



TRADELINE CATALOG

25th Edition

In addition to the most up-to-date information on Honeywell's products the 25th edition of the Trade-line® catalog has many new products including

- 2nd Generation Lyric™ Thermostat
- 24 Volt UV Air Purifier with AirBRIGHT™ Odor Absorption
- Electrode Humidifier
- Fast-Acting, Two-Position Actuators
- Lyric™ Water Leak and Freeze Detector
- New Globe Valve Linkage with flexible actuator mounting
- Redesigned threaded 2-way and 3-way threaded Control Ball Valve and Actuator combinations
- Silicon Carbide Hot Surface Igniter
- TheraPro Electronic Radiator Controller
- TrueZONE Bypass Dampers
- TrueZONE Damper Actuator
- VR9205 24 Vac Direct Ignition Combination 2-Stage Gas Controls
- WEB-700 Controller

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Changes to PDF

List of Models Corrected

Deletion of an accessory to M7285; M7286 Modutrol IV™ Motors

HR90 now compatible with steam

Clarification to Variable Frequency Drive Replacement Parts

Voltage correction on W7752

Bullets changed for R4222 and R8222

Changes in Pneumatic Accessories descriptions

Deleted CSA approval from T4031C; T6031C, D Ambistat Controller

Deleted MARD20 and MARD22

Changes to bullets for AMX300 Series DirectConnect™ Thermostatic Mixing Valve and Kits

Changes to spring color (strength) to VCZZ valve cartridges

Changed Seat materials for V5013N

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Subject Index

Honeywell Environmental and Combustion Controls Maintains ISO 9001:2008 Registration

What is ISO?

ISO is the International Organization for Standardization. ISO standards used to apply only to manufacturing, but now can be applied to many types of businesses. This promotes a common standard for accessing systems worldwide.

What does ISO 9001 registration involve?

ISO 9001 is part of the ISO 9000 family. Registration is evidence that a Quality Management System has been put in place to verify that customer requirements are being identified and met. This means that an Organization has demonstrated the capability to define, document, and control the processes that define the product or service being supplied. Continuous improvement is assured through the preventive and corrective actions that result from a comprehensive system of Internal Audits and Agency (3rd party) Audits.

Registration focuses on the concept of companies using a process approach to quality management. ISO requires that companies meet some very specific requirements, which include defining the process used and controls for each level of every process, from design, through delivery of the finished product or service. Systems, procedures and documentation are required for all processes.

Each facility must be registered separately since it is the quality management system of each facility that is registered, not the products that are manufactured by the system.

Characteristics of ISO Compliant Businesses

ISO management system standards provide the organization with a model to follow in setting up and operating the management system. This model incorporates the features on which experts in the field have reached a consensus as representing the international state of the art. A management system, which follows the model - or "conforms to the standard" - is built on a firm foundation of state-of-the-art practices. It is a well-organized operation with trained and motivated people. It continually rethinks how it runs its business and focuses on meeting and exceeding customer specifications through eliminating non-value-added functions.

It welcomes outside auditors who review its processes and ensure continual improvement against a universally recognized standard of performance.

What does Honeywell ISO registration offer you?

It offers the confidence and peace of mind that the Honeywell quality system requires production processes that meet highest standards for consistency and control, which translates to consistent product quality.

Honeywell ISO Registered Facilities

Many of the products described in this catalog are built in ISO registered facilities.

The following facilities are registered under ISO 9001:2008 registered by Quality Management Institute; Certificate # CERT-0067107:

ACS ECC – Golden Valley Facility

1985 Douglas Drive North
Golden Valley, MN 55422-3992
USA
File No: 014498

Honeywell International ACS ECC (West Coast Operations)

2055 Dublin Drive
San Diego, CA 92154-8203
USA
File No: 014499

Honeywell International Manufacturas de Chihuahua S de RL de CV

Avenida Cristobal Colon #11364 Complejo Ind. Chihuahua
Chihuahua, C.P. 31136
México
File No: 014501

Honeywell International ACS ECC (Mexhon)

Mexhon S.A. de C.V. Blvd. Insurgentes No. 8503-2
Tijuana, Baja, CA
México
File No: 014504

Honeywell International Inc., A Delaware Corporation ACS ECC

304 S. Chicago Avenue
Freeport, IL 61032
USA
File No: 014587

Honeywell International Inc., A Delaware Corporation

25 E. Spring Street
Freeport, IL 61032
USA
File No: 014588

Honeywell International Manufacturas de Chihuahua S de RL de CV

Ave. Parque Industrial Juárez #3328
Parque Industrial Juárez
Juárez, Chihuahua 32630
México
File No: 1065696

General Information

Order Specification Number System

| TYPE LETTER | TYPE NUMBER | SUFFIX LETTER | OS NUMBER |
|-------------|-------------|---------------|-----------|
| V | 4055 | A | 1007 |

The type letter is the single letter, or two letter group, which begins the model number. This letter usually indicates the general type of device involved, however, some product model numbers may not follow these designations exactly. If you have questions about a particular product designation, please contact your Honeywell sales representative. A list of type letters used is shown below (some may fit in more than one category):

| | |
|---------|--|
| A | — Testers. |
| AT | — Transformers. |
| BC | — Microcomputer burner control system. |
| C or CS | — Combustion controls; sensors. |
| D or DM | — Dampers. |
| DSP | — Demonstrators. |
| EL | — Lighting controls. |
| ER | — Energy recovery ventilators. |
| F | — Electronic air cleaners. |
| H | — Humidity controls, including combination temperature and humidity controllers. |

| | |
|-----------------|--|
| L, LA or LS | — Limit controllers. |
| M | — Motors. |
| P | — Pressure controllers. |
| PM | — Program modules. |
| Q | — Accessories. |
| QS | — Communication interface modules. |
| R, RA or RW | — Relays. |
| RM | — Primary controls. |
| S | — Switches and ignition modules. |
| ST | — Electronic fan timers. |
| SV | — Integrated controls. |
| T, TA or TS | — Thermostats and remote bulb temperature controllers. |
| TG | — Thermostat guards. |
| V, VR, VS or VW | — Valves. |
| W | — Load control panels, accessories. |
| Y | — Package sets. |
| ZM | — Software packages. |

Summary of Honeywell Control Series Designations

| Series Designation | Controller Type | Controller Action | Relay or Valve Type | Motor Action | Example |
|--------------------|------------------------------------|---|--|---|-------------------|
| Series 20 | 3-wire, low voltage (2-position) | Makes circuit to start; makes second circuit to stop. | — | Low voltage; rotates 180 to open, continues 180 to close; stops on power interruption. | V2045 |
| Series 40 | 2-wire, line voltage (2-position) | Makes circuit to start; breaks it to stop. | Line voltage coil circuit; makes (opens) when powered; breaks (closes) when power interrupted. | Line voltage; motor drives open when powered; spring returns on power interruption. | T42, L4064, L4008 |
| Series 50 | Mechanical (nonelectrical) series. | | | | V5011 |
| Series 60 | 3-wire, line voltage (2-position) | Makes circuit to start; makes second circuit to stop. | — | Old style—line voltage equivalent to series 20. New style—line or low voltage drives open when powered open; reverses and drives closed when powered closed; stops on power interruption. | M6284 |
| Series 70 | Electronic series. | | | | M7285, C7031 |
| Series 80 | 2-wire, low voltage (2-position) | Makes circuit to start; breaks it to stop. | Low voltage coil circuit; makes (opens) when powered; breaks (closes) when power interrupted. | Low voltage; motor drives open when powered; spring return closed on power interruption. | T87, L8124 |
| Series 90 | 3-wire, low voltage (modulating) | Varies resistance between common terminal and two end terminals in response to controlled variable. | — | Low voltage; motor modulates position in response to changes in controlled variable signaled by controller. | T921, M9164, W899 |

Approval Bodies

Most of the devices described in this catalog have been approved or listed by one or more of the approval bodies listed below.

Underwriters Laboratories Inc.

Underwriters Laboratories Inc., is a Limited Liability Corporation (LLC) that examines and tests devices, systems and materials. Its membership represents a broad cross section of industry, education, and government.

Field inspectors for Underwriters Laboratories Inc., do not normally inspect equipment installed on job sites, but restrict their activities entirely to periodic inspections of products coming off manufacturers' assembly lines.

The three general categories of acceptance of a product by Underwriters Laboratories Inc., are:

1. Listing
2. Component Recognition
3. Classification

Listed devices are structurally and functionally complete and suitable for field installation.

Component Recognized devices are incomplete in some way that makes them unsuitable for general field installation. They are intended to be factory installed as part of some other piece of equipment.

Classified devices or products have been evaluated as to specific hazards only.

Underwriters Laboratories of Canada can also provide certification services to Canadian standards, which is displayed as a "c" adjacent to the UL mark (cUL).

CSA - Canadian Standards Association

The Canadian Standards Association is a not-for-profit, membership-based, non-governmental organization which provides a national standardizing body for Canada.

The Canadian Standards Association Testing Laboratories, inaugurated in May 1940, is a division of the Canadian Standards Association, and is recognized as a testing and investigating agency by Inspection Authorities and by Fire Marshals and Fire Commissioners throughout Canada.

The Canadian Standards Association Laboratories test and examine electrical products submitted for approval in compliance with pertinent Canadian Standards Association codes and standards.

The Canadian Standards Association now includes International Approval Services (IAS).

CSA can also provide certification services to UL standards, which is indicated by a "US" adjacent to the CSA mark.

International Approval Services—U.S.

IAS, now part of CSA and no longer known as IAS, is the testing organization of the American gas industry with laboratories in Cleveland, Ohio and Irvine, Calif. The CSA sponsors the American National Standards Institute Z21 and Z83 Committees on standards for gas-fired equipment.

Any manufacturer of gas appliances or gas appliance accessories may submit their products to the Laboratories and secure certification of their designs upon compliance with the appropriate national standards. Upon such compliance, the manufacturer is granted an Appliance Certificate or an Accessory Certificate and is permitted to display the trademarked Laboratories' Certification Seal or trademarked Laboratories' Certification Symbol on the appliance or accessory.

International Approval Services—Canada

IAS, now part of CSA and no longer known as IAS, represents all segments of the Canadian gas industry, has been accredited by the Standards Council of Canada and the Standards Advisory Committee to prepare National Standards in the area of equipment for use with natural gas and propane. CSA has laboratories in Toronto, Canada.

Each standard is intended to be used within the scope of the standard by the manufacturing sector, those applying the equipment or those responsible for its application. It is the responsibility of the user to determine in each case that the standard is suitable for the application.

IAS operates a certification program for gas appliances, equipment, and accessories.

Canadian Gas Association (CGA), is now part of CSA and is no longer known as CGA, although some legacy products still may display the CGA mark.

American Gas Association (AGA) is also now part of CSA and is no longer known as AGA, although some legacy products still may display the AGA mark.

Factory Mutual

Factory Mutual is an association of mutual insurance companies dedicated to loss prevention. Through its research arm, the Factory Mutual Research Corporation, it investigates means of preventing and minimizing fire and other losses. Factory Mutual Laboratories test and approve two broad categories of devices and materials:

1. Those used for the control or prevention of property damage.
2. Those that in themselves would present serious hazards if not properly designed.

Factory Mutual Acceptance refers to a specific installation or arrangement of equipment. Installations using approved devices, if found satisfactory following review of plans and inspection of completed work, are "accepted."

A continuing follow-up program is carried out through periodic plant inspections and reports of performance in actual use.

CE Mark ("Conformité Européene" European Self-Certification mark)

CE marking is mandatory for products covered by one or more Directives. The manufacturer must apply the CE mark and declare conformity to the applicable Directives in order to bring a product on the market in the European Community. CE marking requirements vary from Directive to Directive, and even within Directives.

Some of the Directives (e.g. Gas Appliance Directive) require third party testing by Notified Bodies, in which case a product surveillance contract with a Notified Body is also mandatory. Other Directives can be satisfied by Declarations of Conformity provided by the manufacturer as a result of internal testing and documentation.

C-Tick

The Australian C-Tick mark is intended for use on products that comply with EMC standards. The C-Tick mark is a certification trademark registered to the ACA by the Trademarks Office and is only to be used in accordance with conditions laid down by the ACA (Australian Communications Authority). The C-Tick mark is valid for both countries and may be applied by either a New Zealand supplier or an Australian supplier.

AGA – Australia Gas Association

AGA reviews a product's CE Mark EMC report and/or Declarations and issues a certificate allowing import into Australia and New Zealand.

The approved product will bear the C-Tick mark with the assigned number of the importer.

Reference Information

Date Code

A date code is stamped on each device to identify the date of manufacture.

In October 1975, Honeywell adopted the industry standard date code system of a 4-digit code. The first 2 digits indicate the year; the second 2 digits indicate the week of the year. EXAMPLE: 7812—the last week of March 1978.

For devices manufactured before October 1975, the following date code was used. If the letter "R" is added as a third letter, it indicates a repair date.

| | | | |
|------------|-------------|--------|--------|
| A January | G July | H 1962 | Z 1970 |
| B February | H August | G 1963 | Y 1971 |
| C March | I September | F 1964 | X 1972 |
| D April | J October | E 1965 | W 1973 |
| E May | K November | D 1966 | V 1974 |
| F June | L December | C 1967 | U 1975 |
| | | B 1968 | T 1976 |
| | | A 1969 | |

Taxes

The amount of any and all present or future taxes or other government charges upon the production, shipment, installation or sale of the equipment covered hereby, including use or occupation taxes, shall be added to the price and paid by the Purchaser; or in lieu thereof, the Purchaser shall furnish the Company with a tax-exemption certificate acceptable to the taxing authorities.

International Controls

Some Honeywell controls are available with Celsius scales and/or at 110/220V, 50 Hz. For information on the availability of these devices, contact:

Commercial/Industrial Combustion Controls
 Honeywell International Inc., MN10-181B
 1985 Douglas Drive North
 Golden Valley, MN 55422-3992

All other controls and systems:
 International Marketing MN10-131A
 Honeywell International Inc.
 1985 Douglas Drive North
 Golden Valley, MN 55422-3992

Terms of Payment and Prices

Contact your local Honeywell TRADELINE Wholesaler or Authorized Distributor for your discount and terms of payment.

Horsepower Ratings

Ratings of Honeywell controls listed herein are in amperes, and correspond generally to the values for various horsepowers as shown in this chart. Full load ratings are taken from the National Electrical Code, 1978 edition; locked motor ratings are 6 times full load rating (ac) or 10 times full load rating (dc).

All motors do not necessarily come within the maximum ampere ratings shown in the table, and control devices must be used which have a rating equal to, or greater than, the actual motor running and starting currents.

| Approximate Horsepower | 120V | | 240V | |
|------------------------|--------------|----------------|--------------|----------------|
| | Full Load | Locked Rotor | Full Load | Locked Rotor |
| 1/6 ac dc | 4.4 — | 26.4 — | 2.2 — | 13.2 — |
| 1/4 ac dc | 5.8 3.1 | 34.8 31.0 | 2.9 1.6 | 17.4 16.0 |
| 1/3 ac dc | 7.2 4.1 | 43.2 41.0 | 3.6 2.0 | 21.6 20.0 |
| 1/2 ac dc | 9.8 5.4 | 58.8 54.0 | 4.9 2.7 | 29.4 27.0 |
| 3/4 ac dc | 13.8 7.6 | 82.8 76.0 | 6.9 3.8 | 41.4 38.0 |
| 1 ac dc | 16.0 9.5 | 96.0 95.0 | 8.0 4.7 | 48.0 47.0 |
| 1 to 1-1/2 ac dc | 20.0 13.2 | 120.0 132.0 | 10.0 6.6 | 60.0 66.0 |
| 2 ac dc | 24.0 17.0 | 144.0 170.0 | 12.0 8.5 | 72.0 85.0 |
| 3 ac dc | 34.0 25.0 | 204.0 250.0 | 17.0 12.2 | 102.0 122.0 |

NEMA Standard Classification Code for Flame Safeguard Enclosures

NEMA 1—General purpose. For indoor protection, where conditions are not unusually severe.

NEMA 2—Driptight. Designed to exclude falling moisture or dirt. Particularly applicable to cooling rooms, laundries, etc., where condensation is prevalent. For indoor use.

NEMA 3—Weather Resistant (weatherproof). For outdoor use; designed to withstand all normal exposure to natural elements. Controls mounted on pullout racks for easy access. With rain hood and weather seals.

NEMA 4—Watertight. Withstands water pressure from 1 in. hose nozzle, 65 gallons per minute, from distance of not less than 10 ft. for five minutes. Suitable for maritime applications, breweries, etc.

NEMA 5—Dust-tight. Equipped with dust-tight gaskets. Suitable for mills and other high-dust atmospheres.

NEMA 6—Submersible. For submerged operation under specified pressures and time.

NEMA 7—Hazardous Locations, National Electrical Code Class 1 (circuit breaks in air).

NEMA 8—Hazardous Locations, National Electrical Code Class 1 (circuit breaks immersed in oil).

NEMA 9—Hazardous Locations, National Electrical Code Class 2.

NEMA 10—Explosion-proof. Meets U.S. Bureau of Mines requirements for explosive atmospheres.

NEMA 11—Acid or Fume Resistant. Provides for immersion of enclosed equipment in oil.

NEMA 12—Industrial Use. Excludes oils, dust, moisture, to satisfy individual requirements.

Conversion of Pressure Units

(Convert by multiplying value in known pressure units by factor listed under required pressure unit.)

| Known Pressure Unit | Required Pressure Unit | | | | | | | | |
|------------------------|------------------------|-------------------|-------------------|------------------------|---------------------|-----------------|-------------------|---------------|----------------------|
| | Kilo-pascals | Pounds per sq in. | Ounces per sq in. | Millimeters of Mercury | Kilograms per sq cm | Inches of Water | Inches of Mercury | Feet of Water | Centimeters of Water |
| Centimeters of Water | 0.0981 | 0.0142 | 0.227 | 0.735 | 0.000999 | 0.394 | 0.0289 | 0.0328 | — |
| Feet of Water | 2.99 | 0.433 | 6.94 | 22.4 | 0.0305 | 12.0 | 0.883 | — | 30.5 |
| Inches of Mercury | 3.39 | 0.491 | 7.86 | 25.4 | 0.0345 | 13.6 | — | 1.13 | 34.6 |
| Inches of Water | 0.249 | 0.0361 | 0.578 | 1.87 | 0.00254 | — | 0.0735 | 0.0833 | 2.54 |
| Kilograms per sq cm | 98.1 | 14.2 | 228.0 | 735.0 | — | 394.0 | 29.0 | 32.8 | 1000.0 |
| Millimeters of Mercury | 0.133 | 0.0193 | 0.308 | — | 0.00136 | 0.535 | 0.0394 | 0.0446 | 1.36 |
| Ounces per sq in. | 0.431 | 0.0625 | — | 8.24 | 0.00439 | 1.73 | 0.128 | 0.144 | 4.40 |
| Pounds per sq in. | 6.89 | — | 16.0 | 51.7 | 0.0703 | 27.7 | 2.04 | 2.31 | 70.4 |
| Kilo-pascals | — | 0.145 | 2.32 | 7.52 | 0.010 | 4.02 | 0.295 | 0.334 | 10.2 |

Absolute Pressure = Gauge Pressure +14.74 psi.

Capacities

Most gas capacities listed in this catalog are stated for natural gas, based on 1,000 Btu per cu ft, 0.64 sp. gr. nat. gas, at a pressure drop of 1.0 in. w.c. (37.3 MJ/m³, 0.64 sp. gr. at a pressure drop of 0.25 kPa).

To calculate the Btu/h capacity for other gases, multiply the listed Btu/h capacity by the conversion factor.

| Total Heating Value for Gas X | | At sp. gr. | Conversion Factor (multiply) |
|-------------------------------|-------------------|---------------|------------------------------|
| Btu/cu ft | MJ/m ³ | | |
| 500 to 800 | 18.7 to 29.8 | 0.60 | 0.516 ^a |
| 800 to 950 | 29.8 to 35.4 | 0.70 | 0.765 ^a |
| 2500 | 93.3 | 1.53 (LP gas) | 1.62 |

^a Nominal conversion factor for range of total heat value.

For gases not listed in table, use one of the following formulas:

$$\left(\frac{\text{Btu/h Capacity}}{(0.64 \text{ sp. gr.})} \right) \left(\sqrt{\frac{0.64}{\text{sp. gr. gas X}}} \right) \left(\frac{\text{Btu/cu ft (MJ/m}^3 \text{ gas X)}}{1000 \text{ Btu/cu ft (37.3 MJ/m}^3)} \right) = \text{Btu/h Capacity gas X}$$

or

$$\left(\frac{\text{Btu/h Capacity}}{(\text{gas A})} \right) \left(\sqrt{\frac{\text{sp. gr. gas A}}{\text{sp. gr. gas B}}} \right) \left(\frac{\text{Btu/cu ft (MJ/m}^3 \text{ gas B)}}{\text{Btu/cu ft (MJ/m}^3 \text{ gas A)}} \right) = \text{Btu/h Capacity gas B}$$

M18317

Reference Information

Power & Heat

| | |
|---------------------|---|
| 1 Btu | 776 ft-lb 0.293 Watt-hr 252 cal |
| 1 cal | 0.003968 Btu 0.0011619 Watt-hr |
| 1 Btu/h | 0.293 Watt 4.2 cal/min |
| 1 Watt | 3.413 Btu/h |
| 1 Watt-hr | 3.413 Btu |
| 1 kW (1000 Watts) | 3413 Btu/h |
| 1 kW-hr | 3413 Btu |
| 1 hp | 0.746 kW 2544.65 Btu/h 33,000 ft-lb./min |
| 1 Bohp ^a | 9.809 kW 33,479 Btu/h 34.5 lb of steam per hour |

^a Boiler Output Horsepower is the equivalent of the heat required to evaporate 34.5 lb of water per hour into dry, saturated steam at 212°F.

Btu Contents of Fuels

| Grade or Type | Unit | Btu |
|---------------|--------|--------------|
| No. 1 Oil | Gallon | 137,400 |
| No. 2 Oil | Gallon | 139,600 |
| No. 3 Oil | Gallon | 141,800 |
| No. 4 Oil | Gallon | 145,100 |
| No. 5 Oil | Gallon | 148,800 |
| No. 6 Oil | Gallon | 152,400 |
| Nat. Gas | cu ft | 950 to 1,150 |
| Propane | cu ft | 2,550 |
| Butane | cu ft | 3,200 |

Commercial/Industrial Combustion Conversion Factors

Simplified method of determining combustion air required to completely burn a given amount of fuel.

$$\text{Cf/h Air} = \frac{\text{Btu/hr input}}{100}$$

M18318

To correct gas volume from one set of conditions to another.

$$\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}$$

P = Absolute pressure.

= 14.7 + gauge psi.

T = Absolute temperature in -R = 460.

V = Volume in any consistent terms.

Normally useful for determining standard cubic feet of fuel consumed when metering pressure is other than standard; e.g., gas passing through a volumetric gas meter at 5 psig. (The heating value of fuel gases is based on Btu/cf at standard gas conditions.)

Turndown ratio of fixed area burner.

$$\text{T.D.} = \sqrt{\frac{\text{Maximum Pressure Drop across Burner}}{\text{Minimum Pressure Drop across Burner}}} = \frac{\text{Maximum Firing Rate}}{\text{Minimum Firing Rate}}$$

M18319

Where pressure drops are expressed in the same units.

Relationship between flow capacity at a specified pressure drop and C_v factor.

C_v = Flow Factor. Defined as the amount of water at 60°F in gallons per minute which will flow through a valve in the open position with a pressure drop through the valve of 1 pound per square inch.

For capacity conversion to gases the following may be used for pressure ratios less than critical ratios.

$$Q = 1360 C_v \sqrt{\frac{(P_1 - P_2) P_2}{GT}}$$

M18320

Q = Standard cubic feet per hour at 14.7 psia and 60°F.

P₁ = Inlet pressure, psia.

P₂ = Outlet pressure, psia.

T = Absolute temperature in -R = -F+460.

G = Specific gravity of the gas.

Steam Valve Selection

There are five steps in choosing the appropriate steam valve:

1. Determine the steam medium temperature, pressure, and the pressure drop across the valve. (This is often determined using inlet vs. outlet pressures. For example, a valve with a 75 psi inlet and a 50 psi outlet would have a pressure drop of 25 psi.)
2. Using this information (and Tables 1 and 2), calculate the C_v or select the pipe size.
3. Check the average pressure and the temperature to determine the quality of the steam medium. The quality of the steam is:
 - Saturated
 - Superheated
4. Establish the required valve body configuration for the application. This is typically fixed by the particular application and is often part of the design specifications. Standard body configurations are:
 - Two-way
 - Straight-through
 - Angle Body
5. See valve and actuator Product Overview Table and individual catalog pages.

NOTE: Traditionally, steam valves use a linear flow characteristic, but equal percentage characteristics are used in Europe.

All steam valves are two-way valves. There are two valve operation control types; two-position (open/closed) and modulating (proportional).

Two-Position

Two-position steam valves are typically selected based on the pipe size of the line, which is matched to the coil to deliver the amount of steam required at design conditions. For example, if the pipe size is three inches in diameter, you would select a three inch steam valve. Delivered heat is a function of steam pressure, valve capacity index (C_v), and the percentage open time of the valve (duty cycle). The condensed steam may be returned to the boiler by active or passive methods.

Modulating

Two-way modulating steam valves are typically used to throttle the flow of steam in proportion to the load. Similar to water valves, when sizing a modulating valve for steam, consider the pressure throughout the valve travel. The pressure drop must be large enough so that, as the valve starts to close, it can diminish the flow. If this is not accomplished, the valve is not able to maintain control throughout its entire range of travel. However, a pressure drop that is too large causes noisy valve operation and decreases the life span of the valve.

Calculating C_v

To determine the appropriate C_v rating, one must know:

Supply pressure (psi)

Valve differential pressure (Δp)

Flow rate (lb/hr)

$$C_v = \frac{Q\sqrt{v}}{63.5\sqrt{\Delta p}}$$

M34741

Q = Quantity of Steam (pounds per hour)

v = specific volume of steam (cubic feet per pound) at the average pressure in the valve

63.5 = scaling constant

Δp = pressure drop in psi

When Btu/hr (heat output) is known:

Using the supply pressure, differential pressure and Table 1, determine the value of Factor A for the application. Then using Factor A, the flow rate and Table 2, determine the C_v for the application.

Table 1. Calculations of Factor A for Steam Valves

| Supply (psig) | Return Pressure (psig) | | | | | | | | | | | | | | | | | | | | Supply (Bar) | |
|---------------|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|--------------|-----|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | | 70 |
| 2 | 4.0 | 5.5 | | | | | | | | | | | | | | | | | | | | 0.1 |
| 3 | 3.2 | 3.9 | 5.4 | | | | | | | | | | | | | | | | | | | 0.2 |
| 4 | 2.7 | 3.1 | 3.7 | 5.2 | | | | | | | | | | | | | | | | | | 0.3 |
| 5 | 2.4 | 2.7 | 3.0 | 3.7 | 5.1 | | | | | | | | | | | | | | | | | 0.3 |
| 6 | 2.2 | 2.3 | 2.6 | 2.9 | 3.6 | 5.0 | | | | | | | | | | | | | | | | 0.4 |
| 7 | 2.0 | 2.1 | 2.3 | 2.5 | 2.9 | 3.5 | 4.9 | | | | | | | | | | | | | | | 0.5 |
| 8 | 1.8 | 1.9 | 2.1 | 2.2 | 2.5 | 2.8 | 3.4 | 4.8 | | | | | | | | | | | | | | 0.6 |
| 9 | 1.7 | 1.8 | 1.9 | 2.0 | 2.2 | 2.4 | 2.8 | 3.3 | 4.7 | | | | | | | | | | | | | 0.6 |
| 10 | 1.6 | 1.7 | 1.7 | 1.8 | 2.0 | 2.1 | 2.4 | 2.7 | 3.3 | 4.6 | | | | | | | | | | | | 0.7 |
| 11 | 1.5 | 1.6 | 1.6 | 1.7 | 1.8 | 1.9 | 2.1 | 2.3 | 2.6 | 3.2 | 4.5 | | | | | | | | | | | 0.8 |
| 12 | 1.4 | 1.5 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 | 2.0 | 2.3 | 2.6 | 3.1 | 4.4 | | | | | | | | | | 0.8 |
| 15 | 1.2 | 1.3 | 1.3 | 1.3 | 1.4 | 1.4 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 | 2.1 | 2.5 | | | | | | | | | 1.0 |
| 20 | 1.0 | 1.0 | 1.0 | 1.1 | 1.1 | 1.1 | 1.1 | 1.2 | 1.2 | 1.3 | 1.3 | 1.4 | 1.4 | 1.8 | | | | | | | | 1.4 |
| 25 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 1.0 | 1.0 | 1.0 | 1.1 | 1.1 | 1.1 | 1.2 | 1.7 | | | | | | | 1.7 |
| 30 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 | 0.9 | 0.9 | 1.0 | 1.1 | 1.6 | | | | | | 2.1 |
| 40 | 0.7 | 0.7 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.8 | 0.9 | 1.0 | | | | | 2.8 |
| 50 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 0.9 | | | | 3.4 |
| 60 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.9 | | | 4.1 |
| 70 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.6 | 0.8 | 4.8 |
| 80 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.6 | 0.8 | 5.5 |
| | .00 | .07 | .14 | .21 | .28 | .34 | .41 | .48 | .55 | .62 | .69 | .76 | .83 | 1.03 | 1.38 | 1.72 | 2.07 | 2.76 | 3.45 | 4.14 | 4.83 | |
| | Return Pressure (Bar) | | | | | | | | | | | | | | | | | | | | | |

Reference Information

Table 2. Steam valve C_v final Calculation

| | Steam Flow Rate (in lb/hr) | | | | | | | | | | | | | | | | | | | | | | |
|-----|----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|------|-----|-----|-----|
| | 5 | 10 | 25 | 50 | 75 | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1k | 2k | 3k | 4k | 5k | 7.5k | 10k | 20k | 30k |
| 0.4 | | | 0.16 | 0.31 | 0.47 | 0.63 | 1.26 | 1.9 | 2.5 | 3.1 | 3.8 | 4.4 | 5.0 | 5.7 | 6.3 | 13 | 19 | 25 | 31 | 47 | 63 | 126 | 189 |
| 0.5 | | 0.08 | 0.20 | 0.39 | 0.59 | 0.79 | 1.6 | 2.4 | 3.1 | 3.9 | 4.7 | 5.5 | 6.3 | 7.1 | 7.9 | 16 | 24 | 31 | 39 | 59 | 79 | 157 | 236 |
| 0.6 | | 0.09 | 0.24 | 0.47 | 0.71 | 0.94 | 1.9 | 2.8 | 3.8 | 4.7 | 5.7 | 6.6 | 7.6 | 8.5 | 9.4 | 19 | 28 | 38 | 47 | 71 | 94 | 189 | 283 |
| 0.7 | | 0.11 | 0.28 | 0.55 | 0.83 | 1.1 | 2.2 | 3.3 | 4.4 | 5.5 | 6.6 | 7.7 | 8.8 | 9.9 | 11.0 | 22 | 33 | 44 | 55 | 83 | 110 | 220 | 331 |
| 0.8 | | 0.13 | 0.31 | 0.63 | 0.94 | 1.3 | 2.5 | 3.8 | 5.0 | 6.3 | 7.6 | 8.8 | 10.1 | 11.3 | 13 | 25 | 38 | 50 | 63 | 94 | 126 | 252 | 378 |
| 0.9 | | 0.14 | 0.35 | 0.71 | 1.1 | 1.4 | 2.8 | 4.3 | 5.7 | 7.1 | 8.5 | 9.9 | 11.3 | 13 | 14 | 28 | 43 | 57 | 71 | 106 | 142 | 283 | 425 |
| 1 | | 0.16 | 0.39 | 0.79 | 1.2 | 1.6 | 3.1 | 4.7 | 6.3 | 7.9 | 9.4 | 11.0 | 13 | 14 | 16 | 31 | 47 | 63 | 79 | 118 | 157 | 315 | 472 |
| 1.1 | | 0.17 | 0.43 | 0.87 | 1.3 | 1.7 | 3.5 | 5.2 | 6.9 | 8.7 | 10.4 | 12 | 14 | 16 | 17 | 35 | 52 | 69 | 87 | 130 | 173 | 346 | 520 |
| 1.2 | | 0.19 | 0.47 | 0.94 | 1.4 | 1.9 | 3.8 | 5.7 | 7.6 | 9.4 | 11.3 | 13 | 15 | 17 | 19 | 38 | 57 | 76 | 94 | 142 | 189 | 378 | 567 |
| 1.3 | 0.10 | 0.20 | 0.51 | 1.0 | 1.5 | 2.0 | 4.1 | 6.1 | 8.2 | 10.2 | 12 | 14 | 16 | 18 | 20 | 41 | 61 | 82 | 102 | 154 | 205 | 409 | 614 |
| 1.4 | 0.11 | 0.22 | 0.55 | 1.1 | 1.7 | 2.2 | 4.4 | 6.6 | 8.8 | 11.0 | 13 | 15 | 18 | 20 | 22 | 44 | 66 | 88 | 110 | 165 | 220 | 441 | |
| 1.5 | 0.12 | 0.24 | 0.59 | 1.2 | 1.8 | 2.4 | 4.7 | 7.1 | 9 | 12 | 14 | 17 | 19 | 21 | 24 | 47 | 71 | 94 | 118 | 177 | 236 | 472 | |
| 1.6 | 0.13 | 0.25 | 0.63 | 1.3 | 1.9 | 2.5 | 5.0 | 7.6 | 10.1 | 13 | 15 | 18 | 20 | 23 | 25 | 50 | 76 | 101 | 126 | 189 | 252 | 504 | |
| 1.7 | 0.13 | 0.27 | 0.67 | 1.3 | 2.0 | 2.7 | 5.4 | 8.0 | 10.7 | 13 | 16 | 19 | 21 | 24 | 27 | 54 | 80 | 107 | 134 | 201 | 268 | 535 | |
| 1.8 | 0.14 | 0.28 | 0.71 | 1.4 | 2.1 | 2.8 | 5.7 | 8.5 | 11.3 | 14 | 17 | 20 | 23 | 26 | 28 | 57 | 85 | 113 | 142 | 213 | 283 | 567 | |
| 1.9 | 0.15 | 0.30 | 0.75 | 1.5 | 2.2 | 3.0 | 6.0 | 9.0 | 12 | 15 | 18 | 21 | 24 | 27 | 30 | 60 | 90 | 120 | 150 | 224 | 299 | 598 | |
| 2 | 0.16 | 0.31 | 0.79 | 1.6 | 2.4 | 3.1 | 6.3 | 9.4 | 13 | 16 | 19 | 22 | 25 | 28 | 31 | 63 | 94 | 126 | 157 | 236 | 315 | 630 | |
| 2.1 | 0.17 | 0.33 | 0.83 | 1.7 | 2.5 | 3.3 | 6.6 | 9.9 | 13 | 17 | 20 | 23 | 26 | 30 | 33 | 66 | 99 | 132 | 165 | 248 | 331 | | |
| 2.2 | 0.17 | 0.35 | 0.87 | 1.7 | 2.6 | 3.5 | 6.9 | 10.4 | 14 | 17 | 21 | 24 | 28 | 31 | 35 | 69 | 104 | 139 | 173 | 260 | 346 | | |
| 2.3 | 0.18 | 0.36 | 0.91 | 1.8 | 2.7 | 3.6 | 7.2 | 10.9 | 14 | 18 | 22 | 25 | 29 | 33 | 36 | 72 | 109 | 145 | 181 | 272 | 362 | | |
| 2.4 | 0.19 | 0.38 | 0.94 | 1.9 | 2.8 | 3.8 | 7.6 | 11.3 | 15 | 19 | 23 | 26 | 30 | 34 | 38 | 76 | 113 | 151 | 189 | 283 | 378 | | |
| 2.5 | 0.20 | 0.39 | 0.98 | 2.0 | 3.0 | 3.9 | 7.9 | 12 | 16 | 20 | 24 | 28 | 31 | 35 | 39 | 79 | 118 | 157 | 197 | 295 | 394 | | |
| 2.6 | 0.20 | 0.41 | 1.0 | 2.0 | 3.1 | 4.1 | 8.2 | 12 | 16 | 20 | 25 | 29 | 33 | 37 | 41 | 82 | 123 | 164 | 205 | 307 | 409 | | |
| 2.7 | 0.21 | 0.43 | 1.1 | 2.1 | 3.2 | 4.3 | 8.5 | 13 | 17 | 21 | 26 | 30 | 34 | 38 | 43 | 85 | 128 | 170 | 213 | 319 | 425 | | |
| 2.8 | 0.22 | 0.44 | 1.1 | 2.2 | 3.3 | 4.4 | 8.8 | 13 | 18 | 22 | 26 | 31 | 35 | 40 | 44 | 88 | 132 | 176 | 220 | 331 | 441 | | |
| 2.9 | 0.23 | 0.46 | 1.1 | 2.3 | 3.4 | 4.6 | 9.1 | 14 | 18 | 23 | 27 | 32 | 37 | 41 | 46 | 91 | 137 | 183 | 228 | 343 | 457 | | |
| 3 | 0.24 | 0.47 | 1.2 | 2.4 | 3.5 | 4.7 | 9.4 | 14 | 19 | 24 | 28 | 33 | 38 | 43 | 47 | 94 | 142 | 189 | 236 | 354 | 472 | | |
| 3.1 | 0.24 | 0.49 | 1.2 | 2.4 | 3.7 | 4.9 | 9.8 | 15 | 20 | 24 | 29 | 34 | 39 | 44 | 49 | 98 | 146 | 195 | 244 | 366 | 488 | | |
| 3.2 | 0.25 | 0.50 | 1.3 | 2.5 | 3.8 | 5.0 | 10.1 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 101 | 151 | 202 | 252 | 378 | 504 | | |
| 3.3 | 0.26 | 0.52 | 1.3 | 2.6 | 3.9 | 5.2 | 10.4 | 16 | 21 | 26 | 31 | 36 | 42 | 47 | 52 | 104 | 156 | 208 | 260 | 390 | 520 | | |
| 3.4 | 0.27 | 0.54 | 1.3 | 2.7 | 4.0 | 5.4 | 10.7 | 16 | 21 | 27 | 32 | 37 | 43 | 48 | 54 | 107 | 161 | 214 | 268 | 402 | 535 | | |
| 3.5 | 0.28 | 0.55 | 1.4 | 2.8 | 4.1 | 5.5 | 11.0 | 17 | 22 | 28 | 33 | 39 | 44 | 50 | 55 | 110 | 165 | 220 | 276 | 413 | 551 | | |
| 3.6 | 0.28 | 0.57 | 1.4 | 2.8 | 4.3 | 5.7 | 11.3 | 17 | 23 | 28 | 34 | 40 | 45 | 51 | 57 | 113 | 170 | 227 | 283 | 425 | 567 | | |
| 3.7 | 0.29 | 0.58 | 1.5 | 2.9 | 4.4 | 5.8 | 11.7 | 17 | 23 | 29 | 35 | 41 | 47 | 52 | 58 | 117 | 175 | 233 | 291 | 437 | 583 | | |
| 3.9 | 0.31 | 0.61 | 1.5 | 3.1 | 4.6 | 6.1 | 12 | 18 | 25 | 31 | 37 | 43 | 49 | 55 | 61 | 123 | 184 | 246 | 307 | 461 | 614 | | |
| 4.4 | 0.35 | 0.69 | 1.7 | 3.5 | 5.2 | 6.9 | 14 | 21 | 28 | 35 | 42 | 49 | 55 | 62 | 69 | 139 | 208 | 277 | 346 | 520 | | | |
| 4.5 | 0.35 | 0.71 | 1.8 | 3.5 | 5.3 | 7.1 | 14 | 21 | 28 | 35 | 43 | 50 | 57 | 64 | 71 | 142 | 213 | 283 | 354 | 531 | | | |
| 4.6 | 0.36 | 0.72 | 1.8 | 3.6 | 5.4 | 7.2 | 14 | 22 | 29 | 36 | 43 | 51 | 58 | 65 | 72 | 145 | 217 | 290 | 362 | 543 | | | |
| 4.7 | 0.37 | 0.74 | 1.9 | 3.7 | 5.6 | 7.4 | 15 | 22 | 30 | 37 | 44 | 52 | 59 | 67 | 74 | 148 | 222 | 296 | 370 | 555 | | | |
| 4.8 | 0.38 | 0.76 | 1.9 | 3.8 | 5.7 | 7.6 | 15 | 23 | 30 | 38 | 45 | 53 | 60 | 68 | 76 | 151 | 227 | 302 | 378 | 567 | | | |
| 4.9 | 0.39 | 0.77 | 1.9 | 3.9 | 5.8 | 7.7 | 15 | 23 | 31 | 39 | 46 | 54 | 62 | 69 | 77 | 154 | 231 | 309 | 386 | 579 | | | |
| 5 | 0.39 | 0.79 | 2.0 | 3.9 | 5.9 | 7.9 | 16 | 24 | 31 | 39 | 47 | 55 | 63 | 71 | 79 | 157 | 236 | 315 | 394 | 591 | | | |
| 5.2 | 0.41 | 0.82 | 2.0 | 4.1 | 6.1 | 8.2 | 16 | 25 | 33 | 41 | 49 | 57 | 66 | 74 | 82 | 164 | 246 | 328 | 409 | 614 | | | |
| 5.3 | 0.42 | 0.83 | 2.1 | 4.2 | 6.3 | 8.3 | 17 | 25 | 33 | 42 | 50 | 58 | 67 | 75 | 83 | 167 | 250 | 334 | 417 | | | | |
| 5.4 | 0.43 | 0.85 | 2.1 | 4.3 | 6.4 | 8.5 | 17 | 26 | 34 | 43 | 51 | 60 | 68 | 77 | 85 | 170 | 255 | 340 | 425 | | | | |
| 5.5 | 0.43 | 0.87 | 2.2 | 4.3 | 6.5 | 8.7 | 17 | 26 | 35 | 43 | 52 | 61 | 69 | 78 | 87 | 173 | 260 | 346 | 433 | | | | |

IMPORTANT

If the steam is superheated, it can require a valve with a larger C_v . Use the following equation to determine the correct C_v to use:

$$C_v = C_v \text{ Calculated} \times [1 + (0.00075 \times S)]$$

Where: S = degrees of superheat (in Fahrenheit).

If the calculated C_v falls between two valve sizes, use a valve with the next higher C_v value unless the calculated C_v is within 10 percent of the next lower C_v value.

 **CAUTION**

Pressure reducing valves can also produce superheated steam and exceed the valve's temperature rating.

For example: 100 psi steam at 338°F passing through a pressure reducing valve gives up no heat as it expands to 10 psi, so the 10 psi steam downstream will be at 338°F not 239°F. This is 99 Fahrenheit degrees of superheat and downstream valves and piping will be exposed to the higher temperature. To correct for superheated steam, 1 Btu/lb is added for each Fahrenheit degree of superheat.

Superheat—The additional heat contained in a vapor at a temperature higher than the saturation (boiling) temperature corresponding to the pressure of the vapor.

Table 3. Properties of Saturated Steam

| Vacuum, Inches of Mercury | Boiling Point or Steam Temperature Deg. F | Specific Volume (V), cu. ft/lb | \sqrt{V} (For valve sizing) | Maximum Allowable Pressure Drop, psi. (For valve sizing) | Heat of the Liquid, Btu | Latent Heat of Evap., Btu | Total Heat of Steam, Btu |
|----------------------------|---|--------------------------------|----------------------------------|---|-------------------------|---------------------------|--------------------------|
| 29 | 76.6 | 706.00 | 26.57 | 0.23 | 44.7 | 1048.6 | 1093.3 |
| 25 | 133.2 | 145.00 | 12.04 | 1.2 | 101.1 | 1017.0 | 1118.1 |
| 20 | 161.2 | 75.20 | 8.672 | 2.4 | 129.1 | 1001.0 | 1130.1 |
| 15 | 178.9 | 51.30 | 7.162 | 3.7 | 146.8 | 990.6 | 1137.4 |
| 14 | 181.8 | 48.30 | 6.950 | 3.9 | 149.7 | 988.8 | 1138.5 |
| 12 | 187.2 | 43.27 | 6.576 | 4.4 | 155.1 | 985.6 | 1140.7 |
| 10 | 192.2 | 39.16 | 6.257 | 4.9 | 160.1 | 982.6 | 1142.7 |
| 8 | 196.7 | 35.81 | 5.984 | 5.4 | 164.7 | 980.0 | 1144.7 |
| 6 | 201.0 | 32.99 | 5.744 | 5.9 | 168.9 | 977.2 | 1146.1 |
| 4 | 204.8 | 30.62 | 5.533 | 6.4 | 172.8 | 974.8 | 1147.6 |
| 2 | 208.5 | 28.58 | 5.345 | 6.9 | 176.5 | 972.5 | 1149.0 |
| Gage Pressure, psig | | | | | | | |
| 0 | 212.0 | 26.79 | 5.175 | 7.4 | 180.0 | 970.4 | 1150.4 |
| 1 | 215.3 | 25.20 | 5.020 | 7.8 | 183.3 | 968.2 | 1151.5 |
| 2 | 218.5 | 23.78 | 4.876 | 8.4 | 186.6 | 966.2 | 1152.8 |
| 3 | 221.5 | 22.57 | 4.751 | 8.8 | 189.6 | 964.3 | 1153.9 |
| 4 | 224.4 | 21.40 | 4.626 | 9.4 | 192.5 | 962.4 | 1154.9 |
| 5 | 227.1 | 20.41 | 4.518 | 9.8 | 195.3 | 960.6 | 1155.9 |
| 6 | 229.8 | 19.45 | 4.410 | 10.4 | 198.0 | 958.8 | 1156.8 |
| 7 | 232.3 | 18.64 | 4.317 | 10.8 | 200.5 | 957.2 | 1157.7 |
| 8 | 234.8 | 17.85 | 4.225 | 11.4 | 203.0 | 955.5 | 1158.5 |
| 9 | 237.1 | 17.16 | 4.142 | 11.8 | 205.4 | 954.0 | 1159.4 |
| 10 | 239.4 | 16.49 | 4.061 | 12.4 | 207.7 | 952.5 | 1160.2 |
| 11 | 241.6 | 15.90 | 3.987 | 12.8 | 209.9 | 951.1 | 1161.0 |
| 12 | 243.7 | 15.35 | 3.918 | 13.4 | 212.1 | 949.7 | 1161.8 |
| 15 | 249.8 | 13.87 | 3.724 | 14.8 | 214.2 | 948.3 | 1162.5 |
| 20 | 258.8 | 12.00 | 3.464 | 17.4 | 227.4 | 939.5 | 1166.9 |
| 25 | 266.8 | 10.57 | 3.251 | 19.8 | 235.6 | 934.0 | 1169.6 |
| 30 | 274.0 | 9.463 | 3.076 | 22.4 | 243.0 | 928.9 | 1171.9 |
| 40 | 286.7 | 7.826 | 2.797 | 27.4 | 255.9 | 919.9 | 1175.8 |
| 50 | 297.7 | 6.682 | 2.585 | 32.4 | 267.1 | 911.9 | 1179.0 |
| 60 | 307.3 | 5.836 | 2.416 | 37.4 | 277.1 | 904.7 | 1181.8 |
| 70 | 316.0 | 5.182 | 2.276 | 42.4 | 286.1 | 898.0 | 1184.1 |
| 80 | 323.9 | 4.662 | 2.159 | 47.4 | 294.3 | 891.9 | 1186.2 |
| 90 | 331.2 | 4.239 | 2.059 | 52.4 | 301.9 | 886.1 | 1188.0 |
| 100 | 337.9 | 3.888 | 1.972 | 57.4 | 308.9 | 880.7 | 1189.6 |
| 120 | 350.0 | 3.337 | 1.827 | 67.4 | 321.7 | 870.7 | 1192.4 |
| 140 | 360.9 | 2.923 | 1.710 | 77.4 | 333.1 | 861.5 | 1194.6 |

Authorized Distributors

Honeywell Authorized Distributors

Certain Honeywell product lines are available only through authorized distributors. Authorized distributors have chosen to make a commitment to representing Honeywell controls. They are committed to excellence:

- in education, by providing continuing training in HVAC industry developments to their employees.
- in application, by choosing the right system for each application.
- in marketing, by providing customers with accurate information and efficient service.

7800 SERIES Distributors

For commercial and industrial burner and boiler controls and systems, and 7800 SERIES burner controls.

Authorized Systems Distributors

Complete access to building automation systems, standalone controls and commercial field device products.

Combustion Solutions Distributors

For commercial and industrial combustion solutions and components.

Commercial Controls Distributors

Access to light commercial building automation systems, standalone controls and commercial field device products.

ControLinks™ Representatives

For ControLinks Products.

FOR YOUR CONVENIENCE

For more information about authorized distributors or for the name of a particular outlet in your area, use our toll-free number.

1-800-345-6770

Lyric™ Thermostat



The Lyric thermostat is ideal for customers who are always on the go and want optimal comfort and savings they don't have to think about. Instead of operating on a fixed schedule, Lyric uses their smartphone location to automatically adjust the temperature as they come and go – delivering comfort when they're home and savings when they're away. It's the next generation of connectivity, from the home comfort leader.

- Remote Access
- Lyric App allows you to control with your smartphone or tablet
- Geofence control for savings when you're away and comfort when you're home
- Fine Tune temperature control
- Smart Cues for system information and recommendations

Display: Round
Color: White
Changeover: Auto/Manual
Programmability: Programmable with Geofencing
Setting Temperature Range: Heat: 40°F to 90°F; Cool 50°F to 99°F
 (Heat: 4.5°C to 32.0°C; Cool: 10°C to 37.0°C)
Operating Temperature Range: 32°F to 120°F (0°C to 48.9°C)
Humidification Setting Range: Cooling: 40 to 80% RH. Heating: 10 to 60% RH.

Dehumidification Setting Range: 40 to 80% RH.
Operating Humidity Range (% RH): 5 to 90% RH, non-condensing
Power Method: Hardwired, Battery Back-up, Power Transformation
Supply Voltage: 18 to 30 Vac
Frequency: 50 Hz; 60 Hz
Electrical Connections: Push Terminals
Electrical Ratings: 18 to 30 Vac
Approvals, FCC: Approved
Approvals, Underwriters Laboratories Inc.: Approved

| Material Number | Applications | Switch Positions (System) | Switch Positions (Fan) | Terminal Designations | Stages |
|---------------------------------|--|--------------------------------|------------------------|---|--|
| TH8732WFH5002/U US model | Up to 3 Heat/2 Cool Heat Pumps; Up to 2 Heat/2 Cool Conventional Systems | HEAT-OFF-COOL-AUTO-EM. HEAT | AUTO-ON-CIRC | R, Rc, W-O/B, W2-Aux/E. Y, Y2, G, C, K, L, U1, U2 | Up to 3 Heat/2 Cool Heat Pumps; Up to 2 Heat/2 Cool Conventional Systems |
| TH8732WFH5010/U Canada model | Up to 3 Heat/2 Cool Heat Pumps; Up to 2 Heat/2 Cool Conventional Systems | HEAT-OFF-COOL-AUTO-EM. HEAT | AUTO-ON-CIRC | R, Rc, W-O/B, W2-Aux/E. Y, Y2, G, C, K, L, U1, U2 | Up to 3 Heat/2 Cool Heat Pumps; Up to 2 Heat/2 Cool Conventional Systems |

Voice Control Wi-Fi 9000 Color Touchscreen



Honeywell's Wi-Fi 9000 allows remote access to the thermostat through a computer, tablet, or smartphone with Honeywell's Total Connect Comfort Service.

- Change temperature with Voice Control (English only)
- Get Connected – Connect to home's existing Wi-Fi network
- Remote Control – Convenience, comfort and control from anywhere through web, tablet or smartphone access
- App available for tablet and smartphones
- Automatic software updates through Wi-Fi
- Selectable to 7 Day or Non-Programmable
- Program thermostat locally or over the web or app
- Customize the screen color to match any décor

Display: Color Touchscreen
Display Size: 8.06 sq in.
Mounting: Horizontal
Color: Black
Changeover: Auto or Manual
Programmability: 7-Day Multiple Day Programming or Non-Programmable
Scheduling: On-line scheduling or Locally at thermostat
Setting Temperature Range: Heat: 40°F to 90°F; Cool: 50°F to 99°F
 (Heat: 4.5°C to 32°C; Cool: 10°C to 37°C)
Operating Temperature Range: 32°F to 120°F (0°C to 48.9°C)

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing
Power Method: Hardwired
Supply Voltage: 18 to 30 Vac
Frequency: 50 Hz; 60 Hz
Dimensions: 3 1/2 in. High, 4 1/2 in. Wide, 7/8 in. Deep (88 mm. High, 115 mm. Wide, 22 mm. Deep)

Accessories:
THP2400A1027B/U – Black coverplate Assembly

| Material Number | Applications | Terminal Designations | Stages | Switch Positions (System) | Switch Positions (Fan) | Electrical Ratings | Comments |
|-----------------|--|--|---|----------------------------|------------------------------|--------------------|---|
| TH9320WFV6007/U | Up to 3 Heat/2 Cool Heat Pumps; Up to 2 Heat/2 Cool Conventional Systems | R, RC, C, W (O/B), W2 (AUX/E), Y, Y2, G, L | Up to 3 Heat/2 Cool Heat Pump; Up to 2 Heat/2 Cool Conventional | HEAT-OFF-COOL-AUTO-EM.HEAT | AUTO-ON-CIRC-FOLLOW SCHEDULE | 18 to 30 Vac | Tri-Lingual Display (selectable for English, French or Spanish) |

Connected Thermostats

Wi-Fi 9000 Color Touchscreen



Applications: Up to 3 Heat/2 Cool Heat Pumps; Up to 2 Heat/2 Cool Conventional Systems
Display: Color Touchscreen
Display Size: 8.06 sq in.
Mounting: Horizontal
Color: Premier White®
Changeover: Auto or Manual
Stages: Up to 3 Heat/2 Cool Heat Pump; Up to 2 Heat/2 Cool Conventional
Scheduling: On-line scheduling or Locally at thermostat
Switch Positions (System): HEAT-OFF-COOL-AUTO-EM.HEAT
Switch Positions (Fan): AUTO-ON-CIRC-FOLLOW SCHEDULE
Setting Temperature Range: Heat: 40°F to 90°F; Cool: 50°F to 99°F (Heat: 4.5°C to 32°C; Cool: 10°C to 37°C)

Honeywell's Wi-Fi 9000 allows remote access to the thermostat through a computer, tablet, or smartphone with Honeywell's Total Connect Comfort Service.

- Tri-lingual - English, French and Spanish display options.
- Get Connected – Connect to home's existing Wi-Fi network
- Remote Control – Convenience, comfort and control from anywhere through web, tablet or smartphone access
- Apps available for tablet and smartphones
- Automatic software updates through Wi-Fi
- Selectable to 7 Day or Non-Programmable
- Program thermostat locally or over the web or app
- Customize the screen color to match any décor

Operating Temperature Range: 32°F to 120°F (0°C to 48.9°C)
Operating Humidity Range (% RH): 5 to 90% RH, non-condensing
Power Method: Hardwired
Supply Voltage: 18 to 30 Vac
Frequency: 50 Hz; 60 Hz
Electrical Ratings: 18 to 30 Vac
Dimensions: 3 1/2 in. High, 4 1/2 in. Wide, 7/8 in. Deep (88 mm. High, 115 mm. Wide, 22 mm. Deep)
Used With: THP9045 Wire Saver
Comments: Tri-Lingual Display (selectable for English, French or Spanish)

Accessories:
THP9045A1023/U – WireSaver

| Material Number | Programmability | Terminal Designations |
|-----------------|--|---|
| TH9320WF5003/U | 7-Day Multiple Day Programming or Non-Programmable | R, RC, C, W (O/B), W2 (AUX/E), Y, Y2, G, L, K |

Wi-Fi VisionPRO® 8000



Applications: Up to 3 Heat/2 Cool heat pump or up to 2 Heat/2 Cool conventional
Display Size: 10 sq in.
Color: Arctic White
Changeover: Auto or Manual
Stages: Up to 3 Heat / 2 Cool Heat Pump or Up to 2 Heat / 2 Cool Conventional
Switch Positions (System): HEAT-OFF-COOL-AUTO-EM.HEAT
Switch Positions (Fan): AUTO-ON-CIRC-FOLLOW SCHEDULE
Setting Temperature Range: Heat: 40°F to 90°F; Cool 50°F to 99°F (Heat: 4.5°C to 32.0°C; Cool: 10°C to 37.0°C)
Operating Temperature Range: 32°F to 120°F (0°C to 48.9°C)
Humidification Setting Range: Cooling: 40 to 80% RH. Heating: 10 to 60% RH.

Your customers want comfort, convenience and connectivity. With the Wi-Fi VisionPRO, you can offer them all three. Using an existing Wi-Fi network plus Honeywell's free Total Connect Comfort services, the Wi-Fi VisionPRO allows homeowners to remotely control their comfort settings and manage their energy costs – with ease.

- Intuitive programming for easier setup
- Remote comfort control via computer, tablet or smartphone
- Universal application across more system types
- Equipment check/change reminders
- Programmable for annual energy savings

Dehumidification Setting Range: 40 to 80% RH.
Operating Humidity Range (% RH): 5 to 90% RH, non-condensing
Power Method: Hardwired
Supply Voltage: 18 to 30 Vac or 750 mV
Frequency: 50 Hz; 60 Hz
Electrical Connections: Screw terminals
Electrical Ratings: 18 to 30 Vac or 750 mV
Dimensions: 4 5/8 in. High, 4 15/16 in. Wide, 1 1/8 in. Deep (118 mm. High, 126 mm. Wide, 29 mm. Deep)
Includes: Wi-Fi VisionPRO® 8000 thermostat

Accessories:
THP9045A1023/U – WireSaver

| Material Number | Programmability | Terminal Designations |
|-----------------|--|---|
| TH8321WF1001/U | 7-Day Multiple Day Programming or Non-Programmable | R, RC, C, W-O/B, W2-AUX/E, Y, Y2, G, A-L/A, K, U1 U1, S1 S1 |

Prestige® 2-Wire IAQ Thermostat



THX9421R5021WW/U

The Prestige® IAQ thermostat is a 2 wire high definition color touch screen thermostat, 7 day programmable and selectable for residential or light commercial use. Controls up to 4-stages of heat and 2-stages of cool in a heat pump system and up to 3-stages of heat and 2-stages of cool in a conventional system.

- Control heating, cooling and IAQ equipment with only 2 wires at the thermostat. Heating, cooling and IAQ equipment wires to the Equipment Interface Module.
- Smart Schedule - programs in seconds for any lifestyle
- Patented interview based programming and installer setup.
- RedLINK™ wireless communication.
- Increase profit per job by including RedLINK™ accessories that provide comfort and convenience. RedLINK™ accessories include the RedLINK™ Internet Gateway, Portable Comfort Control (PCC), Wireless Outdoor Sensor, Wireless Indoor Sensor, Wireless Entry/Exit Remote, Wireless Vent and Filter Boost Remote, TrueSTEAM™ humidifier with Wireless Adapter and TrueZONE® zoning panel with Wireless Adapter.
- Selectable for residential and light commercial applications. Meets commercial code and is title 24 compliant.
- Light commercial - commercial language (occupied and unoccupied), schedule holidays and custom events, remote setback, economizer and time of day.
- Delta T Alerts and Diagnostics informs customers when their system is not performing as expected with instructions to contact the dealer. Provides a sense of security and greater comfort while generating repeat business.
- All Prestige® IAQ kits come standard with a return and discharge air temperature sensor to measure Delta T.
- Alerts and User Interactions Log - Keeps a searchable history of alerts and setting changes to the thermostat to determine if there is a system malfunction or if the issue was caused by user error. Saves time in troubleshooting and points the technician in the right direction.
- Performance Logs - Keeps a history of heating and cooling performance. The performance log includes Minimum and Maximum Delta T, Minimum and Maximum Discharge Temperature, Minimum and Maximum Return Temperature, Minimum and Maximum Indoor Temperature/Humidity, Minimum and Maximum Outdoor Temperature/Humidity and Run Time. Quickly determine if the system is performing as expected and reduces service time on the job.

- Customizable Service Reminders allow dealers to remind their customers when it's time to call for service, when their warranty is expiring and to provide customized alerts.
- USB port for transferring Installer Setup, Customizable Reminders, Custom Events and Holidays to multiple thermostats.
- USB port for adding the dealer's full color business logo on the screen.
- 3 assignable outputs to control humidification, dehumidification, ventilation and a stage of heating or cooling.
- 4 assignable inputs on the Equipment Interface Module can be used with wired outdoor, indoor or discharge sensors, occupancy sensor for remote setback and dry contact devices to trip pre-packaged or custom alerts such as a full drain pan or water leak.
- Extend wireless range of the Equipment Interface Module by connecting a THM4000R1000 Wireless Adapter to the ABCD terminals.
- Tri-lingual - English, French and Spanish display options.
- Precise temperature control (+/- 1°F) for reliable and consistent temperature.
- Multiple staging options to provide comfort or energy savings.

Applications: Up to 4 Heat/2 Cool Heat Pumps; Up to 3 Heat/2 Cool Conventional Systems

Display Size: 8.06 sq in.

Terminal Designations: R, °C then RedLINK to Equipment Interface Module

Changeover: Auto or Manual

Stages: Up to 4 Heat/2 Cool Heat Pumps; Up to 3 Heat/2 Cool Conventional Systems, See Equipment Interface Module

Programmability: 7-Day Multiple Day Programming or Non-Programmable

Switch Positions (System): HEAT-OFF-COOL-AUTO-EM.HEAT

Switch Positions (Fan): AUTO-ON-CIRC-FOLLOW SCHEDULE

Setting Temperature Range: Heat: 40°F to 90°F; Cool 50°F to 99°F (Heat: 4.5°C to 32.0°C; Cool: 10°C to 37.0°C)

Operating Temperature Range: 32°F to 120°F (0°C to 48.9°C)

Humidification Setting Range: Cooling: 40 to 80% RH. Heating: 10 to 60% RH.

Dehumidification Setting Range: 40 to 80% RH.

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Power Method: Hardwired

Supply Voltage: 18 to 30 Vac

Frequency: 50 Hz; 60 Hz

Electrical Connections: Screw terminals

Electrical Ratings: 18 to 30 Vac

Dimensions: 3 1/2 in. High, 4 1/2 in. Wide, 7/8 in. Deep (88 mm. High, 115 mm. Wide, 22 mm. Deep)

External Sensors Available: N/A

Comments: Tri-Lingual Display (selectable for English, French or Spanish)



Wireless Technology

Accessories:

THP2400A1027B/U – Black Coverplate assembly for use with the Prestige® 2-Wire IAQ Thermostat

YTHM5421R1010/U – Prestige® 2-Wire IAQ Equipment Interface Module Kit with 2 Duct Sensors

THM5421R1021/U – Prestige® 2-Wire IAQ Equipment Interface Module

THM6000R1002/U – RedLINK Internet Gateway

THM4000R1000/U – Wireless Adapter for use with RedLINK™ enabled thermostats and TrueZONE™ system

REM5000R1001/U – Portable Comfort Control

REM1000R1003/U – RedLINK Wireless Entry/Exit Remote

HVC20A1000/U – Wireless Vent and Filter Boost Remote

C7089R1013/U – Senses outdoor temperature and humidity

C7189R1004/U – Wireless Indoor Air Sensor. RedLINK™ enabled. Senses indoor temperature and humidity

| Material Number | Color | Includes | Used With |
|-------------------|---------------------------|--|--|
| THX9421R5021WW/U | Front: White, Side: White | | THM5421R1021 Equipment Interface Module and RedLINK™ accessories |
| YTHX9421R5085WW/U | Front: White, Side: White | THX9421R5021WW Prestige® 2-Wire IAQ Thermostat, THM5421R1021 Equipment Interface Module and 2 Duct Sensors | RedLINK™ accessories |
| YTHX9421R5101WW/U | Front: White, Side: White | THX9421R5021WW Prestige® 2-Wire IAQ Thermostat, THM5421R1021 Equipment Interface Module, C7089R1013 Wireless Outdoor Sensor and 2 Duct Sensors | RedLINK™ accessories |
| YTHX9421R5127WW/U | Front: White, Side: White | THX9421R5021WW Prestige® 2-Wire IAQ Thermostat, THM5421R1021 Equipment Interface Module, THM6000R1002 RedLINK™ Internet Gateway and 2 Duct Sensors | RedLINK™ accessories |

Programmable Thermostats

VisionPRO® 8000 with RedLINK™ technology



VisionPRO® 8000 with RedLINK™ technology is a touchscreen thermostat, 7 day programmable and selectable for residential or light commercial use. Controls up to 3-stages of heat and 2-stages of cool in a heat pump system and up to 2-stages of heat and 2-stages of cool in a conventional system.

- Thermostat works standalone or with the THM5421R1021 Equipment Interface Module or with the TrueZONE Wireless Adapter.
- Smart Schedule - programs in seconds for any lifestyle.
- Patented interview based programming and installer setup.
- RedLINK™ wireless communication.
- Increase profit per job by including RedLINK™ accessories that provide comfort and convenience. RedLINK™ accessories include the RedLINK™ Internet Gateway, Portable Comfort Control (PCC), Wireless Outdoor Sensor, Wireless Indoor Sensor, Wireless Entry/Exit Remote, Wireless Vent and Filter Boost Remote, TrueSTEAM™ humidifier with Wireless Adapter and TrueZONE® zoning panel with Wireless Adapter.
- Selectable for residential and light commercial applications. Meets commercial code and is title 24 compliant.
- Light commercial - commercial language (occupied and unoccupied), schedule holidays and custom events, remote setback, economizer and time of day. Remote Setback requires the THM5421R1021 Equipment Interface Module.

Applications: Up to 1 Heat/1 Cool heat pump or up to 1 Heat/1 Cool conventional

Display Size: 10 sq in.

Color: Arctic White

Changeover: Auto or Manual

Stages: Up to 4 Heat / 2 Cool Heat Pump or Up to 3 Heat / 2 Cool Conventional when used with the Equipment Interface Module.

Programmability: 7-Day Multiple Day Programming or Non-Programmable

Switch Positions (System): HEAT-OFF-COOL-AUTO

Switch Positions (Fan): AUTO-ON-CIRC-FOLLOW SCHEDULE

Setting Temperature Range: Heat: 40°F to 90°F; Cool 50°F to 99°F (Heat: 4.5°C to 32.0°C; Cool: 10°C to 37.0°C)

Operating Temperature Range: 32°F to 120°F (0°C to 48.9°C)

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Power Method: Battery or Hardwired (must be battery powered when used on a millivolt system)

Supply Voltage: 18 to 30 Vac

Frequency: 50 Hz; 60 Hz

Electrical Connections: Screw terminals

Electrical Ratings: 18 to 30 Vac or 750 mV

Dimensions: 4 5/8 in. High, 4 15/16 in. Wide, 1 1/8 in. Deep (118 mm. High, 126 mm. Wide, 29 mm. Deep)

Used With: Works standalone or with optional THM5421R1021 Equipment Interface Module and RedLINK™ accessories

- Plain language setup, no manual needed.
- Alerts and User Interactions Log - Keeps a searchable history of alerts and setting changes to the thermostat to determine if there is a system malfunction or if the issue was caused by a user error. Saves time in troubleshooting and points the technician in the right direction. The Alert and User Interaction Logs are viewable on a computer after you download them from the thermostat to a microSD card.
- Customizable Service Reminders allow dealers to remind their customers when it's time to call for service, when their warranty is expiring and to provide customized alerts.
- MicroSD port for copying the Installer Setup, Customizable Reminders, Custom Events and Holidays to multiple thermostats.
- MicroSD port for adding the dealer's contact information on the screen.
- 1 assignable output on the TH8321 model to control humidification, dehumidification, ventilation or a stage of heating/cooling.
- 3 assignable outputs on the Equipment Interface Module to control humidification, dehumidification, ventilation or a stage of heating/cooling. The TH8110 and TH8320 models require the use of a Wireless Indoor Sensor to control humidification and dehumidification.
- 1 assignable input can be used with a wired outdoor, indoor or discharge sensor.
- 4 assignable inputs on the Equipment Interface Module can be used with wired outdoor, indoor or discharge sensors, occupancy sensor for remote setback and dry contact devices to trip pre-packaged or custom alerts such as a full drain pan or water leak.
- Extend wireless range of the Equipment Interface Module by connecting a THM4000R1000 Wireless Adapter to the ABCD terminals.
- Dual powered - battery or hardwired (C wire).
- Precise temperature control (+/- 1°F) for reliable and consistent temperature.
- Multiple staging options to provide comfort or energy savings.



Accessories:

YTHM5421R1010/U – Prestige® 2-Wire IAQ Equipment Interface Module Kit with 2 Duct Sensors

THM5421R1021/U – Prestige® 2-Wire IAQ Equipment Interface Module

THM6000R1002/U – RedLINK Internet Gateway

THM4000R1000/U – Wireless Adapter for use with RedLINK™ enabled thermostats and TrueZONE™ system

REM1000R1003/U – RedLINK Wireless Entry/Exit Remote

HVC20A1000/U – Wireless Vent and Filter Boost Remote

C7089R1013/U – Senses outdoor temperature and humidity

C7189R1004/U – Wireless Indoor Air Sensor. RedLINK™ enabled.

Senses indoor temperature and humidity

THP2400A1019/U – Coverplate assembly for use with the RedLINK™ VisionPRO®

REM5000R1001/U – Portable Comfort Control

| Material Number | Terminal Designations | Stages (when used standalone) | Humidification Setting Range | Dehumidification Setting Range | Includes |
|-----------------|---|---|--|--------------------------------|---|
| TH8110R1008/U | R, RC, C, W-O/B, Y, G, K, S1 S1 | Up to 1 Heat / 1 Cool Heat Pump or Up to 1 Heat / 1 Cool Conventional | | | VisionPRO® 8000 thermostat |
| TH8320R1003/U | R, RC, C, W-O/B, W2-AUX/E, Y, Y2, G, A-L/A, K, S1 S1 | Up to 3 Heat / 2 Cool Heat Pump or Up to 2 Heat / 2 Cool Conventional | | | VisionPRO® 8000 thermostat |
| TH8321R1001/U | R, RC, C, W-O/B, W2-AUX/E, Y, Y2, G, A-L/A, K, U1 U1, S1 S1 | Up to 3 Heat / 2 Cool Heat Pump or Up to 2 Heat / 2 Cool Conventional | Cooling: 40 to 80% RH. Heating: 10 to 60% RH. | 40 to 80% RH. | VisionPRO® 8000 thermostat |
| YTH8321R1002/U | R, RC, C, W-O/B, W2-AUX/E, Y, Y2, G, A-L/A, K, U1 U1, S1 S1 | Up to 3 Heat / 2 Cool Heat Pump or Up to 2 Heat / 2 Cool Conventional | Cooling: 40 to 80% RH. Heating: 10 to 60% RH. | 40 to 80% RH. | TH8321R1001 VisionPRO® 8000 thermostat and THM6000R1002 RedLINK™ Internet Gateway |

THM5421 Prestige® 2-Wire IAQ Comfort System Equipment Interface Module



THM5421 Equipment Interface Module for Prestige® IAQ and VisionPRO® 8000 with RedLINK™. Equipment Interface Module controls up to 4-stages of heat and 2-stages of cool in a heat pump system and up to 3-stages of heat and 2-stages of cool in a conventional system. Three sets of Universal IAQ contacts to control humidification, dehumidification, and ventilation. Four sensor inputs for wired sensors or dry contact devices.

Applications: Gas, oil, electric, heat pump, forced warm air, hot water, steam or gravity
Mounting: Vertical
Color: Gray
Operating Temperature Range: -40°F to 165°F (-40°C to 73.9°C)
Operating Humidity Range (% RH): 5 to 95% RH, non-condensing
Power Method: Hardwired
Supply Voltage: 18 to 30 Vac
Frequency: 50 Hz; 60 Hz
Electrical Connections: Screw terminals
Electrical Ratings: 18 to 30 Vac

Dimensions: 9 5/16 in. High, 4 13/16 in. Wide, 1 5/8 in. Deep (237.4 mm High, 122.5 mm Wide, 40.6 mm Deep)
Cool Current: 1.0 A running
Heat Current: 1.0 A running
Fan Current: 0.5A running



| Material Number | Terminal Designations | Stages | Includes | Used With |
|-----------------|--|---|--|--|
| THM5421R1021/U | R, RC, RH, C, W-O/B, W2-AUX1, W3-AUX2, Y, Y2, G, A-L/A, U1, U1, U2, U2, U3, U3, S1, S1, S2, S2, S3, S3, S4, S4, A, B, C, D | Up to 4 Heat / 2 Cool Heat Pump or Up to 3 Heat / 2 Cool Conventional | THM5421R1021 Equipment Interface Module | All THX9421R5021 Prestige® 2-Wire IAQ Thermostats and all versions of Prestige® IAQ Thermostats and the VisionPRO® Thermostats with RedLINK™ technology. |
| YTHM5421R1010/U | R, RC, RH, C, W-O/B, W2-AUX1, W3-AUX2, Y, Y2, G, A-L/A, U1, U1, U2, U2, U3, U3, S1, S1, S2, S2, S3, S3, S4, S4, A, B, C, D | Up to 4 Heat / 2 Cool Heat Pump or Up to 3 Heat / 2 Cool Conventional | THM5421R1021 Equipment Interface Module and 2 Duct Sensors | All THX9421R5021 Prestige® 2-Wire IAQ Thermostats and all versions of Prestige® IAQ Thermostats and the VisionPRO® Thermostats with RedLINK™ technology. |

7-Day Touchscreen Programmable Thermostat



Thermostat

- 7-day program schedules maximize comfort and economy.
- Armchair programming: Just pull thermostat from the wall to set schedules.
- Energy-saving settings for maximum cost savings.
- One-touch temp control overrides program schedule at any time.
- Precise comfort control keeps temperature within 1°F of the level you set.
- Change/check reminders let you know when to service or replace filters, batteries and other critical components.
- Large touchscreen display with backlight is easy to read – even in the dark.
- Select models accommodate optional outdoor or indoor remote sensors.

Display Size: 10 sq in.
Terminal Designations: R, RC, W-O/B, Y, G, C, W2-Aux, Y2/E, L, S1, S2
Mounting: Horizontal
Color: Premier White®
Changeover: Auto/Manual Selectable
Stages: Up to 2 Heat/2 Cool Conventional; Up to 2 Heat/1 Cool Heat Pump
Programmability: 7 Day Multiple Day Programming or Non-Programmable
Switch Positions (System): HEAT-OFF-COOL-AUTO-EM.HEAT
Switch Positions (Fan): AUTO-ON-CIRC
Differential Temperature: ± 1°F (±0.5°C)

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing
Power Method: Battery or Hardwired
Frequency: 50 Hz; 60 Hz
Electrical Ratings: 20 to 30 Vac or 750 mV
Dimensions: 3-3/4 in. high x 6 in. wide x 1-3/8 in. deep (99 mm high x 152 mm wide x 35 mm deep)
Sensor Element: Thermistor
Cool Current: 1.0 A running
Heat Current: 1.0 A running
Fan Current: 0.6A running
Comments: Selectable: Programmable or Non-Programmable; The L terminal is an input or output.

| Material Number | Applications | Setting Temperature Range |
|-----------------|--|--|
| TH7220U1035/U | Heat/Cool or Heat Pump with Auxiliary Heat | Heat: 40°F to 90°F; Cool: 50°F to 99°F (Heat: 4.5°C to 32°C; Cool: 10°C to 37°C) |

Programmable Thermostats

Z-Wave Touch Screen Programmable Thermostat



Honeywell's VisionPRO Z-Wave offers you top-of-the-line features like touchscreen interaction, a real-time clock, and a large, easy-to-read backlit display to easily integrate comfort control into your automated home. You'll enjoy the convenience, energy savings and consistent comfort for years to come.

Color: Premier White®
Changeover: Auto or Manual
Electrical Ratings: 18 to 30 Vac

| Material Number | Programmability | Terminal Designations |
|-----------------|--|---|
| YTH8320ZW1007/U | Universal Programming from 7 Day to Non-Programmable | R, RC, C, W-O/B, W2-E/Aux, Y, Y2, G, L, K |

FocusPRO® 6000 Wireless Thermostat



Honeywell's FocusPRO® 6000 digital thermostat offers the perfect blend of features, performance, energy savings and value. With the largest backlit screen in its class, the FocusPRO 6000 prominently displays both room and set temperature.

- Selectable to 5-1-1 (Weekdays, Saturday, Sunday) or 5-2 (Weekdays, Weekend) programmable thermostat.
- Large, clear, backlit display - easy to read in various lighting conditions.
- Precise comfort control (+/-1°F) - maintains consistent comfort to the highest level of accuracy.
- Simplified programming and operation.
- Easy change battery door - flip out door allows for easy battery replacement without removing or disassembling the thermostat.
- Built in instructions - simple, pull out instruction manual.
- Adaptive Intelligent Recovery™ - ensures programmed temperature is reached by programmed time.
- Temperature range stops - prevents user from setting the temperature too high or too low.

Applications: Gas, oil, electric, heat pump, forced warm air, hot water, steam or gravity

Mounting: Horizontal

Color: Premier White®

Changeover: Auto/Manual Selectable

Programmability: 5-1-1 Day Program or 5-2 Day Program

Setting Temperature Range: Heat: 40°F to 90°F; Cool: 50°F to 99°F
 (Heat: 4.5°C to 32°C; Cool: 10°C to 37°C)

Differential Temperature: ± 1°F (±0.5°C)

Operating Temperature Range: 32°F to 120°F (0°C to 48.9°C)

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Power Method: Battery

Dimensions: 3 9/16 in. High X 5 13/16 in. Wide X 1 1/2 in. Deep
 (91 mm High X 147 mm Wide X 38 mm Deep)

Sensor Element: Thermistor

Comments: Thermostat is also available in kits for zoned and non-zoned systems



Accessories:

REM5000R1001 – Portable Comfort Control uses RedLINK™ to sense and control room temperature anywhere in the home. Works in both zoned and non-zoned applications.

C7089R1013 – Senses outdoor temperature and humidity to display on RedLINK™ enabled thermostats and accessories.

C7735A1000 – Mount on return duct for backup control of non-zoned RedLINK™ enabled wireless systems. Works with the EIM to maintain safe indoor temperatures if power is lost at the wireless thermostat.

50002883-001 – FocusPRO 5000/6000 and PRO 3000/4000 Cover Plate Assembly

50007298-001 – 12 pack of medium coverplates (5 in. x 6 7/8 in.)

Replacement Parts:

50007072-001 – Replacement Battery Holder for FocusPRO TH5220, TH5320, TH6110, TH6220, and TH6320 Thermostat

| Material Number | Switch Positions (System) | Switch Positions (Fan) | Stages | Parts Needed for Operation (not included) - TrueZONE™ System | Parts Needed for Operation (not included) - Non-Zoned System |
|-----------------|----------------------------|------------------------|---|---|--|
| TH6320R1004/U | HEAT-OFF-COOL-AUTO-EM.HEAT | AUTO-ON | Up to 3 Heat / 2 Cool Heat Pump or Up to 2 Heat / 2 Cool Conventional | HZ432 or HZ322 TrueZONE™ panel; THM4000R1000 Wireless Adapter | THM5320R1000 Equipment Interface Module |

Wireless Thermostat Kits



Everything you need to relocate or upgrade with a non-programmable thermostat without running new wires. Kit options include wireless outdoor sensor, RedLINK Internet Gateway for remote access, or wireless adapters for working with TrueZONE panels.

- **WIRELESS FOCUSPRO® THERMOSTAT:** Same great features of the FocusPRO® thermostat - now wireless. Installs in minutes. Displays outdoor temperature and humidity. 1 year battery life. 2 month low battery warning. Dual Fuel enabled.
- **EQUIPMENT INTERFACE MODULE (EIM):** All HVAC equipment is wired to the module. Module receives communication from the wireless devices.
- **RETURN AIR SENSOR:** Works with the Equipment Interface Module to maintain safe indoor temperatures if power is lost at the wireless thermostat. Maintains 62°F for heating and 82°F for cooling.
- **REDLINK™ WIRELESS TECHNOLOGY:** Powered by RedLINK™ reliability. No interference with other wireless devices in the home.

Applications: Gas, oil, electric, heat pump, forced warm air, hot water, steam or gravity

Changeover: Auto/Manual Selectable

Stages: Up to 3 Heat / 2 Cool Heat Pump or Up to 2 Heat / 2 Cool Conventional

Switch Positions (System): HEAT-OFF-COOL-AUTO-EM.HEAT

Switch Positions (Fan): AUTO-ON

Electrical Ratings: Equipment Interface Module – 18 to 30 Vac, 50 Hz; 60 Hz

Cool Current: 1.0 A running

Heat Current: 1.0 A running

Fan Current: 0.6 A running



Accessories:

50002883-001 – FOCUSPRO® 5000/6000 and PRO 3000/4000 and Horizontal PRO 1000/2000 Cover Plate Assembly

50007298-001 – 12 pack of medium coverplates (5 in. x 6 7/8 in.)

C7089R1013 – Senses outdoor temperature and humidity to display on RedLINK™ enabled thermostats and accessories.

REM5000R1001 – Use the Portable Comfort Control anywhere in the home to experience a new level of comfort and convenience.

Replacement Parts:

50007072-001 – Replacement Battery Holder for FocusPRO TH5220, TH5320, TH6110, TH6220, and TH6320 Thermostat

| Material Number | Description | Terminal Designations | Programmability | Power Method | Includes |
|-----------------|--|---|--------------------------------------|----------------------|---|
| YTH5320R1000/U | Wireless Thermostat Kit. RedLINK™ Enabled. Up to 3H/2C Heat Pump or Up to 2H/2C Conventional. Kit includes Wireless FocusPRO® Non-Programmable Thermostat, Equipment Interface Module and Return Air Sensor. | C, R, Rc, Rh, W-O/B, W2-Aux/E, Y, Y2, G, L, RAS | | Thermostat-Battery | C7735A1000 Return Air Sensor; THM5320R1000 Equipment Interface Module; TH5320R1002 Wireless FocusPRO® Non-Programmable Thermostat |
| YTH6320R1001/U | Wireless Thermostat Kit. RedLINK™ Enabled. Up to 3H/2C Heat Pump or Up to 2H/2C Conventional. Kit includes Wireless FocusPRO® 5-1-1 Programmable Thermostat, Equipment Interface Module and Return Air Sensor. | C, R, Rc, Rh, W-O/B, W2-Aux/E, Y, Y2, G, L, RAS | 5-1-1 Day Program or 5-2 Day Program | Thermostat-Battery | C7735A1000 Return Air Sensor; THM5320R1000 Equipment Interface Module; TH6320R1004 Wireless FocusPRO® 5-1-1 Programmable Thermostat |
| YTH6320R1114/U | Everything you need to relocate thermostat or upgrade equipment without running new wires. | C, R, Rc, Rh, W-O/B, W2-Aux/E, Y, Y2, G, L, RAS | 5-1-1 Day Program or 5-2 Day Program | Battery (Thermostat) | C7735A1000 Return Air Sensor THM5320R1000 Equipment Interface Module TH6320R1004 Wireless FocusPRO® 5-1-1 Programmable Thermostat THM6000R1002 RedLINK Internet Gateway |

Programmable Thermostats

THM5320 Equipment Interface Module



Easily relocate thermostat or upgrade equipment without running new wires using this module and a wireless FocusPRO® thermostat.

- Powered by RedLINK™ reliability
- No interference with other wireless devices in the home
- Works with TH6320R1004 or TH5320R1002 Wireless FocusPRO® thermostats
- Input for Return Air Sensor
- Quick-connect terminal blocks
- LEDs for power and system status

Applications: Gas, oil, electric, heat pump, forced warm air, hot water, steam or gravity

Color: Gray

Operating Temperature Range: -40°F to 165°F (-40°C to 73.9°C)

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Supply Voltage: 18 to 30 Vac

Electrical Ratings: 18 to 30 Vac, 50/60 Hz

Dimensions: 8 1/8 in. high x 8 in. wide x 1 7/8 in. deep (206 mm high x 203 mm wide x 47 mm deep)

Cool Current: 1.0 A running

Heat Current: 1.0 A running

Fan Current: 0.6 A running

Accessories:

C7735A1000 – Mount on return duct for backup control of non-zoned RedLINK™ enabled wireless systems. Works with the EIM to maintain safe indoor temperatures if power is lost at the wireless thermostat.

C7089R1013 – Senses outdoor temperature and humidity to display on RedLINK™ enabled thermostats and accessories.

REM5000R1001 – Portable Comfort Control uses RedLINK™ to sense and control room temperature anywhere in the home. Works in both zoned and non-zoned applications.

THM6000R1002 – RedLINK Internet Gateway

| Material Number | Terminal Designations | Stages | Description | Part Needed for Operation (not included) | Comments |
|-----------------|---|---|---|--|--|
| THM5320R1000/U | C, R, Rc, Rh, W-O/B, W2-Aux/E, Y, Y2, G, L, RAS | Up to 3 Heat/2 Cool Heat Pump or Up to 2 Heat/2 Cool Conventional | RF Equipment Interface Module. Controls up to 3 heat / 2 cool heat pump systems or up to 2 heat / 2 cool conventional systems when used with the Wireless FocusPRO® Thermostat. RedLINK™ Enabled. | TH6320R1004 or TH5320R1002 Wireless FocusPRO® Thermostat | Equipment Interface Module is also available in kits |

Programmable WiFi FocusPRO®



Honeywell's Wi-Fi FocusPRO® 6000 allows remote access to the thermostat through a computer, tablet, or smartphone with Honeywell's Total Connect Comfort Service.

- Homeowners can monitor and control their home's comfort settings from anywhere at anytime.
- Connect using a regular computer, tablet or smartphone.
- Automatic software updates through Wi-Fi.
- Selectable to 7-Day or Non-programmable thermostat.
- Large, clear, backlit display - easy to read in various lighting conditions.
- Precise comfort control ($\pm 1^\circ\text{F}$) - maintains consistent comfort to the highest level of accuracy.
- Simplified programming and operation.
- Built in instructions - simple, pull out instruction manual.
- Adaptive Intelligent Recovery™ – ensures programmed temperature is reached by programmed time.
- Temperature range stops - prevents user from setting the temperature too high or too low.

Applications: Up to 3 Heat/2 Cool Heat Pumps; Up to 2 Heat/2 Cool Conventional Systems

Display Size: Large display size 5.09 sq. in.

Mounting: Horizontal

Color: Premier White®

Changeover: Auto/Manual Selectable

Programmability: 7-Day Program

Differential Temperature: $\pm 1^\circ\text{F}$ ($\pm 0.5^\circ\text{C}$)

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Power Method: Hardwired

Supply Voltage: 20 to 30 Vac

Frequency: 50 Hz; 60 Hz

Electrical Ratings: 20 to 30 Vac

Dimensions: 3 9/16 in. High X 5 13/16 in. Wide X 1 1/2 in. Deep (91 mm High X 147 mm Wide X 38 mm Deep)

Sensor Element: Thermistor

Cool Current: Y = 0.02 A to 1.0 A running, Y2 = 0.02 A to 1.0 A running

Heat Current: W2 (AUX/E) = 0.02 A to 0.5 A running; W = 0.02 A to 1.0 A running

Comments: Large display size 5.09 sq. in.

Accessories:

THP9045A1023/U – WireSaver

| Material Number | Switch Positions (System) | Switch Positions (Fan) | Terminal Designations | Stages | Setting Temperature Range |
|-----------------|----------------------------|------------------------|--|---|--|
| TH6320WF1005/U | HEAT-OFF-COOL-AUTO-EM.HEAT | AUTO-ON | Rc, R, W (O/B), W2 (AUX/E), Y, Y2, G, C, K | Up to 3 Heat / 2 Cool Heat Pump or Up to 2 Heat / 2 Cool Conventional | Heat: 40°F to 90°F; Cool: 50°F to 99°F (Heat: 4.5°C to 32°C; Cool: 10°C to 37°C) |

FocusPRO® 6000 5-1-1 Day Programmable Thermostat



Standard Display

Large Display

Display Size: N/A

Mounting: Horizontal

Color: Premier White®

Changeover: Auto/Manual Selectable

Programmability: 5-1-1 Day Program or 5-2 Day Program

Switch Positions (Fan): AUTO-ON

Setting Temperature Range: Heat: 40°F to 90°F; Cool: 50°F to 99°F
(Heat: 4.5°C to 32°C; Cool: 10°C to 37°C)

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing
Power Method: Battery or Hardwired (must be battery powered when used on a millivolt system)

Supply Voltage: 20 to 30 Vac

Frequency: 50 Hz; 60 Hz

Electrical Ratings: 20 to 30 Vac or 750 mV

Honeywell's FocusPRO® 6000 digital thermostat offers the perfect blend of features, performance, energy savings and value. With the largest backlit screen in its class, the FocusPRO 6000 prominently displays both room and set temperature.

- Selectable to 5-1-1 (Weekdays, Saturday, Sunday) or 5-2 (Weekdays, Weekend) programmable thermostat.
- Large, clear, backlit display - easy to read in various lighting conditions.
- Display size options - available in large screen or standard.
- Precise comfort control (+/-1°F) - maintains consistent comfort to the highest level of accuracy.
- Simplified programming and operation.
- Easy change battery door - flip out door allows for easy battery replacement without removing or disassembling the thermostat.
- Built in instructions - simple, pull out instruction manual.
- Adaptive Intelligent Recovery™ - ensures programmed temperature is reached by programmed time.
- Temperature range stops - prevents user from setting the temperature too high or too low.

Dimensions: 3 9/16 in. High X 5 13/16 in. Wide X 1 1/2 in. Deep
(91 mm High X 147 mm Wide X 38 mm Deep)

Fan Current: 0.02 A to 0.5 A running

Accessories:

50002883-001 – FocusPRO 5000/6000 and PRO 3000/4000 and Horizontal PRO 1000/2000 Cover Plate Assembly

50007298-001 – 12 pack of medium coverplates (5 in. x 6 7/8 in.)

Replacement Parts:

50007072-001 – Replacement Battery Holder for FocusPRO TH5220, TH5320, TH6110, TH6220, and TH6320 Thermostat

| Material Number | Description | Applications | Terminal Designations | Stages | Switch Positions (System) | Differential Temperature | Sensor Element | Cool Current | Heat Current | Comments |
|-----------------|--|---|--|---|-----------------------------|--------------------------|----------------|---|--|---------------------------------|
| TH6110D1021/U | 1 heat/1 cool conventional and heat pump programmable thermostat with R, Rc, C, W (O/B), Y and G terminals. Large Display. | Heat/Cool or Heat Pump without Auxiliary Heat | Rc, R, W (O/B), Y, G, C | Up to 1 Heat/1 Cool | HEAT-OFF-COOL-AUTO | ± 1°F (±0.5°C) | Thermistor | 0.02 A to 1.0 A running | 0.02 A to 1.0 A running | Large display size 5.09 sq. in. |
| TH6220D1028/U | 5-1-1 Programmable Thermostat | Heat/Cool or Heat Pump with Auxiliary Heat | R, RC, C, W-O/B, G, Y, W2-AUX/E, Y2-L | Up to 2 Heat/2 Cool Conventional; Up to 2 Heat/1 Cool Heat Pump | HEAT-OFF-COOL-AUTO-EM. HEAT | | | Y = 0.02 A to 1.0 A running; Y2 = 0.02 A to 1.0 A running | W = 0.02 A to 1.0 A running; W2 (AUX) = 0.02 A to 0.5 A running; E = 0.02 A to 1.0 A running | Large display size 5.09 sq. in. |
| TH6320U1000/U | 5-1-1 Programmable Thermostat | Heat/Cool or Heat Pump with Auxiliary Heat | Rc, R, W (O/B), W2 (AUX/E), Y, Y2, G, L, C | Up to 3 Heat / 2 Cool Heat Pump or Up to 2 Heat / 2 Cool Conventional | HEAT-OFF-COOL-AUTO-EM. HEAT | | | Y = 0.02 A to 1.0 A running; Y2 = 0.02 A to 1.0 A running | W2 (AUX/E) = 0.02 A to 0.5 A running; W = 0.02 A to 1.0 A running | Large display size 5.09 sq. in. |

Programmable Thermostats

PRO 4000 5-2 Day Programmable Thermostat



Standard Model



Model includes Emergency Heat

Display Size: 1.73 sq in.
Mounting: Horizontal
Color: Premier White®
Changeover: Manual
Programmability: 5-2 Day Program
Setting Temperature Range: Heat: 40°F to 90°F; Cool: 50°F to 99°F
 (Heat: 4.5°C to 32°C; Cool: 10°C to 37°C)
Differential Temperature: ± 1°F (±0.5°C)
Operating Humidity Range (% RH): 5 to 90% RH, non-condensing
Power Method: Dual Powered: Battery or Hardwire (must be battery powered when used on a millivolt system)
Supply Voltage: 20 to 30 Vac

The PRO programmable family of thermostats offers a basic thermostat with the benefits of energy savings. PRO 4000 features an easy-to-read display and 5-2 day programming. Best of all, it's backed by the Honeywell name.

- Weekday/Weekend programming – 5-2 (Weekdays, Weekend) programming
- Backlit digital display – both current and set temperatures are easy to read in various lighting conditions
- Precise comfort control [±1°F (±0.5°C)] - maintains consistent comfort to the highest level of accuracy
- Basic operation – easy-to-use slide switches allow you to select the heat or cool mode, and operate the fan
- Built in instructions – simple, pull out instruction manual
- Adaptive Intelligent Recovery™ - ensures programmed temperature is reached by programmed time

Frequency: 50 Hz; 60 Hz
Electrical Ratings: 20 to 30 Vac or 750 mV
Dimensions: 3 13/16 in. High X 5 3/8 in. Wide X 1 1/4 in. Deep (97 mm High X 137 mm Wide X 32 mm Deep)
Sensor Element: Thermistor
Cool Current: 0.02 A to 1.0 A running
Heat Current: 0.02 A to 1.0 A running

Accessories:
50002883-001 – FocusPRO 5000/6000 and PRO 3000/4000 and Horizontal PRO 1000/2000 Coverplate Assembly
50007298-001 – 12 pack of medium coverplates (5 in. x 6 7/8 in.)

| Material Number | Applications | Switch Positions (System) | Switch Positions (Fan) | Terminal Designations | Stages |
|-----------------|---|---------------------------|------------------------|-----------------------------|-------------------------|
| TH4110D1007/U | Heat/Cool or Heat Pump without Auxiliary Heat | HEAT-OFF-COOL | AUTO-ON | R, Rc, W, Y, G, O, B, C | 1 Heat/1 Cool |
| TH4210D1005/U | Heat Pump Systems | HEAT-OFF-COOL-EM. HT | AUTO-ON | R, Y, AUX, E, G, O, B, L, C | 2 Heat/1 Cool Heat Pump |

PRO 2000 Horizontal Programmable Thermostats



Standard Model



Model includes Emergency Heat

Display Size: 1.73 sq in.
Mounting: Horizontal
Color: Premier White®
Changeover: Manual
Programmability: 5-2 Day Program
Setting Temperature Range: Heat: 40°F to 90°F; Cool: 50°F to 99°F
 (Heat: 4.5°C to 32°C; Cool: 10°C to 37°C)
Power Method: Dual Powered: Battery or Hardwire
Frequency: 50 Hz; 60 Hz

The PRO programmable family of thermostats offers a basic thermostat with the benefits of energy savings. The PRO features an easy-to-read display and 5-2 day programming. Best of all, it's backed by the Honeywell name.

- Weekday/Weekend programming – 5-2 (Weekdays, Weekend) programming
- Backlit digital display – both current and set temperatures are easy to read in various lighting conditions
- Precise comfort control [±1°F (±0.5°C)] – maintains consistent comfort to the highest level of accuracy
- Basic operation – easy-to-use slide switches allow you to select the heat or cool mode, and operate the fan
- Adaptive Intelligent Recovery™ – ensures programmed temperature is reached by programmed time

Dimensions: 3 7/16 High x 4 10/16 Wide x 1 3/16 Deep (87mm High x 119mm Wide x 30mm Deep)
Cycles per Hour: Heating 2 - 6 CPH; Cooling 2 - 6 CPH
Cool Current: 0.02 A to 1.0 A running
Heat Current: 0.02 A to 1.0 A running

Accessories:
50002883-001 – FocusPRO 5000/6000 and PRO 3000/4000 and Horizontal PRO 1000/2000 Cover Plate Assembly

| Material Number | Applications | Switch Positions (System) | Switch Positions (Fan) | Terminal Designations | Operating Humidity Range (% RH) | Electrical Ratings | Stages |
|-----------------|---|---------------------------|------------------------|-------------------------|---------------------------------|------------------------|-------------------------|
| TH2110DH1002/U | Heat/Cool or Heat Pump without Auxiliary Heat | HEAT-OFF-COOL | AUTO-ON | R, RC, C, W, Y, G, O, B | 5 to 90% RH, non-condensing | 20 to 30 Vac or 750 mV | 1 Heat/1 Cool |
| TH2210DH1000/U | Heat Pump Systems | HEAT-OFF-COOL-EM. HT | AUTO-ON | R, C, Y, AUX/E, G, O, B | | 20 to 30 Vac | 2 Heat/1 Cool Heat Pump |

PRO 2000 Vertical Programmable Thermostats



Standard Model



Model includes Emergency Heat

The PRO programmable family of thermostats offers a basic thermostat with the benefits of energy savings. The PRO features an easy-to-read display and 5-2 day programming. Best of all, it's backed by the Honeywell name.

- Weekday/Weekend programming – 5-2 (Weekdays, Weekend) programming
- Backlit digital display – both current and set temperatures are easy to read in various lighting conditions
- Precise comfort control [$\pm 1^\circ\text{F}$ ($\pm 0.5^\circ\text{C}$)] – maintains consistent comfort to the highest level of accuracy
- Basic operation – easy-to-use slide switches allow you to select the heat or cool mode, and operate the fan
- Adaptive Intelligent Recovery™ – ensures programmed temperature is reached by programmed time

Display Size: 1.73 sq in.

Mounting: Vertical

Color: Premier White®

Changeover: Manual

Programmability: 5-2 Day Program

Setting Temperature Range: Heat: 40°F to 90°F; Cool: 50°F to 99°F
(Heat: 4.5°C to 32°C; Cool: 10°C to 37°C)

Power Method: Dual Powered: Battery or Hardwire

Frequency: 50 Hz, 60 Hz

Dimensions: 4 11/16 in. High X 2 7/8 in. Wide X 1 1/8 in. Deep
(120 mm high x 74 mm wide x 28 mm deep)

Cycles per Hour: Heating 2 - 6 CPH; Cooling 2 -6 CPH

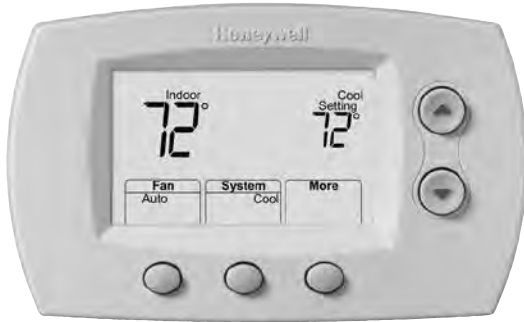
Cool Current: 0.02 A to 1.0 A running

Heat Current: 0.02 A to 1.0 A running

| Material Number | Applications | Switch Positions (System) | Switch Positions (Fan) | Terminal Designations | Operating Humidity Range (% RH) | Electrical Ratings | Stages |
|-----------------|---|---------------------------|------------------------|-------------------------|---------------------------------|------------------------|-------------------------|
| TH2110DV1008/U | Heat/Cool or Heat Pump without Auxiliary Heat | HEAT-OFF-COOL | AUTO-ON | R, RC, C, W, Y, G, O, B | 5 to 90% RH, non-condensing | 20 to 30 Vac or 750 mV | 1 Heat/1 Cool |
| TH2210DV1006/U | Heat Pump Systems | HEAT-OFF-COOL-EM. HT | AUTO-ON | R, C, Y, AUX/E, G, O, B | 5 to 90% RH, non-condensing | 20 to 30 Vac | 2 Heat/1 Cool Heat Pump |

Non-Programmable Thermostats

FocusPRO® 5000 Wireless Thermostat



Honeywell's FocusPRO® 5000 digital thermostat offers the perfect blend of features, performance, energy savings and value. With the largest backlit screen in its class, the FocusPRO 5000 prominently displays both room and set temperature.

- Powered by RedLINK™ reliability
- No interference with other wireless devices in the home
- Works with compatible RedLINK™ enabled devices
- Same great features of the FocusPRO thermostat now wireless
- Installs in minutes
- Can display outdoor temperature and humidity
- 1 year battery life
- 2 month low battery warning
- Dual Fuel enabled – requires THM5320R1000 Equipment Interface Module and C7089R1013 Wireless Outdoor Sensor (sold separately)

Applications: Gas, oil, electric, heat pump, forced warm air, hot water, steam or gravity

Mounting: Horizontal

Color: Premier White®

Changeover: Auto/Manual Selectable

Setting Temperature Range: Heat: 40°F to 90°F; Cool: 50°F to 99°F
(Heat: 4.5°C to 32°C; Cool: 10°C to 37°C)

Differential Temperature: ± 1°F (±0.5°C)

Operating Temperature Range: 32°F to 120°F (0°C to 48.9°C)

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Power Method: Battery

Dimensions: 3 9/16 in. High X 5 13/16 in. Wide X 1 1/2 in. Deep
(91 mm High X 147 mm Wide X 38 mm Deep)

Sensor Element: Thermistor

Comments: Thermostat is also available in kits for zoned and non-zoned systems

Accessories:

REM5000R1001 – Portable Comfort Control uses RedLINK™ to sense and control room temperature anywhere in the home. Works in both zoned and non-zoned applications.

C7089R1013 – Senses outdoor temperature and humidity to display on RedLINK™ enabled thermostats and accessories.

C7735A1000 – Mount on return duct for backup control of non-zoned RedLINK™ enabled wireless systems. Works with the EIM to maintain safe indoor temperatures if power is lost at the wireless thermostat.

50002883-001 – FocusPRO 5000/6000 and PRO 3000/4000 and Horizontal PRO 1000/2000 Cover Plate Assembly

50007298-001 – 12 pack of medium coverplates (5 in. x 6 7/8 in.)

Replacement Parts:

50007072-001 – Replacement Battery Holder for FocusPRO TH5220, TH5320, TH6110, TH6220, and TH6320 Thermostat

| Material Number | Switch Positions (System) | Switch Positions (Fan) | Stages | Parts Needed for Operation (not included) - TrueZONE™ System | Parts Needed for Operation (not included) - Non-Zoned System |
|-----------------|----------------------------|------------------------|---|---|--|
| TH5320R1002/U | HEAT-OFF-COOL-AUTO-EM.HEAT | AUTO-ON | Up to 3 Heat / 2 Cool Heat Pump or Up to 2 Heat / 2 Cool Conventional | HZ432 or HZ322 TrueZONE™ panel; THM4000R1000 Wireless Adapter | THM5320R1000 Equipment Interface Module |

Wireless Thermostat Kits



Everything you need to relocate or upgrade with a non-programmable thermostat without running new wires. Kit options include wireless outdoor sensor, RedLINK Internet Gateway for remote access, or wireless adapters for working with TrueZONE panels.

- **WIRELESS FOCUSPRO® THERMOSTAT:** Same great features of the FocusPRO® thermostat - now wireless. Installs in minutes. Displays outdoor temperature and humidity. 1 year battery life. 2 month low battery warning. Dual Fuel enabled.
- **EQUIPMENT INTERFACE MODULE (EIM):** All HVAC equipment is wired to the module. Module receives communication from the wireless devices.
- **RETURN AIR SENSOR:** Works with the Equipment Interface Module to maintain safe indoor temperatures if power is lost at the wireless thermostat. Maintains 62°F for heating and 82°F for cooling.
- **REDLINK™ WIRELESS TECHNOLOGY:** Powered by RedLINK™ reliability. No interference with other wireless devices in the home.

Applications: Gas, oil, electric, heat pump, forced warm air, hot water, steam or gravity

Changeover: Auto/Manual Selectable

Stages: Up to 3 Heat / 2 Cool Heat Pump or Up to 2 Heat / 2 Cool Conventional

Switch Positions (System): HEAT-OFF-COOL-AUTO-EM.HEAT

Switch Positions (Fan): AUTO-ON

Electrical Ratings: Equipment Interface Module – 18 to 30 Vac, 50 Hz; 60 Hz

Cool Current: 1.0 A running

Heat Current: 1.0 A running

Fan Current: 0.6 A running



Accessories:

50002883-001 – FOCUSPRO® 5000/6000 and PRO 3000/4000 and Horizontal PRO 1000/2000 Cover Plate Assembly

50007298-001 – 12 pack of medium coverplates (5 in. x 6 7/8 in.)

C7089R1013 – Senses outdoor temperature and humidity to display on RedLINK™ enabled thermostats and accessories.

REM5000R1001 – Use the Portable Comfort Control anywhere in the home to experience a new level of comfort and convenience.

Replacement Parts:

50007072-001 – Replacement Battery Holder for FocusPRO TH5220, TH5320, TH6110, TH6220, and TH6320 Thermostat

| Material Number | Description | Terminal Designations | Programmability | Power Method | Includes |
|-----------------|--|---|--------------------------------------|----------------------|---|
| YTH5320R1000/U | Wireless Thermostat Kit. RedLINK™ Enabled. Up to 3H/2C Heat Pump or Up to 2H/2C Conventional. Kit includes Wireless FocusPRO® Non-Programmable Thermostat, Equipment Interface Module and Return Air Sensor. | C, R, Rc, Rh, W-0/B, W2-Aux/E, Y, Y2, G, L, RAS | | Thermostat-Battery | C7735A1000 Return Air Sensor; THM5320R1000 Equipment Interface Module; TH5320R1002 Wireless FocusPRO® Non-Programmable Thermostat |
| YTH6320R1001/U | Wireless Thermostat Kit. RedLINK™ Enabled. Up to 3H/2C Heat Pump or Up to 2H/2C Conventional. Kit includes Wireless FocusPRO® 5-1-1 Programmable Thermostat, Equipment Interface Module and Return Air Sensor. | C, R, Rc, Rh, W-0/B, W2-Aux/E, Y, Y2, G, L, RAS | 5-1-1 Day Program or 5-2 Day Program | Thermostat-Battery | C7735A1000 Return Air Sensor; THM5320R1000 Equipment Interface Module; TH6320R1004 Wireless FocusPRO® 5-1-1 Programmable Thermostat |
| YTH6320R1114/U | Everything you need to relocate thermostat or upgrade equipment without running new wires. | C, R, Rc, Rh, W-0/B, W2-Aux/E, Y, Y2, G, L, RAS | 5-1-1 Day Program or 5-2 Day Program | Battery (Thermostat) | C7735A1000 Return Air Sensor THM5320R1000 Equipment Interface Module TH6320R1004 Wireless FocusPRO® 5-1-1 Programmable Thermostat THM6000R1002 RedLINK Internet Gateway |

Non-Programmable Thermostats

FocusPRO® 5000 Digital Non-Programmable Thermostats



TH5110 Large Display



TH5220 Large Display

Honeywell's FocusPRO® 5000 digital thermostat offers the perfect blend of features, performance, energy savings and value. With the largest backlit screen in its class, the FocusPRO 5000 prominently displays both room and set temperature.

- Non-programmable digital thermostat.
- Large, clear, backlit display - easy to read in various lighting conditions.
- Display size options - available in large screen or standard.
- Precise comfort control ($\pm 1^\circ\text{F}$) - maintains consistent comfort to the highest level of accuracy.
- Easy change battery door - flip out door allows for easy battery replacement without removing or disassembling the thermostat.
- Up to 3 Heat/2 Cool Heat Pump or Up to 2 Heat/2 Cool Conventional.
- Dual-powered (battery and/or hardwire).

Mounting: Horizontal
Color: Premier White®
Changeover: Auto/Manual Selectable
Switch Positions (Fan): AUTO-ON
Setting Temperature Range: Heat: 40°F to 90°F; Cool: 50°F to 99°F
 (Heat: 4.5°C to 32°C; Cool: 10°C to 37°C)
Accuracy: $\pm 1^\circ\text{F}$ ($\pm 0.5^\circ\text{C}$)
Operating Humidity Range (% RH): 5 to 90% RH, non-condensing
Power Method: Dual Powered: Battery or Hardwire (must be battery powered when used on a millivolt system)
Supply Voltage: 20 to 30 Vac
Frequency: 50 Hz; 60 Hz
Electrical Ratings: 20 to 30 Vac or 750 mV
Sensor Element: Thermistor
Switch Type: Relay
Cycles per Hour: Heating 1-12 CPH; Cooling 1-6 CPH

Accessories:

- 50001137-001** – FocusPRO TH5110 and Horizontal PRO 1000/2000 Cover Plate Assembly
- 50002883-001** – FocusPRO 5000/6000, PRO 3000/4000 and horizontal PRO 1000/2000 Cover Plate Assembly
- 50007297-001** – 12 pack of small coverplates (4 5/16 in. x 5 1/2 in.)
- 50007298-001** – 12 pack of medium coverplates (5 in. x 6 7/8 in.)

Replacement Parts:

- 50000951-001** – Replacement Battery Holder for FocusPRO TH5110 Thermostat
- 50007072-001** – Replacement Battery Holder for FocusPRO TH5220, TH5320, TH6110, TH6220, and TH6320 Thermostat

| Material Number | Applications | Terminal Designations | Stages | Switch Positions (System) | Dimensions | Cool Current | Heat Current | Fan Current | Comments |
|-----------------|--|--|---------------------|----------------------------|---|---|--|-------------------------|---------------------------------|
| TH5110D1022/U | Up to 1 Heat/1 Cool Conventional Systems and Heat Pumps with No Auxiliary Heat | R, Rc, C, W (O/B), Y, G | Up to 1 Heat/1 Cool | HEAT-OFF-COOL-AUTO | 3 7/16 in. high x 4 1/2 in. wide x 1 5/16 in. deep (86 mm high x 114 mm wide x 33 mm deep) | 1.0 A running | 1.0 A running | 0.5A running | Large display size 2.98 sq. in. |
| TH5220D1029/U | Up to 2 Heat/2 Cool Conventional Systems; Up to 2 Heat/1 Cool Heat Pumps | R, RC, C, W-O/B, G, Y, W2-AUX/E, Y2-L | Up to 2 Heat/2 Cool | HEAT-OFF-COOL-AUTO-EM.HEAT | 3 9/16 in. High x 5 13/16 in. Wide X 1 1/2 in. Deep (91 mm High x 147 mm Wide x 38 mm Deep) | Y = 0.02 A to 1.0 A running; Y2 = 0.02 A to 1.0 A running | W = 0.02 A to 1.0 A running; W2 (AUX) = 0.02 A to 0.5 A running; E = 0.02 A to 1.0 A running | 0.02 A to 0.5 A running | Large display size 5.09 sq. in. |
| TH5320U1001/U | Up to 3 Heat/2 Cool Heat Pumps; Up to 2 Heat/2 Cool Conventional Systems | Rc, R, W (O/B), W2 (AUX/E), Y, Y2, G, L, C | Up to 3 Heat/2 Cool | HEAT-OFF-COOL-AUTO-EM.HEAT | 3 9/16 in. High x 5 13/16 in. Wide X 1 1/2 in. Deep (91 mm High x 147 mm Wide x 38 mm Deep) | Y = 0.02 A to 1.0 A running; Y2 = 0.02 A to 1.0 A running | W = 0.02 A to 1.0 A running; W2 (AUX/E) = 0.02 A to 0.5 A running | 0.02 A to 0.5 A running | Large display size 5.09 sq. in. |

FocusPRO® Communicating Thermostats



Honeywell's FocusPRO® 5000 digital thermostat offers the perfect blend of features, performance, energy savings and value. With the largest backlit screen in its class, the FocusPRO 5000 prominently displays both room and set temperature.

- Non-programmable digital thermostat
- Large, clear, backlit display - easy to read in various lighting conditions
- Precise comfort control ($\pm 1\frac{1}{2}^{\circ}\text{F}$) - maintains consistent comfort to the highest level of accuracy
- Up to 3 Heat/2 Cool Heat Pump or Up to 2 Heat/2 Cool Conventional

Applications: 3 Heat/2 Cool system for Network Zoning, Conventional, and Heat Pump systems

Color: Premier White®

Changeover: Auto/Manual Selectable

Zones: Up to 9

Accuracy: $\pm 1^{\circ}\text{F}$ ($\pm 0.5^{\circ}\text{C}$)

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Power Method: Communicating

Supply Voltage: 20 to 30 Vac

Frequency: 50 Hz; 60 Hz

Dimensions: 3 7/16 in. high x 4 1/2 in. wide x 1 5/16 in. deep (86 mm high x 114 mm wide x 33 mm deep)

Sensor Element: Thermistor

Switch Type: Relay

Used With: THM5421C1008 Equipment Interface Module; W8835A ENVIRAZONE PANEL

Comments: Large display size 2.98 sq. in.

Replacement Parts:

50001137-001/U – Cover Plate Assembly for FocusPRO TH5110, coverplates, bracket for j-boxes, mounting hardware

| Material Number | Switch Positions (System) | Switch Positions (Fan) | Terminal Designations | Stages | Setting Temperature Range |
|-----------------|----------------------------|------------------------|-----------------------|---------------------|--|
| TH5320C1002/U | HEAT-OFF-COOL-AUTO-EM.HEAT | AUTO-ON | 1, 2, 3 | Up to 3 Heat/2 Cool | Heat: 40°F to 90°F; Cool: 50°F to 99°F (Heat: 4.5°C to 32°C; Cool: 10°C to 37°C) |

PRO 3000 Non-Programmable Thermostats



Standard Model

Model includes Emergency Heat

Honeywell's PRO 3000\1000 offers a basic thermostat with the convenience of an easy-to-read digital display. Best of all, it's backed by the Honeywell brand name.

- Non-programmable digital thermostat
- Backlit digital display - both current and set temperatures are easy to read in various lighting conditions
- Shows both current and set temperatures at the same time
- Precise comfort control [$\pm 1^{\circ}\text{F}$ ($\pm 0.5^{\circ}\text{C}$)] - maintains consistent comfort to the highest level of accuracy
- Basic operation - easy-to-use slide switches allow you to select the heat or cool mode, and operate the fan

Display Size: 1.32 sq. in.

Mounting: Horizontal

Color: Premier White®

Changeover: Manual

Switch Positions (Fan): AUTO-ON

Accuracy: $\pm 1^{\circ}\text{F}$ ($\pm 0.5^{\circ}\text{C}$)

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Power Method: Dual Powered: Battery or Hardwire

Frequency: 50 Hz; 60 Hz

Electrical Ratings: 20 to 30 Vac or 750 mV

Dimensions: 3 13/16 in. High X 5 3/8 in. Wide X 1 1/4 in. Deep (97 mm High X 137 mm Wide X 32 mm Deep)

Sensor Element: Thermistor

Switch Type: Relay

Cycles per Hour: Heating 1-12 CPH; Cooling 1-6 CPH

Cool Current: 0.02 A to 1.0 A running

Heat Current: 0.02 A to 1.0 A running

Accessories:

50002883-001 – FocusPRO 5000/6000, PRO 3000/4000 and

Horizontal PRO 1000/2000 Cover Plate Assembly

50007298-001 – 12 pack of medium coverplates (5 in. x 6 7/8 in.)

| Material Number | Applications | Switch Positions (System) | Supply Voltage | Terminal Designations | Stages | Setting Temperature Range |
|-----------------|--|---------------------------|----------------------|-----------------------------|-------------------------|--|
| TH3110D1008/U | 1 Heat/1 Cool Conventional Systems and Heat Pumps with No Auxiliary Heat | HEAT-OFF-COOL | 20 to 30 Vac; 750 mV | R, Rc, W, Y, G, O, B, C | 1 Heat/1 Cool | Heat: 40°F to 90°F; Cool: 50°F to 99°F (Heat: 4.5°C to 32°C; Cool: 10°C to 37°C) |
| TH3210D1004/U | 2 Heat/1 Cool Heat Pump Systems | HEAT-OFF-COOL-EM. HT | 20 to 30 Vac | R, Y, AUX, E, G, O, B, L, C | 2 Heat/1 Cool Heat Pump | Heat: 40°F to 90°F; Cool: 50°F to 99°F (Heat: 4.5°C to 32°C; Cool: 10°C to 37°C) |

Non-Programmable Thermostats

PRO 1000 Horizontal Non-Programmable Thermostats



Display Size: 1.32 sq in.

Mounting: Horizontal

Color: Premier White®

Changeover: Manual

Setting Temperature Range: Selectable Heat: 40°F to 90°F or 35°F to 90°F (Selectable Heat 4.5°C to 32°C or 1.5°C to 32°C)

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Power Method: Dual Powered: Battery or Hardwire

Frequency: 50 Hz; 60 Hz

Honeywell's PRO 3000\1000 offers a basic thermostat with the convenience of an easy-to-read digital display. Best of all, it's backed by the Honeywell brand name.

- Non-programmable digital thermostat
- Easy-to-read backlit display - easy to read in various lighting conditions
- Precise comfort control [$\pm 1^\circ\text{F}$ ($\pm 0.5^\circ\text{C}$)] - maintains consistent comfort to the highest level of accuracy
- Basic operation - easy-to-use slide switches allow you to select the heat or cool mode, and operate the fan

Dimensions: 3 7/16 in. High x 4 5/8 in. Wide x 1 3/16 in. Deep (87mm High x 119mm Wide x 30mm Deep)

Heat Current: 0.02 A to 1.0 A running

Accessories:

50002883-001 – FocusPRO 5000/6000 and PRO 3000/4000 and Horizontal PRO 1000/2000 Cover Plate Assembly

| Material Number | Applications | Terminal Designations | Stages | Switch Positions (System) | Switch Positions (Fan) | Electrical Ratings | Cycles per Hour | Cool Current | Comments |
|-----------------|--|-------------------------|-------------------------|---------------------------|------------------------|------------------------|--------------------------------------|-------------------------|--|
| TH1100DH1004/U | Heat Only | R, C, W | 1 Heat | HEAT-OFF | | 20 to 30 Vac or 750 mV | Heating 2 - 6 CPH | | Adjustable Temperature Scale: Standard selection of 40 to 90°F or Garage selection of 35 to 90°F |
| TH1110DH1003/U | 1 Heat/1 Cool Conventional Systems and Heat Pumps with No Auxiliary Heat | R, RC, C, W, Y, G, O, B | 1 Heat/1 Cool | HEAT-OFF-COOL | AUTO-ON | 20 to 30 Vac or 750 mV | Heating 2 - 6 CPH; Cooling 2 - 6 CPH | 0.02 A to 1.0 A running | |
| TH1210DH1001/U | 2 Heat/1 Cool Heat Pump Systems | R, C, Y, AUX/E, G, O, B | 2 Heat/1 Cool Heat Pump | HEAT-OFF-COOL-EM. HT | AUTO-ON | 20 to 30 Vac | Heating 2 - 6 CPH; Cooling 2 - 6 CPH | 0.02 A to 1.0 A running | |

PRO 1000 Vertical Non-Programmable Thermostats



Honeywell's PRO 1000 offers a basic thermostat with the convenience of an easy-to-read digital display. Best of all, it's backed by the Honeywell brand name.

- Non-programmable digital thermostat
- Easy-to-read backlit display - easy to read in various lighting conditions
- Precise comfort control [$\pm 1^\circ\text{F}$ ($\pm 0.5^\circ\text{C}$)] - maintains consistent comfort to the highest level of accuracy
- Basic operation - easy-to-use slide switches allow you to select the heat or cool mode, and operate the fan

Display Size: 1.32 sq in.

Mounting: Vertical

Color: Premier White®

Changeover: Manual

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Power Method: Dual Powered: Battery or Hardwire

Frequency: 50 Hz, 60 Hz

Dimensions: 4 11/16 in. High X 2 7/8 in. Wide X 1 1/8 in. Deep
(120 mm high x 74 mm wide x 28 mm deep)

Heat Current: 0.02 A to 1.0 A running

| Material Number | Applications | Terminal Designations | Stages | Switch Positions (System) | Switch Positions (Fan) | Electrical Ratings | Cycles per Hour | Cool Current | Setting Temperature Range | Comments |
|-----------------|--|-------------------------|-------------------------|---------------------------|------------------------|------------------------|--------------------------------------|-------------------------|--|--|
| TH1100DV1000/U | Heat Only | R, C, W | 1 Heat | HEAT-OFF | | 20 to 30 Vac or 750 mV | Heating 2 - 6 CPH | | Selectable Heat: 40°F to 90°F or 35°F to 90°F (Selectable Heat 4.5°C to 32°C or 1.5°C to 32°C) | Adjustable Temperature Scale: Standard selection of 40 to 90°F or Garage selection of 35 to 90°F |
| TH1110DV1009/U | 1 Heat/1 Cool Conventional Systems and Heat Pumps with No Auxiliary Heat | R, RC, C, W, Y, G, O, B | 1 Heat/1 Cool | HEAT-OFF-COOL | AUTO-ON | 20 to 30 Vac or 750 mV | Heating 2 - 6 CPH; Cooling 2 - 6 CPH | 0.02 A to 1.0 A running | Heat: 40°F to 90°F; Cool: 50°F to 99°F (Heat: 4.5°C to 32°C; Cool: 10°C to 37°C) | |
| TH1210DV1007/U | 2 Heat/1 Cool Heat Pump Systems | R, C, Y, AUX/E, G, O, B | 2 Heat/1 Cool Heat Pump | HEAT-OFF-COOL-EM. HT | AUTO-ON | 20 to 30 Vac | Heating 2 - 6 CPH; Cooling 2 - 6 CPH | 0.02 A to 1.0 A running | Heat: 40°F to 90°F; Cool: 50°F to 99°F (Heat: 4.5°C to 32°C; Cool: 10°C to 37°C) | |

Non-Programmable Thermostats

Mercury Free T834 Econo Thermostats



Cool Only



1 Heat/1 Cool

Meets all current and future mercury-free thermostat compliance needs with Honeywell's Mercury-Free Econostat. With a sleek, attractive appearance, the Mercury-Free Econostat is the perfect electromechanical replacement choice.

- Integrated thermometer and temperature setting scale.
- Precise Snap-action switch.
- Mount directly on wall or outlet box.
- Includes dealer logo pocket.

Mounting: Vertical

Color: Premier White®

Accuracy: ±2°F (±1°C)

Supply Voltage: 20 to 30 Vac

Electrical Ratings: 20 to 30 Vac

Dimensions: 4 3/4 in. high x 2 7/8 in. wide x 1 3/8 in. deep (121 mm high x 73 mm wide x 35 mm deep)

Sensor Element: Bimetal

Switch Type: Precision Snap Action

Switching Action: SPST

Cool Current: 0.02 A to 1.0 A running

Heat Current: 0.02 A to 1.0 A running

Accessories:

50019661-001 – Range Stop Assembly for Econostat

| Material Number | Description | Applications | Switch Positions (System) | Switch Positions (Fan) | Terminal Designations | Changeover | Stages | Setting Temperature Range |
|-----------------|--|--|---------------------------|------------------------|-----------------------|------------|---------------|----------------------------|
| T834L1004/U | Mercury Free Cool Only Thermostat with Positive Off for control of single stage low voltage cooling systems; Temperature scale in Fahrenheit and Celsius | Cool Only | COOL-OFF | AUTO-ON | R, Y, G, O | | 1 Cool | 45°F to 95°F (7°C to 35°C) |
| T834N1002/U | Mercury Free 1 Heat/1 Cool Stage Thermostat for control of single stage low voltage heating/cooling systems | 1 Heat/1 Cool Conventional Systems and Heat Pumps with No Auxiliary Heat | HEAT-OFF-COOL | AUTO-ON | R, Rc, W, Y, G, O, B | Manual | 1 Heat/1 Cool | 45°F to 95°F |

Mercury Free T822 Econo Thermostats



Heat-Off



Heat Only



Dual Scale

Thermostats provide 24 Vac control of heating or cooling systems

- Vented cover for improved temperature sensing
- Setting lever and thermometer scale on thermostat face
- Mounts directly on the wall or on vertical outlet box
- Integrated thermometer and setting scale

Mounting: Vertical

Color: Premier White®

Accuracy: ±2°F (±1°C)

Supply Voltage: 20 to 30 Vac

Electrical Ratings: 20 to 30 Vac

Dimensions: 4 3/4 in. high x 2 7/8 in. wide x 1 3/8 in. deep (121 mm high x 73 mm wide x 35 mm deep)

Sensor Element: Bimetal

Switch Type: Precision Snap Action

Switching Action: SPST

| Material Number | Description | Applications | Terminal Designations | Stages | Switch Positions (System) | Setting Temperature Range | Heat Current |
|-----------------|--|--|-----------------------|--------|---------------------------|----------------------------|-------------------------|
| T822K1000/U | Mercury Free Heat Only Thermostat with Positive Off for control of single stage low voltage heating systems | Heat Only | R, W | 1 Heat | HEAT-OFF | 45°F to 95°F | 0.02 A to 1.0 A running |
| T822K1018/U | Mercury Free Heat Only Thermostat for control of single stage low voltage heating systems | Heat Only | R, W | 1 Heat | | 45°F to 95°F | 0.02 A to 1.0 A running |
| T822K1034/U | Mercury Free Heat Only Thermostat for control of single stage low voltage heating systems | Heat Only | R, W | 1 Heat | | (7°C to 32°C) | 0.02 A to 1.0 A running |
| T822K1042/U | Mercury Free Heat Only Thermostat with Low Temperature Scale, Ideal for Garages. Heat/Off. For control of heat only low voltage systems. | Heat Only | R, W | 1 Heat | HEAT-OFF | 35°F to 85°F | 0.02 A to 1.0 A running |
| T822L1000/U | Mercury Free Cool Only Thermostat control of single stage low voltage cooling systems; Temperature scale in Fahrenheit and Celsius | Cool Only or Heat Only for Normally Open Hot Water Zone Valves | R, Y | 1 Cool | | 45°F to 95°F (7°C to 35°C) | |

Non-Programmable Thermostats

Mercury Free T827 Econo Thermostats



Heating thermostats provide control of 750 mV or 12 Vdc heating systems.

- Rated for 12 Vdc and millivoltage systems
- Coiled bimetal element operates snap-acting switch
- Temperature setting lever on bottom of thermostat
- Mounting using two screws through base to wall or vertical outlet box
- Temperature setting and thermometer scale on cover

Applications: Heat Only

Mounting: Vertical

Color: Premier White®

Accuracy: ±2°F (±1°C)

Supply Voltage: 12 Vdc; 750 mV

Dimensions: 4 3/4 in. high x 2 7/8 in. wide x 1 3/8 in. deep (121 mm high x 73 mm wide x 35 mm deep)

Sensor Element: Bimetal

Switch Type: Precision Snap Action

Switching Action: SPST

| Material Number | Switch Positions (System) | Switch Positions (Fan) | Terminal Designations | Stages | Setting Temperature Range |
|-----------------|---------------------------|------------------------|-----------------------|--------|---------------------------|
| T827K1009/U | HEAT-OFF | | R, W | 1 Heat | 45°F to 95°F |

Wireless Zoning Adapter Kits



Applications: Heat Pump Systems; Forced warm air
Changeover: Auto/Manual Selectable
Power Method: Thermostat – Battery

Accessories:

REM5000R1001 – Portable Comfort Control uses RedLINK™ to sense and control room temperature anywhere in the home. Works in both zoned and non-zoned applications.

Everything you need to relocate or upgrade with a non-programmable thermostat without running new wires. Kit options include wireless outdoor sensor, RedLINK Internet Gateway for remote access, or wireless adapters for working with TrueZONE panels.

- **WIRELESS FOCUSPRO® THERMOSTAT:** Same great features of the FocusPRO® thermostat - now wireless. Installs in minutes. Displays outdoor temperature and humidity. 1 year battery life. 2 month low battery warning. Dual Fuel enabled.
- **EQUIPMENT INTERFACE MODULE (EIM):** All HVAC equipment is wired to the module. Module receives communication from the wireless devices.
- **RETURN AIR SENSOR:** Works with the Equipment Interface Module to maintain safe indoor temperatures if power is lost at the wireless thermostat. Maintains 62°F for heating and 82°F for cooling.
- **REDLINK™ WIRELESS TECHNOLOGY:** Powered by RedLINK™ reliability. No interference with other wireless devices in the home.

C7089R1013 – Senses outdoor temperature and humidity to display on RedLINK™ enabled thermostats and accessories.

50002883-001 – FocusPRO 5000/6000 and PRO 3000/4000 Cover Plate Assembly

50007298-001 – 12 pack of medium coverplates (5 in. x 6 7/8 in.)

Replacement Parts:

50007072-001 – Replacement Battery Holder for FocusPRO TH5220, TH5320, TH6110, TH6220, and TH6320 Thermostat

| Material Number | Programmability | Switch Positions (System) | Switch Positions (Fan) | Includes |
|-----------------|--------------------------------------|--------------------------------|------------------------|---|
| YTH5320R1025/U | | HEAT-OFF-COOL-AUTO-EM. HEAT | AUTO-ON | TH5320R1002 Wireless FocusPRO® Non-Programmable Thermostat; THM4000R1000 Wireless Adapter |
| YTH6320R1023/U | 5-1-1 Day Program or 5-2 Day Program | HEAT-OFF-COOL-AUTO-EM. HEAT | AUTO-ON | TH6320R1004 Wireless FocusPRO® 5-1-1 Programmable Thermostat; THM4000R1000 Wireless Adapter |

Wireless Thermostat Kits with Outdoor Sensor



Terminal Designations: C, R, Rc, Rh, W-O/B, W2-Aux/E, Y, Y2, G, L, RAS

Changeover: Auto/Manual Selectable
Programmability: 5-1-1 Day Program or 5-2 Day Program
Power Method: Battery (Thermostat)
Cool Current: 1.0 A running
Heat Current: 1.0 A running
Fan Current: 0.6 A running



Everything you need to relocate or upgrade with a programmable thermostat without running new wires. Kit options include wireless outdoor sensors, RedLINK Internet Gateway for remote access, or wireless adapters for working with TrueZONE panels.

- **WIRELESS FOCUSPRO® THERMOSTAT:** Same great features of the FocusPRO® thermostat - now wireless. Installs in minutes. Displays outdoor temperature and humidity. 1 year battery life. 2 month low battery warning. Dual Fuel enabled.
- **EQUIPMENT INTERFACE MODULE (EIM):** All HVAC equipment is wired to the module. Module receives communication from the wireless devices.
- **RETURN AIR SENSOR:** Works with the Equipment Interface Module to maintain safe indoor temperatures if power is lost at the wireless thermostat. Maintains 62°F for heating and 82°F for cooling.
- **REDLINK™ WIRELESS TECHNOLOGY:** Powered by RedLINK™ reliability. No interference with other wireless devices in the home.

Accessories:

50002883-001 – FOCUSPRO® 5000/6000 and PRO 3000/4000 Cover Plate Assembly

50007298-001 – 12 pack of medium coverplates (5 in. x 6 7/8 in.)

C7089R1013 – Senses outdoor temperature and humidity to display on RedLINK™ enabled thermostats and accessories.

REM5000R1001 – Use the Portable Comfort Control anywhere in the home to experience a new level of comfort and convenience.

Replacement Parts:

50007072-001 – Replacement Battery Holder for FocusPRO TH5220, TH5320, TH6110, TH6220, and TH6320 Thermostat

| Material Number | Applications | Electrical Ratings | Switch Positions (System) | Switch Positions (Fan) | Stages | Includes |
|-----------------|---|---|----------------------------|------------------------|---|--|
| YTH6320R1122/U | Gas, oil, electric, heat pump, forced warm air, hot water, steam or gravity | Equipment Interface Module – 18 to 30 Vac, 50 Hz; 60 Hz | HEAT-OFF-COOL-AUTO-EM.HEAT | AUTO-ON | Up to 3 Heat / 2 Cool Heat Pump or Up to 2 Heat / 2 Cool Conventional | C7735A1000 Return Air Sensor THM5320R1000 Equipment Interface Module TH6320R1004 Wireless FocusPRO® 5-1-1 Programmable Thermostat THM6000R1002 RedLINK Internet Gateway C7089R1013 Wireless Outdoor Sensor |

RedLINK™ Accessories

RedLINK Internet Gateway



The RedLINK™ Internet Gateway provides remote access to any RedLINK™ enabled thermostat through the internet, smartphone or tablet.

- RedLINK™ enabled to communicate with compatible wireless devices.
- Control any RedLINK™ enabled thermostat.
- 3 foot ethernet cable included.
- Simple installation to home or business router.
- Easily change system modes and indoor temperature through the web portal or mobile app.
- Multiple HOLD options allows modification of schedule as needed.
- High/Low temperature and humidity messaging alerts the user when the indoor conditions are too high or too low.
- Will accept a maximum of 4 thermostats on one single Gateway.

Applications: Internet control of RedLINK thermostats; Up to 4 Heat/2 Cool Heat Pumps

Color: Black

Operating Temperature Range: 32°F to 120°F (0°C to 48.9°C)

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Power Method: A 5 Vdc, 1000 mA power adapter

Electrical Connections: 24 Volt Plug In Transformer

Electrical Ratings: 20 to 30 Vac

Dimensions: Unit: 5 in. tall x 5 1/2 in. wide x 1 3/8 in. deep; Foot base: 6 in. x 2 1/2 in. (Unit: 127 mm tall x 140 mm wide x 35 mm deep; Foot base: 152 mm x 64 mm)

| Material Number | Description | Used With | Includes |
|-----------------|--------------------------|--|---|
| THM6000R1002/U | RedLINK Internet Gateway | RedLINK™ enabled thermostats and accessories | 3 Foot Ethernet Cable and Plug in Power Adapter |

C7089 Wireless Outdoor Sensor



Senses outdoor temperature and humidity to display on RedLINK™ enabled thermostats and accessories.

- Powered by RedLINK™ reliability
- No interference with other wireless devices in the home
- Reliable performance in all climates
- Installs in minutes
- Up to 5 year battery life
- 2 month low battery warning
- Battery warning displayed on RedLINK™ enabled thermostats
- Includes 2 AA Lithium batteries and mounting hardware

Applications: Outdoor Sensor

Mounting: Vertical mounting with supplied bracket and mounting hardware

Color: Gray

Operating Temperature Range: -40°F to 140°F (-40°C to +60°C)

Operating Humidity Range (% RH): 0 to 100% RH, condensing

Power Method: Battery

Dimensions: (with mounting bracket) 5 in. high x 3 1/2 in. wide x 1 11/16 in. deep ([with mounting bracket] 127 mm high x 89 mm wide x 43 mm deep)

Sensor Element: Thermistor

| Material Number | Comments | Used With | Includes |
|-----------------|---|--|--|
| C7089R1013/U | Wireless Outdoor Sensor is also available in kits | RedLINK™ enabled thermostats and accessories | 2 AA Lithium Batteries and mounting hardware |

C7189 Wireless Indoor Air Sensor



The Remote Indoor Sensor works with RedLINK enabled thermostats.

- Used to sense temperature if the thermostat is installed in a poor temperature sensing location.
- Small remote temperature sensor to match any room decor.
- Easy to install and use.
- Factory calibrated; no field calibration required.

Applications: Wireless Indoor Air Sensor

Mounting: Mounts on a vertical wall with supplied bracket and mounting hardware

Color: Arctic White

Operating Temperature Range: 0°F to 120°F (35°F to 114°F for optimal battery life) -17.8°C to 48.9°C (1.7°C to 45.6°C for optimal battery life)

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Power Method: Battery

Dimensions: 2 7/8 in. high x 1 7/8 in. wide x 15/16 in. deep (73 mm high x 48 mm wide x 24 mm deep)

| Material Number | Description | Used With | Includes |
|-----------------|---|---|--|
| C7189R1004/U | Senses indoor temperature and humidity for control with RedLINK thermostats | Redesigned Prestige IAQ, Prestige IAQ 2.0, Prestige 2.0, All New RedLINK VisionPRO 8000 | 2 AAA alkaline batteries and mounting hardware |

REM1000 RedLINK Wireless Entry/Exit Remote



Applications: Heating and Cooling systems, RedLINK Thermostat Accessory

Color: White

Operating Temperature Range: 35°F to 114°F for optimal battery life (1.7°C to 45.6°C for optimal battery life)

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Power Method: Battery, Lithium Coin Cell

Dimensions: 6 1/4 in. high x 3 1/8 in. wide x 1 5/8 in. deep (159 mm high x 79 mm wide x 41 mm deep)

Sensor Element: Thermistor

Used With: RedLINK™ enabled thermostats and accessories

| Material Number | Description |
|-----------------|------------------------------------|
| REM1000R1003/U | RedLINK Wireless Entry/Exit Remote |

RedLINK™ Accessories

REM5000 Portable Comfort Control



Use the Portable Comfort Control anywhere in the home to experience a new level of comfort and convenience. Works in both zoned and non-zoned applications.

- Powered by RedLINK™ reliability
- No interference with other wireless devices in the home
- Works with compatible RedLINK™ enabled thermostats and accessories
- Installs in minutes
- Touchscreen interface with backlit display
- Can display outdoor temperature and humidity
- Built-in pager with an audible noise helps locate the device in the home
- Screen-lock feature helps prevent accidental changes
- 1 year battery life
- 2 month low battery warning
- In Non-Zoned Applications: Bring it with you anywhere in the home to sense and control temperature from the room that you are in
- In Zoned Applications: View and adjust all RedLINK™ enabled thermostats from a single control
- Controls up to 16 thermostats

Applications: Zoned and Non-Zoned Applications

Changeover: Auto or Manual

Differential Temperature: ± 1°F (±0.5°C)

Operating Temperature Range: 32°F to 120°F (0°C to 48.9°C)

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Power Method: Battery

Dimensions: 6 1/4 in. high x 3 1/8 in. wide x 1 5/8 in. deep (159 mm high x 79 mm wide x 41 mm deep)

Sensor Element: Thermistor

Used With: RedLINK™ enabled thermostats and accessories

Comments: Portable Comfort Control is also available in kits.

| Material Number | Description |
|-----------------|--|
| REM5000R1001/U | Use the Personal Comfort Station™ anywhere in the home to experience a new level of comfort and convenience. Works in both zoned and non-zoned applications. |

Wireless Adapter



Wireless Adapters allows easy addition of RedLINK™ enabled thermostats to TrueZONE™ systems. Use with a RedLINK™-enabled TrueSTEAM™ Humidification System to communicate & control humidity. It also controls dehumidifiers like the Honeywell TrueDRY™.

- Powered by RedLINK™ reliability.
- No interference with other wireless devices in the home.
- Communicates with Wireless Outdoor Sensor to automatically control humidity.

Terminal Designations: A, B, C, D

Mounting: Mount Wireless Adapter on wall near HVAC equipment or on the duct.

Color: Gray

Operating Temperature Range: -40°F to 165°F (-40°C to 73.9°C)

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing
Dimensions: 5 9/16 in. high x 4 3/8 in. wide x 1 1/4 in. deep (141 mm high x 112 mm wide x 32 mm deep)

Operation: One adapter per zone control panel, HZ322 or HZ432 TrueZONE panel

| Material Number | Description |
|-----------------|---|
| THM4000R1000/U | Wireless Adapter allows you to easily add RedLINK™ enabled thermostats to a TrueZONE™ system without running new wires. |

C7735 Return Air Sensor



Applications: Mount on return duct for backup control of non-zoned systems

Mounting: Mounts on return duct

Color: Gray

Return Air Sensor mounts on return duct for backup control of non-zoned RedLINK™ enabled Wireless Systems and Thermostats.

- Works with THM5320R1000 Equipment Interface Module to maintain safe indoor temperatures if power is lost at the wireless thermostat
- Takes control of the equipment by turning on the blower fan and sensing the indoor temperature of the home
- Controls heating at 62°F and cooling at 82°F
- Provides homeowners with peace of mind
- Installs in minutes
- Includes mounting hardware

Operating Temperature Range: 0°F to 200°F (-17.8°C to 93.3°C)

Dimensions: 3 7/8 in. high x 4 1/8 in. wide x 1 1/4 in. deep (77 mm high x 102 mm wide x 25 mm deep. Sensor probe is 3 3/4 in. long (77 mm))

| Material Number | Comments | Used With |
|-----------------|---|---|
| C7735A1000/U | Return Air Sensor is also available in kits for non-zoned systems | THM5320R1000 Equipment Interface Module; TH6320R1004 or TH5320R1002 Wireless FocusPRO® Thermostat |

C7089 Outdoor Sensor



Mounting: Mounting Clip provided and screws provided.

Ambient Temperature Range: -40°F to +120°F (-40°C to +49°C)

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Remote outdoor temperature sensor, when installed, the current outdoor temperature is displayed. Also can be used to manage dual fuel and lock-out expensive auxiliary heat in heat pump applications.

- Mounting clip allows easy sensor positioning on siding or soffit.
- Includes 60 in. leadwires.
- Factory calibrated; no field calibration required.
- Maximum wire run of 200 feet.

Dimensions: 2 1/4 in. x 3/8 in. with 60 in. leadwires. (57 mm x 10 mm with 1524 mm leadwires.)

| Material Number | Description | Applications | Used With |
|-----------------|---|--|--|
| C7089U1006/U | Outdoor Sensor used to measure the outdoor temperature for use with VisionPro and VisionPRO IAQ | Outdoor sensor for VisionPRO and VisionPRO IAQ Thermostats | VisionPRO® Series Thermostats, VisionPRO® IAQ Thermostat |

C7189 Remote Indoor Sensor



Applications: Remote Indoor Temperature Sensor for VisionPRO and VisionPRO IAQ Thermostats

Mounting: Mounts directly on the wall using mounting screws and anchors provided

Color: Premier White®

The Remote Indoor Temperature Sensor for VisionPRO® IAQ and VisionPRO® thermostat families.

- Used to sense temperature if the thermostat is installed in a poor temperature sensing location.
- Small remote temperature sensor to match any room decor.
- Easy to install and use.
- Factory calibrated; no field calibration required.

Ambient Temperature Range: 45°F to 88°F (7°C to 32°C)

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Dimensions: 1 1/2 in. wide x 2 1/4 in. high x 3/4 in. deep (38 mm wide x 57 mm high x 19 mm deep)

| Material Number | Description | Setting Temperature Range | Used With |
|-----------------|---|---------------------------|--|
| C7189U1005/U | Remote indoor sensor for remote sensing applications. | See Thermostats | VisionPRO® and VisionPRO® IAQ Series Thermostats |

Winter Watchman

S483 Winter Watchman



Mounting: Vertical
Color: Beige
Accuracy: $\pm 5^{\circ}\text{F}$ ($\pm 3^{\circ}\text{C}$)
Ambient Temperature Range: 30°F to 60°F (-1°C to $+16^{\circ}\text{C}$)
Supply Voltage: 120 Vac
Frequency: 60 Hz
Electrical Ratings: Load: 120W maximum for incandescent lamp load only.

Used as a freeze warning device. Completes circuit to household lamp on temperature fall, indicating inoperative heating equipment.

- Plugs directly into wall outlet.
- Lamp plugs into receptacle at bottom of Winter Watchman device.
- Useful when house is unoccupied to notify a neighbor of a temperature drop so heating source fault can be rectified before freeze-up occurs.
- Not precision calibrated for use as a thermostat.

Dimensions: 3 3/8 in. high x 2 1/8 in. wide x 13/16 in. deep (86 mm high x 54 mm wide x 21mm deep)

Sensor Element: Bimetal

Switching Action: SPST

Heat Current: 1.0A

| Material Number | Applications | Setting Temperature Range |
|-----------------|-------------------|---|
| S483B1002/U | Incandescent Lamp | 30°F to 60°F (-1°C to 16°C) |

TL116A Line Volt Electric Heating Thermostat



This thermostat is designed to control an electric heating system such as a baseboard heater, a convector or a fan-forced heater.

- Applications:** Baseboard heater, Convector or Fan-forced Heater, Electric Heating
- Mounting:** Vertical
- Color:** White
- Accuracy:** 0.9°F / 0.5°C
- Ambient Temperature Range:** 32°F to 120°F / 0°C to 50°C
- Power Method:** Hardwired
- Supply Voltage:** 120 Vac; 208 Vac; 240 Vac
- Frequency:** 50 Hz; 60 Hz
- Electrical Connections:** 6 in. (150 mm) tinned copper lead wires
- Dimensions:** 5.0 in. X 3.05 in. X 2.4 in. (127 mm x 77 mm x 60 mm)
- Sensor Element:** Thermistor
- Switch Type:** Relay
- Switching Action:** SPST
- Approvals, CSA:** Certified
- Comments:** battery-free, Min & Max temperature locks

| Material Number | Setting Temperature Range | Electrical Ratings |
|-----------------|---------------------------|--|
| TL116A1008/U | 5°C to 27°C | Minimum Load: 1.25 A (resistive only) 300 W @240 Vac, 150 W @ 120 Vac, Maximum Load: 12.5 A (resistive only), 3000 W @ 240 Vac, 1500 W @ 120 Vac |
| TL116A1016/U | 41°F to 80°F | Minimum Load: 1.25 A (resistive only) 300 W @240 Vac, 150 W @ 120 Vac, Maximum Load: 12.5 A (resistive only), 3000 W @ 240 Vac, 1500 W @ 120 Vac |

7-Day Programmable Line Voltage Thermostat



- Large, clear, backlit display - easy to read in various lighting conditions.
- Attractive design includes hidden programming buttons.
- Soundproofed for quiet operation - reduces the clicking noise commonly heard with conventional thermostats.
- Maintenance free - no batteries required.

Applications: Electric baseboards, convectors and fan forced heaters (resistive rated loads). 4 Wire models, not compatible with 2-wire applications.

Display Size: 2.67 sq in.

Mounting: Vertical
Color: Premier White®
Stages: 1 Heat

Programmability: 7-Day Program

Setting Temperature Range: 40°F to 86°F (5°C to 30°C)

Ambient Temperature Range: 32°F to 122°F (0°C to 50°C)

Power Method: Hardwired

Supply Voltage: 208 Vac; 240 Vac

Frequency: 50 Hz; 60 Hz

Electrical Connections: 4-wire tinned copper leadwires

Dimensions: 4 7/8 in. high x 2 3/4 in. wide x 7/8 in. deep (124 mm high x 70 mm wide x 23 mm deep)

Sensor Element: Thermistor

Switch Type: Epoxy-soundproofed relay

Approvals, CSA: cCSAus, File Number: LR76030

Approvals, Underwriters Laboratories Inc.: UL Listed 9R12, File Number: E183695

The 7-day programmable thermostat provides electronic control of 208/240 Vac resistive rated electric baseboard heaters, radiant ceiling heat, convectors and fan forced heaters.

- Advanced temperature control ensures total comfort by minimizing temperature swings.
- On/Off or On/Standby switch allows you to turn the thermostat off at the end of the heating season.
- 7-day programmable - maintain the pre-set program schedule for up to 20% energy savings, or modify the schedule to fit your lifestyle.
- On-screen heating power indicator gives at-a-glance verification of power being used.
- Early Start function ensures programmed temperature is reached by programmed time.
- Electronic temperature control - precision of ±1°F saves up to an additional 10% on heating bills.
- Temporary bypass enables temperature override without changing programming.

| Material Number | Description | Electrical Ratings | Switching Action | Used With | Comments |
|------------------|---|---|------------------|--------------------------------------|---|
| TH115-A-240S-B/U | Aube Logo Line Volt Programmable Electric Heating Thermostat with Backlight | Maximum Load: 16.7 A (resistive only), 3475 W @ 208 Vac, 4000 W @ 240 Vac | SPST | Compatible with CT240-01 or CT241-01 | |
| TL8130A1005/U | LineVoltPRO Honeywell logo Digital Programmable Single Pole Line Voltage Thermostat for electric baseboards, convectors and fan forced heaters (resistive rated loads). | Maximum Load: 16.7 A (resistive only), 3475 W @ 208 Vac, 4000 W @ 240 Vac | SPST | | No remote input capability, No dry contacts |
| TL8230A1003/U | LineVoltPRO Honeywell logo Digital Programmable Single Pole Line Voltage Thermostat for electric baseboards, convectors and fan forced heaters (resistive rated loads). | Maximum Load: 15 A (resistive only), 3210 W @ 208 Vac, 3600 W @ 240 Vac | DPST | | No remote input capability, No dry contacts |

Electric Heat Thermostats

LineVoltPRO® 8000 7-Day Programmable Hydronic Thermostat



The TL8100 Hydronic Thermostat offers the energy savings of a programmable control for a wide variety of applications without a need to carry multiple thermostats for different applications. Controls 2-way and 3-way zone valves or circulator pumps.

Applications: Central Heating (Conventional); Baseboards; Convectors; Fan-forced Heaters; Radiant Ceilings
Mounting: Vertical
Color: White
Programmability: 7-Day Program
Setting Temperature Range: 40°F to 85°F (5°C to 30°C)
Differential Temperature: 0.1°F (0.1°C)
Operating Temperature Range: 32°F to 122°F (0°C to 50°C)
Operating Humidity Range (% RH): 0% to 95%, non-condensing

Power Method: 2 AA (LR6) batteries
Supply Voltage: 24 Vac; 30 Vdc; 120 Vac; 240 Vac
Electrical Connections: Screw terminals
Electrical Ratings: Maximum Load: 5 A (resistive), 2 A (inductive) @ 24 Vac, 120 Vac, 240 Vac; Compatible with millivolt systems
Dimensions: 4.9 in. X 3.8 in. X 1 in. (126 mm X 97 mm X 26 mm)
Sensor Element: Thermistor
Switch Type: Relay
Approvals, Underwriters Laboratories Inc.: Approved

| Material Number | Description | Stages | Accuracy | Terminal Designations | Comments | Used With |
|-----------------|--|--------|----------|-------------------------------------|---|------------------------------------|
| TL8100A1008/U | TL8100A1008 - Multi-Application 7-Day Programmable Electronic Thermostat | 1 Heat | 0.5°C | R, W, (X, C, optional remote input) | Pump Protection (for hot water heating) | Aube CT240-01 Telephone Controller |

LineVoltPRO® 7000 Digital Non-Programmable Electric Heat Thermostats



LineVoltPRO™ digital thermostats provide electronic control of 208/240 Vac resistive rated electric baseboard heaters, radiant ceiling heat, convectors and fan forced heaters. If used as directed, they can save up to 10% on annual heating costs.

- Electronic temperature control - precision of ±1°F saves up to 10% on heating bills.
- Large, clear, backlit display - easy to read in various lighting conditions.
- Soundproofed for quiet operation - reduces the clicking noise commonly heard with conventional thermostats.
- On/Off switch allows you to turn the thermostat off at the end of the heating season.
- Heating indicator - at a glance confirmation that the heat is on.
- Maintenance free - no batteries required.

Applications: Electric baseboards, convectors and fan forced heaters (resistive rated loads).
Mounting: Vertical
Color: Premier White®
Accuracy: ±1°F (± 0.5°C)
Operating Temperature Range: 32°F to 122°F (0°C to 50°C)
Supply Voltage: 208 Vac; 240 Vac
Frequency: 50 Hz; 60 Hz
Electrical Connections: 5.5 in. (140mm) tinned copper lead wires

Dimensions: 4 7/8 in. high x 2 3/4 in. wide x 7/8 in. deep (124 mm high x 70 mm wide x 23 mm deep)
Sensor Element: Thermistor
Switch Type: Relay
Switching Action: DPST
Approvals, CSA: cCSAus, File Number: LR76030
Approvals, Underwriters Laboratories Inc.: UL Listed 9R12, File Number: E183695

| Material Number | Electrical Ratings | Stages | Setting Temperature Range |
|-----------------|---|--------|----------------------------|
| TL7235A1003/U | 15 Amps Max; 3600 Watts at 240 VAC, 3120 Watts at 208 VAC | 1 Heat | 40°F to 86°F (5°C to 30°C) |

T410 Electric Heat Thermostats



Economy thermostats that provide reliable line voltage control of resistive rated electric heating equipment. Snap-action switch makes heating circuit on temperature fall.

- Economical.
- Replace virtually any two-wire (T410A) or four-wire (T410B) line voltage wall-mounted electric heating thermostat.
- Easy to install; 6 in. (150 mm) color-coded leads.
- Include long-lasting Micro Switch™ mechanism.
- Rugged, plastic mounting base and one-piece cover with vents.
- Ideally suited to new construction applications.

Applications: Electric baseboards, convectors and fan forced heaters (resistive rated loads).

Mounting: Vertical

Accuracy: (2°C)

Differential Temperature: 3°F (2°C)

Ambient Temperature Range: 40°F to 85°F (5°C to 30°C)

Supply Voltage: 120 Vac; 208 Vac; 240 Vac; 277 Vac

Frequency: 60 Hz

Electrical Connections: 6 in. (150 mm) copper leadwires, suitable for connecting to aluminum wiring if approved CO/ALR solderless connectors are used.

Electrical Ratings: Non-inductive resistive 22A at 120/208/240 Vac. 19A at 277 Vac.

Dimensions: 4 1/2 in. high x 2 3/4 in. wide x 2 1/4 in. deep (115 mm high x 70 mm wide x 57 mm deep)

Sensor Element: Bimetal

Approvals, CSA: Listed: File No. LR1322

Approvals, Underwriters Laboratories Inc.: Listed; File No. E4436, Guide No. XAPX

Accessories:

272804A – Range Stop and Locking Screws Assembly

| Material Number | Color | Switching Action | Stages | Setting Temperature Range | Includes |
|-----------------|----------------|------------------|--------|---------------------------|--------------|
| T410A1013/U | Premier White® | SPST | 1 Heat | 40°F to 80°F | |
| T410A1047/U | Beige | SPST | 1 Heat | (5°C to 25°C) | |
| T410B1004/U | White | DPST | 1 Heat | 40°F to 80°F | Positive OFF |
| T410B1129/U | Premier White® | DPST | 1 Heat | (5°C to 25°C) | Positive OFF |

Electric Heat Thermostats

T498 Electric Heat Thermostats



Electric Heat Thermostats provide line voltage control of electric heating systems.

- Easy to install; color-coded leads.
- Include thermometer. Include long-lasting Micro Switch™ mechanism; makes on temperature fall.
- Rugged, plastic mounting base.
- Mount on standard 2 x 4 in. outlet box.
- Select models include extra knob decal for recalibration, if necessary.

Applications: Electric baseboards, convectors and fan forced heaters (resistive rated loads).

Mounting: Vertical

Accuracy: 1°F (2°C)

Differential Temperature: 3°F (2°C)

Ambient Temperature Range: 40°F to 85°F (5°C to 30°C)

Supply Voltage: 120 Vac; 208 Vac; 240 Vac; 277 Vac

Frequency: 60 Hz

Electrical Connections: 6 in. (150 mm) copper leadwires, suitable for connecting to aluminum wiring if approved CO/ALR solderless connectors are used.

Electrical Ratings: Non-inductive resistive 22A at 120/208/240 Vac. 19A at 277 Vac.

Dimensions: 4 9/16 in. high x 2 7/8 in. wide x 1 15/16 in. deep (116 mm high x 73 mm wide x 33 mm deep)

Sensor Element: Bimetal

Approvals, CSA: Listed: File No. LR1322

Approvals, Underwriters Laboratories Inc.: Listed; File No. E4436, Guide No. XAPX

Tradeline Value: Tradeline

Accessories:

272804A – Range Stop and Locking Screws Assembly

272823 – Blind Locking Cover and Range Stop Assembly

| Material Number | Color | Switching Action | Stages | Setting Temperature Range | Includes |
|-----------------|-------------------|------------------|--------|---------------------------|---|
| T498A1794/U | Brush gold finish | SPST | 1 Heat | (5°C to 25°C) | Thermometer, range stops and locking cover |
| T498A1927/U | Premier White® | SPST | 1 Heat | (5°C to 25°C) | |
| T498B1512/U | Brush gold finish | DPST | 1 Heat | 40°F to 80°F | Positive OFF, Range stops, locking cover and extra knob decal for recalibration |
| T498B1579/U | Brush gold finish | DPST | 1 Heat | | Positive OFF, thermometer |
| T498B1652/U | Brush gold finish | DPST | 1 Heat | (5°C to 25°C) | Positive OFF |
| T498B1678/U | Premier White® | DPST | 1 Heat | (5°C to 25°C) | Positive OFF |

T4398 High Performance Electric Heat Thermostats



High Performance Electric Heat Thermostats provide precise line voltage control of resistive-rated electric heating equipment.

- For control of resistive-rated baseboard electric heaters.
- Extremely sensitive to temperature changes.
- Replace virtually all standard wall-mounted line voltage thermostats.
- Color-coded leads allow easy installation.
- Include long-lasting Micro Switch™ mechanism.
- Rugged, plastic mounting base.
- Cover thermometer indicates room temperature.
- Well suited for upgrades and high-end new construction.
- Mounts directly on vertical 2 x 4 in. outlet box.

Applications: Electric baseboards, convectors and fan forced heaters (resistive rated loads).

Mounting: Vertical

Color: Premier White®

Accuracy: (1°C)

Differential Temperature: 2°F (1°C)

Ambient Temperature Range: 50°F to 80°F (10°C to 25°C)

Supply Voltage: 120 Vac; 208 Vac; 240 Vac; 277 Vac

Frequency: 60 Hz

Electrical Connections: 6 in. (150 mm) copper leadwires, suitable for connecting to aluminum wiring if approved CO/ALR solderless connectors are used.

Electrical Ratings: Non-inductive resistive 22A at 120/208/240 Vac. 19A at 277 Vac.

Dimensions: 4 1/2 in. high x 2 7/8 in. wide x 2 5/8 in. deep (115 mm high x 73 mm wide x 67 mm deep)

Sensor Element: Vapor filled dual diaphragm

Approvals, CSA: Listed: File No. LR1322

Approvals, Underwriters Laboratories Inc.: Listed; File No. E4436, Guide No. XAPX

Accessories:

272804A – Range Stop and Locking Screws Assembly

| Material Number | Switching Action | Stages | Setting Temperature Range | External Sensors Available | Tradeline Value | Includes |
|-----------------|------------------|--------|---------------------------|----------------------------|-----------------|--|
| T4398A1005/U | SPST | 1 Heat | (5°C to 25°C) | | | Thermometer |
| T4398A1013/U | SPST | 1 Heat | (10°C to 25°C) | | | |
| T4398A1021/U | SPST | 1 Heat | 50°F to 80°F | | Tradeline | Thermometer, range stops and locking cover screws |
| T4398B1003/U | DPST | 1 Heat | (10°C to 25°C) | Outdoor Sensor optional | | Thermometer, Positive OFF |
| T4398B1029/U | DPST | 1 Heat | 50°F to 80°F | Outdoor Sensor optional | Tradeline | Thermometer, range stops, locking cover screws, Positive Off |

Electric Heat Thermostats

EConnect™ Wireless Line Volt Thermostat



- Wireless Installation - eliminates opening walls for system or control upgrades
- Precise Temperature Control - on the wall where it belongs, for optimal sensing and comfort
- Electronic Programmable Thermostat - enables energy savings of up to 33%
- User-friendly, Plain-language Interface - easily adjust your comfort settings
- Compatible Wireless Accessories - for added comfort and convenience
- Connect up to 8 EIM's per line volt thermostat

Applications: Electric Heating; Baseboard heater; Convactor or Fan-forced Heater

Display Size: Thermostat 4.53 sq. in.

Mounting: Vertical

Color: Relay: Grey; Thermostat: White; Antenna: White or Light Almond

Programmability: 5-2 Day Program; 7 Day Program

Setting Temperature Range: Thermostat 41°F - 86°F (5°C - 30°C)

Differential Temperature: 1°F (0.5°C)

Operating Temperature Range: Thermostat: 32°F - 122°F; EIM: -4°F - 140°F (Thermostat: 0°C - 50°C; EIM: -20°C - 60°C)

Ambient Temperature Range: 32°F to 104°F (0°C to 40°C)

Operating Humidity Range (% RH): Thermostat: 5 to 90% RH, non-condensing; EIM: 5 to 95% RH, non-condensing

Power Method: Thermostat: Battery; EIM: Hardwired

Supply Voltage: 100 to 240 Vac

Frequency: 50 Hz; 60 Hz

Electrical Connections: 6 in. (150 mm) tinned copper lead wires

Electrical Ratings: Minimum Load: 0.4 A (resistive only) 100 W @ 240 Vac, 50 W @ 120 Vac; Maximum Load: 12.5 A (resistive only), 3000 W @ 240 Vac, 1500 W @ 120 Vac

Dimensions: Thermostat: 5.13 in. high x 3.22 in. wide x 1.14 in. Deep; Relay: 3.03 in. high x 2.49 in. wide x 1.28 in. Deep; Antenna: 2.89 in. high x 2.63 in. wide x 1.16 in. Deep (Thermostat: 130 mm high x 82 mm wide x 29 mm Deep; Relay: 73 mm high x 63 mm wide x 29 mm Deep; Antenna: 71 mm high x 62 mm wide x 33 mm Deep)

Sensor Element: Thermistor

Switch Type: Relay

Switching Action: SPST

External Sensors Available: Outdoor – C7089R1013, optional

Approvals, NEMA Standard: Energy Aware

Approvals, FCC: Approved

Approvals, Underwriters Laboratories Inc.: Approved

Comments: For French Only User interface, use YTA7210-AR-SPK. For English User Interface, use Honeywell YTL9160AR1000

Accessories:

C7089R1013 – Senses outdoor temperature and humidity to display on RedLINK™ enabled thermostats and accessories.

REM5000R1001 – Portable Comfort Control uses RedLINK™ to sense and control room temperature anywhere in the home. Works in both zoned and non-zoned applications.

THM6000R1002 – RedLINK Internet Gateway

| Material Number | Description | Includes |
|------------------|--|---|
| YTA7210-AR-SPK/U | Aube logo Wireless Programmable/Non-programmable Line Volt Thermostat kit. RedLINK™ Enabled. Up to 12.5 A. Kit includes Wireless EConnect™ 7-Day / 5-2 Programmable Thermostat and Electrical Heat Equipment Interface Module. French Interface. | ATM100-SPK Equipment Interface Module |
| YTL9160AR1000/U | Honeywell logo Wireless Programmable/Non-programmable Line Volt Thermostat kit. RedLINK™ Enabled. Up to 12.5 A. Kit includes Wireless EConnect™ 7-Day / 5-2 Programmable Thermostat and Electrical Heat Equipment Interface Module. English Interface. | TLM1110R1000 Equipment Interface Module |

| Material Number | Description | Used With | Includes |
|-----------------|---|---|--|
| ATM100-SPK/U | Aube logo EConnect™ Wireless Electrical Heat Equipment Interface Module. For Baseboards, convectors and fan-forced heaters up to 12.5 A. | YTA7210-AR-SPK EConnect™ thermostat kit | Aube Electrical Heat Equipment Interface, white and light almond antenna covers |
| TLM1110R1000/U | Honeywell logo RedLINK™ Enabled Electrical Heat Equipment Interface Module. For Baseboards, convectors and fan-forced heaters up to 12.5 A. | YTL9160AR1000 EConnect™ thermostat kit | Honeywell Electrical Heat Equipment Interface, white and light almond antenna covers |

TG510 Versaguard Universal Thermostat Guards



The Versaguard® Universal Thermostat Guards cover wall thermostats and protect against tampering, damage and unauthorized adjustment of thermostat settings.

- Unique double-wall construction provides extra measure of tamper-resistance.
- Used in both new and existing applications.
- Tamper-resistant lock; key cannot be removed unless in locked position.
- All models mount vertically or horizontally on wall or exposed junction box.
- Vents in guard base allow airflow for optimum thermostat performance.

Applications: Small Thermostat Guard

Accessories:

191990A – Replacement Keys (set of 2) for TG509, TG510, TG511 and TG51

| Material Number | Color | Description | Dimensions | Used With | Tradeline Value |
|-----------------|---|---|--|--------------------------------|-----------------|
| TG510A1001/U | Ring Base – clear acrylic; Wallplate – Opaque Polystyrene | Small universal thermostat guard Clear cover, clear base opaque wallplate Fits T87 RS TX400 | Outside – Height: 5 7/8 in., Width: 5 7/8 in., Depth: 2 1/2 in.; Inside – Height: 4 7/16 in., Width: 4 7/16 in. (Outside – Height: 149 mm, Width: 149 mm, Depth: 64 mm; Inside – Height: 113 mm, Width: 113 mm) | T87 and others of similar size | Tradeline |
| TG510D1005/U | Painted metal; Ring Base – opaque polystyrene; Wallplate – Opaque Polystyrene | Small Universal Thermostat Guard with Beige painted steel cover, opaque ring base and wallplate | Outside – Height: 5 7/8 in., Width: 5 11/16 in., Depth: 2 7/16 in.; Inside – Height: 4 7/16 in., Width: 4 7/16 in. (Outside – Height: 149 mm, Width: 144 mm, Depth: 62 mm; Inside – Height: 113 mm, Width: 113 mm) | T87 and others of similar size | |

Thermostat Guards

TG511 Versaguard Universal Thermostat Guards



The Versaguard® Universal Thermostat Guards cover wall thermostats and protect against tampering, damage and unauthorized adjustment of thermostat settings.

- Unique double-wall construction provides extra measure of tamper-resistance.
- Used in both new and existing applications.
- Tamper-resistant lock; key cannot be removed unless in locked position.

- All models mount vertically or horizontally on wall or exposed junction box.
- Vents in guard base allow airflow for optimum thermostat performance.

Applications: Medium Thermostat Guard

Accessories:

191990A – Replacement Keys (set of 2) for TG509, TG510, TG511 and TG51

| Material Number | Color | Description | Dimensions | Used With | Tradeline Value |
|-----------------|---|---|---|---|-----------------|
| TG511A1000/U | Ring Base – clear acrylic; Wallplate – Opaque Polystyrene | Medium Universal Thermostat Guard with clear cover and base, and opaque wallplate Fits T822, T834, T8034, T841, T874 with Q674, WR1F46, and others | Outside – Height: 6 1/2 in., Width: 7 1/2 in., Depth: 2 15/16 in.; Inside – Height: 5 1/16 in., Width: 6 1/16 in. (Outside – Height: 165 mm, Width: 191 mm, Depth: 75 mm; Inside – Height: 129 mm, Width: 154 mm) | TH3000 Series, TH4000 Series, TH5000 Series, TH6000 Series, TH8000 Series, Others thermostats of similar size | Tradeline |
| TG511A1018/U | Ring Base – clear acrylic; Wallplate – Opaque Polystyrene | Medium Universal Thermostat Guard with clear cover and base, and opaque wallplate Fits T822, T834, T8034, T841, T874 with Q674, WR1F46, and others | Outside – Height: 6 1/2 in., Width: 7 1/2 in., Depth: 2 15/16 in.; Inside – Height: 5 1/16 in., Width: 6 1/16 in. (Outside – Height: 165 mm, Width: 191 mm, Depth: 75 mm; Inside – Height: 129 mm, Width: 154 mm) | T874/Q674, Others of similar size | |
| TG511B1008/U | Ring Base – opaque polystyrene; Wallplate – Opaque Polystyrene | Medium Universal Thermostat Guard with opaque cover, base and wallplate Fits T822, T834, T8034, T841, T874 with Q674, and others | Outside – Height: 6 1/2 in., Width: 7 1/2 in., Depth: 2 15/16 in.; Inside – Height: 5 1/16 in., Width: 6 1/16 in. (Outside – Height: 165 mm, Width: 191 mm, Depth: 75 mm; Inside – Height: 129 mm, Width: 154 mm) | T874/Q674, Others of similar size | Tradeline |
| TG511D1004/U | Painted metal; Ring Base – opaque polystyrene; Wallplate – Opaque Polystyrene | Medium Universal Thermostat Guard with Beige painted steel cover, opaque ring base and wallplate Fits T822, T834, T8034, T841, T874 with Q674, and others | Outside – Height: 6 1/2 in., Width: 7 3/8 in., Depth: 2 7/8 in.; Inside – Height: 5 1/16 in., Width: 6 1/16 in. (Outside – Height: 165 mm, Width: 187 mm, Depth: 73 mm; Inside – Height: 129 mm, Width: 154 mm) | TH3000 Series, TH4000 Series, TH5000 Series, TH6000 Series, TH8000 Series, Others thermostats of similar size | |

TG512 Versaguard Universal Thermostat Guards



The Versaguard® Universal Thermostat Guards cover wall thermostats and protect against tampering, damage and unauthorized adjustment of thermostat settings.

- Unique double-wall construction provides extra measure of tamper-resistance.
- Used in both new and existing applications.
- Tamper-resistant lock; key cannot be removed unless in locked position.
- All models mount vertically or horizontally on wall or exposed junction box.
- Vents in guard base allow airflow for optimum thermostat performance.

Applications: Large Thermostat Guard

Accessories:

191990A – Replacement Keys (set of 2) for TG509, TG510, TG511 and TG51




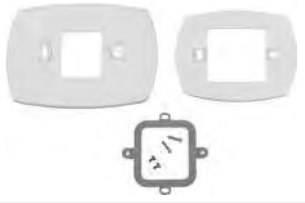




| Material Number | Color | Description | Dimensions | Used With | Tradeline Value |
|-----------------|---|---|---|---|-----------------|
| TG512A1009/U | Ring Base – clear plastic; Wallplate – Opaque Polystyrene | Large Universal Thermostat Guard with clear cover and base, and opaque wallplate Fits T8082, T8085, T8600, and most electronic thermostats | Outside – Height: 7 1/4 in., Width: 9 3/4 in., Depth: 3 3/8 in.; Inside – Height: 5 7/8 in., Width: 8 3/8 in. (Outside – Height: 184 mm, Width: 248 mm, Depth: 86 mm; Inside – Height: 149 mm, Width: 213 mm) | TH5000 Series, TH6000 Series, TH8000 Series, Others thermostats of similar size | Tradeline |
| TG512B1007/U | Ring Base – opaque polystyrene; Wallplate – Opaque Polystyrene | Large Universal Thermostat Guard with opaque cover, base, and wallplate Fits T8082, T8085, T8600, and most electronic thermostats | Outside – Height: 7 1/4 in., Width: 9 3/4 in., Depth: 3 3/8 in.; Inside – Height: 5 7/8 in., Width: 8 3/8 in. (Outside – Height: 184 mm, Width: 248 mm, Depth: 86 mm; Inside – Height: 149 mm, Width: 213 mm) | T8600, T8090, Others of similar size | Tradeline |
| TG512D1003/U | Painted metal; Ring Base – opaque polystyrene; Wallplate – Opaque Polystyrene | Large Universal Thermostat Guard with Beige painted steel cover, opaque ring base and wallplate Fits T8082, T8085, T8600, and most electronic thermostats | Outside – Height: 7 1/4 in., Width: 9 5/8 in., Depth: 3 1/4 in.; Inside – Height: 5 7/8 in., Width: 8 3/8 in. (Outside – Height: 184 mm, Width: 244 mm, Depth: 83 mm; Inside – Height: 149 mm, Width: 213 mm) | TH5000 Series, TH6000 Series, TH8000 Series, Others thermostats of similar size | |

Thermostat Guard Parts






| Material Number | Description | Used With |
|-----------------|---------------------------------------|-----------|
| 194560A/U | Replacement Keys (set of 2) for TG501 | TG501 |

Thermostat Parts and Accessories

Parts and Accessories

| Material Number | Color | Description | Used With | Includes | |
|-----------------|----------------|--|---|---|---|
| 203280AR/U | Taupe | Nameplate | T7512 | | |
| 272876/H | White | White Replacement Cover for T498 | T498 | | |
| 32003796-001/U | Premier White® | Premier White® coverplate 7 7/8 in. (200 mm) x 5 1/2 in. (140 mm) - TH8XXX | TH8000 VisionPRO® Series Thermostats | |  |
| 40426/U | White | Wall plate for Venmar 40415 or Broan 40425 controls to a junction box or cover marks | 40415; 40425 | 1 Metal mounting plate; 1 Plastic cover plate; 4 screws | |
| 50000066-001/U | | Decorative Coverplate for T87K, T87N and T8775 | T87K, T87N, T8775 | |  |
| 50000951-001/U | Premier White® | Replacement Battery Holder for FocusPRO TH5110 Thermostat | FocusPRO® TH5110 Thermostat | |  |
| 50001137-001/U | Premier White® | Coverplate assembly for use with FocusPRO® TH5110 thermostat. Includes one small and one medium coverplate, bracket for j-boxes and mounting hardware. | FocusPRO® TH5110 Thermostat | Includes one small cover plate (4 5/16 in. x 5 1/2 in.) and one medium coverplate (5 in. x 6 7/8 in.), bracket for j-boxes and mounting hardware. |  |
| 50002883-001/U | Premier White® | Coverplate assembly for use with FocusPRO® 6000/5000 and PRO 4000/3000 thermostats. Includes one medium and one large coverplate, bracket for j-boxes and mounting hardware. Medium coverplate is 5 in. x 6 7/8 in. Large coverplate is 6 in. x 8 5/16 in. | FocusPRO® 6000, 5000; PRO 4000, 3000 | |  |
| 50005625-001/U | Premier White® | Premier White® Coverplate Assembly includes 4 3/4 in. (120mm) x 4 3/4 in. (120mm) coverplate, bracket for junction box mounting, mounting screws. | T812 and TS812 Thermostats | |  |
| 50007072-001/U | Premier White® | Replacement Battery Holder for FocusPRO TH5220, TH5320, TH6110, TH6220, and TH6320 Thermostat | FocusPRO® TH5220, TH5320, TH6110, TH6220, and TH6320 Thermostat | |  |
| 50007297-001/U | Premier White® | 12 pack of small coverplates for use with FocusPRO® TH5110 thermostat. Small coverplate is 4 5/16 in. x 5 1/2 in. | FocusPRO® TH5110 Thermostat | |  |

Thermostat Parts and Accessories

| Material Number | Color | Description | Used With | Includes | |
|-----------------|----------------|--|---|------------------------|---|
| 50007298-001/U | Premier White® | 12 pack of medium coverplates for use with FocusPRO® 6000/5000 and PRO 4000/3000 thermostats. Medium coverplate is 5 in. x 6 7/8 in. | FocusPRO® 6000, 5000; PRO 4000, 3000 | |  |
| 50010944-001/U | | Range Stop Assembly for T87K, T87N, includes: range stops for degree °F and °C with screws | The Round® T87K and T87N Mercury Free Thermostats | Range stops and screws |  |
| 50022893-001/U | Premier White® | White Coverplate 5 3/4 in. (146 mm) x 7 3/8 in. (187mm) | PRO TH1000 and TH2000 Series Thermostats | |  |
| 50028399-001/U | Arctic White | Premier White® Coverplate for Prestige Thermostats 7 7/8 in. (200 mm) x 5 1/2 in. (140 mm) | THX9000 Series Thermostats | |  |
| THP2100A1004/U | Premier White® | Replacement Battery Tray for UtilityPRO Thermostat | UtilityPRO T5060F, TH8320UP | | |
| THP2400A1019/U | Arctic White | Coverplate assembly for use with the RedLINK™ VisionPRO®. Includes a coverplate, bracket for j-boxes and mounting hardware. Coverplate is 5-3/4 in. x 6-5/32 in. | VisionPRO® 8000 with RedLINK™ technology | | |
| THP9045A1023/U | Gray | WireSaver | THX9000 Series Thermostats | |  |

Prestige® 2-Wire IAQ Parts and Accessories

| Material Number | Color | Description | Used With |
|-----------------|-------|---|--|
| THP2400A1027B/U | Black | Black Coverplate assembly for use with the Prestige® 2-Wire IAQ Thermostat. Includes one small and one large black coverplate, bracket for j-boxes and mounting hardware. Small coverplate is 4-21/64 in. x 5-33/64 in. Large coverplate is 5 in. x 6-7/8 in. | THX9421R5021BB Prestige® 2-Wire IAQ Thermostat |
| THP2400A1027G/U | Gray | Gray Coverplate assembly for use with the Prestige® 2-Wire IAQ Thermostats. Includes one small and one large gray coverplate, bracket for j-boxes and mounting hardware. Small coverplate is 4-21/64 in. x 5-33/64 in. Large coverplate is 5 in. x 6-7/8 in. | THX9421R5021WG Prestige® 2-Wire IAQ Thermostat |
| THP2400A1027W/U | White | White Coverplate assembly for use with the Prestige® 2-Wire IAQ Thermostat. Includes one small and one large white coverplate, bracket for j-boxes and mounting hardware. Small coverplate is 4-21/64 in. x 5-33/64 in. Large coverplate is 5 in. x 6-7/8 in. | THX9421R5021WW Prestige® 2-Wire IAQ Thermostat |

TrueZONE Zoning Panels and Kits

TrueZONE® Panel



TrueZONE® HZ432 Panel for conventional, heat pump or dual fuel applications expandable up to 32 zones (3H/2C).

- Intuitive Installer setup. Easy-to-follow, digital display uses real language to guide installer through four easy steps
- Standard Checkout Procedure
- Robust Push Terminals
- Variable-Speed Fan Control
- Discharge Air Temperature Staging
- Advanced Dual-Fuel Operation
- Use with TAZ-4 Add-A-Zone to expand to 32 zones
- RedLINK™ enabled for up to 4 wireless zones when used with THM4000R1000 Wireless Adapter
- Controls up to 3 Heat/2 Cool conventional or heat pump
- Controls up to two stages compressor and two stages fossil fuel in dual fuel mode

Applications: Zoning

Comments: Intuitive advanced setup with screen

Auto Changeover: Yes

Voltage: 24V

Compatible with Sensor: Discharge Air Temperature Sensor

Resettable Fuse: Yes

Individual Zone Fan Control: Yes

Used With: Optional RedLINK wireless zoning Adapter (THM4000)



| Material Number | Description | Stages | Number of Zones | LEDs | Heat Pump Compatible | Emergency Heat Switch | Includes |
|-----------------|--|---------------|--------------------|------|----------------------|-----------------------|--|
| HZ432/U | This 4-zone, expandable, TrueZONE® HZ432 panel is for 3 heat/2 cool stage applications | 3 Heat/2 Cool | 4 Zone, Expandable | Yes | Yes | Yes | |
| HZ432K/U | This 4-zone, expandable, TrueZONE® HZ432 panel is for 2 heat/2 cool stage applications | 3 Heat/2 Cool | 4 Zone, Expandable | Yes | Yes | Yes | HZ432 Zone Control Panel, AT140 Transformer, C7735A Discharge Air Temperature Sensor |

TrueZONE® Panel



TrueZONE® HZ322 Panel for conventional and heat pump applications up to 3 zones (2H/2C).

- Intuitive Installer setup. Easy-to-follow, digital display uses real language to guide installer through four easy steps.
- Standard Checkout Procedure
- Robust Push Terminals
- Common-Sense LEDs
- Clean, Professional Installation
- Smaller Footprint
- Variable-Speed Fan Control
- Discharge Air Temperature Staging
- RedLINK™ enabled for wireless operation when used with THM4000R1000 wireless adapter
- Controls up to 2 Heat/2 Cool conventional or 2 Heat/1 Cool heat pump

Applications: Zoning

Comments: Intuitive advanced setup with screen

Auto Changeover: Yes

Voltage: 24V

Compatible with Sensor: Discharge Air Temperature Sensor

Resettable Fuse: Yes

Individual Zone Fan Control: Yes

Used With: Optional RedLINK wireless zoning Adapter (THM4000)



| Material Number | Description | Stages | Number of Zones | LEDs | Heat Pump Compatible | Emergency Heat Switch | Includes |
|-----------------|--|---------------|-----------------|------|----------------------|-----------------------|--|
| HZ322/U | This 3-zone, TrueZONE® HZ322 panel is for 2 heat/2 cool stage applications | 2 Heat/2 Cool | 3 Zone | Yes | Yes | Yes | |
| HZ322K/U | This 3-zone, 2 heat/2 cool stage, TrueZONE® kit includes DATS, transformer and HZ322 panel | 2 Heat/2 Cool | 3 Zone | Yes | Yes | Yes | HZ322 Zone Control Panel, AT140 Transformer, C7735A Discharge Air Temperature Sensor |

TrueZONE® Panel



TrueZONE® HZ311 Panel for conventional, single stage applications up to 3 zones (1H/1C).

- Robust Push Terminals
- Common-Sense LEDs
- Clean, Professional Installation
- Smaller Footprint
- Variable-Speed Fan Control

Applications: Zoning
Comments: No programming required
Auto Changeover: Yes
Voltage: 24V

Compatible with Sensor: Discharge Air Temperature Sensor
Resettable Fuse: Yes
Individual Zone Fan Control: Yes

| Material Number | Description | Stages | Number of Zones | LEDs | Heat Pump Compatible | Emergency Heat Switch | Includes |
|-----------------|--|---------------|-----------------|------|----------------------|-----------------------|--|
| HZ311/U | This 3-zone, TrueZONE® HZ311 panel is for 1 heat/1 cool stage applications | 1 Heat/1 Cool | 3 Zone | Yes | No | No | |
| HZ311K/U | This 3-zone, 1 heat/1 cool stage, TrueZONE® kit includes DATS, transformer and HZ311 panel | 1 Heat/1 Cool | 3 Zone | Yes | No | No | HZ311 Zone Control Panel, AT140 Transformer, C7735A Discharge Air Temperature Sensor |

TrueZONE® Panel



TrueZONE® HZ221 Panel for single stage heat pumps with auxiliary heat applications up to two zones.

- Robust Push Terminals
- Common-Sense LEDs
- Clean, Professional Installation
- Smaller Footprint
- Variable-Speed Fan Control

Applications: Zoning
Comments: No programming required
Auto Changeover: Yes
Voltage: 24V

Compatible with Sensor: Discharge Air Temperature Sensor
Resettable Fuse: Yes
Individual Zone Fan Control: Yes

| Material Number | Description | Stages | Number of Zones | LEDs | Heat Pump Compatible | Emergency Heat Switch | Includes |
|-----------------|---|---------------------------------------|-----------------|------|----------------------|-----------------------|--|
| HZ221/U | This 2-zone, TrueZONE® HZ221 zoning panel is for 2heat/1cool stage applications | 1 stage heat pump with auxiliary heat | 2 Zone | Yes | Yes/Heat Pump Only | Yes | |
| HZ221K/U | This 2-zone, 2 heat/1 cool stage TrueZONE® kit includes DATS, transformer and HZ221 panel | 1 stage heat pump with auxiliary heat | 2 Zone | Yes | Yes/Heat Pump Only | Yes | HZ221 Zone Control Panel, AT140 Transformer, C7735A Discharge Air Temperature Sensor |

TrueZONE Zoning Panels and Kits

TotalZONE™ Add-A-Zone (TAZ) Panel



Zone panel used to add zones to HZ432.

- Used with HZ432 TrueZONE Panel to expand number of zones.
- Use multiple TAZ-4 Control Panels to control up to 32 zones.

Applications: Zoning - add a zone panel (4-zone)

Auto Changeover: Yes

Voltage: 24V






Compatible with Sensor: Discharge Air Temperature Sensor

Resettable Fuse: Yes

Individual Zone Fan Control: Yes

| Material Number | Description | Stages | Number of Zones | LEDs | Heat Pump Compatible | Emergency Heat Switch |
|-----------------|---|---------------|-----------------|------|----------------------|-----------------------|
| TAZ-4/U | This 4-zone, TotalZONE® Add-A-Zone (TAZ) zone control panel is for 3 heat/2 cool stage applications | 3 Heat/2 Cool | 4 Zone | Yes | Yes | No |

Zone Control Panel Accessories

| Material Number | Description | |
|-----------------|---|---|
| FPC/U | The freeze protection control (FPC) breaks the Y circuit to a compressor below 36 degrees F and remakes at 46 degrees F |  |
| MSTN/U | MSTN is a power open, power close damper actuator |  |
| PIRR/U | The plug-in replacement relay (PIRR) is used with legacy zone control panels, including MM-2, MM-3, MABS-3, and MARK-V |  |
| SDCR/U | SDCR is a slave damper control relay |  |
| SPC/U | The static pressure control (SPC) is used with MARD for bypass control |  |

Bypass Dampers

TrueZONE Bypass Damper (CPRD)



The TrueZONE® Bypass constant pressure regulating damper (CPRD) is a round static pressure relief damper. It is used in forced-air bypass applications to relieve excess static pressure when some of the zone dampers are closed.

- Quick installation and setup
- No weight to adjust
- Can be installed in any orientation
- Engineered to provide constant system pressure regardless of changes in zones ceiling or blower speed

Applications: Constant Pressure Regulating (Bypass) Damper

Damper Type: Bypass

Shape: Round

Motor or Actuator Mounting: Quick connect regulator

Motor: Calibrated spring tension regulator

Motor Timing: Not Applicable

Voltage: Not Applicable

Wires to Motor: None

| Material Number | Size | Description |
|-----------------|-----------------------------------|--|
| CPRD8/U | 8 in. Diameter (203 mm diameter) | 8 in. Round Constant Pressure Regulating Damper |
| CPRD10/U | 10 in. Diameter (254 mm diameter) | 10 in. Round Constant Pressure Regulating Damper |
| CPRD12/U | 12 in. Diameter (305 mm diameter) | 12 in. Round Constant Pressure Regulating Damper |
| CPRD14/U | 14 in. Diameter (356 mm diameter) | 14 in. Round Constant Pressure Regulating Damper |

TrueZONE Bypass Damper Replacement Regulator



The TrueZONE® Bypass constant pressure regulating damper (CPRD) is a round static pressure relief damper. It is used in forced-air bypass applications to relieve excess static pressure when some of the zone dampers are closed.

- Quick installation and setup
- No weight to adjust
- Can be installed in any orientation
- Engineered to provide constant system pressure regardless of changes in zones ceiling or blower speed

Motor or Actuator Mounting: Quick connect regulator

Motor: Calibrated spring tension regulator

Motor Timing: Not Applicable

Voltage: Not Applicable

Wires to Motor: None

| Material Number | Applications | Description |
|-----------------|--------------------------------|--|
| CPR8/U | Replacement regulator for CPRD | 8 in. TrueZONE Bypass replacement regulator |
| CPR10/U | Replacement regulator for CPRD | 10 in. TrueZONE Bypass replacement regulator |
| CPR12/U | Replacement regulator for CPRD | 12 in. TrueZONE Bypass replacement regulator |
| CPR14/U | Replacement regulator for CPRD | 14 in. TrueZONE Bypass replacement regulator |

SPRD Damper Replacement Parts

| Material Number | Description |
|-----------------|---|
| 32005981-004/U | SPRD Counterweight Assembly (includes arm, coupling, and weight). Used with SPRD10, 12, 14, 16, and SPRD12x12 and 20x12 |

Automatic Round Damper (ARD)



Honeywell Automatic Round Damper power-close, spring-open models ensure low leakage while controlling circulating air in heating, cooling and ventilation systems.

- Features galvanized steel with single-blade damper, which closes off tightly against gasket for minimal leakage
- Designated as power closed/spring return open damper for use with Honeywell Zoning Systems
- Can be field-converted when used as an independent zone or for fresh air intake
- Rated to operate up to 1-inch wc
- Available in 5- to 10-inch, 12-, 14-, 16-, and 18-inch diameter sizes

Applications: Zone Damper

Motor Timing: 30 seconds power open/10 seconds spring return

Voltage: 24V

Wires to Motor: Terminals: M1-Power; M6 Common; M4 (optional)-LED indication

Other Motor Information: Simplified range stops

| Material Number | Shape | Size | Motor or Actuator Mounting | Damper Type | Motor | Description |
|-----------------|-------|-----------------------------------|----------------------------|---------------------|---------------------------|--|
| ARD5TZ/U | Round | 5 in. | Side or Top | Single-blade, round | Power closed, spring open | 5 in. Round Automatic Damper, Spring Return |
| ARD6TZ/U | Round | 6 in. diameter (152 mm diameter) | Side or Top | Single-blade, round | Power closed, spring open | 6 in. Round Automatic Damper, Spring Return |
| ARD7TZ/U | Round | 7 in. | Side or Top | Single-blade, round | Power closed, spring open | 7 in. Round Automatic Damper, Spring Return |
| ARD8TZ/U | Round | 8 in. diameter (203 mm diameter) | Side or Top | Single-blade, round | Power closed, spring open | 8 in. Round Automatic Damper, Spring Return |
| ARD9TZ/U | Round | 9 in. | Side or Top | Single-blade, round | Power closed, spring open | 9 in. Round Automatic Damper, Spring Return |
| ARD10TZ/U | Round | 10 in. diameter (254 mm diameter) | Side or Top | Single-blade, round | Power closed, spring open | 10 in. Round Automatic Damper, Spring Return |
| ARD12TZ/U | Round | 12 in. diameter (305 mm diameter) | Side or Top | Single-blade, round | Power closed, spring open | 12 in. Round Automatic Damper, Spring Return |
| ARD14TZ/U | Round | 14 in. diameter (356 mm diameter) | Side or Top | Single-blade, round | Power closed, spring open | 14 in. Round Automatic Damper, Spring Return |
| ARD16TZ/U | Round | 16 in. | Side or Top | Single-blade, round | Power closed, spring open | 16 in. Round Automatic Damper, Spring Return |
| ARD18TZ/U | Round | 18 in. | Side or Top | Single-blade, round | Power closed, spring open | 18 in. Round Automatic Damper, Spring Return |
| ARD20TZ/U | Round | 20 in. | Side or Top | | Power closed, spring open | 20 in. Round Automatic Damper, Spring Return |

EARD TrueZone Fresh Air Damper



The EARD is a round damper with a 24 Vac powered-open/spring-closed motor. It is used for fresh air intake for ventilation or for combustion makeup air.

- Adjustable damper position range stops.
- Single-blade damper.
- Shipped as power open/spring return closed damper.
- Galvanized steel.
- Quiet operation.
- Can be field-converted to power closed/spring return open damper.
- Blade closes off tightly against gasket for minimal leakage.
- Male (crimped) and female (uncrimped) ends to connect to any rigid or flexible round duct.

Shape: Round

Used With: Honeywell Ventilation Systems

Motor Timing: 30 seconds power closed/10 seconds spring return

Voltage: 24V

Wires to Motor: Terminals: M1-Power; M6 Common

Other Motor Information: Simplified range stops

| Material Number | Application | Size | Motor or Actuator Mounting | Damper Type | Motor | Description |
|-----------------|--------------------|----------------------------------|----------------------------|---------------------|---------------------------|---|
| EARD6TZ/U | Zone Damper | 6 in. diameter (152 mm diameter) | Side or Top | Single-blade, round | Power open, spring closed | 6 in. Round Fresh Air Damper, Spring Return |
| EARD8TZ/U | Ventilation Damper | 8 in. diameter (203 mm diameter) | Side or Top | Single-blade, round | Power open, spring closed | 8 in. Round Fresh Air Damper |

Zone Control Dampers

Modulating Automatic Round Dampers (MARD)



The MARD series damper is a power opened/closed, zone or bypass damper. It is usually used in light commercial applications on systems larger than 5 tons that do not exceed 2 in. W.C. at the damper, but may be used in any residential system as well.

- Uses 90-second open to closed motor.
- Can be used as a zone damper.
- ML6161 is replacement motor.
- Available in 5, 6, 7, 8, 9, 10, 12, 14, 16, and 18 in. diameter sizes.
- Used with Static Pressure Control (SPC) for bypass applications.

Applications: Motorized Bypass or Zone Damper
Motor Timing: 90 seconds

Voltage: 24V
Wires to Motor: 3

| Material Number | Shape | Size | Motor or Actuator Mounting | Damper Type | Motor | Description |
|-----------------|-------|--------------------------------------|----------------------------|---------------------|----------|--|
| MARD6/U | Round | 6 in. | Side or Top | | Floating | 6 in. Round Modulating Power Open, Power Close Damper |
| MARD8/U | Round | 8 in. | Side or Top | | Floating | 8 in. Round Modulating Power Open, Power Close Damper |
| MARD10/U | Round | 10 in. diameter (254 mm diameter) | Side or Top | Single-blade, round | Floating | 10 in. Round Modulating Power Open, Power Close Damper |
| MARD12/U | Round | 12 in. diameter (305 mm diameter) | Side or Top | Single-blade, round | Floating | 12 in. Round Modulating Power Open, Power Close Damper |
| MARD14/U | Round | 14 in. diameter (356 mm diameter) | Side or Top | Single-blade, round | Floating | 14 in. Round Modulating Power Open, Power Close Damper |
| MARD16/U | Round | 16 in. diameter (406 mm diameter) | Side or Top | Single-blade, round | Floating | 16 in. Round Modulating Power Open, Power Close Damper |
| MARD18/U | Round | 18 in. | Side or Top | | Floating | 18 in. Round Modulating Power Open, Power Close Damper |

Retrofit Round Damper (RRD)



The RRD is a round damper that is easily inserted into rigid round ducts for retrofit zoning in forced air heating and cooling systems. This power open, power closed damper actuator is available in four sizes for 5 in., 6 in., 7 in., and 8 in. ducts.

- Easy slide-in installation
- 2.5 VA allows for many dampers on one zone
- Available in 4 sizes to fit most rigid round branch ducts
- Quiet, long life motor automatically shuts itself off in full open and closed positions
- Gaskets around blade and under motor housing for low internal leakage and very low external leakage
- Range stops with easy adjustment from top of motor
- Easy to see and reliable mechanical blade position indicator
- Easy to hook up with conventional thermostat wire
- Simple manual blade positioning with push button gear release

Applications: Zone Damper
Motor Timing: 90 seconds
Voltage: 24V

Wires to Motor: 3
Other Motor Information: Range stops

| Material Number | Shape | Size | Motor or Actuator Mounting | Damper Type | Motor | Description |
|-----------------|-------|--------|-----------------------------------|-------------|------------------------|-----------------------------|
| RRD5/U | Round | 5 inch | Direct connection to damper shaft | Retrofit | Power open/Power close | 5 in. Retrofit Round Damper |
| RRD6/U | Round | 6 inch | Direct connection to damper shaft | Retrofit | Power open/Power close | 6 in. Retrofit Round Damper |
| RRD7/U | Round | 7 inch | Direct connection to damper shaft | Retrofit | Power open/Power close | 7 in. Retrofit Round Damper |
| RRD8/U | Round | 8 inch | Direct connection to damper shaft | Retrofit | Power open/Power close | 8 in. Retrofit Round Damper |

ZD Series Dampers



The ZD is a power close and spring open damper. It has a 24-volt motor used to control circulating air in HVAC systems and used when a normally-open damper is required. The ZD is typically used with the TrueZONE and other electronic zoning systems.

- Mechanical visual position indicator for damper status.
- Solid construction using extruded aluminum frame and blades.
- Parallel blade design for low leakage performance.
- Simple, easy-to-wire, two-wire installation.
- Reliable, strong, 24-volt spring-return motor.
- Fail-safe, normally open operation.
- Ordering Instructions: Order ZD (dimension 1) x (dimension 2). (Motor is always mounted on dimension 2 side.) For example, ZD10x8 is a 10 in. x 8 in. damper with the motor on the 8 in. side; but a ZD8x10 is an 8 in. x 10 in. damper that has the motor on the 10 in. side.
- Damper can be installed in any orientation (mounting side can be on either the bottom or the side of the duct).

Applications: Parallel Blade Damper

Blade Action: Parallel

Motor Timing: 30 seconds power open/10 seconds spring return

Voltage: 24V

Wires to Motor: Terminals: M1-Power; M6 Common; M4 (optional)-LED indication

Other Motor Information: Simplified range stops

| Material Number | Shape | Size | Motor or Actuator Mounting | Motor | Used With |
|-----------------|-------------|-----------------|----------------------------|---------------------------|--------------------------|
| ZD10X10TZ/U | Square | 10 in. x 10 in. | Side | power closed, spring open | Honeywell zoning systems |
| ZD10X12TZ/U | Rectangular | 10 in. x 12 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD10X14TZ/U | Rectangular | 10 in. x 14 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD10X16TZ/U | Rectangular | 10 in. x 16 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD10X18TZ/U | Rectangular | 10 in. x 18 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD10X20TZ/U | Rectangular | 10 in. x 20 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD10X22TZ/U | Rectangular | 10 in. x 22 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD10X24TZ/U | Rectangular | 10 in. x 24 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD10X26TZ/U | Rectangular | 10 in. x 26 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD10X28TZ/U | Rectangular | 10 in. x 28 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD10X6TZ/U | Rectangular | 10 in. x 6 in. | Side | power closed, spring open | Honeywell zoning systems |
| ZD10X8TZ/U | Rectangular | 10 in. x 8 in. | Side | power closed, spring open | Honeywell zoning systems |
| ZD12X10TZ/U | Rectangular | 12 in. x 10 in. | Side | power closed, spring open | Honeywell zoning systems |
| ZD12X12TZ/U | Square | 12 in. x 12 in. | Side | power closed, spring open | Honeywell zoning systems |
| ZD12X14TZ/U | Rectangular | 12 in. x 14 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD12X16TZ/U | Rectangular | 12 in. x 16 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD12X18TZ/U | Rectangular | 12 in. x 18 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD12X20TZ/U | Rectangular | 12 in. x 20 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD12X22TZ/U | Rectangular | 12 in. x 22 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD12X24TZ/U | Rectangular | 12 in. x 24 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD12X26TZ/U | Rectangular | 12 in. x 26 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD12X28TZ/U | Rectangular | 12 in. x 28 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD12X6TZ/U | Rectangular | 12 in. x 6 in. | Side | power closed, spring open | Honeywell zoning systems |
| ZD12X8TZ/U | Rectangular | 12 in. x 8 in. | Side | power closed, spring open | Honeywell zoning systems |
| ZD14X10TZ/U | Rectangular | 14 in. x 10 in. | Side | power closed, spring open | Honeywell zoning systems |
| ZD14X12TZ/U | Rectangular | 14 in. x 12 in. | Side | power closed, spring open | Honeywell zoning systems |
| ZD14X14TZ/U | Square | 14 in. x 14 in. | Side | power closed, spring open | Honeywell zoning systems |
| ZD14X16TZ/U | Rectangular | 14 in. x 16 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD14X18TZ/U | Rectangular | 14 in. x 18 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD14X20TZ/U | Rectangular | 14 in. x 20 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD14X22TZ/U | Rectangular | 14 in. x 22 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD14X24TZ/U | Rectangular | 14 in. x 24 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD14X26TZ/U | Rectangular | 14 in. x 26 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD14X28TZ/U | Rectangular | 14 in. x 28 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD14X6TZ/U | Rectangular | 14 in. x 6 in. | Side | power closed, spring open | Honeywell zoning systems |
| ZD14X8TZ/U | Rectangular | 14 in. x 8 in. | Side | power closed, spring open | Honeywell zoning systems |
| ZD16X10TZ/U | Rectangular | 16 in. x 10 in. | Side | power closed, spring open | Honeywell zoning systems |
| ZD16X12TZ/U | Rectangular | 16 in. x 12 in. | Side | power closed, spring open | Honeywell zoning systems |
| ZD16X14TZ/U | Rectangular | 16 in. x 14 in. | Side | power closed, spring open | Honeywell zoning systems |
| ZD16X16TZ/U | Square | 16 in. x 16 in. | Side | power closed, spring open | Honeywell zoning systems |
| ZD16X18TZ/U | Rectangular | 16 in. x 18 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD16X20TZ/U | Rectangular | 16 in. x 20 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD16X22TZ/U | Rectangular | 16 in. x 22 in. | Bottom | power closed, spring open | Honeywell zoning systems |

Zone Control Dampers

| Material Number | Shape | Size | Motor or Actuator Mounting | Motor | Used With |
|-----------------|-------------|----------------|----------------------------|---------------------------|--------------------------|
| ZD6X18TZ/U | Rectangular | 6 in. x 18 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD6X20TZ/U | Rectangular | 6 in. x 20 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD6X22TZ/U | Rectangular | 6 in. x 22 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD6X24TZ/U | Rectangular | 6 in. x 24 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD6X28TZ/U | Rectangular | 6 in. x 28 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD6X6TZ/U | Square | 6 in. x 6 in. | Side | power closed, spring open | Honeywell zoning systems |
| ZD6X8TZ/U | Rectangular | 6 in. x 8 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD8X10TZ/U | Rectangular | 8 in. x 10 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD8X12TZ/U | Rectangular | 8 in. x 12 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD8X14TZ/U | Rectangular | 8 in. x 14 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD8X16TZ/U | Rectangular | 8 in. x 16 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD8X18TZ/U | Rectangular | 8 in. x 18 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD8X20TZ/U | Rectangular | 8 in. x 20 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD8X22TZ/U | Rectangular | 8 in. x 22 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD8X24TZ/U | Rectangular | 8 in. x 24 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD8X26TZ/U | Rectangular | 8 in. x 26 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD8X28TZ/U | Rectangular | 8 in. x 28 in. | Bottom | power closed, spring open | Honeywell zoning systems |
| ZD8X6TZ/U | Rectangular | 8 in. x 6 in. | Side | power closed, spring open | Honeywell zoning systems |
| ZD8X8TZ/U | Square | 8 in. x 8 in. | Side | power closed, spring open | Honeywell zoning systems |

Zone Control Damper Accessories

Zoning Damper Accessories

| Material Number | Description | Includes |
|-----------------|--|---|
| 32006184-001/U | Filler strip kit used to install ZD dampers in odd sized ducts | 1 1/8 in. x 3/4 in. adhesive-backed foam strips |

M847D Damper Actuator



The M847D is a two position, 24 Vac spring return actuator designed to operate ARD, EARD and ZD zone dampers.

- Low voltage, spring return damper actuator.
- Equipped with anti-rotation and drive shaft extensions for direct mounting to 7/16 inch diameter coupling style dampers.
- Adjustable range stops.
- Direct replacement for M847D1004

Applications: Replacement motor for EARD ventilation damper
Motor Timing: 30 seconds power closed/10 seconds spring return
Voltage: 24V

Wires to Motor: Terminals: M1-Power; M6 Common; M4 (optional)-LED indication
Other Motor Information: Simplified range stops

| Material Number | Description | Motor | Used With |
|-----------------|---|---------------------------|----------------------|
| M847D-VENT/U | Replacement motor for EARD ventilation damper, Power open spring close, 24V | Power open, spring closed | EARD |
| M847D-ZONE/U | Replacement motor for ARD and ZD zone dampers, Power close spring open, 24V | Power closed, spring open | ARD, ARDTZ, ZD, ZDTZ |

AT140 Universal Mount Transformer



The AT140 is a 24V, 40 VA universal mount transformer.

- Provides a low voltage power source for any Honeywell zone control panel or damper
- Powers up to 5 ZD or ARD damper motors and 14 RRD damper motors from one 40VA transformer
- Mounting options include plate or foot mounting
- 120/240 VAC primary

Frequency: 60 Hz
Mounting: Universal (Plate, Foot or Knockout)
Electrical Connections (Primary): 9 in. leadwires (229 mm leadwires)
Electrical Connections (Secondary): (2) screw terminals

Electrical Ratings, Output: 24 Vac at 40 VA
Approvals, Underwriters Laboratories Inc.: UL Listed
Approvals, CSA: CSA Listed
Temperature Range (C): -29°C to +41°C (-20°F to +105°F)

| Material Number | Description | Electrical Ratings |
|-----------------|--|---|
| AT140A1042/U | AT140A1042 is an AT140 universal mount transformer | Primary voltage – 208 Vac, 240 Vac; Secondary voltage – 24V |

EconoSwitch™ Programmable Wall Switch



When it comes to automatically controlling outdoor or indoor lights, pool pumps or fans, Honeywell's EconoSwitches™ ease of use and sleek design makes them much appreciated by homeowners while contractors enjoy their easy installation. Honeywell's line of Switches and Timers are synonymous with reliability and convenience while enabling energy savings and providing security to homeowners.

- Easy-to-use interface
- For lighting, fan, pumps, and motors installations
- Buttons hidden by panel that acts as on-off switch

Voltage: 120 Vac

Frequency: 50 Hz; 60 Hz

Ambient Temperature Range: Operating: 5°F to 122°F (Operating: -15°C to 50°C)

Shipping and Storage Temperature Range: -4°F to 122°F (-20°C to 50°C)

Operating Mode: Manual (conventional on/off switch); Automatic

Programmability: Weekly/Daily Programming (7 on, 7 off)

Dimensions, Approximate: 1-13/16 in. wide x 2-23/32 in. high x 1-19/32 in. deep (43 mm wide x 68 mm high x 40 mm deep)

Approvals, CSA: Approved

Approvals, Underwriters Laboratories Inc.: Approved

Comments: Programming protected during power outages

| Material Number | Applications | Electrical Connections | Electrical Ratings | Electrical Ratings (Motor) | Description |
|-----------------|---|--|---|----------------------------|---|
| PLS530A1008/U | Incandescent lights; Halogen lights; Fluorescent lights, not compatible with CFL's and LED's | Single pole 2 wire; Multiswitch (3-way), 3 wires | Maximum and Resistive Load – 500 W @ 120 V, 40 W min. | | Weekly/Daily Programmable wall switch for lights, white |
| PLS531A1006/U | Incandescent lights; Halogen lights; Fluorescent lights, not compatible with CFL's and LED's | Single pole 2 wire; Multiswitch (3-way), 3 wires | Maximum and Resistive Load – 500 W @ 120 V, 40 W min. | | Weekly/Daily Programmable wall switch for lights, light almond |
| PLS730B1003/U | Incandescent lights; Halogen lights; Fluorescent lights; Electronic ballasts, compatible with CFL's and LED's; Motors (up to 1 HP) PLS730Bxxxx ARE compatible with CFL's and LED's | Single pole 3 wire (line, load, neutral) | Maximum and Resistive Load – 2400 W resistive or inductive; Inductive Load – 20 A @ 120 V | 1 HP @ 120 Vac | Weekly/Daily Programmable wall switch for all types of lighting and motors up to 1 HP, white |
| PLS731B1001/U | Incandescent lights; Halogen lights; Fluorescent lights; Electronic ballasts, compatible with CFL's and LED's; Motors (up to 1 HP) | Single pole 3 wire (line, load, neutral) | Maximum and Resistive Load – 2400 W resistive or inductive; Inductive Load – 20 A @ 120 V | 1 HP @ 120 Vac | Weekly/Daily Programmable wall switch for all types of lighting and motors up to 1 HP, light almond |

Residential Switches and Timers

EconoSwitch™ Programmable Wall Switch with Solar Timetable



When it comes to automatically controlling outdoor or indoor lights, pool pumps or fans, Honeywell's EconoSwitches™ ease of use and sleek design makes them much appreciated by homeowners while contractors enjoy their easy installation. Honeywell's line of Switches and Timers are synonymous with reliability and convenience while enabling energy savings and providing security to homeowners.

- Easy-to-use interface
- Random Mode for improved house security
- For lighting, fan, pumps, and motors installations
- Solar timetable programming available
- Large backlit screen
- Two hours battery backup for power outage

Voltage: 120 Vac

Frequency: 60 Hz

Ambient Temperature Range: Operating: 5°F to 122°F (Operating: -15°C to 50°C)

Shipping and Storage Temperature Range: -40°F to 140°F (-40°C to 60°C)

Operating Mode: Manual (conventional on/off switch); Automatic; Random

Programmability: Weekly/Daily Programming (21 on, 21 off); Solar timetable; Random

Dimensions, Approximate: 1-13/16 in. wide x 2-23/32 in. high x 1-13/16 in. deep (43 mm wide x 68 mm high x 43 mm deep)

Approvals, Underwriters Laboratories Inc.: Approved

Approvals, Canadian Underwriters Laboratories Inc.: Approved

Comments: White backlit screen; Hidden lock

| Material Number | Applications | Electrical Connections | Electrical Ratings | Electrical Ratings (Motor) | Description |
|-----------------|---|--|---|----------------------------|---|
| PLS550A1006/U | Incandescent lights; Halogen lights; Fluorescent lights, not compatible with CFL's and LED's | Single pole 2 wire; Multiswitch (3-way), 3 wire | Maximum and Resistive Load – 500 W @ 120 V, 40 W min. | | 7-Day programmable wall switch with solar timetable for lights, white |
| PLS551A1004/U | Incandescent lights; Halogen lights; Fluorescent lights, not compatible with CFL's and LED's | Single pole 2 wire; Multiswitch (3-way), 3 wire | Maximum and Resistive Load – 500 W @ 120 V, 40 W min. | | 7-Day programmable wall switch with solar timetable for lights, light almond |
| PLS750C1000/U | Incandescent lights; Halogen lights; Fluorescent lights; Electronic ballasts, compatible with CFL's and LED's; Motors (up to 1 HP) PLS750Cxxxx ARE compatible with CFL's and LED's | Single pole 3 wire (line, load, neutral); Multiswitch (3-way), 4 wire (line, load, neutral, three-way) | Maximum Load – 15 A @ 120 Vac 1800 W resistive 12 A @ 120 Vac 1440 W (Tungsten lights) No minimum load | 1 HP @ 120 Vac | 7-Day programmable wall switch with solar timetable for all types of lighting and motors up to 1 HP, white |
| PLS751C1008/U | Incandescent lights; Halogen lights; Fluorescent lights; Electronic ballasts, compatible with CFL's and LED's; Motors (up to 1 HP) | Single pole 3 wire (line, load, neutral); Multiswitch (3-way), 4 wire (line, load, neutral, three-way) | Maximum Load – 15 A @ 120 Vac 1800 W resistive 12 A @ 120 Vac 1440 W (Tungsten lights) No minimum load | 1 HP @ 120 Vac | 7-Day programmable wall switch with solar timetable for all types of lighting and motors up to 1 HP, light almond |

TI035 Solar Programmable Switch for Lights & Motors



This easy-to-install switch handles motors, all types of lighting, and features solar timetable programming to turn lights on at sunset and off at sunrise.

- Sleek design mounts flush with wallplate
- Works with motors and all types of lighting (compatible with electronic ballasts, CFL's and LED's and tungsten lighting up to 5A)
- LCD shows time, day and load status
- Installs in standard Decora-style wallplate (not included)
- Manual override turns load on/off without affecting programming
- Three-wire installation (requires line and neutral wires)
- Built-in rechargeable battery
- Programming protected during power outages for 30 days

Voltage: 120 Vac
Frequency: 50 Hz; 60 Hz
Electrical Connections: Single pole 3 wire (line, load, neutral)
Operating Mode: Manual (conventional on/off switch); Automatic
Programmability: Solar timetable + 2 optional settings (1 on, 1 off) or 4 optional settings (2 on, 2 off)
Electrical Ratings: Maximum Load – 20 A @ 120 V 2400 W resistive. Inductive load: 20 A @ 120Vac
Electrical Ratings, Motor: 1 HP @ 120 Vac
Ambient Temperature Range: Operating: 5°F to 122°F (Operating: -15°C to 50°C)

Shipping and Storage Temperature Range: -4°F to 122°F (-20°C to 50°C)
Dimensions: 1-13/16 in. wide x 2-23/32 in. high x 1-19/32 in. deep (44 mm wide x 68 mm high x 40 mm deep)
Comments: Programming protected during power outages; Single pole, 3 wires (line, load, neutral)
Approvals, CSA: Approved
Approvals, Underwriters Laboratories Inc.: Approved

| Material Number | Applications | Description |
|-----------------|--|--|
| TI035/U | Incandescent lights; Halogen lights; Fluorescent lights; CFL's and LED's; Electronic ballasts; Motors (up to 1 HP) | Programmable wall switch with solar timetable for all types of lighting and motors up to 1 HP, white |

TI040 Industrial Weekly/Daily Programmable Indoor & Outdoor Timer for Lights and Motors



This powerful programmable timer allows the user to choose 120 or 240 V.

- Heavy-duty weather-proof casing (NEMA 3R) ideal for outdoor use
- Selectable voltage switch enables choice of 120 or 240 V
- Lockable casing for increased security
- Temporary bypass enables override without affecting programming
- Compatible with 3-way switches
- Programming protected during power outage for 30 days

Voltage: 120 Vac; 240 Vac; 208 Vac
Frequency: 50 Hz; 60 Hz
Electrical Connections: Terminals for #14 to #10 AWG wire; Multiswitch (3-way) compatible
Operating Mode: Manual (conventional on/off switch); Automatic
Programmability: Weekly/Daily Programming (7 on, 7 off)
Electrical Ratings: Maximum Load – 30 A (resistive), 10 A (ballast); Inductive Load – 10 A @ 120/240 Vac; Resistive Load – 3600 W (30 A @ 120 Vac); 7200 W (30 A @ 240 Vac)
Electrical Ratings, Motor: 1.5 HP @ 120 Vac; 2 HP @ 240 Vac

Ambient Temperature Range: Operating: -40°F to 122°F (Operating: -40°C to 50°C)
Shipping and Storage Temperature Range: -4°F to 122°F (-20°C to 50°C)
Dimensions: 9-13/32 in. wide x 7-7/32 in. high x 4 in. deep (238 mm wide x 182 high mm x 102 mm deep)
Comments: Field-selectable voltage (120 V or 240 V); Lockable NEMA 3R casing; 3-way input; Programming protected during power outages
Approvals, CSA: Approved
Approvals, Underwriters Laboratories Inc.: Approved

| Material Number | Applications | Description |
|-----------------|--|---|
| TI040/U | All types of lighting; Motors up to 1.5 HP | Industrial Weekly/Daily Programmable Indoor & Outdoor Timer for all types of lighting and motors up to 1.5 HP (120 V) or 2 HP (240 V) |

Residential Switches and Timers

TI044 Industrial Solar Programmable Indoor & Outdoor Timer for Lights and Motors



The powerful TI044 accepts two loads and features solar programming - ideal for outdoor lighting.

- Heavy-duty weather-proof casing (NEMA 3R) ideal for outdoor use
- Solar programming automatically turns lights on at sunset and off at sunrise
- Lockable casing for increased security
- Temporary bypass enables override without affecting programming
- Compatible with 3-way switches
- Programming protected during power outage for 30 days

Voltage: 120 Vac

Frequency: 50 Hz; 60 Hz

Electrical Connections: Terminals for #14 to #10 AWG wire; Multiswitch (3-way) compatible

Operating Mode: Manual (conventional on/off switch); Automatic

Programmability: Solar timetable + 2 optional settings (1 on, 1 off)

Electrical Ratings: Maximum Load – 30 A (resistive), 10 A (ballast); Inductive Load – 10 A @ 120 Vac; Resistive Load – 3600 W (30 A @ 120 Vac)

Electrical Ratings, Motor: 1.5 HP @ 120 Vac

Ambient Temperature Range: Operating: -40°F to 122°F (Operating: -40°C to 50°C)

Shipping and Storage Temperature Range: -4°F to 122°F (-20°C to 50°C)

Dimensions: 9-13/32 in. wide x 7-7/32 in. high x 4 in. deep (238 mm wide x 182 high mm x 102 mm deep)

Comments: Programming protected during power outages; Lockable NEMA 3R casing; 3-way input. Load 1 is either solar or fix time selected by user. Load 2 is exclusively sunset to sunrise without the possibility of being overridden.

Approvals, CSA: Approved

Approvals, Underwriters Laboratories Inc.: Approved

| Material Number | Applications | Description |
|-----------------|--|--|
| TI044/U | All types of lighting; Motors up to 1.5 HP | Industrial Programmable Indoor & Outdoor Timer for all types of lighting and motors up to 1.5 HP, with solar timetable and 2 optional settings |

F300 High Efficiency Electronic Air Cleaner



F300 optimizes efficiency with airflow capturing up to 98% of particles that pass through it. It operates with all gas, oil and electric forced warm air furnaces and AC systems, and is available in four sizes to fit most ducts.

- Media post-filter provides enhanced filtration on select models.
- Solid state power supply is self-regulating and maintains peak efficiency during a wide range of cell dirt loading conditions.
- Low-profile door with test button to check system operation.
- Helps filter efficiency-robbing “gunk” before it coats critical system parts.
- Very low pressure drop.
- Exclusive 10-year Clean Coil Guarantee.
- Rugged zinc-coated, roll-formed cabinet provides superior strength and corrosion protection.

Applications: Duct mounted

Type of Air Cleaner: Electronic Air Cleaner

Efficiency Standard: Efficiency ranges are defined for small particles, E1=0.3 to 1.0 microns; medium particles, E2=1.0 to 3.0 microns; and large particles, E3=3.0 to 10.0 microns. Efficiency ratings are based on American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-1999

Electrical Ratings: 120 Vac, 0.4A max.

Frequency: 60 Hz

Additional Features: Includes high air flow post filter to enhance filtration performance.

Approvals, Underwriters Laboratories Inc.: Listed: Report E30954

Tradeline Value: Tradeline

Comments: Enhanced Filtration

Accessories:

W8600A1007 – AIRWATCH indicator for use with F100F, F200 or F300A, E

W8600F1014 – White EAC Performance indicator for use with F50F or F300E

Replacement Parts:

4074EHG – FC37A Terminal Board Repair Kit. Contains 2 connector clips, 1 Terminal Board and instruction sheet

FC37A1049 – Electronic Air Cleaner Cell, 9.8 x 20

FC37A1064 – Electronic Air Cleaner Cell, 12.4 x 20

FC37A1114 – Electronic Air Cleaner Cell, 9.8 x 16

FC37A1130 – Electronic Air Cleaner Cell, 12.4 x 16

203365A – Conversion Kit for changing 120V Power Supply to 240V

50000293-001 – 16 x 10 Post Filter for 16 x 20 F300E and F50F

50000293-002 – 16 x 12.5 Post Filter for 16 x 25 F300E and F50F

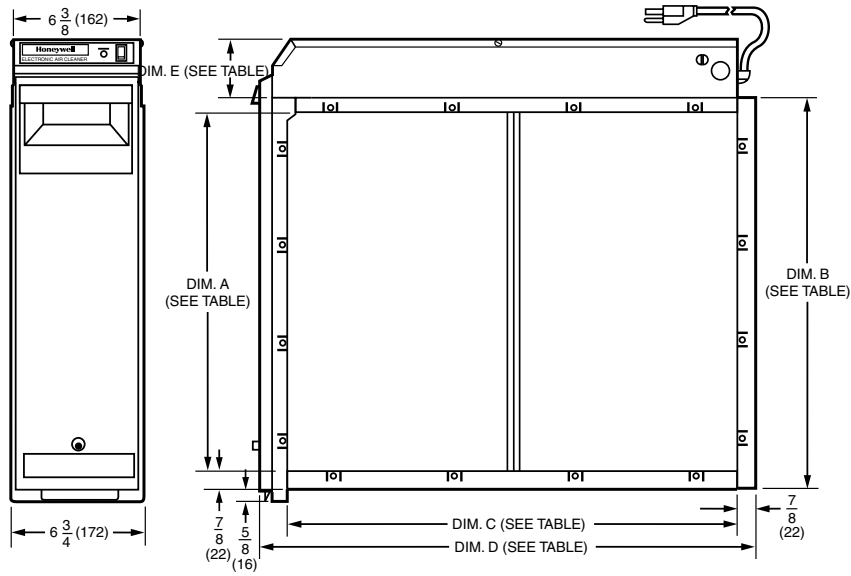
50000293-003 – 20 x 10 Post Filter for 20 x 20 F300E and F50F

50000293-004 – 20 x 12.5 Post Filter for 20 x 25 and 20 x 12.5 F300E and F50F

| Material Number | Approximate, Dimensions | Airflow Capacity (cfm) | Airflow Capacity (m ³ /hr) | Fractional Efficiency | Static Pressure Drop (in. w.c.) | Replacement Filters |
|---|-----------------------------------|------------------------|---------------------------------------|------------------------|---------------------------------|---------------------|
| F300 Electronic Air Cleaner with Performance Enhancing Post Filter | | | | | | |
| F300E1001/U | 16 in. x 20 in. (406 mm x 508 mm) | Maximum – 1200 cfm | Maximum – 2040 m ³ /hr | E1=81%, E2=93%, E3=99% | 0.26 at 500 FPM | 50000293-001 |
| F300E1019/U | 16 in. x 25 in. (406 mm x 635 mm) | Maximum – 1400 cfm | Maximum – 2380 m ³ /hr | E1=81%, E2=93%, E3=99% | 0.26 at 500 FPM | 50000293-002 |
| F300E1027/U | 20 in. x 20 in. (508 mm x 508 mm) | Maximum – 1400 cfm | Maximum – 2380 m ³ /hr | E1=81%, E2=93%, E3=99% | 0.26 at 500 FPM | 50000293-003 |
| F300E1035/U | 20 in. x 25 in. (508 mm x 635 mm) | Maximum – 2000 cfm | Maximum – 3400 m ³ /hr | E1=81%, E2=93%, E3=99% | 0.26 at 500 FPM | 50000293-004 |

Electronic Air Cleaners

Dimensions in inches (millimeters)

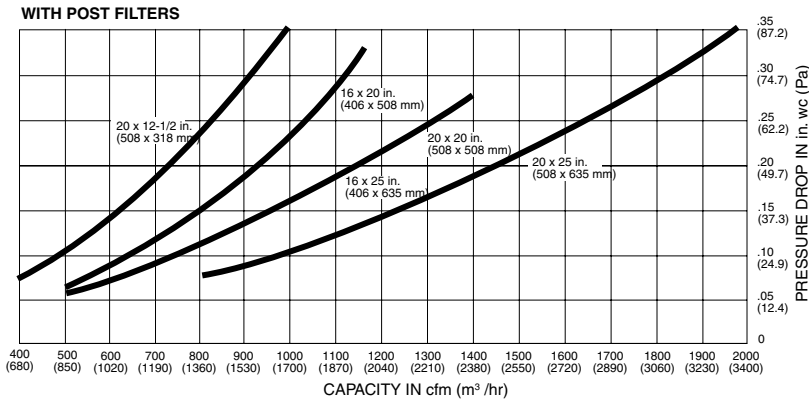
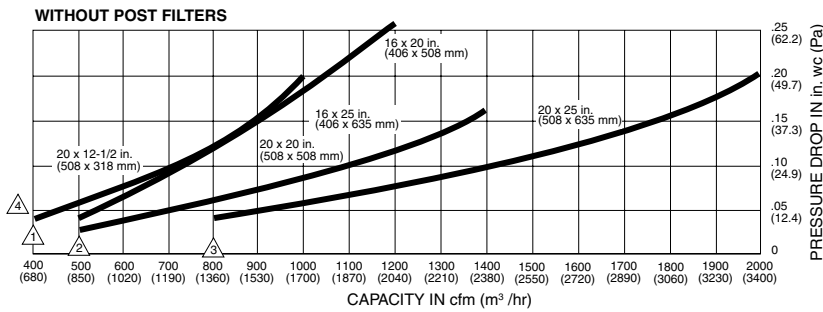


| F300 SIZE | | DIM. A | | DIM. B | | DIM. C | | DIM. D | | DIM. E | |
|-------------|-----------|---------|-----|---------|-----|--------|-----|--------|-----|--------|----|
| IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM |
| 16 X 25 | 406 X 635 | 14 7/16 | 367 | 16 3/16 | 411 | 23 1/4 | 591 | 25 1/2 | 648 | 2 3/4 | 70 |
| 16 X 20 | 406 X 508 | 14 7/16 | 367 | 16 3/16 | 411 | 18 1/4 | 457 | 20 1/2 | 521 | 2 3/4 | 70 |
| 20 X 25 | 508 X 635 | 18 7/16 | 468 | 20 3/16 | 513 | 23 1/4 | 591 | 25 1/2 | 648 | 2 3/4 | 70 |
| 20 X 20 | 508 X 508 | 18 7/16 | 468 | 20 3/16 | 513 | 18 1/4 | 457 | 20 1/2 | 521 | 2 3/4 | 70 |
| 20 X 12 1/2 | 508 X 318 | 18 7/16 | 468 | 20 3/16 | 513 | 10 7/8 | 276 | 13 1/8 | 333 | 3 5/8 | 92 |

M2872B

Pressure Drop versus Airflow

AIR CLEANER EFFICIENCY AND PRESSURE DROP AT VARIOUS AIRFLOW RATES.

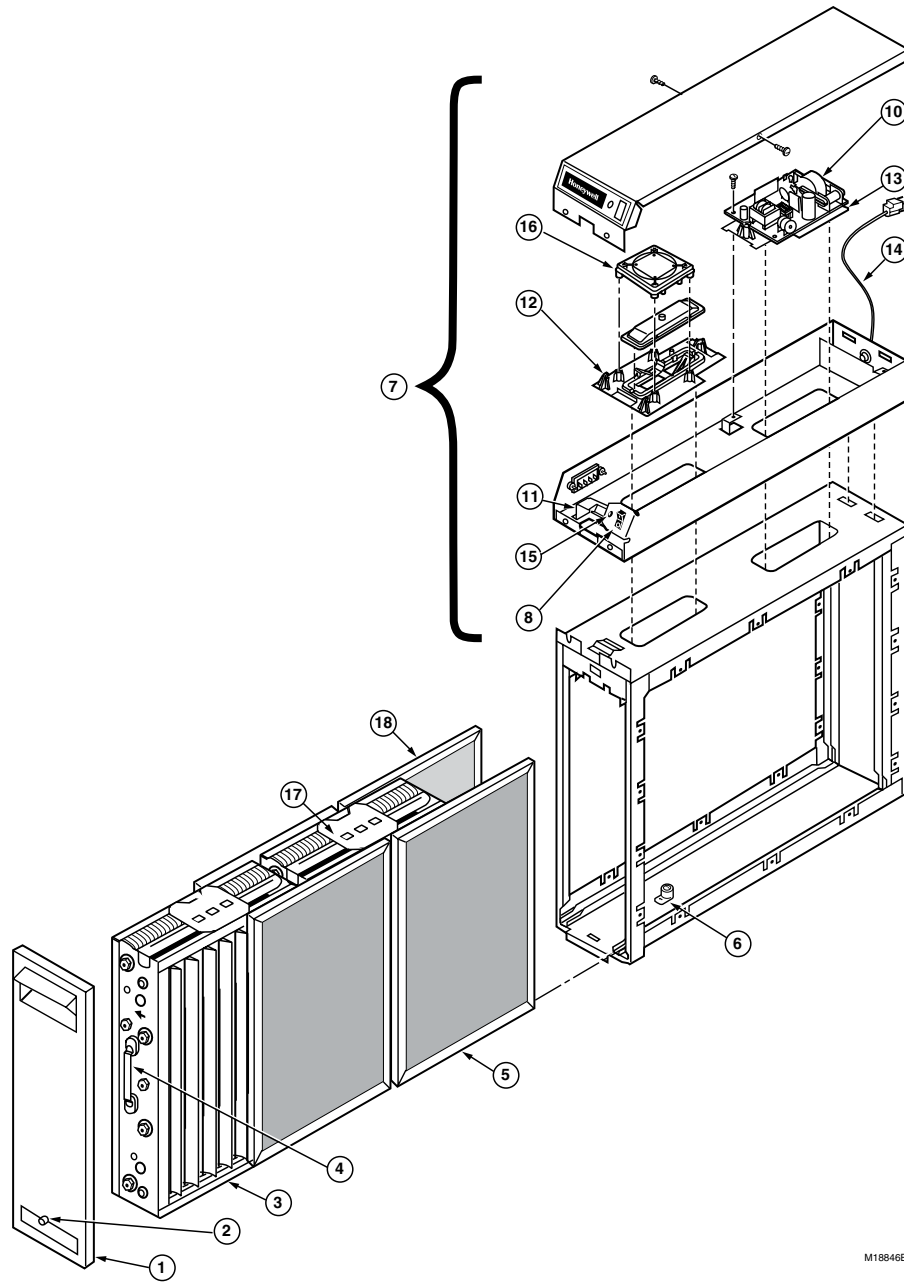


- ▲ MINIMUM RECOMMENDED cfm FOR 20 x 12-1/2 in. (508 x 318 mm) MODEL.
- ▲ MINIMUM RECOMMENDED cfm FOR 16 x 25 in. (406 x 635 mm), 20 x 20 in. (508 x 508 mm), 16 x 20 in. (406 x 508 mm) MODELS.
- ▲ MINIMUM RECOMMENDED cfm FOR 20 x 25 in. (508 x 635 mm) MODEL.
- ▲ SELECT SIZE THAT MOST CLOSELY FITS DIMENSIONS OF FURNACE/AIR HANDLER RETURN AIR OPENING

M13654

Electronic Air Cleaners Parts and Accessories

F300E Exploded View



M18846E

Indoor Air Quality

Electronic Air Cleaners Parts and Accessories

| No. | Description | Nominal Return Air Opening | | | | |
|-----|---|-------------------------------|-------------------------------|-----------------------------------|-------------------------------|-------------------------------|
| | | 16 x 20 in. (406 x 508 mm) | 16 x 25 in. (406 x 635 mm) | 20 x 12-1/2 in. (508 x 318 mm) | 20 x 20 in. (508 x 508 mm) | 20 x 25 in. (508 x 635 mm) |
| 1 | F50 Access Door includes No. 2 | N/A | N/A | N/A | N/A | N/A |
| 1 | F300 Access Door includes No. 2 | N/A | N/A | N/A | N/A | N/A |
| 2 | Test Button Assembly | 137980A/U (1) | 137980A/U (1) | 137980A/U (1) | 137980A/U (1) | 137980A/U (1) |
| 3 | Electronic Cell | FC37A1114/U (2) | FC37A1130/U (2) | FC37A1064/U (1) | FC37A1049/U (2) | FC37A1064/U (2) |
| 4 | Cell Handle | 137266/U (2) | 137266/U (2) | 137266/U (1) | 137266/U (2) | 137266/U (2) |
| 5 | Prefilter (without spring clips) | 209989/U (2) | 203371/U (2) | 203369/U (1) | 203373/U (2) | 203372/U (2) |
| 7 | F50 Power Box Assembly Includes No. 8-20, 120V, 60 Hz. Brown Cover. | PS1201B20/U | PS1201B25/U | N/A | PS1201B20/U | PS1201B25/U |
| 7 | F300 Power Box Assembly Includes No. 8-20, 120V, 60 Hz. White Cover. | PS1201B20/U | PS1201B25/U | N/A | PS1201B20/U | PS1201B25/U |
| 8 | Switch | 203321/U (1) | 203321/U (1) | 203321/U (1) | 203321/U (1) | 203321/U (1) |
| 10 | F50 and F300 Power Supply, Series Two ^b . 120V, 60 Hz | N/A | N/A | N/A | N/A | N/A |
| 11 | Interlock Bracket and Switch | 4074ETG/U (1) | 4074ETG/U (1) | 4074ETG/U (1) | 4074ETG/U (1) | 4074ETG/U (1) |
| 12 | Terminal Board Assembly Front | 203329B/U (1) | 203329B/U (1) | N/A | 203329B/U (1) | 203329B/U (1) |
| 13 | Terminal Board Assembly Rear | 203329A/U (1) | 203329A/U (1) | N/A | 203329A/U (1) | 203329A/U (1) |
| 15 | Neon Assembly | 4074EYS/U (1) | 4074EYS/U (1) | 4074EYS/U (1) | 4074EYS/U (1) | 4074EYS/U (1) |
| 16 | Airflow Switch, pin connection | 4074ETH/U (1) | 4074ETH/U (1) | 4074ETH/U (1) | 4074ETH/U (1) | 4074ETH/U (1) |
| 16 | Airflow Switch, plug connection | 4074EZB/U (1) | 4074EZB/U (1) | N/A | 4074EZB/U (1) | 4074EZB/U (1) |
| 17 | FC37A Bag Assembly for cell repair. Contains 2 Connector Clips, 1 Terminal Board and Instructions. | 4074EHG/U | 4074EHG/U | 4074EHG/U | 4074EHG/U | 4074EHG/U |
| 18 | Post Filter (not included with F300A) | 50000293-001/U | 50000293-002/U | 50000293-004/U | 50000293-003/U | 50000293-004/U |

^a Series One compatible with W8600E and W8600F.

^b Series Two compatible with W8600F only.

^c Use 203365A Conversion Kit for changing 120V, 60Hz model to 240V, 60 Hz.

^d Change from brown cover to white cover as a running change. Use original cover for color match.

(#) = Quantity required per unit

N/A = Not available as merchandised part.

Parts and Accessories Not Illustrated

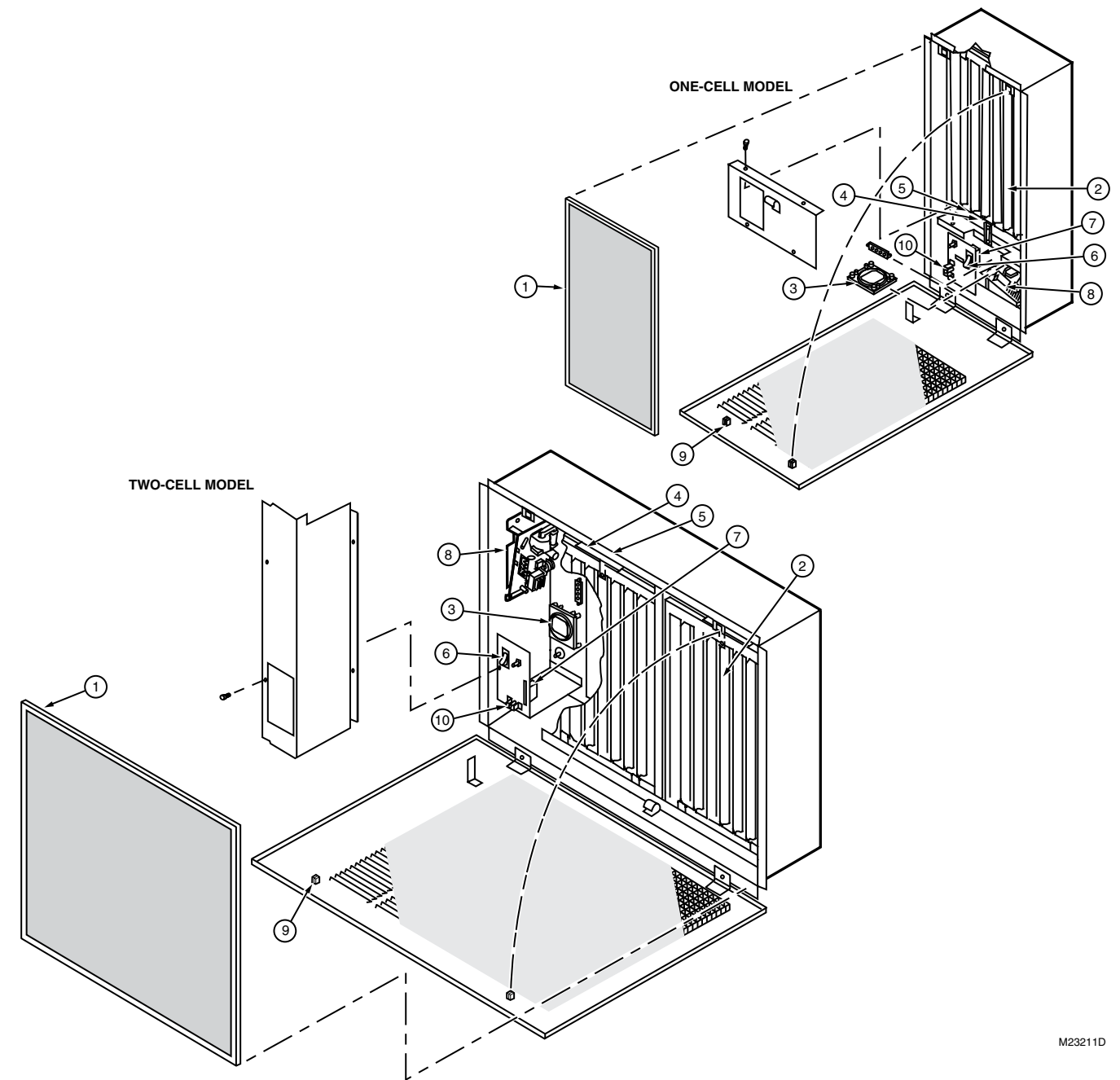
| Description | Nominal Return Air Opening | | | | |
|--------------------------------|-------------------------------|-------------------------------|-----------------------------------|-------------------------------|-------------------------------|
| | 16 x 20 in. (406 x 508 mm) | 16 x 25 in. (406 x 635 mm) | 20 x 12-1/2 in. (508 x 318 mm) | 20 x 20 in. (508 x 508 mm) | 20 x 25 in. (508 x 635 mm) |
| Ionizer Wires (multiples of 5) | 136434BA/U | 136434BA/U | 136434AA/U | 136434AA/U | 136434AA/U |
| 240V Conversion Kit | 203365A/U | 203365A/U | N/A | 203365A/U | 203365A/U |

(#) = Quantity required per unit

N/A = Not available as merchandised part.

Electronic Air Cleaners Parts and Accessories

F52F Exploded View



Indoor Air Quality

M23211D

| No. | Description | Part Number | |
|-----|--------------------------------------|-----------------|-----------------|
| | | 120 Vac Model | |
| | | F52F1048 1-Cell | F52F1055 2-Cell |
| 1 | Prefilter | 208536/U | 208537/U |
| 2 | Electronic Cell | FC37A1171/U | FC37A1171/U (2) |
| 3 | Air Flow Switch | 4074ETH/U | 4074ETH/U |
| 4 | Cell Contact Board | 4074EHG/U | 4074EHG/U (2) |
| 5 | Cabinet Contact Board | 190912A/U | 190912A/U (2) |
| 6 | On/Off Switch | 203321/U | 203321/U |
| 7 | Interlock Switch | 208543/U | 208543/U |
| 8 | Power Supply Series One ^a | 208427J/U | 208427AA/U |
| | Power Supply Series Two ^b | N/A | 208416AA/U |
| 9 | Plastic Door Latch | 207631/U (2) | 207631/U (2) |
| 10 | Neon Lamp Assembly | 4074ETE/U | 4074ETE/U |

^a Series One compatible with W8600E only.

^b Series Two compatible with W8600F only.

Parts and Accessories not Illustrated

| Description | Part Number |
|--|---------------------|
| | 120 Vac Model |
| Cell Handle | 137266/U |
| Ionizer Wires (Must be ordered in multiples of 5.) | 136434AA/U (9/cell) |

Electronic Air Cleaners Parts and Accessories

Residential Air Cleaners Replacement Power Supply

| Electronic Air Cleaner | | | | Replacement Power Supply | | |
|------------------------|-----------------|-------------------|-------------|----------------------------------|---------------------------------|-----------------------------------|
| Model | Voltage | Nominal Cell Size | | Old Power Supply Cross Reference | Universal Power Supply (No Box) | Universal Power Supply (With Box) |
| | | in. | mm | | | |
| F300A, F300E | 120 Vac | 20 x 12.5 | 508 x 318 | 208419A | PS1201A00 | PS1201B12 |
| | | 16 x 20 | 406 x 508 | 208418J | | PS1201B20 |
| | | 16 x 25 | 406 x 635 | 208417S | | PS1201B25 |
| | | 20 x 20 | 508 x 508 | 208418H | | PS1201B20 |
| | | 20 x 25 | 508 x 635 | 208417R | | PS1201B25 |
| F300B | 240 Vac | 20 x 12.5 | 508 x 318 | 208419E | PS2401A00 | PS2401B12 |
| F50A F50E | 120 Vac | 16 x 25 | 406 x 635 | — | PS1201C01 | — |
| | | 20 x 20 | 508 x 508 | — | | — |
| | | 20 x 25 | 508 x 635 | — | | — |
| | | 20 x 12.5 | 508 x 318 | — | | PS1201C02 |
| | 240 Vac | 16 x 25 | 406 x 635 | — | PS2401C00 | — |
| | | 20 x 20 | 508 x 508 | — | | — |
| | | 20 x 25 | 508 x 635 | — | | — |
| | | 20 x 12.5 | 508 x 318 | — | | — |
| 220 Vac/50 Hz | 16 x 25 | 406 x 635 | — | — | — | |
| F50F | 120 Vac | 20 x 12.5 | 508 x 318 | 208419E | PS1201A00 | — |
| | | 16 x 20 | 406 x 508 | 208418E, 208418K | | — |
| | | 16 x 25 | 406 x 635 | 208417B | | — |
| | | 20 x 20 | 508 x 508 | 208418A, 208418L | | — |
| | | 20 x 25 | 508 x 635 | 208417A | | — |
| | 240 Vac | 20 x 12.5 | 508 x 318 | 208419C | PS2401A00 | PS2401B12CE |
| | | 16 x 20 | 406 x 508 | — | | — |
| | | 16 x 25 | 406 x 635 | 208417P | | — |
| | | 20 x 20 | 508 x 508 | — | | — |
| 20 x 25 | 508 x 635 | 208417N | — | PS2401B25 | | |
| F52C (One-Cell) | 120 Vac | 20 x 12.5 | 508 x 318 | — | PS1201C02 | — |
| | 220-240 Vac | 20 x 12.5 | 508 x 318 | — | PS2401C00 | — |
| F52D (Two-Cell) | 120 Vac | 20 x 25 | 508 x 635 | — | PS1201C02 | — |
| | 220-240 Vac | 20 x 25 | 508 x 635 | — | PS2401C00 | — |
| F52F | 120 Vac | 12.5 x 20 | 317.5 x 508 | 208416AA | PS1201C02 | PS1201C00 |
| | 120 Vac/60 Hz | 20 x 25 | 508 x 635 | 208416AB | PS1201C02 | PS1201C00 |
| F54C | 120 Vac | 20 x 25 | 508 x 635 | — | PS1201C02 | — |
| | 220-240 Vac | 20 x 25 | 508 x 635 | — | PS2401C00 | — |
| F55A F55E | 120 Vac | 16 x 25 | 406 x 635 | — | PS1201C02 | — |
| | | 20 x 25 | 508 x 635 | — | | — |
| | 240 Vac | 16 x 25 | 406 x 635 | — | PS2401C00 | — |
| | | 20 x 25 | 508 x 635 | — | | — |
| F56A | 120 Vac | 16 x 12.5 | 406 x 318 | — | PS1201C02 | — |
| F57A (Two-Cell) | 120 Vac | 20 x 25 | 508 x 635 | — | PS1201C02 | — |
| F57B (One-Cell) | 120 Vac | 20 x 12.5 | 508 x 318 | — | PS1201C02 | — |
| F57B | 220-240V, 50 Hz | 20 x 12.5 | 508 x 318 | — | PS2401C00 | — |
| F58A, F58E | 120 Vac | 16 X 25 | 406 x 635 | — | PS1201C02 | — |
| F59A | 120 Vac | 16 x 12.5 | 406 x 318 | — | PS1201C02 | — |
| | 220 Vac/50 Hz | 16 x 12.5 | 406 x 318 | — | PS2401C00 | — |
| F70C | 120 Vac | 20 x 25 | 508 x 635 | — | PS1201C00 | — |

F200 High Efficiency Media Air Cleaner



The F200 Media Air Cleaner captures a significant amount of the airborne particles in the air circulated through the unit. Recommended as a basic minimum air quality product. Includes; cabinet, access door and MERV 13 filter.

- Includes cabinet, access door and MERV 13 pleated media filter.
- High efficiency charged-media filter captures particles as small as 0.3 microns.
- Applicable to all gas, oil and electric forced air furnaces and to compressor cooling up to 5 tons.
- Mounts in the return air duct.
- Rugged zinc-coated, roll-formed cabinet resists corrosion and can support weight of residential furnace and evaporator coil.
- Requires no electrical connections.
- Mounts in any position.
- Requires no maintenance except periodic media filter replacement.
- Quick and easy media filter replacement.
- Later upgrade to higher performing media or electronic air cleaner is easy.

Applications: Duct mounted

Type of Air Cleaner: Media Air Cleaner

Efficiency Standard: Efficiency ratings are based on American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-1999. Efficiency ranges are defined for small particles, E1=0.3 to 1.0 microns; medium particles, E2=1.0 to 3.0 microns; and large particles, E3=3.0 to 10.0 microns.

Minimum Efficiency Reporting Value (Media Filters Only): MERV 13
Additional Features: Includes Media Air Cleaner and MERV 13 Filter
Approvals, Underwriters Laboratories Inc.: Filter Element: UL Listed, UL900, Class 2

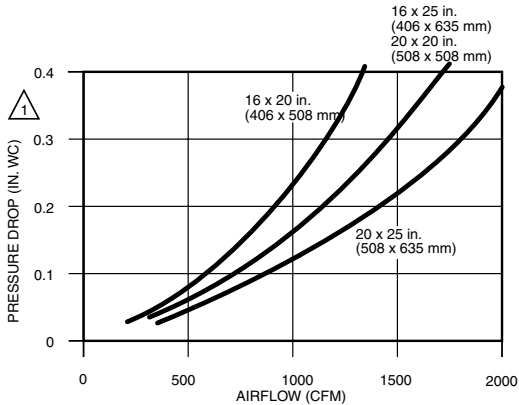
Tradeline Value: Tradeline

Replacement Parts

- FC100A1029/U** – 16 x 25 Media Air Filter
- FC100A1037/U** – 20 x 25 Media Air Filter
- FC100A1003/U** – 16 x 20 Media Air Filter
- FC100A1011/U** – 20 x 20 Media Air Filter
- FC200E1029/U** – 16 x 25 Charged-Media Filter
- FC200E1037/U** – 20 x 25 Charged-Media Filter
- FC200E1003/U** – 16 x 20 Charged-Media Filter
- FC200E1011/U** – 20 x 20 Charged-Media Filter
- POPUP1625/U** – 16 x 25 POPUP Media Air Filter
- POPUP2025/U** – 20 x 25 POPUP Media Air Filter
- POPUP1620/U** – 16 x 20 POPUP Media Air Filter
- POPUP2020/U** – 20 x 20 POPUP Media Air Filter

| Material Number | Approximate, Dimensions | Airflow Capacity (cfm) | Airflow Capacity (m³/hr) | Fractional Efficiency | Static Pressure Drop (in. w.c.) | Replacement Filters |
|-----------------|--------------------------------------|------------------------|--------------------------|------------------------|---------------------------------|-----------------------------------|
| F200F2002/U | 16 in. x 25 in. (406 mm x 635 mm) | Maximum – 1400 cfm | Maximum – 2380 m³/hr | E1=63%, E2=91%, E3=99% | 0.3 at 500 FPM | FC100A1029, FC200E1029, POPUP1625 |
| F200F2010/U | 20 in. x 25 in. (508 mm x 635 mm) | Maximum – 2000 cfm | Maximum – 3400 m³/hr | E1=63%, E2=91%, E3=99% | 0.3 at 500 FPM | FC100A1037, FC200E1037, POPUP2025 |
| F200F2028/U | 16 in. x 20 in. (406 mm x 508 mm) | Maximum – 1200 cfm | Maximum – 2040 m³/hr | E1=63%, E2=91%, E3=99% | 0.3 at 500 FPM | FC100A1003, FC200E1003, POPUP1620 |
| F200F2036/U | 20 in. x 20 in. (508 mm x 508 mm) | Maximum – 1400 cfm | Maximum – 2380 m³/hr | E1=63%, E2=91%, E3=99% | 0.3 at 500 FPM | FC100A1011, FC200E1011, POPUP2020 |

Pressure Drop of FC200 Filter

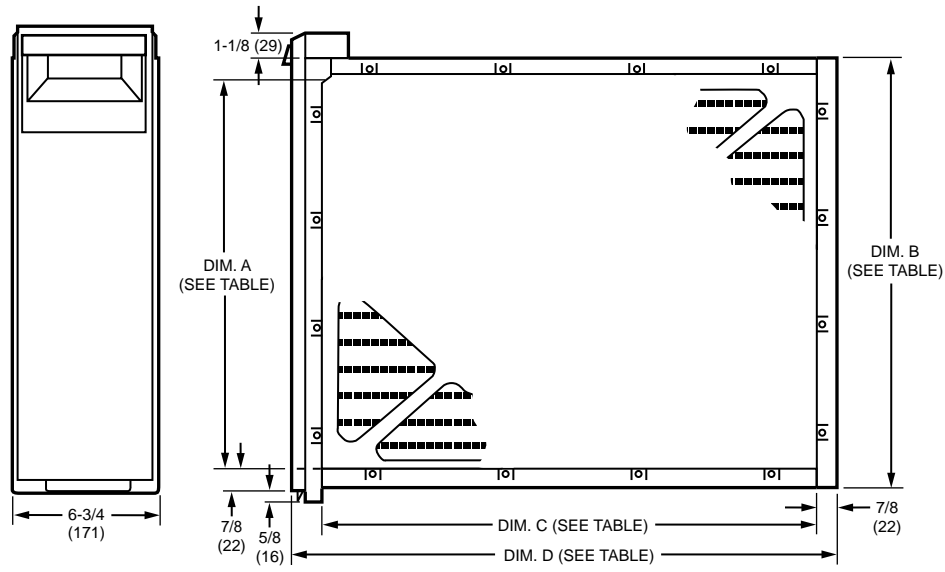


⚠ WHEN FIRST INSTALLED, PRESSURE DROP INCREASES AS FILTER BECOMES LOADED. REPLACE FILTER WHEN PRESSURE DROP REACHES 0.5 IN. WC. (0.1 kPa). M13662

Indoor Air Quality

Media Air Cleaners

Dimensions in inches (millimeters)



| F100 SIZE | | DIM. A | | DIM. B | | DIM. C | | DIM. D | |
|-----------|-----------|---------|-----|---------|-----|--------|-----|--------|-----|
| IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM |
| 16 X 25 | 406 X 635 | 14 7/16 | 367 | 16 3/16 | 411 | 23 1/4 | 591 | 25 1/2 | 648 |
| 16 X 20 | 406 X 508 | 14 7/16 | 367 | 16 3/16 | 411 | 18 1/4 | 457 | 20 1/2 | 521 |
| 20 X 25 | 508 X 635 | 18 7/16 | 468 | 20 3/16 | 513 | 23 1/4 | 591 | 25 1/2 | 648 |
| 20 X 20 | 508 X 508 | 18 7/16 | 468 | 20 3/16 | 513 | 18 1/4 | 457 | 20 1/2 | 521 |
| 25 X 20 | 635 X 508 | 23 5/16 | 592 | 25 1/8 | 638 | 18 3/8 | 467 | 20 5/8 | 524 |
| 25 X 22 | 635 X 559 | 23 5/16 | 592 | 25 1/8 | 638 | 20 1/4 | 514 | 22 1/2 | 572 |

M14710E

F100 Media Air Cleaner with MERV 11 Filter



The F100 Media Air Cleaner captures a significant amount of the airborne particles in the air circulated through the unit. Recommended as a basic minimum air quality product. Includes; cabinet, access door and MERV 11 filter.

- High efficiency media filter captures particles as small as 0.3 microns.
- Applicable to all gas, oil and electric forced air furnaces and to compressor cooling up to 5 tons.
- Mounts in the return air duct.
- Rugged zinc-coated, roll-formed cabinet resists corrosion and can support weight of residential furnace and evaporator coil.
- Requires no electrical connections.
- Mounts in any position.
- Requires no maintenance except periodic media filter replacement.
- Quick and easy media filter replacement.
- Later upgrade to higher performing media or electronic air cleaner is easy.

Applications: Duct mounted

Type of Air Cleaner: Media Air Cleaner

Efficiency Standard: Efficiency ranges are defined for small particles, E1=0.3 to 1.0 microns; medium particles, E2=1.0 to 3.0 microns; and large particles, E3=3.0 to 10.0 microns. Efficiency ratings are based on American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-1999

Minimum Efficiency Reporting Value (Media Filters Only): MERV 11

Additional Features: Includes Media Air Cleaner and MERV 11 Filter
Approvals, Underwriters Laboratories Inc.: Filter Element: UL Listed, UL900, Class 2

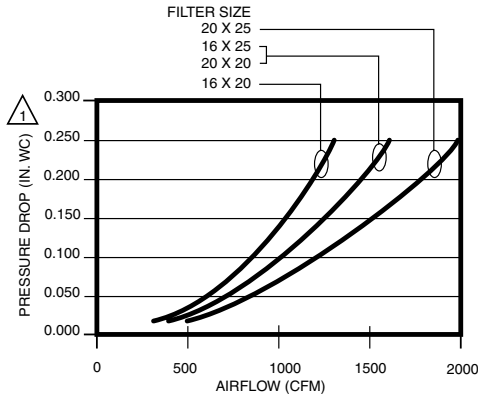
Tradeline Value: Tradeline

Replacement Parts:

- FC100A1003/U** – F16 x 20 Media Air Filter - MERV 11
- FC100A1011/U** – 20 x 20 Media Air Filter - MERV 11
- FC100A1029/U** – 16 x 25 Media Air Filter - MERV 11
- FC100A1037/U** – 20 x 25 Media Air Filter - MERV 11
- FC100A1045/U** – 21.5 x 27.5 Media Air Filter - MERV 11
- FC100A1052/U** – 20 x 12.5 Media Air Filter - MERV 11
- FC200E1003/U** – 16 x 20 Charged-Media Filer - MERV 13
- FC200E1011/U** – 20 x 20 Charged-Media Filter - MERV 13
- FC200E1029/U** – 16 x 25 Charged-Media Filer - MERV 13
- FC200E1037/U** – 20 x 25 Charged-Media Filter - MERV 13

| Material Number | Approximate, Dimensions | Airflow Capacity (cfm) | Airflow Capacity (m ³ /hr) | Fractional Efficiency | Static Pressure Drop (in. w.c.) | Replacement Filters |
|-----------------|--------------------------------------|------------------------|---------------------------------------|------------------------|---------------------------------|------------------------------------|
| F100F2002/U | 16 in. x 25 in. (406 mm x 635 mm) | Maximum – 1400 cfm | Maximum – 2380 m ³ /hr | E1=25%, E2=62%, E3=85% | 0.23 at 500 FPM | FC100A1029, FC200E1029, POPUP1625 |
| F100F2010/U | 20 in. x 25 in. (508 mm x 635 mm) | Maximum – 2000 cfm | Maximum – 3400 m ³ /hr | E1=25%, E2=62%, E3=85% | 0.23 at 500 FPM | FC100A1037, FC200E1037, POPUP2025 |
| F100F2028/U | 16 in. x 20 in. (406 mm x 508 mm) | Maximum – 1200 cfm | Maximum – 2040 m ³ /hr | E1=25%, E2=62%, E3=85% | 0.23 at 500 FPM | FC100A1003, FC200E1003, POPUP1620 |
| F100F2036/U | 20 in. x 20 in. (508 mm x 508 mm) | Maximum – 1400 cfm | Maximum – 2380 m ³ /hr | E1=25%, E2=62%, E3=85% | 0.23 at 500 FPM | FC100A1011, FC200E1011, POPUP2020 |
| F100F2044/U | 25 in. x 20 in. (635 mm x 508 mm) | Maximum – 2000 cfm | Maximum – 3400 m ³ /hr | E1=25%, E2=62%, E3=85% | 0.23 at 500 FPM | FC100A1037, FC200E1037, FC100C1017 |
| F100F2051/U | 25 in. x 22 in. (635 mm x 559 mm) | Maximum – 2000 cfm | Maximum – 3400 m ³ /hr | E1=25%, E2=62%, E3=85% | 0.23 at 500 FPM | FC100A1037, FC200E1037, FC100C1017 |

Pressure Drop of FC100 Filter



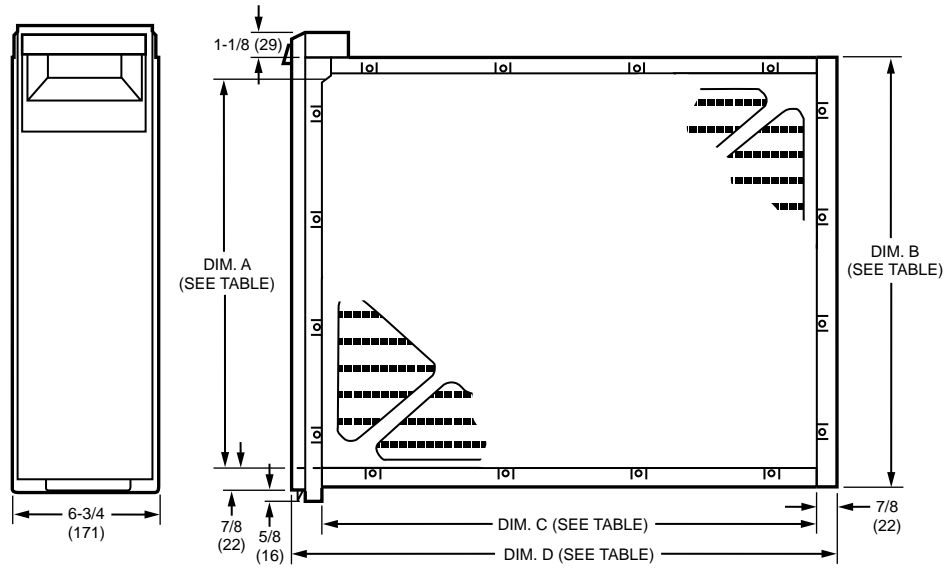
1 WHEN FIRST INSTALLED, PRESSURE DROP INCREASES AS FILTER BECOMES LOADED. REPLACE FILTER WHEN PRESSURE DROP REACHES 0.5 IN. WC. (0.1 kPa).

M14709A

Indoor Air Quality

Media Air Cleaners

Dimensions in inches (millimeters)



| F100 SIZE | | DIM. A | | DIM. B | | DIM. C | | DIM. D | |
|-----------|-----------|---------|-----|---------|-----|--------|-----|--------|-----|
| IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM |
| 16 X 25 | 406 X 635 | 14 7/16 | 367 | 16 3/16 | 411 | 23 1/4 | 591 | 25 1/2 | 648 |
| 16 X 20 | 406 X 508 | 14 7/16 | 367 | 16 3/16 | 411 | 18 1/4 | 457 | 20 1/2 | 521 |
| 20 X 25 | 508 X 635 | 18 7/16 | 468 | 20 3/16 | 513 | 23 1/4 | 591 | 25 1/2 | 648 |
| 20 X 20 | 508 X 508 | 18 7/16 | 468 | 20 3/16 | 513 | 18 1/4 | 457 | 20 1/2 | 521 |
| 25 X 20 | 635 X 508 | 23 5/16 | 592 | 25 1/8 | 638 | 18 3/8 | 467 | 20 5/8 | 524 |
| 25 X 22 | 635 X 559 | 23 5/16 | 592 | 25 1/8 | 638 | 20 1/4 | 514 | 22 1/2 | 572 |

M14710E

Residential Air Cleaner Replacement Media Filter



Replacement filter for Honeywell F25, F27, F35, F100, F150, F200 Media Air Cleaners.

- High filtration efficiency
- Low pressure drop
- Easy to install
- Long life
- UL listed

Applications: Replacement Filter
Type of Air Cleaner: Media Air Cleaner

Efficiency Standard: Efficiency ratings are based on American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-1999.

| Material Number | Minimum Efficiency Reporting Value (Media Filters Only) | Approximate, Dimensions | Fractional Efficiency | Static Pressure Drop (in. w.c.) | Used With |
|-----------------|---|---|------------------------|---------------------------------|--|
| FC100A1003/U | MERV 10 | 16 in. x 20 in. (406 mm x 508 mm) | E1=25%, E2=62%, E3=85% | 0.23 at 500 FPM | Honeywell 16X20 F100 and F200 Media Air Cleaners |
| FC100A1011/U | MERV 10 | 20 in. x 20 in. (508 mm x 508 mm) | E1=25%, E2=62%, E3=85% | 0.23 at 500 FPM | Honeywell 20X20 F100 and F200 Media Air Cleaners |
| FC100A1029/U | MERV 10 | 16 in. x 25 in. (406 mm x 635 mm) | E1=25%, E2=62%, E3=85% | 0.23 at 500 FPM | Honeywell 16X25 F100 and F200 Media Air Cleaners |
| FC100A1037/U | MERV 10 | 20 in. x 25 in. (508 mm x 635 mm) | E1=25%, E2=62%, E3=85% | 0.23 at 500 FPM | Honeywell 20X25, 25X20, 25X22 F100 and F200 Media Air Cleaners, SpaceGard 2200 |
| FC100A1045/U | MERV 10 | 21 1/2 in. x 27 1/2 in. (546 mm x 699 mm) | E1=25%, E2=62%, E3=85% | 0.23 at 500 FPM | F27F1057 |
| FC100A1052/U | MERV 10 | 20 in. x 12 1/2 in. (508 mm x 318 mm) | E1=25%, E2=62%, E3=85% | 0.23 at 500 FPM | F27F1032 |
| FC100A1060/U | MERV 10 | 16 in. x 28 in. (406 mm x 711 mm) | E1=25%, E2=62%, E3=85% | 0.23 at 500 FPM | SpaceGard 2400 |
| FC200E1003/U | MERV 13 | 16 in. x 20 in. (406 mm x 508 mm) | E1=63%, E2=90%, E3=97% | 0.28 at 500 FPM | Honeywell 16X20 F100 and F200 Media Air Cleaners |
| FC200E1011/U | MERV 13 | 20 in. x 20 in. (508 mm x 508 mm) | E1=63%, E2=90%, E3=97% | 0.28 at 500 FPM | Honeywell 20X20 F100 and F200 Media Air Cleaners |
| FC200E1029/U | MERV 13 | 16 in. x 25 in. (406 mm x 635 mm) | E1=63%, E2=90%, E3=97% | 0.28 at 500 FPM | Honeywell 16X25 F100 and F200 Media Air Cleaners |
| FC200E1037/U | MERV 13 | 20 in. x 25 in. (508 mm x 635 mm) | E1=63%, E2=90%, E3=97% | 0.28 at 500 FPM | Honeywell 20X25, 25X20, 25X22 F100 and F200 Media Air Cleaners, SpaceGard 2200 |
| FC2200A1009/U | MERV 10 | 20 1/4 in. x 24 1/4 in. x 5 7/8 in. (514 mm x 616 mm x 149 mm) | E1=19%, E2=54%, E3=86% | 0.21 at 500 FPM | SpaceGard 2200 |
| FC2400A1005/U | MERV 10 | 16 in. x 27 1/8 in. x 5 7/8 in. (406 mm x 689 mm x 149 mm) | E1=19%, E2=54%, E3=86% | 0.21 at 500 FPM | SpaceGard 2400 |

Replacement Media Filters

Residential Air Cleaner POPUP Replacement Media Filter



Honeywell PopUP filters store flat and pop into shape for installation.

- Save space on the truck.
- Less damage during storage.
- Save time on assembly.
- So easy you can sell over-the-counter to homeowners without worry of mistakes.
- Compact shape makes PopUP easy to ship.
- No combs, pleat spacers or end caps.

Applications: Replacement Filter
Type of Air Cleaner: Media Air Cleaner

Efficiency Standard: Efficiency ratings are based on American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-1999. Efficiency ranges are defined for small particles, E1=0.3 to 1.0 microns; medium particles, E2=1.0 to 3.0 microns; and large particles, E3=3.0 to 10.0 microns.

| Material Number | Minimum Efficiency Reporting Value (Media Filters Only) | Approximate, Dimensions | Used With |
|-----------------|---|---|---|
| POPUP1620/U | MERV 11 | 16 in. x 20 in. (406 mm x 508 mm) | Honeywell 16X20 F100 and F200 Media Air Cleaners |
| POPUP1625/U | MERV 11 | 16 in. x 25 in. (406 mm x 635 mm) | Honeywell 16X25 F100 and F200 Media Air Cleaners |
| POPUP2020/U | MERV 11 | 20 in. x 20 in. (508 mm x 508 mm) | Honeywell 20X20 F100 and F200 Media Air Cleaners |
| POPUP2025/U | MERV 11 | 20 in. x 25 in. (508 mm x 635 mm) | Honeywell 20X25 F100 and F200 Media Air Cleaners. Does not work with 25X20 or 25X22 Media Air Cleaners. |
| POPUP2200/U | MERV 11 | 20 1/4 in. x 24 1/4 in. x 5 7/8 in. (514 mm x 616 mm x 149 mm) | SpaceGard 2200, 2120, 2250, Lennox PMAC20, GeneralAire AC-1 |
| POPUP2400/U | MERV 11 | 16 in. x 27 1/8 in. x 5 7/8 in. (406 mm x 689 mm x 149 mm) | SpaceGard 2400, 2140, Lennox PMAC12 |

Return Grille Media Air Filter



The Return Grille Filter provides a high efficiency, long life alternative to a 1" filter. Our patented design, unique to the industry, captures a significant amount of the airborne particles, in the air that circulates through the filter.

- Mounts in most return filter grilles.
- Pleated for greater media capacity.
- Low pressure drop provides a comfortable air flow.
- Maintains equipment efficiency longer than standard filters.
- FC40 is MERV 10.
- FC20 is MERV 8.

Applications: Return Grille

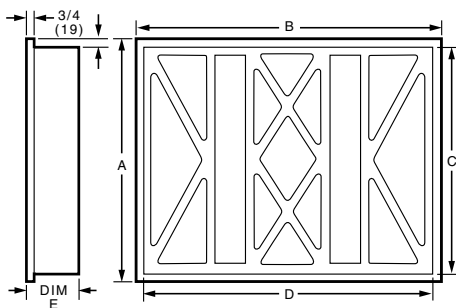
Type of Air Cleaner: Media Air Cleaner

Efficiency Standard: Efficiency ratings are based on American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-1999. Efficiency ranges are defined for small particles, E1=0.3 to 1.0 microns; medium particles, E2=1.0 to 3.0 microns; and large particles, E3=3.0 to 10.0 microns.

Fractional Efficiency: E1=31%, E2=61%, E3=86%
Static Pressure Drop (in. w.c.): 0.12 at 300FPM

| Material Number | Minimum Efficiency Reporting Value (Media Filters Only) | Approximate, Dimensions | Airflow Capacity (cfm) | Airflow Capacity (m ³ /hr) |
|-----------------|---|-----------------------------------|------------------------|---------------------------------------|
| FC40R1003/U | MERV 10 | 20 in. x 20 in. (508 mm x 508 mm) | Maximum – 1150 cfm | Maximum – 1950 m ³ /hr |
| FC40R1011/U | MERV 10 | 20 in. x 25 in. (508 mm x 635 mm) | Maximum – 1450 cfm | Maximum – 2460 m ³ /hr |
| FC40R1029/U | MERV 10 | 20 in. x 30 in. (508 mm x 762 mm) | Maximum – 1800 cfm | Maximum – 3060 m ³ /hr |
| FC40R1045/U | MERV 10 | 14 in. x 25 in. (356 mm x 635 mm) | Maximum – 1000 cfm | Maximum – 1700 m ³ /hr |
| FC40R1052/U | MERV 10 | 16 in. x 20 in. (406 mm x 508 mm) | Maximum – 900 cfm | Maximum – 1530 m ³ /hr |
| FC40R1060/U | MERV 10 | 16 in. x 25 in. (406 mm x 635 mm) | Maximum – 1150 cfm | Maximum – 1950 m ³ /hr |
| FC40R1078/U | MERV 10 | 24 in. x 24 in. (610 mm x 610 mm) | Maximum – 1700 cfm | Maximum – 2890 m ³ /hr |
| FC40R1094/U | MERV 10 | 12 in. x 12 in. (305 mm x 305 mm) | Maximum – 350 cfm | Maximum – 590 m ³ /hr |
| FC40R1102/U | MERV 10 | 14 in. x 14 in. (356 mm x 356 mm) | Maximum – 500 cfm | Maximum – 850 m ³ /hr |
| FC40R1110/U | MERV 10 | 14 in. x 20 in. (356 mm x 508 mm) | Maximum – 750 cfm | Maximum – 1270 m ³ /hr |
| FC40R1128/U | MERV 10 | 14 in. x 24 in. (356 mm x 610 mm) | Maximum – 950 cfm | Maximum – 1610 m ³ /hr |
| FC40R1136/U | MERV 10 | 18 in. x 24 in. (457 mm x 610 mm) | Maximum – 1250 cfm | Maximum – 2120 m ³ /hr |
| FC40R1144/U | MERV 10 | 20 in. x 24 in. (508 mm x 610 mm) | Maximum – 1400 cfm | Maximum – 2380 m ³ /hr |
| FC40R1169/U | MERV 10 | 14 in. x 30 in. (356 mm x 762 mm) | Maximum – 1200 cfm | Maximum – 2040 m ³ /hr |
| FC40R1177/U | MERV 10 | 24 in. x 30 in. (610 mm x 762 mm) | Maximum – 2050 cfm | Maximum – 3480 m ³ /hr |
| FC40R1185/U | MERV 10 | 18 in. x 18 in. (457 mm x 457 mm) | Maximum – 950 cfm | Maximum – 850 m ³ /hr |
| FC40R1830/U | MERV 10 | 18 in. x 30 in. (457 mm x 762 mm) | Maximum – 1550 cfm | Maximum – 2610 m ³ /hr |

Dimensions in inches (millimeters)



DIMENSIONS IN. (MM)

| Product Numbers | Size | A | B | C | D | E |
|-----------------|---------------------|--------------|--------------|--------------|--------------|-------------|
| FC40R1003 | 20 X 20 (508 x 508) | 19-3/4 (502) | 19-3/4 (502) | 18-1/2 (470) | 18-1/2 (470) | 4-3/8 (111) |
| FC40R1011 | 20 X 25 (508 x 635) | 19-3/4 (502) | 24-3/4 (629) | 18-1/2 (470) | 23-1/2 (597) | 4-3/8 (111) |
| FC40R1029 | 20 X 30 (508 x 762) | 19-3/4 (502) | 29-3/4 (756) | 18-1/2 (470) | 28-1/2 (724) | 4-3/8 (111) |
| FC40R1037 | 12 X 24 (305 X 610) | 11-3/4 (298) | 23-3/4 (603) | 10-1/2 (266) | 22-1/2 (571) | 4-3/8 (111) |
| FC40R1045 | 14 X 25 (356 X 635) | 13-3/4 (349) | 24-3/4 (629) | 12-1/2 (317) | 23-1/2 (596) | 4-3/8 (111) |
| FC40R1052 | 16 X 20 (406 X 508) | 15-3/4 (400) | 19-3/4 (502) | 14-1/2 (368) | 18-1/2 (470) | 4-3/8 (111) |
| FC40R1060 | 16 X 25 (406 X 635) | 15-3/4 (400) | 24-3/4 (629) | 14-1/2 (368) | 23-1/2 (596) | 4-3/8 (111) |
| FC40R1078 | 24 X 24 (610 X 610) | 23-3/4 (603) | 23-3/4 (603) | 22-1/2 (571) | 22-1/2 (571) | 4-3/8 (111) |
| FC40R1094 | 12 X 12 (305 X 305) | 11-3/4 (298) | 11-3/4 (298) | 10-1/2 (266) | 10-1/2 (266) | 4-3/8 (111) |
| FC40R1102 | 14 X 14 (356 X 356) | 13-3/4 (349) | 13-3/4 (349) | 12-1/2 (317) | 12-1/2 (317) | 4-3/8 (111) |
| FC40R1110 | 14 X 20 (356 X 508) | 13-3/4 (349) | 19-3/4 (502) | 10-1/2 (266) | 18-1/2 (470) | 4-3/8 (111) |
| FC40R1128 | 14 X 24 (356 X 610) | 13-3/4 (349) | 23-3/4 (603) | 12-1/2 (317) | 22-1/2 (571) | 4-3/8 (111) |
| FC40R1136 | 18 X 24 (457 X 610) | 17-3/4 (451) | 23-3/4 (603) | 16-1/2 (419) | 22-1/2 (571) | 4-3/8 (111) |
| FC40R1144 | 20 X 24 (508 X 610) | 19-3/4 (502) | 23-3/4 (603) | 18-1/2 (470) | 22-1/2 (571) | 4-3/8 (111) |
| FC40R1169 | 14 X 30 (356 X 762) | 13-3/4 (349) | 29-3/4 (756) | 12-1/2 (317) | 28-1/2 (724) | 4-3/8 (111) |
| FC40R1177 | 24 X 30 (610 X 762) | 23-3/4 (603) | 29-3/4 (756) | 22-1/2 (571) | 28-1/2 (724) | 4-3/8 (111) |
| FC40R1185 | 18 X 18 (457 X 457) | 17-3/4 (451) | 17-3/4 (451) | 16-1/2 (419) | 16-1/2 (419) | 4-3/8 (111) |
| FC40R1830 | 18 X 30 (457 X 762) | 17-3/4 (451) | 29-3/4 (756) | 16-1/2 (419) | 28-1/2 (724) | 4-3/8 (111) |

M18953D

Replacement Media Filters

HEPA Replacement Media

HEPA stands for high-efficiency particulate arresting. Honeywell HEPA air cleaners offer powerful filtration: They capture 99.97% of particles that are 0.3 microns in size from the air that passes through the filter.

Applications: Replacement Filter
Type of Air Cleaner: HEPA Air Cleaner

| Material Number | Description | Used With |
|-----------------|---|-----------|
| 32006026-001/U | Carbon Filter for Whole House HEPA Air Cleaner | F500 |
| 32006027-001/U | 2 inch Prefilter for Whole House HEPA Air Cleaner | F500 |
| 32006028-001/U | HEPA Filter for Whole House HEPA Air Cleaner | F500 |

Replacement Filter for Perfect Fit



The replacement filter is a high-efficiency long-life filter for Perfect Fit media air cleaners. It captures a significant amount of airborne particles in the air that circulates through the filter.

- Higher efficiency and lower pressure drop than OEM filter.
- Captures particles as small as 0.3 microns.
- Pleated filter for greater media capacity.
- Low pressure drop reduces strain on equipment, provides a comfortable air flow, and helps maintain equipment efficiency.
- Easy installation. Angled edge fits neatly into offset side of air cleaner frame.

Applications: Replacement Filter
Type of Air Cleaner: Media Air Cleaner

Efficiency Standard: Efficiency ratings are based on American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-1999. Efficiency ranges are defined for small particles, E1=0.3 to 1.0 microns; medium particles, E2=1.0 to 3.0 microns; and large particles, E3=3.0 to 10.0 microns.

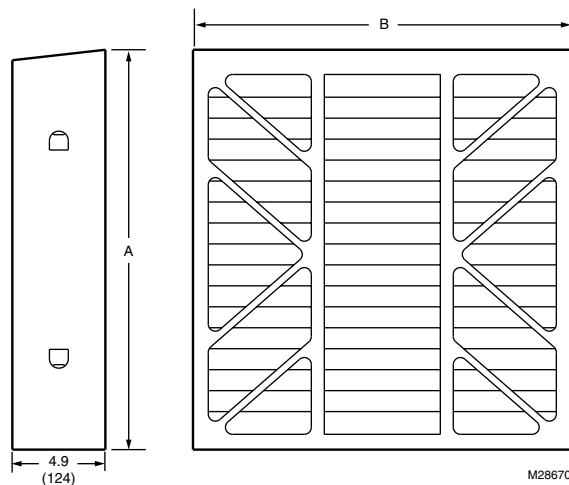
Fractional Efficiency: E1=22%, E2=61%, E3=87%

Static Pressure Drop (in. w.c.): 0.17 at 500 FPM




Approvals, Underwriters Laboratories Inc.: Filter Element: UL Listed, UL900, Class 2

| Material Number | Minimum Efficiency Reporting Value (Media Filters Only): | Approximate, Dimensions | Used With |
|-----------------|--|--|--------------------------------------|
| TRN1427T1/U | MERV 10 | 14 1/2 in. X 27 in. X 5 in. (360 mm x 670 mm x 120 mm) | Trane Perfect Fit Media Air Cleaners |
| TRN1727T1/U | MERV 10 | 17 1/2 in. X 27 in. X 5 in. (440 mm x 670 mm x 120 mm) | Trane Perfect Fit Media Air Cleaners |
| TRN2121T1/U | MERV 10 | 21 1/2 in. x 21 in. x 5 in. (540 mm x 510 mm x 120 mm) | Trane Perfect Fit Media Air Cleaners |
| TRN2127T1/U | MERV 10 | 21 in. x 27 in. x 5 in. (530 mm x 670 mm x 120 mm) | Trane Perfect Fit Media Air Cleaners |
| TRN2321T1/U | MERV 10 | 23 1/2 in. x 21 in. x 5 in. (590 mm x 51 mm x 120 mm) | Trane Perfect Fit Media Air Cleaners |
| TRN2427T1/U | MERV 10 | 24 in. x 27 in. x 5 in. (620 mm x 670 mm x 120 mm) | Trane Perfect Fit Media Air Cleaners |
| TRN2621T1/U | MERV 10 | 26 in. X 21 in. X 5 in. (660 mm x 510 mm 120 mm) | Trane Perfect Fit Media Air Cleaners |

Dimensions in inches (millimeters)



Residential Air Cleaner Parts and Accessories

| Material Number | Description | Used With | |
|-----------------|--|-------------------------|---|
| 136434AA/U | 20 inch Ionizer wire | | |
| 136434BA/U | 16 inch Ionizer wire | | |
| 137266/U | F50F and F58F Cell Handle | | |
| 137980A/U | Test Button Assembly for F50A, F50E, F50F, or F58C,F | F50 | |
| 138889A/U | Contact Board, F50E, F59A | F50, F59 |  |
| 190912A/U | Contact Board, F52C,D,E,F | F52 | |
| 195911/U | Carbon filter | | |
| 203321/U | ON/OFF Switch for F50F, F52F, or F58F | F52 | |
| 203329A/U | F50F Terminal Board Assembly, Rear | F50 | |
| 203329B/U | F50F Terminal Board Assembly, Front, 25 in Box | F50 | |
| 203368/U | Prefilter for 16X25 F50F, F300" | F300, F50 |  |
| 203369/U | Prefilter for 20X25, 20X12.5 F50F, F300" | F300, F50 | |
| 203370/U | Prefilter for 20X20 F50F, F300" | F300, F50 | |
| 203371/U | Prefilter for 16X25 F50A,B,E,F, F300" | F300, F50 | |
| 203372/U | Prefilter for 20X25, 20X12.5 F50A,B,E,F, F300" | F300, F50 | |
| 203373/U | Prefilter for 20X20 F50A,B,E,F, F300" | F300, F50 | |
| 203638/U | Carbon Filter, F59A, Series 1,2,3" | F59 | |
| 207631/U | DOOR LATCH, F52F | F52 | |
| 208536/U | Prefilter for F52F 1-Cell | F52 | |
| 208537/U | Prefilter for F52F 2-Cell | F52 | |
| 208543/U | INTERLOCK SWITCH, F52F | F52 | |
| 209989/U | Prefilter for 16X20 F50F, F300" | F300, F50 | |
| 50053268-018/U | TrueCLEAN™ Replacement Air Flow Sensor | FH8000A | |
| 50067967-003/U | 25 in. Replacement door for F100 (gray) | F100F2044, F100F2051 | |
| FC37A1049/U | Electronic Air Cleaner Cell, 9.8 x 20" | |  |
| FC37A1064/U | Electronic Air Cleaner Cell, 12.4 x 20" | | |
| FC37A1114/U | Electronic Air Cleaner Cell, 9.8 x 16" | | |
| FC37A1130/U | Electronic Air Cleaner Cell, 12.4 x 16" | | |
| FC37A1171/U | Electronic Air Cleaner Cell, 12.4 x 20" | F52 | |
| FC37B1030/U | Electronic Air Cleaner Cell, 12.4 x 20" | | |

Air Cleaner Parts and Accessories

EAC Media Post Filter

Applications: Replacement Filter
Type of Air Cleaner: Electronic Air Cleaner

| Material Number | Description | Used With |
|-----------------|--|------------|
| 50000293-001/U | High air flow media post-filter for EAC, 16x10 - 2 filters per package | F300, F50F |
| 50000293-002/U | High air flow media post-filter for EAC, 16x12.5 - 2 filters per package | F300, F50F |
| 50000293-003/U | High air flow media post-filter for EAC, 20x10 - 2 filters per package | F300, F50F |
| 50000293-004/U | High air flow media post-filter for EAC, 20x12.5 - 2 filters per package | F300, F50F |

Residential Air Cleaners Replacement Power Supply

| Material Number | Electrical Ratings | Description | Used With |
|-----------------|--------------------|---|-----------|
| 203365A/U | | Conversion Kit for changing 120V Power Supply to 240V. | |
| PS1201A00/U | 120 Vac | Replacement power supply. 120 Vac. Selectable jumper for 20x25, 16x25, 20x20, 16x20 and 12.5x20 electronic air cleaners. | F300 F50 |
| PS1201B20/U | 120 Vac | Replacement power box. 120 Vac. 20 inch box for 16x20 and 20x20 electronic air cleaners. | F50 F300 |
| PS1201B25/U | 120 Vac | Replacement power box. 120 Vac. 25 inch box for 16x25 and 20x25 electronic air cleaners. | F50 F300 |
| PS1201C00/U | 120 Vac | Replacement power supply on chassis. 120 Vac. Selectable jumper for 20x25 and 12.5x20 return grill electronic air cleaners. | F52 |
| PS1201C01/U | 120 Vac | Replacement power supply on chassis. 120 Vac. Selectable jumper. | |
| PS1201C02/U | 120 Vac | Replacement power supply on chassis. 120 Vac. Selectable jumper. | |
| PS1202A00/U | 120 Vac | Replacement power supply. 120 Vac. Includes driver board for LED indicators. Selectable jumper for 20x25, 16x25, 20x20, 16x20 and 12.5x20 electronic air cleaners. | F50 F300 |
| PS1202B12/U | 120 Vac | Replacement power box. 120 Vac. Includes driver board for LED indicators. 12 inch box for 12.5x20 electronic air cleaner. | F50 F300 |
| PS1202B12J/U | 120 Vac | Replacement power junction box. 120 Vac. Includes driver board for LED indicators. 12 inch box for 12.5x20 electronic air cleaner. | F50 |
| PS1202B20/U | 120 Vac | Replacement power box. 120 Vac. Includes driver board for LED indicators. 20 inch box for 16x20 and 20x20 electronic air cleaners. | F300 F50 |
| PS1202B25/U | 120 Vac | Replacement power box. 120 Vac. Includes driver board for LED indicators. 25 inch box for 16x25 and 20x25 electronic air cleaners. | F50 F300 |
| PS1202C00/U | 120 Vac | Replacement power supply on chassis. 120 Vac. Includes driver board for LED indicators. Selectable jumper for 20x25 and 12.5x20 return grill electronic air cleaners. | F52 |
| PS1202C03/U | 120 Vac | Replacement power supply on chassis. 120 Vac. Includes driver board for LED indicators. | |
| PS2401A00/U | 230 Vac | Replacement power supply. 230 Vac. Selectable jumper. | F300 F50 |
| PS2401B12/U | 230 Vac | Replacement power box. 230 Vac. 12 inch box for 12.5x20 electronic air cleaner. | F50 |
| PS2401B25/U | 230 Vac | Replacement power box. 230 Vac. 25 inch box. Selectable jumper. | F50 |
| PS2401C00/U | 230 Vac | Replacement power supply on chassis. 230 Vac. Selectable jumper. | |
| PS2402B12/U | 230 Vac | Replacement power box. 230 Vac. Includes driver board for LED indicators. 12 inch box for 12.5x20 electronic air cleaner. | F50 |
| PS2402B12J/U | 230 Vac | Replacement power junction box. 230 Vac. Includes driver board for LED indicators. 12 inch box for 12.5x20 electronic air cleaner. | F50 |

TrueDRY™ Dehumidification Systems



The Honeywell TrueDRY DR120 ensures the home is maintained at proper humidity levels through its high performance and efficiency in the industry.

- Removes up to 65 pints (30.8 l) of water per day from the indoor air.
- Built-in humidity control requires no additional wiring to an external control. Just plug in and go! Choice of external control options also available for centrally ducted control.
- Energy Star 3.0 rated.

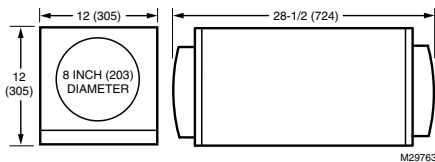
Type: Dehumidifier

Voltage: 120V

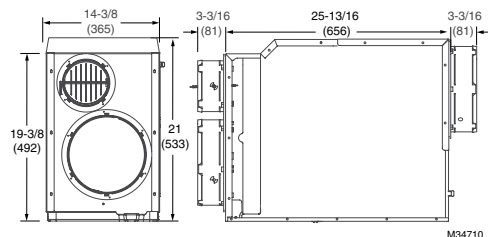
Includes: Four leveling feet with rubber isolation pads.

| Material Number | Description | Capacity (gal. per day) | Capacity (pints per day) | Capacity (liter per day) | Electrical Ratings | Color | Approximate, Dimensions | Plenum Opening | Weight (lb) |
|-----------------|---|-------------------------|--------------------------|--------------------------|--------------------|-------|--|---|-------------|
| DR65A2000/U | TrueDRY 65-pint dehumidifier with on-board control. | 8 3/25 gal per day | 65 pints per day | 30 L per day | 5.2 A | Gray | 31 in. L x 15 in. W x 16 in. H | Diameter – 8 in. collars (Diameter – 203 mm collar) | 55 lb |
| DR90A2000/U | TrueDRY 90-pint dehumidifier. | 11 1/4 gal per day | 90 pints per day | 45 L per day | 6.3 A | Gray | 40 in. L x 18-1/2 in. W x 21-1/2 in. H | Diameter – 10 in. collars; 6 in. ventilation collar (Diameter – 254 mm collars; 152 mm vent collar) | 82 lb |
| DR120A2000/U | TrueDRY 120-pint dehumidifier. | 15 gal per day | 120 pints per day | 57 L per day | 8.1 A | Gray | 40 in. L x 18-1/2 in. W x 23-1/2 in. H | Diameter – 10 in. collars; 6 in. ventilation collar (Diameter – 254 mm collars; 152 mm vent collar) | 90 lb |

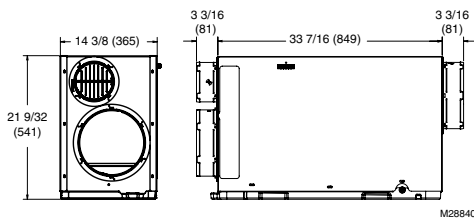
DR65A dimensions in inches (millimeters)



DR120A dimensions in inches (millimeters)

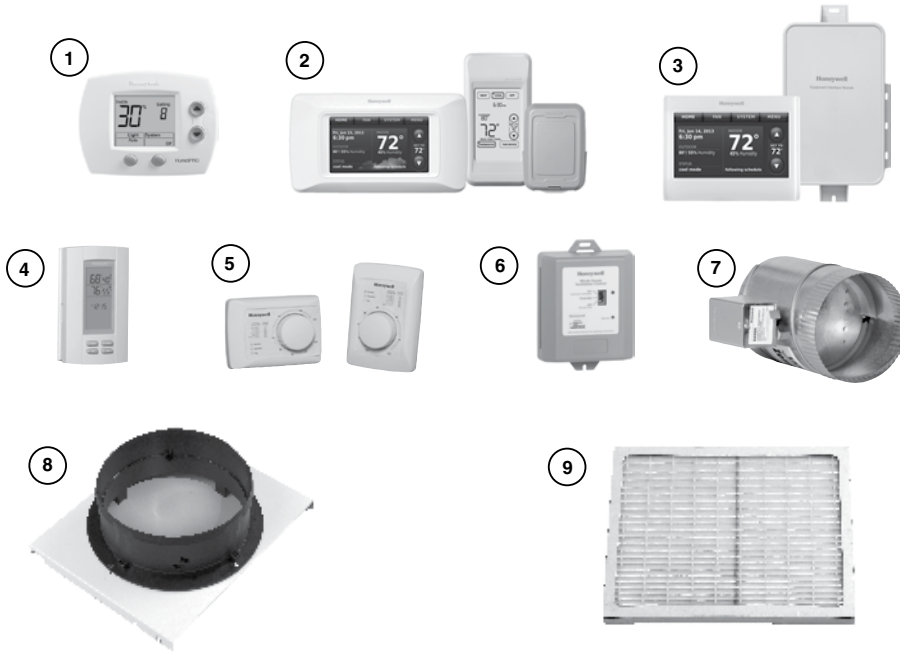


DR90A dimensions in inches (millimeters)



TrueDRY™ Humidification Systems

Parts List DR65

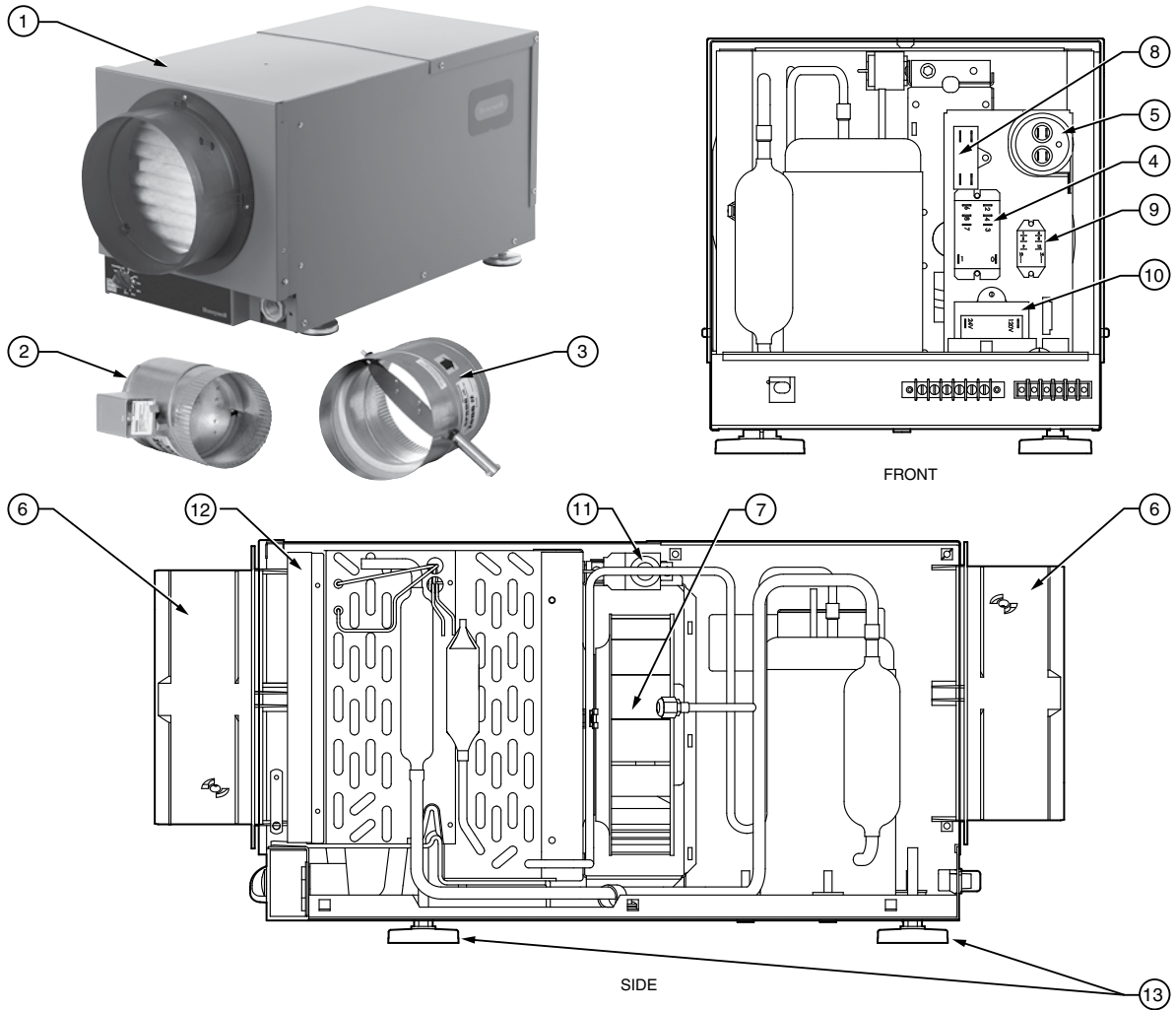


| Figure Reference | Description | Part Number |
|------------------|-------------------------------------|---------------|
| 1 | HumidiPRO Digital Humidity Control | H6062A1000 |
| 2 | Prestige Comfort System | YTHX9321R5003 |
| 3 | VisionPRO IAQ Total Comfort Control | YTH9421C1010 |
| 4 | TruelAQ digital IAQ control | DG115EZIAQ |
| 5 | H8908D Manual Dehumidistat | H8908DSPST |
| 6 | Automatic ventilation control | W8150A1001 |
| 7 | Motorized ventilation damper | EARD 6 |
| | Compressor overload | 50049537-001 |
| | Compressor relay, DPDT 24 VAC, 30A | 50049537-002 |
| | Run capacitor, 35 MFD | 50049537-003 |
| 8 | 8-in. Duct Collar | 50049537-004 |
| 9 | Filter | 50049537-005 |
| | Fan | 50049537-006 |
| | Fan relay, SPDT, 24 Vac, 15A | 50035445-011 |

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TrueDRY™ Humidification Systems

Parts List DR65



| Figure Reference | Base and Accessory Parts | Part Number |
|-------------------|---|--------------|
| 1 | TrueDRY DR65 | DR65A2000/U |
| 2 | Motorized Ventilation Damper | EARD6 |
| 3 | 8 in. Backdraft Damper (Discard Included Counterweight) | SPRD8 |
| Replacement Parts | | |
| 4 | Compressor Relay, 24 VAC, 30 A | 50049537-002 |
| 5 | Compressor Run Capacitor | 50049537-003 |
| 6 | 8" Duct Collar | 50049537-004 |
| 7 | Fan Assembly | 50049537-006 |
| 8 | Capacitor - Fan | 50070204-001 |
| 9 | Fan Relay, SPDT, 24 VAC, 15A | 50035445-011 |
| 10 | Transformer 120/24 VAC, 40 VA | 50035445-013 |
| 11 | Defrost Thermostat | 50070204-002 |
| 12 | Filter | 50049537-005 |
| 13 | Leveling Foot | 50035445-019 |

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TrueDRY™ Humidification Systems

TrueDRY Parts and Accessories

| Material Number | Description | Used With |
|-----------------|--|--|
| 50035445-003/U | DH150 capillary tubes, 0.050in x 0.124in x 59.00in | DH150 |
| 50035445-005/U | DH150 accumulator | DH150 |
| 50035445-006/U | DH150 filter/drier | DH150 |
| 50035445-007/U | DH150 tube -cond to filter | DH150 |
| 50035445-008/U | DH150 tube -discharge line | DH150 |
| 50035445-009/U | DH150 condenser | DH150 |
| 50035445-010/U | DH150 impeller | DH150 |
| 50035445-011/U | Fan relay, SPDT, 24 Vac, 15A | DR65, DR90, DR120, DH150 |
| 50035445-012/U | DH150 45 MFD capacitor -compressor | DH150 |
| 50035445-014/U | DR90 compressor relay, SPST, 24 Vac, 30A | DR90, DR120 |
| 50035445-015/U | DH150 15 MFD capacitor-impeller | DH150 |
| 50035445-020/U | DH150 MERV 11 filter | DH150 |
| 50049536-001/U | DR90 compressor run capacitor | DR90A1000 |
| 50049536-004/U | DR90 6" duct collar | DR93 |
| 50049536-005/U | DR90 10" duct collar | DR90, DR120 |
| 50049536-006/U | DR90 magnetic door | DR90A1000 |
| 50049536-007/U | Defrost Thermostat for TrueDRY | DR90A1000, DH150 |
| 50049536-008/U | Styrofoam Assembly with Tape | DR90A1000 |
| 50049537-001/U | Compressor overload | DR65A1000 |
| 50049537-002/U | Compressor relay, DPDT 24 VAC, 30A | DR65 |
| 50049537-003/U | Compressor Run capacitor, 35 MFD | DR65 |
| 50049537-004/U | 8" Duct Collar | DR65 |
| 50049537-005/U | DR65 Filter | DR65 |
| 50049537-006/U | TrueDRY Blower Motor | DR65, DR90A2000 with date code up to K12XXXXX |
| 50049537-007/U | Defrost Thermostat for TrueDRY | DR65A1000 |
| 50070171-001/U | Compressor Run Capacitor | DR90A2000 |
| 50070171-002/U | TrueDRY Filter | DR90A2000, DR120 |
| 50070171-003/U | TrueDRY Magnetic door, black | DR90A2000, DR120 |
| 50070204-001/U | TrueDRY Fan Capacitor | DR65A2000, DR90A2000 with date code up to K12XXXXX |
| 50070204-002/U | Defrost Thermostat for TrueDRY | DR65, DR90, DR120 |
| 50070205-001/U | Compressor Run Capacitor | DR120 with date code up to K12XXXXX |
| 50070205-002/U | TrueDRY Blower Motor | DR120 |
| 50070205-003/U | TrueDRY Fan Capacitor | DR120 |
| DR120XCRC1/U | TrueDRY Compressor Run Capacitor | DR120A2000, Date Code L12XXXXX and Up |
| DR90XCFA1/U | TrueDRY Fan Capacitor | DR90A2000, Date Code L12XXXXX and Up |

HM700 Electrode Humidifier



The Electrode Humidifier comes with a HumidiPRO™ digital humidity control, and also works seamlessly with Honeywell thermostats including the Lyric™, Prestige® IAQ and VisionPRO® 8000, so you'll have maximum flexibility to integrate it into the system you're installing. The Electrode Humidifier can be remote mounted up to five feet from the system and can provide 11 or 22 gallons per day (GPD). It requires only a potable water supply, water drainage and 110 or 220 power.

- Auto-adaptive technology adjusts for changes in the weather, water and voltage
- Automatically protects against window condensation and frost
- Humidity Boost can be used to increase relative humidity by 5 or 10%
- Easy to use with any of the control options
- When used with Prestige IAQ and VisionPRO 8000 thermostats, the humidifier communicates with the wireless outdoor sensor to make automatic humidity adjustments

Type: Steam

Color: Light Gray

Approximate, Dimensions: 11-7/16 in. wide x 21-7/16 in. high x 6-15/16 in. deep (289 mm wide x 544 mm high x 174 mm deep)

Mounting: Mount on sturdy wall (Concrete, Drywall, or Wood)




Temperature Rating: Installation Ambient Temperature - 40°F to 105°F (4°C to 40°C)

Voltage: 120 Vac or 240 Vac; 1.9 or 3.8 kW, 15.9 Amps, 1 Phase

Steam Output: 11 GPD for 110/120V or 22 GPD for 220/240V

| Material Number | Description | Capacity (gal. per day) | Capacity (liter per day) | Includes |
|-----------------|---|-------------------------|--------------------------|---|
| HM700A1000/U | 11 or 22-GPD Electrode Humidifier with HumidiPRO Humidistat | 11 or 22 gpd | 42 or 83 lpd | HumidiPRO™ H6062 Digital Humidity Control, Distribution kit and 5-ft remote mount hose. |

HM700 Electrode Humidifier Accessories and Replacement Parts

| Material Number | Description | Includes | |
|-----------------|---|--|---|
| H6062A1000/U | HumidiPRO Humidistat | |  |
| HM700ADISTKIT/U | Stainless Steel Distribution Remote Mount Kit | Steam distributor, steam hose, condensate hose and installation hardware |  |
| HM700ACYL2/U | Replacement Canister | |  |
| HM700ADVALVE/U | Replacement Drain Valve | | |
| HM700AFVALVE/U | Replacement Fill Valve | | |

Steam Humidification Systems

RO Water Filter System



In homes with hard water, Honeywell recommends a Reverse Osmosis Filtration System. The RO Filter System is designed to remove calcium and magnesium from the water. If the water also has high iron, manganese or biological content, the filters may require replacement more than once per year.

- Sediment Pre-Filter — Removes chlorine, sediment.
- Reverse Osmosis Filter — Removes calcium and magnesium, the primary sources of hard water.
- Clean Water Staging Tank — Can be reused each season.
- Quick Connect Plumbing — Simple installation for flow control and plumbing to TrueSTEAM™.
- Optional Permeate Pump — For homes with water pressure lower than 45 psi.

Ambient Temperature Range: 40°F to 100°F (4°C to 38°C)

Connection Type: Plastic body with Quick connect end fittings & pin locks

| Material Number | Description |
|-----------------|---|
| HM600XROF1/U | RO Water Filter for Honeywell Steam Humidifier |
| 50046086-001/U | Bundled replacement kit water filters. Change filters once per humidification season. |

Honeywell's STEAM Installation Accessories

| Material Number | Description | |
|-----------------|---|--|
| 50024917-001/U | Honeywell's STEAM 10-Foot Remote Mount Kit. Compatible with all TrueSTEAM models. | |
| 50024917-002/U | Honeywell's STEAM 20-Foot Remote Mount Kit. Compatible with HM612 and HM609 STEAM models. | |
| 50027910-001/U | Duct or Remote Mount Differential Pressure Switch | |

Honeywell's STEAM Parts

| Material Number | Description |
|-----------------|--|
| 50027998-002/U | TrueSTEAM water level sensor assembly |
| 50043771-001/U | Qty 25 Honeywell's STEAM filter for Solenoid Valve |

TrueEASE™ Bypass or Fan-powered Humidifier



Honeywell's revolutionary new line of evaporative bypass and fan Type: Evaporative Flow-Through Humidifier humidifiers.

- Versatile fit designed for more jobs.
- Operational efficiencies to drive higher margins with values homeowners understand.
- Fast installation for labor and time savings.
- Unintimidating, engaging maintenance to drive repeat business.
- Operational noise reduction for humidity comfort without the ear aches.
- Includes HumidiPRO Digital Humidity Control.

Indoor Air Quality



| Material Number | Capacity (gal. per day) | Capacity (liter per day) | Description |
|--|-------------------------|--------------------------|---|
| TrueEase Advanced Humidifier | | | |
| HE150A1005/U | 12 gal. per day | 46 L per day | TrueEASE Small Advanced Bypass Humidifier |
| HE250A1005/U | 17 gal. per day | 64 L per day | TrueEASE Large Advanced Bypass Humidifier |
| HE300A1005/U | 18 gal. per day | 68 L per day | TrueEASE Advanced Fan-Powered Humidifier |
| TrueEase Advanced Humidifier - Canadian Model | | | |
| HE150C1014/U | 12 gal. per day | 46 L per day | TrueEASE Small Advanced Bypass Humidifier with Additional Installation Hardware |
| HE250C1014/U | 17 gal. per day | 64 L per day | TrueEASE Large Advanced Bypass Humidifier with Additional Installation Hardware |
| TrueEase Basic Humidifier | | | |
| HE100A1000/U | 12 gal. per day | 46 L per day | TrueEASE Small Basic Bypass Humidifier |
| HE200A1000/U | 17 gal. per day | 64 L per day | TrueEASE Large Basic Bypass Humidifier |
| TrueEase Basic Humidifier - Canadian Model | | | |
| HE100C1001/U | 12 gal. per day | 46 L per day | TrueEASE Small Basic Bypass Humidifier with Additional Installation Hardware |
| HE200C1001/U | 17 gal. per day | 64 L per day | TrueEASE Large Basic Bypass Humidifier with Additional Installation Hardware |

TrueEASE Parts and Accessories, Honeywell's STEAM Parts

| Material Number | Description |
|-----------------|---|
| 32001647-001/U | Qty 25 Residential humidifier cone screen filter |
| 50032048-002/U | Qty 25 Residential Humidifier quick connect adapter |

TrueEASE™ Humidifiers

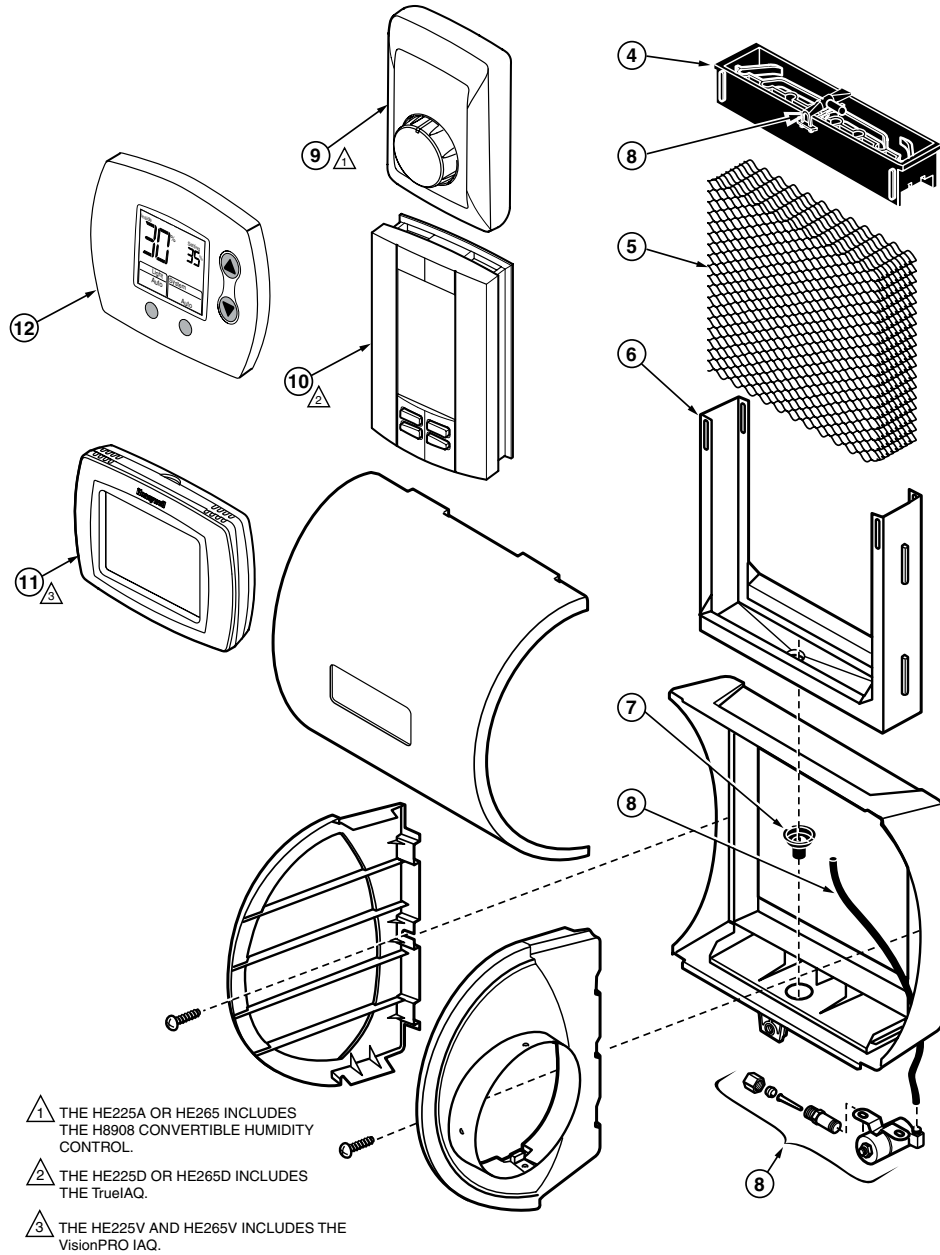
TrueEASE Parts and Accessories

| Material Number | Description | |
|-----------------|---|---|
| 32001652-002/U | 10V transformer | |
| 50041861-001/U | Frame and tray assembly for small bypass models | |
| 50041861-002/U | Frame and tray assembly for large bypass models | |
| 50041883-001/U | DC Solenoid valve |  |
| 50041883-002/U | AC Solenoid valve |  |
| 50041890-001/U | Small bypass duct with automatic damper | |
| 50041890-002/U | Large bypass duct with automatic damper | |
| 50041919-001/U | Frame and tray assembly for fan model | |
| 50045729-001/U | Blower and motor assembly with isolator | |
| 50050349-001/U | 15V transformer | |
| 50052642-001/U | Bottom cover for small advanced bypass models | |

TrueEASE Replacement Parts

| Material Number | Description | Used With |
|-----------------|---|------------------------|
| 50057547-001/U | Circuit board for HE300 TrueEASE fan humidifier | HE300A1005 |
| 50057547-002/U | Circuit board for HE150 TrueEASE small advanced bypass humidifier | HE150A1005, HE150C1014 |
| 50057547-003/U | Circuit board for HE250 TrueEASE large advanced bypass humidifier | HE250A1005, HE250C1014 |

HE225 and HE265 Exploded View



- 1 THE HE225A OR HE265 INCLUDES THE H8908 CONVERTIBLE HUMIDITY CONTROL.
- 2 THE HE225D OR HE265D INCLUDES THE TrueIAQ.
- 3 THE HE225V AND HE265V INCLUDES THE VisionPRO IAQ.



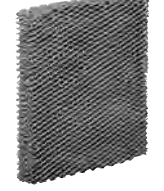
| No. | Description | HE225 Part Number | HE265 Part Number |
|-----|---|-------------------|-------------------|
| 4 | PerfectFlo™ water distribution tray | 32001619-001 | 32001630-001 |
| 5 | Humidifier Pad (pad has antimicrobial coating) | HC22E1003 | HC26E1004 |
| 6 | Humidifier Pad Frame | 32001621-001 | 32001632-001 |
| 7 | Drain fitting | 32001615-001 | 32001615-001 |
| 8 | Solenoid valve assembly(includes nozzle) | 32001639-002 | 32001639-002 |
| 9 | H8908 Humidity Control | H8908ASPST | H8908ASPST |
| 10 | TrueIAQ Digital Automatic Control with Outdoor Enthalpy Sensor | DG115EZIAQ | DG115EZIAQ |
| 11 | VisionPRO IAQ with outdoor temp sensor | YTH9421C1010 | YTH9421C1010 |
| 12 | HumidiPRO Digital Humidity Control | H6062A1000 | H6062A1000 |
| — | Hardware Kit for Solenoid Assembly (same as Solenoid valve assembly without the solenoid valve) | 32001752-001 | 32001752-001 |
| — | Current Sensing Relay | 32001754-001 | 32001754-001 |

M23213C

Indoor Air Quality

Humidifier Replacement Pads and Parts

Humidifier Replacement Pads and Filters

| Material Number | Description | Includes | Used With | |
|-----------------|---|------------------------------------|---|---|
| 32000146-001/U | HE120 Replacement Humidifier Pad (includes clips) | | HE120 | |
| 50028044-001/U | Plumb in-line scale and sediment Humidifier replacement filter with quick-connect fittings. | 1 filter | All Honeywell steam and evaporative humidifiers. Also fits Aprilaire evaporative models. |  |
| HC22A1007/U | HE220 Humidifier Pad | Standard Humidifier Pad | Honeywell HE100, HE150, HE220, HE225, Aprilaire Models 110, 220, 550, 558 |  |
| HC22E1003/U | HE225 Humidifier Pad with AgION™ Coating | AgION Antimicrobial Humidifier Pad | Honeywell HE100, HE150, HE220, HE225, Aprilaire Models 110, 220, 550, 558 |  |
| HC26A1008/U | HE260 Humidifier Pad | Standard Humidifier Pad | Honeywell HE200, HE250, HE260, HE265, HE300, HE360, HE365, Aprilaire 350, 360, 560, 568, 600, 700, 760, 768 | |
| HC26E1004/U | HE265 Humidifier Pad with AgION™ Coating | AgION Antimicrobial Humidifier Pad | Honeywell HE200, HE250, HE260, HE265, HE300, HE360, HE365, Aprilaire 350, 360, 560, 568, 600, 700, 760, 769 | |

Humidifier Parts

| Material Number | Description | Used With |
|-----------------|---|--|
| 32000132-001/U | HE120 24 Vac Motor | HE120 |
| 32000136-001/U | HE120 Float Valve | HE120 |
| 32000408-001/U | HE360, HE365 Feed Tube Nozzle | HE360, HE365 |
| 32000429-001/U | HE360, HE365 Fan Blade | HE360, HE365 |
| 32001615-001/U | HE220, HE225, HE260, HE265, HE360, HE365 Drain Fitting | HE220, HE225, HE260, HE265, HE360, HE365 |
| 32001619-001/U | HE220, HE225, HE360A1001 PerfectFlo™ Water Distribution Tray | HE220, HE225, HE360 |
| 32001621-001/U | HE220, HE225 Humidifier Pad Frame | HE220, HE225 |
| 32001630-001/U | HE260, HE265, HE360, HE365 PerfectFlo™ Water Distribution Tray | HE260, HE265, HE360, HE365 |
| 32001632-001/U | HE260, HE265, HE360, HE365 Humidifier Pad Frame | HE260, HE265, HE360, HE365 |
| 32001639-002/U | HE220, HE225, HE260, HE265 Solenoid Valve Assembly (includes water feed tube and nozzle). Sold in Bulk Packs | HE220, HE225, HE260, HE265 |
| 32001652-001/B | HE220, HE225, HE260, HE265 Transformer (10VA). Sold in Bulk Packs | HE260, HE265, HE360, HE365 |
| 32001676-001/U | HE360, HE365 Printed Wiring Board Assembly. Sold in Bulk Packs | HE360, HE365 |
| 32001752-001/U | HE220, HE225, HE260, HE265, HE360, HE365 Hardware Kit for Solenoid Assembly (does not include solenoid valve) | HE220, HE225, HE260, HE265, HE360, HE365 |
| 32001754-001/U | Current Sensing Relay | HE220, HE225, HE260, HE265, HE360, HE365 |
| 32001876-001/U | HE360, HE365 Solenoid Valve Assembly (includes water feed tube). Sold in Bulk Packs | HE360, HE365 |
| 32006450-001/U | HE440 Filter Pack | HE440 |
| 50027997-001/U | SOLENOID VALVE | |
| 50028001-001/U | Remote-Mount Nozzles for TrueSTEAM | HM509; HM512 |
| 50028003-001/U | TrueSTEAM Duct Nozzle | HM509; HM512 |
| 50033181-001/U | Large water Tank for TrueSTEAM and Honeywell STEAM humidifiers | HM509; HM512; HM609; HM612 |
| 50040111-001/U | Ductboard Adaptor Kit for TrueSTEAM Remote Mount | HM509; HM512 |
| 50043683-001/U | Water Backflow Prevention Valve with Manual Water Shutoff. For use with TrueSTEAM | HM509; HM512 |
| HM600XGSKT/U | Tank Replacement Gasket for Honeywell Steam Humidifier | HM609, HM612 |

S688 Sail Switch



The Sail Switch activates an electronic air cleaner, a humidifier, or other equipment in response to airflow from the system fan. The S688A is mounted in the return air duct where the sail will be in the direct path of an unrestricted air stream.

- Simplified installations with multi-speed fans, inaccessible air handlers, fan motors with voltage or phase different from controlled equipment; eliminated wiring to system fan.
- Polyester film sail mounted on a micro switch snap switch.
- Removable spring counterbalances sail to allow mounting in either vertical (up or down) or horizontal air flow.
- Top and bottom conduit knockouts for wiring convenience.
- Low air velocity switch operation makes at 250 fpm and breaks at 75 fpm.

Application: Air Flow Switch

Contact Ratings (AFL): N.O. Contacts: 2.0 A @ 24 Vac, 120 Vac; N.O. Contacts: 1.0 A @ 240 Vac; N.C. Contacts: 1.0 A @ 24 Vac, 120 Vac; N.C. Contacts: 0.5 A @ 240 Vac

Contact Ratings (ALR): N.O. Contacts: 12.0 A @ 24 Vac, 120 Vac; N.O. Contacts: 6.0 A @ 240 Vac; N.C. Contacts: 6.0 A @ 24 Vac, 120 Vac; N.C. Contacts: 3.0 A @ 240 Vac

Contact Ratings (resistive): N.O. Contacts: 5.0 A @ 24 Vac, 120 Vac; N.O. Contacts: 2.5 A @ 240 Vac; N.C. Contacts: 2.5 A @ 24 Vac, 120 Vac, 240 Vac

Ambient Temperature Range: At switches: 125°F Maximum; At sail: 170°F Maximum (At switches: 52°C Maximum; At sail: 77°C Maximum)

Used With:

Approvals, CSA: Certified

Approvals, Underwriters Laboratories Inc.: UL Listed: File No. E4436, Guide No. XAPX. For use in ambient temperatures normally prevailing in occupiable spaces, which usually are not higher than 77°F (25°C) but occasionally may be as high as 104°F (40°C) for brief periods.

| Material Number | Switching | Operating Velocity (fpm) | Operating Velocity (m/s) | Approximate, Dimensions | Insertion Length |
|-----------------|-----------|--------------------------|--------------------------|---|------------------|
| S688A1007/U | SPDT | 75 fpm-250 fpm | 0.4 m/s-22.9 m/s | 2 15/16 in. high x 3 3/4 in. wide x 2 in. deep; Sail Dimensions – 5 in. wide (max), 26.2 sq. in. of area (59 mm high x 95 mm wide x 51 mm deep; Sail Dimensions – 127 mm wide (max), 16,903 mm ²) | 10 in. (254 mm) |

Sail Switch Accessories

| Material Number | Description | Used With |
|-----------------|-------------------------|-----------|
| 123773A/U | Sail assembly for S688A | S688A |

Digital IAQ Control

HumidiPRO™ Digital Humidity Control



Easy to use, digital control of your home's humidification or dehumidification. HumidiPRO™ will automatically adjust settings for changes in outdoor temperature to ensure no condensation will appear in your home (window protection).

- Automatic humidification (window protection) with included outdoor sensor
- Manual humidification control
- Manual dehumidification control
- Dehumidifier compressor protection
- Large, digital backlit display
- Simple, intuitive programming
- RH% and outdoor temperature calibration
- Adjustable high and low range stops (10-90%)
- Automatically detects presence of outdoor sensor to set control to Automatic or Manual Mode

Type: Humidistat/Dehumidistat

Voltage: 24 Vac

Frequency: 50 Hz; 60 Hz

Mounting: Return Duct (Recommended) or Wall Mount

Differential: 4% to 6% RH

Temperature Range: -20°F to +120°F

Approximate, Dimensions: 3 7/16 in. high x 4 1/2 in. wide x 1 5/16 in. deep (86 mm x 114 mm x 33 mm)

Includes: HumidiPRO Control, Outdoor Sensor, Mounting Hardware

| Material Number | Operating Humidity Range (% RH) | Color | Used With |
|-----------------|---|----------------|---|
| H6062A1000/U | Manual Mode: 10% to 90% RH% (Adjustable) Auto Mode: 10% to 60% RH% (35% Default) | Premier White® | Whole Home Humidifiers or Dehumidifiers |

TrueIAQ Automatic Digital IAQ Control



Integrate control of your humidification, dehumidification, ventilation and bathroom fans with Honeywell's TrueIAQ® control. TrueIAQ® automatically adjusts humidity settings and provides maintenance reminders for peak efficiency.

- Setting changes can be made easily with the touch of a button.
- Manages humidification, dehumidification, ventilation and bathroom fans from a central point in your home
- Simultaneously displays both indoor and outdoor temperature and humidity levels on-screen. Automatically adjusts inside settings based on outdoor conditions
- Include individual air quality enhancements to your system with TrueIAQ®, or integrate them all as part of a total air quality system
- Intuitive digital backlit display

Type: Steam Humidifier

Voltage: 24 Vac

Electrical Ratings: 120 Vac, Full Load: 2.0A at 24 Vac, humidifier, dehumidifier, vent contacts

Mounting: Duct or Remote Mount (up to 20 feet/6 meters)

Temperature Range: 1.1°C-40°C

Includes: TrueIAQ control and outdoor sensor for temperature and humidity

| Material Number | Operating Humidity Range (% RH) | Color | Used With |
|-----------------|---------------------------------|-------|---|
| DG115EZIAQ/U | 95% RH at 95°F, non-condensing | White | Outdoor temp/humidity sensor (included) |

H8908 Humidistat/Dehumidistat



The H8908A Humidistat and H8908D Dehumidistat (humidity controllers) provide automatic low voltage control of humidifiers and dehumidifiers or ventilators, respectively, in central heating and air conditioning systems. They have a SPST, snap-acting, dust-proof switch and are designed for wall or surface duct mounting.

- SPST, snap-acting, dust-proof switch and are designed for wall or surface duct mounting.
- Positive ON and OFF settings.
- Twelve-inch ribbon of thin, moisture-sensitive nylon ribbon wound around three bobbins effectively gives optimum control for reliable operation under changing ambient.

Voltage: 24 Vac
Mounting: Duct or Remote Mount (up to 20 feet/6 meters)
Temperature Range: 1.1°C - 40°C

Approximate, Dimensions: 19 in. high x 11 1/4 in. wide x 9 in. deep (482.6 mm H x 285.75 mm L x 228.6 mm D)

| Material Number | Color | Application |
|-----------------|-------|--|
| H8908ASPST/U | White | Provides humidification control for ducts, greenhouses, computer rooms, printing and photographic laboratories, and other applications where electronic accuracy, as well as remote sensing, is desired. |
| H8908DSPST/U | White | Provides dehumidification control for ducts, greenhouses, computer rooms, printing and photographic laboratories, and other applications where electronic accuracy, as well as remote sensing, is desired. |

H46 Humidity Controller



Provide automatic control of a humidifier or dehumidifier for dehumidification in air conditioning systems.

- Positive ON-OFF settings permit manual operation of controlled equipment.
- Impact-resistant, molded plastic cover mounts on wall.
- Fully enclosed, dust free, SPST, snap-acting switch.
- Sensing element of thin, moisture sensitive nylon ribbon provides reliable operation even when ambient temperature conditions change.

Type: Humidity Control
Mounting: Wall mount
Differential: 4% to 6% RH
Temperature Range: 50°F to 125°F (10°C to 52°C)

Approximate, Dimensions: 4 11/16 in. high x 2 15/16 in. wide x 2 1/8 in. deep (119 mm high x 75 mm wide x 54 mm deep)
Tradeline Value: Tradeline

| Material Number | Voltage | Electrical Ratings | Operating Humidity Range (% RH) | Color | Description |
|-----------------|--------------------------|---|---------------------------------|----------------|---|
| H46C1166/U | 120 Vac, 24 Vac, 240 Vac | 120 Vac, Full Load: 7.5A; 120 Vac, Locked Rotor: 30.0A; 120 Vac, Resistive: 12.0A; 240 Vac, Full Load: 3.8A; 240 Vac, Locked Rotor: 15.0A; 240 Vac, Resistive: 6.0A | 20 to 80% RH | Premier White® | 24/120/240 Vac Wall mounted Premier White® Dehumidistat |

Humidity Controllers

H600 Humidity Controllers



Mechanical humidity controllers provide automatic control of humidifiers and dehumidifiers or ventilators in central heating and air conditioning systems.

- Sensing element of thin, moisture sensitive nylon ribbon provides reliable operation even when ambient temperature conditions change.
- Fully enclosed, dust free, SPDT, snap-acting switch.
- Removable setting knob prevents tampering.
- Mount vertically on 2 x 4 in. junction box (not to be duct mounted).
- Includes alternate scale and faceplate for horizontal mounting.

Type: Humidity Control
Voltage: 120 Vac, 24 Vac, 240 Vac
Color: Gray
Mounting: Wall mount
Differential: 5% RH

Temperature Range: 50°F to 125°F (10°C to 52°C)
Operating Humidity Range (% RH): 20 to 80% RH
Approximate, Dimensions: 6 3/16 in. high x 3 3/8 in. wide x 2 1/4 in. deep (157 mm high x 86 mm wide x 57 mm deep)
Tradeline Value: Tradeline

| Material Number | Electrical Ratings |
|-----------------|---|
| H600A1014/U | Humidifier Contacts – 120 Vac, Full Load: 4.4A; 120 Vac, Locked Rotor: 26.4A; 120 Vac, Resistive: 12A; 240 Vac, Full Load: 2.2A; 240 Vac, Locked Rotor: 13.2A; 240 Vac, Resistive: 6A. Dehumidifier Contacts – 120 Vac, Full Load: 7.5A; 120 Vac, Locked Rotor: 3 |

24 Volt UV Air Purifier with AirBRIGHT™ Odor Absorption



UV2400U1000



UV2400U5000



Honeywell's UV Air Purifier with AirBRIGHT Odor Absorption is installed in the ductwork of your central air system and is designed to help reduce airborne odors, toxic chemical vapors, germs and mold in your home.

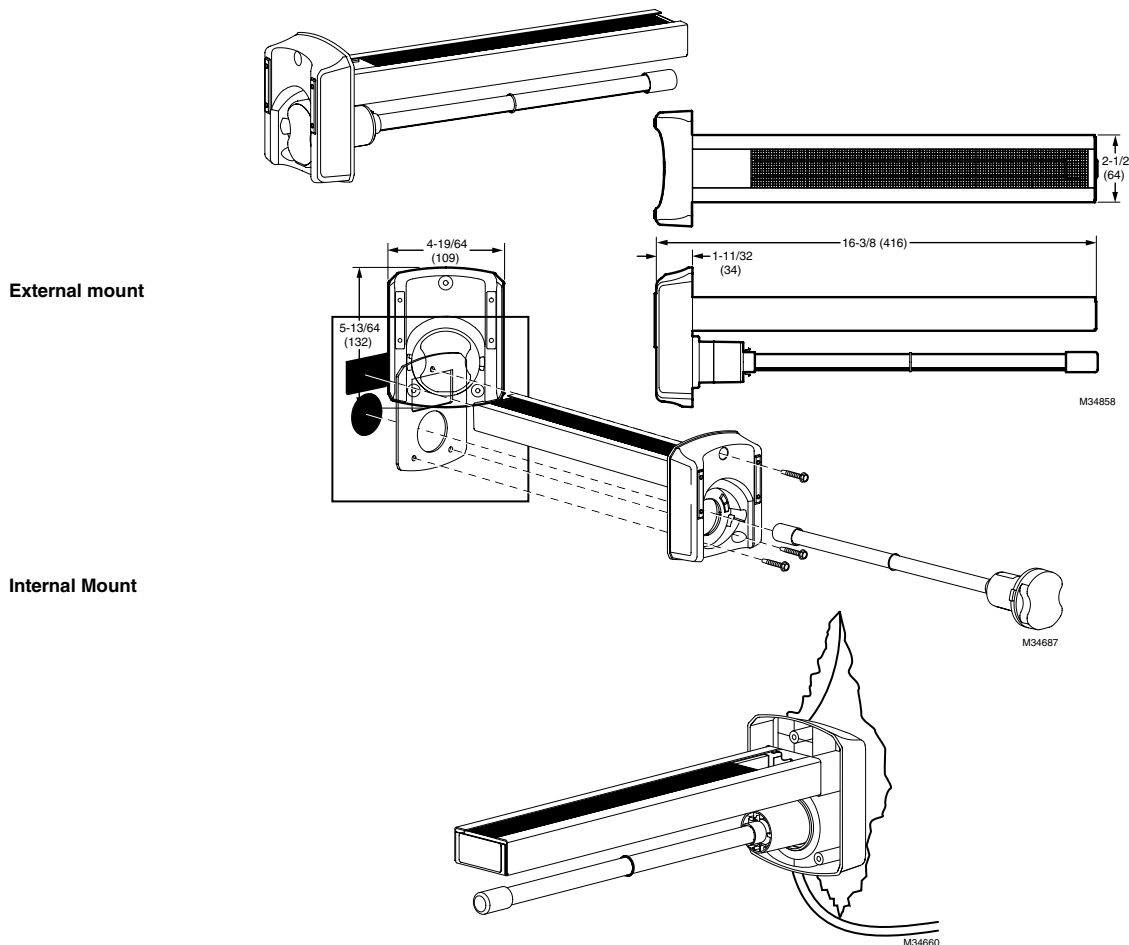
- Lamp is Always On
- Replace Lamp Annually
- AirBRIGHT Odor Absorber never needs replacing
- SnapLamp™ features replacement lamp handle with detachable replacement lamp.

- Universal Installation with a single product
- UV Only
- UV + Odor Removal
- Internal Mount
- External Mount

Electrical Ratings: 24V VAC
Electrical Rating (Watts): 16W
Application: Return or Supply Mount
Operating Temperature Range:

| Material Number | Description | Contaminants Reduced |
|-----------------|--|---|
| UV2400U1000/U | The UV Air Purifier eliminates up to 99 percent of mold spores on the air conditioning coil, helping to maintain system efficiency and airflow. Your customers will experience increased comfort and efficiency. | Airborne Bacteria, Surface Mold |
| UV2400U5000/U | The UV Air Purifier eliminates up to 99 percent of mold spores on the air conditioning coil. The AirBRIGHT Odor Absorber reduces potentially harmful VOC's and odors without the use of harmful byproducts. | Airborne Bacteria, Surface Mold and ODOR. |

Dimensions in inches (millimeters)



External mount






Internal Mount

Indoor Air Quality

Ultraviolet Air Treatment Systems

24 Volt UV Air Purifier with AirBRIGHT™ Odor Absorption

The UC100 Ultraviolet Air Treatment System Replacement Lamp is for use with the UV100 Ultraviolet Air Treatment System.

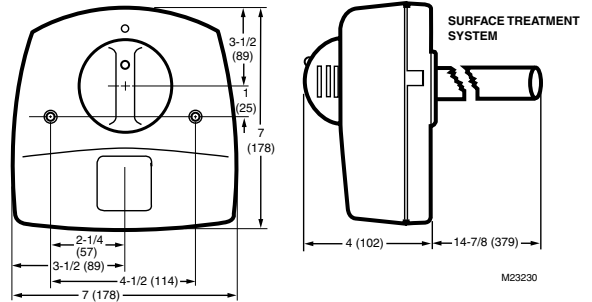
| Material Number | Description | Used With | |
|-----------------|--|-----------|---|
| UV2400XBAL1/U | Replacement Ballast for UV2400 | UV2400 |  |
| UV2400XDBA1/U | Duct Board Adapter for UV2400 | UV2400 |  |
| | | |  |
| UV2400XLAM1/U | Replacement Lamp for UV2400 | UV2400 |  |
| UV2400XPC01/U | The AirBRIGHT Odor Absorber reduces potentially harmful VOC's and Odors in the home without the use of harmful byproducts. | UV2400 |  |

Ultraviolet Air Treatment Systems

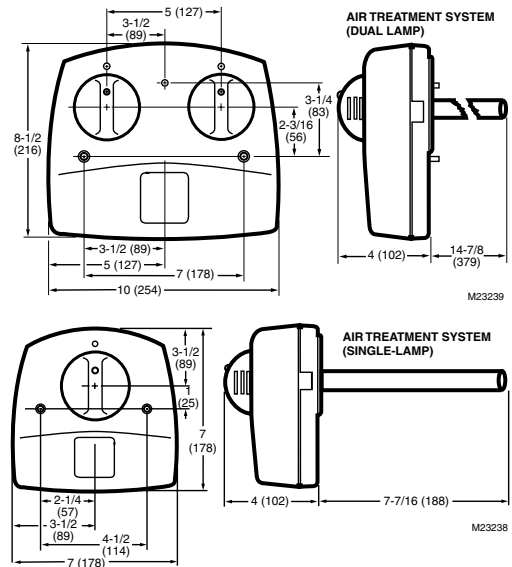
UV100 Ultraviolet Air Treatment Systems



Dimensions in inches (millimeters)



Approximate, Dimensions in inches (millimeters)



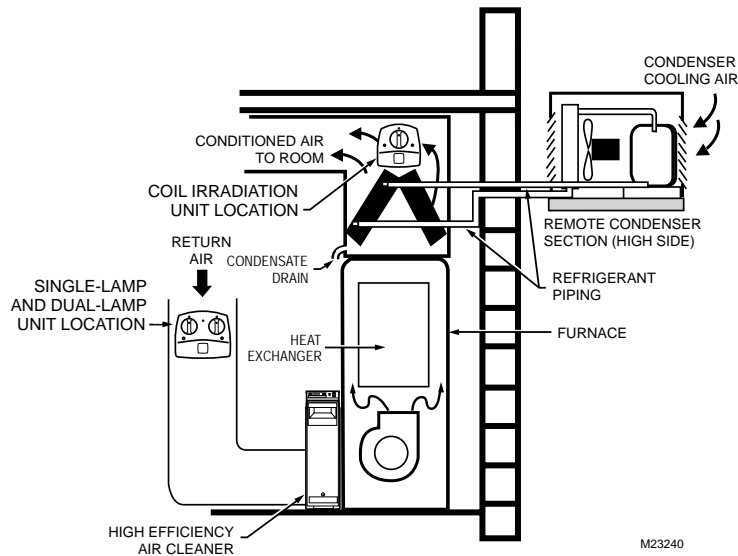
UV offering both air (return) and surface (coil) ultraviolet treatment systems to inactivate live airborne particles and surface mold.

Application: Return Air or Coil Irradiation Application

Operating Temperature Range: Outside duct – 30°F to 104°F: Inside duct – 30°F to 140°F (Outside duct – -2°C to +40°C: Inside duct – -2°C to +60°C)

| Material Number | Contaminants Reduced | Electrical Ratings | Electrical Rating (Watts) | Description |
|-----------------|---------------------------------|--------------------|---------------------------|--|
| UV100A1059/U | Airborne Bacteria, Surface Mold | 120 Vac | 36W | Ultraviolet Surface Treatment or Air Treatment System, Coil Plus Model |
| UV100E1043/U | Airborne Bacteria | 120 Vac | 18W | SmartLamp Ultraviolet Air Treatment System, Single Lamp Return Air Model |
| UV100E2009/U | Airborne Bacteria | 120 Vac | 36W each | SmartLamp Ultraviolet Air Treatment System, Dual Lamp Return Air Model |



Possible mounting locations for Ultraviolet Air Treatment Systems



Ultraviolet Air Treatment Systems

Replacement Lamp Ultraviolet Air Treatment System

The UC100 Ultraviolet Air Treatment System Replacement Lamp is for use with the UV100 Ultraviolet Air Treatment System.

| Material Number | Electrical Ratings (Watts) | Description | Used With | |
|-----------------|----------------------------|--|--|---|
| UC100E1006/U | 18W | Replacement SnapLamp for UV100E1001 and UV100E1043, blue handle. | UV100E1001, UV100E1043 |  |
| UC100E1030/U | 36W | Replacement SnapLamp for UV100E3007, UV100E1035, UV100A1059 and UV100A2008, blue handle. | UV100A1018, UV100E3007, UV100E1035, UV100A2009, UV100A1059, UV100A2008 | |
| UC18W1004/U | 18W | Replacement Bulb for 18W SnapLamp Models | UC100A1005, UC100E1006, UV100A1000, UV100E1043 |  |
| UC36W1006/U | 36W | Replacement Bulb for 36W SnapLamp Models | UC100A1013, UC100A1054, UC100E1014, UC100E1030, UV100A1018, UV100A1059, UV100A2008, UV100E2009, UV100E3007 | |

TrueFRESH™ Balanced Ventilation System



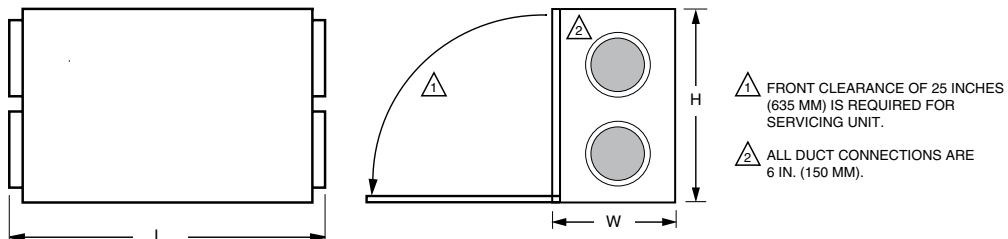
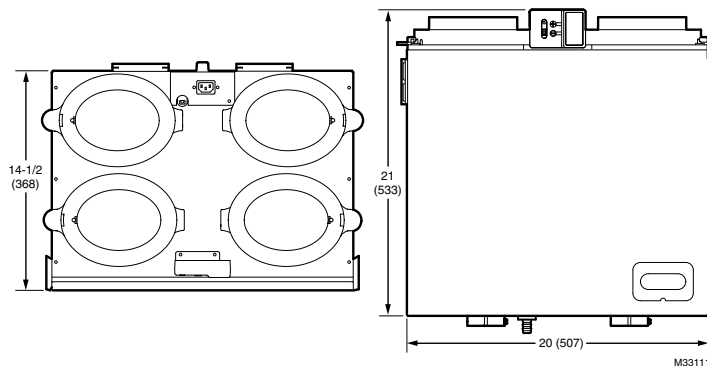
- Removable Duct Collars
- Damperless Balancing
- Adjustable Hanging Straps
- Centralized Wiring and Speed Control
- Customizable
- Compact Size
- Meets ASHRAE 62.2 Standards
- 5-Year Warranty

Defrost Control: Exhaust Only Defrost
Materials: Polypropylene 10 inch HRV Core
Electrical Ratings: 120 Vac

Frequency: 60 Hz

| Material Number | Airflow Capacity (cfm) | Description | Sensible Effectiveness |
|---|---|---|------------------------|
| Energy Star rated Ventilators | | | |
| VNT6150H1000/U | 150 cfm at external static pressure 0.4 in. wc | 150 cfm Heat Recovery Ventilator | 0.8 |
| VNT6200H1000/U | 200 cfm at external static pressure 0.4 in. wc | 200 cfm Heat Recovery Ventilator | 0.84 |
| TrueFRESH™ Energy Recovery Ventilators | | | |
| VNT5070E1000/U | 80 cfm at external static pressure 0.4 in. wc | 70 cfm Compact Energy Recovery Ventilator | |
| VNT5150E1000/U | 159 cfm at external static pressure 0.4 in. wc | 150 cfm Energy Recovery Ventilator | 0.67 |
| VNT5200E1000/U | 188 cfm at external static pressure 0.4 in. wc | 200 cfm Energy Recovery Ventilator | 0.69 |
| TrueFRESH™ Heat Recovery Ventilators | | | |
| VNT5070H1000/U | 75 cfm at external static pressure 0.4 in. wc | 70 cfm Compact Heat Recovery Ventilator | |
| VNT5150H1000/U | 150 cfm at external static pressure 0.4 in. wc | 150 cfm Heat Recovery Ventilator | 0.78 |
| VNT5200H1000/U | 200 cfm at external static pressure 0.4 in. wc | 200 cfm Heat Recovery Ventilator | 0.71 |

Dimensions in inches (millimeters)

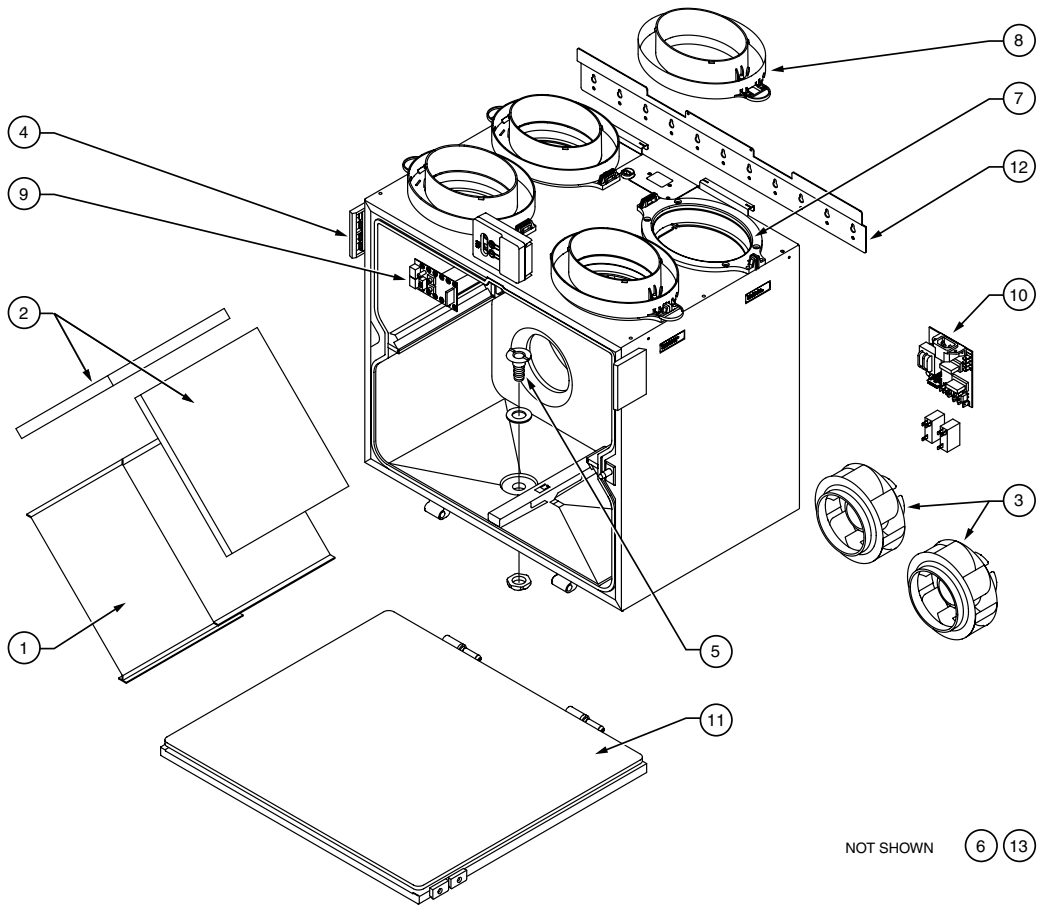


VNT5150H1000, VNT5150E1000 or VNT6150H1000: H = 22 1/2 in. (572 mm), W = 11 1/2 in. (295 mm), L = 29 1/2 in. (749 mm)
 VNT5200H1000, VNT5200E1000 or VNT6200H1000: H = 22 1/2 in. (572 mm), W = 16 1/2 in. (422 mm), L = 29 1/2 in. (749 mm)

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TrueFRESH Ventilation System

VNT5070 Parts List



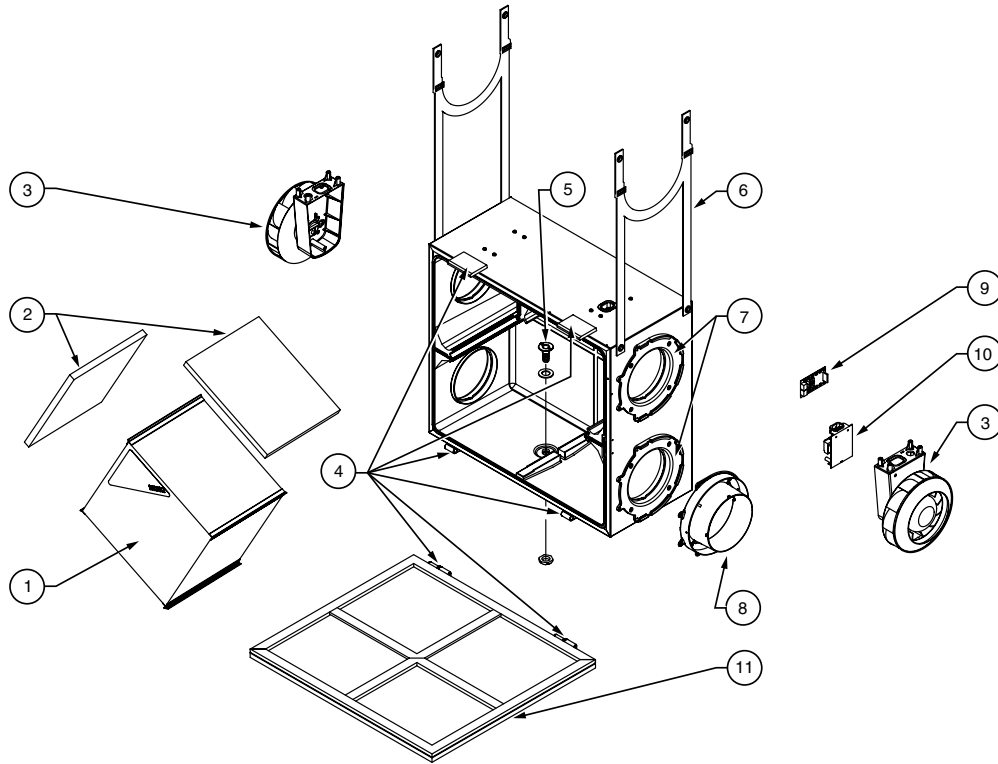
| Parts List | | |
|---------------|---|-------------------------|
| Figure Number | Description | VNT5070 |
| 1 | Polypropylene HRV Core | 50063805-001 9" Core |
| | Enthalpy ERV Core | 50063805-002 9" Core |
| 2 | Replacement Filter Kit | 50063805-003 |
| 3 | Replacement Motor | 50063805-004 |
| 4 | Latch & Hinge Kit | 50053952-014 |
| 5 | Condensation Drain Fitting Kit | 50053952-011 |
| 6 | Adjustable Hanging Strap Set (optional on VNT5070) | 50053952-009 |
| 7 | 5" diameter Plastic Keeper | 50063805-006 |
| 8 | 5" diameter Plastic Collar | 50063805-005 |
| 9 | Replacement LVC Electronic Board (Speed Control) | 50063805-010 |
| 10 | Replacement HVC Electronic Board | 50053952-013 |
| 11 | Front Access Door | 50063805-007 |
| 12 | Mounting Bracket | 50063805-008 |
| 13 | Matrix Ventilation Hood | 50063805-009 |

| Parts List (not illustrated) | |
|------------------------------|---|
| Honeywell Part Number | Description |
| 50053952-016 | Drain Cap (VNT5150E1000V and VNT5200E1000 only) |
| 50053952-020 | 20/40/60 Minute Timer |

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TrueFRESH Ventilation System

VNT5150 and VNT5200 Parts List



| Parts List | | | | |
|---------------|--|--------------|----------|-----------------------|
| Figure Number | Description | VNT5150 | | VNT5200 |
| 1 | Polypropylene HRV Core | 50053952-001 | 10" Core | 50053952-002 15" Core |
| | Enthalpy ERV Core | 50053952-003 | 10" Core | 50053952-004 15" Core |
| 2 | Replacement Filter Kit | 50053952-005 | | 50053952-006 |
| 3 | Replacement Motor | | | 5053952-010 |
| 4 | Latch & Hinge Kit | | | 50053952-014 |
| 5 | Condensation Drain Fitting Kit | | | 50053952-011 |
| 6 | Adjustable Hanging Strap Set (optional on VNT5070) | | | 50053952-009 |
| 7 | 6" diameter Plastic Keeper | | | 50053952-008 |
| 8 | 6" diameter Plastic Double Collar | | | 50053952-007 |
| 9 | Replacement LVC Electronic Board (Speed Control) | | | 50053952-012 |
| 10 | Replacement HVC Electronic Board | | | 50053952-013 |
| 11 | Front Access Door | | | 50053952-015 |

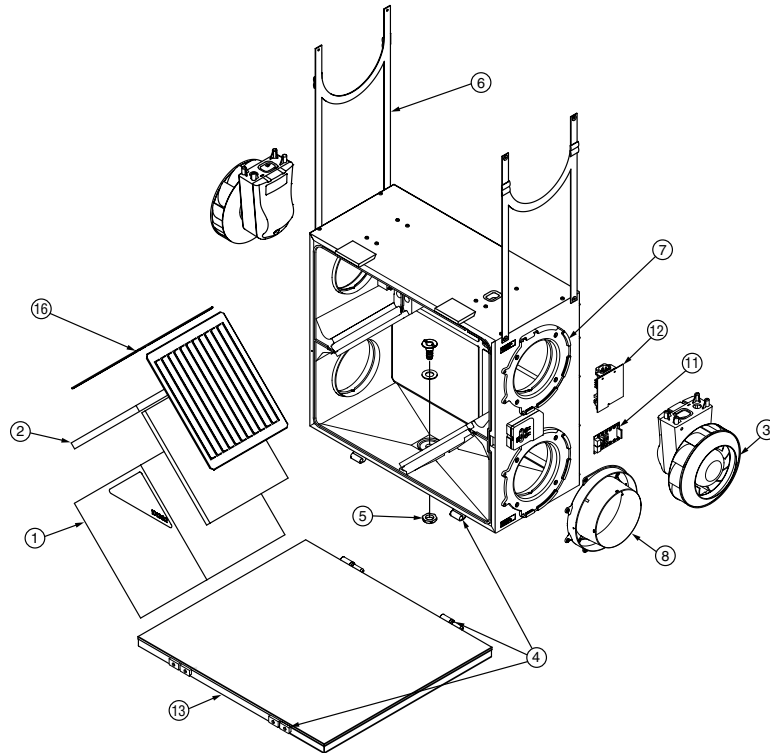
| Parts List (not illustrated) | |
|------------------------------|---|
| Honeywell Part Number | Description |
| 50053952-016 | Drain Cap (VNT5150E1000V and VNT5200E1000 only) |
| 50053952-020 | 20/40/60 Minute Timer |

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Indoor Air Quality

TrueFRESH Ventilation System

VNT6150 and VNT6200 Parts List



| No. | Description | VNT6150 | VNT6200 |
|---------------------|---|-----------------------|-----------------------|
| 1 | Polypropylene HRV Core | 50053952-001 10" Core | 50053952-002 15" Core |
| 2 | Replacement Filter Kit | 50053952-005 | 50053952-006 |
| 3 | Replacement Motor | VNT6150XIMPEL1 | 50053952-010 |
| 4 | Latch & Hinge Kit | 50053952-014 | |
| 5 | Condensation Drain Fitting Kit | 50053952-011 | |
| 6 | Adjustable Hanging Strap Set | 50053952-009 | |
| 7 | 6" diameter Plastic Keeper | 50053952-008 | |
| 8 | 6" diameter Plastic Double Collar | 50053952-007 | |
| 11 | Replacement LVC Electronic Board (Speed Control) | VNT6150XLVCBD1 | VNT6200XLVCBD1 |
| 12 | Replacement HVC Electronic Board | 50053952-013 | |
| 13 | Front Access Door | 50053952-015 | |
| 16 | Aluminum Distribution Plates | VNT6150XALPLT1 | VNT6200XALPLT1 |
| PARTS NOT DISPLAYED | | | |
| | 20/40/60 Minute Timer (compatible with all HRVs & ERVs) | 50053952-020 | |

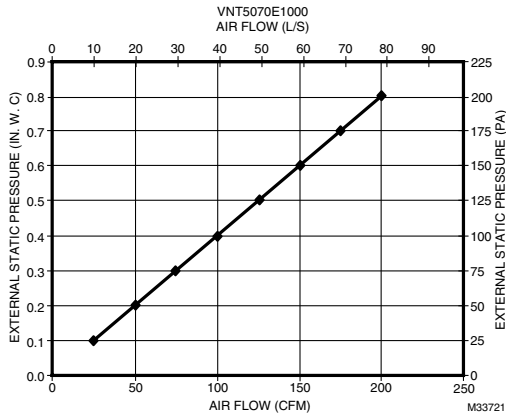
M34717

TrueFRESH Ventilation System

VNT5070E Ventilation Performance

VNT5070E1000 Ventilation Performance

| External Static Pressure | | Net Supply Air Flow | | Gross Air Flow | | | |
|--------------------------|----------|---------------------|-----|----------------|-----|---------|-----|
| | | | | Supply | | Exhaust | |
| Pa | in. W.C. | L/s | CFM | L/s | CFM | L/s | CFM |
| 25 | 0.1 | 49 | 105 | 49 | 105 | 46 | 97 |
| 50 | 0.2 | 46 | 97 | 47 | 99 | 41 | 86 |
| 75 | 0.3 | 44 | 92 | 44 | 93 | 41 | 86 |
| 100 | 0.4 | 37 | 80 | 38 | 81 | 34 | 73 |
| 125 | 0.5 | 34 | 73 | 35 | 74 | 29 | 63 |
| 150 | 0.6 | 29 | 62 | 29 | 63 | 25 | 52 |
| 175 | 0.7 | 23 | 48 | 23 | 49 | 18 | 37 |
| 200 | 0.8 | 22 | 46 | 22 | 47 | 10 | 20 |



VNT5070E Energy Performance

VNT5070E1000 Energy Performance

| Heating | Supply Temperature | | Net Supply Air Flow | | Average Power | Sensible Recovery | Apparent Sensible |
|---------|--------------------|----|---------------------|-----|---------------|-------------------|-------------------|
| | °C | °F | L/s | CFM | Watts | Efficiency % | Effectiveness % |
| | 0 | 32 | 20 | 41 | 30 | 65 | 74 |
| 0 | 32 | 30 | 64 | 36 | 64 | 71 | |
| -15 | 5 | 16 | 35 | 27 | 54 | 80 | |
| 35 | 95 | 19 | 41 | 30 | | | |
| 35 | 95 | | | | | | |

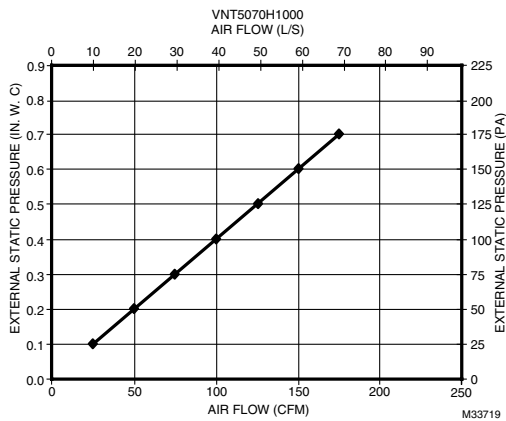
M33722

Indoor Air Quality

VNT5070H Ventilation Performance

VNT5070H1000 Ventilation Performance

| External Static Pressure | | Net Supply Air Flow | | Gross Air Flow | | | |
|--------------------------|----------|---------------------|-----|----------------|-----|---------|-----|
| | | | | Supply | | Exhaust | |
| Pa | in. W.C. | L/s | CFM | L/s | CFM | L/s | CFM |
| 25 | 0.1 | 47 | 99 | 48 | 100 | 48 | 102 |
| 50 | 0.2 | 44 | 93 | 45 | 94 | 43 | 92 |
| 75 | 0.3 | 39 | 83 | 40 | 84 | 38 | 80 |
| 100 | 0.4 | 35 | 75 | 35 | 75 | 36 | 78 |
| 125 | 0.5 | 30 | 65 | 30 | 66 | 32 | 68 |
| 150 | 0.6 | 27 | 56 | 27 | 57 | 25 | 52 |
| 175 | 0.7 | 22 | 46 | 22 | 47 | 19 | 41 |



VNT5070H Energy Performance

VNT5070H1000 Energy Performance

| Heating | Supply Temperature | | Net Supply Air Flow | | Average Power | Sensible Recovery | Apparent Sensible |
|---------|--------------------|----|---------------------|-----|---------------|-------------------|-------------------|
| | °C | °F | L/s | CFM | Watts | Efficiency % | Effectiveness % |
| | 0 | 32 | 19 | 40 | 28 | 64 | 72 |
| 0 | 32 | 30 | 65 | 40 | 59 | 66 | |
| -25 | -13 | 18 | 37 | 30 | 55 | 73 | |
| 35 | 95 | | | | | | |

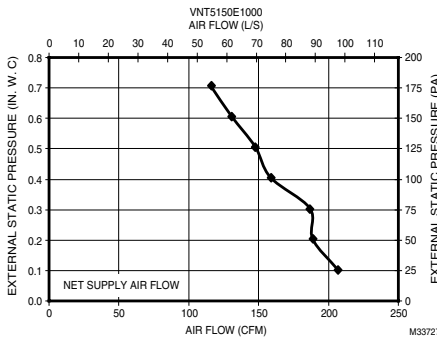
M33720

TrueFRESH Ventilation System

VNT5150E Ventilation Performance

VNT5150E1000 Ventilation Performance

| External Static Pressure | | Net Supply Air Flow | | Gross Air Flow | | | |
|--------------------------|----------|---------------------|-----|----------------|-----|---------|-----|
| | | | | Supply | | Exhaust | |
| Pa | in. W.C. | L/s | CFM | L/s | CFM | L/s | CFM |
| 25 | 0.1 | 97 | 207 | 99 | 210 | 99 | 211 |
| 50 | 0.2 | 89 | 189 | 91 | 193 | 91 | 193 |
| 75 | 0.3 | 88 | 187 | 84 | 179 | 84 | 178 |
| 100 | 0.4 | 75 | 159 | 76 | 162 | 76 | 162 |
| 125 | 0.5 | 70 | 148 | 71 | 150 | 69 | 147 |
| 150 | 0.6 | 62 | 131 | 63 | 133 | 62 | 131 |
| 175 | 0.7 | 55 | 116 | 55 | 118 | 55 | 117 |
| 200 | 0.8 | 49 | 104 | 50 | 106 | 48 | 102 |
| 225 | 0.9 | 42 | 90 | 43 | 91 | 43 | 92 |
| 250 | 1.0 | 36 | 77 | 37 | 78 | 40 | 86 |
| 275 | 1.1 | 32 | 68 | 32 | 69 | 32 | 69 |



VNT5150E Energy Performance

VNT5150E1000 Energy Performance

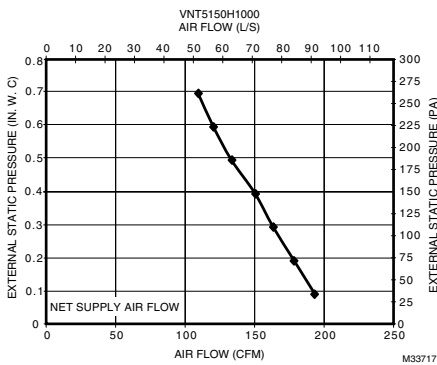
| | Supply Temperature | | Net Supply Air Flow | | Average Power | Sensible Recovery | Apparent Sensible |
|-----|--------------------|----|---------------------|-----|---------------|-------------------|-------------------|
| | °C | °F | L/s | CFM | Watts | Efficiency % | Effectiveness % |
| | Heating | 0 | 32 | 24 | 51 | 58 | 65 |
| 0 | | 32 | 38 | 80 | 76 | 65 | 73 |
| 0 | | 32 | 56 | 118 | 96 | 62 | 70 |
| -15 | | 5 | 26 | 55 | 59 | 52 | 78 |
| 35 | | 95 | 30 | 64 | 66 | | |

M33728

VNT5150H Ventilation Performance

VNT5150H1000 Ventilation Performance

| External Static Pressure | | Net Supply Air Flow | | Gross Air Flow | | | |
|--------------------------|----------|---------------------|-----|----------------|-----|---------|-----|
| | | | | Supply | | Exhaust | |
| Pa | in. W.C. | L/s | CFM | L/s | CFM | L/s | CFM |
| 25 | 0.1 | 91 | 193 | 91 | 194 | 103 | 217 |
| 50 | 0.2 | 84 | 178 | 85 | 179 | 95 | 201 |
| 75 | 0.3 | 77 | 163 | 77 | 163 | 86 | 183 |
| 100 | 0.4 | 71 | 150 | 71 | 151 | 80 | 169 |
| 125 | 0.5 | 63 | 133 | 63 | 134 | 71 | 152 |
| 150 | 0.6 | 57 | 120 | 57 | 121 | 66 | 138 |
| 175 | 0.7 | 51 | 109 | 51 | 109 | 57 | 121 |
| 200 | 0.8 | 46 | 96 | 46 | 96 | 50 | 106 |
| 225 | 0.9 | 40 | 85 | 40 | 86 | 43 | 91 |
| 250 | 1 | 35 | 75 | 36 | 75 | 39 | 82 |



VNT5150H Energy Performance

VNT5150H1000 Energy Performance

| | Supply Temperature | | Net Supply Air Flow | | Average Power | Sensible Recovery | Apparent Sensible |
|-----|--------------------|-----|---------------------|-----|---------------|-------------------|-------------------|
| | °C | °F | L/s | CFM | Watts | Efficiency % | Effectiveness % |
| | Heating | 0 | 32 | 31 | 65 | 72 | 66 |
| 0 | | 32 | 39 | 83 | 80 | 63 | 72 |
| 0 | | 32 | 50 | 107 | 94 | 60 | 67 |
| -25 | | -13 | 36 | 76 | 72 | 56 | 73 |

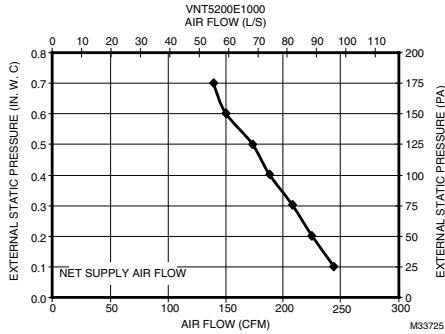
M33718

TrueFRESH Ventilation System

VNT5200E Ventilation Performance

VNT5200E1000 Ventilation Performance

| External Static Pressure | | Net Supply Air Flow | | Gross Air Flow | | | |
|--------------------------|----------|---------------------|-----|----------------|-----|---------|-----|
| | | | | Supply | | Exhaust | |
| Pa | in. W.C. | L/s | CFM | L/s | CFM | L/s | CFM |
| 25 | 0.1 | 115 | 244 | 116 | 247 | 108 | 230 |
| 50 | 0.2 | 106 | 225 | 107 | 228 | 101 | 215 |
| 75 | 0.3 | 98 | 208 | 99 | 210 | 95 | 202 |
| 100 | 0.4 | 88 | 188 | 89 | 190 | 83 | 177 |
| 125 | 0.5 | 81 | 173 | 82 | 175 | 74 | 157 |
| 150 | 0.6 | 71 | 150 | 71 | 152 | 67 | 142 |
| 175 | 0.7 | 65 | 139 | 66 | 140 | 60 | 127 |
| 200 | 0.8 | 57 | 122 | 58 | 124 | 52 | 110 |
| 225 | 0.9 | 49 | 105 | 50 | 106 | 42 | 89 |
| 250 | 1 | 40 | 86 | 41 | 87 | 37 | 74 |
| 275 | 1.1 | 34 | 72 | 34 | 73 | 30 | 63 |



VNT5200E Energy Performance

VNT5200E1000 Energy Performance

| | Supply Temperature | | Net Supply Air Flow | | Average Power | Sensible Recovery | Apparent Sensible |
|-----|--------------------|----|---------------------|-----|---------------|-------------------|-------------------|
| | °C | °F | L/s | CFM | Watts | Efficiency % | Effectiveness % |
| | Heating | 0 | 32 | 37 | 78 | 74 | 71 |
| 0 | | 32 | 50 | 107 | 80 | 72 | 79 |
| 0 | | 32 | 71 | 150 | 102 | 69 | 77 |
| -15 | | 5 | 36 | 75 | 65 | 58 | 82 |
| 35 | | 95 | 35 | 75 | 72 | | |

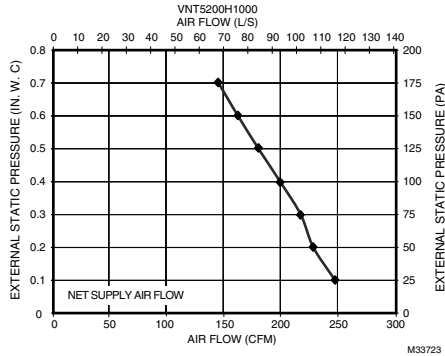
M33726

Indoor Air Quality

VNT5200H Ventilation Performance

VNT5200H1000 Ventilation Performance

| External Static Pressure | | Net Supply Air Flow | | Gross Air Flow | | | |
|--------------------------|----------|---------------------|-----|----------------|-----|---------|-----|
| | | | | Supply | | Exhaust | |
| Pa | in. W.C. | L/s | CFM | L/s | CFM | L/s | CFM |
| 25 | 0.1 | 117 | 248 | 118 | 250 | 130 | 277 |
| 50 | 0.2 | 108 | 229 | 109 | 231 | 119 | 253 |
| 75 | 0.3 | 102 | 218 | 103 | 220 | 110 | 234 |
| 100 | 0.4 | 94 | 200 | 95 | 202 | 101 | 216 |
| 125 | 0.5 | 85 | 181 | 86 | 183 | 92 | 197 |
| 150 | 0.6 | 77 | 163 | 78 | 165 | 82 | 175 |
| 175 | 0.7 | 69 | 146 | 70 | 148 | 71 | 151 |
| 200 | 0.8 | 61 | 129 | 61 | 131 | 60 | 128 |
| 225 | 0.9 | 52 | 110 | 52 | 111 | 49 | 104 |
| 250 | 1 | 45 | 96 | 46 | 97 | 40 | 86 |



VNT5200H Energy Performance

VNT5200H1000 Energy Performance

| | Supply Temperature | | Net Supply Air Flow | | Average Power | Sensible Recovery | Apparent Sensible |
|-----|--------------------|-----|---------------------|-----|---------------|-------------------|-------------------|
| | °C | °F | L/s | CFM | Watts | Efficiency % | Effectiveness % |
| | Heating | 0 | 32 | 55 | 118 | 106 | 61 |
| 0 | | 32 | 75 | 160 | 132 | 58 | 65 |
| 0 | | 32 | 87 | 185 | 150 | 55 | 62 |
| -25 | | -13 | 57 | 120 | 105 | 58 | 72 |
| | | | | | | | |

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TrueFRESH Ventilation System

VNT6150H Ventilation Performance

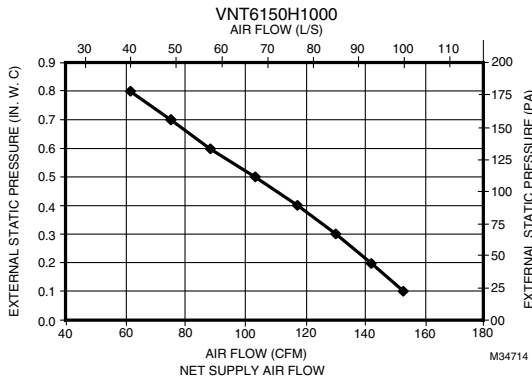
| EXTERNAL STATIC PRESSURE | | NET SUPPLY AIR FLOW | | GROSS AIR FLOW | | | |
|--------------------------|----------|---------------------|-----|----------------|-----|---------|-----|
| | | | | SUPPLY | | EXHAUST | |
| Pa | in. W.C. | L/s | CFM | L/s | CFM | L/s | CFM |
| 25 | 0.1 | 72 | 153 | 72 | 153 | 67 | 142 |
| 50 | 0.2 | 67 | 142 | 68 | 143 | 61 | 129 |
| 75 | 0.3 | 61 | 130 | 62 | 130 | 55 | 116 |
| 100 | 0.4 | 55 | 117 | 55 | 118 | 47 | 101 |
| 125 | 0.5 | 49 | 103 | 49 | 103 | 41 | 87 |
| 150 | 0.6 | 42 | 88 | 42 | 89 | 34 | 73 |
| 175 | 0.7 | 35 | 75 | 35 | 75 | 27 | 59 |
| 200 | 0.8 | 28 | 61 | 28 | 61 | 22 | 46 |

VNT6150H Energy Performance

VNT6150H1000 Energy Performance

| HEATING | SUPPLY TEMPERATURE | | NET SUPPLY AIR FLOW | | AVERAGE POWER | SENSIBLE RECOVERY | APPARENT SENSIBLE |
|---------|--------------------|----|---------------------|-----|---------------|-------------------|-------------------|
| | °C | °F | L/s | CFM | Watts | Efficiency % | Effectiveness % |
| | 0 | 32 | 31 | 66 | 52 | 75 | 84 |
| 0 | 32 | 40 | 84 | 64 | 73 | 80 | |
| 0 | 32 | 50 | 106 | 74 | 70 | 77 | |
| -25 | -13 | 32 | 68 | 49 | 62 | 81 | |

M34715



VNT6200E Ventilation Performance

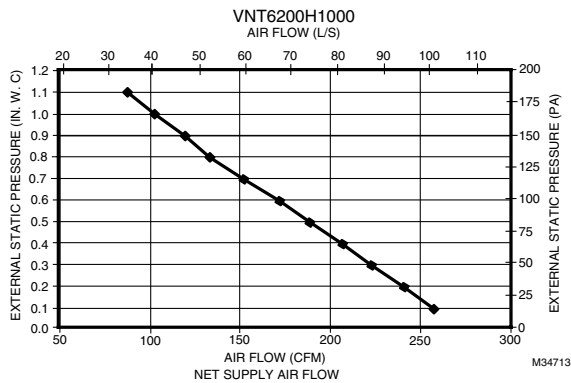
| EXTERNAL STATIC PRESSURE | | NET SUPPLY AIR FLOW | | GROSS AIR FLOW | | | |
|--------------------------|----------|---------------------|-----|----------------|-----|---------|-----|
| | | | | SUPPLY | | EXHAUST | |
| Pa | in. W.C. | L/s | CFM | L/s | CFM | L/s | CFM |
| 25 | 0.1 | 122 | 258 | 126 | 260 | 120 | 254 |
| 50 | 0.2 | 114 | 241 | 115 | 242 | 111 | 235 |
| 75 | 0.3 | 105 | 223 | 106 | 225 | 103 | 218 |
| 100 | 0.4 | 98 | 207 | 99 | 209 | 94 | 199 |
| 125 | 0.5 | 89 | 189 | 90 | 190 | 85 | 180 |
| 150 | 0.6 | 81 | 172 | 82 | 174 | 76 | 161 |
| 175 | 0.7 | 72 | 152 | 73 | 154 | 67 | 142 |
| 200 | 0.8 | 63 | 133 | 64 | 135 | 58 | 123 |
| 225 | 0.9 | 56 | 119 | 57 | 121 | 50 | 106 |
| 250 | 1.0 | 48 | 102 | 48 | 102 | 42 | 89 |
| 275 | 1.1 | 41 | 87 | 42 | 88 | 35 | 74 |

VNT6200E Energy Performance

VNT6200H1000 Energy Performance

| HEATING | SUPPLY TEMPERATURE | | NET SUPPLY AIR FLOW | | AVERAGE POWER | SENSIBLE RECOVERY | APPARENT SENSIBLE |
|---------|--------------------|----|---------------------|-----|---------------|-------------------|-------------------|
| | °C | °F | L/s | CFM | Watts | Efficiency % | Effectiveness % |
| | 0 | 32 | 29 | 61 | 62 | 78 | 90 |
| 0 | 32 | 43 | 91 | 74 | 76 | 85 | |
| 0 | 32 | 60 | 127 | 92 | 73 | 80 | |
| -25 | -13 | 31 | 66 | 59 | 66 | 88 | |

M34716



Residential Ventilation Replacement Filters

| Material Number | Description | Used With |
|-----------------|---|-----------|
| 50053952-005/U | Replacement Filter Kit VNT5150 (Kit quantity 2) | VNT5150 |
| 50053952-006/U | Replacement Filter Kit VNT5200 (Kit quantity 2) | VNT5200 |

Residential Ventilation Accessories and Replacement Parts

| Material Number | Description | Used With |
|------------------|--|--|
| 50048694-001/U | Door Latch, for HR150B, HR200B, ER150B, ER200B, ER150C | ER150B; ER150C; ER200B; ER200C; HR150B; HR200B |
| 50048918-001/U | ERV Replacement core for ER150 and ER200 models | ER150B; ER150C; ER200B; ER200C |
| 50050728-001/U | Foam Prefilter, Set of 2 | ER150B; ER150C; ER200B; ER200C; HR150B; HR200B |
| 50050832-001/U | Electronic Control Kit | ER150B; ER150C; ER200B; ER200C; HR150B; HR200B |
| 50053952-001/U | Polypropylene 10 inch HRV Core for VNT5150H1000 | VNT5150H1000 |
| 50053952-002/U | Polypropylene 15 inch HRV Core for VNT5200H1000 | VNT5200H1000 |
| 50053952-003/U | Enthalpy 10 inch ERV Core for VNT5150E1000 | VNT5150E1000 |
| 50053952-004/U | Enthalpy 15 inch ERV Core for VNT5200E1000 | VNT5200E1000 |
| 50053952-010/U | Replacement Motor | VNT5150, VNT5200 |
| 50053952-012/U | Replacement low voltage control electronic board | VNT5150, VNT5200 |
| 50053952-013/U | Replacement high voltage control electronic board | VNT5070, VNT5150, VNT5200 |
| 50053952-015/U | Front Access Door | VNT5150, VNT5200 |
| 50053952-020/U | 20-40-60 Minute Boost Control | VNT5150, VNT5200 |
| 50063805-001/U | Polypropylene 9 inch HRV Core for VNT5070H1000 | VNT5070H1000 |
| 50063805-002/U | Enthalpy 9 inch ERV Core for VNT5070E1000 | VNT5070E1000 |
| 50063805-004/U | Replacement Motor | VNT5070 |
| 50063805-005/U | 5 inch diameter Plastic Collar | VNT5070 |
| 50063805-006/U | 5 inch diameter Plastic Keeper | VNT5070 |
| 50063805-007/U | Front Access Door | VNT5070 |
| 50063805-008/U | Mounting Bracket | VNT5070 |
| 50063805-009/U | Matrix Ventilation Hood | VNT5070 |
| 50063805-010/U | Replacement low voltage control electronic board | VNT5070 |
| VNT6150XALPLT1/U | Aluminum distribution plates, 150 cfm | VNT6150 |
| VNT6150XIMPEL1/U | Motor 180mm impeller, 150 cfm | VNT6150 |
| VNT6150XLVCBD1/U | Low voltage control board, 150 cfm | VNT6150 |
| VNT6200XALPLT1/U | Aluminum distribution plates, 200 cfm | VNT6200 |
| VNT6200XLVCBD1/U | Low voltage control board, 200 cfm | VNT6200 |

Fresh Air Ventilation System

Y8150 Fresh Air Ventilation Kit



The Y8150 Fresh Air Ventilation System from Honeywell provides optimal ventilation for improved indoor air quality at an affordable price for a home. A “set it and forget it” program calculates the amount of ventilation needed in the home based on custom settings. The control operates a fresh air intake damper and, when necessary, activates the main HVAC blower to efficiently meet ASHRAE ventilation rates.

- Designed to help meet local ventilation codes and standards, including ASHRAE 62.2-2010 standard, Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings.
- Smart Control optimizes air delivery by syncing ventilation calls with heating/cooling
- Easy-to-use input dials allow customized ventilation for each installation
- Test mode that includes immediate feedback to installer to confirm that air delivery requirements of selected ventilation standard are being met.
- Economical supply-only ventilation; works with forced air system.
- Can be used with other equipment, such as an HRV/ ERV, for balanced ventilation.

Electrical Ratings: 24 Vac

Tradeline Value: Tradeline

Includes: W8150A Fresh Air Ventilation Control, EARDTZ6 normally closed 6 inch damper, AT120B 120 Vac/24 Vac 20 VA transformer, mounting hardware for control

| Material Number | Application | Airflow Capacity (cfm) | Current Draw |
|-----------------|--------------------|------------------------|--------------|
| Y8150A1017/U | Ventilation System | 50 to 160 cfm | 0.6 A |

Fresh Air Ventilation Control



W8150 Fresh Air Ventilation Control provides fresh air to a home. The control operates a fresh air intake damper and, when necessary, activates the main HVAC blower to efficiently meet ASHRAE ventilation rates.

- Designed to help meet local ventilation codes and standards, including ASHRAE 62.2-2010 standard, Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings.
- Smart Control optimizes air delivery by syncing ventilation calls with heating/cooling
- Easy-to-use input dials allow customized ventilation for each installation.
- Test mode that includes immediate feedback to installer to confirm that air delivery requirements of selected ventilation standard are being met.
- Economical supply-only ventilation; works with forced air system.
- Can be used with other equipment, such as an HRV/ ERV, for balanced ventilation.

Electrical Ratings: 24 Vac

Tradeline Value: Tradeline

| Material Number | Application | Airflow Capacity (cfm) | Current Draw | Used With |
|-----------------|---------------------|------------------------|--------------|---------------------------------|
| W8150A1001/U | Ventilation Control | 50 to 160 cfm | 0.6 A | EAR6, VNT5150, VNT5200, VNT5070 |

Digital Bath Fan Control



Every home can benefit from proper ventilation. Honeywell's new Digital Bath Fan Control can operate a bath fan to meet ASHRAE 62.2 ventilation standards, allowing you to offer increased ventilation control that is smart, affordable and efficient.

- Installs in place of a normal switch.
- Manually turn fan on / off or program to run at certain times of day for increased energy efficiency and convenience.
- Can run in timer mode up to 60 minutes.
- Meets ASHRAE 62.2 Ventilation Standard, required or recommended in most states and provinces for new construction or whenever a permit is required.
- Easy-to-see backlit display shows current time to keep you on schedule when getting ready.

Application: Ventilation Control
Electrical Ratings: 120 Vac

Frequency: 60 Hz
Tradeline Value: Tradeline

| Material Number | Description |
|-----------------|---------------|
| HVC0001/U | Color White |
| HVC0002/U | Color Biscuit |

Wireless Vent and Filter Boost Remote



The Wireless Vent and Filter Boost Remote provides one-touch control of your ventilation system from bathrooms, laundry rooms, or any location in your home or building. The remote has three buttons: 20, 40, and 60 minutes. The ventilator can be temporarily boosted for 20, 40, or 60 minutes, depending on the button pressed.

- Pressing one of these buttons temporarily boosts the ventilator for either the time on the button or the current run time at the thermostat, whichever is greater. Vent boost can be canceled from the thermostat.

Application: Ventilation Control
Tradeline Value: Tradeline

| Material Number | Description |
|-----------------|--|
| HVC20A1000/U | Wireless Vent and Filter Boost Remote works with RedLINK 2.0 thermostats |

Supply Air Ventilation Products

EARD TrueZONE Fresh Air Damper



The EARD is a round damper with a 24 Vac powered-open/spring-closed motor. It is used for fresh air intake for ventilation or for combustion makeup air.

- Adjustable damper position range stops.
- Single-blade damper.
- Shipped as power open/spring return closed damper.
- Galvanized steel.
- Quiet operation.
- Can be field-converted to power closed/spring return open damper.
- Blade closes off tightly against gasket for minimal leakage.
- Male (crimped) and female (uncrimped) ends to connect to any rigid or flexible round duct.

Shape: Round

Used With: Honeywell Ventilation Systems

Motor Timing: 30 seconds power closed/10 seconds spring return

Voltage: 24V

Wires to Motor: Terminals: M1-Power; M6 Common

Other Motor Information: Simplified range stops

| Material Number | Application | Size | Motor or Actuator Mounting | Damper Type | Motor | Description |
|-----------------|--------------------|-------------------------------------|----------------------------|---------------------|---------------------------|---|
| EARD6TZ/U | Zone Damper | 6 in. diameter (152 mm diameter) | Side or Top | Single-blade, round | Power open, spring closed | 6 in. Round Fresh Air Damper, Spring Return |
| EARD8TZ/U | Ventilation Damper | 8 in. diameter (203 mm diameter) | Side or Top | Single-blade, round | Power open, spring closed | 8 in. Round Fresh Air Damper |

V400 Line Voltage; V800 Low Voltage Standing Pilot Gas Controls



Ignition Type: Standing Pilot
Application: Single Stage
Type of Fuel: Natural (LP if conversion kit included)
Body Pattern: Straight-through
Pilot Gas Outlet: Compression fitting for 1/4 in. OD tubing
Pressure Tapping: Outlet pressure tap: 1/8 in. NPT with plug
Capacity (kBtuh):
 1/2 x 1/2 inlet x outlet – 225,000 BTU/hr 1 in. PD; 23,000 BTU/hr minimum; 225,000 BTU/hr maximum
 1/2 x 3/4 inlet x outlet – 250,000 BTU/hr 1 in. PD; 23,000 BTU/hr minimum; 290,000 BTU/hr maximum
 3/4 x 3/4 inlet x outlet – 335,000 BTU/hr 1 in. PD; 34,000 BTU/hr minimum; 425,000 BTU/hr maximum
Pressure Ratings (psi): 1/2 psi
Pressure Ratings (kPa): 3.5 kPa
Frequency: 60 Hz
Operating Temperature Range: 32°F to 175°F (0°C to 79°C)

Used on gas fired standing pilot appliances with 30 mV thermocouple. These gas controls include a manual gas valve, safety shutoff, single millivoltage automatic operator, pressure regulator, pilot gas filter and flow adjustment, pressure tapping, and thermocouple connector.

- Include pilot flow adjustment screw.
- Easy to install, adjust and service; all adjustments and connections are accessible from top of control.
- Add separate energy cutoff (ECO) where codes call for dual safety shutoff.
- Complete safety shutoff on pilot flame failure.
- LITE-RITE (OFF-PILOT-ON) lighting sequence.

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Approvals, Underwriters Laboratories Inc.: UL Component
 Recognized MCCZ2.MH5323

Approvals, CSA: CSA International: 112395

Accessories:

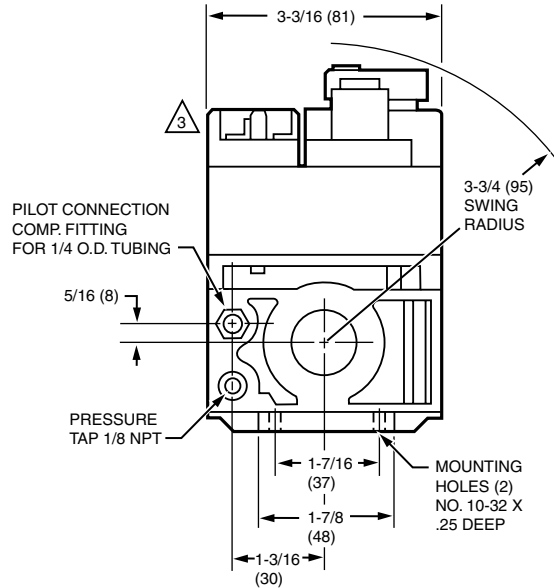
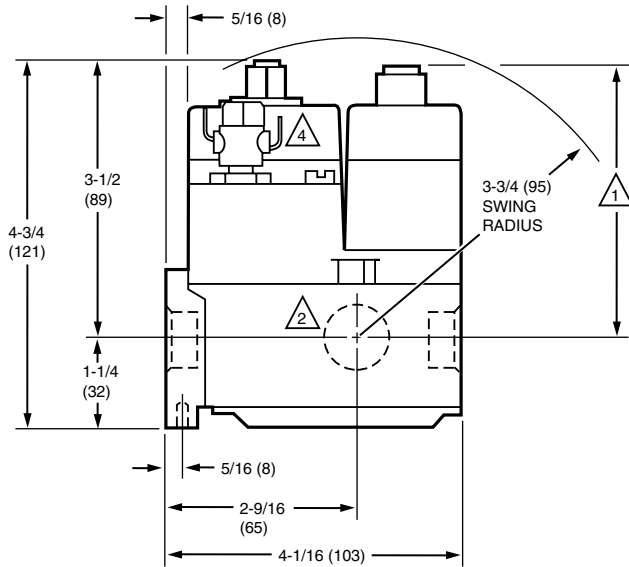
- 390427A/U** – One 3/4 x 1/2 in. reducer bushing
- 390427B/U** – One 1/2 inch x 3/8 inch reducer bushing
- 390427E/U** – Two 3/4 x 1/2 in. reducer bushings
- 390795/U** – Remote Gas Cock Knob
- 391936/U** – Single Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, screw and cap
- 391937/U** – Single Stage Natural to LP Gas Conversion Kit. 8" to 12" adjustment range. Includes regulator spring, o-ring, screw and cap
- 392451-1/U** – ECO adapter with 1/4" x 0.032" quick-connect terminals for the V800 or the VS820 family.

| Material Number | Voltage | Opening Characteristics | Inlet/Outlet Size (in.) | Pressure Regulator Setpoint (in. wc) | Pressure Regulator Setpoint (kPa) | Electrical Connections | Includes | Comments |
|-----------------|---------|-------------------------|---|--|---|--|--|--------------------------|
| V400A1095/U | 120 Vac | Standard | 3/4 in. NPT x 3/4 in. NPT with 1/2 in. NPT side outlets | 3.5 in. WC | 0.87 kPa | 39" Leadwires with Conduit Cover | One 1/2 x 3/8 in. reducer bushing Two 3/4 x 1/2 in. reducer bushings | – |
| V800A1070/U | 24 Vac | Standard | 1/2 in. NPT x 3/4 in. NPT with 1/2 in. NPT side outlets | 3.5 in. WC | 0.87 kPa | Combination screw and 1/4 in. male quick connects. | One 1/2 x 3/8 in. reducer bushing One 3/4 x 1/2 in. reducer bushing Natural to LP Conversion Kit Q340 Thermocouple | – |
| V800A1088/U | 24 Vac | Standard | 3/4 in. NPT x 3/4 in. NPT with 1/2 in. NPT side outlets | 3.5 in. WC | 0.87 kPa | Combination screw and 1/4 in. male quick connects. | One 1/2 x 3/8 in. reducer bushing Two 3/4 x 1/2 in. reducer bushings Natural to LP Conversion Kit Q340 Thermocouple | – |
| V800A1161/U | 24 Vac | Standard | 1/2 in. x 1/2 in. | 3.5 in. WC | 0.87 kPa | Combination screw and 1/4 in. male quick connects. | – | Available in Canada only |
| V800A1179/U | 24 Vac | Standard | 3/4 in. x 3/4 in. | 3.5 in. WC | 0.87 kPa | Combination screw and 1/4 in. male quick connects. | – | Available in Canada only |
| V800A1476/U | 24 Vac | Standard | 1/2 in. x 3/4 in. | 3.5 in. WC | 0.87 kPa | Combination screw and 1/4 in. male quick connects. | One 3/4 x 1/2 in. reducer bushing Natural to LP Conversion Kit | – |
| V800A1591/U | 24 Vac | Standard | 3/4 in. x 3/4 in. | 3.5 in. WC | 0.87 kPa | Combination screw and 1/4 in. male quick connects. | Two 3/4 x 1/2 in. reducer bushings Natural to LP Conversion Kit | – |
| V800C1052/U | 24 Vac | Step | 3/4 in. NPT x 3/4 in. NPT with 1/2 in. NPT side outlets | Step Setting: 0.9 in. WC non-adjustable; Full Rate: 3.5 in. wc | Step Setting: 0.22 kPa; Full Rate: 0.87 kPa | Combination screw and 1/4 in. male quick connects. | One 1/2 x 3/8 in. reducer bushing Two 3/4 x 1/2 in. reducer bushings | – |

Residential Combustion Control

Combination Gas Controls

Dimensions in inches (millimeters)



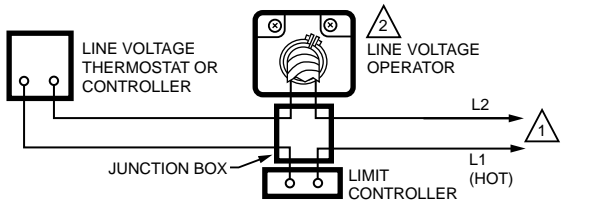
1 WITH V5306 (ILLUSTRATED), V5307 OR 5390 PRESSURE REGULATOR: 24V MODELS—3-1/2 (89), 120V MODEL—3-5/8 (92)
MANUAL MODELS—2-13/16 (71), FOR V5308 ADD 5/8 (16) TO DIMENSIONS GIVEN.

2 SIDE OUTLETS—LEFT AND RIGHT HAND. STANDARD ONLY ON TRADELINE MODELS.

3 CONTROL WITH 24V VALVE OPERATOR SHOWN. LINE VOLT MODEL HAS COVER FOR CONDUIT CONNECTION (TOP SURFACE).

M16547A

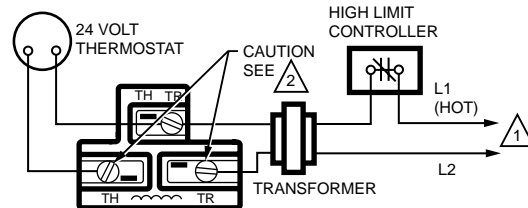
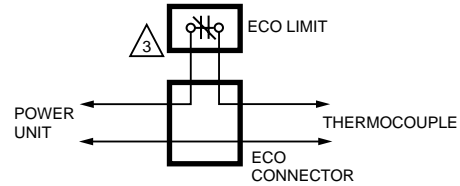
4 ECO CONNECTOR ON STANDARD CAPACITY V800 ONLY.



1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

2 LINE VOLTAGE ENCLOSURE NOT PART OF GAS CONTROL. LINE VOLTAGE GAS CONTROLS MUST BE USED IN AN OEM APPROVED ENCLOSURE.

M23300



1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

2 NEVER JUMPER THESE TERMINALS. THIS SHORTS OUT VALVE COIL AND MAY BURN OUT HEAT ANTICIPATOR IN THERMOSTAT.

3 ORDER ECO LIMIT AND LEADWIRES SEPERATELY.

M23299

VS820 Millivoltage Standing Pilot Gas Controls



Ignition Type: Standing Pilot

Application: Self-powered automatic control. Use with 750 mV pilot generator.

Pilot Gas Outlet: Compression fitting for 1/4 in. OD tubing.

Pressure Tapping: Outlet pressure tap: 1/8 in. NPT with plug

Body Pattern: Straight-through

Capacity (kBtuh):

1/2 x 1/2 inlet x outlet – 225,000 BTU/hr 1 in. PD; 23,000 BTU/hr minimum; 225,000 BTU/hr maximum

1/2 x 3/4 inlet x outlet – 250,000 BTU/hr 1 in. PD; 23,000 BTU/hr minimum; 290,000 BTU/hr maximum

3/4 x 3/4 inlet x outlet – 335,000 BTU/hr 1 in. PD; 34,000 BTU/hr minimum; 425,000 BTU/hr maximum

Pressure Ratings (psi): 1/2 psi

Pressure Ratings (kPa): 3.5 kPa

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Voltage: 750 mV

Electrical Connections: Combination screw and 1/4 in. male quick connects.

These gas controls are used on gas fired, standing pilot appliances with 750 mV self-powered control systems. They include a manual gas valve, safety shutoff, single millivoltage automatic operator and pressure regulator.

- Include pilot flow adjustment screw.
- Easy to install, adjust and service; all adjustments and connections are accessible from top of control.
- Add separate energy cutoff (ECO) where codes call for dual safety shutoff.
- Complete safety shutoff on pilot flame failure.
- LITE-RITE (OFF-PILOT-ON) lighting sequence.

Operating Temperature Range: VS820M models only -40°F to 175°F; All others 32°F to 175°F (VS820M models only -40°C to +79°C; All others 0°C to 79°C)

Approvals, Underwriters Laboratories Inc.: UL Component Recognized MCCZ2.MH5323

Approvals, CSA: CSA International: 112395

Accessories:

390427A/U – One 3/4 x 1/2 in. reducer bushing

390427B/U – One 1/2 inch x 3/8 inch reducer bushing

390427E/U – Two 3/4 x 1/2 in. reducer bushings

390795/U – Remote Gas Cock Knob

391936/U – Single Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, screw and cap

391937/U – Single Stage Natural to LP Gas Conversion Kit. 8" to 12" adjustment range. Includes regulator spring, o-ring, screw and cap

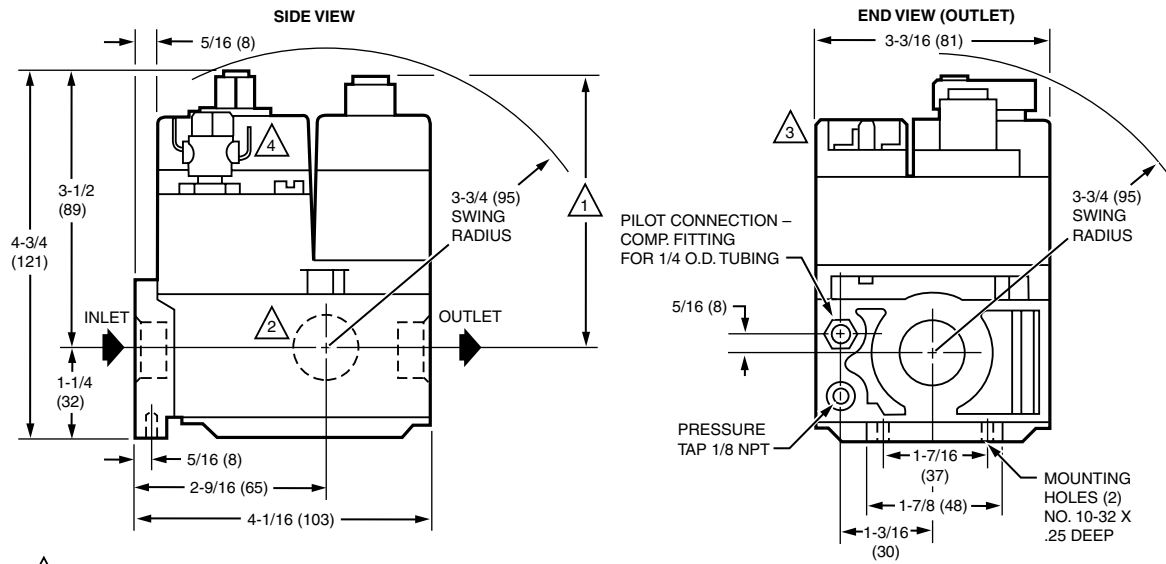
392451-1/U – ECO adapter with 1/4" x 0.032" quick-connect terminals for the V800 or the VS820 family.

| | Material Number | Type of Fuel | Opening Characteristics | Inlet/Outlet Size (in.) | Pressure Regulator Setpoint (in. wc) | Pressure Regulator Setpoint (kPa) | Includes |
|---|-----------------|---|-------------------------|---|---|-------------------------------------|---|
| | VS820A1047/U | Natural | Standard | 1/2 in. NPT x 3/4 in. NPT with 1/2 in. NPT side outlets | 3.5 in. WC | 0.87 kPa | One 1/2 x 3/8 in. reducer bushing One 3/4 x 1/2 in. reducer bushing |
| | VS820A1054/U | Natural | Standard | 3/4 in. NPT x 3/4 in. NPT with 1/2 in. NPT side outlets | 3.5 in. WC | 0.87 kPa | One 1/2 x 3/8 in. reducer bushing Two 3/4 x 1/2 in. reducer bushings |
| | VS820A1088/U | Natural (LP with included conversion kit) | Standard | 3/4 in. NPT x 3/4 in. NPT with 1/2 in. NPT side outlets | 3.5 in. WC | 0.87 kPa | One 1/2 x 3/8 in. reducer bushing Two 3/4 x 1/2 in. reducer bushings Natural to LP Conversion Kit Remote rod adapter |
| | VS820A1187/U | Natural | Standard | 1/2 in. NPT x 1/2 in. NPT | 3.5 in. WC | 0.87 kPa | – |
| | VS820A1336/U | LP | Standard | 3/4 in. NPT x 3/4 in. NPT with 1/2 in. NPT side outlets | 10.0 in. WC | 2.49 kPa | One 1/2 x 3/8 in. reducer bushing One 3/4 x 1/2 in. reducer bushing |
| | VS820C1100/U | Natural | Step | 3/4 in. NPT x 3/4 in. NPT with 1/2 in. NPT side outlets | Step: 0.9 in. WC non-adjustable; Full rate: 3.5 in. WC | Step: 0.22 kPa; Full rate: 0.87 kPa | One 1/2 x 3/8 in. reducer bushing One 3/4 x 1/2 in. reducer bushing |
| | VS820C1332/U | LP | Step | 3/4 in. NPT x 3/4 in. NPT | Step: 2.2 in. WC non-adjustable; Full rate: 11.0 in. WC | Step: 0.56 kPa; Full rate: 2.73 kPa | – |
| U | VS820M1309/U | Natural (LP with included conversion kit) | Standard | 3/4 in. NPT x 3/4 in. NPT with 1/2 in. NPT side outlets | 3.5 in. WC | 0.87 kPa | One 1/2 x 3/8 in. reducer bushing Two 3/4 x 1/2 in. reducer bushings Natural to LP Conversion Kit Remote rod adapter |

U Universal Service Part

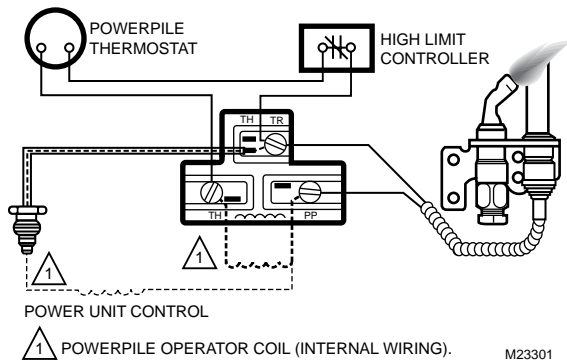
Combination Gas Controls

Dimensions in inches (millimeters)



- 1 WITH V5306 (ILLUSTRATED), V5307 OR V8305 PRESSURE REGULATOR: 24V MODELS-3-1/2 (89), 120V MODEL-3-5/8 (92) MANUAL MODELS-2-13/16 (71), FOR V5308 ADD 5/8 (16) TO DIMENSIONS GIVEN.
- 2 SIDE OUTLETS-LEFT AND RIGHT HAND. STANDARD ONLY ON TRADELINE MODELS.
- 3 CONTROL WITH 24V VALVE OPERATOR SHOWN. LINE VOLT MODEL HAS COVER FOR CONDUIT CONNECTION (TOP SURFACE).
- 4 ECO CONNECTOR AVAILABLE FOR STANDARD CAPACITY V800 ONLY.

M23262



VR8200 Low Voltage



Ignition Type: Standing Pilot
Application: Single Stage
Type of Fuel: Natural (LP if conversion kit included)
Body Pattern: Straight-through
Electrical Connections: 1/4 in. quick-connect male terminals
Pilot Gas Outlet: Compression fitting for 1/4 in. OD tubing
Pressure Tapping: 1/8 in. NPT with plug
Capacity (kBtuh): At 1 in. wc p.d. – 130,000 BTUh; 20,000 BTUh minimum; 200,000 BTUh maximum Natural Gas
Pressure Ratings (psi): 1/2 psi
Pressure Ratings (kPa): 3.5 kPa
Operating Temperature Range: 0°F to 175°F (-18°C to +79°C)
Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.
Approvals, Underwriters Laboratories Inc.: UL Component Recognized MCCZ2.MH5323
Approvals, CSA: CSA International: 112395
Approvals, Australian Gas Association: 4752

Gas valves for use in 24 Vac, gas-fired, standing pilot appliances with capacities from 20 to 200 cfh.

- Gas valves include manual valve, two automatic operators, servo pressure regulator and pilot adjustment.
- Compact size.
- Provide two automatic valves.
- Solenoid-operated first automatic valve opens on thermostat call for heat; closes when call for heat ends.
- Diaphragm-operated second automatic valve opens under control of regulator; closes if gas or power supply is interrupted.
- Meet codes requiring dual safety shutoff.
- Natural to LP and LP to Natural conversion kits available for standard and slow opening gas valves.
- LITE-RITE (OFF-PILOT-ON) lighting sequence.
- All adjustments, wiring connections and pilot outlet are accessible from top of control.
- Adjustable servo regulator effectively maintains almost constant gas output pressure under wide fluctuations in gas supply pressure.
- Compatible with ECO connector.

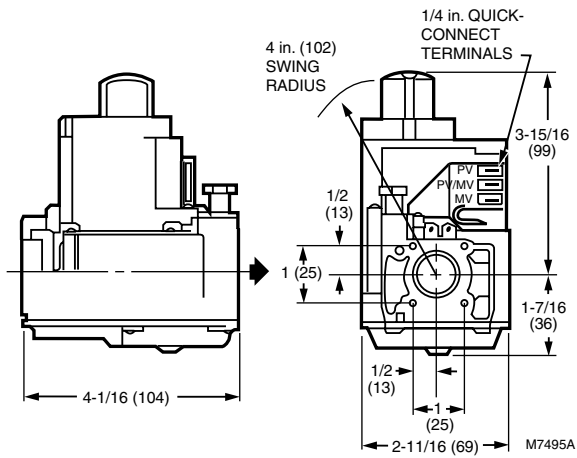
Accessories:

- 390427A/U** – One 3/4 x 1/2 in. reducer bushing
- 390427B/U** – One 1/2 inch x 3/8 inch reducer bushing
- 390427E/U** – Two 3/4 x 1/2 in. reducer bushings
- 393200-1/U** – ECO adapter with 1/4" x 0.032" quick-connect terminals for VR8200 and VR8300 family.
- 393690-13/U** – 1/2" NPT Elbow Flange kit includes flange, o-rings and hex screws
- 393690-4/U** – 3/4" NPT Straight Flange kit includes flange, o-rings and hex screws
- 393691/U** – Single Stage Natural to LP Gas Conversion Kit. 8" to 12" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw
- 394588/U** – Single Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw
- 395253-1/U** – Single Stage LP to Natural Gas Conversion Kit. 5" to 7" WC adjustment. Includes regulator spring, o-ring, and adjustment screw and cap screw
- 396221/U** – Single Stage Natural to LP Gas Conversion Kit. 8" to 12" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.
- 396222/U** – Single Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.

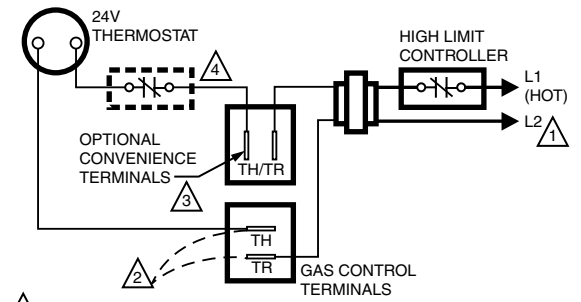
| Material Number | Voltage | Frequency | Opening Characteristics | Inlet/Outlet Size (in.) | Pressure Regulator Setpoint (in. wc) | Pressure Regulator Setpoint (kPa) | Includes |
|-----------------|---------|-----------|-------------------------|-------------------------|--|---|--|
| VR8200A2124/U | 24 Vac | 60 Hz | Standard | 1/2 in. x 1/2 in. | 3.5 in. WC | 0.87 kPa | One 3/4 in. straight flange One 1/2 x 3/8 in. reducer bushing Natural to LP conversion kit Q340 Thermocouple |
| VR8200A2132/U | 24 Vac | 60 Hz | Standard | 1/2 in. x 1/2 in. | 3.5 in. WC | 0.87 kPa | One 3/4 in. straight flange One 1/2 x 3/8 in. reducer bushing Natural to LP conversion kit |
| VR8200A2322/U | 24 Vac | 60 Hz | Standard | 1/2 in. x 1/2 in. | 3.5 in. WC | 0.87 kPa | Natural to LP Conversion Kit |
| VR8200A2744/U | 24 Vac | 60 Hz | Standard | 1/2 in. x 1/2 in. | 3.5 in. WC | 0.87 kPa | One 3/4 in. straight flange One 3/4 in. elbow flange One 1/2 x 3/8 in. reducer bushing Natural to LP conversion kit |
| VR8200C1041/U | 24 Vac | 60 Hz | Step | 1/2 in. x 1/2 in. | Step Setting: 0.9 in. WC non-adjustable; Full Rate: 3.5 in. wc | Step Setting: 0.22 kPa; Full Rate: 0.87 kPa | – |
| VR8200H1236/U | 24 Vac | 60 Hz | Slow | 1/2 in. x 1/2 in. | 3.5 in. WC | 0.87 kPa | Natural to LP Conversion Kit |
| VR8200H1251/U | 24 Vac | 60 Hz | Slow | 1/2 in. x 1/2 in. | 3.5 in. WC | 0.87 kPa | One 3/4 in. straight flange One 1/2 x 3/8 in. reducer bushing Natural to LP conversion kit |

Combination Gas Controls

Dimensions in inches (millimeters)



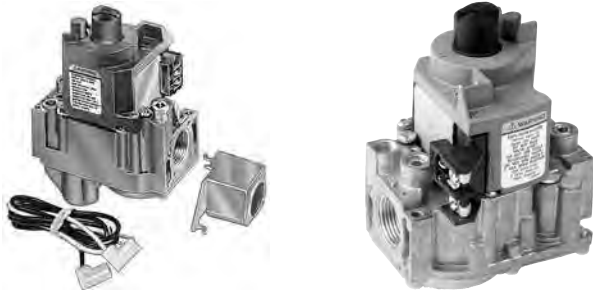
Wiring connections for 24 volt control



- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 DO NOT JUMPER THESE TERMINALS. THIS SHORTS VALVE COIL AND CAN BURN OUT ANTICIPATOR IN THERMOSTAT.
- 3 CONVENIENCE TERMINALS SERVE ONLY AS A TIE POINT. THEY ARE NOT INTERNALLY WIRED TO THE CONTROL CIRCUIT OR TO GROUND.
- 4 OPTIONAL HIGH LIMIT.

M2915C

VR4300 Line Voltage; VR8300 Low Voltage Standing Pilot Combination Gas Controls



Application: Single Stage

Type of Fuel: Natural (LP if conversion kit included)

Pressure Tapping: 1/8 in. NPT with plug

Pilot Gas Outlet: Compression fitting for 1/4 in. OD tubing

Body Pattern: Straight-through (with flange if included)

Capacity (kBtuh):

1/2 x 3/4 inlet x outlet – At 1 in. wc p.d. – 190,000 BTUh;
30,000 BTUh minimum: 290,000 BTUh maximum Natural Gas

3/4 x 3/4 inlet x outlet – At 1 in. wc p.d. – 200,000 BTUh;
30,000 BTUh minimum: 300,000 BTUh maximum Natural Gas

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Operating Temperature Range: 0°F to 175°F (-18°C to +79°C);
VR8300M -40°F to +175°F (-40°C to +79°C)

Approvals, Underwriters Laboratories Inc.: UL Component
Recognized MCCZ2.MH5323

Approvals, CSA: CSA International: 112395

Approvals, Australian Gas Association: 4717; except VR8300M models

Pressure Ratings (psi): 1/2 psi

Pressure Ratings (kPa): 3.5 kPa

Ignition Type: Standing Pilot

Combination gas control for use in 24 Vac, 120 Vac, gas-fired, standing pilot appliances with capacities from 30 to 300 cfh.

- Control includes safety shutoff, manual valve, two automatic operators, pressure regulator and pilot adjustment.
- Compact size.
- Provides two automatic valves.
- Solenoid operated first automatic valve opens on thermostat call for heat, closes when call for heat ends.
- Diaphragm-operated second automatic valve opens under control of regulator; closes if gas or power supply is interrupted.
- Meets codes requiring dual safety shut-off.
- Natural to LP and LP to Natural conversion kits available for standard and slow opening gas valves.
- All adjustments, wiring connections and pilot outlet are accessible from top of control.
- Adjustable servo regulator effectively maintains almost constant gas output pressure under wide fluctuations in gas supply pressure.
- Compatible with ECO connector.
- LITE-RITE (OFF-PILOT-ON) lighting sequence.

Accessories:

390427A/U – One 3/4 x 1/2 in. reducer bushing

390427B/U – One 1/2 inch x 3/8 inch reducer bushing

390427E/U – Two 3/4 x 1/2 in. reducer bushings

393200-1/U – ECO adapter with 1/4" x 0.032" quick-connect terminals for VR8200 and VR8300 family.

393690-13/U – 1/2" NPT Elbow Flange kit includes flange, o-rings and hex screws

393690-4/U – 3/4" NPT Straight Flange kit includes flange, o-rings and hex screws

393691/U – Single Stage Natural to LP Gas Conversion Kit. 8" to 12" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw

394588/U – Single Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw

395253-1/U – Single Stage LP to Natural Gas Conversion Kit. 5" to 7" WC adjustment. Includes regulator spring, o-ring, and adjustment screw and cap screw

396221/U – Single Stage Natural to LP Gas Conversion Kit. 8" to 12" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.

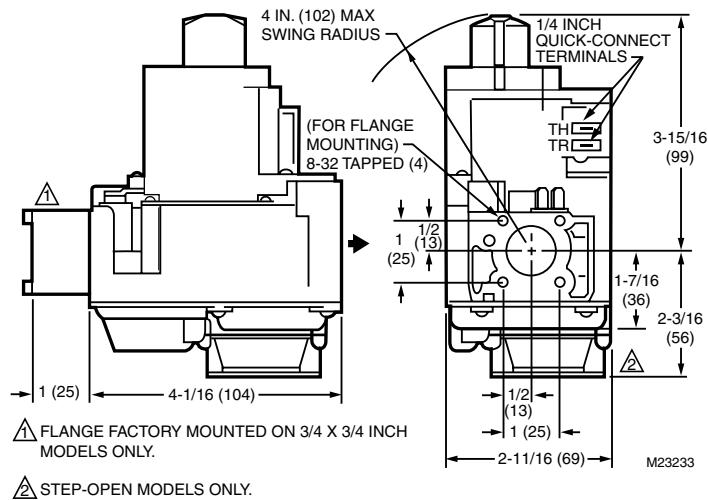
396222/U – Single Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.

| | Material Number | Voltage | Frequency | Opening Characteristics | Inlet/Outlet Size (in.) | Pressure Regulator Setpoint (in. wc) | Pressure Regulator Setpoint (kPa) | Electrical Connections | Includes |
|---|-----------------|---------|-----------------|-------------------------|--|---|--|--------------------------------------|--|
| | VR4300A4502/U | 120 Vac | 60 Hz | Standard | 3/4 in. straight flange on inlet x 3/4 in. | 3.5 in. WC | 0.87 kPa | 21 in. (533 mm) leadwire. | One 1/2 x 3/8 in. reducer bushing Two 3/4 x 1/2 in. reducer bushings Natural to LP Conversion Kit |
| | VR8300A3500/U | 24 Vac | 60 Hz | Standard | 1/2 in. x 3/4 in. | 3.5 in. WC | 0.87 kPa | 1/4 in. quick-connect male terminals | One 3/4 x 1/2 in. reducer bushing Natural to LP Conversion Kit |
| | VR8300A3518/U | 24 Vac | 60 Hz | Standard | 1/2 in. x 3/4 in. | 3.5 in. WC | 0.87 kPa | 1/4 in. quick-connect male terminals | One 3/4 in. straight flange One 3/4 x 1/2 in. reducer bushing Natural to LP Conversion Kit Q340 Thermocouple ECO Adaptor |
| | VR8300A4508/U | 24 Vac | 60 Hz | Standard | 3/4 in. straight flange on inlet x 3/4 in. | 3.5 in. WC | 0.87 kPa | 1/4 in. quick-connect male terminals | Two 3/4 x 1/2 in. reducer bushings Natural to LP conversion kit |
| | VR8300A4516/U | 24 Vac | 60 Hz | Standard | 3/4 in. straight flange on inlet x 3/4 in. | 3.5 in. WC | 0.87 kPa | 1/4 in. quick-connect male terminals | Two 3/4 x 1/2 in. reducer bushings Natural to LP conversion kit Q340 Thermocouple ECO adaptor |
| | VR8300C4506/U | 24 Vac | 60 Hz | Step | 3/4 in. straight flange on inlet x 3/4 in. | Step Setting: 0.9 in. WC non-adjustable; Full Rate: 3.5 in. wc | Full Rate: 0.87 kPa; Step Setting: 0.22 kPa | 1/4 in. quick-connect male terminals | Two 3/4 x 1/2 in. reducer bushings |
| | VR8300H4501/U | 24 Vac | 60 Hz | Slow | 3/4 in. straight flange on inlet x 3/4 in. | 3.5 in. WC | 0.87 kPa | 1/4 in. quick-connect male terminals | – |
| U | VR8300M4406/U | 24 Vac | 50 Hz; 60 Hz | Standard | 3/4 in. x 3/4 in. | 3.5 in. WC | 0.87 kPa | 1/4 in. quick-connect male terminals | Two 3/4 x 1/2 in. reducer bushings Natural to LP Conversion Kit |

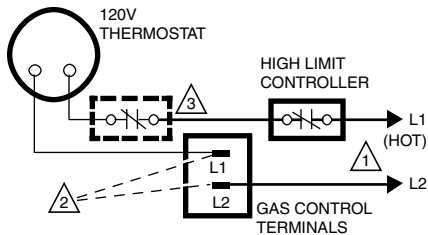
U Universal Service Part

Combination Gas Controls

Dimensions in inches (millimeters)



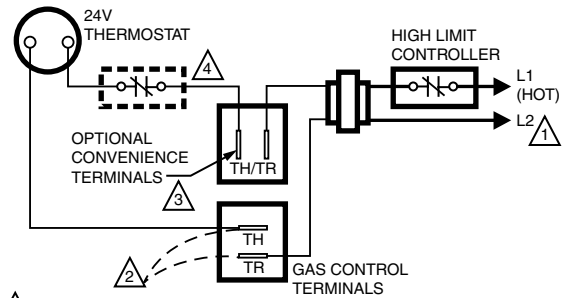
Wiring connections for 120 volt control



- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 DO NOT JUMPER THESE TERMINALS. THIS SHORTS VALVE COIL AND MAY BURN OUT ANTICIPATOR IN THERMOSTAT.
- 3 OPTIONAL HIGH LIMIT.

M3092B

Wiring connections for 24 volt control



- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 DO NOT JUMPER THESE TERMINALS. THIS SHORTS VALVE COIL AND CAN BURN OUT ANTICIPATOR IN THERMOSTAT.
- 3 CONVENIENCE TERMINALS SERVE ONLY AS A TIE POINT. THEY ARE NOT INTERNALLY WIRED TO THE CONTROL CIRCUIT OR TO GROUND.
- 4 OPTIONAL HIGH LIMIT.

M2915C

VR8204 Intermittent Pilot Dual Automatic Valve Combination Gas Controls



Ignition Type: Intermittent Pilot
Application: Single Stage
Voltage: 24 Vac
Frequency: 60 Hz
Type of Fuel: Natural (LP if conversion kit included)
Body Pattern: Straight-through
Electrical Connections: 1/4 in. quick-connect male terminals
Pilot Gas Outlet: Compression fitting for 1/4 in. OD tubing
Pressure Tapping: 1/8 in. NPT with plug
Capacity (kBtu/h): At 1 in. wc p.d. – 150,000 BTU/h: 20,000 BTU/h minimum; 200,000 BTU/h maximum Natural Gas
Pressure Ratings (psi): 1/2 psi
Pressure Ratings (kPa): 3.5 kPa
Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.
Approvals, Underwriters Laboratories Inc.: UL Component Recognized MCC22.MH5323
Approvals, CSA: CSA International: 112395
Approvals, Australian Gas Association: 4752

Gas valves for use in 24 Vac, gas-fired, intermittent pilot appliances with capacities from 20 to 200 cfh.

- Gas valves include manual valve, two automatic operators, servo pressure regulator and pilot adjustment.
- Use with S86F, H; S8600F, H and S8610 Control Modules.
- Compact size.
- Provide two automatic valves.
- Solenoid operated first automatic valve opens on thermostat call for heat; closes when call for heat ends.
- Diaphragm operated second automatic valve opens under control of regulator; closes if gas or power supply is interrupted.
- Meet codes requiring dual safety shutoff.
- Natural to LP and LP to Natural conversion kits available for standard and slow opening gas valves.
- All adjustments and wiring connections are accessible from top of control.
- ON-OFF lighting sequence.

Accessories:

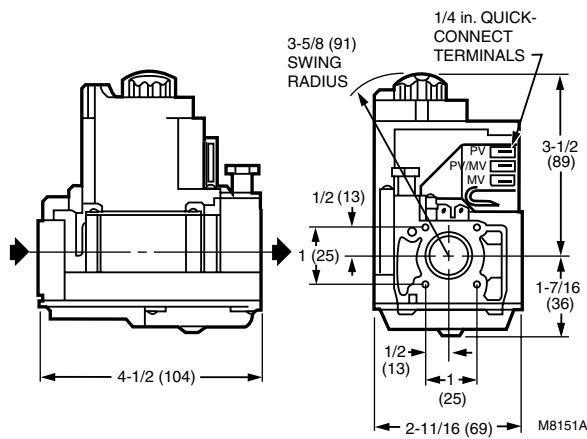
- 390427A/U** – One 3/4 x 1/2 in. reducer bushing
- 390427B/U** – One 1/2 inch x 3/8 inch reducer bushing
- 390427E/U** – Two 3/4 x 1/2 in. reducer bushings
- 393690-13/U** – 1/2" NPT Elbow Flange kit includes flange, o-rings and hex screws
- 393690-4/U** – 3/4" NPT Straight Flange kit includes flange, o-rings and hex screws
- 393691/U** – Single Stage Natural to LP Gas Conversion Kit. 8" to 12" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw
- 394588/U** – Single Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw
- 395253-1/U** – Single Stage LP to Natural Gas Conversion Kit. 5" to 7" WC adjustment. Includes regulator spring, o-ring, adjustment screw and cap screw
- 396221/U** – Single Stage Natural to LP Gas Conversion Kit. 8" to 12" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.
- 396222/U** – Single Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.
- 396021/U** – Two Stage Natural to LP Gas Conversion Kit. 8" to 11" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.
- 396025/U** – Two Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.

| Material Number | Opening Characteristics | Inlet/Outlet Size (in.) | Pressure Regulator Setpoint (in. wc) | Pressure Regulator Setpoint (kPa) | Operating Temperature Range | Includes |
|-----------------|-------------------------|-------------------------|---|--|----------------------------------|--|
| VR8204A2076/U | Standard | 1/2 in. x 1/2 in. | 3.5 in. wc | 0.87 kPa | 0°F to 175°F (-18°C to +79°C) | One 3/4 in. straight flange One 1/2 x 3/8 in. reducer bushing Natural to LP Conversion Kit |
| VR8204C1019/U | Step | 1/2 in. x 1/2 in. | Step Setting: 0.9 in. WC non-adjustable; Full Rate: 3.5 in. wc | Full Rate: 0.87 kPa; Step Setting: 0.22 kPa | 0°F to 175°F (-18°C to +79°C) | – |
| VR8204H1006/U | Slow | 1/2 in. x 1/2 in. | 3.5 in. wc | 0.87 kPa | 0°F to 175°F (-18°C to +79°C) | – |
| VR8204M1091/U | Standard | 1/2 in. x 1/2 in. | 3.5 in. wc | 0.87 kPa | -40°F to +175°F (-40°C to +79°C) | One 3/4 in. straight flange One 1/2 x 3/8 in. reducer bushing Natural to LP Conversion Kit |

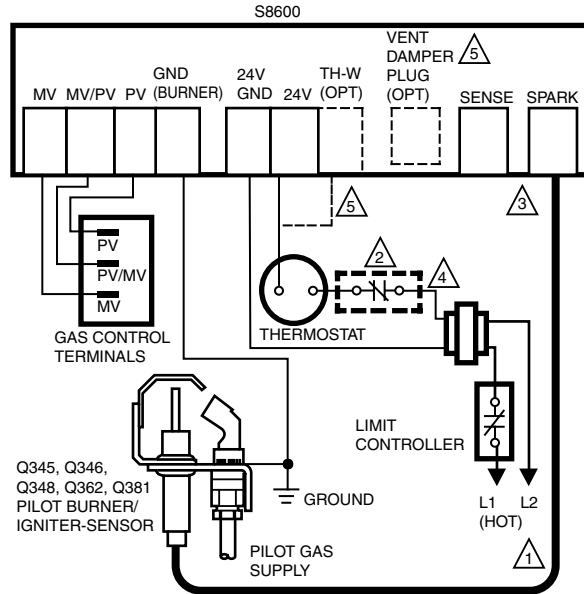
Residential Combustion Control

Combination Gas Controls

Dimensions in inches (millimeters)



Wiring connections for 24 volt control in intermittent ignition system with S8600.



- ⚠️ 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- ⚠️ 2 ALTERNATE LIMIT CONTROLLER LOCATION.
- ⚠️ 3 MAXIMUM WIRE LENGTH 3 ft [.9 m].
- ⚠️ 4 CONTROLS IN 24V CIRCUIT MUST NOT BE IN GROUND LEG TO TRANSFORMER.
- ⚠️ 5 FOR MODULE WITH TH-W TERMINAL AND VENT DAMPER PLUG, CONNECT THERMOSTAT TO TH-W. LEAVE 24V OPEN. DO NOT REMOVE VENT DAMPER PLUG.

M9056

VR4304 Line Voltage; VR8304 Low Voltage Intermittent Pilot Combination Gas Controls



Combination gas controls for use in 24Vac and 120Vac, gas-fired intermittent pilot appliances with capacities from 30 to 415 cfh.

- Controls include safety shutoff, manual valve, two automatic operators, pressure regulator and pilot adjustment.
- Use with S86F, H; S860D; S8600F, H; S8610 and S90A, B Control Modules.
- Compact size.
- Provide two automatic valves.
- Solenoid operated first automatic valve opens on thermostat call for heat; closes when call for heat ends.
- Diaphragm-operated second automatic valve opens under control of regulator; closes if gas or power supply is interrupted.
- Meet codes requiring dual safety shutoff.
- Natural to LP and LP to Natural conversion kits available for standard and slow opening gas valves.
- All adjustments, wiring connections and pilot outlet are accessible from top of control.
- Adjustable servo regulator effectively maintains almost constant gas output pressure under wide fluctuations in gas supply pressure.
- ON-OFF lighting sequence.

Ignition Type: Intermittent Pilot

Application: Single Stage

Body Pattern: Straight-through

Electrical Connections:

24 Vac models: 1/4 in. male quick connects

120 Vac Models: 21 in. leadwires

Pilot Gas Outlet: Compression fitting for 1/4 in. OD tubing

Pressure Tapping: 1/8 in. NPT with plug

Capacity (kBtu/h):

1/2 x 1/2 inlet x outlet – At 1 in. wc p.d. - 240,000 BTU/h:
30,000 BTU/h minimum; 340,000 BTU/h maximum Natural Gas

1/2 x 3/4 inlet x outlet – At 1 in. wc p.d. - 270,000 BTU/h:
30,000 BTU/h minimum; 370,000 BTU/h maximum Natural Gas

3/4 x 3/4 inlet x outlet – At 1 in. wc p.d. - 300,000 BTU/h:
30,000 BTU/h minimum; 415,000 BTU/h maximum Natural Gas

Pressure Ratings (psi): 1/2 psi

Pressure Ratings (kPa): 3.5 kPa

Operating Temperature Range: -40°F to 175°F (-40°C to 79°C);

VR8304H: 0°F to 175°F (-18°C to 79°C)

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Approvals, Underwriters Laboratories Inc.: UL Component
Recognized MCCZ2.MH5323

Approvals, CSA: CSA International: 112395

Approvals, Australian Gas Association: VR4304M models only -
4717

Accessories:

390427A/U – One 3/4 x 1/2 in. reducer bushing

390427B/U – One 1/2 inch x 3/8 inch reducer bushing

390427E/U – Two 3/4 x 1/2 in. reducer bushings

393690-13/U – 1/2" NPT Elbow Flange kit includes flange, o-rings and hex screws

393690-4/U – 3/4" NPT Straight Flange kit includes flange, o-rings and hex screws

393691/U – Single Stage Natural to LP Gas Conversion Kit. 8" to 12" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw

394588/U – Single Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw

395253-1/U – Single Stage LP to Natural Gas Conversion Kit. 5" to 7" WC adjustment. Includes regulator spring, o-ring, adjustment screw and cap screw

396221/U – Single Stage Natural to LP Gas Conversion Kit. 8" to 12" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.

396222/U – Single Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.

396021/U – Two Stage Natural to LP Gas Conversion Kit. 8" to 11" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.

396025/U – Two Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.

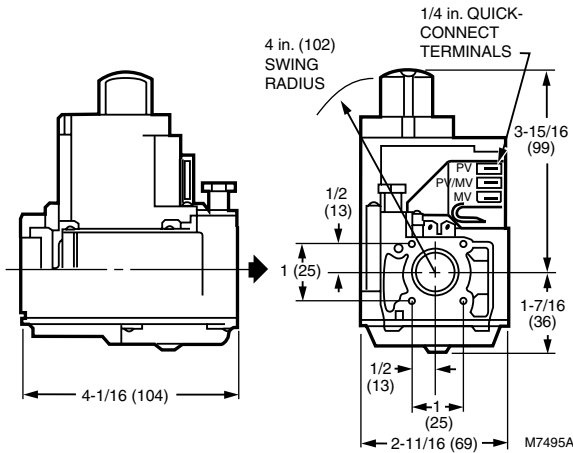
| Material Number | Voltage | Frequency | Opening Characteristics | Type of Fuel | Inlet/Outlet Size (in.) | Pressure Regulator Setpoint (in. wc) | Pressure Regulator Setpoint (kPa) | Includes |
|-----------------|---------|-----------|-------------------------|---|-------------------------|--------------------------------------|-----------------------------------|---|
| VR4304M4519/U | 120 Vac | 60 Hz | Standard | Natural (LP with included conversion kit) | 3/4 in. x 3/4 in. | 3.5 in. wc | 0.87 kPa | One 1/2 x 3/8 in. reducer bushing Two 3/4 x 1/2 in. reducer bushings Natural to LP Conversion Kit |
| VR8304H4503/U | 24 Vac | 60 Hz | Slow | Natural (LP with included conversion kit) | 3/4 in. x 3/4 in. | 3.5 in. wc | 0.87 kPa | Natural to LP Conversion Kit |
| VR8304M2501/U | 24 Vac | 60 Hz | Standard | Natural (LP with included conversion kit) | 1/2 in. x 1/2 in. | 3.5 in. wc | 0.87 kPa | Natural to LP Conversion Kit |
| VR8304M3509/U | 24 Vac | 60 Hz | Standard | Natural (LP with included conversion kit) | 1/2 in. x 3/4 in. | 3.5 in. wc | 0.87 kPa | One 3/4 x 1/2 in. reducer bushing Natural to LP Conversion Kit |
| VR8304M4507/U | 24 Vac | 60 Hz | Standard | Natural (LP with included conversion kit) | 3/4 in. x 3/4 in. | 3.5 in. wc | 0.87 kPa | Two 3/4 x 1/2 in. reducer bushings Natural to LP Conversion Kit |
| VR8304M4515/U | 24 Vac | 60 Hz | Standard | Natural (LP with included conversion kit) | 3/4 in. x 3/4 in. | 3.5 in. wc | 0.87 kPa | Two 3/4 x 1/2 in. reducer bushings Natural to LP Conversion Kit |

Residential Combustion Control

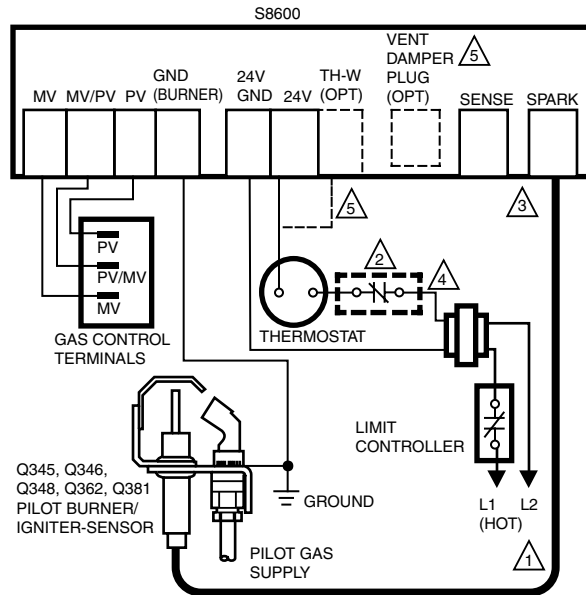
Combination Gas Controls

| Material Number | Voltage | Frequency | Opening Characteristics | Type of Fuel | Inlet/Outlet Size (in.) | Pressure Regulator Setpoint (in. wc) | Pressure Regulator Setpoint (kPa) | Includes |
|-----------------|---------|-----------|-------------------------|--------------|-------------------------|---|---|----------|
| VR8304P4330/U | 24 Vac | 60 Hz | Step | LP | 3/4 in. x 3/4 in. | Step Setting: 2.5 in. WC non-adjustable; Full Rate: 10.0 in. wc | Full Rate: 2.49 kPa; Step Setting: 0.62 kPa | - |
| VR8304P4504/U | 24 Vac | 60 Hz | Step | Natural | 3/4 in. x 3/4 in. | Step Setting: 0.9 in. WC non-adjustable; Full Rate: 3.5 in. wc | Full Rate: 0.87 kPa; Step Setting: 0.22 kPa | - |

Dimensions in inches (millimeter)



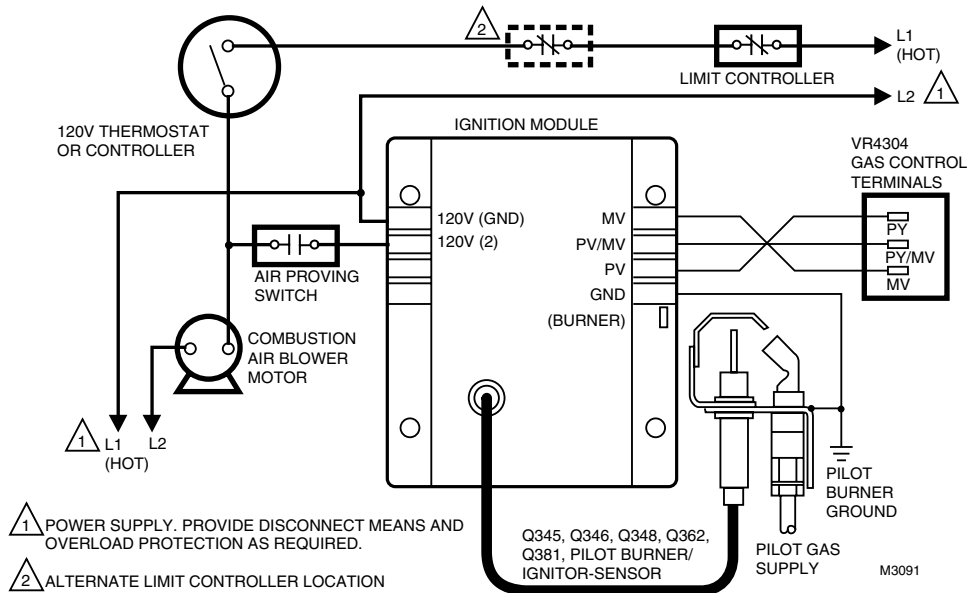
Wiring connections for 24 volt control intermittent ignition system with S8600



- ⚠️ 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- ⚠️ 2 ALTERNATE LIMIT CONTROLLER LOCATION.
- ⚠️ 3 MAXIMUM WIRE LENGTH 3 ft [9 m].
- ⚠️ 4 CONTROLS IN 24V CIRCUIT MUST NOT BE IN GROUND LEG TO TRANSFORMER.
- ⚠️ 5 FOR MODULE WITH TH-W TERMINAL AND VENT DAMPER PLUG, CONNECT THERMOSTAT TO TH-W. LEAVE 24V OPEN. DO NOT REMOVE VENT DAMPER PLUG.

M9056

VR4304 wiring connections in intermittent ignition system



- ⚠️ 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- ⚠️ 2 ALTERNATE LIMIT CONTROLLER LOCATION

M3091

VR8205 Direct Ignition Dual Automatic Valve Combination Gas Controls



Ignition Type: Direct Ignition
Application: Single Stage
Voltage: 24 Vac
Frequency: 60 Hz
Type of Fuel: Natural (LP if conversion kit included)
Body Pattern: Straight-through
Electrical Connections: 1/4 in. quick-connect male terminals
Pilot Gas Outlet: None
Pressure Tapping: 1/8 in. NPT with plug
Capacity (kBtu/h): At 1 in. wc p.d. – 150,000 BTU/h: 20,000 BTU/h minimum; 200,000 BTU/h maximum Natural Gas
Pressure Ratings (psi): 1/2 psi
Pressure Ratings (kPa): 3.5 kPa
Operating Temperature Range: 0°F to 175°F (-18°C to +79°C)
Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.
Approvals, Underwriters Laboratories Inc.: UL Component Recognized MCCZ2.MH5323
Approvals, CSA: CSA International: 112395
Approvals, Australian Gas Association: 4752

Combination gas controls for use with hot surface/direct spark systems in 24 Vac, gas-fired appliances with capacities from 20 to 200 cfh.

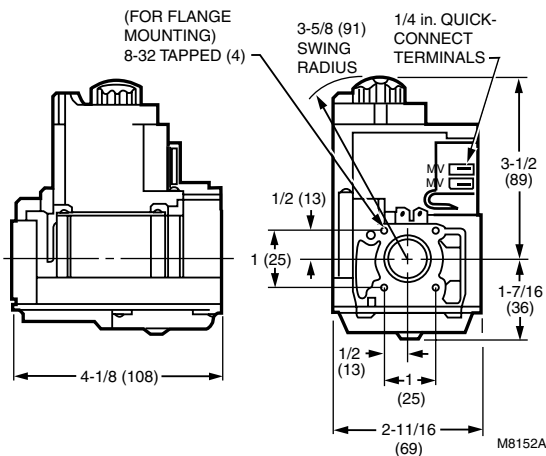
- Controls include manual valve, two automatic operators, and pressure regulator.
- Provide two automatic valves.
- Solenoid operated first automatic valve opens on thermostat call for heat; closes when call for heat ends.
- Diaphragm operated second automatic valve opens under control of the regulator; closes if gas or power supply is interrupted.
- Meet codes requiring dual safety shutoff.
- Natural to LP and LP to Natural conversion kits available for standard and slow opening gas valves.
- Adjustments and wiring connections are accessible from top of the control.
- ON-OFF lighting sequence.

Accessories:

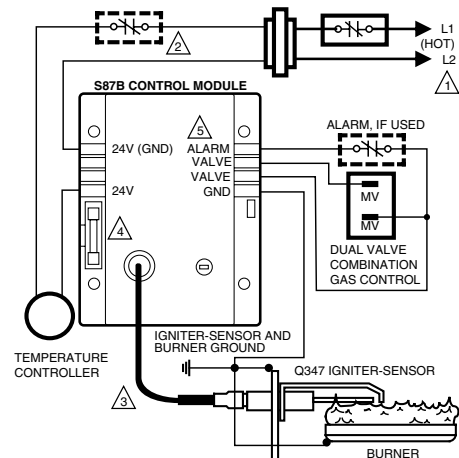
- 390427A/U** – One 3/4 x 1/2 in. reducer bushing
- 390427B/U** – One 1/2 inch x 3/8 inch reducer bushing
- 390427E/U** – Two 3/4 x 1/2 in. reducer bushings
- 393690-13/U** – 1/2" NPT Elbow Flange kit includes flange, o-rings and hex screws
- 393690-4/U** – 3/4" NPT Straight Flange kit includes flange, o-rings and hex screws
- 393691/U** – Single Stage Natural to LP Gas Conversion Kit. 8" to 12" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw
- 394588/U** – Single Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw
- 395253-1/U** – Single Stage LP to Natural Gas Conversion Kit. 5" to 7" WC adjustment. Includes regulator spring, o-ring, adjustment screw and cap screw
- 396221/U** – Single Stage Natural to LP Gas Conversion Kit. 8" to 12" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.
- 396222/U** – Single Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.

| Material Number | Opening Characteristics | Inlet/Outlet Size (in.) | Pressure Regulator Setpoint (in. wc) | Pressure Regulator Setpoint (kPa) | Includes |
|-----------------|-------------------------|-------------------------|--------------------------------------|-----------------------------------|--|
| VR8205A2024/U | Standard | 1/2 in. x 1/2 in. | 3.5 in. wc | 0.87 kPa | One 3/4 in. straight flange One 1/2 x 3/8 in. reducer bushing Natural to LP Conversion Kit |
| VR8205H1003/U | Slow | 1/2 in. x 1/2 in. | 3.5 in. wc | 0.87 kPa | - |

Dimensions in inches (millimeters)



Wiring connections for 24 volt control in S87 Direct Ignition System

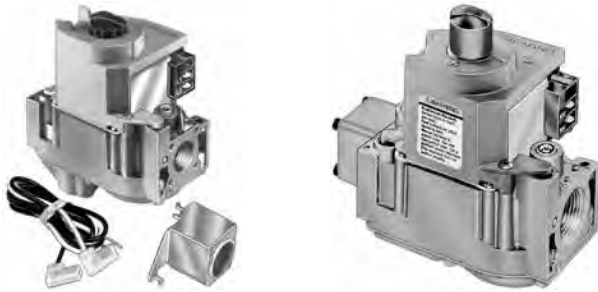


- ⚠️ POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- ⚠️ ALTERNATE LIMIT CONTROLLER LOCATION.
- ⚠️ MAXIMUM IGNITER-SENSOR CABLE LENGTH: 3 ft. (0.9 m) OR LESS.
- ⚠️ 3A REPLACEABLE FUSE.
- ⚠️ ALARM TERMINAL PROVIDED ON SOME MODELS.

Residential Combustion Control

Combination Gas Controls

VR4305 Line Voltage; VR8305 Low Voltage Direct Ignition Combination Gas Controls



Combination gas control for use with hot surface/direct spark systems in 24 Vac or 120 Vac, gas-fired appliances, with capacities from 30 to 415 cfh.

- Controls include manual valve, two automatic operators and pressure regulator.
- Provides two automatic valves.
- Solenoid operated first automatic valve opens on thermostat call for heat; closes when call for heat ends.
- Diaphragm-operated second automatic valve opens under control of regulator; closes if gas or power supply is interrupted.
- Meets codes requiring dual safety shut-off.
- Natural to LP and LP to Natural conversion kits available for standard and slow opening gas valves.
- Adjustable servo regulator effectively maintains almost constant gas output pressure under wide fluctuations in gas supply pressure.
- ON/OFF lighting sequence.
- All adjustments, wiring connections and pilot outlet are accessible from top of control.

Ignition Type: Direct Ignition

Application: Single Stage

Type of Fuel: Natural (LP if conversion kit included)

Body Pattern: Straight-through

Electrical Connections:

24 Vac Models – 1/4 in. male quick-connects

120 Vac Models – 21 in. leadwires

Pilot Gas Outlet: None

Pressure Tapping: 1/8 in. NPT with plug

Capacity (kBtuh):

1/2 x 3/4 inlet x outlet – At 1 in. wc p.d. - 270,000 BTUh:

30,000 BTUh minimum; 370,000 BTUh maximum Natural Gas

3/4 x 3/4 inlet x outlet – At 1 in. wc p.d. - 300,000 BTUh:

30,000 BTUh minimum; 415,000 BTUh maximum Natural Gas

Pressure Ratings (psi): 1/2 psi

Pressure Ratings (kPa): 3.5 kPa

Operating Temperature Range: -40°F to +175°F (-40°C to +79°C)

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Approvals, Underwriters Laboratories Inc.: UL Component
Recognized MCCZ2.MH5323

Approvals, CSA: CSA International: 112395

Accessories:

390427A/U – One 3/4 x 1/2 in. reducer bushing

390427B/U – One 1/2 inch x 3/8 inch reducer bushing

390427E/U – Two 3/4 x 1/2 in. reducer bushings

393690-13/U – 1/2" NPT Elbow Flange kit includes flange, o-rings and hex screws

393690-4/U – 3/4" NPT Straight Flange kit includes flange, o-rings and hex screws

393691/U – Single Stage Natural to LP Gas Conversion Kit. 8" to 12" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw

394588/U – Single Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw

395253-1/U – Single Stage LP to Natural Gas Conversion Kit. 5" to 7" WC adjustment. Includes regulator spring, o-ring, adjustment screw and cap screw

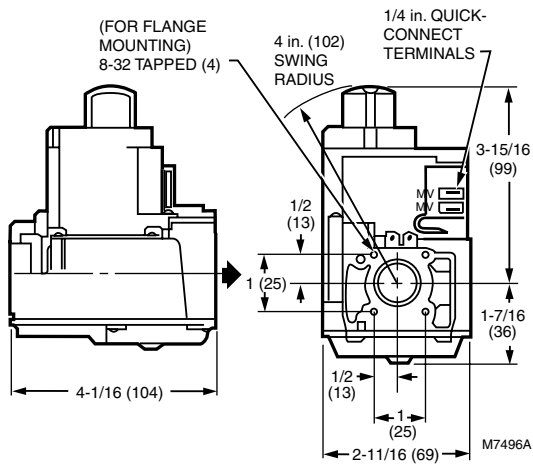
396221/U – Single Stage Natural to LP Gas Conversion Kit. 8" to 12" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.

396222/U – Single Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.

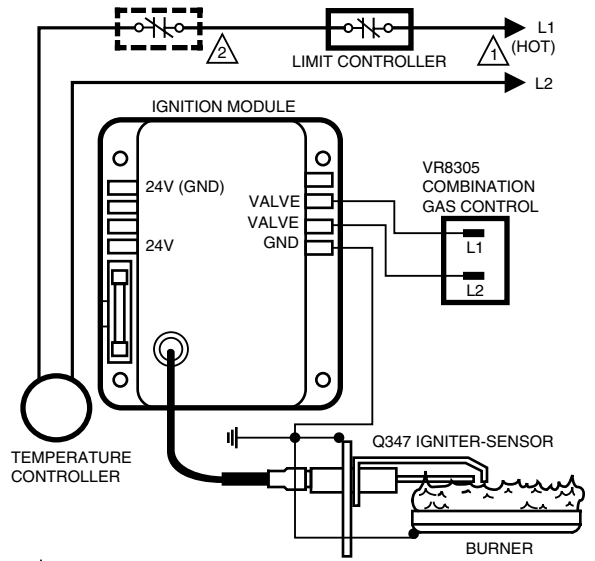
| Material Number | Voltage | Frequency | Opening Characteristics | Inlet/Outlet Size (in.) | Pressure Regulator Setpoint (in. wc) | Pressure Regulator Setpoint (kPa) | Includes |
|-----------------|---------|-----------|-------------------------|-------------------------|--|--|---|
| VR4305M4532/U | 120 Vac | 60 Hz | Standard | 3/4 in. x 3/4 in. | 3.5 in. wc | 0.87 kPa | One 1/2 x 3/8 in. reducer bushing Two 3/4 x 1/2 in. reducer bushings Natural to LP Conversion Kit |
| VR8305M3506/U | 24 Vac | 60 Hz | Standard | 1/2 in. x 3/4 in. | 3.5 in. wc | 0.87 kPa | One 3/4 in. straight flange One 3/4 x 1/2 in. reducer bushing Natural to LP Conversion Kit |
| VR8305P4279/U | 24 Vac | 60 Hz | Step | 3/4 in. x 3/4 in. | Step Setting: 0.9 in. WC non-adjustable; Full Rate: 3.5 in. wc | Full Rate: 0.87 kPa; Step Setting: 0.22 kPa | – |

Combination Gas Controls

Dimensions in inches (millimeters)



Wiring connections for 120 volt control in S87 Direct Ignition System



1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

2 ALTERNATE LIMIT CONTROLLER LOCATION.

M3088

Combination Gas Controls

VR8215 Direct Ignition Dual Automatic Valve Combination Gas Controls



Combination gas controls for use with hot surface/direct spark systems in 24 Vac, gas-fired appliances with capacities from 15 to 200 cfh.

- Controls include manual valve, two automatic operators, and pressure regulator.
- Provide two automatic valves.
- Solenoid operated first automatic valve opens on thermostat call for heat; closes when call for heat ends.
- Diaphragm operated second automatic valve opens under control of the regulator; closes if gas or power supply is interrupted.
- Meet codes requiring dual safety shutoff.
- Natural to LP and LP to Natural conversion kits available for standard and slow opening gas valves.
- Adjustments and wiring connections are accessible from top of the control.
- Compact size.
- ON-OFF lighting sequence.

Ignition Type: Direct Ignition

Application: Single Stage

Voltage: 24 Vac

Frequency: 50 Hz, 60 Hz

Type of Fuel: Natural (LP with included conversion kit)

Body Pattern: Straight-through

Electrical Connections: 1/4 in. quick-connect male terminals

Pilot Gas Outlet: None

Pressure Tapping: 1/8 in. NPT with plug

Capacity (kBtu/h): At 1 in. wc p.d. – 150,000 BTU/h; 15,000 BTU/h minimum; 200,000 BTU/h maximum Natural Gas

Pressure Ratings (psi): 1/2 psi

Pressure Ratings (kPa): 3.5 kPa

Operating Temperature Range: -40°F to +175°F (-40°C to +79°C)

Approximate Dimensions: 3.38 inches high x 4.44 inches wide x 2.70 inches deep (113 mm long x 86 mm high x 69 mm wide)

Mounting: Multipoise - Mounts in any direction

Approvals, CSA: CSA International: 112395

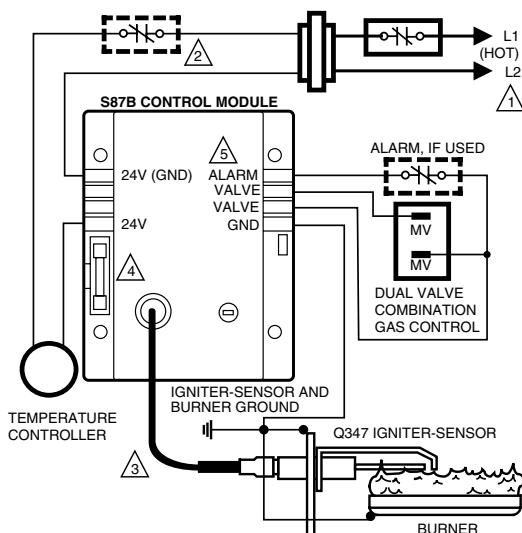
Approvals, Australian Gas Association: 7960

Accessories:

396221/U – Single Stage Natural to LP Gas Conversion Kit. 8" to 12" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.

396222/U – Single Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.

| Material Number | Opening Characteristics | Inlet/Outlet Size (in.) | Pressure Regulator Setpoint (in. wc) | Pressure Regulator Setpoint (kPa) | Includes |
|-----------------|-------------------------|-------------------------|--------------------------------------|-----------------------------------|------------------------------|
| VR8215S1503/U | Standard | 1/2 in. x 1/2 in. | 3.5 in. wc | 0.87 kPa | Natural to LP Conversion Kit |
| VR8215T1502/U | Slow | 1/2 in. x 1/2 in. | 3.5 in. wc | 0.87 kPa | Natural to LP Conversion Kit |



1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

2 ALTERNATE LIMIT CONTROLLER LOCATION.

3 MAXIMUM IGNITER-SENSOR CABLE LENGTH: 3 ft. (0.9 m) OR LESS.

4 3A REPLACEABLE FUSE.

5 ALARM TERMINAL PROVIDED ON SOME MODELS.

M9043A

VR8245; VR8345 Low Voltage Universal Electronic Ignition Combination Gas Controls



Ignition Type: Direct Ignition; Intermittent Pilot

Voltage: 24 Vac

Frequency: 50 Hz; 60 Hz

Type of Fuel: Natural (LP with included conversion kit)

Body Pattern: Straight-through

Electrical Connections: 1/4 in. quick-connect male terminals

Pilot Gas Outlet: Compression fitting for 1/4 in. OD tubing

Pressure Tapping: 1/8 in. NPT with plug

Capacity (kBtuh):

1/2 x 1/2 inlet x outlet – At 1 in. wc p.d. – 150,000 BTU/h;
20,000 BTU/h minimum; 200,000 BTU/h maximum Natural Gas

3/4 x 3/4 inlet x outlet – At 1 in. wc p.d. – 300,000 BTU/h;
30,000 BTU/h minimum; 415,000 BTU/h maximum Natural Gas

Pressure Ratings (psi): 1/2 psi

Pressure Ratings (kPa): 3.5 kPa

Operating Temperature Range: -40°F to +175°F (-40°C to +79°C)

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Approvals, Underwriters Laboratories Inc.: UL Component
Recognized MCCZ2.MH5323

Approvals, CSA: CSA International: 112395

Universal electronic ignition combination gas control for use with direct spark ignition, hot surface ignition or intermittent pilot ignition in 24 Vac, gas-fired appliances, with capacities from 20 to 200 cfh (VR8245M) or 30 to 415 cfh (VR8345M).

- Control includes manual valve, two automatic operators, pressure regulator, pilot adjustment, pilot plug and ignition adapter.
- Replaces many IP, HSI, or DSI gas control.
- For use with natural or manufactured gas or LP gas.
- Includes converter kit to adapt from natural to LP gas.
- All adjustments and wiring connections accessible from top of control.
- Clearly marked, keyed terminal block allows quick attachment of wires and IP/DSI/HSI jumper.

Accessories:

390427A/U – One 3/4 x 1/2 in. reducer bushing

390427B/U – One 1/2 inch x 3/8 inch reducer bushing

390427E/U – Two 3/4 x 1/2 in. reducer bushings

393690-13/U – 1/2" NPT Elbow Flange kit includes flange, o-rings and hex screws

393690-4/U – 3/4" NPT Straight Flange kit includes flange, o-rings and hex screws

393691/U – Single Stage Natural to LP Gas Conversion Kit. 8" to 12" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw

394588/U – Single Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw

395253-1/U – Single Stage LP to Natural Gas Conversion Kit. 5" to 7" WC adjustment. Includes regulator spring, o-ring, adjustment screw and cap screw

396221/U – Single Stage Natural to LP Gas Conversion Kit. 8" to 12" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.

396222/U – Single Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.

396021/U – Two Stage Natural to LP Gas Conversion Kit. 8" to 11" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.

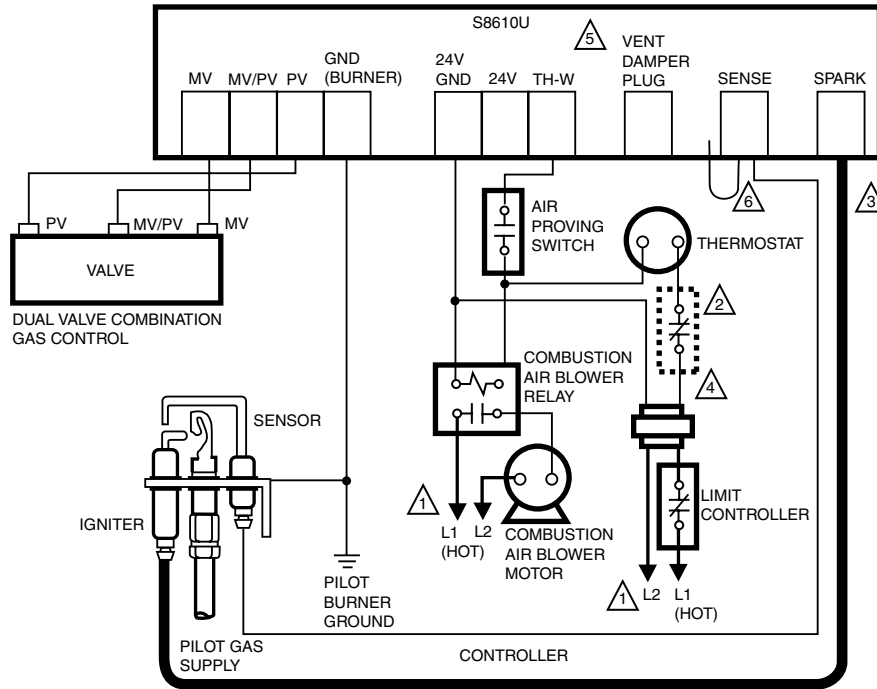
396025/U – Two Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw.

| | Material Number | Application | Opening Characteristics | Inlet/Outlet Size (in.) | Pressure Regulator Setpoint (in. wc) | Pressure Regulator Setpoint (kPa) | Includes |
|---|-----------------|--------------|-------------------------|-------------------------|--------------------------------------|-----------------------------------|--|
| U | VR8245M2530/U | Single Stage | Standard | 1/2 in. x 1/2 in. | 3.5 in. wc | 0.9 kPa | One 1/2 x 3/8 in. reducer bushing Natural to LP Conversion Kit |
| U | VR8345K4809/U | Single Stage | Slow | 3/4 in. x 3/4 in. | 3.5 in. wc | 0.87 kPa | Two 3/4 x 1/2 in. reducer bushings Natural to LP Conversion Kit |
| U | VR8345M4302/U | Single Stage | Standard | 3/4 in. x 3/4 in. | 3.5 in. wc | 0.87 kPa | Two 3/4 x 1/2 in. reducer bushings Natural to LP Conversion Kit |
| U | VR8345Q4563/U | Two Stage | Standard | 3/4 in. x 3/4 in. | 1.7 in. wc low; 3.5 in. wc high | 0.48 kPa low; 0.87 kPa high | Two 3/4 x 1/2 in. reducer bushings Natural to LP Conversion Kit |

U Universal Service Part

Combination Gas Controls

VR8245M/VR8345M wiring connections in intermittent ignition system

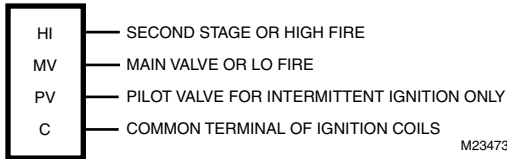


- ⚠️ 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- ⚠️ 2 ALTERNATE LIMIT CONTROLLER LOCATION.
- ⚠️ 3 MAXIMUM CABLE LENGTH 3 FT [0.9 M].
- ⚠️ 4 CONTROLS IN 24V CIRCUIT MUST NOT BE GROUND LEG TO TRANSFORMER.
- ⚠️ 5 LEAVE VENT DAMPER PLUG CONNECTED.
- ⚠️ 6 REMOVE JUMPER AND CONNECT SENSE TERMINAL ON TWO ROD APPLICATION ONLY.

M23470

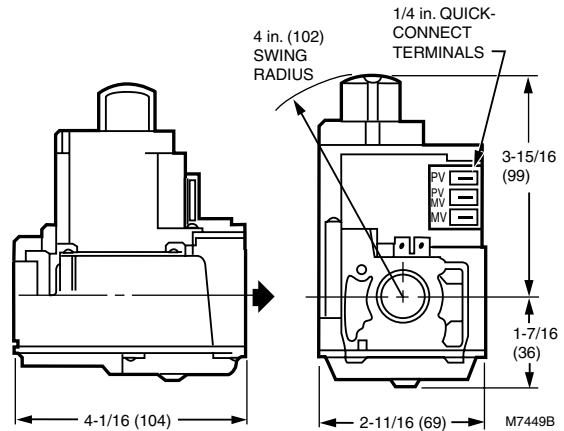
VR8245M/VR8345M wiring connections in intermittent ignition system

2-STAGE
GAS VALVE



M23473

Dimensions in inches (millimeters)



M7449B

VR9205 24 Vac Direct Ignition Combination 2-Stage Gas Controls



The VR9205Q Direct Ignition Combination 2-Stage Gas Controls are used in gas-fired appliances with up to 140 KBtu/h capacity at 1 in. wc pressure drop. They have been optimized for direct ignition applications and include a manual switch, two automatic operators and a pressure regulator.

Ignition Type: Direct Ignition
Type of Fuel: Natural (LP if conversion kit included)
Body Pattern: Straight-through
Electrical Connections: 1/4 in. quick-connect male terminals
Capacity (kBtu/h): At 1 in. wc p.d. – 140,000 BTU/h; 20,000 BTU/h minimum at high fire, 8,000 BTU minimum at low fire; 200,000 BTU/h maximum at max fire Natural Gas
Pressure Ratings (psi): 1/2 psi
Pressure Ratings (kPa): 3.5 kPa
Operating Temperature Range: 40°F to +175°F (-40°C to +79°C)
Mounting: Any direction
Approximate, Dimensions: 4.04 in. high x 5.04 in. wide x 3.2 in. deep (103 mm high x 128 mm wide x 81 mm deep)
Approvals, CSA: CSA International: 112491

Parts and Accessories:

50033841-003 – VR9205Q Natural to LP Conversion Kit. 5" to 11" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw.
50033842-001 – VR9205Q LP to Natural Conversion Kit. 0.9" to 4" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw.

| Material Number | Application | Opening Characteristics | Inlet/Outlet Size (in.) | Voltage | Frequency | Pressure Regulator Setpoint (in. wc) | Pressure Regulator Setpoint (kPa) | Pressure Regulator Adjustment Range | Includes |
|-----------------|-------------|-------------------------|-------------------------|---------|-----------------|--------------------------------------|-----------------------------------|-------------------------------------|--|
| VR9205Q1507/U | Two-Stage | Standard Opening | 1/2 in. x 1/2 in. | 24 Vac | 50 Hz; 60 Hz | 1.7 in. wc low; 3.5 in. wc high | 0.42 kPa low; 0.87 kPa high | 0.9" WC to 4.0" WC | 6 in. wire harness; LP Conversion Kit |

Gas Valve Selection Guide

Gas Valve Selection Guide

| Trade Replacements (Double-Check Specifications Before Replacement) | | Specifications | | | | Accessories Included | | | | | |
|---|---------------------------------|--|---------------------------|---|------------------------------|----------------------|-----------------------------------|------------------------------|-------------------------|-----------------------------------|-------------------------|
| Universal Service Part | Direct Service Part Replacement | Opening Characteristics (standard, step) | Inlet / Outlet Size (in.) | Pressure Regulator Setting (in. wc) | Temperature Range | Q340 Thermocouple | 3/4 in. x 1/2 in. Reducer Bushing | Natural to LP Conversion Kit | 3/4 in. Straight Flange | 1/2 in. x 3/8 in. Reducer Bushing | Remote Rod Adapter Knob |
| VR8345M4302 | VR8345M4302 | Standard | 3/4 x 3/4 | 3.5 in. wc (0.87 kPa) | -40° to 175°F (-40° to 79°C) | None | Two | One | None | None | None |
| | VR8304M3509 | Standard | 1/2 x 3/4 | 3.5 in. wc (0.87 kPa) | -40° to 175°F (-40° to 79°C) | None | One | One | None | None | None |
| | VR8304M4507 | Standard | 3/4 x 3/4 | 3.5 in. wc (0.87 kPa) | -40° to 175°F (-40° to 79°C) | None | Two | One | None | None | None |
| | VR8305M3506 | Standard | 1/2 x 3/4 | 3.5 in. wc (0.87 kPa) | -40° to 175°F (-40° to 79°C) | None | One | One | One | None | None |
| VR8345K4809 | VR8345K4809 | Slow | 3/4 x 3/4 | 3.5 in. wc (0.87 kPa) | -40° to 175°F (-40° to 79°C) | None | Two | One | None | None | None |
| | VR8205H1003 | Slow | 1/2 x 1/2 | 3.5 in. wc (0.87 kPa) | 0° to 175°F (-18° to 79°C) | None | None | None | None | None | None |
| | VR8304H4503 | Slow | 3/4 x 3/4 | 3.5 in. wc (0.87 kPa) | 0° to 175°F (-18° to 79°C) | None | None | One | None | None | None |
| VR8345Q4563 | VR8345Q4563 | 2-Stage | 3/4 x 3/4 | 1.7 in. wc (0.42 kPa) low; 3.5 in. wc (0.87 kPa) high | -40° to 175°F (-40° to 79°C) | None | Two | One | None | None | None |
| VR8245M2530 | VR8245M2530 | Standard | 1/2 x 1/2 | 3.5 in. wc (0.87 kPa) | -40° to 175°F (-40° to 79°C) | None | None | One | None | One | None |
| | VR8204A2076 | Standard | 1/2 x 1/2 | 3.5 in. wc (0.87 kPa) | 0° to 175°F (-18° to 79°C) | None | None | One | One | One | None |
| | VR8204M1091 | Standard | 1/2 x 1/2 | 3.5 in. wc (0.87 kPa) | -40° to 175°F (-40° to 79°C) | None | None | One | One | One | None |
| | VR8205A2024 | Standard | 1/2 x 1/2 | 3.5 in. wc (0.87 kPa) | 0° to 175°F (-18° to 79°C) | None | None | One | One | One | None |
| VR8215 | VR8215S1503 | Standard | 1/2 x 1/2 | 3.5 in. wc (0.87 kPa) | -40° to 175°F (-40° to 79°C) | None | None | One | None | None | None |
| | VR8215T1502 | Slow | 1/2 x 1/2 | 3.5 in. wc (0.87 kPa) | -40° to 175°F (-40° to 79°C) | None | None | One | None | None | None |
| VR9205Q | VR9205Q1507 | 2-stage | 1/2 x 1/2 | 1.7 in. wc (0.42 kPa) low; 3.5 in. wc (0.87 kPa) high | -40° to 175°F (-40° to 79°C) | None | None | One | None | None | None |
| VR8300M4406 | VR8300M4406 | Standard | 3/4 x 3/4 | 3.5 in. wc (0.87 kPa) | -40° to 175°F (-40° to 79°C) | None | Two | One | None | None | None |
| | VR8300A4508 | Standard | 3/4 x 3/4 | 3.5 in. wc (0.87 kPa) | 0° to 175°F (-18° to 79°C) | None | Two | One | None | None | None |
| | VR8300A3500 | Standard | 1/2 x 3/4 | 3.5 in. wc (0.87 kPa) | 0° to 175°F (-18° to 79°C) | None | One | One | None | None | None |
| | VR8200A2124 | Standard | 1/2 x 1/2 | 3.5 in. wc (0.87 kPa) | 0° to 175°F (-18° to 79°C) | One | None | One | One | One | None |
| | VR8200A2132 | Standard | 1/2 x 1/2 | 3.5 in. wc (0.87 kPa) | 0° to 175°F (-18° to 79°C) | None | None | One | One | One | None |
| | VR8200A2744 | Standard | 1/2 x 1/2 | 3.5 in. wc (0.87 kPa) | 0° to 175°F (-18° to 79°C) | None | None | One | One + One Elbow | One | None |
| VS820M1309 | VS820M1309 | Standard | 3/4 x 3/4 | 3.5 in. wc (0.87 kPa) | -40° to 175°F (-40° to 79°C) | None | Two | One | None | One | Yes |
| | VS820A1054 | Standard | 3/4 x 3/4 | 3.5 in. wc (0.87 kPa) | 32° to 175°F (0° to 79°C) | None | Two | None | None | One | None |
| | VS820A1336 | Standard | 3/4 x 3/4 | 10.0 in. wc (2.49 kPa) | 32° to 175°F (0° to 79°C) | None | Two | None | None | One | None |

Notes:

All piloted valves have a 1/4" compression fitting.
 All the VR valves come set for natural gas, but can be converted to LP gas.
 The VS820A1054 is for natural gas. The VS820A1336 is for LP gas.
 All the VR valves have inlet and outlet pressure taps. The VS820 valves have just an outlet pressure tap.

Gas Valve Cross Reference Guide

| Trade Replacements (Double-Check Specifications Before Replacement) | | Competitive Replacements | | |
|---|---------------------------------|--|--|--|
| Universal Service Part | Direct Service Part Replacement | Honeywell | White-Rogers | Robertshaw |
| VR8345M4302 | VR8345M4302 | | 36E36-304, 36C68-423, 36H32-423 | |
| | VR8304M3509 | VR8304M2501 | | |
| | VR8304M4507 | VR8304M4002, VR8304M4804 | | |
| | VR8305M3506 | VR8305M4066, VR8305M4165, VR8305M4231 | 36G22-214, 36C68-423 | 720-051 (7200DER) |
| VR8345K4809 | VR8345K4809 | VR8304K3808, VR8304K4814 | 36E98-304, 36E24-214, 36E52-214 | 700-052 |
| | VR8205H1003 | VR8205H2605, VR8305H4013, VR8305H4039 | | |
| | VR8304H4503 | VR8204H1006, VR8204H1055 | | 720-070 (7200IPER-S7C), 720-071 (7200IPER-S7C), 720-072 (7200IPER-S7C), 720-073 (7200IPER-LP-S7C) |
| VR8345Q4563 | VR8345Q4563 | VR8205Q2381, VR8205Q2555, VR8205Q2662, VR8205Q2746, VR8205Q2787, VR8304Q4453, VR8304Q4511, VR8305Q4138, VR8305Q4146, VR8305Q4195, VR8305Q4500 | 36C76-406, 36C76-420, 36C76-463, 36D13-208, 36D13-405, 36E54-214, 36E96-314, 36G54-214 | 720-082 (7200IPER-2-4) |
| VR8245M2530 | VR8245M2530 | VR8204A2852, VR8205M1080, VR8205M1106, VR8205M2310, VR8205M2443, VR8205M2450, VR8205M2476 | 36E36-304, 36E22-214 | 720-079 (7200IPER), 720-080 (7200IPER-LP) 722-079 (2000IPERHC) |
| | VR8204A2076 | VR8204A1201, VR8204A1219, VR8204A2001, VR8204A2035, VR8204A2043, VR8204A2175, VR8204A2183, VR8204A2241, VR8204A2225, VR8204A2803 | | |
| | VR8204M1091 | VR8204M1075, VR8204M1232 | 36E01-204, 36E01-205, 36E01-206, 36E01-305, 36E93-304 | |
| | VR8205A2024 | VR8205A2008, VR8205A2081 | 36G22-214, 36J22-214 | 722-051 (2000DERHC), 720-051 |
| VR8215 | VR8215S1503 | VR8205S2262, VR8205S2270, VR8205S2296, VR8205S2338, VR8205S2353, VR8205S2361, VR8205S2379, VR8205S2395, VR8205S2437, VR8205S2858, VR8205S2882, VR8205S5802, VR8205S5828, VR8205S5836, VR8205S5844, VR8215S1222, VR8215S1263, VR8215S5207, VR8215S5215, VR8205A2008, VR8205A2016, VR8205A2024, VR8205A2065, VR8205A2081, VR8205A2131, VR8205A2263, VR8205A2800, VR8205M1080, VR8205M1106, VR8205M1122, VR8205M1130, VR8205M1148, VR8205M1155, VR8205M1163, VR8205M2310, VR8205M2401, VR8205M2476, VR8205M2484, VR8205M2831, VR8205M2864, VR8205M2872, VR8205M2880, VR8205M5024, VR8205M5032 | 36G22-214, 36J22-214, 36G22-207 | |
| | VR8215T1502 | VR8205H1003, VR8205H1011, VR8205H2605, VR8205H2621, VR8205K1157, VR8205K1173, VR8205K2247, VR8205K2593, VR8205K2619, VR8205T5801, VR8215T1205, VR8215T1239, VR8215T5206, VR8215T5214 | | |
| VR9205Q | VR9205Q1507 | VR9205Q1006, VR9205Q1010, VR9205Q1028, VR9205Q1101, VR9205Q1127, VR9205Q1218 | | |
| VR8300M4406 | VR8300M4406 | VR8300A4003, VR8300A4011, VR8300A4037, VR8200A2827, VR8300A4045, VR8300A4557, VR8300A4565 | 36C03-400, 36C03-433 | 700-400 |
| | VR8300A4508 | VR8300A4003, VR8300A4011, VR8300A4037, VR8300A4045, VR8300A4557, VR8300A4565 | 36C01-405 | 700-400, 720-406 (7200ER) |
| | VR8300A3500 | VR8300A3104, VR8300A3120, VR8300A3153, VR8300A3161, VR8300A3203, VR8300A3559, VR8300A3567, VR8300A3575 | 36C03-300, 36C03-258 | 720-404 (7200ER), 720-400, 720-402 |
| | VR8200A2124 | VR8200A2009, VR8200A2082, VR8200A2116, VR8200A2215, VR8200A2264, VR8200A2322, VR8200A2348 | | 720-400 (7200ER), 720-402 (7200ER) |
| | VR8200A2132 VR8200A2744 | VR8200A2322 | | |
| VS820M1309 | VS820M1309 | VS820A1039, VS820A1807, VS820A1815, VS820A2003, VS820A2011 | 36C03U-300, 36C03U-333, 36C03U-400, 36C03U-433 | |
| | VS820A1054 | VS820A1005, VS820A1013, VS820A1047, VS820A1260, VS820A1278, VS820A1922, VS820A5204 | | |
| | VS820A1336 | VS820A1120, VS820A1211, VS820A1740, VS820A1872, VS820A1898, VS820A1906 | | |

*Canadian Numbers
For a complete cross-reference, visit www.customer.honeywell.com

Residential Combustion Control

SmartValve System Controls

SV9501; SV9502; SV9601; SV9602 Intermittent Pilot SmartValve® System



The SmartValve® System Controls combine gas flow control and electronic intermittent pilot sequencing functions into a single unit. This product family offers several different intermittent pilot sequences for a wide range of applications. The specific application of the SmartValve System is the responsibility of the appliance manufacturer. They are directly compatible with the Q3450 or Q3480 Intermittent Pilot burners used with the original controls on the appliance.

- Suitable for a wide range of gas-fired appliances including residential furnaces, roof-top furnaces, residential boilers, unit heaters, infrared heaters, space heaters and commercial cooking units.
- Ignition sequence includes timed trial for ignition.

Ignition System Type: Intermittent Hot Surface Pilot Ignition

Ignition Sequence: Intermittent Pilot

Flame Sense: Two-Rod

Electrical Ratings: 24 Vac

Frequency: 50 Hz; 60 Hz

Body Pattern: Straight-through

Pressure Tapping: 1/8 in. - NPT

Capacity:

1/2 x 1/2 inlet x outlet – At 1 in. wc p.d. - 150,000 BTUh:

20,000 BTUh minimum: 200,000 BTUh maximum Natural Gas

3/4 x 3/4 inlet x outlet – At 1 in. wc p.d. - 300,000 BTUh:

30,000 BTUh minimum: 415,000 BTUh maximum Natural Gas

Pressure Ratings (psi): 1/2 psi

Pressure Ratings (kPa): 3.5 kPa

Ignition Source: Pilot

Ignition Trials To Lockout: Continuous retry

Ignition Trial Time (sec): 90 sec

Flame Failure Response Time (sec): 1.6 sec @ 3 µA

Typical Ignition Hardware: Q3450; Q3480

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Approximate, Dimensions: 3.2 in. wide x 4.9 in. high x 4.1 in. long
(81 mm wide x 124 mm high x 104 mm long)

Approvals, CSA: CSA International: 112395

Accessories (For H and M models only):

393691/U – Single Stage Natural Gas to LP Conversion kit, including regulator spring, adjustment screw and cap screw

394588/U – Single Stage LP to Natural Gas Conversion kit, including regulator spring, adjustment screw and cap screw

| | Material Number | Opening Characteristics | Type of Gas | Inlet/Outlet Size (in.) | Pressure Regulator Setting (psi) | Pressure Regulator Setting (kPa) | Prepurge | Ambient Temperature Range | Includes |
|---|-----------------|-------------------------|---|----------------------------|---|---|------------|----------------------------------|---|
| U | SV9501M2528/U | Standard | Natural (LP with included conversion kit) | 1/2 in. NPT x 1/2 in. NPT | 3.5 in. WC | 0.87 kPa | None | -40°F to +175°F (-40°C to +79°C) | Natural to LP Conversion Kit Extension Harness |
| U | SV9501M8129/U | Fast-Fast | Natural (LP with included conversion kit) | 1/2 in. NPT x 1/2 in. NPT | 3.4 in. WC | 0.87 kPa | None | -40°F to +175°F (-40°C to +79°C) | Natural to LP Conversion Kit Extension Harness |
| U | SV9502H2522/U | Slow | Natural (LP with included conversion kit) | 1/2 in. NPT x 1/2 in. NPT | 3.2 in. WC | 0.80 kPa | 15 seconds | 0°F to 175°F (-18°C to +79°C) | Natural to LP Conversion Kit Extension Harness |
| U | SV9601M4571/U | Standard | Natural (LP with included conversion kit) | 3/4 in. NPT x 3/4 in. NPT. | 3.5 in. WC | 0.87 kPa | None | -40°F to +175°F (-40°C to +79°C) | Two 3/4 x 1/2 in. reducer bushings Natural to LP Conversion Kit |
| U | SV9602P4816/U | Step | Natural | 3/4 in. NPT x 3/4 in. NPT. | Full Rate: 3.5 in. WC; Step Setting: 0.7 in. WC non-adjustable | Full Rate: 0.87 kPa; Step Setting: 0.17 kPa | 30 seconds | -40°F to +175°F (-40°C to +79°C) | Two 3/4 x 1/2 in. reducer bushings Extension Harness |
| U | SV9602P4824/U | Step | Natural | 3/4 in. NPT x 3/4 in. NPT. | Full Rate: 3.5 in. WC; Step Setting: 2.5 in. WC non-adjustable | Full Rate: 0.87 kPa; Step Setting: 0.62 kPa | 30 seconds | -40°F to +175°F (-40°C to +79°C) | Two 3/4 x 1/2 in. reducer bushings Extension Harness |
| U | SV9602P4832/U | Step | LP | 3/4 in. NPT x 3/4 in. NPT. | Full Rate: 10.0 in. WC; Step Setting: 2.5 in. WC non-adjustable | Full Rate: 2.49 kPa; Step Setting: 0.62 kPa | 30 seconds | -40°F to +175°F (-40°C to +79°C) | Two 3/4 x 1/2 in. reducer bushings Extension Harness |
| U | SV9602P4840/U | Step | LP | 3/4 in. NPT x 3/4 in. NPT. | Full Rate: 10.0 in. WC; Step Setting: 1.4 in. WC non-adjustable | Full Rate: 2.49 kPa; Step Setting: 0.35 kPa | 30 seconds | -40°F to +175°F (-40°C to +79°C) | Two 3/4 x 1/2 in. reducer bushings Extension Harness |

U Universal Service Part

SV9510; SV9520 Direct Ignition SmartValve® System



The SmartValve® System Controls combine gas flow control and electronic direct main burner ignition sequencing functions into a single unit. The ignition source is 120V hot surface igniter lighting the main burner flame. Provides all gas ignition safety functions by controlling gas flow, ignition source, and a 120 Vac combustion air blower. The control also monitors the appliance airflow proving switch circuit and limit string to assure proper appliance operation.

- The control communicates directly with the ST9160 Electronic Fan Timer (EFT) in typical forced warm air furnace applications.
- It can directly interface with the appropriate power supplies and a system thermostat for additional appliance applications.
- When controlled directly by a thermostat, the control does not provide a postpurge function, as power to the control is removed when the thermostat call for heat ends.
- This system is suitable for a wide range of fan-assisted combustion, gas-fired appliances including furnaces, rooftop furnaces, boilers, unit heaters, infrared heaters, water heaters and commercial cooking appliances.

Ignition System Type: Direct Hot Surface Ignition

Flame Sense: HSI

Type of Gas: Natural (LP if conversion kit included)

Electrical Ratings: 24 Vac

Frequency: 50 Hz; 60 Hz

Body Pattern: Straight-through

Pressure Tapping: 1/8 in. - NPT

Includes: LP Conversion Kit

Capacity:

1/2 x 1/2 inlet x outlet – At 1 in. wc p.d. - 150,000 BTUh;

20,000 BTUh minimum; 200,000 BTUh maximum Natural Gas

Pressure Ratings (psi): 1/2 psi

Pressure Ratings (kPa): 3.5 kPa

Ignition Source: HSI

PrePurge: 15 seconds

Ignition Trials To Lockout: 4 trials

Flame Failure Response Time (sec): 2 sec @ 5 μ A

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically

Approximate, Dimensions: 3.2 in. wide x 4.9 in. high x 4.1 in. long (81 mm wide x 124 mm high x 104 mm long)

Approvals, CSA: CSA International: 112395

Accessories:

393691/U – Single Stage Natural Gas to LP Conversion kit, including regulator spring, adjustment screw and cap screw

394588/U – Single Stage LP to Natural Gas Conversion kit, including regulator spring, adjustment screw and cap screw

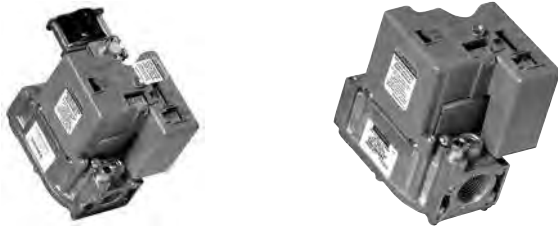
| | Material Number | Opening Characteristics | Inlet/Outlet Size (in.) | Pressure Regulator Setting (psi) | Pressure Regulator Setting (kPa) | Typical Ignition Hardware | Ignition Sequence | Ignition Trial Time (sec) | Ambient Temperature Range |
|---|-----------------|-------------------------|---------------------------|----------------------------------|----------------------------------|---------------------------|-------------------|---------------------------|----------------------------------|
| U | SV9510K2539/U | Slow | 1/2 in. NPT x 1/2 in. NPT | 3.5 in. WC | 0.87 kPa | Norton 271 | 17/27 sec | 9 sec | -40°F to +175°F (-40°C to +79°C) |
| U | SV9510M2511/U | Standard | 1/2 in. NPT x 1/2 in. NPT | 3.5 in. WC | 0.87 kPa | Norton 271 | 17/27 sec | 7 sec | -40°F to +175°F (-40°C to +79°C) |
| U | SV9520H8513/U | Fast-Slow | 1/2 in. NPT x 1/2 in. NPT | 3.5 in. WC | 0.87 kPa | Norton 601 | 7/12 sec | 7 sec | 0°F to 175°F (-18°C to +79°C) |
| U | SV9520M2536/U | Standard | 1/2 in. NPT x 1/2 in. NPT | 3.5 in. WC | 0.87 kPa | Norton 601 | 7/12 sec | 7 sec | -40°F to +175°F (-40°C to +79°C) |

U Universal Service Part

Residential Combustion Control

SmartValve System Controls

SV9541; SV9641 Intermittent Pilot with air control SmartValve® System



The SmartValve® System Controls combine gas flow control and electronic intermittent pilot sequencing functions into a single unit. The Q3450 or Q3480 Pilot hardware supplies the low voltage igniter, flame sensor and pilot burner. These ignition system controls provide gas ignition safety functions by controlling gas flow, ignition source, and a 120 Vac or 240 Vac combustion air blower. The controls also monitor the appliance airflow proving switch and limit string to assure proper operation.

- These controls communicate directly with an electronic fan timer (ST9160 Electronic Fan Timer for single stage applications; ST9162 Electronic Fan Timer for two-stage applications) in typical forced warm air furnace applications.
- It can directly interface with the appropriate power supplies and a system thermostat for additional appliance applications.
- When controlled directly by a thermostat, these controls do not provide a postpurge function, because power to the control is removed when the thermostat call for heat ends.
- The Systems are suitable for a wide range of fan-assisted combustion gas-fired appliances including furnaces, rooftop furnaces, boilers, unit heaters, infrared heaters, water heaters and commercial cooking appliances.

Ignition System Type: Intermittent Hot Surface Pilot Ignition

Ignition Sequence: Intermittent Pilot

Type of Gas: Natural (LP if conversion kit included)

Flame Sense: Two-Rod

Body Pattern: Straight-through

Pressure Tapping: 1/8 in. - NPT

Capacity:

1/2 x 1/2 inlet x outlet – At 1 in. wc p.d. - 150,000 BTUh:

20,000 BTUh minimum: 200,000 BTUh maximum Natural Gas

3/4 x 3/4 inlet x outlet – At 1 in. wc p.d. - 300,000 BTUh:

30,000 BTUh minimum: 415,000 BTUh maximum Natural Gas

Pressure Ratings (psi): 1/2 psi

Pressure Ratings (kPa): 3.5 kPa

Ignition Source: Pilot

PrePurge: 15 seconds

Ignition Trials To Lockout: continuous retry

Ignition Trial Time (sec): 90 sec

Flame Failure Response Time (sec): 1.6 sec @ 3 µA

PostPurge: 30 seconds

Typical Ignition Hardware: Q3450; Q3480

Ambient Temperature Range: -40°F to +175°F (-40°C to +79°C)

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Approximate, Dimensions: 3.2 in. wide x 4.9 in. high x 4.1 in. long (81 mm wide x 124 mm high x 104 mm long)

Approvals, CSA: CSA International: 112395

Accessories:

393691/U – Single Stage Natural Gas to LP Conversion kit, including regulator spring, adjustment screw and cap screw

394588/U – Single Stage LP to Natural Gas Conversion kit, including regulator spring, adjustment screw and cap screw

396021/U – 2 Stage Natural Gas to LP Gas Conversion kit, includes regulator shaft

396025/U – 2 Stage LP to Natural Gas Conversion kit, includes regulator shaft

390427A/U – One 3/4 x 1/2 in. reducer bushings

390427E/U – Two 3/4 x 1/2 in. reducer bushings

| | Material Number | Opening Characteristics | Inlet/Outlet Size (in.) | Voltage | Frequency | Pressure Regulator Setting (psi) | Pressure Regulator Setting (kPa) | Includes |
|---|-----------------|-------------------------|----------------------------|---------|--------------|----------------------------------|----------------------------------|--|
| U | SV9541Q2561/U | Standard 2-stage | 1/2 in. NPT x 1/2 in. NPT | 24 Vac | 60 Hz | 1.7 in. WC low; 3.2 in. WC high | 0.42 kPa low; 0.80 kPa high | Natural to LP Conversion Kit |
| U | SV9641M4510/U | Standard | 3/4 in. NPT x 3/4 in. NPT. | 24 Vac | 50 Hz; 60 Hz | 3.5 in. WC | 0.87 kPa | Two 3/4 x 1/2 in. reducer bushings Natural to LP Conversion Kit |

U Universal Service Part

SmartValve® Control Systems Selection Guide





| Specifications | | | | | Includes | | | Cross-Reference | | |
|---|---------------------------|----------|----------------------------|------------------------------------|---------------------------------------|---|---|--|--|---|
| Ignition/ Application | Universal Service Part | Gas Type | Opening Characteristics | Ambient Temperature Range | Natural to LP Conversion Kit | 3/4 in. x 1/2 in. Reducer Bushings | Extension Harness | OEM Brands | Replaces | |
| Intermittent HSI Pilot with Combustion Air Control and Limit Monitoring Forced Air Furnace | SV9541Q2561 | Natural | 2-Stage | -40° to 175°F (-40° to 79°C) | Yes | None | No | ICP, Heil, Tempstar, Arcoaire, Comfortmaker, KeepRite | SV9540Q2464, SV9541Q3098 | |
| | SV9641M4510 | | Standard Opening | | Yes | Two | | ICP, Heil, Tempstar, Arcoaire, Comfortmaker, KeepRite, Mestek, Slant/Fin | SV9541M2094, SV9540M2229, SV9540M2260, SV9640M4116, SV9640M4124, SV9540M2278, SV9540M2245, SV9640M3126, SV9640M4132 | |
| Direct Ignition, General Application | SV9510M2511 | Natural | Standard Opening | -40° to 175°F (-40° to 79°C) | Yes | None | No | Modine | SV9510M2347, SV9510M2362, SV9410M2902, SV9510M2412, SV9510M2354, SV9410M2910, SV9510M2388, SV9510M2420 | |
| | SV9520M2536 | | Slow Opening | | | | | — | SV9420M2331, SV9520M2403, SV9420M2323 | |
| | SV9510K2539 | | | | | | | Roberts Gordon | SV9510H2228, SV9510K2133, SV9510K2158, SV9510K2141, SV9510K2166 | |
| | SV9520H8513 | | Fast-Slow Opening | Armstrong, Concord, AirEase | | | | SV9520H8042, SV9520H8034, SV9520H8067, SV9520H8026 | | |
| Intermittent HSI Pilot, General Application | SV9601M4571 | Natural | Standard Opening | -40° to 175°F (-40° to 79°C) | Yes | None | No | — | SV9601M4167, SV9601M3003, SV9601M4225 | |
| | SV9501M2528 | | | | | | | ICP, Heil, Tempstar, Arcoaire, Comfortmaker, KeepRite | SV9501M2056, SV9501M2080, SV9501M2718, SV9501M2726, SV9501M2031, SV9501M2049, SV9501M2239, SV9501M2700, SV9501M2734, SV9501M2742, SV9501M2064 | |
| | SV9501M8129 | | | | | | | — | SV9501M8103 | |
| | SV9502H2522 | | Slow Opening | 0° to 175°F (-18° to 79°C) | | Yes | Laars, Utica, Armstrong, Concord, AireEase | SV9501H3415, SV9501H2417, SV9501H2409, SV9502H1706, SV9502H2704, SV9501H3423, SV9501H2425 | | |
| | SV9602P4816 | | Step Opening | -40° to 175°F (-40° to 79°C) | | None | Two | Yes | Burnham, ICP, Heil, Tempstar, Arcoaire, Comfortmaker, KeepRite | SV9501P2004, SV9601P4107, SV9501P2053, SV9502P2101, SV9602P4105 |
| | SV9602P4824 | | | | | | | | Burnham | SV9501P2087, SV9601P4172, SV9502P2127, SV9602P4121 |
| | SV9602P4832 | | | | | | | | Burnham | SV9501P2020, SV9501P2046, SV9601P4149, SV9601P4164, SV9502P2119, SV9502P2135, SV9602P4113, SV9602P4139 |
| | SV9602P4840 | | | | | | | | — | SV9601P4115 |
| | | | | | | | | | | |

For a complete cross-reference, visit www.customer.honeywell.com






Residential Combustion
Control

Gas Valves Parts and Accessories

Parts and Accessories for Combination Gas Controls

| Material Number | Description | Used With | |
|-----------------------------|---|--|---|
| Compression Fittings | | | |
| 386449/U | Compression fitting for 1/4 inch OD pilot tubing, 0.65 inch total overall length | V800, VS820, VR8100, VR8200, VR8300, VR8104, VR8204, VR8304; V400, VR4200, VR4300, VR4204, VR4304; Honeywell Pilot Burners for Standing Pilot and Intermittent Pilot Applications; SV9501; SV9502; SV9541, SV9601; SV9602; SV9641 |  |
| 386449-1/U | Compression fitting for 1/4 inch OD pilot tubing, 0.78 inch total overall length | V800, VS820, VR8100, VR8200, VR8300, VR8104, VR8204, VR8304; V400, VR4200, VR4300, VR4204, VR4304; Honeywell Pilot Burners for Standing Pilot and Intermittent Pilot Applications; SV9501; SV9502; SV9541, SV9601; SV9602; SV9641 | |
| 386449-4/U | Compression fitting for 1/4 inch OD pilot tubing, 1.15 inch total overall length | V800, VS820, VR8100, VR8200, VR8300, VR8104, VR8204, VR8304; V400, VR4200, VR4300, VR4204, VR4304; Honeywell Pilot Burners for Standing Pilot and Intermittent Pilot Applications; SV9501; SV9502; SV9541, SV9601; SV9602; SV9641 | |
| 392449/U | Compression fitting for 1/8 inch OD pilot tubing, 0.65 inch total overall length | V800, VS820, VR8100, VR8200, VR8300, VR8104, VR8204, VR8304; V400, VR4200, VR4300, VR4204, VR4304; Honeywell Pilot Burners for Standing Pilot and Intermittent Pilot Applications; SV9501; SV9502; SV9541, SV9601; SV9602; SV9641 | |
| 392449-1/U | Compression fitting for 1/8 inch OD pilot tubing, 0.78 inch total overall length | V800, VS820, VR8100, VR8200, VR8300, VR8104, VR8204, VR8304; V400, VR4200, VR4300, VR4204, VR4304; Honeywell Pilot Burners for Standing Pilot and Intermittent Pilot Applications; SV9501; SV9502; SV9541, SV9601; SV9602; SV9641 | |
| 392449-4/U | Compression fitting for 1/8 inch OD pilot tubing, 1.15 inch total overall length | V800, VS820, VR8100, VR8200, VR8300, VR8104, VR8204, VR8304; V400, VR4200, VR4300, VR4204, VR4304; Honeywell Pilot Burners for Standing Pilot and Intermittent Pilot Applications; SV9501; SV9502; SV9541, SV9601; SV9602; SV9641 | |
| Conversion Kit | | | |
| 391936/U | Single Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw | V400, V800, VS821, VS820; Standard and Slow opening valves. Not for use with Step valves. |  |
| 391937/U | Single Stage Natural to LP Gas Conversion Kit. 8" to 12" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw | V400, V800, VS821, VS820; Standard and Slow opening valves. Not for use with Step valves. | |
| 393691/U | Single Stage Natural to LP Gas Conversion Kit. 8" to 12" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw | VR8200, VR8300, VR8104, VR8204, VR8304, VR8205 (not VR8205S), VR8305; VR4200, VR4300, VR4204, VR4304, VR4205, VR4305; Standard and Slow opening valves. SV9501; SV9502; SV9541; SV9601; SV9602; SV9641 Smart valves. Not for use with Step valves. | |
| 394588/U | Single Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw | VR8200, VR8300, VR8104, VR8204, VR8304, VR8205 (not VR8205S), VR8305, VR4200, VR4300, VR4204, VR4304, VR4205, VR4305; Standard and Slow opening valves. SV9501; SV9502; SV9541; SV9601; SV9602; SV9641 Smart valves. Not for use with Step valves. | |
| 395253-1/U | Single Stage LP to Natural Gas Conversion Kit. 5" to 7" WC adjustment. Includes regulator spring, o-ring, adjustment screw and cap screw | VR8200, VR8300, VR8104, VR8204, VR8304, VR8205 (not VR8205S), VR8305; VR4200, VR4300, VR4204, VR4304, VR4205, VR4305; Standard and Slow opening valves. SV9501; SV9502; SV9541; SV9601; SV9602; SV9641 Smart valves. Not for use with Step valves. | |
| 396021/U | Two Stage Natural to LP Gas Conversion Kit. 8" to 11" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw. | VR820xQ, VR830xQ, VR820xN, VR830xN; SV9xxxQ |  |
| 396025/U | Two Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw. | VR820xQ, VR830xQ, VR820xN, VR830xN; SV9xxxQ | |
| 396221/U | Single Stage Natural to LP Gas Conversion Kit. 8" to 12" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw. | VR8205S,T; VR8215S,T; VR82/VR8300A,M,H,K; VR82/VR8304A,M,H,K; VR82/VR8305A,M,H,K; VR42/VR4300A,M,H,K; VR42/VR4304A,M,H,K; VR42/VR4305A,M,H,K Standard and Slow opening valves. Not for use with Step valves. |  |
| 396222/U | Single Stage LP to Natural Gas Conversion Kit. 3" to 5" adjustment range. Includes regulator spring, o-ring, and adjustment screw. Reuse existing cap screw. | VR8205S,T; VR8215S,T; VR82/VR8300A,M,H,K; VR82/VR8304A,M,H,K; VR82/VR8305A,M,H,K; VR42/VR4300A,M,H,K; VR42/VR4304A,M,H,K; VR42/VR4305A,M,H,K Standard and Slow opening valves. Not for use with Step valves. | |

Gas Valves Parts and Accessories

| Material Number | Description | Used With | |
|------------------------------|---|---|---|
| Parts and Accessories | | | |
| 50033841-003 | Natural to LP Conversion Kit. 5" to 11" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw. | VR9205Q | |
| 50033842-001 | LP to Natural Conversion Kit. 0.9" to 4" adjustment range. Includes regulator spring, o-ring, adjustment screw and cap screw. | VR9205Q | |
| ECO Adapter | | | |
| 392451-1/U | ECO adapter with 1/4" x 0.032" quick-connect terminals | V400, V800, VS821, VS820 |  |
| 393200-1/U | ECO adapter with 1/4" x 0.032" quick-connect terminals | VR8200, VR8300, VR4200, VR4300 |  |
| Flange Kit | | | |
| 393690-13/U | Flange Kit bag assembly, includes 1/2 inch elbow flange, O-ring, 9/64 inch hex screws and 9/64 inch hex wrench | VR8100, VR8200, VR8300, VR4200, VR4300, SV9500, VR8104, VR8204, VR8304, VR4204, VR4304, VR8105, VR8205, VR8305, VR4205, VR4305, that are not 3/4" inlet or outlet. Cannot be used on 3/4 in. inlet/ outlet valves that are not threaded for flange screws or on the inlet end of VR standing pilot models if the ECO connector is used. |  |
| 393690-4/U | Flange Kit bag assembly, includes 3/4 inch straight flange, O-ring, 9/64 inch hex screws, and dust plug. | VR8100, VR8200, VR8300, VR4200, VR4300, SV9500, VR8104, VR8204, VR8304, VR4204, VR4304, VR8105, VR8205, VR8305, VR4205, VR4305, that are not 3/4" inlet or outlet. Cannot be used on 3/4 in. inlet/ outlet valves that are not threaded for flange screws or on the inlet end of VR standing pilot models if the ECO connector is used. |  |
| Reducer Bushings | | | |
| 390427A/U | One 3/4 x 1/2 in. reducer bushing | All Honeywell Combination Gas Controls. |  |
| 390427B/U | One 1/2 to 3/8 in. reducer bushing | All Honeywell Combination Gas Controls. | |
| 390427E/U | Two 3/4 x 1/2 in. reducer bushings | All Honeywell Combination Gas Controls. | |

Thermocouples and Thermopiles

Q313 Thermopile Generators



The Q313 Thermopile generates 750 mV, which is sufficient to operate an automatic millivolt gas control system, independent of any outside power source.

- Push-in clip, split nut, and adapter assembly for easy pilot burner installation.
- Spade or quick-connect terminals available for millivolt gas control connections.

Application: Thermopile

Voltage: 750 mV; Open circuit output – 600 mV to 750 mV

Temperature Ratings: Hot Junction – 1400°F; Cold Junction – 780°F
(Hot Junction – 760°C; Cold Junction – 416°C)

Used With: Q314, Q324, Q327, Q377, Q379, Q382 Pilot Burners

Approvals: CSA International: 112395

| | Material Number | Length | Connection Type | Resistance | Includes |
|---|-----------------|------------------|-----------------|------------|---|
| | Q313B1005/U | 35 in. (889 mm) | Spade Terminals | 2.89 ohms | Terminal Block |
| U | Q313U3000/U | 35 in. (889 mm) | Spade Terminals | 2.89 ohms | 1/2 in. attaching nut, split nut, spade to quick connect adapter, push-in clip, PG9 adapter |
| | Q313A1055/U | 47 in. (1194 mm) | Spade Terminals | 2.90 ohms | 1/2 in. attaching nut |

U Universal Service Parts

Q340 Universal 30 mV Thermocouple



The Q340A premium thermocouples generate 30mV. They are used to sense the pilot flame on gas-fired heating systems. The Q340's have the maximum amount of Copel, which provides long-lasting service.

- Push-in clip, split nut, and adapter assembly for easy pilot burner installation.
- Male nut connector for Pilotstat® safety control power units.
- Available in a variety of lead lengths.

Application: Thermocouple

Voltage: 30 mV; Open circuit output – 26 mV to 32 mV

Temperature Ratings: Hot Junction – 1400°F; Cold Junction – 780°F
(Hot Junction – 760°C; Cold Junction – 416°C)

Approvals: CSA International: 112395

| | Material Number | Length | Connection Type | Resistance | Includes |
|---|-----------------|------------------|-----------------------------|------------|--------------------------|
| U | Q340A1066/U | 18 in. (457 mm) | 11/32 32 Male Connector Nut | 0.02 ohms | Adapter and Push In Clip |
| U | Q340A1074/U | 24 in. (610 mm) | 11/32 32 Male Connector Nut | 0.02 ohms | Adapter and Push In Clip |
| U | Q340A1082/U | 30 in. (762 mm) | 11/32 32 Male Connector Nut | 0.02 ohms | Adapter and Push In Clip |
| U | Q340A1090/U | 36 in. (914 mm) | 11/32 32 Male Connector Nut | 0.02 ohms | Adapter and Push In Clip |
| U | Q340A1108/U | 48 in. (1219 mm) | 11/32 32 Male Connector Nut | 0.03 ohms | Adapter and Push In Clip |

U Universal Service Parts

Q390 Thermocouple



The Q390A thermocouples generate 30mV that is used to sense the pilot flame on gas-fired heating systems.

- Push-in clip, split nut, and adapter assembly for easy pilot burner installation.
- Male nut connector for Pilotstat® safety control power units.
- Available in a variety of lead lengths.

Application: Thermocouple

Voltage: 30 mV; Open circuit output – 26 mV to 32 mV

Temperature Ratings: Hot Junction – 1400°F; Cold Junction – 780°F
(Hot Junction – 760°C; Cold Junction – 416°C)

Approvals: CSA International: 112395

| | Material Number | Length | Connection Type | Resistance | Includes |
|--|-----------------|------------------|-----------------------------|------------|--------------------------|
| | Q390A1095/U | 18 in. (457 mm) | 11/32 32 Male Connector Nut | 0.02 ohms | Adapter and Push In Clip |
| | Q390A1046/U | 24 in. (610 mm) | 11/32 32 Male Connector Nut | 0.02 ohms | Adapter and Push In Clip |
| | Q390A1053/U | 30 in. (762 mm) | 11/32 32 Male Connector Nut | 0.02 ohms | Adapter and Push In Clip |
| | Q390A1061/U | 36 in. (914 mm) | 11/32 32 Male Connector Nut | 0.02 ohms | Adapter and Push In Clip |
| | Q390A1103/U | 48 in. (1219 mm) | 11/32 32 Male Connector Nut | 0.03 ohms | Adapter and Push In Clip |

Thermopiles and Thermocouples Selection Guide

Q370A Thermocouple



The Q370 Thermocouple is a quick dropout thermocouple that generates 30mV.

- The Q370 has various adapters for different mounting possibilities in various pilot burners.

Application: Thermocouple


Voltage: 30 mV; Output after 60 S: 22mV minimum

Drop Out Time: 30 sec

Temperature Ratings: Hot Junction – 650°C ± 50°C; Cold Junction – 415°C

| Material Number | Description | Length | Resistance |
|-----------------|--|---------------------|---------------------|
| Q370A 1014 | This 30 mV Thermocouple includes 900 mm leads with 8 adapters. | 35 1/2 in. (900 mm) | 0.025 to 0.031 ohms |

Thermocouple and Thermopile Accessories

| Material Number | Description | |
|-----------------|---------------------|---|
| 394530/U | Thermocouple Tester |  |

Thermopiles and Thermocouples Selection Guide

| Thermocouples | | | | | | |
|-------------------|-------------|-------------|-------------------|------------------|----------|------------------|
| Lead Length (in.) | Universal | Tradeline | Cross Reference | | | |
| | | | White-Rodgers | Robertshaw | Husky | Johnson Controls |
| 18 | Q340A1066/U | Q390A1095/U | H06E-518, H06E-18 | — | K16BT-18 | K19AT-18 |
| 24 | Q340A1074/U | Q390A1046/U | H06E-524, H06E-24 | 1970-24, 1980-24 | K16BT-24 | K19AT-24 |
| 30 | Q340A1082/U | Q390A1053/U | H06E-530, H06E-30 | 1970-30 | K16BT-30 | K19AT-30 |
| 36 | Q340A1090/U | Q390A1061/U | H06E-536, H06E-36 | 1970-36, 1980-36 | K16BT-36 | K19AT-36 |
| 48 | Q340A1108/U | Q390A1103/U | H06E-548, H06E-48 | — | K16BT-48 | K19AT-48 |

| Thermopiles | | | | |
|-------------------|-----------|----------------|---|--|
| Lead Length (in.) | Universal | Connection | Includes | Replaces |
| 35 | Q313U3000 | Spade Terminal | Push-In clip, PG9 adapter, 1/2" attaching nut, Split nut, spade to QC adapter | Q313A1022, Q313A1139, Q313A1170, Q313A1188 |
| 47 | Q313A1055 | | 1/2" attaching nut | |

Pilot Burners

Universal Pilot Burner



Q314U



Q345U



Q3451U



Q348U

Universal Pilot Burners make replacing pilot burners easier than ever. With four pilots, contractors can replace over 100 different models. This means fewer stocking trips and more money in your pocket.

Tip Style: Single

Aeration: Non-primary

Direction of Front Tip: Adjustable Left, Right, and Center

Mounting Bracket: U

Type of Gas: Natural; LP

| | Product Number | Compression Fitting Length | Orifice 2 | Lead Length | | Includes | Used With |
|---|----------------|-------------------------------|--|----------------------|-----------------------|--|---|
| | | | | in. | mm | | |
| U | Q314U1001/U | 1/4" Installed 1/8" Packed | BCR-18; BBR-10; CAR-12; CAR-13; BBR-8 | — | — | BCR-18, BBR-10, CAR-12, CAR-13, BBR-8 orifices, Standard and low BTU hoods, Adjustable tip style, Universal mounting bracket | Q309, Q340, Q390, Q313 |
| U | Q345U1005/U | 1/4" Installed 1/8" Packed | BCR-20; BCR-18; BBR-12; BBR-11 | — | — | BCR-20, BCR-18, BBR-12, BBR-11 orifices, Adjustable tip style, Universal mounting bracket | S8600F, S8600H, S8600M, S8610F, S8610H, S8610M, S8610U, S8660D, S8660E, S8670D, S8670E |
| U | Q3451U1000/U | 1/4" Installed 1/8" Packed | BCR-20; BCR-18; BBR-12; BBR-11; BCR-10 | 36 in. and 55 in. | 915 mm and 1397 mm | BCR-20, BCR-18, BBR-12, BBR-11, BCR-10 orifices, Adjustable tip style, Universal mounting bracket, 36 in. and 55 in. igniter lead lengths | S8600F, S8600H, S8600M, S8610F, S8610H, S8610M, S8610U, S8660D, S8660E, S8670D, S8670E |

U Universal Service Parts

Tip Style: Batwing

Aeration: Primary

Direction of Front Tip: Dual wing - 1 in. wing span

Mounting Bracket: U

Type of Gas: Natural; LP

| | Product Number | Compression Fitting Length | Orifice 2 | Includes | Used With |
|---|----------------|-------------------------------|-----------------------|--|--|
| U | Q348U1009/U | 1/4" Installed 1/8" Packed | NE22, KF24, A26, KR14 | NE22, KF24, A26, KR14 orifices, 1 in. batwing, Universal mounting bracket | S8600F, S8600H, S8600M, S8610F, S8610H, S8610M, S8610U, S8660D, S8660E, S8670D, S8670E |

U Universal Service Parts

Q314 Standing Pilot Burner



Non primary-aerated, target type pilot burner for standing pilot applications. Used with Q309, Q340, Q340 thermocouples or Q313 thermopiles.

- Variety of mounting brackets available
- Single tip style
- Variety of tip directions to provide desired flame pattern.
- Interchangeable, color-coded orifices can be ordered to convert between natural and LP gas

Application: Pilot Burner for Standing Pilot Applications

Aeration: Non-primary

Compression Fitting Size: 1/4 in.

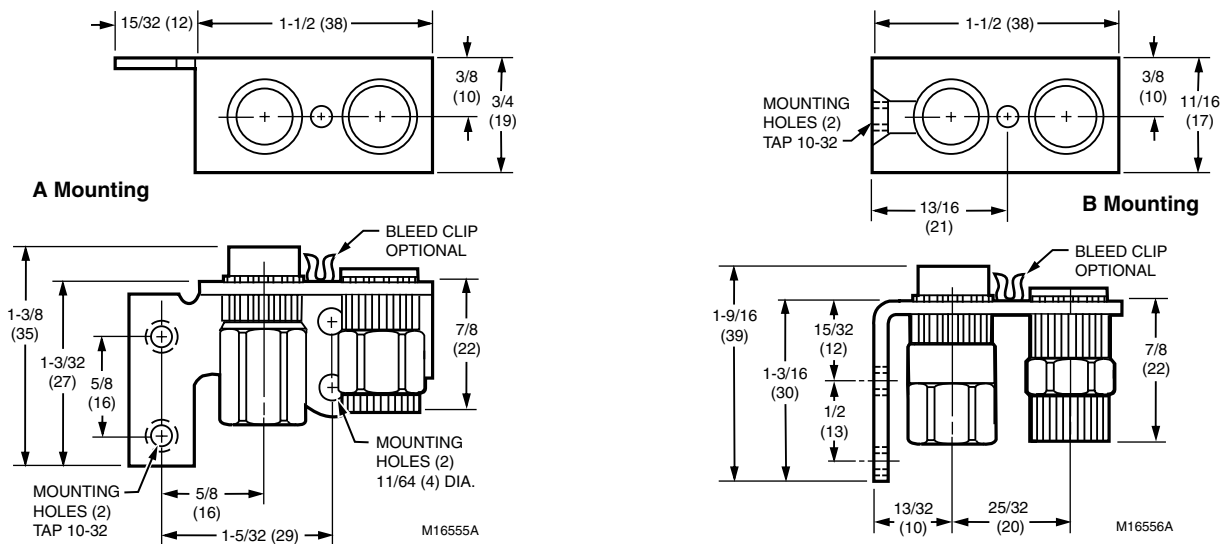
Compression Fitting Length: 0.65 in.

Tip Style: Target

Approvals: CSA International: 112395

| Material Number | Direction of Front Tip | Type of Gas | Mounting | Orifice | Includes |
|-----------------|------------------------|-------------|---|--|--|
| Q314A3513/U | (F) Front | Natural | Bracket Style A | BCR-18 (0.018 in.) | |
| Q314A3547/U | (L) Left | Natural | Bracket Style A | BCR-18 (0.018 in.) | |
| Q314A4586/U | (F) Front | Natural, LP | Bracket Style B; Includes Bracket A adapter | BCR-18 (0.018 in.) / BBR-10 (0.010 in.) Packed | BCR18 and BBR-10 orifices. Special mounting bracket with screws to convert "B" bracket to "A" bracket. |
| Q314A6094/U | (L) Left | Natural, LP | Bracket Style B; Includes Bracket A adapter | BCR-18 (0.018 in.) / BBR-10 (0.010 in.) Packed | BCR18 and BBR-10 orifices. Special mounting bracket with screws to convert "B" bracket to "A" bracket. |
| Q314A6102/U | (K) Right | Natural, LP | Bracket Style B; Includes Bracket A adapter | BCR-18 (0.018 in.) / BBR-10 (0.010 in.) Packed | BCR18 and BBR-10 orifices. Special mounting bracket with screws to convert "B" bracket to "A" bracket. |

Dimensions in inches (millimeters)



Residential Combustion Control

Pilot Burners

Q327 Standing Pilot Burner



Primary-aerated, bat-wing type pilot burner for standing pilot applications. Used with Q309, Q340, Q340 thermocouples or Q313 thermopiles.

- Variety of mounting brackets available.
- Interchangeable, color-coded orifices can be ordered to convert between natural and LP gas.
- Batwing tip style.

Application: Pilot Burner for Standing Pilot Applications

Aeration: Primary

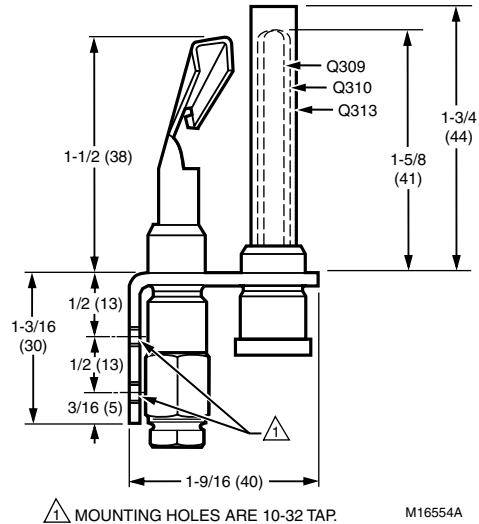
Compression Fitting Size: 1/4 in.

Compression Fitting Length: 0.65 in.

Tip Style: Batwing

Approvals: CSA International: 112395

Dimensions in inches (millimeters)



| Material Number | Batwing Size | Type of Gas | Mounting | Orifice | Includes |
|-----------------|--------------|-------------|-----------------|--|----------------------|
| Q327A1626/U | 1" wing span | Natural, LP | Bracket Style B | A26 (0.026 in.) / K14 (0.014 in.) (packed) | A26 and K14 orifices |

Q345 Intermittent Pilot Burner



The Q345 Pilot Burner provides pilot flame ignition and sensing in intermittent pilot systems. It consists of a target type pilot burner with a combination spark igniter and flame sensor.

- Includes pilot burner with bracket, ceramic-insulated Kanthal flame rod/spark igniter and ground strap.
- Single tip style.

Application: Pilot Burner for Intermittent Pilot Applications

Aeration: Non-primary

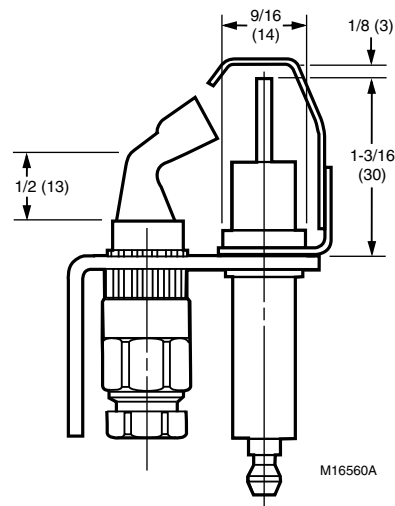
Tip Style: Target

Compression Fitting Size: 1/4 in.

Compression Fitting Length: 0.78 in.

Approvals: CSA International: 112395

Dimensions in inches (millimeters)



| Material Number | Direction of Front Tip | Type of Gas | Mounting | Orifice | Includes |
|-----------------|------------------------|-------------|-----------------|--|---|
| Q345A1305/U | (F) Front | Natural | Bracket Style B | BBR-10 (0.010 in.); BCR-18 (0.018 in.) | Special mounting bracket with screws to convert "B" bracket to "A" bracket. |
| Q345A1313/U | (L) Left | Natural | Bracket Style B | BBR-10 (0.010 in.); BCR-18 (0.018 in.) | Special mounting bracket with screws to convert "B" bracket to "A" bracket. |
| Q345A1321/U | (K) Right | Natural | Bracket Style B | BBR-10 (0.010 in.); BCR-18 (0.018 in.) | Special mounting bracket with screws to convert "B" bracket to "A" bracket. |

Q3450 SmartValve® Pilot Burners



SmartValve® System pilot burners provide pilot flame ignition and sensing for SmartValve Systems. They consist of a bracket, pilot target, ground electrode, replaceable igniter-flame rod, orifice assembly, compression fitting and spring clip.

- Used with SmartValve® System.
- Replaceable Igniter-Flame Rod Assembly (Q3400A).
- Integral keyed plug provides quick, convenient connection of igniter and sensor to SmartValve.
- Natural and LP gas orifices available.
- Variety of target styles available.
- Variety of mounting brackets available.

Application: Pilot Burner

Aeration: Non-primary

Compression Fitting Size: 1/4 in.

Tip Style: Target

Temperature Ratings: Leadwire – 250°C

Used With: SmartValve

Accessories:

Q3400A1024/U – 30" Igniter Flame Rod Assembly

Q3400A1081/U – 36" Igniter Flame Rod Assembly

| Material Number | Type of Gas | Mounting | Orifice | Length | Direction of Front Tip | Includes |
|-----------------|---------------|-----------------|---|---------------------------------|------------------------|---|
| Q3450C1185/U | Natural or LP | Bracket Style C | BCR-18 (0.018 in.) Installed; Packed with BCR-20 (0.020 in.); BCR-22 (0.022 in.); BCR-12 (0.12 in.) | Ignition Wire – 30 in. (762 mm) | (L) Left | BCR-18 (0.018 in.); BCR-20 (0.020 in.); BCR-22 (0.022 in.); BCR-12 (0.12 in.) |
| Q3450C2092/U | Natural or LP | Bracket Style C | BCR-18 (0.018 in.) Installed; Packed with BCR-20 (0.020 in.); BCR-22 (0.022 in.); BCR-12 (0.12 in.) | Ignition Wire – 30 in. (762 mm) | (F) Front | BCR-18 (0.018 in.); BCR-20 (0.020 in.); BCR-22 (0.022 in.); BCR-12 (0.12 in.) |

Pilot Burner Parts and Accessories

Residential Combustion Pilot Burner Parts

| Material Number | Description | Used With | |
|--|--|--|---|
| Compression Fittings | | | |
| 386449/U | Compression fitting for 1/4 inch OD pilot tubing, 0.65 inch total overall length | Honeywell Pilot Burners for Standing Pilot and Intermittent Pilot Applications |  |
| 386449-1/U | Compression fitting for 1/4 inch OD pilot tubing, 0.78 inch total overall length | Honeywell Pilot Burners for Standing Pilot and Intermittent Pilot Applications | |
| 386449-4/U | Compression fitting for 1/4 inch OD pilot tubing, 1.15 inch total overall length | Honeywell Pilot Burners for Standing Pilot and Intermittent Pilot Applications | |
| 392449/U | Compression fitting for 1/8 inch OD pilot tubing, 0.65 inch total overall length | Honeywell Pilot Burners for Standing Pilot and Intermittent Pilot Applications | |
| 392449-1/U | Compression fitting for 1/8 inch OD pilot tubing, 0.78 inch total overall length | Honeywell Pilot Burners for Standing Pilot and Intermittent Pilot Applications | |
| 392449-4/U | Compression fitting for 1/8 inch OD pilot tubing, 1.15 inch total overall length | Honeywell Pilot Burners for Standing Pilot and Intermittent Pilot Applications | |
| Pilot Orifice | | | |
| 388146AG/U | 0.026 in. Natural Gas Orifice with 1/4 in. compression fitting. Ribbed style. Orifice is stamped: A26 | Q179, Q327, Q348 |  |
| 388146KP/U | 0.014 LP orifice with 1/4 in. compression fitting. Ribbed style. Orifice is stamped: KR14 | Q179, Q327, Q348, Q3480, Q3481 | |
| 388146KR/U | 0.014 in. LP orifice with 1/4 in. compression fitting. Flat style. Orifice is stamped: KR14 | Q179, Q327, Q348, Q3480, Q3481 | |
| 388146NE/U | 0.022 in. Natural Gas Orifice with 1/4 in. compression fitting. Ribbed style. Orifice is stamped: NE22 | Q179, Q327, Q348, Q3480, Q3481 |  |
| 388468D/U | 0.010 in. LP Gas Orifice with 1/4 in. compression fitting. Flat style. Orifice is stamped: L10. | Q324 | |
| 388468H/U | 0.018 in. Natural Gas Orifice with 1/4 in. compression fitting. Flat style. Orifice is stamped: N18 | Q324 | |
| 390686-1/U | 0.010 in. LP Orifice. Orifice is stamped BBR10. | Q314; Q345; Q350, Q3450; Q3451; Q3452 |  |
| 390686-15/U | 0.009 in. LP Orifice. Orifice is stamped BBR9 | Q314; Q362; Q377 | |
| 390686-23/U | 0.008 in. LP Orifice. Orifice stamped with GAF8. | Q350, Q377, Q380 | |
| 390686-24/U | 0.014 in. LP Orifice. Orifice stamped: BBR14. | Q314, Q345, Q382, Q3450, Q3451, Q3452 | |
| 390686-25/U | 0.012 in. LP Orifice. Orifice is stamped BBR12. | Q314, Q345, Q373, Q379, Q3450, Q3451, Q3452 | |
| 390686-32/U | 0.014 in. Natural Gas Orifice. Orifice stamped: BAR-14. | Q314, Q345, Q373, Q3450, Q3451, and Q3452 | |
| 390686-36/U | 0.011 in. LP Orifice. Orifice stamped: BBR11. | Q314, Q345, Q373, Q3450, Q3451, and Q3452 | |
| 390686-4/U | 0.018 in. Natural Gas Orifice. Orifice is stamped BCR18 | Q308, Q314, Q327, Q345, Q362, Q373, Q379, Q380, Q3450, Q3451 and Q3452 | |
| 390686-5/U | 0.020 in. Natural Gas Orifice. Orifice is stamped BCR20 | Q314, Q327, Q345, Q362, Q373, Q382, Q3450, Q3451 and Q3452 | |
| 392431/U | Pilot Hardware for Y8610 | Y8610 | |
| SmartValve Flame Rod Assemblies | | | |
| Q3400A1024/U | 30 in. Igniter Flame Rod Assembly | SmartValve, Field replacement for Q3450, Q3480 hot surface pilot burner |  |
| Q3400A1081/U | 36 in. Igniter Flame Rod Assembly | SmartValve, Field replacement for Q3450, Q3480 hot surface pilot burner | |

S8610U Universal Intermittent Pilot Module



Ignition System Type: Intermittent Pilot
Ignition Sequence: Continuous Retry
Typical Gas Control: VR8204, VR8304
Type of Gas: Natural or LP
Ignition Source: Internal high voltage spark generator
Lockout Timing: continuous retry
Maximum Valve Load @ 24 Vac (Amps): 1A Pilot, 2A Main @ 165°F;
 1A Pilot, 1A Main @ 175°F
Typical Ignition Hardware: Q345, Q3451, Q3452
Approximate, Dimensions: 3 15/16 in. high x 5 7/16 in. wide x 2 5/8 in.
 deep (100 mm high x 138 mm wide x 67 mm deep)
Electrical Ratings: 24 Vac

Universal intermittent pilot ignition module replaces multiple field installed intermittent pilot modules supplied by Honeywell, Robertshaw, Johnson, and UTEC (HSC). Includes instructions and accessories for easy replacement.

- Replaces over 400 White-Rogers, Robertshaw and Honeywell intermittent pilot ignition modules
- Provides ignition sequencing, flame monitoring and safety shutoff for intermittent pilot warm air furnaces and heating appliances
- Provides 100 percent pilot gas shutoff if pilot fails to light; after 6-minute delay, trial for ignition is repeated. Ignition trial/delay sequence is repeated until the appliance lights or call for heat is removed.
- For use with Natural or LP gas
- For use in single rod or dual rod/remote sense applications
- Includes spark cable adapters to allow field replacement of both Honeywell and competitive controls without replacing existing spark cable.

Frequency: 60 Hz

Ambient Temperature Range: -40°F to +165°F (-40°C to +74°C)

Approvals, CSA: Design Certified

Tradeline Value: Tradeline

Flame Failure Response Time (sec): 2 seconds maximum

Accessories:

394800-30/U – 30 in. Ignition Cable Assembly with a right angle boot for ignition terminal and 1/4 in. straight quick connect at module end for S8600 family.

394801-30/U – 30 in. ignition cable assembly with a straight boot on igniter end and a 1/4 in. straight connect at ignition module end.

| Material Number | Flame Sense | Ignition Trial Time (sec) | Between Trial Time (sec) | Ignition Trials To Lockout | PrePurge | Includes |
|-----------------|------------------------|---------------------------|---|----------------------------|---|---|
| S8610U3009/U | Single Rod or Two Rods | 15 or 90 sec | 5 minute delay after failed trial for ignition. | continuous retry | Configurable to 30 seconds or no prepurge | Damper connection with automatic vent damper plug |

Ignition Pilot Modules

S87 Direct Spark Ignition Modules



Ignition Modules provide electronic control of direct spark ignition systems used on gas fire furnaces, boilers, and other heating appliances.

- Control ignition sequence and gas control operation.
- Generate high voltage potential for main burner ignition.
- Lockout after one trial for ignition if main burner fails to ignite.
- Reset from thermostat after lockout.
- Use modules (except S87C) with any combination gas control designed for direct spark applications and rated 2.0A or less.

Ignition System Type: Direct Spark Ignition

Typical Gas Control: VR8205, VR8305

Type of Gas: Natural or LP

Ignition Source: Internal high voltage spark generator

Ignition Trials To Lockout: 1

Approximate, Dimensions: 5 1/4 in. high x 4 1/16 in. wide x 1 15/16 in. long (133 mm high x 103 mm wide x 49 mm deep)

Electrical Ratings: 24 Vac

Frequency: 60 Hz

Ambient Temperature Range: -40°F to +175°F (-40°C to +79°C)

Approvals, CSA: File 112491_0_000

Flame Failure Response Time (sec): 0.8 sec. @ 5.0 microamp

Flame Failure Re-ignition Time (sec): 0.8 sec. maximum

| Material Number | Flame Sense | Ignition Sequence | Ignition Trial Time (sec) | Lockout Timing | Typical Ignition Hardware | Maximum Valve Load @ 24 Vac (Amps) | Typical Ignition Hardware | PrePurge | Includes |
|-----------------|-------------|---|---------------------------|----------------|---------------------------|------------------------------------|---------------------------|-----------------|----------------|
| S87B1008/U | Single Rod | Single trial for main burner ignition (then shut down and lockout) | 6 sec. | 6 sec. | Q347A | 2A | Q347A | None | Alarm terminal |
| S87B1016/U | Single Rod | Single trial for main burner ignition (then shut down and lockout) | 11 sec. | 11 sec. | Q347A | 2A | Q347A | None | Alarm terminal |
| S87B1024/U | Single Rod | Single trial for main burner ignition (then shut down and lockout) | 21 sec. | 21 sec. | Q347A | 2A | Q347A | None | Alarm terminal |
| S87B1065/U | Single Rod | Single trial for main burner ignition (then shut down and lockout) | 4 sec. | 4 sec. | Q347A | 2A | Q347A | None | Alarm terminal |
| S87C1006/U | Two Rod | Single trial for main burner ignition (then shut down and lockout) | 6 sec. | 6 sec. | Q347A, Q354, Q366 | | Q347A, Q354, Q366 | None | |
| S87C1030/U | Two Rod | Single trial for main burner ignition (then shut down and lockout) | 21 sec. | 21 sec. | Q347A, Q354, Q366 | | Q347A, Q354, Q366 | None | |
| S87D1004/U | Two Rod | Single trial for main burner ignition (then shut down and lockout) | 6 sec. | 6 sec. | Q347A, Q354, Q366 | 2A | Q347A, Q354, Q366 | None | Alarm terminal |
| S87D1012/U | Two Rod | Single trial for main burner ignition (then shut down and lockout) | 11 sec. | 11 sec. | Q347A, Q354, Q366 | 2A | Q347A, Q354, Q366 | None | Alarm terminal |
| S87D1020/U | Two Rod | Single trial for main burner ignition (then shut down and lockout) | 4 sec. | 4 sec. | Q347A, Q354, Q366 | 2A | Q347A, Q354, Q366 | None | Alarm terminal |
| S87D1038/U | Two Rod | Single trial for main burner ignition (then shut down and lockout) | 21 sec. | 21 sec. | Q347A, Q354, Q366 | 2A | Q347A, Q354, Q366 | None | Alarm terminal |
| S87J1026/U | Single Rod | Single trial for main burner ignition (then shut down and lockout) | 11 sec. | 11 sec. | Q347A | 2A | Q347A | 30 sec. minimum | |
| S87J1034/U | Single Rod | Single trial for main burner ignition (then shut down and lockout) | 21 sec. | 21 sec. | Q347A | 2A | Q347A | 30 sec. minimum | |
| S87K1008/U | Two Rod | Multiple trials for main burner ignition (then shut down and lockout) | 4 sec. | 4 sec. | Q347A, Q354, Q366 | 2A | Q347A, Q354, Q366 | 30 sec. minimum | |

S89E, F Direct Spark Ignition Modules



Ignition System Type: Direct Spark Ignition
Ignition Sequence: Single trial for main burner ignition (then shut down and lockout)
Typical Gas Control: VR8205, VR8305
Type of Gas: Natural or LP
Ignition Source: External (120 VAC powered) High Voltage Spark Generator
Lockout Timing: 4 sec.
Maximum Valve Load @ 24 Vac (Amps): 2A

Ignition Modules provide electronic control of direct spark ignition systems, with external spark transformers, used on gas-fired furnaces, boilers, conversion burners and other heating appliances.

- Controls ignition sequence and gas control operation in direct spark ignition systems.
- Control separate 120 Vac spark generator that provides high voltage potential for main burner ignition.
- Lockout after one trial for ignition if main burner fails to ignite.
- Reset from thermostat after lockout. Use separate electrodes for spark ignition and flame sensing.
- Use any 24 Vac combination gas control designed for direct spark applications and rated at 2.0A or less.

Approximate, Dimensions: 5 1/4 in. high x 4 1/16 in. wide x 1 15/16 in. long (133 mm high x 103 mm wide x 49 mm deep)

Electrical Ratings: 24 Vac

Frequency: 60 Hz

Ambient Temperature Range: -40°F to +175°F (-40°C to +79°C)

Approvals, CSA: Design Certified

Flame Failure Response Time (sec): 2.0 sec. @ 2.5 microamp

Flame Failure Re-ignition Time (sec): 0.8 sec. maximum

| Material Number | Flame Sense | Ignition Trial Time (sec) | Ignition Trials To Lockout | PrePurge | Includes |
|-----------------|-------------|---------------------------|----------------------------|-----------------|--|
| S89E1058/U | Two Rod | 4 sec. | 1 | | |
| S89F1098/U | Two Rod | 4 sec. | 1 | 30 sec. minimum | |
| S89F1106/U | Two Rod | 4 sec. | 1 | 30 sec. minimum | Labels applied upside down for inverted mounting |

S8910 Universal Hot Surface Ignition Module



Ignition System Type: Direct Hot Surface Ignition
Ignition Sequence: The number of trials for ignition and trial time is determined by the selection tab. If a selection tab is not installed, the module will operate at four seconds trial time and one ignition trial.
Typical Gas Control: VR8205, VR8305
Type of Gas: Natural or LP
Ignition Source: Line Voltage (120 VAC) Hot Surface Element (Norton Model 201 or 270)
Lockout Timing: 4 sec. or 7 sec.
Maximum Valve Load @ 24 Vac (Amps): 2A

Universal Hot Surface Ignition Module is designed to provide easy field replacement of a wide range of hot surface ignition modules manufactured by Honeywell, Robertshaw and White-Rodgers. The S8910U Module provides operating control of a direct ignition system using a 120 Vac hot surface igniter.

- Replaces many White-Rodgers, Robertshaw and Honeywell hot surface ignition models.
- For 120 Vac (up to 5.0A) surface igniter (Norton 201/271 or equivalent).
- For local (single rod) or remote (dual rod) rectification type flame sensing.
- Contains easy-to-use instructions plus the accessories required to adapt the existing hot surface ignition module.
- Provides one or three ignition trials (four second or seven-second trials) per call for heat; prepurge of 32 seconds or less; up to 96 seconds between purge trial times.
- Temperature range is -40°F to +175°F (-40°C to +79°C).

Typical Ignition Hardware: Norton 201, Norton 271, Q354

Approximate, Dimensions: 5 1/4 in. high x 4 1/16 in. wide x 1 15/16 in. long (133 mm high x 103 mm wide x 49 mm deep)

Electrical Ratings: 24 Vac

Frequency: 60 Hz

Ambient Temperature Range: -40°F to +175°F (-40°C to +79°C)

Approvals, CSA: Design Certified

Tradeline Value: Tradeline

Flame Failure Response Time (sec): 1.5 sec.

| Material Number | Flame Sense | Ignition Trial Time (sec) | Between Trial Time (sec) | Ignition Trials To Lockout | PrePurge |
|-----------------|------------------------|---------------------------|--------------------------------|----------------------------|------------|
| S8910U1000/U | Single Rod or Two Rods | 4 sec. or 7 sec. | (2) 96 sec.- 3 trial mode only | 1 or 3 | 32 seconds |

Ignition Pilot Modules

S8910U3000 Universal Hot Surface Ignition Module



One universal ignition module covers the most common timing and flame sensing configurations. The Honeywell S8910U Universal Hot Surface Ignition Module is the only model you need to replace more than 800 Honeywell and competitive controls. LED status indicators and microammeter ports simplify troubleshooting. Field configurable DIP switches make it quick and simple to match the characteristics of the old control.

- Replaces over 800 White-Rodgers, Robertshaw and Honeywell hot surface ignition models.
- For 120 Vac (up to 5.0A) surface igniter (Norton 201/271 or equivalent).
- S8910U 3000 Series has LED status indicator and microammeter ports for easy troubleshooting
- For local (single rod) or remote (dual rod) rectification type flame sensing.
- Contains easy-to-use cross reference and instructions plus the accessories required to replace the existing hot surface ignition module.
- Provides one or three ignition trials (four-second or seven-second trials) per call for heat.
- Field selectable number of ignition trials and trial time based on unit being replaced.
- Igniter warm up time: 7 (12 seconds second and third trial), 17 (27 seconds second and third trial), 34, or 45 seconds

Ignition System Type: Direct Hot Surface Ignition

Ignition Sequence: The number of trials for ignition and trial time is determined by the dip switch selection.

Typical Gas Control: VR8205, VR8305

Type of Gas: Natural or LP

Ignition Source: Line Voltage (120 VAC) Hot Surface Element (Norton Model 201 or 270)

Lockout Timing: 4 sec. or 7 sec.

Maximum Valve Load @ 24 Vac (Amps): 2A

Typical Ignition Hardware: Norton 201, Norton 271, Q354

Approximate, Dimensions: 5 1/4 in. high x 4 1/16 in. wide x 1 15/16 in. deep (133 mm high x 103 mm wide x 49 mm deep)

Electrical Ratings: 24 Vac

Frequency: 50 Hz; 60 Hz

Ambient Temperature Range: -40°F to +175°F (-40°C to +79°C)

Approvals, CSA: Design Certified

Tradeline Value: Tradeline

Flame Failure Response Time (sec): 1.5 sec

| Material Number | Flame Sense | Ignition Trial Time (sec) | Between Trial Time (sec) | Ignition Trials To Lockout | PrePurge |
|-----------------|------------------------|---------------------------|--|----------------------------|------------|
| S8910U3000/U | Single Rod or Two Rods | 4 sec. or 7 sec. | (2) 96 sec (32 Seconds Prepurge and 64 seconds interpurge) | 1 or 3 | 32 seconds |

Y8610U Universal Retrofit Intermittent Pilot Gas Burner Ignition Systems



Complete kit converts conventional standing pilot system to an intermittent pilot system. For use with 24 Vac gas-fired atmospheric furnaces, boiler and heating appliances.

- Y8610U kits are for use with natural or LP gas. Provides 100 percent pilot gas shutoff if pilot fails to light. After 6-minute delay, trial for ignition is repeated.
- Ignition trial/delay sequence is repeated until the appliance lights or call for heat is removed.

Ignition System Type: Intermittent Pilot

Ignition Sequence: Continuous retry, after trial for ignition, pilot gas shuts off for 5 minutes, then another trial for pilot ignition takes place

Typical Gas Control: VR8204, VR8304

Type of Gas: Natural or LP

Ignition Source: Internal high voltage spark generator

Lockout Timing: 15 or 90 seconds

Maximum Valve Load @ 24 Vac (Amps): 1A Pilot, 2A Main @ 24Vac

Typical Ignition Hardware: Q345, Q3451

Approximate, Dimensions: 3 15/16 in. high x 5 7/16 in. wide x 2 5/8 in. deep (100 mm high x 138 mm wide x 67 mm deep)

Electrical Ratings: 24 Vac

Frequency: 60 Hz

Ambient Temperature Range: -40°F to +165°F (-40°C to +74°C)

Flame Failure Response Time (sec): 2.0 sec

| Material Number | Flame Sense | Ignition Trial Time (sec) | Ignition Trials To Lockout | PrePurge | Includes |
|-----------------|------------------------|---------------------------|----------------------------|-----------------|--|
| Y8610U4001/U | Single Rod or Two Rods | 15 or 90 seconds | continuous retry | 0 or 30 seconds | VR8204A2142 valve (1/2 x 1/2; 3.5" WC setting; 150 kBtu/hr at 1" p.d.) |
| Y8610U6006/U | Single Rod or Two Rods | 15 or 90 seconds | continuous retry | 0 or 30 seconds | VR8304M3558 (1/2 x 3/4; 3.5" setting; 270kBtu/hr at 1 in. p.d.) |

Ignition Pilot Modules Selection Guide

Ignition Pilot Modules Selection Guide

| Universal Service Part | Applications | | | Timings | | | | | |
|------------------------|--------------------------------|--------------|----------------------------|-------------------------------------|--------------------------------------|---|------------------------------------|-----------------------------|--|
| | Ignition System | Flame Sensor | Ignition Sequence (Note 1) | Ignition Trials To Lockout (Note 1) | Ignition Trial Time | Between Trial Time | Pre-Purge | Flame Failure Response Time | Igniter Warm-Up Time |
| S8910U3000/U | Line Volt Hot Surface Ignition | 1 or 2 Rods | Z | 1 or 3 Field Selectable | 4 sec. or 7 sec. Field Selectable | 96 sec. (32 sec. prepurge and 64 sec. interpurge) | 32 sec. | 1.5 sec. maximum | 7 (12 sec. 2nd and 3rd trial), 17 (27 sec. 2nd and 3rd trial), 34 or 45 sec. |
| S8910U1000/U | Line Volt Hot Surface Ignition | 1 or 2 Rods | P | 1 or 3 Field Selectable | 4 sec. or 7 sec. Field Selectable | 96 sec., 3 Trial Mode Only | 32 sec. | 1.5 sec. | |
| S8610U3009/U | Intermittent Pilot | 1 or 2 Rods | C | C | 15 sec. or 90 sec. Field Selectable | 5 Minute Delay After Failed Trial for Ignition | 0 sec. or 30 sec. Field Selectable | 2.0 sec. max. | |
| Y8610U4001/U | Intermittent Pilot | 1 or 2 Rods | C | C | 15 sec. or 90 sec. Field Selectable | 5 Minute Delay After Failed Trial for Ignition | 0 sec. | 2.0 sec. | |
| Y8610U6006/U | Intermittent Pilot | Single Rod | C | C | 15 sec. or 90 sec. Field Selectable. | 5 Minute Delay After Failed Trial for Ignition | 0 sec. | 2.0 sec. max. | |

| Features and Functions | | | | | Cross-Reference | | | |
|------------------------|-------------|-----------------------|--|---------------------------|--|---|---|---|
| Universal Service Part | Type of Gas | Ignition Source | Typical Ignition Hardware | Includes | Honeywell | White-Rodgers | Robertshaw | Johnson Controls |
| S8910U3000/U | Nat or LP | Switched Line Voltage | Norton 201, Norton 271, Hot Surface Elements, Q354 Flame Rod | — | S89C1004, S89C1007, S89C1012, S89C1046, S89C1087, S89C1103, S89D1002, S89G1005, S89F1011, S89G1013, S89G1021, S89G1029, S89G1047, S89H1003, S89H1011, S89H1029, S89J1008, S89D1006, S89G1003, S89G1037, S89H1002, S89H1010, S8910U1000/U | 50E47 1-79, 101-179, 201-279, 301-379; 5047F1-79, 101-179, 201-279, 301-379 | HS780-17NL 104A, 306A, 308A; HS780-17NR 104A, 306A, 308A; HS780-34NL 108A, 304A, 306A, 308A, 312A; HS780-34NR 104A, 306A, 308A, 312A; HS780-34PL 308A | — |
| S8910U1000/U | Nat or LP | Switched Line Voltage | Norton 201, Norton 271, Hot Surface Elements, Q354 Flame Rod | — | S89C1004, S89C1007, S89C1012, S89C1046, S89C1087, S89C1103, S89D1002, S89G1005, S89F1011, S89G1013, S89G1021, S89G1029, S89G1047, S89H1003, S89H1011, S89H1029, S89J1008, S89D1006, S89G1003, S89G1037, S89H1002, S89H1010 | 50E47 1-79, 101-179, 201-279, 301-379; 5047F1-79, 101-179, 201-279, 301-379 | HS780-17NL 104A, 306A, 308A; HS780-17NR 104A, 306A, 308A; HS780-34NL 108A, 304A, 306A, 308A, 312A; HS780-34NR 104A, 306A, 308A, 312A; HS780-34PL 308A | — |
| S8610U3009/U | Nat or LP | Internal | Q345, Q3451, Q3452 | Internal Damper Connector | S86 Series, S90 Series, S8600 Series, S8610 Series, S8620 Series, S8660 Series, S8670 Series, S8680J1004 | 50D49-350, 50D49-360, 50D49-361, 50D50-843, 50D-401 | 710-713, 710-715, 735-737, 780-002, 780-003, 780-701, 780-715, 780-735, 780-736, 780-737, 780-845, SP710, SP715, SP720, SP730, SP735, SP750 Series | CSA42, 43, 44, 45, 46, 48, 49; G60, G65, G67, G770 Series |
| Y8610U4001/U | Nat or LP | Internal | Adapter for Pilot Burner Included | Internal Damper Connector | Y8610U3029 | — | — | — |
| Y8610U6006/U | Nat or LP | Internal | Adapter for Pilot Burner Included | Internal Damper Connector | Y8610U3003 | — | — | — |

Notes:

1. Ignition Sequence

C = Continuous retry - After trial for ignition, pilot gas shuts off for 5 minutes, then another trial for pilot ignition takes place.





P = The number of trials for ignition and trial time is determined by the selection tab. If a selection tab is not installed, the module will operate at four seconds trial time and one ignition trial.

Z = The number of ignition trials, trial time, between trial time, prepurge, and igniter warm-up times are determined by the appropriate dip switch selection. Please refer to the instruction guide for appropriate timing selection.

For a complete cross-reference, visit www.customer.honeywell.com

Gas Ignition Module Accessories

Gas Ignition Module Accessories

| Material Number | Description | Used With | |
|-----------------|---|----------------|---|
| 392125-1/U | 25 in. ignition cable assembly with a right angle boot on the igniter end and a straight boot on the module end. For use with the S86/S87 family. | S86/S87 family |  |
| 392125-2/U | 36 in. ignition cable assembly with a right angle boot on the igniter end and a straight boot on the module end. For use with the S86/S87 family. | S86/S87 family | |
| 394800-30/U | 30 in. Ignition Cable Assembly with a right angle boot for ignition terminal and 1/4 in. straight quick connect at module end for S8600 family. | S8600 family |  |
| 394800-32/U | 32 in. Ignition Cable Assembly with a right angle boot for ignition terminal and 1/4 in. straight quick connect at module end for S8600 family. | S8600 family | |
| 394800-36/U | 36 in. Ignition Cable Assembly with a right angle boot for ignition terminal and 1/4 in. straight quick connect at module end for S8600 family. | S8600 family | |
| 394801-30/U | 30 in. ignition cable assembly with a straight boot on igniter end and a 1/4 in. straight connect at ignition module end. | S8600 family |  |
| 394801-36/U | 36 in. ignition cable assembly with a straight boot on igniter end and a 1/4 in. straight connect at ignition module end. | S8600 family | |
| 4074EPM/U | Quick connect to Rajah adapter for S8600 family | S8600 family |  |

Igniter Bracket Replacement Cross Reference

Q3200U Igniter Bracket Replacement Cross Reference^a

| Manufacturer | OEM Part Number | Q3200U Bracket ^b |
|----------------------|-----------------|-----------------------------|
| American Road Equip. | 201W | A |
| Arco Air | 1096048 | D |
| | 1380680 | |
| Armstrong Air | 38322B001 | A |
| Carrier/Bryant/Payne | LH33ZS001 | B or E ^c |
| | LH33ZS001A | |
| | LH33ZS002 | |
| | LH33ZS002A | |
| | LH33ZS003 | |
| | LH33ZS003A | |
| Claire Bros. | C-238 | A |
| | C242 | |
| Coleman | 1474-051 | A |
| | 1474-052 | |
| Comfort Maker | 1096048 | D |
| Detroit Radiant | 201D | A |
| DMO Industries | 20834 | A |
| Dornback Furnace | 271W | A |
| Ducane | 20015201 | B |
| Enero Tech | 10399 | A |
| Evcon | 1474-051 | A |
| | 1474-052 | |
| Evcon Coleman | 025-32625-000 | B |
| Goodman | B1401009 | D |
| | B1401018 | C |
| | B1401018S | D |
| HB Smith | 50018 | A |
| Heil | 1096048 | D |
| Hupp Industries | 09050 | A |
| Intercity | 1009604 | D |
| | 1096048 | |
| Majestic | 75-92-104 | A |
| | 75-92-105 | |
| Metzger | 201N | A |
| | 201W | |
| Modine | 5H76032A | C |
| Mor-Flo | 3200618 | A |
| | 511-330-193 | |
| Nordyne | 105141000 | A |
| | 632-0770 | |
| | 632-0880 | |
| Norton/St Gobain | 201 | B |
| | 271 | |
| | 201D | |
| | 201K | A |
| | 201L | |
| | 201N | |
| | 201R | |
| | 201W | |
| | 271N | |
| | 271NM | |
| | 271P | D |
| 271W | A | |
| Raypak | 600915 | B |
| Rheem | 62-22441-01 | A |

- a Table data is correct to the best of Honeywell's knowledge as of this publication's date. However, some appliances may have igniter applications that are beyond the capabilities of this kit.
- b For igniters that require bracket A, use the template to determine the tab to be removed.
- c For Carrier sealed combustion furnaces, you must use bracket E and retain the existing orange gasket for use with bracket E.

| Manufacturer | OEM Part Number | Q3200U Bracket ^b |
|--------------------|-----------------|-----------------------------|
| Roberts Gordon | 90434300 | B |
| | 90436600 | A |
| Robertshaw | 41-402 | A |
| | 41-403 | B |
| | 41-404 | |
| | 41-405 | A |
| | 41-407 | B |
| | 41-408 | A |
| | 41-409 | B |
| | 41-410 | A |
| | 41-412 | D |
| | 41-418 | C |
| | Snyder General | 1380654 |
| 1380672 | | |
| 1380680 | | |
| Superior Fireplace | 94851 | A |
| Tempstar | 1096048 | D |
| Trane | 340039P01 | A |
| | B138196P01 | B |
| | B144676P01 | A |
| | B144676P02 | B |
| | B340039P01 | A |
| | IGN23 | |
| | IGN26 | B |
| IGN30 | | |
| IGN34 | A | |
| Viessman | 9302-094 | A |
| Wayne Home Equip. | 62821-001 | A |
| | 62821-002 | |
| Weil McLain | 511-330-139 | B |
| | 511-330-190 | |
| | 511-330-193 | |
| White LB | 120-07549 | A |
| White-Rodgers | 767A-301 | A |
| | 767A-303 | F |
| | 767A-306 | A |
| | 767A-311 | |
| | 767A-350 | |
| | 767A-353 | F |
| | 767A-354 | A |
| | 767A-357 | F |
| | 767A-361 | A |
| | 767A-364 | |
| | 767A-366 | |
| | 767A-370 | B |
| | 767A-371 | A |
| | 767A-372 | |
| | 767A-373 | D |
| 767A-376 | B | |
| 767A-377 | A | |
| 767A-382 | B | |
| Williamson | 9050 | A |
| York | 025-27766-000 | A |
| | 025-27774-000 | A |
| | 025-29043-000 | A |
| | 025-29050-000 | A |

- a Table data is correct to the best of Honeywell's knowledge as of this publication's date. However, some appliances may have igniter applications that are beyond the capabilities of this kit.
- b For igniters that require bracket A, use the template to determine the tab to be removed.
- c For Carrier sealed combustion furnaces, you must use bracket E and retain the existing orange gasket for use with bracket E.

Igniters and Sensors

Q3200 Glowfly™ Universal Hot Surface Igniter Kit



The Q3200U Universal Hot Surface Igniter Kit is designed to provide a robust field service replacement igniter, in gas fired appliances with Norton/St Gobain 120 VAC, silicon carbide, hot surface igniters. Includes six brackets and accessories.

- Replaces over 110 OEM igniter models
- Each igniter package includes cross reference instructions, six brackets, and installation accessories.
- Robust Silicon nitride igniter construction
- Igniter application templates enable quick bracket selection.

Application: Remote flame sense appliance applications only

Voltage: 120 Vac

Mounting: Multiple brackets to adapt as field replacement of Norton / St. Gobain / CoorsTek silicon carbide igniters

Temperature Ratings: Lead Wire Maximum - 428°F (Lead Wire Maximum - 250°C)

Length: Lead wire Length - 15 in.

Includes: High temperature ceramic wire nuts

| Material Number | Description |
|-----------------|--|
| Q3200U1004/U | This Glowfly™ Universal Hot Surface Igniter kit, in service pack of single kit |
| Q3200U2002/U | This Glowfly™ Universal Hot Surface Igniter kit in service pack of 6 kits |

Q347 Direct Spark Igniter



The Q347 Igniter is used in direct spark applications. It provides a spark to ignite the main burner flame.

- Includes inner Kanthal electrode with ceramic insulator, bracket and Kanthal ground strap.
- Use with S87C, D, K; S89E, F and Q354A.

Application: Ignitor Only

Approvals, CSA: 112395

| Material Number | Length | Mounting | Rod Angle |
|-----------------|--------------------|---|----------------------|
| Q347A1004/U | 2 1/32 in. (52 mm) | Bracket Style D; One 3/16 in. (5 mm) slot, three 3/16 in. (5 mm) untapped screw holes | standard orientation |
| Q347A1012/U | 2 1/32 in. (52 mm) | Bracket Style D; One 3/16 in. (5 mm) slot, three 3/16 in. (5 mm) untapped screw holes | 90 degree angle |

Q354 Direct Spark Sensor



The Honeywell Q354 Flame Sensor proves the presence of main burner flame in direct spark applications.

- Includes Kanthal rod supported by ceramic insulator and mounting bracket.
- Use with S825, S87C, D, K or S89E, F.

Application: Sensor Only

Approvals, CSA: 112395

| Material Number | Length | Mounting | Rod Angle |
|-----------------|--------------------|---|-----------|
| Q354A1018/U | 6 3/8 in. (162 mm) | One 3/16 in. slot, three 3/16 in. untapped screw holes. | Straight |

Q4100 Silicon Carbide Hot Surface Igniter



Q4100C9068
Q4100C9070



Q4100C9040
Q4100C9052
Q4100C9056



Q4100C9040
Q4100C9046
Q4100C9054
Q4100C9058



Q4100C9042
Q4100C9044



Q4100C9050



Bracket A



Bracket B



Bracket C



Bracket D



Bracket E

Honeywell offers a full line of 120 V direct replacement silicon carbide igniters. Q4100 igniters work with most configurations of element shapes, brackets, connectors, and lead wire lengths. Honeywell igniters are made in the USA and backed by a 2-year warranty.

Application: Ignitor
Type of Gas: Natural; LP
Voltage: 120 V

Temperature Ratings: 392°C (200°C)
Tradeline Value: Tradeline

| Material Number | Connection Type | Wiring Terminal Type | Mounting | Length | Includes |
|-----------------|---|---|---|----------------------|---------------------------------|
| Q4100C9040/U | Receptacle with .093" male pins | Receptacle with .093" male pins | wide ceramic | 5-1/4 in. (133 mm) | |
| Q4100C9042/U | Molex internally keyed connector with .084 pins | Molex internally keyed connector with .084 pins | Standard with rib on right edge | 5-1/2 in. (140 mm) | |
| Q4100C9044/U | Receptacle with .093" male pins | Receptacle with .093" male pins | Standard with rib on right edge | 6 in. (152 mm) | |
| Q4100C9046/U | Stripped ends | Stripped ends | Standard with rib on right edge plus bracket | 19-1/8 in. (486 mm) | |
| Q4100C9048/U | Receptacle with .093" male pins | Receptacle with .093" male pins | Round | 5-1/4 in. (133 mm) | Mounting Bracket |
| Q4100C9050/U | Stripped ends | Stripped ends | Standard with rib on right edge plus 3 brackets | 11 in. (279 mm) | |
| Q4100C9052/U | Molex front lock connector with .092 male pins | Molex front lock connector with .092 male pins | Standard with rib offset from left edge | 5 in. (127 mm) | |
| Q4100C9054/U | Molex side lock connector with .092 male pins | Molex side lock connector with .092 male pins | Standard with rib offset from left edge | 5-1/4 in. (133 mm) | |
| Q4100C9056/U | Receptacle with .093" male pins | Receptacle with .093" male pins | Standard with rib offset from left edge | 5-1/4 in. (133 mm) | |
| Q4100C9058/U | Molex front lock connector with .092 male pins | Molex front lock connector with .092 male pins | | 4-1/2 in. (114 mm) | |
| Q4100C9060/U | Molex side lock connector with .092 male pins | Molex side lock connector with .092 male pins | | 5-1/4 in. (133 mm) | Standard with rib on right edge |
| Q4100C9062/U | Receptacle with .093" male pins | Receptacle with .093" male pins | | 5-1/4 in. (133 mm) | Mounting Bracket |
| Q4100C9064/U | 1/4" female QC terminals | 1/4" female QC terminals | | 1-3/8 in. (35 mm) | |
| Q4100C9066/U | Receptacle with .093" male pins | Receptacle with .093" male pins | | 5-1/4 in. (133 mm) | Three Standard Brackets |
| Q4100C9068/U | Receptacle with .093" male pins | Receptacle with .093" male pins | | 5-1/4 in. (133 mm) | |
| Q4100C9070/U | 1/4" female QC terminals | 1/4" female QC terminals | | 5-11/16 in. (144 mm) | |
| Q4100C9072/U | Amp 1-480699-0 connector housing with .093" male pins | Amp 1-480699-0 connector housing with .093" male pins | | 5-5/16 in. (135 mm) | |

Pressure Switches

Airflow Differential Pressure Switch

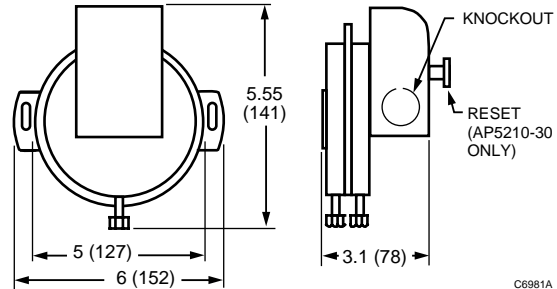


Airflow Differential Pressure Switches are used to sense positive, negative, or differential air pressure in HVAC systems. They provide high or low limit with alarm or high limit shutdown with manual reset.

- Models available with compression or barb fittings.
- Electrical switch enclosed in metal box with cover.
- Reliable pneumatic operation.
- Adjustable setpoint.
- UL, CSA and FM Approved

Maximum Operating Pressure: 1/2 psi
Approximate, Dimensions: -40°F to +190°F (-40°C to +88°C)
Ambient Temperature Range: 5.0 in. Diameter (127 mm Diameter)
Approvals, Underwriters Laboratories Inc: MFHX2.MP2168
Approvals, CSA: CSA International: 112395
Approvals, Factory Mutual: Approved

Dimensions in inches (millimeters)



C6981A

| Material Number | Connection Type | Electrical Switch | Electrical Connections | Pilot Duty Ratings | Electrical Ratings | Setpoint | Additional Features |
|-----------------|---------------------|-------------------|---------------------------------------|---|--|-----------------------------|--|
| AP5027-30/U | 1/4 in. Compression | SPDT | #6-32 Screw terminal with cup washers | 10 Milliamps @ 5Vdc; Gold Flash Contacts; 15 Amps resistive to 277Vac | 278 Va @ 24 Vac; 300 Va @ 120 to 277 Vac | .05"±.02" wc to 12.0" wc PR | Switching Differential: .02"±.01" wc @ minimum set point to approximately .80" wc @ maximum setpoint |
| AP5208-30/U | 1/4 in. Barbed | SPDT | #6-32 Screw terminal with cup washers | 10 Milliamps @ 5Vdc; Gold Flash Contacts; 15 Amps resistive to 277Vac | 278 Va @ 24 Vac; 300 Va @ 120 to 277 Vac | .05"±.02" wc to 12.0" wc PR | Switching Differential: .02"±.01" wc @ minimum set point to approximately .80" wc @ maximum setpoint |
| AP5210-30/U | 1/4 in. Compression | SPNC | #8-32 Screw terminal with cup washers | — | 278 Va @ 24 Vac; 300 Va @ 120 to 277 Vac | .30"±.20" wc to 12.0" wc PR | Manual Reset |

ST9103 Electronic Fan Timers



ST9103A integrates control of burner and circulating fan operations in an oil furnace. Two speed circulator for oil appliances. Isolated line voltage limit interface and isolated relay connection to oil primary.

- Central appliance wiring point simplifies service
- Oil burner primary control
- Fixed or field-adjustable heat fan on delay
- Field adjustable heat fan off delay
- Controls two speed circulating fan

Application: A single circuit board providing combustion air blower control, two speed circulating air blower control, oil primary control, limit circuit inputs, thermostat wiring terminations, & a central appliance wiring point for an oil fixed furnace.

Electrical Ratings: 18 to 30 Vac

Frequency: 50 Hz; 60 Hz

Approvals, Underwriters Laboratories Inc: Listed: Report MP466

Approvals, CSA: Certified: File No. LR95329-17

| Material Number | Heat Fan On Delay | Heat Fan Off Delay | Cool Fan On Delay | Cool Fan Off Delay | Ambient Temperature Range | Replaces |
|-----------------|-------------------|--|-------------------|--------------------|----------------------------------|-------------|
| ST9103A1002/U | fixed, 45 sec | adj. 60, 90, 120, 150 sec (set at 150 sec) | fixed 0 sec | fixed 0 sec | -40°F to +150°F (-40°C to +66°C) | ST9103A1002 |

ST9120 Universal Electronic Fan Timers



Universal electronic fan control for gas furnaces, replaces multiple Honeywell models. Includes instructions and special wire harnesses for easy replacement.

- Replaces 40+ existing Honeywell electronic fan timers
- Instruction sheet supplies full cross reference and wiring guide
- Interface harnesses for simple conversion
- Integrates control of all combustion blower and circulating fan operations in gas warm-air appliance
- Replaceable fuse
- DIP switch selectable heat and cool delay on and off times
- LED lights for easy diagnostics
- Electronic air cleaner and humidifier terminal connections
- Continuous low speed indoor air circulation

Application: Integrates control of combustion blower and circulating fan operations for a gas warm air appliance

Electrical Ratings: 18 to 30 Vac

Frequency: 50 Hz; 60 Hz

Approvals, Underwriters Laboratories Inc: Listed: Report MP466

Approvals, CSA: Certified: File No. LR95329-17

Tradeline Value: Universal

| Material Number | Heat Fan On Delay | Heat Fan Off Delay | Cool Fan On Delay | Cool Fan Off Delay | Ambient Temperature Range | Replaces |
|-----------------|---------------------------------|---|-------------------------------|---------------------------------|----------------------------------|--|
| ST9120U1011/U | adj. 30, 60 sec (set at 30 sec) | adj. 60, 120, 150, 180 sec (set at 120 sec) | adj. 4, 30 sec (set at 4 sec) | adj. 30, 60 sec (set at 30 sec) | -40°F to +175°F (-40°C to +79°C) | all ST9101's, all ST9120's, all ST9141's, and all ST9160's |

Contactors

PowerPro Definite Purpose Contactors



The Tougher Contactors

We're tougher than ever. Honeywell PowerPro, a line of definite purpose contactors, out-features, out-performs and is destined to soon out-sell the competition.

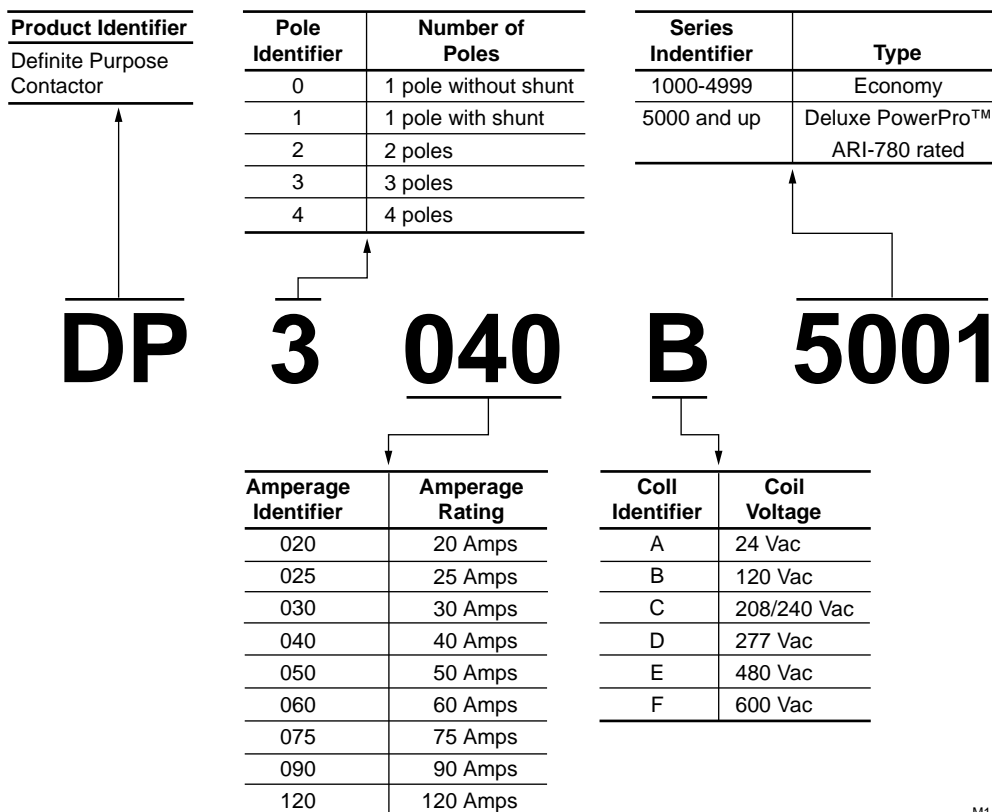
Once you compare the features of Honeywell PowerPro definite purpose contactors against what you're using now, we predict you'll soon standardize on PowerPro for all your applications. Especially in high stakes' situations where you can't afford to gamble on anything less.

Honeywell PowerPro definite purpose contactors will surprise you in more ways than one. Once you try them you'll be amazed at how these compact contactors easily fit in tight spaces while leaving maneuvering room for hands and tools; how easily contactor accessories snap on or off; how you view the operation of the contactor with the user-friendly button; plus many other installer-friendly features

- **Honeywell PowerPro Contactors Meet ARI Standard 780**—Meeting the ARI Standard 780 means that the contactors stand up to tests that simulate harsh, real-world conditions—500,000 cycle mechanical life test, 200,000 cycle endurance life test and 10,000 cycle recycle life test.
- **Contactors are shorter and sweeter than the competition**—Their small size makes them ideal for replacement inside today's compact equipment.
- **Advanced class H insulated contactor coil design protects against high heat conditions**—Class H contactor coils are standard on all Honeywell Contactors.
- **Convenient button for easy testing**—Use it to safely check for proper electrical functioning of the contactor.

DP Contactors Order Number Guide

It's easy to select the order number that you need for your application. Depending on your application, determine the number of poles, amp rating, coil voltage, and whether you need an economy or deluxe model. Then, simply follow this Order Number Guide:



M14500

NOTE: Super Tradeline Contactors contain extra mounting hardware.

Deluxe Honeywell PowerPro DP-Series Definite Purpose Contactors - 1 Pole



These electromagnetically-operated Definite Purpose Contactors provide switching for starting induction motors.

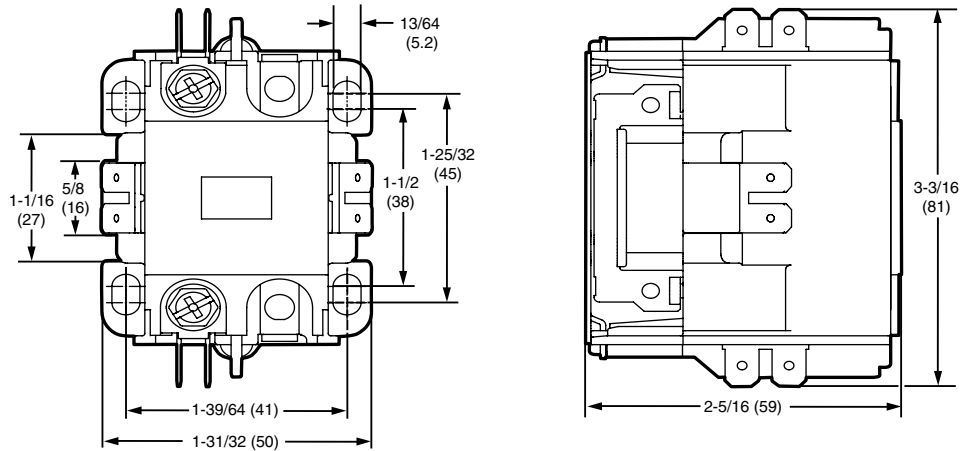
- Meets ARI-780 Standard at started ratings (500,000 cycle mechanical life, 200,000 cycle electrical life and 10,000 cycle recycle life); the most demanding ARI requirement.
- Silver cadmium oxide contacts provide long life under demanding duty cycles.
- Low profile design allows for more wiring room.
- Multiple mounting holes and slots for convenient, interchangeable mounting with most competitive devices.

Application: PowerPro Definite Purpose Contactor
Frequency: 50 Hz; 60 Hz
Temperature Ratings: -4°F to +149°F (-20°C to +65°C)

Approvals, CSA: Certified: File No. LR6535
Approvals, Underwriters Laboratories Inc.: Component Recognized: File No. 14480, Guide No. NLDX2

| Material Number | Poles | Switching | Coil Ratings Voltage | Contact Connections (coil) | Electrical Connections | Contact Ratings (AFL) | Contact Ratings (resistive) |
|-----------------|--------------|-----------|----------------------|----------------------------|------------------------|-----------------------|--------------------------------------|
| DP1025A5006/U | 1 with shunt | SPST | 24 Vac | 1/4 in. quick-connects | lug connectors | 25 A @ 240/277 Vac | 30 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP1030A5014/U | 1 | SPST | 24 Vac | 1/4 in. quick-connects | lug connectors | 30 A @ 240/277 Vac | 48 A @ 240/277 Vac |
| DP1040A5005/U | 1 | | 24 Vac | 1/4 in. quick-connects | lug connectors | 40 A @ 240/277 Vac | 50 A @ 240/277 Vac |

Dimensions in inches (millimeters) for 1 pole contactor without shunt



M34711

Residential Combustion Control

Contactors

Deluxe Honeywell PowerPro DP-Series Definite Purpose Contactors - 2 Pole



These electromagnetically-operated Definite Purpose Contactors provide switching for starting induction motors.

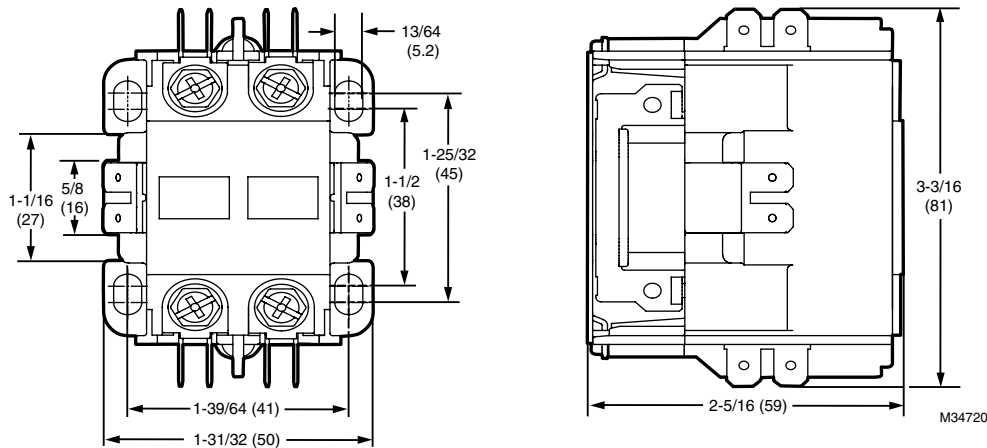
- Meets ARI-780 Standard at started ratings (500,000 cycle mechanical life, 200,000 cycle electrical life and 10,000 cycle recycle life); the most demanding ARI requirement.
- Silver cadmium oxide contacts provide long life under demanding duty cycles.
- Low profile design allows for more wiring room.
- Multiple mounting holes and slots for convenient, interchangeable mounting with most competitive devices.

Application: PowerPro Definite Purpose Contactor
Frequency: 50 Hz; 60 Hz
Switching: DPST
Temperature Ratings: -4°F to +149°F (-20°C to +65°C)

Approvals, CSA: Certified: File No. LR6535
Approvals, Underwriters Laboratories Inc.: Component Recognized: File No. 14480, Guide No. NLDX2

| Material Number | Poles | Coil Ratings Voltage | Contact Connections (coil) | Electrical Connections | Contact Ratings (AFL) | Contact Ratings (resistive) |
|-----------------|-------|----------------------|----------------------------|------------------------|-------------------------------|--------------------------------------|
| DP2020A5022/U | 2 | 24 Vac | 1/4 in. quick-connects | lug connectors | 30 A @ 240, 277, 480, 600 Vac | 25 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP2020B5039/U | 2 | 120 Vac | 1/4 in. quick-connects | lug connectors | 20 A @ 240, 277, 480, 600 Vac | 25 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP2030A5013/U | 2 | 24 Vac | 1/4 in. quick-connects | lug connectors | 30 A @ 240/277 Vac | 40 A @ 240/277 Vac |
| DP2030B5004/U | 2 | 120 Vac | 1/4 in. quick-connects | lug connectors | 30 A @ 240/277 Vac | 40 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP2030B5012/U | 2 | 120 Vac | 1/4 in. quick-connects | lug connectors | 30 A @ 240/277 Vac | 40 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP2030C5003/U | 2 | 208 Vac/240 Vac | 1/4 in. quick-connects | lug connectors | 30 A @ 240/277 Vac | 40 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP2030C5011/U | 2 | 208 Vac/240 Vac | 1/4 in. quick-connects | lug connectors | 30 A @ 240/277 Vac | 40 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP2030D5002/U | 2 | 277 Vac | 1/4 in. quick-connects | lug connectors | 30 A @ 240/277 Vac | 40 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP2040A5004/U | 2 | 24 Vac | 1/4 in. quick-connects | lug connectors | 40 A @ 240/277 Vac | 48 A @ 240/277 Vac |
| DP2040B5003/U | 2 | 120 Vac | 1/4 in. quick-connects | lug connectors | 40 A @ 240/277 Vac | 50 A @ 240/277 Vac |
| DP2040C5002/U | 2 | 208 Vac/240 Vac | 1/4 in. quick-connects | lug connectors | 40 A @ 240/277 Vac | 50 A @ 240/277 Vac |

Dimensions in inches (millimeters) for 2 Pole 25- 40 Amp Contactor



Deluxe Honeywell PowerPro DP-Series Definite Purpose Contactors - 3 Pole



These three pole definite purpose electromagnetically operated contactors provide switching for starting of induction motors.

- Meet the most demanding ARI requirement, ARI-780 Standard.
- Class H high temperature insulated coils are standard on 3 pole contactors.
- Shrouded coils on 3 pole (25A to 60A) models protect the coil from harsh environment factors.
- Multiple mounting holes and slots for convenient, interchangeable mounting with most competitive devices.
- Full array of replacement coils, contact sets and accessories available.

Application: PowerPro Definite Purpose Contactor

Frequency: 50 Hz; 60 Hz

Switching: DPST

Temperature Ratings: -4°F to +149°F (-20°C to +65°C)

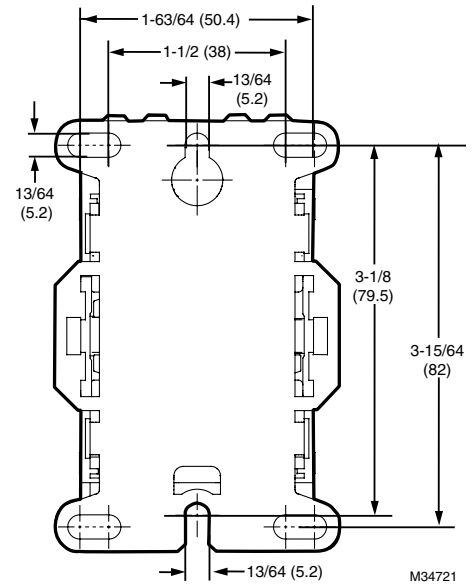
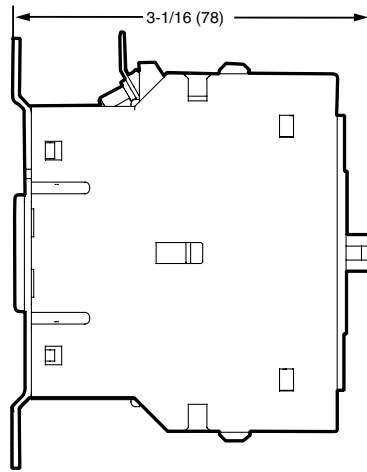
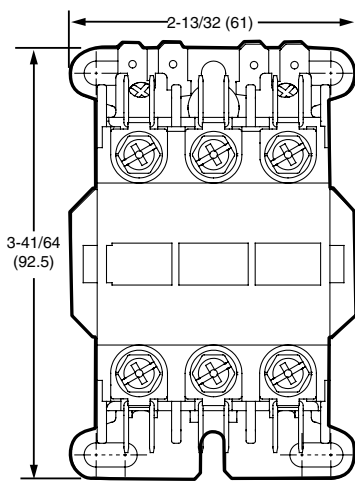
Approvals, CSA: Certified: File No. LR6535

Approvals, Underwriters Laboratories Inc.: Component Recognized: File No. 14480, Guide No. NLDX2

| Material Number | Poles | Coil Ratings Voltage | Contact Connections (coil) | Electrical Connections | Contact Ratings (AFL) | Contact Ratings (resistive) |
|-----------------|-------|----------------------|--------------------------------------|------------------------|--------------------------------------|---------------------------------------|
| DP3030A5004/U | 3 | 24 Vac | 1/4 in. quick-connects and #6 screws | lug connectors | 30 A @ 240/277 Vac, 480 Vac, 600 Vac | 40 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP3030B5003/U | 3 | 120 Vac | 1/4 in. quick-connects and #6 screws | lug connectors | 30 A @ 240/277 Vac, 480 Vac, 600 Vac | 40 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP3030C5002/U | 3 | 208 Vac/240 Vac | 1/4 in. quick-connects and #6 screws | lug connectors | 30 A @ 240/277 Vac, 480 Vac, 600 Vac | 40 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP3040A5003/U | 3 | 24 Vac | 1/4 in. quick-connects and #6 screws | lug connectors | 40 A @ 240/277 Vac, 480 Vac, 600 Vac | 50 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP3040B5002/U | 3 | 120 Vac | 1/4 in. quick-connects and #6 screws | lug connectors | 40 A @ 240/277 Vac, 480 Vac, 600 Vac | 50 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP3040C5001/U | 3 | 208 Vac/240 Vac | 1/4 in. quick-connects and #6 screws | lug connectors | 40 A @ 240/277 Vac, 480 Vac, 600 Vac | 50 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP3050A5002/U | 3 | 24 Vac | 1/4 in. quick-connects and #6 screws | lug connectors | 40 A @ 240/277 Vac, 480 Vac, 600 Vac | 50 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP3050B5001/U | 3 | 120 Vac | 1/4 in. quick-connects and #6 screws | lug connectors | 50 A @ 240/277 Vac, 480 Vac, 600 Vac | 63 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP3050C5010/U | 3 | 208 Vac/240 Vac | 1/4 in. quick-connects and #6 screws | lug connectors | 50 A @ 240/277 Vac, 480 Vac, 600 Vac | 63 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP3060A5001/U | 3 | 24 Vac | 1/4 in. quick-connects and #6 screws | lug connectors | 60 A @ 240/277 Vac, 480 Vac, 600 Vac | 75 A @ 277 Vac, 480 Vac, 600 Vac |
| DP3060B5010/U | 3 | 120 Vac | 1/4 in. quick-connects and #6 screws | lug connectors | 60 A @ 240/277 Vac, 480 Vac, 600 Vac | 75 A @ 277 Vac, 480 Vac, 600 Vac |
| DP3060C5009/U | 3 | 208 Vac/240 Vac | 1/4 in. quick-connects and #6 screws | lug connectors | 60 A @ 240/277 Vac, 480 Vac, 600 Vac | 75 A @ 277 Vac, 480 Vac, 600 Vac |
| DP3075A5017/U | 3 | 24 Vac | 1/4 in. quick-connects and #6 screws | lug connectors | 75 A @ 240/277 Vac, 480 Vac, 600 Vac | 94 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP3075B5016/U | 3 | 120 Vac | 1/4 in. quick-connects and #6 screws | lug connectors | 75 A @ 240/277 Vac, 480 Vac, 600 Vac | 94 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP3075C5015/U | 3 | 208 Vac/240 Vac | 1/4 in. quick-connects and #6 screws | lug connectors | 75 A @ 240/277 Vac, 480 Vac, 600 Vac | 94 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP3090B5007/U | 3 | 120 Vac | 1/4 in. quick-connects and #6 screws | lug connectors | 90 A @ 240/277 Vac, 480 Vac, 600 Vac | 120 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP3090C5006/U | 3 | 208 Vac/240 Vac | 1/4 in. quick-connects and #6 screws | lug connectors | 90 A @ 240/277 Vac, 480 Vac, 600 Vac | 120 A @ 240/277 Vac, 480 Vac, 600 Vac |

Contactors

Dimensions in inches (millimeters) for 3 pole 25 to 40 amp contactors



M34721

Deluxe Honeywell PowerPro DP-Series Definite Purpose Contactors - 4 Pole



Application: PowerPro Definite Purpose Contactor
Frequency: 50 Hz; 60 Hz
Switching: DPST
Temperature Ratings: -4°F to +149°F (-20°C to +65°C)

Definite purpose four (40A) pole contactors provide switching for across-the-line starting of induction motors.

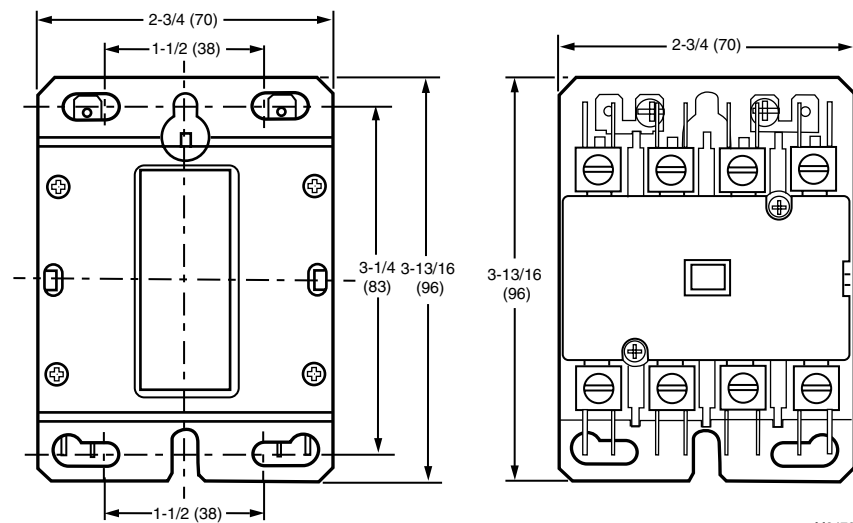
- Shrouded coils on 3 pole (25A to 60A) models protect the coil from harsh environment factors.
- Moisture proof epoxy is used to encapsulate the 3 pole 75A through 120A coils.
- Multiple mounting holes and slots for convenient, interchangeable mounting with most competitive devices.
- Traditional design meets many needs.
- Full array of replacement coils, contact sets and accessories available.

Approvals, CSA: Certified: File No. LR6535

Approvals, Underwriters Laboratories Inc.: Component Recognized: File No. 14480, Guide No. NLDX2

| Material Number | Poles | Coil Ratings Voltage | Contact Connections (coil) | Electrical Connections | Contact Ratings (AFL) | Contact Ratings (resistive) |
|-----------------|-------|----------------------|--------------------------------------|------------------------|--------------------------------------|--------------------------------------|
| DP4040A5002/U | 4 | 24 Vac | 1/4 in. quick-connects and #6 screws | lug connectors | 40 A @ 240/277 Vac, 480 Vac, 600 Vac | 50 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP4040B5001/U | 4 | 120 Vac | 1/4 in. quick-connects and #6 screws | lug connectors | 40 A @ 240/277 Vac, 480 Vac, 600 Vac | 50 A @ 240/277 Vac, 480 Vac, 600 Vac |
| DP4040C5010/U | 4 | 208 Vac/240 Vac | 1/4 in. quick-connects and #6 screws | lug connectors | 40 A @ 240/277 Vac, 480 Vac, 600 Vac | 50 A @ 240/277 Vac, 480 Vac, 600 Vac |

Dimensions in inches (millimeters) for 4 pole 40 amp contactors



M34735

Residential Combustion Control

Contactors

Economy DP-Series Definite Purpose Contactors - 1 Pole



These electromagnetically-operated Definite Purpose Contactors provide switching for starting induction motors.

- Silver cadmium oxide contacts provide long life under demanding duty cycles.
- Low profile design allows for more wiring room.
- Multiple mounting holes and slots for convenient, interchangeable mounting with most competitive devices.

Application: Economy Definite Purpose Contactor
Frequency: 50 Hz; 60 Hz
Switching: SPST
Temperature Ratings: -4°F to +149°F (-20°C to +65°C)

Approvals, CSA: Certified: File No. LR6535
Approvals, Underwriters Laboratories Inc.: Component Recognized: File No. 14480, Guide No. NLDX2

| Material Number | Poles | Coil Ratings Voltage | Contact Connections (coil) | Electrical Connections | Contact Ratings (AFL) | Contact Ratings (resistive) |
|-----------------|-------|----------------------|----------------------------|--------------------------------|----------------------------------|----------------------------------|
| DP1030A1001/U | 1 | 24 Vac | 1/4 in. quick-connects | #10-32 combination head screws | 30 amps @ 240, 277, 480, 600 Vac | 40 amps @ 240, 277, 480, 600 Vac |

Economy DP-Series Definite Purpose Contactors - 2 Pole



These electromagnetically-operated Definite Purpose Contactors provide switching for starting induction motors.

- Silver cadmium oxide contacts provide long life under demanding duty cycles.
- Low profile design allows for more wiring room.
- Multiple mounting holes and slots for convenient, interchangeable mounting with most competitive devices.

Application: Economy Definite Purpose Contactor
Frequency: 50 Hz; 60 Hz
Switching: DPST
Temperature Ratings: -4°F to +149°F (-20°C to +65°C)

Approvals, CSA: Certified: File No. LR6535
Approvals, Underwriters Laboratories Inc.: Component Recognized: File No. 14480, Guide No. NLDX2

| Material Number | Poles | Coil Ratings Voltage | Contact Connections (coil) | Electrical Connections | Contact Ratings (AFL) | Contact Ratings (resistive) | Approximate, Dimensions |
|-----------------|-------|----------------------|----------------------------|--------------------------------|--------------------------------------|--------------------------------------|---|
| DP2030A1004/U | 2 | 24 Vac | 1/4 in. quick-connects | #10-32 combination head screws | 30 A @ 240/277 Vac | 40 A @ 240/277 Vac, 480 Vac, 600 Vac | 3.25 in. high x 3.63 in. wide x 3.8 in. deep (83 mm high x 92 mm wide x 97 mm deep) |
| DP2030B1003/U | 2 | 120 Vac | 1/4 in. quick-connects | #10-32 combination head screws | 30 A @ 240/277 Vac, 480 Vac, 600 Vac | 40 A @ 240/277 Vac, 480 Vac, 600 Vac | 2.2 in. high x 3.31 in. wide x 2.17 in. deep (56 mm high x 84 mm wide x 55 mm deep) |
| DP2030C1002/U | 2 | 208 Vac/240 Vac | 1/4 in. quick-connects | #10-32 combination head screws | 30 A @ 240/277 Vac, 480 Vac, 600 Vac | 40 A @ 240/277 Vac, 480 Vac, 600 Vac | 2.2 in. high x 2.5 in. wide x 3.31 in. deep (56 mm high x 59 mm wide x 84 mm deep) |
| DP2040A1003/U | 2 | 24 Vac | 1/4 in. quick-connects | #10-32 combination head screws | 40 A @ 240/277 Vac, 480 Vac, 600 Vac | 50 A @ 240/277 Vac, 480 Vac, 600 Vac | 2.37 in. high x 3.3 in. wide x 2 in. deep (60 mm high x 84 mm wide x 51 mm deep) |
| DP2040B1002/U | 2 | 120 Vac | 1/4 in. quick-connects | #10-32 combination head screws | 40 A @ 240/277 Vac, 480 Vac, 600 Vac | 50 A @ 240/277 Vac, 480 Vac, 600 Vac | 2.37 in. high x 3.3 in. wide x 2 in. deep (60 mm high x 84 mm wide x 51 mm deep) |
| DP2040C1001/U | 2 | 208 Vac/240 Vac | 1/4 in. quick-connects | #10-32 combination head screws | 40 A @ 240/277 Vac, 480 Vac, 600 Vac | 50 A @ 240/277 Vac, 480 Vac, 600 Vac | 2.37 in. high x 3.3 in. wide x 2 in. deep (60 mm high x 84 mm wide x 51 mm deep) |

Auxiliary Switches



Application: Auxiliary Interlock

Contact Ratings (resistive): 10.0 A

Approximate, Dimensions: 2 13/16 in. x 2 1/2 in. x 7/16 in. (77 mm x 64 mm x 11 mm)

Current Ratings: 60/30/15/12 Amps (Maximum (Inrush) at 120V/240V/480V/600V)

| Material Number | Description | Configuration | Circuits | Used With |
|------------------|--|---------------------------------------|----------|--|
| DP3AUX-1NC/U | This is a 1 Normally Closed Snap-on side mounted auxiliary interlock | Normally Closed snap-on | 1 | DP3060; DP3050; DP3040; DP3030; DP3090; DP3075 |
| DP3AUX-1NO/U | This is a 1 Normally Open Snap-on side mounted auxiliary interlock | Normally Open snap-on | 1 | DP3030; DP3040; DP3050; DP3060; DP3075; DP3090 |
| DP3AUX-1NO-1NC/U | This is a 1 Normally Open/1 Normally Closed Snap-on side mounted auxiliary interlock | Normally Open/Normally Closed snap-on | 2 | DP3030; DP3040; DP3050; DP3060; DP3075; DP3090 |
| DP3AUX-2NC/U | This is a 2 Normally Closed Snap-on side mounted auxiliary interlock | Normally Closed snap-on | 2 | DP3030; DP3040; DP3050; DP3060; DP3075; DP3090 |
| DP3AUX-2NO/U | This is a 2 Normally Open Snap-on side mounted auxiliary interlock | Normally Open snap-on | 2 | DP3060; DP3050; DP3040; DP3030; DP3090; DP3075 |

R8246 Electric Heat Contactor



Provides conventional on-off control of heating elements and fan in an electric furnace.

- Designed for quiet operation. R8246A and R8229A replace over 50 Honeywell and competitive electric heat primaries, including the Honeywell R8330 Electric Furnace Sequencer.
- Use on furnaces with a line voltage or pilot duty limit.
- Simple ON-OFF switching - readily understood and easily serviced- Eliminates cold drafts on system startup.

Application: Electric Heat Contactor

Temperature Ratings: -4°F to +149°F (-20°C to +65°C)

Tradeline Value: Tradeline

| Material Number | Poles | Coil Ratings Voltage | Contact Connections (coil) | Electrical Connections | Contact Ratings (resistive) | Approximate, Dimensions |
|-----------------|-------|----------------------|--|---|--|--|
| R8246A1038/U | 2 | 24 Vac | No. 10 terminal clamp screws and double male 1/4 inch quick-connects | Male 1/4 in. (6 mm) quick-connects plus terminal clamp screws | 48 A @ 240/277 Vac 1st pole resistive only | 2 3/16 in. high x 2 5/16 in. wide x 3 5/16 in. deep (56 mm high x 58 mm wide x 84 mm deep) |

Contactors Selection Guide

Contactors Selection Guide

| Economy Contactors | | | | | | | |
|--------------------|--|----------------------------|----------------|------------------|------------------|--|-----------|
| Poles | Contact Ratings (AFL @ 240, 277, 480, 600 Vac) | Input Voltage/Coil Voltage | Product Number | Main Connections | Coil Connections | Contact Ratings (Resistive @ 240, 277, 480, 600 Vac) | Switching |
| 1 | 30A | 24 Vac | DP1030A1001/U | CHS | Q | 40A | SPST |
| 2 | | 24 Vac | DP2030A1004/U | CHS | Q | 40A | DPST |
| | | 120 Vac | DP2030B1003/U | CHS | Q | 40A | DPST |
| | | 208 Vac/240 Vac | DP2030C1002/U | CHS | Q | 40A | DPST |
| | 40A | 24 Vac | DP2040A1003/U | CHS | Q | 50A | DPST |
| | | 120 Vac | DP2040B1002/U | CHS | Q | 50A | DPST |
| | | 208 Vac/240Vac | DP2040C1001/U | CHS | Q | 50A | DPST |

| PowerPro Contactors - ARI 780/790 Rated | | | | | | | |
|---|--|----------------------------|----------------|------------------|------------------|--|-----------|
| Poles | Contact Ratings (AFL @ 240, 277, 480, 600 Vac) | Input Voltage/Coil Voltage | Product Number | Main Connections | Coil Connections | Contact Ratings (Resistive @ 240, 277, 480, 600 Vac) | Switching |
| 1 with shunt | 25A | 24 Vac | DP1025A5006/U | LC | Q | 30A | SPST |
| 1 | 30A | 24 Vac | DP1030A5014/U | LC | Q | 48A | SPST |
| | 40A | 24 Vac | DP1040A5005/U | LC | Q | 50A | SPST |
| | 2 | 30A | 24 Vac | DP2020A5022/U | LC | Q | 25A |
| 120 Vac | | | DP2020B5039/U | LC | Q | 25A | DPST |
| 30A | | 24 Vac | DP2030A5013/U | LC | Q | 40A | DPST |
| | | 120 Vac | DP2030B5004/U | LC | Q | 40A | DPST |
| | | 120 Vac | DP2030B5012/U | LC | Q | 40A | DPST |
| | | 208 Vac/240 Vac | DP2030C5003/U | LC | Q | 40A | DPST |
| | | 208 Vac/240 Vac | DP2030C5011/U | LC | Q | 40A | DPST |
| | | 277 Vac | DP2030D5002/U | LC | Q | 40A | DPST |
| 40 | | 24 Vac | DP2040A5004/U | LC | Q | 48A | DPST |
| | | 120 Vac | DP2040B5003/U | LC | Q | 50A | DPST |
| | 208 Vac/240 Vac | DP2040C5002/U | LC | Q | 50A | DPST | |
| 3 | 30A | 24V | DP3030A5004/U | LC | Q, CHS | 40A | DPST |
| | | 120V | DP3030B5003/U | LC | Q, CHS | 40A | DPST |
| | | 208 Vac/240 Vac | DP3030C5002/U | LC | Q, CHS | 40A | DPST |
| | 40A | 24 Vac | DP3040A5003/U | LC | Q, CHS | 50A | DPST |
| | | 120 Vac | DP3040B5002/U | LC | Q, CHS | 50A | DPST |
| | | 208 Vac/240 Vac | DP3040C5001/U | LC | Q, CHS | 50A | DPST |
| | 50A | 24 Vac | DP3050A5002/U | LC | Q, CHS | 63A | DPST |
| | | 120 Vac | DP3050B5001/U | LC | Q, CHS | 63A | DPST |
| | | 208 Vac/240 Vac | DP3050C5010/U | LC | Q, CHS | 63A | DPST |
| | 60A | 24 Vac | DP3060A5001/U | LC | Q, CHS | 75A | DPST |
| | | 120 Vac | DP3060B5010/U | LC | Q, CHS | 75A | DPST |
| | | 208 Vac/240 Vac | DP3060C5009/U | LC | Q, CHS | 75A | DPST |
| 3 | 75A | 24 Vac | DP3075A5017/U | LC | Q, CHS | 94A | DPST |
| | | 120 Vac | DP3075B5016/U | LC | Q, CHS | 94A | DPST |
| | | 208 Vac/240 Vac | DP3075C5015/U | LC | Q, CHS | 94A | DPST |
| | 90A | 120 Vac | DP3090B5007/U | LC | Q, CHS | 120A | DPST |
| | | 208 Vac/240 Vac | DP3090C5006/U | LC | Q, CHS | 120A | DPST |
| 4 | 40A | 24 Vac | DP4040A5002/U | LC | Q, CHS | 50A | DPST |
| | | 120 Vac | DP4040B5001/U | LC | Q, CHS | 50A | DPST |
| | | 208 Vac/240 Vac | DP4040C5010/U | LC | Q, CHS | 50A | DPST |

Connectors Key

CHS - #10-32 Combination Head Screw
 Q - Quick Connect
 SS - Sems Screw

LC - Lug Connector
 S - # 6 Screw
 TCS - Terminal Clamp Screw

Temp Rating: -4°F to 149°F

Approvals: UL, CSA

ARI -780: 500,000 cycle mechanical life; 200,000 cycle electrical life; 10,000 cycle recycle life

Electric Heat Contactors

| Electric Heat Contactor | | | | | | | | |
|-------------------------|--|----------------------------|----------------|----------------------------|------------------|------------------|---|---|
| Poles | Contact Ratings (AFL @ 240, 277, 480, 600 Vac) | Input Voltage/Coil Voltage | Product Number | Dimensions (in.) H x W x D | Main Connections | Coil Connections | Contact Ratings (Resistive @ 240/277, 480, 600 Vac) | Special Features |
| 2 | 30 | 24 Vac | R8246A1038 | 2.2 x 2.3 x 3.3 | Q, S | TCS, Q | 48A @ 240/277 Vac | First Pole Resistive Only, Second Pole Resistive/Inductive Combined. ARI 780/790 rated. |

Connectors Key

CHS - #10-32 Combination Head Screw

Q - Quick Connect

SS - Sems Screw

LC - Lug Connector

S - # 6 Screw

TCS - Terminal Clamp Screw

Temp Rating: -4°F to 149°F

Approvals: UL, CSA

ARI -780: 500,000 cycle mechanical life; 200,000 cycle electrical life; 10,000 cycle recycle life

Relays

Q633 Plate-Mounted Relay Receptacle



For installing R4222, R8222 and R4228, R8228 relays on junction boxes.

- Use with appropriate relay and AT72D1683 or AT72D1691 SUPER TRADELINE Transformer.
- Includes relay receptacle, cover and eight leadwires.

Approvals, CSA: Recognized

Approvals, Underwriters Laboratories Inc.: UL Component Recognized

Tradeline Value: Tradeline

| Material Number | Approximate, Dimensions |
|-----------------|--|
| Q633A1007/U | 4 in. x 4 in. plate (102 x 102 mm plate) |

R24 Heat Sequencer



Honeywell R24 Series Heat Sequencers are solid-state positive temperature coefficient (PTC) heaters that mount in any position. Quick-connect terminals speed up installation and the R24 Series Heaters conveniently replace a wide range of models.

- Solid-state PTC Heaters
- Quick-connect terminals
- Shock and vibration resistant
- Mounts in any position
- Contact ratings - to 25 Amps at 120 or 240 Volts, and 12.5 Amps at 480 Volts
- Full-load rating auxiliary contacts
- Standard operating ambience temperature between -40°C and 73.8°C (-40°F and 165°F)
- UL approved, CSA/CUR approval pending

Approvals, Underwriters Laboratories Inc.: UL File 237660

Input Voltage: 24V

Electrical Connections: Solder or screw type 1/4 in. quick connect

Contact Ratings (resistive): 25A Resistive and 14A Inductive at 120Vac

| Material Number | Number of switches/devices | Number of on-timings | Timing Delay | Application |
|-----------------|----------------------------|----------------------|--|-------------------------|
| R24AA1008/U | 1 | 1 | On-timing – 1 to 20 sec: Off-timing – 40 to 110 sec | Electric Heat |
| R24AA2006/U | 1 | 1 | On-timing – 1 to 25: Heat: Off-timing – 65 to 115: Cool | Heat Pump - Air Handler |
| R24AA3004/U | 1 | 1 | On-timing – 30 to 90 sec: Off-timing – 1 to 30 sec | Electric Heat |
| R24BA1006/U | 2 | 1 | On-timing – 1 to 20 sec (first and second switch): Off-timing – 40 to 110 sec (first and second switch) | Electric Heat |
| R24BA3002/U | 2 | 1 | On-timing – 30 to 90 sec (first and second switch): Off-timing – 1 to 30 sec (first and second switch) | Electric Heat |
| R24CB4007/U | 3 | 2 | On-timing – 1 to 110 sec (first, second, and third switches): Off-timing – 1 to 110 sec (first, second, and third switches) | Electric Heat |
| R24DB4005/U | 4 | 2 | On-timing – 1 to 110 sec (first, second, third and fourth switches): Off-timing – 1 to 110 sec (first, second, third, and fourth switches) | Electric Heat |
| R24ED5007/U | 5 | 4 | On-timing – 1 to 160 sec (first, second, third, fourth and fifth switches): Off-timing – 1 to 160 sec (first, second, third, fourth and fifth switches) | Electric Heat |

R4222; R8222 General Purpose and R8228 Heavy Duty Switching Relays



Provide general purpose switching for refrigeration and air conditioning equipment, appliances, vending machines and similar applications.

- Molded terminal numbers and circuit diagram on top of relay provide easy identification for wiring and checking system operation.
- Untaped coil assures cooler operation.
- Laminated magnet construction for higher efficiency.
- Base designed for easy replacement of competitive relays.
- Plug compatible with Stevco 90-340 and Mars 90340.

Electrical Connections: R4222, R8222, R8228D have single quick-connects on poles, double quick-connects on coil terminals; R8228B have double quick-connects on poles and double quick-connects on coil terminals

Frequency: 50 Hz; 60 Hz

Pilot Duty Ratings: For all models EXCEPT R8228 - Minimum: 3 VA @ 24 Vac, 120 Vac, & 480 Vac; Maximum: 25 VA @ 24 Vac, 125 VA @ 120 Vac, 240 Vac, & 480 Vac; Resistive: 3 A @ 277 Vac (0.75 power factor); PowerPile: (Normally Open Contacts Only) 0.25 A @ 0.25 to 12 Vdc

Temperature Ratings: -20°F to +150°F (-29°C to +66°C)

Approximate, Dimensions: 1 7/8 in. high x 2 5/32 in. wide x 2 3/8 in. deep (48 mm high x 55 mm wide x 60 mm deep.)

Approvals, CSA: Certified: File No. LR35066, Guide No. 184-N-13.13

Approvals, Underwriters Laboratories Inc.: UL Listed: File No. E49809, Guide No. NKCR2

Accessories:

129384A/U – Case and Cover Assembly

| Material Number | Switching | Coil Ratings Voltage | Contact Ratings (AFL) | Contact Ratings (AIR) | Contact Ratings (resistive) | Tradeline Value |
|-----------------|--------------------------------|----------------------|---|---|---|-----------------|
| R4222B1082/U | SPDT | 120 V | 3 A @ 480 Vac; 6 A @ 208 Vac, 240 Vac, 277 Vac; 12 A @ 120 Vac | 18 A @ 480 Vac; 35 A @ 208 Vac, 240 Vac, 277 Vac, 60 A @ 120 Vac | 10 A @ 480 Vac; 20.8 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac | Tradeline |
| R4222D1013/U | DPDT | 120 V | 3 A @ 480 Vac; 6 A @ 208 Vac, 240 Vac, 277 Vac; 12 A @ 120 Vac | 18 A @ 480 Vac; 35 A @ 208 Vac, 240 Vac, 277 Vac, 60 A @ 120 Vac | 10 A @ 480 Vac; 20.8 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac | Tradeline |
| R4222D1021/U | DPDT | 208V; 240 V | 3 A @ 480 Vac; 6 A @ 208 Vac, 240 Vac, 277 Vac; 12 A @ 120 Vac | 18 A @ 480 Vac; 35 A @ 208 Vac, 240 Vac, 277 Vac, 60 A @ 120 Vac | 10 A @ 480 Vac; 20.8 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac | Tradeline |
| R4222N1002/U | DPDT - Pilot Duty | 120 V | 3 A @ 480 Vac; 6 A @ 208 Vac, 240 Vac, 277 Vac; 12 A @ 120 Vac | 18 A @ 480 Vac; 35 A @ 208 Vac, 240 Vac, 277 Vac, 60 A @ 120 Vac | 10 A @ 480 Vac; 20.8 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac | Tradeline |
| R8222B1067/U | SPDT | 24 Vac | 3 A @ 480 Vac; 6 A @ 208 Vac, 240 Vac, 277 Vac; 12 A @ 120 Vac | 18 A @ 480 Vac; 35 A @ 208 Vac, 240 Vac, 277 Vac, 60 A @ 120 Vac | 10 A @ 480 Vac; 20.8 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac | Tradeline |
| R8222D1014/U | DPDT | 24 Vac | 3 A @ 480 Vac; 6 A @ 208 Vac, 240 Vac, 277 Vac; 12 A @ 120 Vac | 18 A @ 480 Vac; 35 A @ 208 Vac, 240 Vac, 277 Vac, 60 A @ 120 Vac | 10 A @ 480 Vac; 20.8 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac | Tradeline |
| R8222N1011/U | DPDT - Pilot Duty | 24 Vac | 3 A @ 480 Vac; 6 A @ 208 Vac, 240 Vac, 277 Vac; 12 A @ 120 Vac | 18 A @ 480 Vac; 35 A @ 208 Vac, 240 Vac, 277 Vac, 60 A @ 120 Vac | 10 A @ 480 Vac; 20.8 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac | Tradeline |
| R8222U1079/U | DPST N.O. (1 P & 1 pilot duty) | 24 V | 3 A @ 480 Vac; 6 A @ 208 Vac, 240 Vac, 277 Vac; 12 A @ 120 Vac | 60 A @ 120 Vac; 18 A @ 480 Vac; 35 A @ 208 Vac, 240 Vac, 277 Vac | 15 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac; 10 A @ 480 Vac | Tradeline |
| R8222V1003/U | DPDT (1 P & 1 pilot duty) | 24 Vac | 3 A @ 480 Vac; 6 A @ 208 Vac, 240 Vac, 277 Vac; 12 A @ 120 Vac | 18 A @ 480 Vac; 35 A @ 208 Vac, 240 Vac, 277 Vac, 60 A @ 120 Vac | 10 A @ 480 Vac; 20.8 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac | Tradeline |
| R8228B1012/U | SPDT | 24 Vac | 5 A @ 480 Vac; 12 A @ 277 Vac; 18 A @ 208 Vac, 240 Vac; 16/18 A @ 120 Vac | 30 A @ 480 Vac; 72 A @ 208 Vac, 240 Vac, 277 Vac; 96/72 A @ 120 Vac | 12.5 A @ 480 Vac; 25 A @ 120 Vac; 208 Vac, 240 Vac, 277 Vac | Tradeline |
| R8228D1018/U | DPST N.O. | 24 Vac | 3.0 A @ 480 Vac; 5.5 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac | 8 A @ 480 Vac; 15 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac | 12.5 A @ 480 Vac; 25 A @ 120 Vac; 208 Vac, 240 Vac, 277 Vac | Tradeline |

Relays

R4225; R8225 Fan Relay



Provide general purpose and heavy duty switching for refrigeration and air conditioning equipment, appliances, vending machines and similar applications.

- Molded terminal numbers and circuit diagram on top of relay provide easy identification for wiring and checking system operation.
- Untaped coil assures cooler operation.
- Laminated magnet construction for higher efficiency.
- Base designed for easy replacement of competitive relays.
- Double quick-connect coil terminals.
- Plug compatible with Steveco 90-340 and Mars 90340.

Electrical Connections: Leadwires

Frequency: 60 Hz

Coil Ratings Voltage: 24 Vac

Temperature Ratings: 115°F (46°C)

Approximate, Dimensions: 2 11/16 in. high x 2 1/2 in. wide x 3 7/16 in. deep (68 mm high x 64 mm wide x 87 mm deep)

Approvals, CSA: Certified: File No. LR95329-1

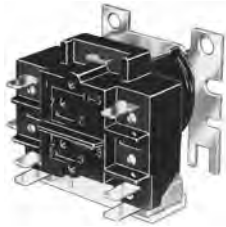
Approvals, Underwriters Laboratories Inc.: UL Listed: File No. E14480, Vol. 1. Sec. 3, Guide No. NLDX

Accessories:

129384A/U – 129384A is a Case and Cover Assembly

| Material Number | Switching | Contact Ratings (AFL) | Contact Ratings (AIR) | Contact Ratings (resistive) | Tradeline Value |
|-----------------|-----------|---|--|--|-----------------|
| R8225A1017/U | SPDT | N.O. 8.0A, N.C., 7.0A, Aux. 2.0A @ 240 Vac; N.O. 14.0A, N.C. 14.0A, Aux. 3.0A @ 120 Vac | N.O. 48.0 A, N.C. 42.0 A, Aux. 12.0 A @ 240 Vac; N.O. 84.0 A, N.C. 84.0 A, Aux. 18.0 A @ 120 Vac | N.O. 8.0 A, N.C. 7.0 A, Aux. 2.0 A @ 240 Vac; N.O. 16.0 A, N.C. 14.0 A, Aux. 3.0 A @ 120 Vac | Tradeline |
| R8225D1003/U | DPST N.O. | N.O. 8.0 A, Aux. 2.0 A @ 240 Vac; N.O. 14.0 A, Aux. 3.0 A @ 120 Vac | N.O. 48.0 A, Aux. 12.0 A @ 240 Vac; N.O. 84.0 A, Aux. 18.0 A @ 120 Vac | N.O. 8.0 A, Aux. 2.0 A @ 240 Vac; N.O. 16.0 A, Aux. 3.0 A @ 120 Vac | |

R8229 Electric Heat Relay



Normally Closed Relays And Contactors For Load Control Systems.

- Close and leave load operating in case of wiring or control problem, or relay malfunction.
- Consume no power while load is powered; require power only to shed load.
- Operate directly from a pilot duty rated relay in the load control system.

Electrical Connections: #10 combination head screws

Contact Ratings (AFL): 2.8 A @ 600Vac; 3.5 A @ 480Vac; 7.0 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac

Contact Ratings (ALR): 14 A @ 600 Vac; 17.5 A @ 480 Vac; 35 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac

Contact Ratings (resistive): 10.0 A @ 600 Vac; 12.5 A @ 480 Vac; 25 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac

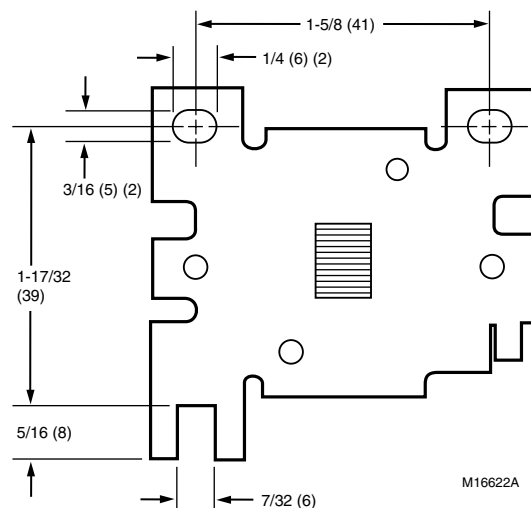
Temperature Ratings: -40°F to +165°F (-40°C to +74°C)

Approximate, Dimensions: 2 3/16 in. high x 2 3/32 in. wide x 2 1/4 in. deep (56 mm high x 53 mm wide x 57 mm deep)

Approvals, CSA: Recognized

Approvals, Underwriters Laboratories Inc.: UL Component Recognized

Dimensions in inches (millimeters)



| Material Number | Coil Ratings Voltage | Frequency | Switching | Includes | Tradeline Value |
|-----------------|----------------------|-----------|-----------|-------------------------|-----------------|
| R8229A1005/U | 24 Vac | 60 Hz | DPST | | |
| R8229A1021/U | 24 Vac | 60 Hz | DPST | Extra Mounting Hardware | Super Tradeline |

R8330 Electric Furnace Sequencer



One control switches a fan and up to three elements on and off in sequence.

- Isolated fan switch has positive interlock to assure fan is on when the element is on, and fan is off when the element is off.
- Replaces many of the OEM and competitive models.
- Auxiliary switch controls a second R8330 in application with more than three elements.
- Cycles ON within two minutes, OFF within four minutes.
- Ten-second minimum delay between stages (makes sequence and break sequence.)
- Timings meet EEI-NEMA and ARI 280 Standards.

Electrical Connections: Terminals

Frequency: 60 Hz

Contact Ratings (AFL): 1/3 hp; 7.2 A @ 120 Vac; 3/4 hp; 6.9 A @ 120 Vac, 208 Vac, 240 Vac; 4.9 A @ 277 Vac

Contact Ratings (ALR): 1/3 hp; 43.2 A @ 120 Vac; 3/4 hp; 41.4 A @ 120 Vac, 208 Vac, 240 Vac; 29.4 A @ 277 Vac

Temperature Ratings: -20°F to +150°F (-29°C to +66°C)

Approximate, Dimensions: 3 1/16 in. high x 4 13/16 in. wide x 2 11/32 in. deep (78 mm high x 122 mm wide x 60 mm deep)

Approvals, CSA: Certified

Approvals, Underwriters Laboratories Inc.: UL Listed

| Material Number | Coil Ratings Voltage |
|-----------------|----------------------|
| R8330D1039/U | 24 Vac |

R841 Electric Heating Relay



Use with two-wire, 24 Vac thermostat to control electric heating equipment such as baseboard, ceiling cable and duct heaters.

- Operate with each cycle of the thermostat (4 to 6 cycles per hour).
- Each relay switches up to a 5,000 W load.
- Contacts make and break in about 75 seconds.
- Mount in any position.
- Includes 1/2 in. (13 mm) male conduit bushing.

Frequency: 50 Hz; 60 Hz

Switching: SPST

Contact Ratings (AFL): 7.0 A @ 208 Vac, 240 Vac, 277 Vac; 14 A @ 120 Vac

Contact Ratings (resistive): 22 A @ 120 Vac, 208 Vac, 240 Vac; 19 A @ 277 Vac

Temperature Ratings: -20°F to +150°F (-29°C to +66°C)

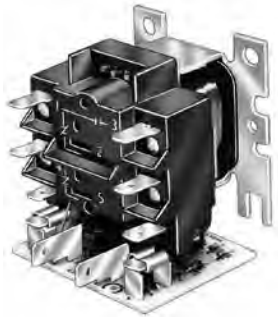
Approximate, Dimensions: 3 7/8 in. high x 2 13/16 in. wide x 1 1/2 in. deep (98 mm high x 71 mm wide x 38 mm deep)

Approvals, CSA: Certified

| Material Number | Coil Ratings Voltage | Electrical Connections | Contact Ratings (ALR) | Approvals, Underwriters Laboratories Inc. | Includes | Tradeline Value |
|-----------------|----------------------|------------------------|--|--|--|-----------------|
| R841C1029/U | 240 V | Leadwires | 42 A @ 208 Vac, 240 Vac, 277 Vac; 84 A @ 120 Vac | UL Listed | Enclosure w/conduit bushing. | |
| R841C1151/U | 600 Vac | | 84 A @ 120 Vac; 42 A @ 208 Vac, 240 Vac, 277 Vac | UL Component Recognized: File No. E47434, Guide No. XAPX | Enclosure w/ conduit bushing and an integral transformer. | |
| R841C1169/U | 208 V; 240 Vac | Leadwires | 84 A @ 120 Vac; 42 A @ 208 Vac, 240 Vac, 277 Vac | UL Component Recognized: File No. E47434, Guide No. XAPX | Enclosure w/ conduit bushing and an integral transformer. | Tradeline |
| R841C1227/U | 24 V | Leadwires | 42 A @ 208 Vac, 240 Vac, 277 Vac; 84 A @ 120 Vac | UL Listed | | Tradeline |
| R841D1036/U | 24 V | Leadwires | 84 A @ 120 Vac; 42 A @ 208 Vac, 240 Vac, 277 Vac | UL Component Recognized: File No. E47434, Guide No. XAPX | Enclosure w/conduit bushing. | Tradeline |
| R841E1068/U | 24 V | Leadwires | 42 A @ 208 Vac, 240 Vac, 277 Vac; 84 A @ 120 Vac | UL Listed | Enclosure w/conduit bushing and integral transformer; dual load. | Tradeline |

Relays Parts and Accessories

ST82 Fan Manager



Use in compressor-run air conditioning, heat pump systems and heating-cooling systems. Delays the indoor blower shutoff after the compressor has shut off.

- Eighty-second delay on break.
- Combination electronic time delay board and R8222 relay saves wiring time.
- Molded terminal numbers and circuit diagram on top of relay and letter-coded terminals on time delay board provide easy identification for wiring and system checkout.
- Laminated magnet construction for high efficiency.
- Reduces stratification and saves energy.

Electrical Connections: 1/4 in. quick-connect terminals

Frequency: 50 Hz; 60 Hz

Contact Ratings (AFL): 3 A @ 480 Vac; 6 A @ 208 Vac, 240 Vac, 277 Vac; 12 A @ 120 Vac

Contact Ratings (ALR): 18 A @ 480 Vac; 35 A @ 208 Vac, 240 Vac, 277 Vac, 60 A @ 120 Vac

Contact Ratings (resistive): 15 A @ 208 Vac, 240 Vac, 277 Vac; 15 A @ 120 Vac; 10 A @ 480 Vac

Timing Delay: 80 seconds

Temperature Ratings: -20°F to +150°F (-29°C to +66°C)

Approximate Dimensions: 2 7/32 in. high x 2 1/16 in. wide x 2 9/16 in. deep (56 mm high x 52 mm wide x 65 mm deep)

Approvals, CSA: Certified: File No. LR95329-17

Approvals, Underwriters Laboratories Inc.: UL Listed: File No. MP466, Vol. 22, Sec. 1, Guide No. MBPR2

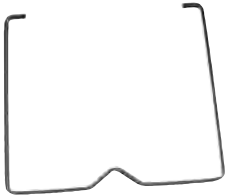

Tradeline Value: Tradeline

| Material Number | Coil Ratings Voltage | Switching |
|-----------------|----------------------|-----------|
| ST82D1004/U | 24 Vac | DPDT |

Relay Accessories

| Material Number | Description | |
|-----------------|--------------------------------------|---|
| 129384A/U | 129384A is a Case and Cover Assembly |  |

Relay Parts

| Material Number | Description | |
|-----------------|--|---|
| 135887/U | 135887 is a Bail Lock Down Assembly |  |
| 135959/U | 135959 is a Relay Receptacle, sold in bulk packs |  |

Relays Selection Guide

| Relays | | | | | | | |
|--------------------------------|-------------------|----------------|-------------------------|------------------------|-------------------------------|----------------------------------|-----------------------|
| Input Voltage/ Coil Voltage | Switching | Product Number | Full Load Amp Rating | Frequency | Dimensions (in.) H x W x D | Electrical Connections (main) | Special Features |
| 24 V | DPST N.O. | R8228D1018/U | 5.5 | 60Hz/50Hz | 1 7/8 x 2 5/32 x 2 3/8 | Q | — |
| | DPDT (1 P&1PDuty) | R8222V1003/U | 12 | 60Hz/50Hz | 1 7/8 x 2 5/32 x 2 3/8 | Q | — |
| | DPDT - Pilot Duty | R8222N1011/U | | 60Hz/50Hz | 1 7/8 x 2 5/32 x 2 3/8 | Q | Pilot Duty |
| | DPDT | R8222D1014/U | | 60Hz/50Hz | 1 7/8 x 2 5/32 x 2 3/8 | Q | — |
| | DPDT | ST82D1004/U | | 60Hz/50Hz | 2 7/32 x 2 1/16 x 2 9/16 | Q | 80 sec shut off delay |
| | SPDT | R8222B1067/U | | 60Hz/50Hz | 1 7/8 x 2 5/32 x 2 3/8 | Q | — |
| DPDT - Pilot Duty | R4222N1002/U | 60Hz/50Hz | | 1 7/8 x 2 5/32 x 2 3/8 | Q | — | |
| 120 V | DPDT | R4222D1013/U | 14 | 60Hz/50Hz | 1 7/8 x 2 5/32 x 2 3/8 | Q | — |
| | SPDT | R4222B1082/U | | 60Hz/50Hz | 1 7/8 x 2 5/32 x 2 3/8 | Q | — |
| | DPDT | R4222D1021/U | | 60Hz/50Hz | 1 7/8 x 2 5/32 x 2 3/8 | Q | — |
| 208V/240V | DPDT | R4222D1021/U | 14 | 60Hz/50Hz | 1 7/8 x 2 5/32 x 2 3/8 | Q | — |
| 24V | SPDT | R8225A1017/U | | 60Hz | 2 11/16 x 2 1/2 x 3 7/16 | L | — |
| | DPST N.O. | R8225D1003/U | 18 | 60Hz | 2 11/16 x 2 1/2 x 3 7/16 | L | — |
| 24 V | SPDT | R8228B1012/U | | 60Hz/50Hz | 1 7/8 x 2 5/32 x 2 3/8 | Q | — |

Connectors Key

CHS - Combination Head Screw
Q - Quick Connect

L - Leadwires
T - Terminals

Switching Key

SPST - Single Pole Single Throw
DPST - Double Pole Single Throw

DPDT - Double Pole Double Throw
SPDT - Single Pole Double Throw

Approvals: UL, CSA

Temp Rating: -20°F to +150°F; 115°F max for R8225

Electric Heat Sequencer Selection Guide

Electric Heat Selection Guide

| Electric Heat Relays | | | | | | | |
|--------------------------------|-----------|----------------|-------------------------|-----------|-------------------------------|----------------------------------|--|
| Input Voltage/ Coil Voltage | Switching | Product Number | Full Load Amp Rating | Frequency | Dimensions (in.) H x W x D | Electrical Connections (main) | Special Features |
| 24V | DPST | R8229A1005/U | 7 | 60Hz | 2 3/16 x 2 3/32 x 2 1/4 | CHS | — |
| | | R8229A1021/U | | 60Hz | 2 3/16 x 2 3/32 x 2 1/4 | CHS | Extra Mounting Hardware |
| 24V | SPST | R841D1036/U | 14 | 60Hz/50Hz | 3 7/8 x 2 13/16 x 1 1/2 | L | 18A resistive @ 120/208/240VAC. Requires Transformer. Canada - replaces R841D1028 |
| 208/240V | SPST | R841C1169/U | | 60Hz/50Hz | 3 7/8 x 2 13/16 x 1 1/2 | L | 18A resistive @ 120/208/240VAC. Integral Transformer. Canada - replaces R841C1029 |
| 240V | SPST | R841E1068/U | | 60Hz/50Hz | 3 7/8 x 2 13/16 x 1 1/2 | L | 22A resistive @120/208/240VAC. Dual Load/ integral transformer |
| 600V | SPST | R841C1151/U | | 60Hz/50Hz | 3 7/8 x 2 13/16 x 1 1/2 | L | 18A resistive @120/208/240VAC. Integral Transformer. Canada |

| Electric Furnace Sequencer | | | | | | |
|----------------------------|----------------|----------------------|-----------|----------------------------|-------------------------------|--|
| Input Voltage/Coil Voltage | Product Number | Full Load Amp Rating | Frequency | Dimensions (in.) H x W x D | Electrical Connections (main) | |
| 24V | R8330D1039/U | 7.2 | 60Hz | 3 1/16 x 4 13/16 x 2 11/32 | T | |

| Electric Heat Contactor | | | | | | |
|----------------------------|-----------|----------------|----------------------|----------------------------|-------------------------------|--|
| Input Voltage/Coil Voltage | Switching | Product Number | Full Load Amp Rating | Dimensions (in.) H x W x D | Electrical Connections (main) | |
| 24V | DPST | R8246A1038/U | 30 | 2-3/16 x 2-1/4 x 3-5/16 | Q,S | |

Connectors Key

CHS - Combination Head Screw
Q - Quick Connect
L - Leadwires

T - Terminals
S - # 6 Screw

Switching Key

SPST - Single Pole Single Throw
DPST - Double Pole Single Throw

DPDT - Double Pole Double Throw
SPDT - Single Pole Double Throw

Approvals: UL, CSA

Temp Rating: -20°F to +150°F; 115°F max for R8225

Electric Heat Sequencer Selection Guide

Electric Heat Sequencer Selection Guide

| Electric Heat Sequencers | | | | | | | | | | | | |
|--------------------------|----------|---------|--------------|-------|-------|-------|--------|---------------|--------|-------|-------|--------|
| Product Number | Switches | Timings | Timings - ON | | | | | Timings - OFF | | | | |
| | | | M1-M2 | M3-M4 | M5-M6 | M7-M8 | M9-M10 | M1-M2 | M3-M4 | M5-M6 | M7-M8 | M9-M10 |
| R24AA1008/U | 1 | 1 | 1-20 | — | — | — | — | 40-110 | — | — | — | — |
| R24AA3004/U | 1 | 1 | — | — | 30-90 | — | — | — | — | 1-30 | — | — |
| R24BA1006/U• | 2 | 1 | 1-20 | 1-20 | — | — | — | 40-110 | 40-110 | — | — | — |
| R24BA3002/U• | 2 | 1 | — | — | 30-90 | 30-90 | — | — | — | 1-30 | 1-30 | — |
| R24CB4007/U• | 3 | 2 | 1-110 | 1-110 | 1-110 | — | — | 1-110 | 1-110 | 1-110 | — | — |
| R24DB4005/U• | 4 | 2 | 1-110 | 1-110 | 1-110 | 1-110 | — | 1-110 | 1-110 | 1-110 | 1-110 | — |
| R24ED5007/U• | 5 | 4 | 1-160 | 1-160 | 1-160 | 1-160 | 1-160 | 1-160 | 1-160 | 1-160 | 1-160 | 1-160 |

| Heat Pump-Air Handler Model | | | | | | |
|-----------------------------|----------------|----------|---------|------|-------|--|
| WR Xref | Product Number | Switches | Timings | Heat | Cool | |
| 24A34-15 | R24AA2006 | 1 | 1 | 1-25 | 75-95 | |

Notes:

*M1-M2 and M3-M4 are always first switches to turn ON and last to turn OFF. All other switches are random ON and random OFF.

*R24ED5007 Switch contacts designated F1 - F2 instead of M1 - M2.

*R24BB3428 is Double Pole Double Throw model.

*R24AA2006 is a Single Pole Double Throw model for Heat Pump Applications.

- These contacts switch simultaneously.

Switching Key

SPST - Single Pole Single Throw

DPST - Double Pole Single Throw

DPDT - Double Pole Double Throw

SPDT - Single Pole Double Throw

Temperature: -50°F to 165°F

Terminations: [Solder or screw type 1/4" quick connect]

Ratings: Estimate - 25A Resistive and 14A Inductive at 120Vac

Agency: UL/CSA

ON Time: Elapsed time (min. to max.) to make contact after heater is energized.

OFF Time: Elapsed time (min. to max.) to break contact after heater is de-energized.

Electric Heat Sequencer Cross Reference

| Honeywell | White-Rodgers | SUPCO | GEMLINE | A1 | T-O-D | Mars |
|-------------|---------------|-------|---------|-------|--------|-------|
| R24AA1008/U | 24A34-1 | Q101 | GS101 | TDR10 | 12S20 | 33841 |
| R24AA3004/U | 24A34-2 | Q102 | GS102 | TDR15 | 12S20 | 33842 |
| R24BA1006/U | 24A34-3 | Q103 | GS103 | TDR20 | 12S22 | 33844 |
| R24BA3002/U | 24A34-4 | Q104 | GS104 | TDR25 | 12S22 | 33845 |
| R24CB4007/U | 24A34-5 | Q105 | GS105 | TDR30 | 15S21 | 33832 |
| R24DB4005/U | 24A34-6 | Q106 | GS106 | | 15S22 | 33833 |
| R24ED5007/U | 24A34-14 | | | | 15S241 | 33848 |
| R24AA2006/U | 24A34-15 | | | | | |

Fan Centers

R8239 Control Center



Dimensions: 4 1/2 in. high, 4 3/16 in. wide, 3 3/32 in. deep (114 mm high, 106 mm wide, 79 mm deep)

Frequency: 50 Hz; 60 Hz

Electrical Ratings: 12 W maximum

Coil Ratings: Inrush – 20 VA maximum, 17 VA nominal.; Sealed – 10 VA maximum, 9 VA nominal

Includes NEMA standard transformer for excellent voltage control. Provides low voltage control of line voltage fan motors and auxiliary circuits in heating, cooling, and heating-cooling circuits.

- NEMA standard Type D transformer (included) powers 24 Vac control systems.
- Provides overload protection for transformer.
- Convenient connections for thermostat and heating and cooling equipment wiring.
- Mounts on standard 4 x 4 junction box.
- Can be mounted in any indoor location without additional enclosure.
- Relay is easily replaced without disturbing wiring.
- Includes relay enclosure.

Approvals, NEMA Standard: NEMA Standard DC20-1992

Approvals, Underwriters Laboratories Inc.: UL Listed

Approvals, CSA: Certified

| Material Number | Applications | Horsepower | Voltage | Supply Voltage | Tradeline Value | Switching Action | Includes |
|-----------------|---|------------|---------------------------|---------------------------|-----------------|------------------|----------|
| R8239A1052/U | For 24 Vac fan control applications | 3/4 HP | 120 Vac | 40 VA; 26.5 V - Secondary | | SPDT | R8222B |
| R8239B1076/U | For system with F50 Electronic Air Cleaner humidifier and blower motor. | 3/4 HP | 120 Vac; 208 Vac; 240 Vac | 50 VA; 26.5 V - Secondary | Super Tradeline | DPDT | R8222D |

R8285 Control Center



Dimensions: 4 3/16 in. high, 4 1/2 in. wide, 2 13/16 in. deep. (106 mm high, 114 mm wide, 71 mm deep)

Frequency: 60 Hz

Electrical Ratings: 11 W maximum

Provides low voltage control of line voltage fan motors and auxiliary circuits in heating, cooling, or air conditioning systems.

- Transformer powers low voltage control systems and provides overload protection.
- Low voltage terminal board provides convenient connections for thermostat and heating and cooling equipment wiring.
- Mounts on standard 4 x 4 in. junction box.
- Relay is easily replaced without disturbing wiring.

Approvals, Underwriters Laboratories Inc.: UL Component Recognized; File No. E4436, Vol.15, Sec. 1, Guide No. XAPX2

Approvals, CSA: Certified: File No. LR95329-17

| Material Number | Applications | Horsepower | Voltage | Supply Voltage | Tradeline Value | Switching Action | Comments | Includes |
|-----------------|--|------------|---------------------------|---------------------------|-----------------|--|---|----------|
| R8285A1048/U | For single- or two speed fan. | 3/4 HP | 120 Vac | 40 VA; 26.5 V - Secondary | Tradeline | SPDT | | R8222B |
| R8285B1053/U | For "Total Comfort" applications with electronic air cleaner, humidifier and blower motor. | 3/4 HP | 120 Vac; 208 Vac; 240 Vac | 40 VA; 26.5 V - Secondary | Tradeline | DPDT | | R8222D |
| R8285D5001/U | For 24 Vac fan control applications | 3/4 HP | 120 Vac | 50 VA; 26.5 V - Secondary | | DPST (One Power Rated, One Pilot Duty) | For Hydronic Applications; use with SV9600 SmartValve™ System and other systems that require 50 VA capacity | R8222U |

Fan Center Selection Guide

| Fan Centers | | | | | | | | | |
|-------------------------|------------------------------------|-----------|----------------|------|----------------------------|------------------|-----------------------|-----------|------------------|
| Electrical Ratings - VA | Electrical Ratings - Input Voltage | Switching | Product Number | NEMA | Dimensions (in.) H x W x D | Main Connections | Secondary Connections | Frequency | Special Features |
| 40VA | 120 Vac | SPDT | R8239A1052/U | Yes | 4 1/2 x 4 3/16 x 3 3/32 | Leadwires | Leadwires | 60Hz/50Hz | Tradeline |
| 50VA | 120 Vac 240 Vac 208 Vac | DPDT | R8239B1076/U | Yes | 4 1/2 x 4 3/16 x 3 3/32 | Leadwires | Leadwires | 60Hz/50Hz | Super Tradeline |
| 40VA | 120 Vac | SPDT | R8285A1048/U | No | 4 3/16 x 4 1/2 x 2 13/16 | Leadwires | Leadwires | 60Hz/50Hz | Tradeline |
| | 120 Vac 240 Vac 208 Vac | DPDT | R8285B1053/U | No | 4 3/16 x 4 1/2 x 2 13/16 | Leadwires | Leadwires | 60Hz/50Hz | Tradeline |
| 50VA | 120 Vac | DPDT | R8285D5001/U | No | 4 3/16 x 4 1/2 x 2 13/16 | Leadwires | Leadwires | 60Hz/50Hz | — |

Approvals: UL, CSA

Temp Rating: -20°F to +105°F

Mounting: Standard 4 X 4 in. junction box

SuperTradeline models include extra hardware.

Transformers

AT120; AT140; AT150A,B; AT175A,B General Purpose Transformer



AT120A

AT140A

AT120B, AT140B, AT140D, AT150B

AT150A

AT175A

Honeywell 20 VA general purpose transformers power 24 Vac circuits. Although typically used in heating/cooling control systems, they can be used in any application that doesn't exceed the load ratings.

- Provides color-coded leadwires for primary connections and screw terminals for secondary connections
- Includes fixed 1/4 inch (6mm) male quick-connects or color-coded leadwires for primary and secondary connections
- Meets NEC Class 2 requirements and Underwriters Laboratories Standard UL 1585
- Identified Class 2 not wet, Class 3 wet

Frequency: 60 Hz

Approvals, Underwriters Laboratories Inc.: UL Listed: A,C,F models.

File # E14881, UL Component Recognized: B, D, E models. File# E14881

Approvals, CSA: CSA Certified: A & B models.

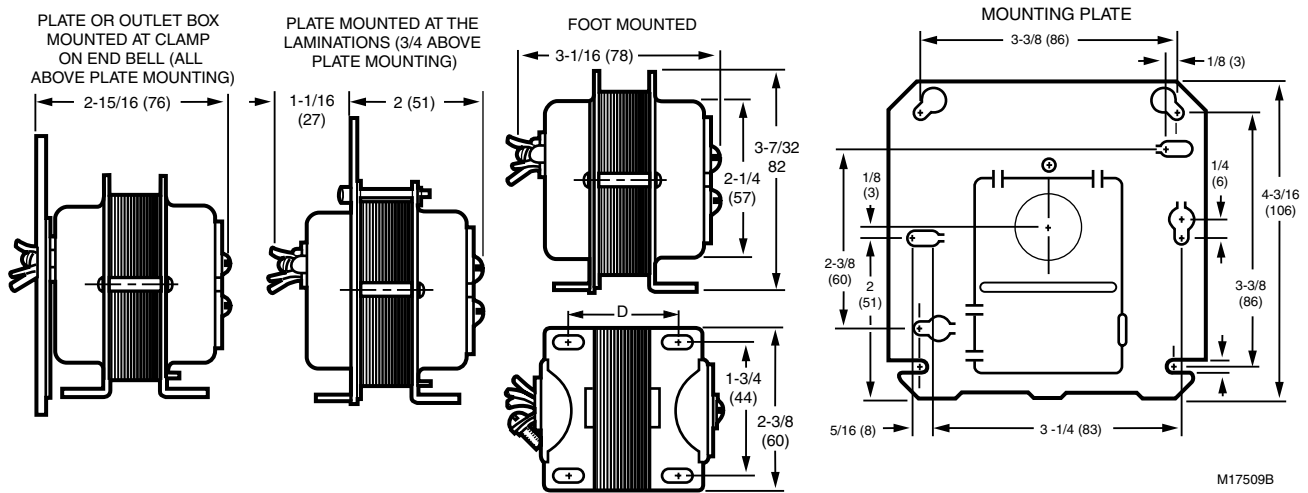
Approvals, N.E.C.: NEC Class 2

Temperature Range: -20°F to +105°F (-29°C to +41°C)

| Material Number | Electrical Connections (Primary) | Electrical Connections (Secondary) | Electrical Ratings-Primary voltage | Electrical Ratings-Secondary voltage | Electrical Ratings, Output | Mounting | Approximate, Dimensions | Includes |
|-----------------|--|--|------------------------------------|--------------------------------------|----------------------------|---|--|------------------|
| AT120A1004/U | 9 in. leadwires (229 mm leadwires) | (2) screw terminals | 120 Vac, 208 Vac, 240 Vac | 27 V.O.C. | 24 Vac at 20 VA | Foot mounted, plate mounted on 2 x 4 in. or 4 x 4 in. outlet box, clamp mounted using outlet box knockout, or panel mounted | 2 7/8 in. high x 1 7/8 in. wide x 2 15/16 in. deep (73 mm high x 48 mm wide x 75 mm deep) | |
| AT120B1028/U | 9 in. leadwires (229 mm leadwires) | 9 in. leadwires (229 mm leadwires) | 120 Vac | 27 V.O.C. | 24 Vac at 20 VA | Foot-mounted | 1 11/16 in. high x 3 3/16 in. wide x 1 3/4 in. deep (43 mm high x 81 mm wide x 75 mm deep) | Metal end bells |
| AT140A1000/U | 9 in. leadwires (229 mm leadwires) | (2) screw terminals | 120 Vac | 27 V.O.C. | 24 Vac at 40 VA | Foot mounted, plate mounted on 2 x 4 in. or 4 x 4 in. outlet box, clamp mounted using outlet box knockout, or panel mounted | 3 3/16 in. high x 2 3/8 in. wide x 3 1/8 in. deep (81 mm high x 60 mm wide x 79 mm deep) | Metal end bells |
| AT140A1018/U | 9 in. leadwires (229 mm leadwires) | (2) screw terminals | 120 Vac | 27 V.O.C. | 24 Vac at 40 VA | Foot mounted, plate mounted on 2 x 4 in. or 4 x 4 in. outlet box, clamp mounted using outlet box knockout, or panel mounted | 3 3/16 in. high x 2 3/8 in. wide x 3 1/8 in. deep (81 mm high x 60 mm wide x 79 mm deep) | Metal end bells |
| AT140B1016/U | 1/4 in. male quick-connects (6.4 mm male quick connects) | 1/4 in. male quick-connects (6.4 mm male quick-connects) | 120 Vac | 27 V.O.C. | 24 Vac at 40 VA | Foot-mounted | 1 11/16 in. high x 3 1/2 in. wide x 1 3/4 in. deep (43 mm high x 89 mm wide x 75 mm deep) | Plastic end caps |
| AT140B1206/U | 9 in. leadwires (229 mm leadwires) | 9 in. leadwires (229 mm leadwires) | 120 Vac | 27 V.O.C. | 24 Vac at 40 VA | Foot-mounted | 1 11/16 in. high x 3 1/2 in. wide x 1 3/4 in. deep (43 mm high x 89 mm wide x 75 mm deep) | Plastic end caps |
| AT140B1214/U | 9 in. leadwires (229 mm leadwires) | 9 in. leadwires (229 mm leadwires) | 120 Vac, 208 Vac, 240 Vac | 27 V.O.C. | 24 Vac at 40 VA | Foot-mounted | 1 11/16 in. high x 3 1/2 in. wide x 1 3/4 in. deep (43 mm high x 89 mm wide x 75 mm deep) | Plastic end caps |
| AT150A1007/U | 9 in. leadwires (229 mm leadwires) | (2) screw terminals | 120 Vac, 208 Vac, 240 Vac | 27.5 V.O.C. | 24 Vac at 50 VA | Foot mounted, plate mounted on 2 x 4 in. or 4 x 4 in. outlet box, clamp mounted using outlet box knockout, or panel mounted | 1 11/16 in. high x 3 3/16 in. wide x 1 3/4 in. deep (43 mm high x 81 mm wide x 75 mm deep) | Metal end bells |

| Material Number | Electrical Connections (Primary) | Electrical Connections (Secondary) | Electrical Ratings-Primary voltage | Electrical Ratings-Secondary voltage | Electrical Ratings, Output | Mounting | Approximate, Dimensions | Includes |
|-----------------|--|---|------------------------------------|--------------------------------------|----------------------------|---|---|------------------|
| AT150B1146/U | 9 in. leadwires (229 mm leadwires) | 9 in. leadwires (229 mm leadwires) | 120 Vac, 208 Vac, 240 Vac | | 24 Vac at 50 VA | Foot-mounted | 1 11/16 in. high x 3 1/2 in. wide x 1 3/4 in. deep (43 mm high x 89 mm wide x 75 mm deep) | |
| AT150B1252/U | 9 in. leadwires with 1/4 in. male quick-connects (229 mm leadwires with 1/4 in. male quick-connects with plastic (2) end covers) | 9 in. leadwires with 1/4 in. male quick-connects with plastic (2) end covers (229 mm leadwires with 6.4 mm male quick-connects with plastic (2) end covers) | 277 Vac | 27.5 V.O.C. | 24 Vac at 50 VA | Foot-mounted | 1 11/16 in. high x 3 1/2 in. wide x 1 3/4 in. deep (43 mm high x 89 mm wide x 75 mm deep) | Plastic end caps |
| AT175A1008/U | 9 in. leadwires (229 mm leadwires) | (2) screw terminals | 120 Vac, 208 Vac, 240 Vac | 27.5 V.O.C. | 24 Vac at 75 VA | Foot mounted, plate mounted on 2 x 4 in. or 4 x 4 in. outlet box, clamp mounted using outlet box knockout, or panel mounted | 3 3/16 in. high x 2 3/8 in. wide x 3 5/8 in. deep (81 mm high x 60 mm wide x 92 mm deep) | Metal end bells |
| AT175B1055/U | 9 in. leadwires (229 mm leadwires) | 9 in. leadwires (229 mm leadwires) | 120 Vac | | 24 Vac at 75 VA | Foot-mounted | 2 1/3 in. high x 3 9/16 in. wide x 2 1/3 in. deep (59 mm high x 90 mm wide x 68 mm deep) | |

Dimensions in inches (millimeters)



AT140 Universal Mount Transformer



The AT140 is a 24V, 40 VA universal mount transformer.

- Provides a low voltage power source for any Honeywell zone control panel or damper
- Powers up to 5 ZD or ARD damper motors and 14 RRD damper motors from one 40VA transformer
- Mounting options include plate or foot mounting
- 120/240 VAC primary

Electrical Connections (Primary): 9 in. leadwires (229 mm leadwires)
Electrical Connections (Secondary): (2) screw terminals
Frequency: 60 Hz

Approvals, Underwriters Laboratories Inc.: UL Listed
Approvals, CSA: CSA Listed
Temperature Range: -20°F to +105°F (-29°C to +41°C)

| Material Number | Electrical Ratings-Primary voltage | Electrical Ratings-Secondary voltage | Electrical Ratings, Output | Mounting |
|-----------------|------------------------------------|--------------------------------------|----------------------------|-------------------------------------|
| AT140A1042/U | 208 Vac, 240 Vac | 24V | 24 Vac at 40 VA | Universal (Plate, Foot or Knockout) |

Transformers

AT150F Circuit Breaker Transformer



Honeywell 50 VA general purpose transformers power 24 Vac circuits. Although typically used in heating/cooling control systems, they can be used in any application that doesn't exceed the load ratings.

- Color-coded lead wires for primary connections and screw terminals for secondary connections
- Includes fixed 1/4 inch (6mm) male quick-connects (AT150A models only) or color-coded lead wires for primary and secondary connections
- Meets Underwriters Laboratories Standard UL 1585
- Identified Class 2 not wet, Class 3 wet

Electrical Connections (Primary): 9 in. leadwires (229 mm leadwires)

Electrical Connections (Secondary): 9 in. leadwires (229 mm leadwires)

Frequency: 60 Hz

Approximate, Dimensions: 3 3/16 in. high x 2 3/16 in. wide x 3 5/8 in. deep (81 mm high x 56 mm wide x 93 mm deep)

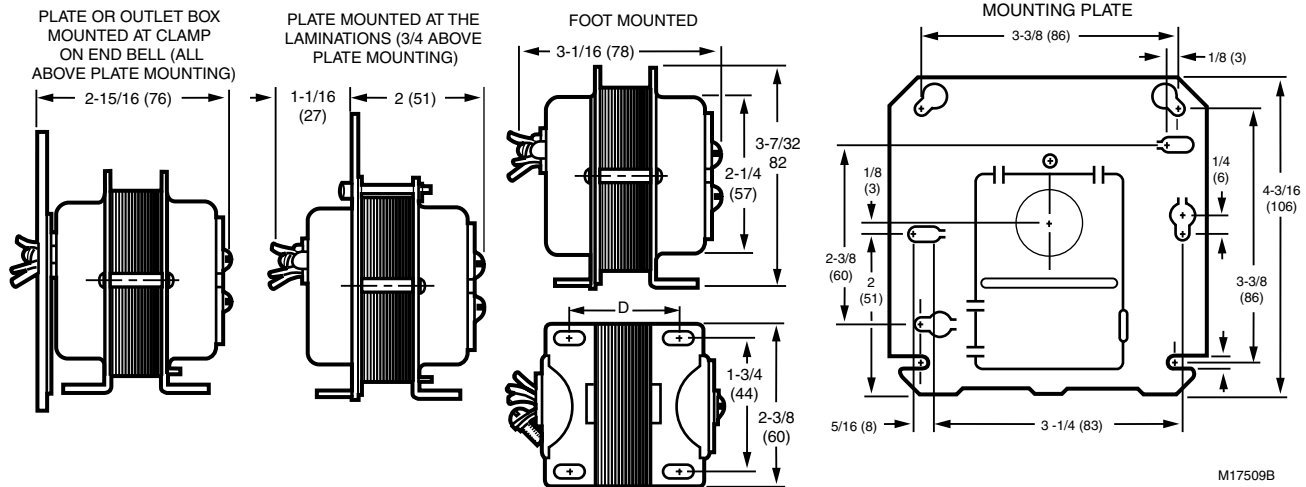
Approvals, Underwriters Laboratories Inc.: UL Listed: File no. E14881, Guide no. XOKV.

Approvals, CSA: Certified: File No. LR95329-18

Tradeline Value: Tradeline

Temperature Range: -20°F to +105°F (-29°C to +41°C)

Dimensions in inches (millimeters)



| Material Number | Electrical Ratings-Primary voltage | Electrical Ratings-Secondary voltage | Electrical Ratings, Output | Mounting | Includes |
|-----------------|------------------------------------|--------------------------------------|----------------------------|--|--|
| AT150F1022/U | 120 Vac, 208 Vac, 240 Vac | 27.5 V.O.C. | 24 Vac at 50 VA | Includes 1/2 14 NPSM conduit connector and lock nut for mounting on plate or panel (not included) with 7/8 in. knockout, and feet for surface mount. | Metal end bells and button for manually resetting the breaker |
| AT150F1030/U | 208 Vac, 277 Vac, 480 Vac | 27.5 V.O.C. | 24 Vac at 50 VA | Includes 1/2 14 NPSM conduit connector and lock nut for mounting on plate or panel (not included) with 7/8 in. knockout, and feet for surface mount. | Button for manually resetting the circuit breaker and metal end bells. |

AT175F Circuit Breaker Transformer



Honeywell 75 VA general purpose transformers power 24 Vac circuits. Although typically used in heating/cooling control systems, they can be used in any application that doesn't exceed the load ratings.

- Color-coded lead wires for primary connections and screw terminals for secondary connections
- Includes fixed 1/4 inch (6mm) male quick-connects (AT175A models only) or color-coded lead wires for primary and secondary connections
- Meets Underwriters Laboratories Standard UL 1585
- Identified Class 2 not wet, Class 3 wet

Electrical Connections (Primary): 9 in. leadwires (229 mm leadwires)

Electrical Connections (Secondary): 9 in. leadwires (229 mm leadwires)

Frequency: 60 Hz

Approximate, Dimensions: 3 3/16 in. high x 2 3/16 in. wide x 3 15/16 in. deep (81 mm high x 56 mm wide x 102 mm deep)

Approvals, Underwriters Laboratories Inc.: UL Listed: File no. E14881, Guide no. XOKV.

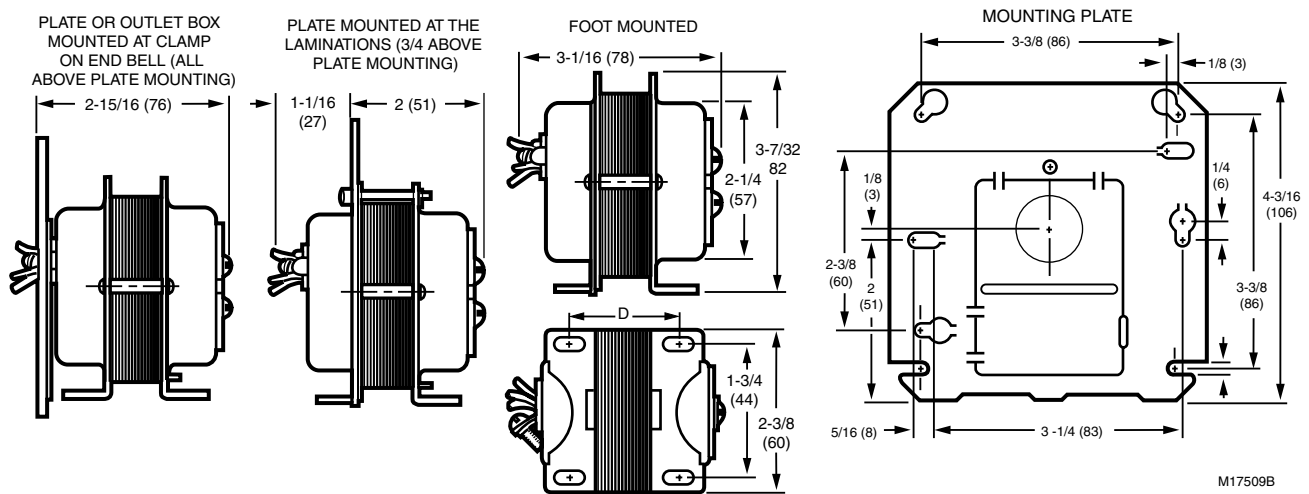
Approvals, CSA: Certified: File No. LR95329-18

Includes: Button for manually resetting the circuit breaker and metal end bells.

Tradeline Value: Tradeline

Temperature Range: -20°F to +105°F (-29°C to +41°C)

Dimensions in inches (millimeters)



M17509B

| Material Number | Electrical Ratings-Primary voltage | Electrical Ratings-Secondary voltage | Electrical Ratings, Output | Mounting |
|-----------------|------------------------------------|--------------------------------------|----------------------------|--|
| AT175F1023/U | 120 Vac, 208 Vac, 240 Vac | 27.5 V.O.C. | 24 Vac at 75 VA | Includes 1/2 14 NPSM conduit connector and lock nut for mounting on plate or panel (not included) with 7/8 in. knockout, and feet for surface mount. |
| AT175F1031/U | 208 Vac, 277 Vac, 480 Vac | 27.5 V.O.C. | 24 Vac at 75 VA | Includes 1/2 14 NPSM conduit connector and lock nut for mounting on plate or panel (not included) with 7/8 in. knockout, and feet for surface mount. |

Residential Combustion Control

Transformers

AT20; AT40 NEMA Standard Universal Stripped-Down Transformer



Honeywell 19 VA transformers power 24V systems including thermostats, gas valves and relays.

- Channel frame mounting feet and slots allow for three mounting positions
- Features color-coded leadwires for primary connections
- Overload protection provided
- Energy limiting, meet NEMA DC20-1992 Standard
- Meet NEC Class 2 not wet, Class 3 wet and UL 1585 requirements

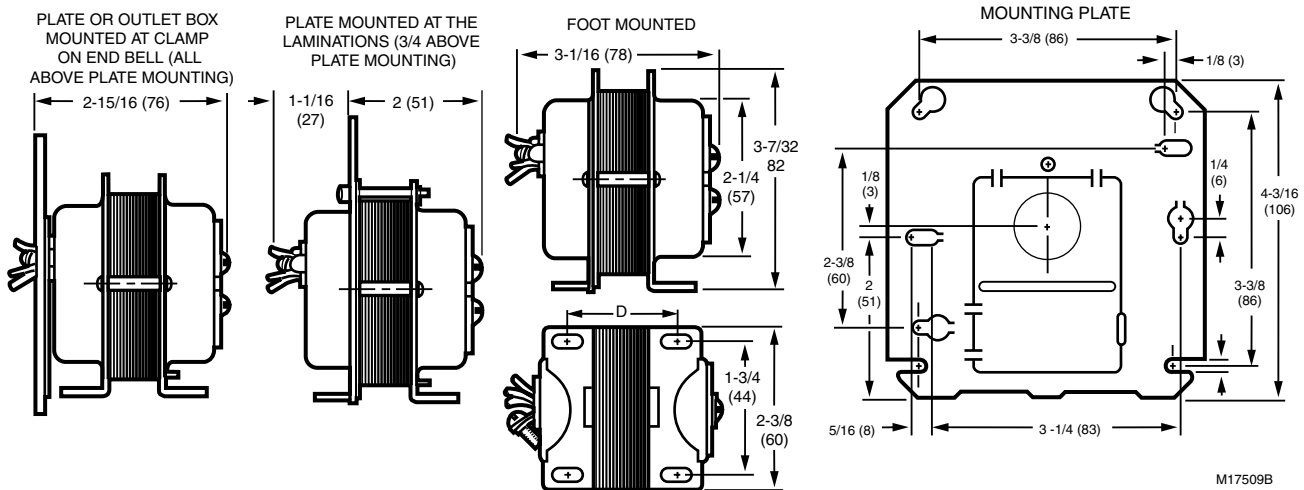
Electrical Connections (Primary): 9 in. color coded primary and secondary leadwires (229 mm color coded primary and secondary leadwires)

Electrical Connections (Secondary): 9 in. color coded primary and secondary leadwires (229 mm color coded primary and secondary leadwires.)

Frequency: 50 Hz; 60 Hz

Mounting: Channel Frame Mounting allows for Direct, Horizontal, or Vertical Foot mounting.

Dimensions in inches (millimeters)



| Material Number | Electrical Ratings-Primary voltage | Electrical Ratings-Secondary voltage | Electrical Ratings, Output | NEMA Rating | Approximate, Dimensions |
|-----------------|------------------------------------|--------------------------------------|----------------------------|-------------|---|
| AT20A1123/U | 120 Vac | 26.5 V.O.C. | 24 Vac at 19 VA | NEMA type B | 2 in. high x 2 1/4 in. wide x 1 7/8 in. deep (50.8 mm high x 57 mm wide x 47.6 mm deep) |
| AT40A1121/U | 120 Vac | 26.5 V.O.C. | 24 Vac at 40 VA | NEMA type D | 2 3/32 in. high x 2 5/8 in. wide x 2 3/16 in. deep (53 mm high x 67 mm wide x 56 mm deep) |
| AT40A1139/U | 240 Vac | 26.5 V.O.C. | 24 Vac at 40 VA | NEMA type D | 2 3/32 in. high x 2 5/8 in. wide x 2 3/16 in. deep (53 mm high x 67 mm wide x 56 mm deep) |

AT72 NEMA Standard Transformer



Honeywell 40 VA transformers power 24V systems including thermostats, gas valves and relays.

- Override protection
- Color-coded lead wires for primary connections
- Energy limiting and meets NEMA Standard DC20-1992
- Transformers are marked NEMA Type D enclosure
- Meets NEC Class 2 not wet, Class 3 wet and UL 1585 requirements

Electrical Ratings, Output: 24 Vac at 40 VA

Frequency: 50 Hz; 60 Hz

NEMA Rating: NEMA type D

Approvals, Underwriters Laboratories Inc.: UL Component Recognized

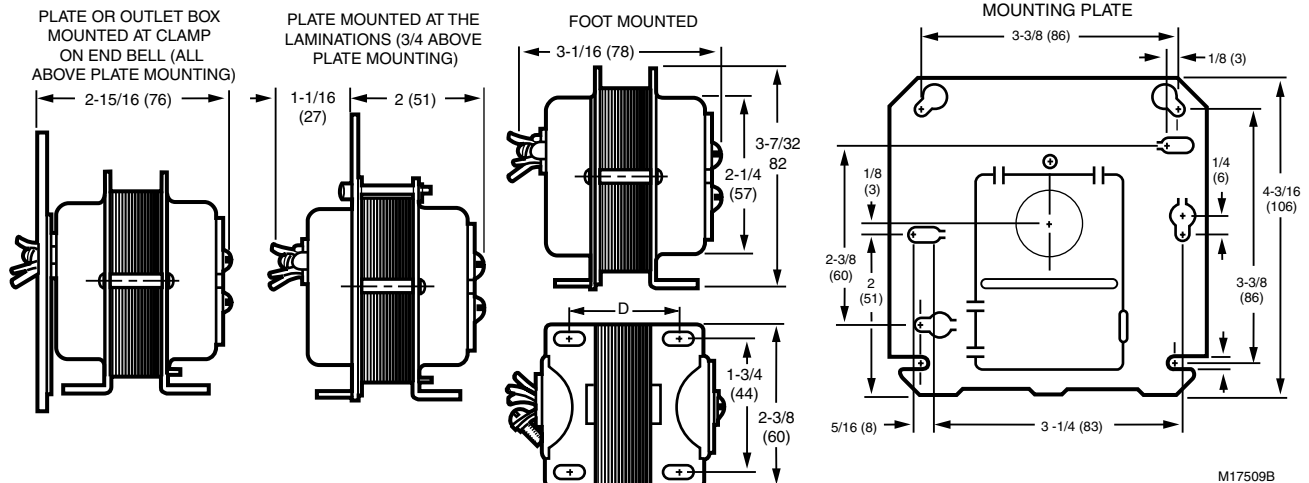
Approvals, CSA: Certified

Approvals, N.E.C.: NEC Class 2

Temperature Range: -20°F to +105°F (-29°C to +41°C)

| Material Number | Electrical Connections (Primary) | Electrical Connections (Secondary) | Electrical Ratings-Primary voltage | Electrical Ratings-Secondary voltage | Mounting | Approximate, Dimensions | Tradeline Value |
|-----------------|---|------------------------------------|------------------------------------|--------------------------------------|---|--|-----------------|
| AT72D1006/U | 9 in. leadwires (229 mm leadwires) | (2) screw terminals | 120 Vac | 26.5 V.O.C. | 4 x 4 in. plate-mounted, protruding into junction box | 3 7/32 in. high x 2 7/32 in. wide x (1 1/16 into plate x 2 in. above plate) deep (81.8 mm high x 56.4 mm wide x (27 mm into box x 50.8 mm above box) deep) | |
| AT72D1030/U | 9 in. leadwires (229 mm leadwires) | (2) screw terminals | 220 Vac 50 Hz with 40 VA | | 4 x 4 in. plate-mounted, protruding into junction box | 3 7/32 in. high x 2 7/32 in. wide x (1 1/16 into plate x 2 in. above plate) deep (81.8 mm high x 56.4 mm wide x (27 mm into box x 50.8 mm above box) deep) | |
| AT72D1089/U | 1/2 in. male conduit spud with 9 in. leadwires (13 mm male conduit spud with 9 in. leadwires) | (2) screw terminals | 120 Vac | 26.5 V.O.C. | Foot-mounted | 3 7/32 in. high x 2 7/32 in. wide x 3 1/16 in. deep (81.8 mm high x 56.4 mm wide x 77.8 mm deep) | |
| AT72D1188/U | 9 in. leadwires (229 mm leadwires) | 9 in. leadwires (229 mm leadwires) | 120 Vac | 26.5 V.O.C. | 4 x 4 in. plate-mounted, protruding into junction box | 3 7/32 in. high x 2 7/32 in. wide x 2 15/16 in. deep (81.8 mm high x 56.4 mm wide x 74.6 mm deep) | |
| AT72D1683/U | 9 in. leadwires (229 mm leadwires) | (2) screw terminals | 120 Vac | 26.5 V.O.C. | Can be foot mounted, plate mounted on 4 x 4 in., 4 in. octagon, or 2 x 4 in. electrical boxes (transformer all above plate or 3/4 above plate); or clamp mounted via a junction box knockout. | 3 7/32 in. high x 2 7/32 in. wide x 3 1/16 in. deep (81.8 mm high x 56.4 mm wide x 77.8 mm deep) | Super Tradeline |
| AT72D1691/U | 9 in. leadwires (229 mm leadwires) | (2) screw terminals | 208 Vac, 240 Vac | 26.5 V.O.C. | Can be foot mounted, plate mounted on 4 x 4 in., 4 in. octagon, or 2 x 4 in. electrical boxes (transformer all above plate or 3/4 above plate); or clamp mounted via a junction box knockout. | 3 7/32 in. high x 2 7/32 in. wide x 3 1/16 in. deep (81.8 mm high x 56.4 mm wide x 77.8 mm deep) | Super Tradeline |

Dimensions in inches (millimeters)



Transformers

AT87 NEMA Standard Transformer



Honeywell 48 VA powers 24V air conditioning circuits and other applications that do not exceed the listed ratings.

- Meets NEC Class 2 not wet, Class 3 wet and UL 1585 requirements.
- Transformer marked NEMA Type E.
- Overload protection provided.
- Color-coded leadwires for primary connections.

Frequency: 50 Hz; 60 Hz

NEMA Rating: NEMA type E

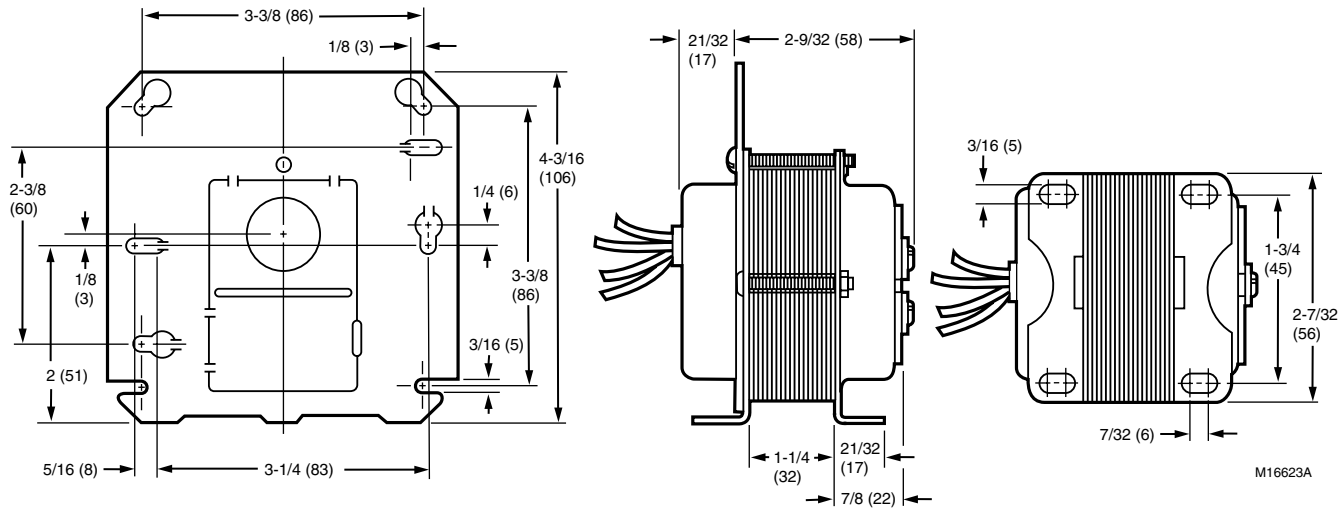
Approximate, Dimensions: 2 15/16 in. deep x 2 7/32 in. wide
(74.6 mm deep x 65.4 mm wide)

Approvals, Underwriters Laboratories Inc.: UL Component Recognized.

Approvals, CSA: Certified

Temperature Range: -20°F to +105°F (-29°C to +41°C)

Dimensions in inches (millimeters)



M16623A

| Material Number | Electrical Connections (Primary) | Electrical Connections (Secondary) | Electrical Ratings-Primary voltage | Electrical Ratings-Secondary voltage | Electrical Ratings, Output | Mounting | Tradeline Value | Includes |
|-----------------|-------------------------------------|-------------------------------------|------------------------------------|--------------------------------------|----------------------------|---|-----------------|---|
| AT87A1049/U | 12 in. leadwires (305 mm leadwires) | 12 in. leadwires (305 mm leadwires) | 120 Vac | 26.5 V.O.C. | 24 Vac at 48 VA | Foot-mounted | | Energy limiting overload protection |
| AT87A1106/U | 13 in. leadwires (330 mm leads) | (2) screw terminals | 120 Vac, 208 Vac, 240 Vac | 26.5 V.O.C. | 24 Vac at 48 VA | Foot mounted or 4 x 4 in. plate-mounted | Super Tradeline | Built-in protection. Primary winding burnout. |
| AT87A1155/U | 12 in. leadwires (305 mm leadwires) | 12 in. leadwires (305 mm leadwires) | 480 Vac | 26.5 V.O.C. | 24 Vac at 48 VA | Foot-mounted | | Energy limiting overload protection |
| AT87A1189/U | 12 in. leadwires (305 mm leadwires) | 12 in. leadwires (305 mm leadwires) | 277 Vac | 26.5 V.O.C. | 24 Vac at 48 VA | Foot-mounted | | Energy limiting overload protection |

AT88 Transformer



Honeywell 75 VA transformers powers 24 Vac air conditioning circuits and other applications that do not exceed the listed ratings.

- Meets NEC Class 2 not wet, Class 3 wet and U.L. 1585 requirements.
- Overload protection provided.
- Color-coded leadwires for primary connections.

Electrical Connections (Primary): 12 in. leadwires (305 mm leadwires)

Electrical Connections (Secondary): 12 in. leadwires (305 mm leadwires)

Frequency: 50 Hz; 60 Hz

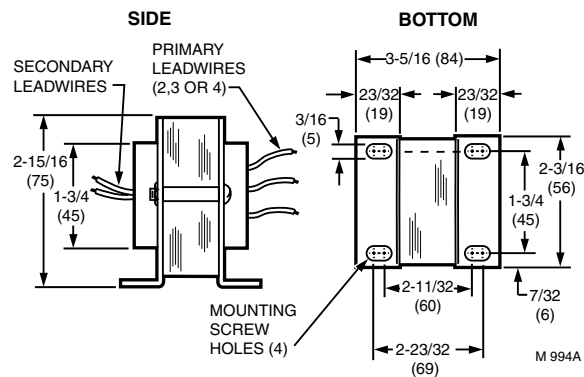
Approximate, Dimensions: 2 15/16 in. high x 2 3/16 in. wide x 3 5/16 in. deep (75 mm high 56 mm wide x 84 mm deep)

Dimensions in inches (millimeters)

Approvals, Underwriters Laboratories Inc.: UL Component Recognized.

Approvals, CSA: Certified

Temperature Range: -20°F to +105°F (-29°C to +41°C)



| Material Number | Electrical Ratings-Primary voltage | Electrical Ratings-Secondary voltage | Electrical Ratings, Output | Mounting | Includes |
|-----------------|------------------------------------|--------------------------------------|----------------------------|--------------|---|
| AT88A1005/U | 120 Vac | 26.5 V.O.C. | 24 Vac at 75 VA | Foot-mounted | Internally fused secondary for overload protection. |
| AT88A1021/U | 208 Vac, 240 Vac | 26.5 V.O.C. | 24 Vac at 75 VA | Foot-mounted | Internally fused secondary for overload protection. |
| AT88A1047/U | 480 Vac | 26.5 V.O.C. | 24 Vac at 75 VA | Foot-mounted | Internally fused secondary for overload protection. |

Transformer Selection Guide

Transformer Selection Guide

| Transformers (NEMA Rated) | | | | | | | |
|---------------------------|------------------------------------|----------------|----------|------------------|-----------------------|-----------|---|
| Electrical Ratings - VA | Electrical Ratings - Input Voltage | Product Number | Mounting | Main Connections | Secondary Connections | Frequency | Dimensions (in.) H x W x D |
| 19VA | 120 Vac | AT20A1123/U | F | L | L | 60Hz/50Hz | 2 x 2 1/4 x 1 7/8 |
| 40VA | 120 Vac | AT72D1006/U | P | L | S | 60Hz/50Hz | 3 7/32 x 2 7/32 x (1 1/16 into x 2 in. above plate) |
| | 120 Vac | AT72D1089/U | F | L | S | 60Hz/50Hz | 3 7/32 x 2 7/32 x 3 1/16 |
| | 120 Vac | AT72D1188/U | P | L | L | 60Hz/50Hz | 3 7/32 x 2 7/32 x 2 15/16 |
| | 120 Vac | AT72D1683/U | M | L | S | 60Hz/50Hz | 3 7/32 x 2 7/32 x 3 1/16 |
| | 208 Vac, 240 Vac | AT72D1691/U | M | L | S | 60Hz/50Hz | 3 7/32 x 2 7/32 x 3 1/16 |
| 48VA | 277 Vac | AT87A1189/U | F | L | L | 60Hz/50Hz | 2 15/16 x 2 7/32 x 2 1/4 |
| | 480 Vac | AT87A1155/U | F | L | L | 60Hz/50Hz | 2 15/16 x 2 7/32 x 2 1/4 |
| 50VA | 120 Vac, 208 Vac, 240 Vac | AT87A1106/U | M | L | S | 60Hz/50Hz | 2 15/16 x 2 7/32 x 2 1/4 |

| Transformers (Not NEMA Rated) | | | | | | | | |
|-------------------------------|------------------------------------|----------------|----------|------------------|-----------------------|-----------|----------------------------|--|
| Electrical Ratings - VA | Electrical Ratings - Input Voltage | Product Number | Mounting | Main Connections | Secondary Connections | Frequency | Dimensions (in.) H x W x D | Special Features |
| 20VA | 120 Vac | AT120B1028/U | F | L | L | 60Hz | 1 11/16 x 3 3/16 x 1 3/4 | |
| | 120 Vac, 208 Vac, 240 Vac | AT120A1004/U | M | L | S | 60Hz | 2 7/8 x 1 7/8 x 2 15/16 | |
| 40VA | 120 Vac | AT140A1000/U | M | L | S | 60Hz | 3 3/16 x 2 3/8 x 3 1/8 | |
| | 120 Vac | AT140B1206/U | F | L | L | 60Hz | 1 11/16 x 3 1/2 x 1 3/4 | |
| | 120 Vac, 208 Vac, 240 Vac | AT140A1018/U | M | L | S | 60Hz | 3 3/16 x 2 3/8 x 3 1/8 | |
| | 120 Vac, 208 Vac, 240 Vac | AT140B1214/U | F | L | L | 60Hz | 1 11/16 x 3 1/2 x 1 3/4 | |
| 50VA | 120 Vac, 208 Vac, 240 Vac | AT150A1007/U | M | L | S | 60Hz | 1 11/16 x 3 3/16 x 1 3/4 | |
| | 120 Vac, 208 Vac, 240 Vac | AT150B1146/U | F | L | L | 60Hz | 1 11/16 x 3 1/2 x 1 3/4 | |
| | 120 Vac, 208 Vac, 240 Vac | AT150F1022/U | M | L | L | 60Hz | 3 3/16 x 2 3/16 x 3 5/8 | Button for resetting circuit breaker & metal end bells |
| | 208 Vac, 277 Vac, 480 Vac | AT150F1030/U | M | L | L | 60Hz | 3 3/16 x 2 3/16 x 3 5/8 | Button for resetting circuit breaker & metal end bells |
| | 277 Vac | AT150B1252/U | F | L, Q | L, Q | 60Hz/50Hz | 1 11/16 x 3 1/2 x 1 3/4 | |
| 75VA | 120 Vac | AT175B1055/U | F | L | L | 60Hz | 2 1/3 x 3 9/16 x 2 1/3 | |
| | 120 Vac, 208 Vac, 240 Vac | AT175A1008/U | M | L | S | 60Hz | 3 3/16 x 2 3/8 x 3 5/8 | |
| | 120 Vac, 208 Vac, 240 Vac | AT175F1023/U | M | L | L | 60Hz | 3 3/16 x 2 3/16 x 3 15/16 | Button for resetting circuit breaker & metal end bells |
| | 208 Vac, 277 Vac, 480 Vac | AT175F1031/U | M | L | L | 60Hz | 3 3/16 x 2 3/16 x 3 15/16 | Button for resetting circuit breaker & metal end bells |
| | 120 Vac | AT88A1005/U | F | L | L | 60Hz/50Hz | 2 15/16 x 2 3/16 x 3 5/16 | |
| | 208 Vac, 240 Vac | AT88A1021/U | F | L | L | 60Hz/50Hz | 2 15/16 x 2 3/16 x 3 5/16 | |
| | 480 Vac | AT88A1047/U | F | L | L | 60Hz/50Hz | 2 15/16 x 2 3/16 x 3 5/16 | |

Connectors Key
 Q - Quick Connect
 L - Leadwires
 T - Terminals
 S - # 6 Screw

Mounting Key
 F - Foot mounting
 P - Plate mounting
 M - Multiple mounting options

Oil Primaries Cross Reference

| Ignition Type | Universal* | Lockout Time (Sec.) | Blower Off Delay (Min) | Valve On Delay (Sec) | Alarm Contacts | Manual Trip Lever w/ LED Indicator | Honeywell | Beckett | Carlin Product | White-Rodgers | R7184U Service Part |
|---------------|--------------|---------------------|------------------------|----------------------|----------------|------------------------------------|--|-----------|--|------------------------------------|---------------------|
| Interrupted | R7284U1004/U | 15 | 2/4/6 | 0/15 | Yes | Yes | R7184U1004, R7184P1031, R7184P1049, R7184P1056, R7184P1064, R7184P1072 | 7505P125M | 50200-02S, 602000-2S, 6020002S015120, 6020002S030015, 6020002S030030, 6020002S030120, 6020002S030300, 6020002S030010 | | R7184U1004 |
| | R7284U1004/U | 15 | | | Yes | Yes | R7184A1026, R7184A1075, R7184A1000 | 7505A000 | 40200-02S | 669-640, 669-670 | R7184U1004 |
| | R7284U1004/U | 15 | | 15 | Yes | Yes | R7184B1024, R7184B1032, R7184B1016 | 7505B1500 | | | R7184U1004 |
| | R7284U1004/U | 15 | 0.25 | 15 | Yes | Yes | R7184P1080, R7184P1098 | 7505P1515 | | | R7184U1004 |
| | R7284U1004/U | 30 | 2/4/6 | 0/15 | Yes | No | R7184U1012 | | | | R7184U1012 |
| | R7284U1004/U | 30 | | | | No | R7184A1018, R7184A1034 | | 42230-02S | 669-440, 669-445, 669-470, 669-540 | R7184U1012 |
| | R7284U1004/U | 45 | 2/4/6 | 0/15 | Yes | No | R7184U1020 | | | | R7184U1020 |
| | R7284U1004/U | 45 | | | | | R7184A1042 | | | | R7184U1020 |
| Intermittent | R7284U1004/U | 15 | | | Yes | | R8184G1294, R8184G1302, R8184G4066, R8184G4074, R8184G4033, R8184G4090, R8184G1427, R8184G4058 | 7505A0000 | | 668-601, 668-670 | R7184U1004 |
| | R7284U1004/U | 30 | | | | | R8184G1393, R8184G1302, R8184G4074, R8184G4033 | | | 668-501 | R7184U1012 |
| | R7284U1004/U | 45 | | | | Yes | R8184G1286, R8184G1427, R8184G1458, R8184G4009, R8184G4025, R8184G4082, R8184G4108 | | 48245-S | 668-401, 668-415, 668-430, 668-515 | R7184U1020 |
| | R7284U1004/U | | | | Yes | | | | | 668-430 | |

* The R7284 does not have integrated alarm contacts

Oil Primaries

R7284B, U Interrupted Electronic Oil Primary



The R7284B, U Electronic Oil Primary is a line voltage, safety rated, interrupted and intermittent ignition oil primary control for residential oil fired burners used in boilers, forced air furnaces and water heaters. The R7284B, U used with a cad cell flame sensor operates an oil burner, spark igniter, and optional oil valve. The control works with a low voltage and optional high voltage thermostat. The primary controls fuel oil, senses flame, controls ignition spark (either interrupted or intermittent) and notifies through the EnviraCOM™ bus a remote alarm circuit when in lockout.

The R7284 Series of Oil Primary Controls can be used with both hydronic and forced air systems. When used with hydronic systems, line voltage switching Aquastat® Controllers normally provide for the starting and stopping of the combustion sequences. With forced air systems, both mechanical and electronic low voltage thermostats control the starting and stopping of the combustion process.

Approximate, Dimensions: 4 5/32 in. long x 4 11/32 in. wide x 2 1/2 in. high (105.4 mm long x 110.5 mm wide x 63.5 mm high)

Temperature Range: -40°F to +147°F (-40°C to +64°C)

Approvals, Underwriters Laboratories Inc.: UL and cUL Component Recognized

Mounting: Junction box on main burner

Electrical Connections: Burner motor, oil valve, ignition, cad cell, limit, thermostat, alarm

Electrical Rating, Contacts (full load): 7.4 A @ 120 Vac; 3.7 A @ 240 Vac

Electrical Rating, Contacts (locked rotor): 44.4 A @ 120 Vac; 22.2 A @ 240 Vac

| Material Number | Ignition Type | Timing, Safety Switch | Display | Description |
|-----------------|------------------------------|----------------------------|--------------------|--|
| R7284B1024/U | Interrupted | 15 sec. | Using LED only | Electronic Oil Primary with 15 seconds lock out timing |
| R7284U1004/U | Interrupted and Intermittent | Settable 15, 30 or 45 sec. | 2 Line LCD display | Electronic Oil Primary with selectable 15, 30 or 45 second lock out timing, selectable valve and blower delays, and two line LCD display |

R8184G Protectorelay® Oil Burner Control



Protectorelay® Oil Burner Control provides automatic, nonrecycling control of an intermittent ignition oil burner system.

- Controls oil burner, oil valve (if desired) and the ignition transformer in response to a call for heat.
- Solid state flame sensing circuit.
- LED on terminal strip indicates system lockout (available on some models).
- Remote lockout indication (available on some models).
- Enclosed safety switch with external reset button.
- Manual trip lever opens safety switch for system maintenance.
- Mounts on standard 4 x 4 in. junction box; select models may be mounted directly on burner housing.
- C554A Cadmium Sulfide Flame Detector and 24 Vac thermostat required.

| Model | Electrical Ratings | |
|----------------|---|---|
| | Full Load | Locked Rotor |
| 15 Sec, 30 Sec | 10 A @ 120 Vac, 60 Hz; 5 A @ 240 Vac, 60 Hz | 60 A @ 120 Vac, 60 Hz; 30 A @ 240 Vac, 60 Hz |
| 45 Sec | 7.4 A @ 120 Vac, 60 Hz; 3.7 A @ 240 Vac, 60 Hz | 44 A @ 120 Vac, 60 Hz; 22.2 A @ 240 Vac, 60 Hz |

Ignition Type: Intermittent

Mounting: For mounting on a standard 4 in. x 4 in. junction box or direct mounting on burner housing.

Approximate, Dimensions: 4 3/8 in. high x 4 1/8 in. wide x 2 1/2 in. deep (111 mm high x 104 mm wide x 64 mm deep)

Temperature Range: -40°F to +130°F (-40°C to +54°C)

Remote Lockout Indication Maximum Load: 0.2 amp @ 30 Vac 60 Hz

Remote Dry Contact Maximum Load: 25 VA @ 30 Vac, 60 Hz

Approvals, CSA: File no. 095329

Approvals, Underwriters Laboratories Inc.: UL Component Recognized; File no. MP268, Vol. 35 Sec. 1, 3

| Material Number | Timing, Safety Switch | Comments | Includes |
|-----------------|-----------------------|---|---------------------------|
| R8184G4009/U | 45 sec. | With LED for lockout indication, and manual trip lever on safety switch to assure burner shutdown during servicing. | |
| R8184G4033/U | 30 sec. | With LED for lockout indication, and manual trip lever on safety switch to assure burner shutdown during servicing. | |
| R8184G4066/U | 15 sec. | With LED for lockout indication, and manual trip lever on safety switch to assure burner shutdown during servicing. | |
| R8184G4074/U | 30 sec. | With LED for lockout indication, and manual trip lever on safety switch to assure burner shutdown during servicing. | |
| R8184G4082/U | 45 sec. | With manual trip lever on safety switch to assure burner shutdown during servicing. Includes remote alarm dry contacts. | Remote Alarm Dry Contacts |

Oil Primaries

R8184M Protectorelay® Oil Burner Control



Operates the oil burner and oil valve (if desired) in response to a call for heat from a low voltage control circuit.

- Intermittent ignition is on while the burner is on.
- Solid state flame sensing circuit.
- External button to manually reset safety switch after lockout.
- Enclosed safety switch must be manually reset after safety shutdown.
- R8184M includes 40 VA transformer and Y and G terminals for connection of cooling equipment.
- Mounts on standard 4 x 4 in. junction box.
- C554A Cadmium Sulfide Flame Detector and a 24 Vac thermostat required.

Ignition Type: Intermittent

Electrical Rating, Contacts (full load): 7.4 A @ 120 Vac; 3.7 A @ 240 Vac

Electrical Rating, Contacts (locked rotor): 44.4 A @ 120 Vac; 22.2 A @ 240 Vac

Approximate, Dimensions: 4 3/8 in. high x 4 1/8 in. wide x 2 1/2 in. deep (111 mm high x 104 mm wide x 64 mm deep)

Temperature Range: -40°F to +130°F (-40°C to +54°C)

Approvals, Underwriters Laboratories Inc.: UL Component Recognized; File no. MP268, guide no. MCCZ2

| Material Number | Timing, Safety Switch | Mounting | Description |
|-----------------|-----------------------|---|---|
| R8184M1051/U | 45 sec. | Mounts on standard 4 x 4 in. junction box | Protectorelay® Oil Burner Control with 45 seconds lock out timing |

RA116; RA117 Protectorelay® Controls



One-piece, stack-mounted oil burner primary controls that cycle the burner on and shut down the burner on flame loss or system malfunction.

- Combine a Protectorelay® unit for cycling the burner and a Pyrostat® flame detector for sensing temperature changes of flue gases up to 1000°F (556°C).
- Manual reset of safety switch required after ignition failure completely shuts off main burner.
- Include manual trip safety switch to assure burner shutdown during servicing.
- Mount with flange for mounting on curved or flat surfaces.
- Use with line voltage or 24 Vac Control Circuit.

Approximate, Dimensions: 6 in. high x 5 3/16 in. wide x 3 3/16 in. deep (152 mm high x 132 mm wide x 81 mm deep)

Comments: Max insertion length: 5 1/2 in.

Approvals, Underwriters Laboratories Inc.: UL Listed; File no. MP268, Guide no. MCCZ

Approvals, CSA: CSA Certified; File no. LR95329-1

| Material Number | Timing, Safety Switch | Mounting | Ignition Type | Description |
|-----------------|-----------------------|--|---------------|---|
| RA116A1055/U | 75 sec. Nominal | Mount with flange for mounting on curved or flat surfaces. | Intermittent | Protectorelay® Oil Burner Control with 75 seconds lock out timing |
| RA117A1047/U | 75 sec. Nominal | Mount with flange for mounting on curved or flat surfaces. | Interrupted | Protectorelay® Oil Burner Control with 75 seconds lock out timing |

Oil Primary Control Parts

| Material Number | Description |
|-----------------|--|
| 120320/U | Replacement Cell Assembly (7.5 mA at 2 ft-candles) |
| 130367/U | Replacement Cell Assembly (12 mA at 2 ft-candles) |

C554 Cadmium Sulfide Flame Detector



The Cadmium Sulfide Flame Detector (cad cell) is a photoconductive flame detector used with oil primary controls such as R4166, R4184, R8182, R8184, R8185, R8404 and R8991.

- On flame failure, the light sensitive cadmium sulfide cell, in conjunction with flame sensing circuitry, causes the Protectorelay® control to shutdown the main oil burner.
- Glass-to-metal hermetic seal in plug-in cell prevents deterioration by humidity, soot or oil fumes.
- Replaceable CAD Cell

Approximate, Dimensions: 1 7/8 in. high x 1 in. long x 1/2 in. wide
(47 mm high x 25 mm long x 13 mm wide)

Ambient Temperature Range: 140°F maximum (1524 mm)

Approvals, Underwriters Laboratories Inc.: UL Listed: File no. MP268, Vol. 39, Sec. 1, Guide MCCZ

Approvals, CSA: CSA Component Listed: File no. LR95329-1

Sensitivity: 12mA @ 2 ft-candles

| Material Number | Lead Length | Electrical Connections | Mounting | Includes | Used With |
|-----------------|-------------------|--|----------------|--|--|
| C554A1463/U | 60 in. (1524 mm) | lead wires: NEC Class 1; Includes 2 flag 1/4 in. quick connects. | Type R bracket | A, B, E, J and P mounting brackets and fuel line adaptor | R4166, R4184, R8182, R8184, R8185, R8404, R8991, R7997, R7184, R7284 |
| C554A1794/U | 60 in. (152.4 cm) | lead wires: NEC Class 1 | Type R bracket | Type "E" mounting bracket and fuel line adaptor | R4166, R4184, R8182, R8184, R8185, R8404, R8991, R7997, R7184, R7284 |

C554A Accessories and Replacement Parts

| Material Number | Description |
|-----------------|---|
| 120320/U | Replacement Cell Assembly (7.5 mA at 2 ft-candles) |
| 130367/U | Replacement Cell Assembly (12 mA at 2 ft-candles) |
| 4074BJS/U | Oil line mounting bracket assembly, including nut and screw |

Magnetic Valves

V4046A, B Magnetic Valves



For ON-OFF control of oil flow to domestic oil burner equipment. Both delayed and non-delayed oil valves.

- Power interruption closes the valve immediately.
- Mount directly to pipeline or on support bracket.

Type of Fuel: #2 fuel oil

Body Pattern: Straight through

Mounting: Directly in pipe or on support bracket

Materials: Body – Aluminum

Power Consumption: 8 W

Electrical Connections: Two 36-in. (914 mm) leadwires, 1/2 in. conduit bushing

Pipe Connection: NPT

Operating Temperature Range: 32°F to 115°F; 125°F max Fluid (0°C to 46°C; 54°C max Fluid)

Approximate, Dimensions: 2 3/4 in. high x 1 5/8 in. wide x 2 5/8 in. deep (70 mm high x 41 mm wide x 67 mm deep)

Approvals, Underwriters Laboratories Inc.: Listed: File no. MH1639, vol. 3, sec. 3, Guide no. YIOZ

Approvals, CSA: File no. 095329

Approvals, Factory Mutual: Listed: Report 16960

| Material Number | Voltage | Frequency | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Pipe Size (inch) | Valve Opening Time | Valve Closing Time | Current Ratings |
|-----------------|---------|-----------|---------------------------------------|---------------------------------------|------------------|--------------------|--------------------|--------------------------------|
| V4046A1074/U | 120 Vac | 60 Hz | 300 psi | 2068 kPa | 1/8 in. | 3 to 8 sec | 1 sec max | 0.115 max amps at rated Vac/Hz |

Magnetic Valve Replacement Parts

| Material Number | Description |
|-----------------|--|
| 116649A/U | Replacement coil for 120V; 60Hz V4046A |
| 116671A/U | Replacement coil for 120V, 60Hz V4046B |

L4029 High Limit Controller



L4029E Reset Limit Control opens a line or low voltage circuit if the air temperature reaches a critical level. L4029E acts as a fire thermostat in the ducts of AC & ventilating systems. If the air temperature indicates a fire, the fan is shut down.

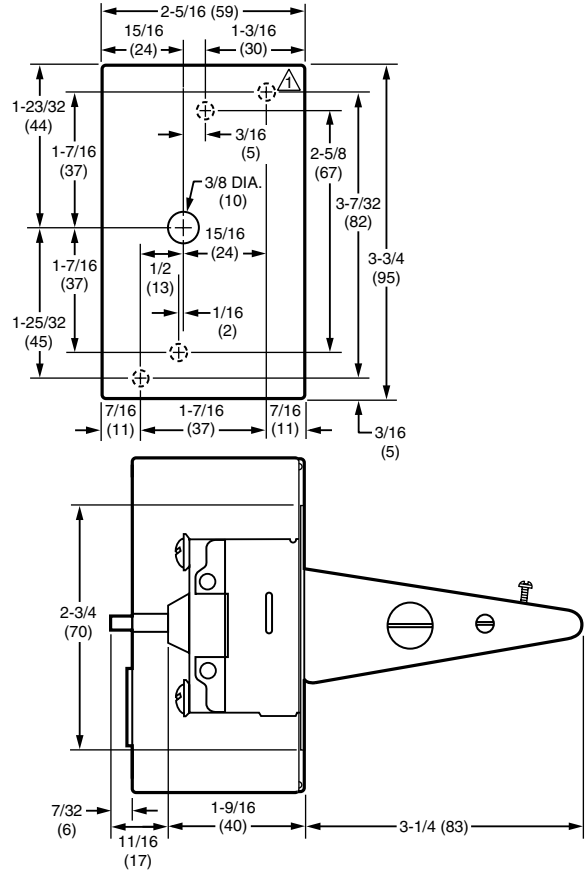
- Shuts off the fan when air temperature is indicative of fire.
- Internal snap-acting switch actuated by a bimetal strip inserted directly into the air stream responds rapidly to temperature changes.
- Requires manual reset.

Switching Action: Normally closed SPST switch opens on temperature rise to the set point. Switch must be manually reset to operate.

Approvals, Underwriters Laboratories Inc.: Listed: File No. MP466, Vol. 8, Guide No. MBPR2

Approvals, CSA: Certified: File No. LR95329-5

Dimensions in inches (millimeters)



Δ 3/16 (5) DIAMETER MOUNTING HOLES L4029E WITH CASE AND COVER. M27077

| Material Number | Element Insertion Length | Electrical Ratings | Pilot Duty Ratings | Temperature Ratings | Tradeline Value |
|-----------------|--------------------------|---|-------------------------|--|-----------------|
| L4029E1011/U | 3 in. (76 mm) | Limit- (AFL) – 2 A @ 30 Vac; 10 A @ 120 Vac; 5 A @ 240 Vac; Limit- (ALR) – 60 A @ 120 Vac; 30 A @ 240 Vac | 0.25 A @ 0.25 to 12 Vdc | Maximum Ambient – At switch: 190°F; At element: 350°F; High Limit Stop – 135°F (Maximum Ambient – At switch 88°C; At element: 177°C) | |
| L4029E1029/U | 3 in. (76 mm) | Limit- (AFL) – 2 A @ 30 Vac; 10 A @ 120 Vac; 5 A @ 240 Vac; Limit- (ALR) – 60 A @ 120 Vac; 30 A @ 240 Vac | 0.25 A @ 0.25 to 12 Vdc | Maximum Ambient – At switch: 190°F; At element: 350°F; High Limit Stop – 200°F (Maximum Ambient – At switch 88°C; At element: 177°C) | |
| L4029E1045/U | 3 in. (76 mm) | Limit- (AFL) – 2 A @ 30 Vac; 10 A @ 120 Vac; 5 A @ 240 Vac; Limit- (ALR) – 60 A @ 120 Vac; 30 A @ 240 Vac | 0.25 A @ 0.25 to 12 Vdc | Maximum Ambient – At switch: 190°F; At element: 350°F; High Limit Stop – 240°F (Maximum Ambient – At switch 88°C; At element: 177°C) | |
| L4029E1219/U | 3 in. (76 mm) | Limit- (AFL) – 2 A @ 30 Vac; 10 A @ 120 Vac; 5 A @ 240 Vac; Limit- (ALR) – 60 A @ 120 Vac; 30 A @ 240 Vac | 0.25 A @ 0.25 to 12 Vdc | Maximum Ambient – At switch: 190°F; At element: 350°F; High Limit Stop – 165°F (Maximum Ambient – At switch 88°C; At element: 177°C) | Tradeline |
| L4029E1227/U | 3 in. (76 mm) | Limit- (AFL) – 2 A @ 30 Vac; 10 A @ 120 Vac; 5 A @ 240 Vac; Limit- (ALR) – 60 A @ 120 Vac; 30 A @ 240 Vac | 0.25 A @ 0.25 to 12 Vdc | Maximum Ambient – At switch: 190°F; At element: 350°F; High Limit Stop – 125°F (Maximum Ambient – At switch 88°C; At element: 177°C) | Tradeline |
| L4029E1250/U | 3 in. (76 mm) | Limit- (AFL) – 2 A @ 30 Vac; 10 A @ 120 Vac; 5 A @ 240 Vac; Limit- (ALR) – 60 A @ 120 Vac; 30 A @ 240 Vac | 0.25 A @ 0.25 to 12 Vdc | Maximum Ambient – At switch: 190°F; At element: 350°F; Fan-on – 126°F; Fan-off – 100°F; High Limit Stop – 116°F (Maximum Ambient – At switch 88°C; At element: 177°C; Fan-on – 52°C; Fan-off – 38°C) | |

Residential Combustion Control

Fan and Limit Controllers

L4064 Fan and Limit Controllers



For control of high limit and fan motor in all types of forced air heating systems.

- Three wiring terminal options available for easy installation.
- Push-in receptacles for stripped wire.
- Female receptacles for 1/4 inch male flag connectors.
- Auxiliary screw terminals.
- Field adjustable fan and high limit settings.
- L4064B and R models have a manual fan switch that overrides the fan control to keep the fan running continuously.
- TRADELINE models with mounting adapters for easy installation and strain relief bushings to protect wiring from field abuse.

Application: Forced warm air heating systems

Switching Action: Fan switch makes and high limit switch breaks on temperature rise.

Dimensions: 4 9/32 in. high x 3 in. wide x 1 19/32 in. deep excluding element (109 mm high x 76 mm wide x 40 mm deep excluding element)

Operating Temperature Range: -40°F to +190°F (-40°C to +88°C)

Differential Temperature Range: High limit 25°F (High limit 14°C)

Tradeline Value: Tradeline

Approvals, Underwriters Laboratories Inc.: Listed File MP466, Guide MBPR

Approvals, CSA: Certified: File No. LR1622

Accessories:

50077438-001/U – Universal Swivel Bracket for L4064

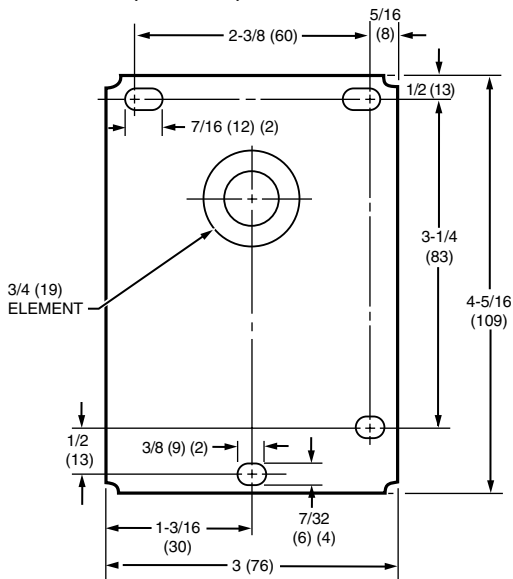
| Material Number | Element Insertion Length | Electrical Ratings | Pilot Duty Ratings | Mounting | Temperature Ratings | Comments |
|-----------------|--------------------------|--|---------------------------------------|--|--|---|
| L4064B2210/U | 11 1/2 in. (292 mm) | Fan- (AFL) – 14 A @ 120 Vac; 7 A @ 240 Vac; Fan- (ALR) – 84 A @ 120 Vac; 42 A @ 240 Vac; Limit- (AFL) – 8 A @ 120 Vac; 4 A @ 240 Vac; Limit- (ALR) 48 A @ 120 Vac; 24 A @ 240 Vac | 0.25 A @ 0.25 to 12 Vdc; 2 A @ 24 Vac | Surface or universal mounting bracket available (50077438-001/U) | Maximum Ambient – At switch: 190°F; At element: 350°F; High Limit – 100°F to 250°F; Fan-on – 65°F to 215°F; Fan-off – 50°F to 200°F; High Limit Stop – 200°F; Fan-on Stop – 125°F; Fan-off Stop – 100°F (Maximum Ambient – At switch 88°C; At element: 177°C; High Limit – 38°C to 121°C; Fan-on – 18°C to 102°C; Fan-off – 10°C to 93°C) | Turns fan on and off according to plenum temperature via helical bimetal sensing element. High limit stop set at 200°F (93°C). Breakaway Jumper included. Includes manual and automatic fan on/off settings. Replaces L4064A,B,E. |
| L4064B2228/U | 5 in. (127 mm) | Fan- (AFL) – 14 A @ 120 Vac; 7 A @ 240 Vac; Fan- (ALR) – 84 A @ 120 Vac; 42 A @ 240 Vac; Limit- (AFL) – 8 A @ 120 Vac; 4 A @ 240 Vac; Limit- (ALR) 48 A @ 120 Vac; 24 A @ 240 Vac | 0.25 A @ 0.25 to 12 Vdc; 2 A @ 24 Vac | Surface or universal mounting bracket available (50077438-001/U) | Maximum Ambient – At switch: 190°F; At element: 350°F; High Limit – 100°F to 250°F; Fan-on – 65°F to 215°F; Fan-off – 50°F to 200°F; High Limit Stop – 200°F; Fan-on Stop – 125°F; Fan-off Stop – 100°F (Maximum Ambient – At switch 88°C; At element: 177°C; High Limit – 38°C to 121°C; Fan-on – 18°C to 102°C; Fan-off – 10°C to 93°C) | Turns fan on and off according to plenum temperature via helical bimetal sensing element. High limit stop set at 200°F (93°C). Breakaway Jumper included. Includes manual and automatic fan on/off settings. Replaces L4064A,B,E. |
| L4064B2236/U | 8 in. (203 mm) | Fan- (AFL) – 14 A @ 120 Vac; 7 A @ 240 Vac; Fan- (ALR) – 84 A @ 120 Vac; 42 A @ 240 Vac; Limit- (AFL) – 8 A @ 120 Vac; 4 A @ 240 Vac; Limit- (ALR) 48 A @ 120 Vac; 24 A @ 240 Vac | 0.25 A @ 0.25 to 12 Vdc; 2 A @ 24 Vac | Surface or universal mounting bracket available (50077438-001/U) | Maximum Ambient – At switch: 190°F; At element: 350°F; High Limit – 100°F to 250°F; Fan-on – 65°F to 215°F; Fan-off – 50°F to 200°F; High Limit Stop – 200°F; Fan-on Stop – 125°F; Fan-off Stop – 100°F (Maximum Ambient – At switch 88°C; At element: 177°C; High Limit – 38°C to 121°C; Fan-on – 18°C to 102°C; Fan-off – 10°C to 93°C) | Turns fan on and off according to plenum temperature via helical bimetal sensing element. High limit stop set at 200°F (93°C). Breakaway Jumper included. Includes manual and automatic fan on/off settings. Replaces L4064A,B,E. |

Fan and Limit Controllers

Residential Combustion Control

| Material Number | Element Insertion Length | Electrical Ratings | Pilot Duty Ratings | Mounting | Temperature Ratings | Comments |
|-----------------|--------------------------|---|---------------------------------------|---|--|--|
| L4064R1134/U | 11 1/2 in. (292 mm) | Fan- (AFL) – 14 A @ 120 Vac; 7 A @ 240 Vac; Fan- (ALR) – 84 A @ 120 Vac; 42 A @ 240 Vac; Limit- (AFL) – 8 A @ 120 Vac; 4 A @ 240 Vac; Limit- (ALR) 48 A @ 120 Vac; 24 A @ 240 Vac | 0.25 A @ 0.25 to 12 Vdc; 2 A @ 24 Vac | Surface mounting or bracket (rigid or swivel) | Maximum Ambient – At switch: 190°F; At element: 250°F above limit setting; High Limit – 150°F to 350°F; Fan-on – 100°F to 305°F; Fan-off – 80°F to 290°F; High Limit Stop – 250°F; Fan-on Stop – 125°F; Fan-off Stop – 100°F (Maximum Ambient – At switch: 88°C; At element: 121°C above limit setting; High Limit – 66°C to 177°C; Fan-on – 38°C to 152°C; Fan-off – 27°C to 143°C) | Turns fan on and off according to plenum temperature. With helical bimetal sensing element. High limit stop set at 250°F (121°C). Small Case. With manual fan-auto switch. |
| L4064R1142/U | 8 in. (203 mm) | Fan- (AFL) – 14 A @ 120 Vac; 7 A @ 240 Vac; Fan- (ALR) – 84 A @ 120 Vac; 42 A @ 240 Vac; Limit- (AFL) – 8 A @ 120 Vac; 4 A @ 240 Vac; Limit- (ALR) 48 A @ 120 Vac; 24 A @ 240 Vac | 0.25 A @ 0.25 to 12 Vdc; 2 A @ 24 Vac | Surface mounting or bracket (rigid or swivel) | Maximum Ambient – At switch: 190°F; At element: 250°F above limit setting; High Limit – 150°F to 350°F; Fan-on – 100°F to 305°F; Fan-off – 80°F to 290°F; High Limit Stop – 250°F; Fan-on Stop – 125°F; Fan-off Stop – 100°F (Maximum Ambient – At switch: 88°C; At element: 121°C above limit setting; High Limit – 66°C to 177°C; Fan-on – 38°C to 152°C; Fan-off – 27°C to 143°C) | Turns fan on and off according to plenum temperature. With helical bimetal sensing element. High limit stop set at 250°F (121°C). Small Case. With manual fan-auto switch. |
| L4064R1159/U | 5 in. (127 mm) | Fan- (AFL) – 14 A @ 120 Vac; 7 A @ 240 Vac; Fan- (ALR) – 84 A @ 120 Vac; 42 A @ 240 Vac; Limit- (AFL) – 8 A @ 120 Vac; 4 A @ 240 Vac; Limit- (ALR) 48 A @ 120 Vac; 24 A @ 240 Vac | 0.25 A @ 0.25 to 12 Vdc; 2 A @ 24 Vac | Surface mounting or bracket (rigid or swivel) | Maximum Ambient – At switch: 190°F; At element: 250°F above limit setting; High Limit – 150°F to 350°F; Fan-on – 100°F to 305°F; Fan-off – 80°F to 290°F; High Limit Stop – 250°F; Fan-on Stop – 125°F; Fan-off Stop – 100°F (Maximum Ambient – At switch: 88°C; At element: 121°C above limit setting; High Limit – 66°C to 177°C; Fan-on – 38°C to 152°C; Fan-off – 27°C to 143°C) | Turns fan on and off according to plenum temperature. With helical bimetal sensing element. High limit stop set at 250°F (121°C). Small Case. With manual fan-auto switch. |

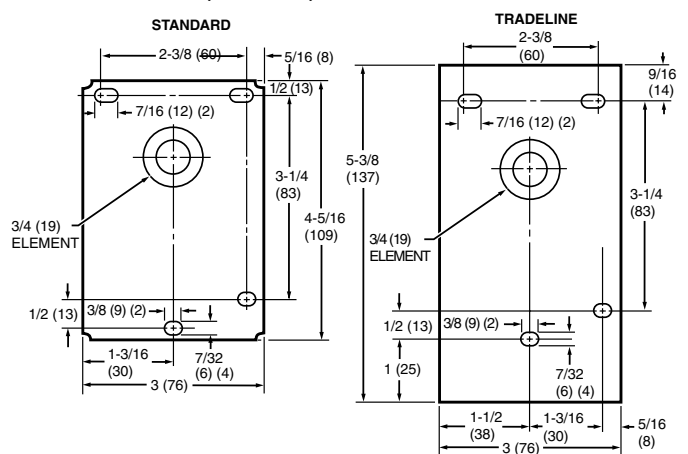
Dimensions in inches (millimeters)



NOTE: OVERALL DEPTH WITH FAN SWITCH IS 2 INCHES (51MM); MODELS LESS FAN SWITCH ARE 1-5/8 INCHES (41MM).

M16829

Dimensions in inches (millimeters)



NOTE: OVERALL DEPTH WITH FAN SWITCH IS 2 INCHES (51MM); MODELS LESS FAN SWITCH ARE 1-5/8 INCHES (41MM).

M23227

L4064 Accessories

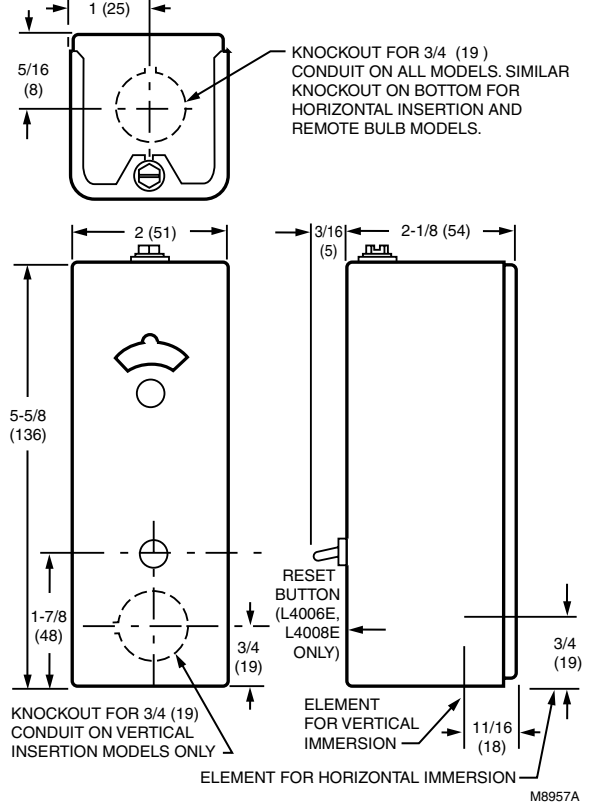
| Material Number | Application | Mounting | Materials | Comments | Used With |
|-----------------|------------------------------------|--------------------------|--|---|------------------------------|
| 50077438-001/U | Universal Swivel Bracket for L4064 | Universal Swivel Bracket | Contains rolled stamped steel riveted between two sheet metal brackets | Replaces: 272569A/B, 110265A/U, 129250AA/U, 129250B/B, 129250B/U, and 27262/U | L4064 Fan and Limit Controls |

Aquastat Controllers

L4006; L6006 Aquastat Controller



Approvals, CSA: File No. 095329



Aquastat® Controllers are immersion type devices for limiting or regulating the temperature of liquids in boilers, storage tanks, and other applications where temperature control is required.

- Totally enclosed Micro Switch™ snap-acting switches operate on temperature rise to setpoint.
- Visible control point scale and external adjustment screw permit easy setting.
- Horizontal or vertical insertion of the sensing element.
- Direct or well immersion of the sensing element.
- Models available for strap-on mounting.
- Remote bulb model may be used to sense air temperature in ducts and in outside air sensing applications.
- Select models have wells.
- UL limit rated device.

Temperature Range: Maximum – 150°F (Maximum – 66°C)

Bulb Size: 3/8 in. x 2 7/8 in. copper (10 mm x 73 mm copper)

Electrical Ratings:

At Full Load – 8 A @ 120 Vac; 5.1 A @ 240 Vac;

At Locked Rotor – 48 A @ 120 Vac; 30.6 A @ 240 Vac

Millivolt – 0.25 A @ 0.25 to 12 Vdc

Dimensions: Case – 5 5/8 in. high x 2 in. wide x 2 1/8 in. deep (Case – 143 mm high x 51 mm wide x 54 mm deep)

Approvals, Underwriters Laboratories Inc.: UL Component

Recognized: File No. MP466, Vol. 6, Sec. 1, Guide No. MBPR2

| Material Number | Application | Switching Action | Operating Temperature Range | Differential Temperature | Well Spud Size | Capillary Length | Mounting | Includes |
|-----------------|-------------------|---|--------------------------------|-------------------------------------|-------------------------|-------------------|------------------------|---|
| L4006A1009/U | High or Low limit | SPST, contacts break on temperature rise. | 100°F to 240°F (38°C to 116°C) | 5°F Fixed (3°C fixed) | 1/2 in. NPT (13 mm NPT) | 1 1/2 in. (38 mm) | Horizontal or Vertical | 1/2 in. well - 123869A |
| L4006A1017/U | High or Low limit | SPST, contacts break on temperature rise. | 100°F to 240°F (38°C to 116°C) | 5°F to 30°F adj. (3°C to 17°C adj.) | 1/2 in. NPT (13 mm NPT) | 1 1/2 in. (38 mm) | Horizontal or Vertical | 1/2 in. well - 123869A |
| L4006A1132/U | High or Low limit | SPST, contacts break on temperature rise. | 100°F to 240°F (38°C to 116°C) | 5°F Fixed (3°C fixed) | 3/4 in. NPT (19 mm NPT) | 3 in. (76 mm) | Horizontal or Vertical | Stop factory-set at 160°F (71°C); 3/4 in. well - 123871A |
| L4006A1678/U | High or Low limit | SPST, contacts break on temperature rise. | 100°F to 240°F (38°C to 116°C) | 5°F to 30°F adj. (3°C to 17°C adj.) | – | 3 in. (76 mm) | Horizontal or Vertical | Stop factory-set at 240°F (116°C); Heat-conductive compound |
| L4006A1959/U | High or Low limit | SPST, contacts break on temperature rise. | 40°F to 180°F (4°C to 82°C) | 5°F Fixed (3°C fixed) | – | 3 in. (76 mm) | Horizontal or Vertical | Heat-conductive compound |
| L4006A1967/U | High or Low limit | SPST, contacts break on temperature rise. | 100°F to 240°F (38°C to 116°C) | 5°F to 30°F adj. (3°C to 17°C adj.) | 1/2 in. (13 mm) | 1 1/2 in. (38 mm) | Horizontal or Vertical | 1/2 in. well - 123869A; Stop factory-set at 240°F (116°C) |
| L4006A2007/U | High or Low limit | SPST, contacts break on temperature rise. | 100°F to 240°F (38°C to 116°C) | 5°F to 30°F adj. (3°C to 17°C adj.) | – | 3 in. (76 mm) | Horizontal | – |
| L4006B1007/U | Circulator | SPST, contacts make on temperature rise. | 100°F to 240°F (38°C to 116°C) | 5°F Fixed (3°C fixed) | 1/2 in. (13 mm) | 1 1/2 in. (38 mm) | Horizontal or Vertical | 1/2 in. well - 123869A |

Aquastat Controllers

| Material Number | Application | Switching Action | Operating Temperature Range | Differential Temperature | Well Spud Size | Capillary Length | Mounting | Includes |
|-----------------|---|---|--------------------------------|-------------------------------------|-----------------------------------|-------------------------------------|---|--|
| L4006B1155/U | Circulator | SPST, contacts make on temperature rise. | 100°F to 240°F (38°C to 116°C) | 5°F to 30°F adj. (3°C to 17°C adj.) | — | 3 in. (76 mm) | Horizontal or Vertical | Stop factory-set at 240°F (116°C); Heat-conductive compound |
| L4006B1163/U | Circulator | SPST, contacts make on temperature rise. | 100°F to 240°F (38°C to 116°C) | 5°F to 30°F adj. (3°C to 17°C adj.) | — | 3 in. (76 mm) | Horizontal or Vertical | — |
| L4006E1067/U | High Limit; Manual Reset | SPST, contacts break on temperature rise. | 130°F to 270°F (54°C to 132°C) | Manual Reset | — | 3 in. (76 mm) | Horizontal or Vertical | Heat-conductive compound; Stop factory-set at 250°F (121°C); Well adapter |
| L4006E1091/U | High Limit; Manual Reset | SPST, contacts break on temperature rise. | 130°F to 270°F (54°C to 132°C) | Manual Reset | — | 3 in. (76 mm) | Horizontal or Vertical | — |
| L4006E1109/U | High Limit; Manual Reset | SPST, contacts break on temperature rise. | 130°F to 270°F (54°C to 132°C) | Manual Reset | — | 1 1/2 in. to 3 in. (38 mm to 76 mm) | Horizontal or Vertical | — |
| L4006E1117/U | High Limit; Manual Reset | SPST, contacts break on temperature rise. | 100°F to 240°F (38°C to 116°C) | Manual Reset | 3/4 in. - 14 NPT (19 mm - 14 NPT) | 1 1/2 in. (38 mm) | Horizontal or Vertical | 3/4 in. well - 123870A |
| L4006E1125/U | High Limit; Manual Reset | SPST, contacts break on temperature rise. | 100°F to 200°F (38°C to 93°C) | Manual Reset | — | 3 in. (76 mm) | Horizontal or Vertical | — |
| L4006H1004/U | High Limit; strap-on mounting on well mount. | SPST, contacts break on temperature rise. | 100°F to 240°F (38°C to 116°C) | Manual Reset | — | 1 1/2 in. (38 mm) | Horizontal or Vertical | Bracket for strap-on mounting; Heat-conductive compound; Stop factory-set at 240°F (116°C) |
| L6006A1012/U | Circulator Control and High Limit or Low Limit | SPDT | 100°F to 240°F (38°C to 116°C) | 5°F to 30°F adj. (3°C to 17°C adj.) | 1/2 in. (13 mm) | 1 1/2 in. (38 mm) | Horizontal or Vertical | 1/2 in. well - 123869A |
| L6006A1145/U | Circulator Control and High Limit or Low Limit | SPDT | 100°F to 240°F (38°C to 116°C) | 5°F to 30°F adj. (3°C to 17°C adj.) | — | 3 in. (76 mm) | Horizontal | Stop factory-set at 240°F (116°C); Heat-conductive compound |
| L6006A1244/U | Circulator Control and High Limit or Low Limit | SPDT | 100°F to 240°F (38°C to 116°C) | 5°F to 30°F adj. (3°C to 17°C adj.) | — | 3 in. (76 mm) | Horizontal or Vertical | — |
| L6006C1018/U | Circulator Control and High Limit and Low Limit | SPDT | 65°F to 200°F (18°C to 93°C) | 5°F to 30°F adj. (3°C to 17°C adj.) | — | — | Horizontal or Vertical Surface mounting | Stop factory-set at 200°F (93°C) |
| L6006C1034/U | Circulator and High and Low Limit | SPDT | 65°F to 200°F (18°C to 93°C) | 5°F to 30°F adj. (3°C to 17°C adj.) | — | — | Horizontal or Vertical Surface mounting | — |

Residential Combustion Control

Aquastat Controllers

L4008; L6008 Remote Bulb Controller



For limiting or regulating temperature of liquids in boilers or tanks. Can also sense duct or outside air temperature.

- Remote temperature sensing element detects and responds rapidly to temperature changes.
- Totally enclosed Micro Switch™ snap-acting switch.
- Visible control point scale and external adjustment screw permit easy setting.
- Horizontal and/or vertical mounting of the remote element into boiler, tank, or other container unless otherwise noted.
- UL and CSA listed limit device.

Bulb Size: 3/8 in. x 2 7/8 in. copper (10 mm x 73 mm copper)

Electrical Ratings:

At Full Load – 8 A @ 120 Vac; 5.1 A @ 240 Vac;

At Locked Rotor – 48 A @ 120 Vac; 30.6 A @ 240 Vac

Millivolt – 0.25 A @ 0.25 to 12 Vdc

Temperature Range: Maximum Ambient – 150°F (66°C)

Mounting: Horizontal or Vertical

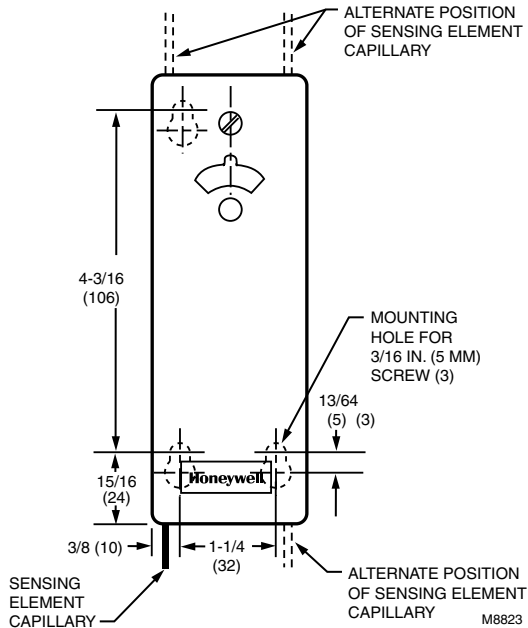
Dimensions: Case – 5 5/8 in. high x 2 in. wide x 2 1/8 in. deep (Case – 143 mm high x 51 mm wide x 54 mm deep)

Approvals, Underwriters Laboratories Inc.: UL Component

Recognized: File No. MP466, Vol. 6, Sec.1, Guide No. MBPR2

Approvals, CSA: File No. 095329

Dimensions in inches (millimeters)



| Material Number | Application | Operating Temperature Range | Differential Temperature | Capillary Length | Switching Action | Includes |
|-----------------|----------------------------------|--------------------------------|--|------------------|---|---|
| L4008A1015/U | High or Low limit | 100°F to 240°F (38°C to 116°C) | 5°F to 30°F adj. (3°C to 17°C adj.) | 66 in. | SPST, contacts break on temperature rise. | – |
| L4008A1130/U | High or Low limit | 130°F to 270°F (54°C to 132°C) | 5°F to 30°F adj. (3°C to 17°C adj.) | 120 in. | SPST, contacts break on temperature rise. | Stop factory-set at 200°F (93°C) |
| L4008B1013/U | Circulator | 100°F to 240°F (38°C to 116°C) | 5°F to 30°F adj. (3°C to 17°C adj.) | 66 in. | SPST, contacts make on temperature rise. | – |
| L4008E1156/U | High Limit; Manual Reset | 130°F to 270°F (54°C to 132°C) | Manual Reset | 66 in. | SPST, contacts break on temperature rise. | Stop factory-set at 250°F (121°C); Heat-conductive compound |
| L4008E1305/U | High Limit; Manual Reset | 100°F to 240°F (38°C to 116°C) | Manual Reset | 66 in. | SPST, contacts break on temperature rise. | Stop factory-set at 240°F (116°C) |
| L4008E1313/U | High Limit; Manual Reset | 100°F to 200°F (38°C to 116°C) | Manual Reset | 66 in. | SPST, contacts break on temperature rise. | – |
| L6008A1192/U | Circulator Control and Low Limit | 100°F to 240°F (38°C to 116°C) | 5°F to 30°F adj. (3°C to 17°C adj.) | 66 in. | SPDT | Stop factory-set at 240°F (116°C) |
| L6008A1242/U | Circulator Control and Low Limit | 100°F to 200°F (38°C to 93°C) | 5°F to 30°F adj. (3°C to 17°C adj.) | 66 in. | SPDT | – |

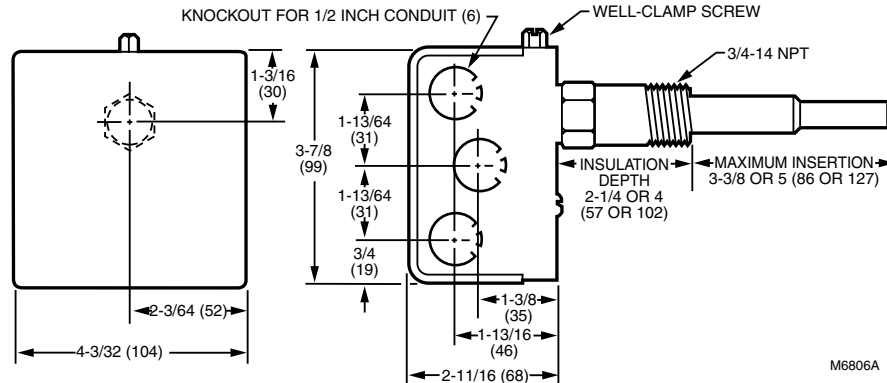
L4103 Combination Aquastat® and High Limit Controller



An immersion-type control the Aquastat® Controller senses water temperature, cycles the burner through the oil primary, or provides water temperature regulation for gas systems. The controller breaks the circuit on a temperature rise past setpoint.

- L4103A,B,C have a sensing element and a high limit sensor with automatic reset.
- Mounts on a horizontal immersion well in water heater wall.
- Adjustable temperature setting scale.
- Fluid-filled element operates SPST, Micro Switch™ snap-acting switch.
- Integral, nonadjustable high limit. L4103C is an immersion controller for gas systems.
- L4103A,B is an immersion controller for oil systems.

Dimensions in inches (millimeters)



Operating Temperature Range: 100°F to 240°F stop set at 150°F
(Scale marked- Hot-Normal-Warm) (38°C to 116°C stop set at 66°C
(scale marked- Hot-Normal-Warm))

Electrical Ratings:

At Full Load – 8 A @ 120 Vac; 5 A @ 240 Vac;
At Locked Rotor – 48 A @ 120 Vac; 30 A @ 240 Vac

Approvals, Underwriters Laboratories Inc.: UL Component
Recognized: File No. MP466, Guide No. MBPR2.

| Material Number | Application | Differential Temperature | Well Spud Size | Insulation Depth | Switching Action | Mounting |
|-----------------|-------------|--------------------------|-------------------------|-------------------|---|---|
| L4103A1019/U | High Limit | 7°F ± 4°F (3.9°C ± 2°C) | 3/4 in. NPT (19 mm NPT) | 4 in. (102 mm) | SPST, contacts break on temperature rise. | Mounts on a horizontal immersion well in water heater wall. |
| L4103A1100/U | High Limit | 7°F ± 4°F (3.9°C ± 2°C) | 3/4 in. NPT (19 mm NPT) | 2 1/4 in. (57 mm) | SPST, contacts break on temperature rise. | Mounts on a horizontal immersion well in water heater wall. |

Aquastat Controllers

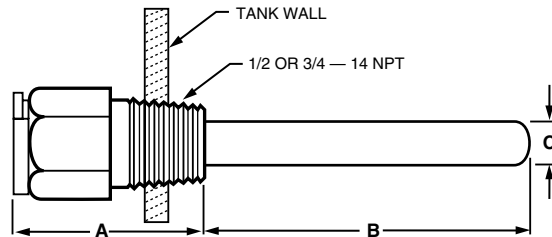
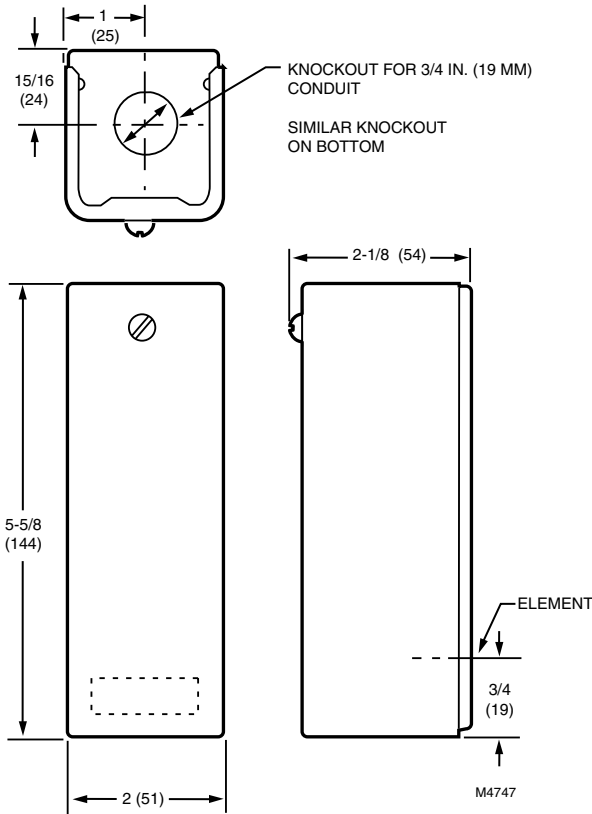
L8100 Aquastat® Controller



L8100 are immersion type controllers for regulating and limiting the tank temperature in water heater and hydronic systems. As the water temperature rises past the setpoint, the controller switches off the gas valve.

- Regulates temperature and provides energy cutoff (ECO) action on a temperature rise past the setpoint.
- Includes a second sensing element that senses average water temperature to minimize stacking.
- Fluid-filled element operates Micro Switch™ SPST snap-acting switch.
- ECO switch interrupts the thermocouple circuit or main valve before tank reaches 210°F (99°C) maximum temperature.
- Includes factory-installed immersion well on controller.
- Internal adjustment screw.
- Special switch terminal provides three-wire hookup from Aquastat® controller to gas valve.

Dimensions in inches (millimeters)



| | CONTROLLER WELL | | REMOTE WELL | |
|---------------------------|-----------------|-----|----------------|----------|
| | IN. | MM | IN. | MM |
| A INSULATION DEPTH | 2-1/4 | 57 | 1-1/2 OR 2-1/2 | 38 OR 64 |
| B INSERTION DEPTH | 5 | 127 | 3 | 76 |
| C WELL DIAMETER | 7/16 | 11 | 7/16 | 11 |

M4746

Operating Temperature Range: 100°F to 180°F (38°C to 82°C)

Differential Temperature:

Controller: 5°F (3°C), fixed.

Energy Cutoff Switch: 20°F (11°C), fixed.

Electrical Ratings: Millivolt – 2A maximum at 24 Vac

Mounting: Immersion Well

Temperature Range:

(ECO) Energy Cutoff: 190°F (88°C);

Tank Maximum: 210°F (99°C)

Dimensions: Case – 5 5/8 in. high x 2 in. wide x 2 1/8 in. deep (Case – 143 mm high x 51 mm wide x 54 mm deep)

Approvals, Underwriters Laboratories Inc.: UL Component

Recognized: File No. MP466, Guide No. MBPR2

Approvals, CSA: File No. 112491

| Material Number | Application | Bulb Size | Capillary Length | Insulation Depth | Switching Action | Includes |
|-----------------|-------------|-----------------|------------------|--|---|---|
| L8100B1037/U | High Limit | 3/8 in. (10 mm) | 42 in. | controller well: 2 1/4 in. (57 mm) remote well: 1 1/2 or 2 1/2 in. (38 mm or 64 mm) | SPST, contacts break on temperature rise. | – |
| L8100B1094/U | High Limit | 3/8 in. (10 mm) | 54 in. | controller well: 2 1/4 in. (57 mm) remote well: 1 1/2 or 2 1/2 in. (38 mm or 64 mm) | SPST, contacts break on temperature rise. | Two zinc plated wells and one well clamp for remote well. |
| L8100B1128/U | High Limit | 3/8 in. (10 mm) | 39 in. | 1 1/2 in. (38 mm) | SPST, contacts break on temperature rise. | – |

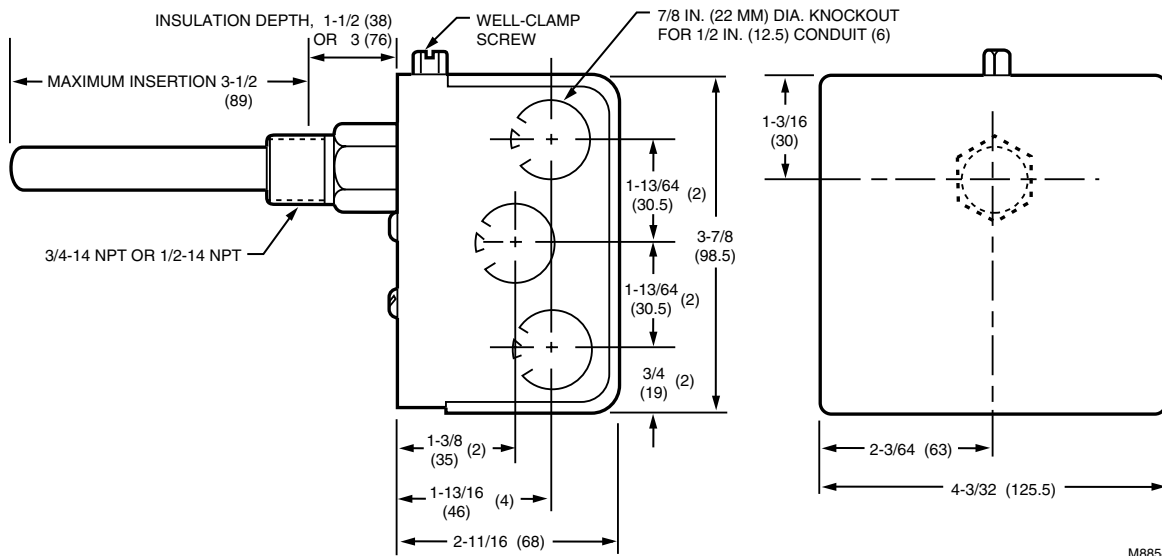
L4081; L6081 Multiple Aquastat® Controllers



High limit, low limit and/or circulator controllers used to regulate boiler water temperature in gas- or oil-fired hydronic heating systems.

- An immersion type liquid-filled sensing element actuates two snap switches.
- One switch operates as a high limit control.
- The other switch operates as a low limit and/or circulator control, depending on the model.
- Controller may be mounted in any positioning and needs no leveling.
- Separate, easy-to-read, calibrated dial and setpoint adjustments for each switch.
- Differential adjustment on low limit or circulator switch on select models.
- All adjustments accessible inside front cover.
- Push-in terminals for quick connecting.
- Single sensing element for easy installation.
- Two SPST snap switches act independently at respective temperature settings.

Dimensions in inches (millimeters)



M8854

Temperature Range: Maximum – 150°F (66°C) at switches; 265°F (129°C) at sensing element

Operating Temperature Range:

High Limit – 130°F to 240°F (54°C to 116°C);
Low Limit – 110°F to 220°F (43°C to 104°C)

Electrical Ratings: 0.25 A @ 0.25 to 12 Vdc;
At Full Load – 8A @ 120 Vac; 5.1A @ 240 Vac;
At Locked Rotor – 48A @ 120 Vac; 30.6A @ 240 Vac

Electrical Ratings, Ignition: Transformer Load: 360 VA
Mounting: Horizontal

Dimensions: 3 7/8 in. high x 4 1/8 in. wide x 2 3/4 in. deep. (98 mm high x 105 mm wide x 70 mm deep.)

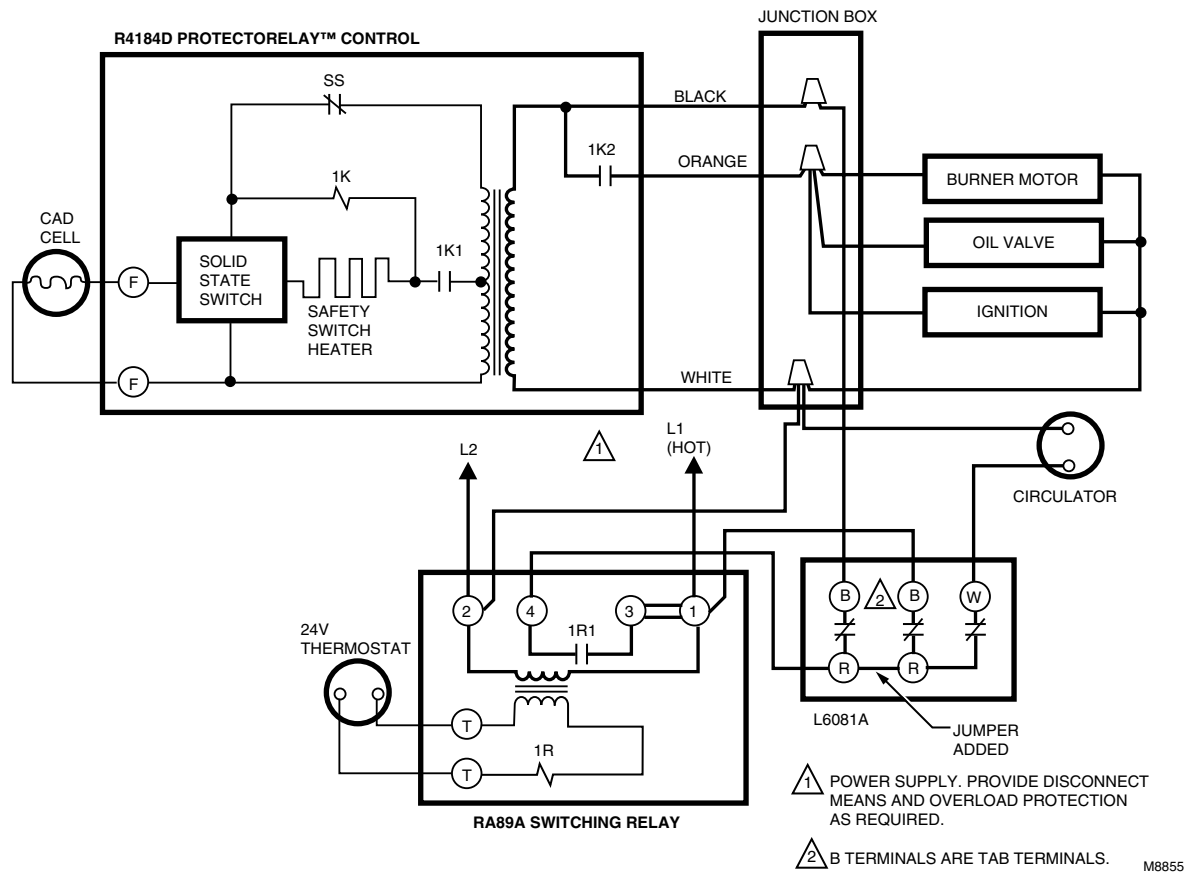
Operating Humidity Range (% RH): 0 to 95% RH, non-condensing
Approvals, Underwriters Laboratories Inc.: UL Listed: File No. MP466, Vol. 12, Sec. 4, Guide No. MBPR2

Approvals, CSA: Certified: File No. LR95329-1

| Material Number | Application | Differential Temperature | Well Spud Size | Insulation Depth | Switching Action |
|-----------------|-----------------------------------|---|-----------------------------------|----------------------------|--|
| L4081A1023/U | High and Low limit | High limit : 10°F fixed; low limit: 10-25°F adj. | 3/4 in. - 14 NPT (19 mm - 14 NPT) | 1 1/2 in. (38 mm) | SPST: High & Low Limit |
| L4081B1047/U | High Limit and Circulator | High limit : 10°F fixed; low limit: 10-25°F adj. | 3/4 in. - 14 NPT (19 mm - 14 NPT) | 1 1/2 in. (38 mm) | SPST: High Limit & Circulator |
| L4081B1096/U | High Limit and Circulator | 10°F Fixed | – | 3 in. (76 mm) | SPST: High Limit & Circulator |
| L6081A1036/U | High and Low Limit and Circulator | High limit : 10°F fixed; low limit: 10-25°F adj. | 3/4 in. - 14 NPT (19 mm - 14 NPT) | 1 1/2 in. to 4 in. (38 mm) | SPST: High Limit SPDT: Low Limit and Circulator |

Residential Combustion Control

Aquastat Controllers



L7224U Oil Electronic Aquastat Controller



Voltage: 120 Vac
Power Consumption: 7 VA
Frequency: 60 Hz
Temperature Range: -30°F to 150°F (-34°C to 66°C)
Operating Temperature Range:
 High Limit – 130°F to 240°F (54°C to 116°C);
 Low Limit – 110°F to 220°F (43°C to 104°C)
Dimensions: 7 1/8 in. high x 4 1/4 in. wide x 2 5/8 in. deep (181 mm high x 109 mm wide x 67 mm deep)
Operating Humidity Range (% RH): 0 to 95% RH, non-condensing
Approvals, Underwriters Laboratories Inc.: Recognized

Universally compatible and easy to install the L7224U allows for quick diagnostics updates through an easy-to-read LED display enhanced with a system of flashing lights. It's like an express checkout service for every installation. For quality circulator, oil burner and boiler control for today's systems and tomorrow's, the L7224U Aquastat is a state-of-the-art solution. Make the switch from electromechanical to electronic with the universally compatible L7224U.

- Complies with 2012 Department of Energy Standards
- Diagnostic updates through easy-to-read LED displays
- $\pm 2^\circ\text{F}$ accuracy and faster response times
- Adjustable high- and low-limit differential
- Outdoor reset functionality available with W8735S1000 and W8735Y1000
- Provides multizone control
- Thermowell horizontal or vertical and flush mounting
- EnviraCOM™ communications enabled
- Compatible with W8735S3000 Alarm Module

Accessories:

- 120650/U** – Heat Conductive Grease 1/2 oz.
121371AA/U – Well clamp assembly with clamp capillary 21371 (1) screws 804644 and nuts 60156
123869A/U – Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 1/2 in. NPT.
123870A/U – Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 3/4 in. NPT.
C7089R1013/U – Senses outdoor temperature and humidity to display on RedLINK™ enabled thermostats and accessories.
C7089U1006/U – Outdoor Sensor used to measure the outdoor temperature for use with VisionPro and VisionPRO IAQ.
W8735ER1000/U – Wireless Outdoor Reset Module for use with L7224/L7248 series 2.
W8735S1000/U – Outdoor Reset Module for use with L7224/L7248 series 2. Includes outdoor sensor.
W8735S1008/U – Domestic Hot Water Module for use with L7224/L7248 series 2. Includes water pipe temperature sensor.
W8735Y1000/U – Outdoor Reset Module for use with L7224/L7248 series 2. Includes outdoor sensor C7089R1013.

| Material Number | Application | Differential Temperature | Mounting | Electrical Ratings, Burner | Electrical Ratings, Circulator |
|-----------------|-------------------------|--|---|--|--|
| L7224U1002/U | Oil Aquastat Controller | High limit : 5-20°F adj.; low limit: 10-25°F adj. | Well mount, horizontal or vertical position, or flush mounted remote from the well. | At Full Load – 7.4 A @ 120 Vac; At Locked Rotor – 44.4 A inrush | At Full Load – 7.4 A @ 120 Vac; At Locked Rotor – 44.4 A inrush |

Aquastat Controllers

L8124 Triple Aquastat® Relay



Immersion-type controllers that combine high limit protection with low limit and circulator control in forced hydronic heating systems, including domestic hot water service.

- Provide multizone control by using a separate circulator and R845 Relay for each zone.
- Include diaphragm powerhead and Micro Switch™ assembly that respond to temperature changes in boiler water.
- Mount directly to boiler.
- Select models include large transformers and extra terminals for supplying power to low voltage zone valves.
- Require 24 Vac thermostat with heat anticipator set at 0.2 A (plus current draw of gas valve on L8124E).

Differential Temperature: High limit: 10°F fixed; low limit: 10-25°F adj.

Frequency: 60 Hz

Electrical Connections: Quick Connect/Screw

Switching Action: SPST: High Limit

SPDT: Low Limit and Circulator Control

Maximum Safe Operating Pressure (psi): 200 psi on outside of immersion well, 100 psi on capsule if inserted directly.

Maximum Safe Operating Pressure (kPa): 1378 kPa on outside of immersion well, 690 kPa on capsule if inserted directly.

Electrical Ratings, Circulator:

At Full Load – 7.4 A @ 120 Vac; 3.7 A @ 240 Vac;

At Locked Rotor – 44.4 A @ 120 Vac; 22.2 A @ 240 Vac

Electrical Ratings, Burner:

At Full Load – 7.4 A @ 120 Vac; 3.7 A @ 240 Vac;

At Locked Rotor – 44.4 A @ 120 Vac; 22.2 A @ 240 Vac

Operating Humidity Range (% RH): 0 to 95% RH, non-condensing

Operating Temperature Range:

High Limit – 130°F to 240°F (54°C to 116°C) adjustable;

Low Limit – 110°F to 220°F (43°C to 104°C) adjustable

Temperature Range: Maximum Ambient temp case: 150°F (66°C);

Maximum Sensing element 265°F (129°C)

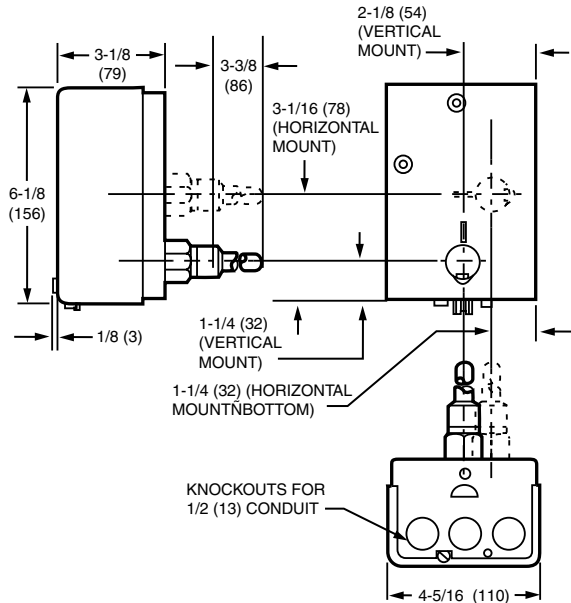
Approvals, Underwriters Laboratories Inc.: UL Listed (models with well): File No. MP466, Guide No. MBPR; UL Component Recognized (models without well): File No. MP466, Guide No. MBPR2

Approvals, CSA: File No. 095329

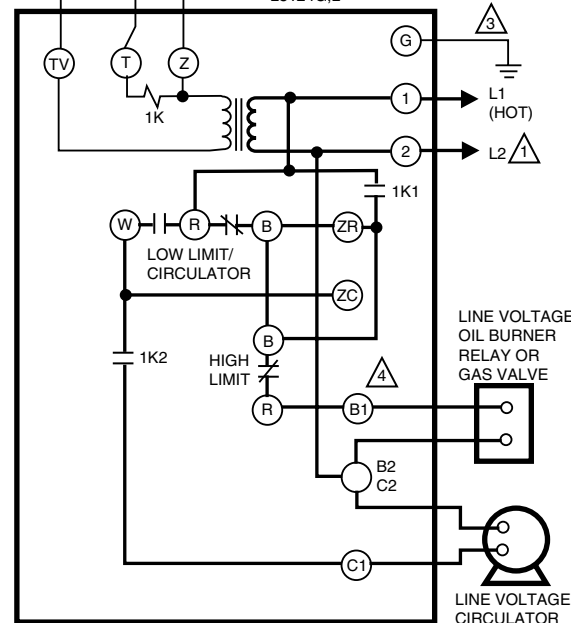
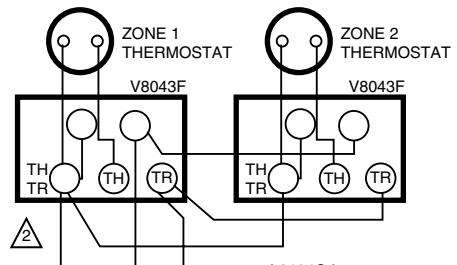
| Material Number | Application | Burner Control Voltage | Insulation Depth | Mounting |
|-----------------|--|------------------------|-------------------|----------------|
| L8124A1007/U | High Limit Protection, Low Limit and Circulation Control | 120 Vac; 60 Hz | 1 1/2 in. (38 mm) | Vertical Mount |
| L8124A1015/U | High Limit Protection, Low Limit and Circulation Control | 120 Vac; 60 Hz | 3 in. (76 mm) | Vertical Mount |
| L8124C1003/U | Triple Aquastat Relay with High limit | 120 Vac; 60 Hz | 1-1/2 in (38 mm) | Horizontal |
| L8124E1016/U | Triple Aquastat Relay with High limit | 120 Vac; 60 Hz | – | Vertical Mount |
| L8124G1020/U | Triple Aquastat Relay with High limit | 120 Vac; 60 Hz | – | Vertical Mount |
| L8124L1011/U | Triple Aquastat Relay with High limit | 120 Vac; 60 Hz | – | Horizontal |

Aquastat Controllers

Dimensions in inches (millimeters)

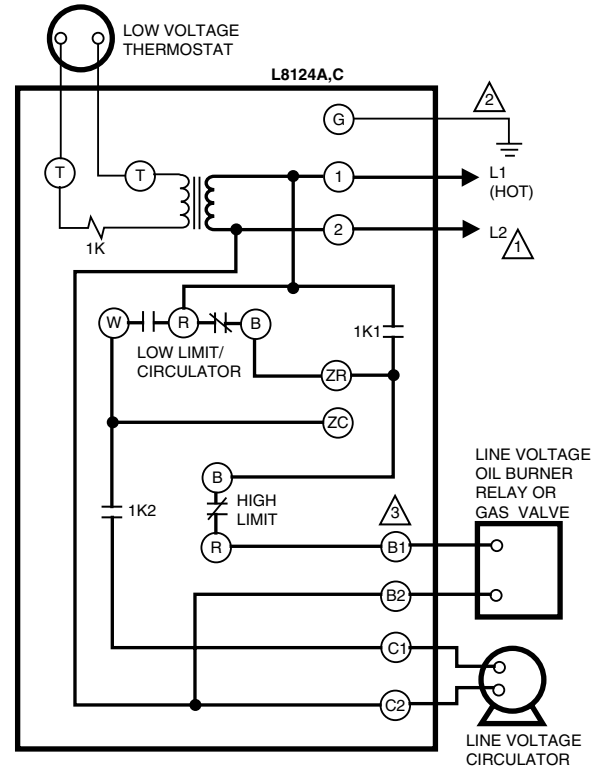


M8925



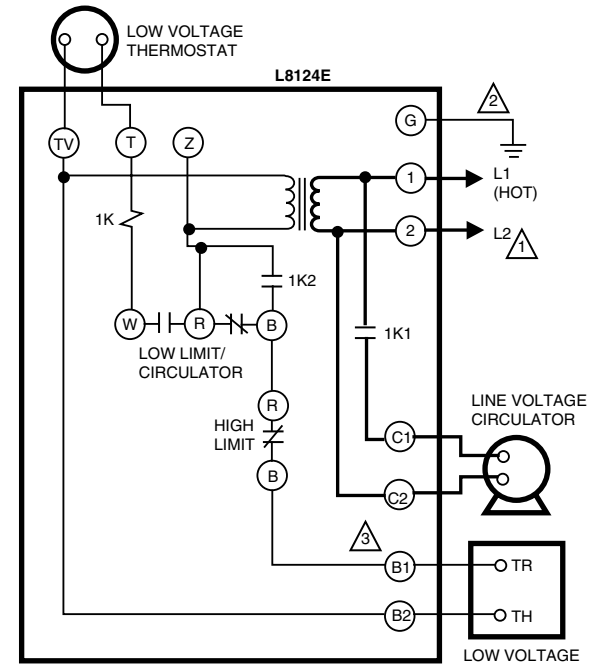
- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 UP TO TWO V8043F ZONE VALVES CAN BE POWERED WITH L8124G,L. ADD ADDITIONAL TRANSFORMER FOR EVERY TWO OR LESS VALVES.
- 3 CONTROL CASE MUST BE CONNECTED TO EARTH GROUND. USE GROUNDING SCREW PROVIDED.
- 4 B1 IS 1/4 IN. TAB TERMINAL.

M1795B



- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 CONTROL CASE MUST BE CONNECTED TO EARTH GROUND. USE GROUNDING SCREW PROVIDED.
- 3 B1 IS 1/4 IN. TAB TERMINAL.

M8802



- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 CONTROL CASE MUST BE CONNECTED TO EARTH GROUND. USE GROUNDING SCREW PROVIDED.
- 3 B1 IS 1/4 IN. TAB TERMINAL.

M8803

Residential Combustion Control

Aquastat Controllers

L8148 Aquastat Relay



Immersion-type controllers that combine high limit protection with switching relay control of burner and circulator motors.

- High limit opens burner circuit only.
- Select models include transformer and accessory terminals for adding a remote low limit controller.
- Case available for horizontal or vertical mounting.
- Requires a 24 Vac thermostat with heat anticipator set at 0.2A.

Application: High Limit

Voltage: 120 Vac

Frequency: 60 Hz

Temperature Range: Maximum – 150°F (66°C) with 1.2 A 24 V load; 77°F (25°C) with 1.4 A 24 V load

Capillary Length: 4 1/2 in. (114 mm)

Electrical Connections: Quick-Connect / Screw

Switching Action: SPST: High Limit & Circulator

Anticipator Setting: 0.2 A

Maximum Safe Operating Pressure (psi): Immersion Well: 255 psi

Maximum Safe Operating Pressure (kPa): Immersion Well: 1757 kPa

Electrical Ratings, Circulator:

At Full Load – 7.4 A @ 120 Vac: 3.7 A @ 240 Vac;

At Locked Rotor – 44.4 A @ 120 Vac: 22.2 A @ 240 Vac

Electrical Rating, Burner:

At Full Load – 7.4 A @ 120 Vac: 3.7 A @ 240 Vac;

At Locked Rotor – 44.4 A @ 120 Vac: 22.2 A @ 240 Vac

Low Voltage – 0.8 A maximum @ 24 Vac

Millivoltage – 0.25 A @ 1/4 to 12 Vdc

Operating Humidity Range (% RH): 0 to 95% RH, non-condensing

Approvals, Underwriters Laboratories Inc.: UL Listed: File No.

MP466, Vol. 13, Sec. 2, Guide No. MBPR2.

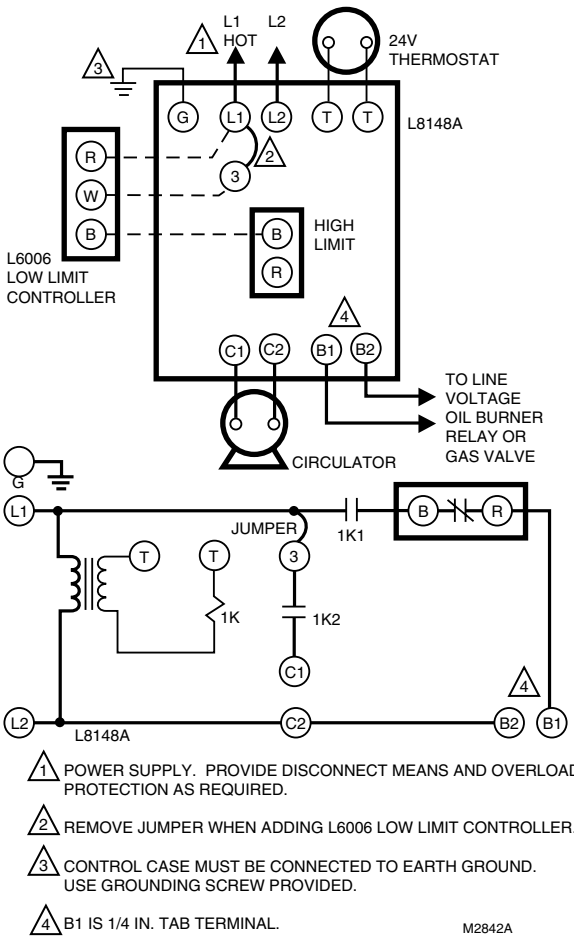
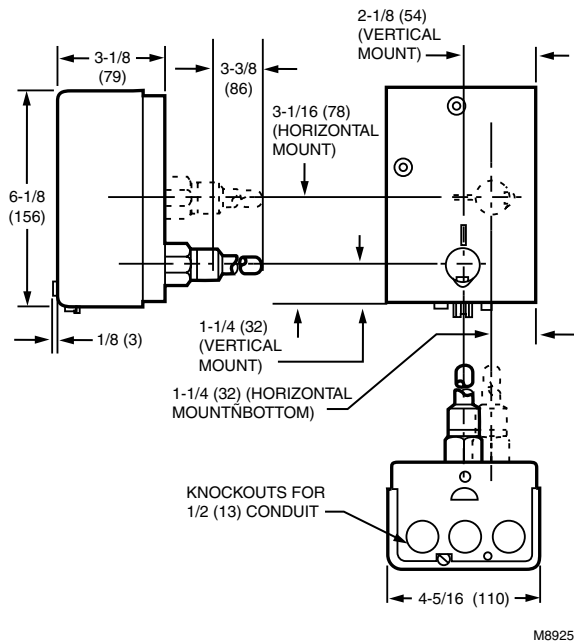
Approvals, CSA: L8148A, E - File No. 095329

L8148 J - File No. LR1620, Guide No. 400-E-O

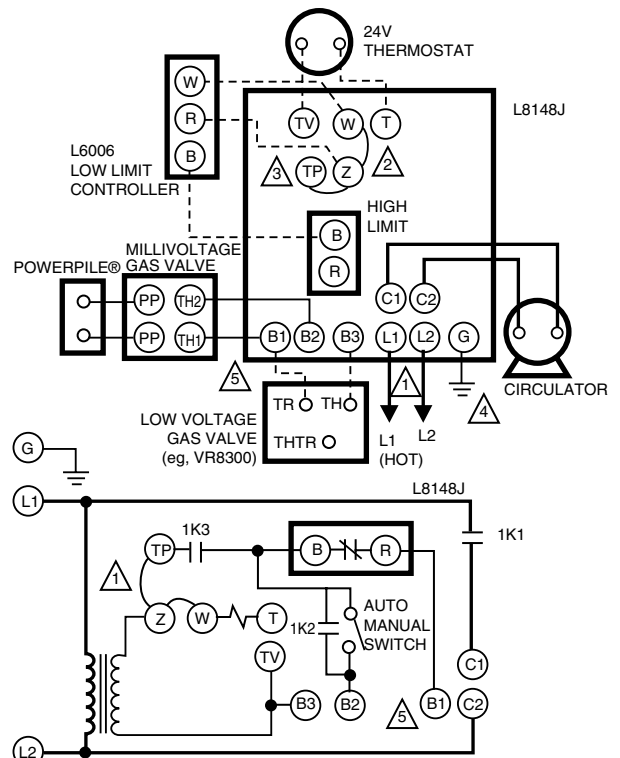
| Material Number | Insulation Depth | Operating Temperature Range | Differential Temperature | Mounting | Includes |
|-----------------|-------------------------|--|--------------------------|------------------------|--|
| L8148A1017/U | 1 1/2" to 3" Insulation | High Limit – 140°F (60°C) to 240°F (116°C) | 8°F fixed | Horizontal | Heat Conductive Compound |
| L8148E1265/U | 1 1/2" to 3" Insulation | High Limit – 180°F (82°C) to 240°F (116°C) | 15°F fixed | Vertical Mount | Molex® plug for use with vent damper, includes heat-conductive compound. |
| L8148E1299/U | 1 1/2" to 3" Insulation | High Limit – 180°F (82°C) to 240°F (116°C) | 15°F fixed | Vertical Mount | 50 VA transformer and heat conductive compound. Molex® plug for use with vent damper |
| L8148J1009/U | 1 1/2" to 3" Insulation | High Limit – 120°F (54°C) to 240°F (116°C) | 8°F fixed | Horizontal or Vertical | Heat Conductive Compound |

Aquastat Controllers

Dimensions in inches (millimeters)



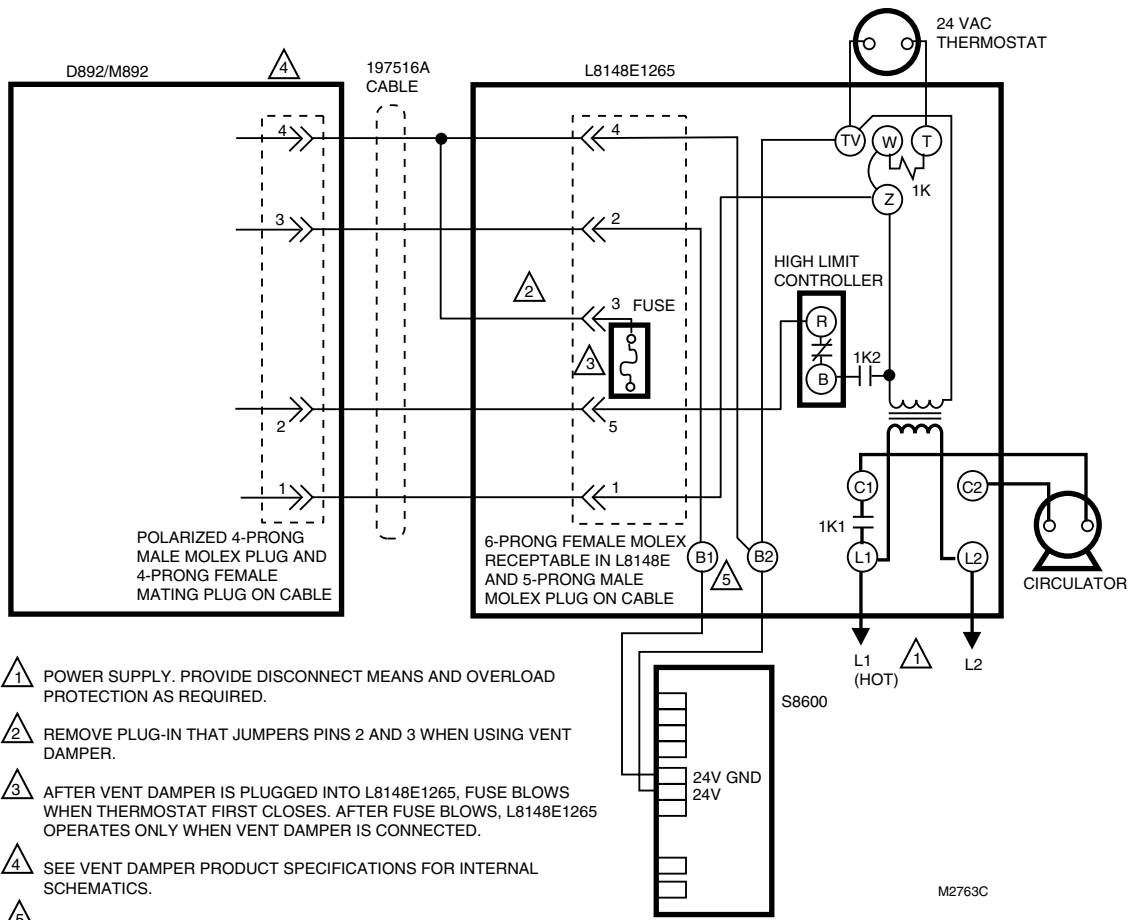
- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 REMOVE JUMPER WHEN ADDING L6006 LOW LIMIT CONTROLLER.
- 3 CONTROL CASE MUST BE CONNECTED TO EARTH GROUND. USE GROUNDING SCREW PROVIDED.
- 4 B1 IS 1/4 IN. TAB TERMINAL.



- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 REMOVE Z-W JUMPER IF SERIES 60 LOW LIMIT IS USED. WIRE LOW LIMIT CONTROLLER OR ZONE VALVES AS SHOWN. USE WITH 24V (B1-B3) CIRCUIT ONLY.
- 3 FOR 24V BURNER, WIRE B1-B3 AND USE JUMPER Z-W AND TP-Z. FOR POWERPILE® (MILLIVOLTAGE) GAS VALVES, REMOVE JUMPER TP-Z AND WIRE BURNER B1-B2. JUMPER Z-W REMAINS IN POSITION.
- 4 CONTROL CASE MUST BE CONNECTED TO EARTH GROUND. USE GROUNDING SCREW PROVIDED.
- 5 B1 IS 1/4 IN. TAB TERMINAL.

Residential Combustion Control

Aquastat Controllers



Outdoor Reset and Domestic Hot Water Priority



Outdoor reset saves energy by optimizing a boiler's settings based on the actual outdoor temperature. We offer wired and wireless AquaReset® Outdoor Reset solutions. While both versions offer the same incredible energy savings, the Wireless AquaReset® solution installs in only 30 minutes thanks to RedLINK® wireless communication. Compatible with Outdoor Reset-Ready L7224/L7248 Aquastat®s, S93 Integrated Boiler Controls, and R7910 SOLA Controls.

Domestic Hot Water Priority Kits are used with AquaReset® and available for applications when domestic hot water priority override is needed.

Voltage: 24 Vac

Frequency: 60 Hz

Temperature Range: -30°F to 150°F (-34°C to 66°C)

Mounting: Wall Mounted in any orientation

Operating Temperature Range: -30°F to 150°F (-9°C to 66°C)

Electrical Ratings: 24 Vac, 60 Hz

Operating Humidity Range (% RH): 0 to 95% RH Non-Condensing

Accessories:

C7089R1013/U – Wireless outdoor sensor

C7089U1006/U – Wired outdoor sensor for use in W8735S1000/U

| Material Number | Description | Application | Dimensions | Used With | Includes |
|-----------------|---|---------------------------------|--|--|---|
| W8735ER1000/U | Wireless Outdoor Reset Module for use with L7224/L7248 series 2. | Wireless Outdoor Reset Module | 5.56 in. high x 4.56 in. wide x 1.25 in deep | L7224; L7248; S9360, S9361, S9380; R7910 | – |
| W8735S1000/U | Outdoor Reset Module for use with L7224/L7248 series 2. Includes outdoor sensor | Wireless Outdoor Reset Module | 2.410 in. high x 3.385 in. wide x .920 in deep | L7224; L7248; S9360, S9361, S9380; R7910 | C7089U1006 Outdoor Sensor; Outdoor Reset Module |
| W8735S1008/U | Domestic Hot Water Module for use with L7224/L7248 series 2. Includes water pipe temperature sensor | Domestic Hot Water Priority Kit | 2.410 in. high x 3.385 in. wide x .920 in deep | L7224; L7248 | – |
| W8735Y1000/U | Outdoor Reset Module for use with L7224/L7248 series 2. Includes outdoor sensor C7089R1013 | Wireless Outdoor Reset Kit | 5.56 in. high x 4.56 in. wide x 1.25 in deep | L7224; L7248; S9360, S9361, S9380; R7910 | C7089R1013 |

Aquastat Controllers

R8182 Combination Protectorelay® and Hydronic Heating Controllers



Immersion type Aquastat controller and oil burner primary control provides high limit and low limit/circulator control for oil-fired hydronic heating systems.

- Use in intermittent ignition applications.
- Capable of zone control with zone valves.
- Circulator zone control with ZC and ZR terminals on R8182D,E,H,J.
- Flame failure during the running cycle results in a 45 second attempt to restart.
- If unsuccessful, safety shutoff occurs, requiring manual reset before burner can be restarted.
- R8182D,E,F mount directly on burner; R8182H,J mount on 4 x 4 in. junction box and include 5 ft (1.5 m) armored capillary with remote sensor.
- C554A Cadmium Sulfide Flame Detector and a 24 Vac thermostat required.
- Auxiliary ZC and ZR terminals may be used to provide circulator zone control through an R845A Switching Relay.

Voltage: 120 Vac

Power Consumption: 9 W

Frequency: 60 Hz

Temperature Range: Maximum – 250°F (121°C) at element

Operating Temperature Range:

High Limit – 130°F to 240°F (54°C to 116°C);

Low Limit – 110°F to 220°F (43°C to 104°C)

Anticipator Setting: 0.2 A

Maximum Safe Operating Pressure (psi): 200 psi on immersion well; 100 psi direct immersion.

Maximum Safe Operating Pressure (kPa): 1378 kPa on immersion well; 90 kPa direct immersion.

Electrical Ratings, Ignition: 360 VA

Electrical Ratings, Burner:

At Full Load – 4.4 A @ 120 Vac;

At Locked Rotor – 26.4 A @ 120 Vac

Timing: Safety Switch – 45 sec

Dimensions: 7 1/8 in. high x 5 1/4 in. wide x 3 7/16 in. deep. (181 mm high x 133 mm wide x 87 mm deep.)

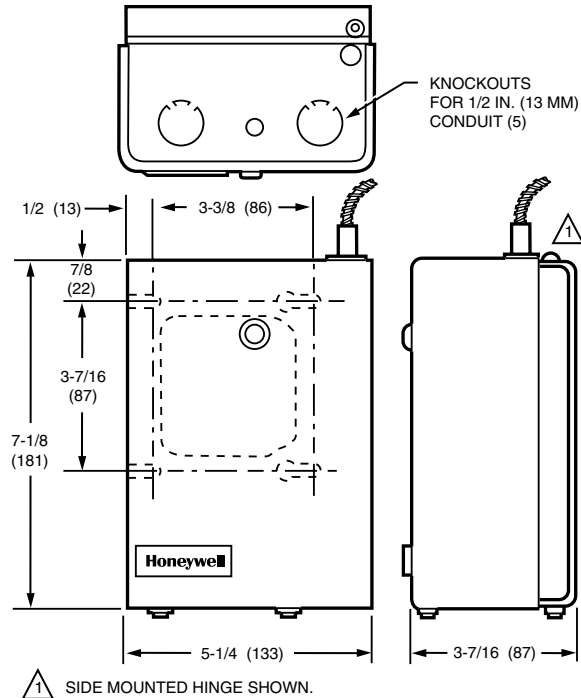
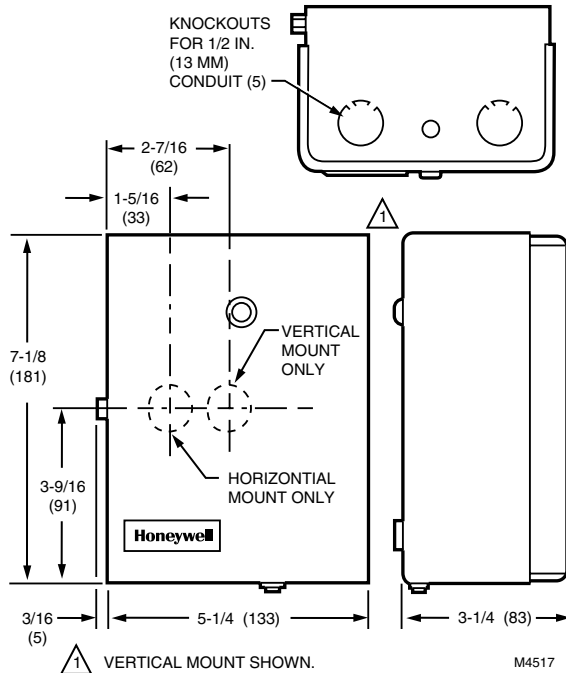
Operating Humidity Range (% RH): 0 to 95% RH, non-condensing

Approvals, Underwriters Laboratories Inc.: UL Listed: File No. listed: MP268, Vol. 3,4 (R8182D,E,F), Vol. 37 (R8182H,J), Sec. 1.



Approvals, CSA: File No. 095329

| Material Number | Differential Temperature | Mounting | Insulation Depth | Includes |
|-----------------|---|--------------------|-------------------|-------------------------------------|
| R8182D1079/U | High limit: 10°F fixed; Low limit/circulator: 10°F to 25°F adj. | Vertical Mount | 1 1/2 in. (38 mm) | Stop dial; Heat Conductive Compound |
| R8182D1111/U | High limit: 10°F fixed; Low limit/circulator: 10°F to 25°F adj. | Horizontal | 1 1/2 in. (38 mm) | Stop dial; Heat Conductive Compound |
| R8182H1070/U | High limit: 10°F fixed; Low limit/circulator: 10°F to 25°F adj. | Junction box mount | 1 1/2 in. (38 mm) | Stop dial; Heat Conductive Compound |


Dimensions in inches (millimeters)



Well Assemblies

| Material Number | Materials | Capillary Diameter | Insertion Length | Shell (internal diameter) | Well Spud Size | Insulation Depth | Description | Includes | Used With | |
|-----------------|-----------|--------------------|------------------|---------------------------|-----------------------------------|------------------|---|----------------|--------------|--|
| 121371A/U | Copper | 5/64 in. | 3 in. | 3/8 in. | 1/2 in. - 14 NPT (13 mm - 14 NPT) | 1 1/2 in. | Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. NPT. Includes mounting clamp. | Mounting Clamp | - |  |
| 121371B/U | Copper | 5/64 in. | 3 in. | 3/8 in. | 3/4 in. - 14 NPT (19 mm - 14 NPT) | 1 1/2 in. | Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 3/4 in. NPT. Includes mounting clamp. | Mounting Clamp | - | |
| 121371L/U | Copper | 5/64 in. | 3 in. | 3/8 in. | 1/2 in. - 14 NPT (13 mm - 14 NPT) | 3 in. | Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 3 in. (76 mm) insulation, 1/2 in. NPT. Includes mounting clamp. | Mounting Clamp | - | |
| 121371M/U | Copper | 5/64 in. | 3 in. | 3/8 in. | 3/4 in. - 14 NPT (19 mm - 14 NPT) | 3 in. | Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 3/4 in. NPT. Includes mounting clamp. | Mounting Clamp | - | |
| 123869A/U | Copper | - | 3 in. | 3/8 in. | 1/2 in. - 14 NPT (13 mm - 14 NPT) | 1 1/2 in. | Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 1/2 in. NPT. | - | - |  |
| 123870A/U | Copper | - | 3 in. | 3/8 in. | 3/4 in. - 14 NPT (19 mm - 14 NPT) | 1 1/2 in. | Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 3/4 in. NPT. | - | L4006; L4081 | |
| 123871A/U | Copper | - | 3 in. | 3/8 in. | 3/4 in. - 14 NPT (19 mm - 14 NPT) | 3 in. | Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 3 in. (76 mm) insulation, 3/4 in. NPT. | - | - | |
| 123872A/U | Copper | - | 3 in. | 3/8 in. | 1/2 in. NPT | 3 in. | Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 3 in. (76 mm) insulation, 1/2 in. NPT | - | - | |

Single and Multi-function Aquastat Replacement Parts

| Material Number | Description | Used With | |
|-----------------|---|---------------|---|
| 120650/U | Heat Conductive Grease 1/2 oz. | Well Assembly | |
| 198799Z/U | Outdoor or Supply sensor with 42 in. lead for AQ475, AQ675 or AQ775 | - |  |
| 121371AA/U | Well clamp assembly with clamp capillary 21371 (1) screws 804644 and nuts 60156 | - | |

Residential Combustion Control

Integrated Furnace Controls

Integrated Furnace Controls



Application: Single stage warm air furnaces
Line Voltage: 120 Vac (97-132 Vac)
Low Voltage: 24V (18-30 Vac)
Frequency: 60 Hz
Operating Humidity Range (% RH): 0% to 95% non-condensing
Igniter Current: 5 A resistive @ 120VAC
Thermostat Anticipator Setting: (Stage 1 only) 100mA
PrePurge: 30 seconds
HSI Warmup Time: 17/27 or 30/30 seconds
Trial For Ignition: 4, 6, or 8 seconds
PostPurge: 15 seconds
Interpurge: 60 seconds
Ignition Trials: Three, two tries if flame is not sensed
Number of LEDs: 3

Universal integrated furnace control replaces multiple single stage field installed hot surface igniter IFC supplied by White Rodgers and UTEC. Uses 120 VAC igniter. Includes instructions special wire harnesses for easy replacement.

- Cross reference and wire harnesses provided for simple replacement over 195 existing furnace controls.
- Main burner ignition using a 120V hot surface igniter.
- Flame rectification circuit to monitor flame presence.
- Monitoring of system pressure switch, high temperature limit, and rollout functions.
- Appliance operation/safety requirements controlled via microprocessor.
- Controls circulating fan motor based on appliance requirements, in response to a conventional low voltage thermostat.
- LED system status, performance and diagnostic indication.
- Twinning capability

Heat On Fan Delay: 30 or 60 seconds

Heat Off Fan Delay: 60, 90, 120, or 180 Seconds

Cool Fan On Delay: 5 seconds

Cool Fan Off Delay: 0 or 60 seconds

Gas Control Used With: Any 24Vac redundant, direct ignition gas control rated at 1.5A or less. Honeywell VR8205 recommended.

Cooling Contactor Used With: Any 24Vac contactor rated at 1.0A or less

Induced Draft Blower Load: 2.2FLA / 25LRA max @120Vac

Circulator Load: 14.5FLA / 25LRA max @120Vac

Type of Fan Used With: Standard Induction-Type Circulating Fan

Operating Temperature Range: -40°C to +79°C (-40°F to +175°F)

Flame Failure Response Time (sec): 2 Seconds max @ 1µA

| Material Number | Description |
|-----------------|--|
| S9200U1000/U | Universal single stage heating & cooling |

Aquatrol® Hydronic Controls

Simple. Powerful. Energy Efficient. Honeywell Aquatrol Hydronic Controls are designed to keep even the most complex systems simple.

All Aquatrol Control Panels Are Loaded With Standard Features:

- Control Pumps or Zone Valves
- Zone Synchronization
- Domestic Hot Water Priority and Priority Override
- Boiler Post Purge
- Boiler Short Cycling Protection
- Freeze Protection
- Pump/Valve Exercise
- Auto Test
- Auto Purge
- Compatible with any digital thermostat
- Intuitive color-coded wiring terminals

AQ250 Relay Control Panels

- Includes all features listed above

| Material Number | Application |
|-----------------|--|
| AQ25042B/U | For use with pumps or zone valves without end switches |
| AQ25044B/U | For use with zone valves with end switches |



AQ25A Relay “Plus” Control Panels

Everything the AQ250 has plus...

- LCD screen, customizable control settings, ability to display outdoor temperature on thermostats, programmable auxiliary relays to add system versatility and more

| Material Number | Application |
|-----------------|--|
| AQ25A42B/U | For use with pumps or zone valves without end switches |
| AQ25A44B/U | For use with zone valves with end switches |



Dedicated AQ1000TN2 and AQ1000TP2 Communicating Thermostats

- Indoor and outdoor temperature can be displayed
- 2-wire “polarity insensitive”
- Displays Fahrenheit or Celsius
- Zone settings for all thermostats can be programmed at the main control panel
- Programmable model controls 1 zone of cooling



AQ251 Reset Control Panels

Everything the AQ25A has plus...

- Outdoor Reset or Load Reset, 0-10 Vdc output to run modulating boilers, support for 1 A/C compressor and up to 64 zones of cooling

| Material Number | Application |
|-----------------|--|
| AQ25110B/U | 1 Zone Reset |
| AQ25142B/U | For use with pumps or zone valves without end switches |
| AQ25144B/U | For use with zone valves with end switches |



AQ252 Mixing Injection Control Panels

Everything the AQ251 has plus...

- The ability to control 2 temperatures with injection pump or mixing valve

| Material Number | Application |
|-----------------|--|
| AQ25242B/U | For use with pumps or zone valves without end switches |
| AQ25244B/U | For use with zone valves with end switches |



Expansion Zoning Panels

For additional zones of pumps or valves, to extend the capacity of systems up to a maximum of 64 heating zones.

| Material Number | Application | Number of Zones |
|-----------------|---|-----------------|
| AQ25542B/U | Expansion panel for pumps or 2 wire zone valves (line voltage) | 4 |
| AQ25582B/U | Expansion panel for pumps or 2 wire zone valves (line voltage) | 8 |
| AQ25742B/U | Expansion panel for 2 wire zone valves (24 Vac) | 4 |
| AQ25744B/U | Expansion panel for 4 wire zone valves (24 Vac) | 4 |
| AQ25400B/U | Add a temperature or expand the AQ network capacity for 16 more zones | — |



AQUATROL Zoning System

AQ250 Electronic Relay Boiler Control Panel for Hydronic Zoning System



Honeywell AQ250 AQUATROL boiler controls for single temperature, residential hydronic heating systems ensure ample supply of hot water for space heating and domestic uses. Convert single zone heating systems or upgrade relay-logic zoning systems.

- Use with AQ1000 two-wire communicating thermostats, or most dry contact digital thermostats
- Offers zoning control for up to four zones and controls up to two stages of heat from a single thermostat
- Can expand up to 16 zones with AQ255 or AQ257 or up to 64 zones with AQ254 Add-A-Temp panels
- Line or low-voltage output for zoning equipment, including pumps or valves
- Features zone synchronization through the zone or Greatest Demand control
- Includes domestic hot water priority, priority override protection and boiler short cycling protection
- Automated test feature for quick start-up and simplified troubleshooting

Application: Boiler control for zoned hydronic systems

Thermostat Compatibility: AQ1000 Series 2-wire communicating thermostats and most digital thermostats

User Interface: DIP Switches

Boiler Heat Post Purge: 30 seconds (sent to DHW tank or Zone of Greatest Demand - selectable)

Pump/Valve Exercise: 30 seconds per 2 weeks of space heating inactivity

R-C Output (on Transformer): 38 VA, 24 Vac Class II

R-C Input (on Control and Zoning Modules): 24 Vac Class II

Demand Input: Heat Demand (Thermostat R-W) and DHW Demand – External dry contacts connection only

B-B Communication Bus Terminals: Low voltage, Class II, 2-wire polarity-insensitive, digital communicating link to other Control or Zoning modules.

Zone Module Thermostat Input: Low voltage, Class II, 2-wire polarity-insensitive, digital communicating with power link to AQ1000 series thermostat.

ZR-ZC Contact Rating: 120 to 240 Vac, 1/3 HP

Output Ratings: Boiler (T-T) – 24 Vac, 0.5A, 12VA; Boiler Pump – 120 Vac/250 Vac 5A, 1/3HP; DHW Pump/Valve – 120 Vac/250 Vac 5A, 1/3HP; Auxiliary Pump – Dry contact output, 120 Vac/250 Vac 5A, 1/3 HP

Electrical Connections: Wire-clamp screw terminals, Maximum 2 x 14 AWG each on line voltage terminals

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing
Sensor: Supply/Return Sensor – 10 kilohm NTC thermistor at 25°C (77°F) ±0.5°F (±0.3°C) up to 500 ft (150 M) using 18 AWG or larger wire, Lead Length: 10 ft. (3050 mm); Outdoor Sensor – 10 kilohm NTC thermistor at 25°C (77°F) ± 0.5°F (±0.3°C) up to 500 ft (150 M) using 18 AWG or larger wire, beta=3892, Lead Length: 10 ft. (3050 mm)

Approvals, CSA: CSA C/US Certified to CSA and UL Standards, File No. LR76030

Approximate, Dimensions: 13 in. wide x 8 in. high x 3 3/8 in. deep (33 cm wide x 20.3 cm high x 8.5 cm deep)

Weight: 4.9 lbs (2.3 kg)

Temperature Ratings: Panel – 32°F to 130°F; Sensor – -58°F to +230°F (Panel – 0°C to 55°C; Sensor – -50°C to +110°C)

Supply Voltage: 120V 60 Hz

| Material Number | Zoning Devices Controlled | Number of Zones | Zone Output Contact Rating | Replacement Parts |
|-----------------|--|-----------------|--|---|
| AQ25042B/U | Zone pumps or 2-wire valves (line voltage) | 4 | Pumps: 120 Vac/250 Vac, 5A, 1/3 HP, Valves: 24 Vac, 0.5 A, 12 VA | AQ10X38 24 Vac 38 VA transformer, AQ15540B 4-zone pump expansion module, AQ12C11 supply/return/mixed loop sensor, AQ15000B boiler control module |
| AQ25044B/U | Zone valves with end switches | 4 | Pumps: 120 Vac/250 Vac, 5A, 1/3 HP, Valves: 24 Vac, 0.5 A, 12 VA | AQ10X38 24 Vac 38 VA transformer, AQ12C11 supply/return/mixed loop sensor, AQ15000B boiler control module, AQ15740B 4-zone valve with end switch expansion module |

AQ25A Programmable Relay Control Panel for Hydronic Zoning System



Application: Boiler control for zoned hydronic systems
Thermostat Compatibility: AQ1000 Series 2-wire communicating thermostats and most digital thermostats
Setback Program: 7 day, up to 2 setback periods/day.
User Interface: LCD Display and a 7 button Key Pad, DIP Switches on zoning modules
Boiler Control Temperature: Differential – 2°F to 41°F or Auto (minimum 2 minutes on time) (Differential – 1°C to 23°C or Auto (minimum 2 minutes on time))
Boiler Heat Post Purge: Off, 10 seconds to 30 minutes (factory default is 30 seconds)
Pump/Valve Exercise: 30 seconds per 2 weeks of space heating inactivity
R-C Output (on Transformer): 38 VA, 24 Vac Class II
R-C Input (on Control and Zoning Modules): 24 Vac Class II (input on Control and Zoning Modules)
Demand Input: Heat Demand (Thermostat R-W), Auxiliary Demand, and DHW Demand – External dry contacts connection only
B-B Communication Bus Terminals: Low voltage, Class II, 2-wire polarity-insensitive, digital communicating link to other Control or Zoning modules.
Zone Module Thermostat Input: Low voltage, Class II, 2-wire polarity-insensitive, digital communicating with power link to AQ1000 series thermostat.

Honeywell AQ250 AQUATROL boiler controls for single temperature, residential hydronic heating systems ensure ample supply of hot water for space heating and domestic uses. Convert single zone heating systems or upgrade relay-logic zoning systems.

- Displays outdoor temperature on all AQ1000 Series thermostats when used with an AQ12C10 outdoor sensor
- Intuitive and accessible programming interface and central program of zone set points and setback programming
- Customizable control settings and schedules provide greater control and comfort and control up to two stages of heat from a single thermostat
- Zoning Control for up to four zones or expanded to up to 64 zones with additional panels
- Domestic hot water priority and priority override protection
- Boiler short cycling protection, boiler post purge and boiler shock prevention from cold water returning to boiler
- Non-volatile EPROM memory retains program settings during power outage

Output Ratings: Boiler (T-T) – 24 Vac, 0.5A, 12VA; Auxiliary Low Voltage – 24 Vac, 0.5A, 12VA; Boiler Pump – 120 Vac/250 Vac 5A, 1/3HP; DHW Pump/Valve – 120 Vac/250 Vac 5A, 1/3HP; Auxiliary Pump – Dry contact output, 120 Vac/250 Vac 5A, 1/3 HP

Electrical Connections: Wire-clamp screw terminals, Maximum 2 x 14 AWG each on line voltage terminals

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing
Sensor: Supply/Return Sensor – 10 kilohm NTC thermistor at 25°C (77°F) ±0.5°F (±0.3°C) up to 500 ft (150 M) using 18 AWG or larger wire, Lead Length: 10 ft. (3050 mm); Outdoor Sensor – 10 kilohm NTC thermistor at 25°C (77°F) ± 0.5°F (±0.3°C) up to 500 ft (150 M) using 18 AWG or larger wire, beta=3892, Lead Length: 10 ft. (3050 mm)

Approvals, CSA: CSA C/US Certified to CSA and UL Standards, File No. LR76030

Approximate, Dimensions: 16 1/2 in. wide x 8 in. high x 3 3/8 in. deep (42 cm wide x 20.3 cm high x 8.5 cm deep)

Weight: 5.7 lbs (2.6 kg)

Temperature Ratings: Panel – 32°F to 130°F; Sensor – -58°F to +230°F (Panel – 0°C to 55°C; Sensor – -50°C to +110°C)

Supply Voltage: 120V 60 Hz

| Material Number | Zoning Devices Controlled | Number of Zones | Zone Output Contact Rating | Replacement Parts |
|-----------------|--|-----------------|--|---|
| AQ25A42B/U | Zone pumps or 2-wire valves (line voltage) | 4 | Pumps: 120 Vac/250 Vac, 5A, 1/3 HP, Valves: 24 Vac, 0.5 A, 12 VA | AQ10X38 24 Vac 38 VA transformer, AQ15540B 4-zone pump expansion module, AQ12C11 supply/return/mixed loop sensor, AQ12C10 outdoor sensor, AQ15A00B boiler control module |
| AQ25A44B/U | Zone valves with end switches | 4 | Pumps: 120 Vac/250 Vac, 5A, 1/3 HP, Valves: 24 Vac, 0.5 A, 12 VA | AQ10X38 24 Vac 38 VA transformer, AQ12C11 supply/return/mixed loop sensor, AQ15740B 4-zone valve with end switch expansion module, AQ12C10 outdoor sensor, AQ15A00B boiler control module |

AQUATROL Zoning System

AQ251 Electronic Boiler Reset Control Panel for Hydronic Zoning System



Honeywell AQ251 AQUATROL boiler reset controls for single temperature, residential hydronic heating systems, provide energy-efficient outdoor-temperature compensated control to convert single zone heating system or upgrade relay-logic zoning systems.

- 0 to 10 Vdc modulating output for driving a modulating/condensing boiler
- Displays outdoor temperature on all AQ1000 thermostats when used with the included AQ12C10 outdoor sensor
- Customizable control settings allow for greater control and comfort
- Intuitive and accessible programming interface and central program of zone set points and setback
- Zoning control for up to four zones and can be up to 64 zones using expansion panels
- Boiler short cycling protection, boiler post purge and boiler shock prevent from cold water returning to boiler
- Domestic hot water priority and priority override protection, as well as an automated test and purge feature
- Test and purge feature for quick start-up and simplified troubleshooting

Application: Boiler reset control for hydronic zoning system

Thermostat Compatibility: AQ1000 Series 2-wire communicating thermostats and most digital thermostats

Setback Program: 7 day, up to 2 setback periods/day.

User Interface: LCD Display and a 7 button Key Pad

Boiler Control Temperature: Supply – Max: OFF, 120°F to 225°F; Min: OFF, 59°F to 180°F; Differential – 2°F to 41°F or Auto (minimum 2 minutes on time) (Supply – Max: OFF, 49°C to 107°C; Min: OFF, 15°C to 82°C; Differential – 1°C to 23°C or Auto [minimum 2 minutes on time])

Boiler Design Temperature: 80°F to 210°F (26°C to 99°C)

Outdoor Low Design Control Temperature: -60°F to 32°F (-51°C to 0°C)

Return Min. Control Temperature: 80°F to 180°F (27°C to 82°C)

Boiler Heat Post Purge: Off, 10 seconds to 30 minutes (factory default is 30 seconds)

Pump/Valve Exercise: 30 seconds per 2 weeks of space heating inactivity

R-C Output (on Transformer): 38 VA, 24 Vac Class II

R-C Input (on Control and Zoning Modules): 24 Vac Class II (input on Control and Zoning Modules)

Demand Input: Heat Demand (Thermostat R-W), Auxiliary Demand, and DHW Demand – External dry contacts connection only

B-B Communication Bus Terminals: Low voltage, Class II, 2-wire polarity-insensitive, digital communicating link to other Control or Zoning modules.

Output Ratings: Boiler (T-T) – 24 Vac, 0.5A, 12VA; Auxiliary Low Voltage – 24 Vac, 0.5A, 12VA; Boiler Pump – 120 Vac/250 Vac 5A, 1/3HP; DHW Pump/Valve – 120 Vac/250 Vac 5A, 1/3HP; Auxiliary Pump – Dry contact output, 120 Vac/250 Vac 5A, 1/3 HP

Electrical Connections: Wire-clamp screw terminals, Maximum 2 x 14 AWG each on line voltage terminals

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

WWSD (Warm Weather Shut Down) Temperature: Off, 35°F to 100°F Off, 1°C to 38°C)

Sensor: Supply/Return Sensor – 10 kilohm NTC thermistor at 25°C (77°F) ±0.5°F (±0.3°C) up to 500 ft (150 M) using 18 AWG or larger wire, Lead Length: 10 ft. (3050 mm); Outdoor Sensor – 10 kilohm NTC thermistor at 25°C (77°F) ± 0.5°F (±0.3°C) up to 500 ft (150 M) using 18 AWG or larger wire, beta=3892, Lead Length: 10 ft. (3050 mm)

Approvals, CSA: CSA C/US Certified to CSA and UL Standards, File No. LR76030

Temperature Ratings: Panel – 32°F to 130°F; Sensor – -58°F to +230°F (Panel – 0°C to 55°C; Sensor – -50°C to +110°C)

Supply Voltage: 120V 60 Hz

| Material Number | Zoning Devices Controlled | Number of Zones | Zone Output Contact Rating | Zone Module Thermostat Input | Approximate, Dimensions | Weight | Replacement Parts |
|-----------------|-------------------------------|-----------------------|--|--|---|------------------|---|
| AQ25110B/U | None | 1 (non-communicating) | | | 13 in. wide x 8 in. high x 3 3/8 in. deep (33 cm wide x 20.3 cm high x 8.5 cm deep) | 4.9 lbs (2.3 kg) | AQ10X38 24 Vac 38 VA transformer, AQ12C11 supply/return/mixed loop sensor, AQ15100B boiler reset module, AQ12C10 outdoor sensor |
| AQ25142B/U | Pumps or 2-wire valves | 4 | Pumps: 120 Vac/250 Vac, 5A, 1/3 HP, Valves: 24 Vac, 0.5 A, 12 VA | Low voltage, Class II, 2-wire polarity-insensitive, digital communicating with power link to AQ1000 series thermostat. | 16 1/2 in. wide x 8 in. high x 3 3/8 in. deep (42 cm wide x 20.3 cm high x 8.5 cm deep) | 5.7 lbs (2.6 kg) | AQ10X38 24 Vac 38 VA transformer, AQ15540B 4-zone pump expansion module, AQ12C11 supply/return/mixed loop sensor, AQ15100B boiler reset module, AQ12C10 outdoor sensor |
| AQ25144B/U | Zone valves with end switches | 4 | Pumps: 120 Vac/250 Vac, 5A, 1/3 HP, Valves: 24 Vac, 0.5 A, 12 VA | Low voltage, Class II, 2-wire polarity-insensitive, digital communicating with power link to AQ1000 series thermostat. | 16 1/2 in. wide x 8 in. high x 3 3/8 in. deep (42 cm wide x 20.3 cm high x 8.5 cm deep) | 5.7 lbs (2.6 kg) | AQ10X38 24 Vac 38 VA transformer, AQ12C11 supply/return/mixed loop sensor, AQ15740B 4-zone valve with end switch expansion module, AQ15100B boiler reset module, AQ12C10 outdoor sensor |

AQ252 Universal Injection/Mixing Boiler Reset Control Panel for Hydronic Zoning System



Application: Controls one boiler and one mixing (either variable speed injection or floating valve mixing) loop in a hydronic zoning system.

Thermostat Compatibility: AQ1000 Series 2-wire communicating thermostats and most digital thermostats

Setback Program: 7 day, up to 2 setback periods/day.

User Interface: LCD Display and a 7 button Key Pad

Boiler Control Temperature: Supply – Max: OFF, 120°F to 225°F; Min: OFF, 59°F to 180°F; Differential – 2°F to 41°F or Auto (minimum 2 minutes on time) (Supply – Max: OFF, 49°C to 107°C; Min: OFF, 15°C to 82°C; Differential – 1°C to 23°C or Auto (minimum 2 minutes on time))

Boiler Design Temperature: 80°F to 210°F (26°C to 99°C)

Outdoor Low Design Control Temperature: -60°F to 32°F (-51°C to 0°C)

Return Min. Control Temperature: 80°F to 180°F (2°C to 82°C)

Boiler Heat Post Purge: Off, 10 seconds to 30 minutes (factory default is 30 seconds)

Pump/Valve Exercise: 30 seconds per 2 weeks of space heating inactivity

R-C Output (on Transformer): 38 VA, 24 Vac Class II

R-C Input (on Control and Zoning Modules): 24 Vac Class II (input on Control and Zoning Modules)

Demand Input: Heat Demand (Thermostat R-W), Auxiliary Demand, and DHW Demand – External dry contacts connection only

B-B Communication Bus Terminals: Low voltage, Class II, 2-wire polarity-insensitive, digital communicating link to other Control or Zoning modules.

Zone Module Thermostat Input: Low voltage, Class II, 2-wire polarity-insensitive, digital communicating with power link to AQ1000 series thermostat.

Output Ratings: Boiler (T-T) – 24 Vac, 0.5A, 12VA; Auxiliary Low Voltage – 24 Vac, 0.5A, 12VA; Boiler Pump – 120 Vac/250 Vac 5A, 1/3HP; DHW Pump/Valve – 120 Vac 5A, 1/3HP; Auxiliary Pump – Dry contact output, 120 Vac/250 Vac 5A, 1/3 HP

Honeywell AQ252 AQUATROL universal injection/mixing boiler reset controls for single temperature, residential hydronic heating systems ensure ample supply of hot water through energy-efficient outdoor temperature compensated control.

- Displays of outdoor temperature on all AQ1000 thermostats when used with an AQ12C10 outdoor sensor (included)
- Customizable control settings allow for greater control and comfort
- Intuitive and accessible programming interface and central program of zone set points and setback
- Zoning control for up to four zones and can be up to 64 zones using expansion panels
- Boiler short cycling protection, boiler post purge and boiler shock prevent from cold water returning to boiler
- Automated test and purge feature for quick start-up and troubleshooting
- Line and low-voltage output and domestic hot water priority and priority override protection
- Non-volatile EPROM memory retains program settings

Mixing Valve Floating Output (Com,O,C): 24 Vac rated dry contacts

Mixing Valve Modulating Output: 0-10 Vdc

Secondary Pump Output Rating: 120 Vac 5A, 1/3HP

Variable Speed Injection Pump Output: Triac modulated; 120 Vac, 2.1A, 1/6HP

Electrical Connections: Wire-clamp screw terminals, Maximum 2 x 14 AWG each on line voltage terminals

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Secondary Loop Temperature Range: Mixing (Supply) max control – 80°F to 210°F; Mixing (Supply) min control – 35°F to 150°F;

Mixing (Supply) Design Temperature – 70°F to 210°F; Return min control – 80°F to 180°F (Mixing (Supply) max control – 27°C to 99°C; Mixing (Supply) min control – 2°C to 66°C; Mixing (Supply) Design Temperature – 21°C to 99°C; Return min control – 27°C to 82°C)

WWSD (Warm Weather Shut Down) Temperature: Off, 35°F to 100°F (Off, 1°C to 38°C)

Sensor: Supply/Return Sensor – 10 kilohm NTC thermistor at 25°C (77°F) ±0.5°F (±0.3°C) up to 500 ft (150 M) using 18 AWG or larger wire, Lead Length: 10 ft. (3050 mm); Outdoor Sensor – 10 kilohm NTC thermistor at 25°C (77°F) ± 0.5°F (±0.3°C) up to 500 ft (150 M) using 18 AWG or larger wire, beta=3892, Lead Length: 10 ft. (3050 mm)

Approvals, CSA: CSA C/US Certified to CSA and UL Standards, File No. LR76030

Approximate, Dimensions: 16 1/2 in. wide x 8 in. high x 3 3/8 in. deep (42 cm wide x 20.3 cm high x 8.5 cm deep)

Weight: 6.0 lbs (2.7 kg)

Temperature Ratings: Panel – 32°F to 130°F; Sensor – -58°F to +230°F (Panel – 0°C to 55°C; Sensor – -50°C to +110°C)

Supply Voltage: 120V 60 Hz

| Material Number | Zoning Devices Controlled | Number of Zones | Zone Output Contact Rating | Replacement Parts |
|-----------------|--|-----------------|--|--|
| AQ25242B/U | Zone pumps or 2-wire valves (line voltage) | 4 | Pumps: 120 Vac/250 Vac, 5A, 1/3 HP, Valves: 24 Vac, 0.5 A, 12 VA | AQ10X38 24 Vac 38 VA transformer, AQ15540B 4-zone pump expansion module, AQ12C11 supply/return/mixed loop sensor, AQ12C10 outdoor sensor, AQ15200B universal injection/mixing boiler reset module |
| AQ25244B/U | Zone valves with end switches | 4 | Pumps: 120 Vac/250 Vac, 5A, 1/3 HP, Valves: 24 Vac, 0.5 A, 12 VA | AQ10X38 24 Vac 38 VA transformer, AQ12C11 supply/return/mixed loop sensor, AQ15740B 4-zone valve with end switch expansion module, AQ12C10 outdoor sensor, AQ15200B universal injection/mixing boiler reset module |

AQUATROL Zoning System

AQ254 Add-a-Temperature Injection/Mixing Expansion Control Panel for Hydronic Zoning System



Honeywell AQ254 add-a-temperature expansion control panel is used in conjunction with AQ250, AQ25A, AQ251 or AQ252 control panels to provide one additional loop temperature control capability for up to 16 zones, when used with AQ255/AQ257 panels.

- Add-on control panel to the main (AQ250, AQ25A, AQ251, AQ252) control panel
- Each of the 16 zones connected to it are assigned to the system's primary or secondary loop
- Up to 3 AQ254 panels can be added to the main control panel
- Controlled mixed loop temperature by a variable speed injection pump or motorized mixing valve connected to the AQ254
- Intuitive and accessible programming interface and central program of zone set points and setback
- Customizable mixing control settings provide greater control and comfort
- Features zone synchronization through Zone of Greatest Demand control

Application: Expanded zone control and mixed loop temperature control in a hydronic zoning system, Mixed loop target temperature is reset by either outdoor temperature or calculated system load based on indoor temperature feedback, Mixing is target controlled by a variable speed injection pump or motorized valve

Thermostat Compatibility: AQ1000 Series 2-wire communicating thermostats and most digital thermostats

User Interface: LCD Display and a 3 button Key Pad

R-C Output (on Transformer): 38 VA, 24 Vac Class II

R-C Input (on Control and Zoning Modules): 24 Vac Class II (input on Control and Zoning Modules)

B-B Communication Bus Terminals: Low voltage, Class II, 2-wire polarity-insensitive, digital communicating link to other Control or Zoning modules.

Output Ratings: Auxiliary Pump – Dry contact output, 120 Vac/250 Vac 5A, 1/3 HP

Secondary Pump Output Rating: 120 Vac 5A, 1/3HP

Variable Speed Injection Pump Output: Triac modulated; 120 Vac, 2.1A, 1/6HP

Electrical Connections: Wire-clamp screw terminals, Maximum 2 x 14 AWG each on line voltage terminals

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Secondary Loop Temperature Range: Mixing (Supply) max control – 80°F to 210°F; Mixing (Supply) min control – 35°F to 150°F; Mixing (Supply) Design Temperature – 70°F to 210°F; Return min control – 80°F to 180°F (Mixing (Supply) max control – 27°C to 99°C; Mixing (Supply) min control – 2°C to 66°C; Mixing (Supply) Design Temperature – 21°C to 99°C; Return min control – 27°C to 82°C)

Approvals, CSA: CSA C/US Certified to CSA and UL Standards, File No. LR76030

Approximate, Dimensions: 9 1/2 in. wide x 8 in. high x 3 3/8 in. deep (24 cm wide x 20.3 cm high x 8.5 cm deep)

Weight: 3.9 lbs (1.8 kg)

Temperature Ratings: Panel – 32°F to 130°F; Sensor – -58°F to +230°F (Panel – 0°C to 55°C; Sensor – -50°C to +110°C)

Supply Voltage: 120V 60 Hz

| Material Number | Mixing Valve Floating Output (Com,O,C) | Replacement Parts |
|-----------------|--|--|
| AQ25400B/U | 24 Vac rated dry contacts | AQ10X38 24 Vac 38 VA transformer, AQ12C11 supply/return/mixed loop sensor, AQ15400B Add-A-Temperature expansion control module |

AQ255 and AQ257 Zoning Expansion Panel for Hydronic Zoning System



Honeywell AQ255 AQUATROL expansion zoning panels work with AQ2000 boiler control panels and AQ1000 communicating thermostats to control up to four space heating zones, up to 16 zones with additional panels.

- Features AQ255 for zoning with pumps or zone valves without end switches
- Auto test function tests zones at system start up and allows for operator controlled testing of zones
- LED lights offer visual diagnostics of zone operation
- Adjacent zoning panels can operate different zone equipment
- Easily switch from zone valves to pumps with same zoning module
- R-C transformer and B-B data bus terminal connections (network communication) for easy expansion
- Zones can energize a group pump via Aux Out dry contacts
- Zone synchronization through Zone of Greatest Demand control

Application: Zoning control for hydronic zoning system

Thermostat Compatibility: AQ1000 Series 2-wire communicating thermostats and most digital thermostats

User Interface: DIP Switches

R-C Input (on Control and Zoning Modules): 24 Vac Class II (input on Control and Zoning Modules)

B-B Communication Bus Terminals: Low voltage, Class II, 2-wire polarity-insensitive, digital communicating link to other Control or Zoning modules.

Zone Module Thermostat Input: Low voltage, Class II, 2-wire polarity-insensitive, digital communicating with power link to AQ1000 series thermostat.

Electrical Connections: Wire-clamp screw terminals, Maximum 2 x 14 AWG each on line voltage terminals

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing
Approvals, CSA: CSA C/US Certified to CSA and UL Standards, File No. LR76030

Approximate, Dimensions: 9 1/2 in. wide x 8 in. high x 3 3/8 in. deep (24 cm wide x 20.3 cm high x 8.5 cm deep)

Temperature Ratings: Panel – 32°F to 130°F (Panel – 0°C to 55°C)

| Material Number | Zoning Devices Controlled | Number of Zones | Zone Output Contact Rating | Weight | Replacement Parts |
|-----------------|--|-----------------|-----------------------------|------------------|--|
| AQ25542B/U | Zone pumps or 2-wire valves (line voltage) | 4 | 120 Vac/250 Vac, 5A, 1/3 HP | 2.1 lbs (1 kg) | AQ15540B 4-zone pump expansion module |
| AQ25742B/U | 2-wire valve (24 Vac) | 4 | 120 Vac/250 Vac, 0.5A, 12VA | 3.9 lbs (1.8 kg) | AQ10X38 24 Vac 38 VA transformer, AQ15540B 4-zone pump expansion module |
| AQ25744B/U | Zone valves with end switches (24 Vac) | 4 | 120 Vac/250 Vac, 0.5A, 12VA | 3.9 lbs (1.8 kg) | AQ10X38 24 Vac 38 VA transformer, AQ15740B 4-zone valve with end switch expansion module |

AQUATROL Zoning System

AQ2000 Series Replacement Control Modules



Replacement control modules for AQ2000 panels

Boiler Control Temperature: Differential – 2°F to 41°F or Auto (minimum 2 minutes on time) (Differential – 1°C to 23°C or Auto (minimum 2 minutes on time))

Pump/Valve Exercise: 30 seconds per 2 weeks of space heating inactivity

R-C Input (on Control and Zoning Modules): 24 Vac Class II (input on Control and Zoning Modules)

B-B Communication Bus Terminals: Low voltage, Class II, 2-wire polarity-insensitive, digital communicating link to other Control or Zoning modules.

Output Ratings: AQ15A00B-Boiler (T-T) – 24 Vac, 0.5A, 12VA; Auxiliary Low Voltage – 24 Vac, 0.5A, 12VA

Electrical Connections: Wire-clamp screw terminals, Maximum 2 x 14 AWG each on line voltage terminals

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing
Approvals, CSA: CSA C/US Certified to CSA and UL Standards, File No. LR76030

Approximate, Dimensions: AQ15A00B-7 1/8 in. wide x 2 1/2 in. high x 4 1/4 in. deep (AQ15A00B-18 cm wide x 94 cm high x 10.09 cm deep)

Weight: AQ15A00B-1.0 lbs (AQ15A00B-0.5 kg)

Temperature Ratings: Panel – 32°F to 130°F (Panel – 0°C to 55°C)

| Material Number | Application | Setback Program | User Interface | Boiler Heat Post Purge | Demand Input | Mixing Valve Modulating Output |
|-----------------|---|-------------------------------------|------------------------------------|---|--|--------------------------------|
| AQ15A00B/U | Replacement boiler control module for AQ25A | 7 day, up to 2 setback periods/day. | LCD Display and a 7 button Key Pad | 30 seconds (sent to DHW tank or Zone of Greatest Demand - selectable) | Heat Demand (Thermostat R-W), Auxiliary Demand, and DHW Demand – External dry contacts connection only | 0-10 Vdc to boiler |

AQ2000 Series Replacement Zoning Modules



Replacement Zoning Modules for AQ2000 panels

Thermostat Compatibility: AQ1000 Series 2-wire communicating thermostats and most digital thermostats

R-C Input (on Control and Zoning Modules): 24 Vac Class II (input on Control and Zoning Modules)

B-B Communication Bus Terminals: Low voltage, Class II, 2-wire polarity-insensitive, digital communicating link to other Control or Zoning modules.

Zone Module Thermostat Input: Low voltage, Class II, 2-wire polarity-insensitive, digital communicating with power link to AQ1000 series thermostat.

Electrical Connections: Wire-clamp screw terminals, Maximum 2 x 14 AWG each on line voltage terminals

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing
Approvals, CSA: CSA C/US Certified to CSA and UL Standards, File No. LR76030






Approximate, Dimensions: 3 1/2 in. wide x 2 1/2 in. high x 4 1/4 in. deep (9 cm wide x 94 cm high x 10.09 cm deep)

Weight: 0.6 lb (0.3 kg)

Temperature Ratings: Panel – 32°F to 130°F (Panel – 0°C to 55°C)

| Material Number | Application | Zoning Devices Controlled | User Interface | Number of Zones | Zone Output Contact Rating |
|-----------------|--|--|----------------|-----------------|-----------------------------|
| AQ15540B/U | Replacement 4 zone pump expansion module for AQ25542 | Zone pumps or 2-wire valves (line voltage) | DIP Switches | 4 | 120 Vac/250 Vac, 5A, 1/3 HP |

AQ2000 Series Accessories and Replacement Parts

| Material Number | Description | |
|-----------------|--|---|
| AQ10X38/U | This Replacement Transformer Module is used for AQ250, AQ25A, AQ251, AQ252, AQ254, AQ257 and AQ25742B series control and zoning panels. It can be used to add an additional 38 VA power per transformer to drive high VA devices. |  |
| AQ11D15/U | This Replacement Enclosure, used for AQ25042B, AQ25044B, AQ25110B panels, includes; case, cover, and DIN rail. It can be used to add extra AQ10X38 transformers or hide system wiring and component. |  |
| AQ11D20/U | This Replacement Enclosure, used for AQ25A42B, AQ25A44B, AQ25142B, AQ25144B, AQ25242B, and AQ25244B panels, includes; case, cover, and DIN rail. It can be used to add extra AQ10X38 transformers or hide system wiring and component. | |
| AQ12C10/U | This Outdoor Sensor, with 10 feet of lead wires and a plastic mounting bracket, is used with AQ2000 series programmable control panels. |  |
| AQ12C11/U | This Supply/Return/Mixed Loop Pipe Sensor, with 10 feet of lead wires, is used with AQ2000 series control panels. |  |
| AQ12C20/U | This Slab/Floor Sensor, with 15 feet lead length is used with AQ2000 series control panels and AQ1000 series thermostats, to control floor temperatures of in-floor radiant heating applications. |  |

AQUATROL Zoning System

AQ1000TN2 Non-Programmable Communicating Thermostat



Honeywell AQ1000TN2 thermostat controls the ambient air or floor temperature in hydronic heating applications. To provide zoning control, it communicates with and is powered by a Honeywell AQ2000 series zoning module.

- Two-wire polarity-insensitive non-programmable network communicating thermostat
- User buttons feature liquid crystal display as well as outdoor, indoor and floor temperature displays
- Floor temperature sensing with minimum and maximum limits (when used with optional AQ12C20 Slab/Floor Sensor (sold separately))
- Selectable temporary and permanent backlight

Application: Hydronic single-stage zoning heat
Temperature Control Mode Selections: "A" for Ambient Air; "F" for Floor; "AF" for Ambient & Floor.

Mounting: Vertical

Color: Premier White®

Zones: Single or Multi-zone; Network Zoning available

Ambient Temperature Range: 32°F to 158°F (0°C to 70°C)

Shipping and Storage Temperature Range: -30°C to 55°C (-20°F to 130°F)

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Electrical Connections: Wire-clamp screw terminals

Approximate, Dimensions: 2.8 in. wide x 4.6 in. high x 1.0 in. deep
 (7 cm wide x 12 cm high x 2.5 cm deep)

Sensor Element: Thermistor

Network Bus: Low voltage, Class II, 2-wire polarity-insensitive, digital communicating link to AQ2000 series zoning modules.

External Sensors Available: Floor Sensor - 10 Kohm NTC thermistor at 25°C (77°F) +/- 0.5°F (+/-0.3°C) up to 500 ft (150 M) using 18 AWG or larger wire, beta=3892. Lead Length: 10 ft. (3050 mm) with rating 58°F to 230°F (-50°C to 110°C)

Outdoor Temperature Display Range: -58°F to 149°F (-5°C to 65°C)

Weight: 0.2 lb (0.1 kg)

Tradeline Value: Tradeline

User Interface: DIP Switches

| Material Number | Setting Temperature Range | Differential Temperature | Terminal Designations | Display | Power Method |
|-----------------|---|--------------------------|------------------------|--|--------------------------------------|
| AQ1000TN2/U | Ambient and Floor -40°F to 100°F (Ambient and Floor -5°C to 38°C) | ± 1°F (±0.5°C) | TH, TH, Sensor, Sensor | LCD Display; Icons in display: Heat On, Vacation Mode, Comfort/Unoccupied, Keypad Lock, Set point; Temperatures Displayed: Indoor, Setpoint, Outdoor | Powered (24 Vdc) by AQ zoning module |

AQ1000TP2 Programmable Heat/Cool Thermostat



Honeywell AQ1000TP2 thermostat controls the ambient air or floor temperature in hydronic heating applications. To providing zoning control, it communicates with and is powered by a Honeywell AQ2000 series zoning module.

- Single-stage heating and cooling with outdoor, indoor, and floor temperature display
- Two-wire polarity-insensitive non-programmable network communicating thermostat
- Seven-day programmable thermostat with liquid crystal display and seven user buttons for programming
- Selectable temporary and permanent backlight

Application: Hydronic single-stage zoning, heating and cooling
Temperature Control Mode Selections: Air for Ambient Air; "Floor" for Floor; "Air/Floor" for Ambient & Floor

Mounting: Vertical

Color: Premier White®

Programmability: 7-day programmable

Zones: Single or Multi-zone; Network Zoning available

Ambient Temperature Range: 32°F to 158°F (0°C to 70°C)

Shipping and Storage Temperature Range: -30°C to 55°C (-20°F to 130°F)

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Electrical Connections: Wire-clamp screw terminals

Approximate, Dimensions: 3.0 in. wide x 4.9 in. high x 1.0 in. deep
 (7.8 cm wide x 12.5 cm high 2.5 cm deep)

Sensor Element: Thermistor

Network Bus: Low voltage, Class II, 2-wire polarity-insensitive, digital communicating link to AQ2000 series zoning modules.

External Sensors Available: Floor Sensor - 10 Kohm NTC thermistor at 25°C (77°F) +/- 0.5°F (+/-0.3°C) up to 500 ft (150 M) using 18 AWG or larger wire, beta=3892. Lead Length: 10 ft. (3050 mm) with rating 58°F to 230°F (-50°C to 110°C)

Outdoor Temperature Display Range: -58°F to 149°F (-5°C to 65°C)

Weight: 0.3 lb (0.5 kg)

Tradeline Value: Tradeline

User Interface: DIP Switches

| Material Number | Setting Temperature Range | Differential Temperature | Terminal Designations | Display | Power Method |
|-----------------|--|--------------------------|------------------------|---|--------------------------------------|
| AQ1000TP2/U | Ambient and Floor-40°F to 100°F (Ambient and Floor -5°C to 38°C) | ± 1°F (±0.5°C) | TH, TH, Sensor, Sensor | LCD Display; Icons in display: Heat On, Cool On, Fan On, Comfort/Unoccupied, Keypad Lock, Set point, Vacation Mode; 7 user programming buttons; Temperatures Displayed: Indoor, Setpoint, Outdoor | Powered (24 Vdc) by AQ zoning module |

R847 Heavy Duty Relay



Designed for control of relatively heavy duty 120 or 240 Vac electrical loads such as cooling compressors.

- Internal, flexible leads permit SPST or DPST switching.

Application: Enclosed heavy duty DPST or SPST switching relay for 24 volt 2-wire thermostat control of high-current loads such as cooling compressors. 120 volt primary power supply.

Electrical Connections: Main- 2-Wire; Control Circuit- 2-Wire

Coil Ratings Voltage: 24 Vac; Maximum Pull-in Voltage-2.0 A

Coil Ratings: 8.4 VA (Sealed); 21.4 VA (inrush)

Coil Ratings Current: 0.4A

Contact Ratings (AFL): 22A @ 120 Vac; 10A @ 240 Vac

Contact Ratings (ALR): 120 Vac – 100A; 240 Vac – 50A

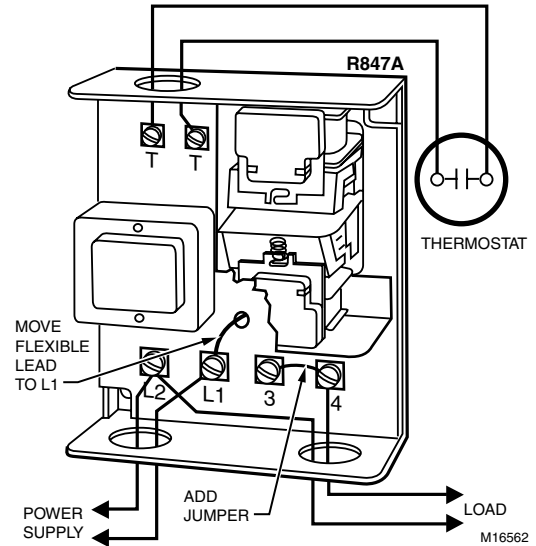
Approximate, Dimensions: 5 1/4 in. high x 4 1/4 in. wide x 2 3/4 in. deep (133 mm high x 108 mm wide x 70 mm deep)

Approvals, CSA: Certified: File No. LR1620

Approvals, Underwriters Laboratories Inc.: Listed: File No. SA481, Guide No. SDF4

Tradeline Value: Tradeline

R847A wired to break one side of the circuit with SPST switching.



| Material Number | Input Voltage | Frequency | Switching | Description | Includes |
|-----------------|---------------|--------------|--------------|--|---------------------------------|
| R847A1085/U | 120V | 50 Hz; 60 Hz | DPST or SPST | This 120V, 50 Hz or 60 Hz Heavy Duty Switching Relay with integral transformer, and DPST or SPST line voltage relays, is used for 24 volt 2-wire thermostat control of high-current loads such as cooling compressors. | Integral transformer, enclosure |

R856 Control Center



Provides 24 volt control of line voltage motors, fans, blowers, or pumps up to 1 hp.

- Integral 45 VA transformer to supply low voltage power for the system.
- Low voltage terminal strip for easy thermostat and panel connections.

Application: Enclosed fan center for 24 volt control of a line voltage motor, evaporator fan, or pump up to 1 horsepower. Includes wiring terminal board and 45 VA transformer.

Input Voltage: 120V

Frequency: 60 Hz

Coil Ratings: 6 VA (Sealed); 11 VA (inrush)

Coil Ratings Current: 0.22A

Electrical Ratings, Contacts: Horsepower – 3/4 hp N.O.; 1/2 hp N.C.

Contact Ratings (AFL): 14.0A N.O.; 10.0A N.C. @ 120 Vac

Contact Ratings (ALR): 120 Vac – 84.0A N.C., 80.0A N.C.

Approximate, Dimensions: 7 1/8 in. high x 4 1/2 in. wide x 3 5/16 in. deep (181 mm high x 114 mm wide x 84 mm deep)

Approvals, CSA: Certified: File No. LR95329-1

Approvals, Underwriters Laboratories Inc.: Listed: File No. E4436, Vol. 6 Sec. 9

Includes: External transformer, enclosure

| Material Number | Coil Ratings Voltage | Switching |
|-----------------|----------------------|-----------|
| R856B1002/U | 24 Vac | SPST |

Hydronic Switching Relays

RA89; RA832; R845 Hydronic Switching Relay



Provides intermediate switching of a line voltage device from a low voltage controller.

- Integral transformer provides low voltage power for control circuit

Input Voltage: 120V

Electrical Connections: Control Circuit- 2-Wire

Frequency: 50 Hz; 60 Hz

Coil Ratings Voltage: 24 Vac

Coil Ratings Current: 0.4A

Electrical Ratings: Maximum Input-5.0 W

Contact Ratings (resistive): At 120 Vac –10A; 240 Vac – 6.0A

Temperature Ratings: 115°F maximum ambient for 60 Hz. 105°F

Max. Ambient for 50 Hz. (46°C maximum ambient for 60 Hz. 41°C maximum ambient for 50 Hz.)

Approximate, Dimensions: 5 1/4 in. high x 4 1/4 in. wide x 2 5/16 in. deep (133 mm high x 108 mm wide x 59 mm deep)

Approvals, CSA: Certified: File No. LR1620

Approvals, Underwriters Laboratories Inc.: Listed: File No. E4436, Guide No. XAPX

Includes: Integral transformer, enclosure

Tradeline Value: Tradeline

| Material Number | Application | Switching | Electrical Ratings, Contacts | Contact Ratings (AFL) | Contact Ratings (ALR) | Pilot Duty Ratings | Description | Comment |
|-----------------|--|---|--|---|--|-------------------------|--|---|
| RA845A1030/U | Enclosed intermediate DPST switching relay for 24 volt 2 wire thermostat control of one line voltage and one line or low voltage devices. 120 volt primary power supply. | DPST; one pole line voltage, the other line or low voltage | Maximum connected load is 2000 VA (120 Vac to 240 Vac) | At 120 Vac – 7.4A; 240 Vac – 3.7A; Secondary – at 120 Vac 3A; at 240 Vac 2A | At 120 Vac – 44.4A; 240 Vac –22.2A; Secondary – at 120 Vac 18A; at 240 Vac 12A | Secondary – 50 VA @ 24V | This 120V, 60 Hz Switching relay with internal transformer, provides DPST switching for hot water zone control systems, or SPST control of two separate loads. | Thermostat Compatibility – Low voltage (Class 2) 2-wire |
| RA832A1066/U | Provide intermediate DPST switching of a line voltage device from a low voltage controller. | DPST; one pole line voltage, the other low voltage or millivolt | Maximum connected load is 2000 VA (120 Vac to 240 Vac); Secondary DC Rating – 1A @ 12 Vdc; Secondary millivolt Rating – 300 mA min. @ 750 mV | At 120 Vac – 7.4A AFL; 240 Vac – 3.7A | At 120 Vac – 44.4A; 240 Vac – 22.2A | Secondary – 50 VA @ 24V | This 120V Switching Relay with internal transformer is used for DPST switching of two line voltage loads having a common power source. | |
| RA89A1074/U | Provide intermediate SPST switching of a line voltage device from a low voltage controller. | SPST | | At 120 Vac – 10.2A; 240 Vac – 5.1A | At 120 Vac – 61.2A; 240 Vac – 30.6A | | This 120V Switching Relay with internal transformer, provides intermediate SPST switching of a line voltage device from a low voltage controller. | |

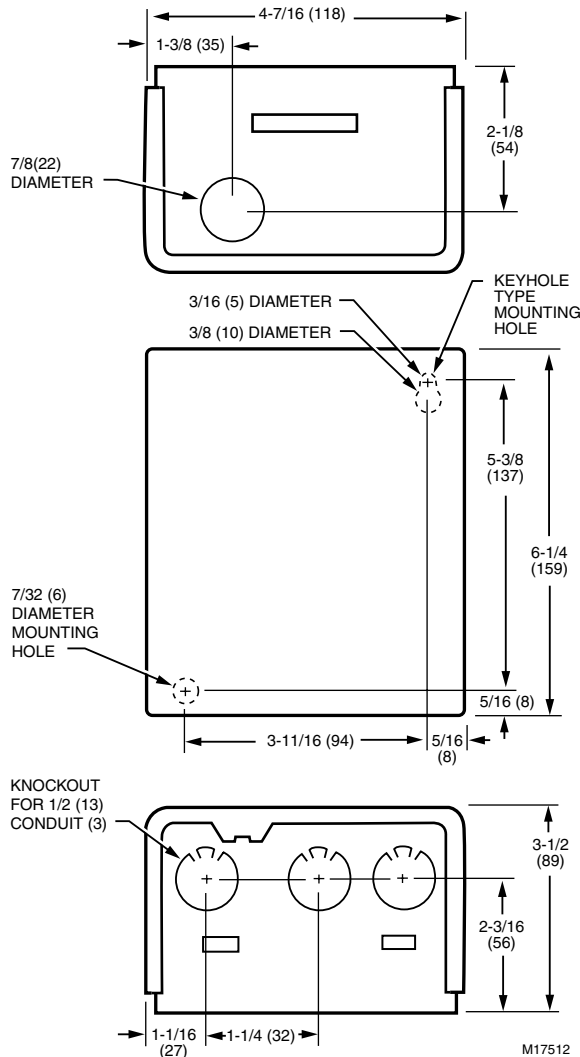
R8845U Universal Switching Relay



The R8845U Universal Switching Relay with 24 V transformer provides intermediate switching of line- and low-voltage devices from a line- or low-voltage controller and is typically applied in Hydronic heating systems.

- Replaceable socketed relays.
- Two troubleshooting LED.
- Push-to-test button.
- Replaceable transformer fuse.
- Low-voltage contact rating for PowerPile applications.
- Long-life DC relay drive control technology.
- Relay for use with external 24 Vac or 24 Vdc supply, with line-voltage control, or with internal 24 V transformer supply.
- One model replaces many competitor models.
- One model may replace many Honeywell models: R182A,B,C,J; R482A,B,C,J; R845; R882A,B,C,J and RA832.

Dimensions in inches (millimeters)



Application: Enclosed Universal switching relay with internal transformer for 24 volt 2 or 3 wire thermostat control of line voltage devices. Two line voltage SPST relays and one low voltage SPST relay with PowerPile rating.

Electrical Connections: Control Circuit- 2 or 3-wire

Coil Ratings Voltage: 24 Vac

Coil Ratings Current: 0.4A

Electrical Ratings, Contacts: Maximum connected load is 2000 VA

Contact Ratings (AFL): 7.4A AFL, 44.4A @ 120 Vac on each set of line-voltage contacts

Transformer: Secondary Rating- 24 Vac, 12 VA max., 9 VA available for external load. Secondary protected by replaceable 1A automotive fuse.

Operating Humidity Range (% RH): 0 to 90% RH, non-condensing
Temperature Ratings: Ambient: -20°F to +120°F (Ambient: -29°C to +49°C)

Approximate, Dimensions: 6 1/4 in. high x 4 7/16 in. wide x 3 1/2 in. deep (159 mm high x 118 mm wide x 89 mm deep)

Approvals, Underwriters Laboratories Inc.: Listed: File No. E4436, Guide No. XAPX

Approvals, Canadian Underwriters Laboratories Inc.: Listed: Guide No. XAPX7.

Comments: Thermostat Compatibility – Honeywell electromechanical and electronic 2- or 3-wire; Thermostat Heat Anticipator Setting – 0.12A

| Material Number | Input Voltage | Frequency | Switching | Description | Includes |
|-----------------|---------------|-----------|---|---|---------------------------------|
| R8845U1003/U | 120V | 60 Hz | Two SPST, plus PowerPile® rated low voltage SPST relay. (If normally closed contacts are needed, use RA889A). | This 120V, 60 Hz Universal Switching Relay with internal transformer, Provides intermediate switching of line and low voltage devices from a line or low voltage controller | Integral transformer, enclosure |

Hydronic Switching Relays

RA889A Switching Relay



The RA889A Switching Relay with 24 V controller provides intermediate switching of line- and low-voltage devices from a line- or low-voltage controller and is typically applied in Hydronic heating systems.

- High load switching capability.
- Troubleshooting LED.
- Push-to-test button.
- Replaceable transformer fuse.
- Long-life DC relay drive control technology.
- Relay for use with external 24 Vac or 24 Vdc supply, with line-voltage control, or with internal 24 V transformer supply.
- One model replaces many Honeywell models.
- Secondary of transformer protected by replaceable 1A automotive fuse.

Application: Provide intermediate SPDT and SPST switching of line- and low-voltage devices from a line- or low-voltage controller.

Electrical Ratings, Contacts: Maximum connected load is 2000 VA

Contact Ratings (AFL): 15A@ 120 Vac

Contact Ratings (ALR): 120 Vac – 30A

Transformer: Secondary Rating- 24 Vac, 12 VA max., 9 VA available for external load. Secondary protected by replaceable 1A automotive fuse.

Operating Humidity Range (% RH): 0 to 90% RH, non-condensing
Temperature Ratings: Ambient: -20°F to +120°F (Ambient: -29°C to +49°C)

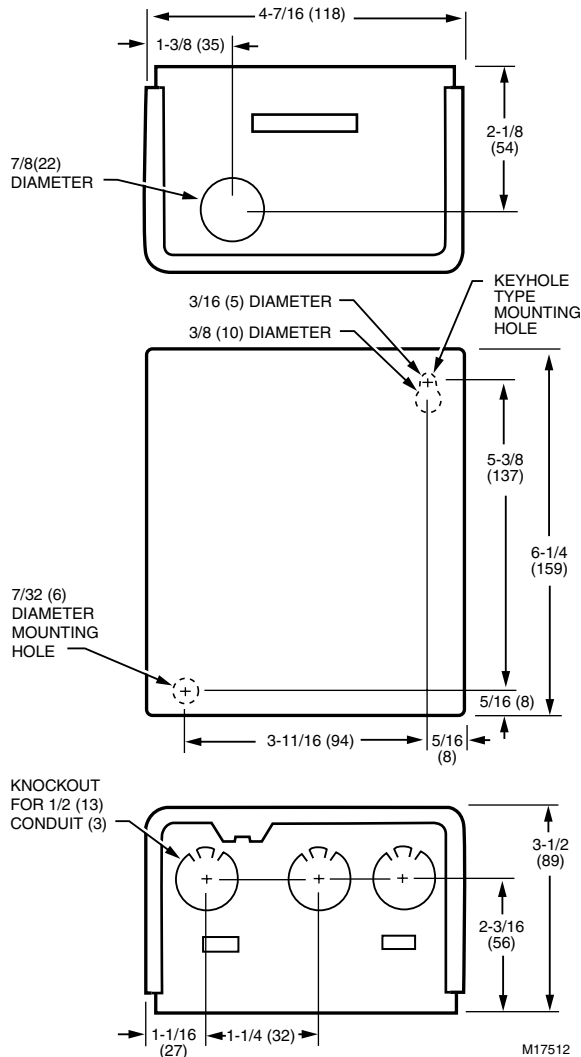
Approximate, Dimensions: 6 1/4 in. high x 4 7/16 in. wide x 3 1/2 in. deep (159 mm high x 118 mm wide x 89 mm deep)

Approvals, Underwriters Laboratories Inc.: Listed: File No. E4436, Guide No. XAPX

Approvals, Canadian Underwriters Laboratories Inc.: Listed: Guide No. XAPX7.

Comments: Thermostat Compatibility – Honeywell electromechanical and electronic 2- or 3-wire; Thermostat Heat Anticipator Setting – 0.12A

Dimensions in inches (millimeters)



| Material Number | Input Voltage | Frequency | Switching | Description | Includes |
|-----------------|---------------|-----------|--|---|---------------------------------|
| RA889A1001/U | 120V | 60 Hz | SPDT, plus PowerPile® rated low voltage SPST relay | This Enclosed 120V, 60 Hz switching relay with internal transformer. Provides intermediate SPDT and SPST switching of line- and low-voltage devices from a line- or low-voltage controller. | Integral transformer, enclosure |

AT140 General Purpose Transformer for Hydronic Heating Controls



Honeywell 40 VA general purpose transformers power 24 Vac circuits. Although typically used in heating/cooling control systems, they can be used in any application that doesn't exceed the load ratings.

- Color-coded lead wires for primary connections and screw terminals for secondary connections
- Includes fixed 1/4 inch (6mm) male quick-connects (AT140A models only) or color-coded lead wires for primary and secondary connections
- Meets NEC Class 2 requirements and Underwriters Laboratories Standard UL 1585
- Identified Class 2 not wet, Class 3 wet

Frequency: 60 Hz

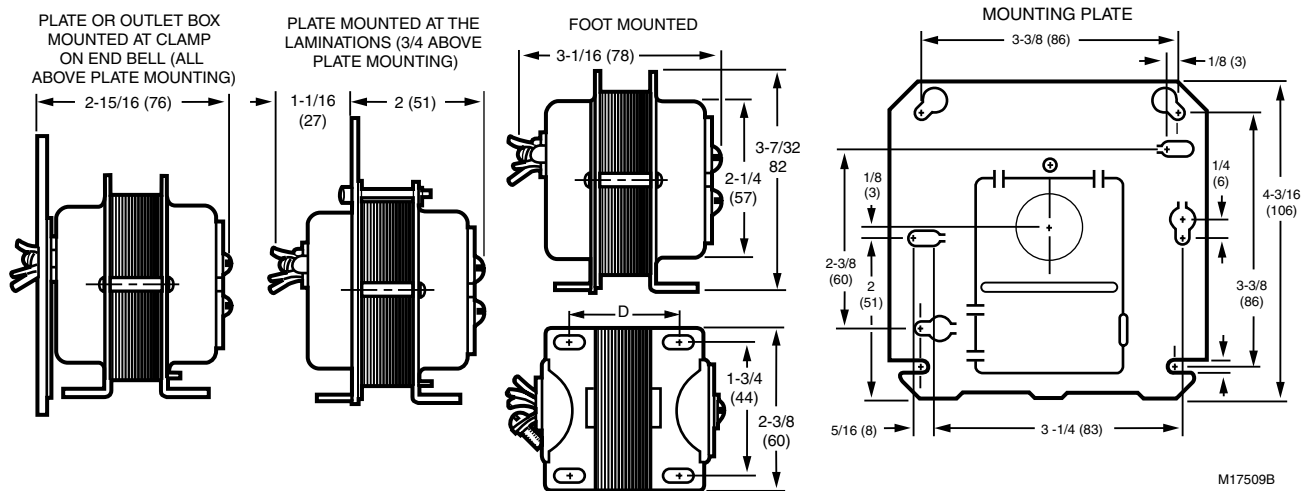
Mounting: Foot mounted, plate mounted on 2x4 in. or 4x4 in. outlet box, clamp mounted using outlet box knockout, or panel mounted

Approvals, Underwriters Laboratories Inc.: UL Listed: A,C,F models. File # E14881

Approvals, CSA: CSA Certified: A & B models.

Temperature Range: -20°F to +105°F (-29°C to +41°C)

Dimensions in inches (millimeters)



| Material Number | Approximate, Dimensions | Electrical Ratings | Electrical Ratings, Output | Electrical Connections (Primary) (in.) | Electrical Connections (Primary) (mm) | Electrical Connections (Secondary) (in.) | Electrical Connections (Secondary) (mm) |
|-----------------|--|---|----------------------------|--|---------------------------------------|--|---|
| AT140A1034/U | 3 3/16 in. high x 2 3/8 in. wide x 3 1/8 in. deep (81 mm high x 60 mm wide x 79 mm deep) | Primary voltage - 120 Vac; Secondary voltage - 27 V.O.C. | 24 Vac at 20 VA | 9 in. leadwires | 229 mm leadwires | (2) screw terminals | (2) screw terminals |

Residential Heating Valves and Actuators

M6063 Rotary Actuator



Actuator Type: Rotary
Frequency: 50 Hz; 60 Hz
Torque Rating (lb-in.): 60 lb-in. Manual declutch
Torque Rating (Nm): 7 Nm Manual declutch
Auxiliary Switch Ratings: 24 Vac, 3A, 24 VA pilot duty, Class 2, normally closed, Gray cable. S1 (black/gray pair) opens at left (CCW) end stop. S2 (brown/pink pair) opens at right (CW) end stop.
Electrical Connections: Color-coded 40 in. (1 meter) cable
Cable: Blue=Common; Brown=Clockwise rotation; Black=Counter-clockwise rotation
Timing: 100 seconds for 90 degrees (full) stroke
Environmental, Electrical, or Ingress Protection Rating: Double insulated. IP44 according to 60529 Standard (exceeds NEMA 3).
Dimensions in inches (millimeters)

The Corona series of M6063 Actuator and V5442 Compact Rotary Valves provide integrated mixing of boiler supply, boiler return, loop supply, and loop return water in hydronic heating systems. The M6063 actuator enables automatic mixing operation.

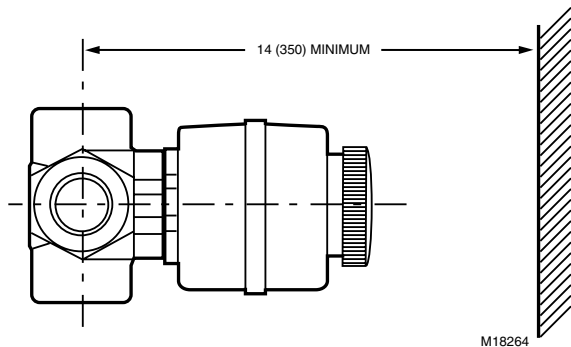
- 24 Vac floating input for automatic control.
- Single screw attachment to V5442 valve body.
- Multi-poise mounting.
- Color-coded position indicator.
- Manual valve operator.
- Auxiliary end switch for cascade control outputs.
- Sealed assembly; flylead electrical connections.

Approximate, Dimensions: Approximately 3 5/16 in. high x 4 in. wide x 3 3/16 in. deep (Approximately 97 mm high x 101 mm wide x 81 mm deep)

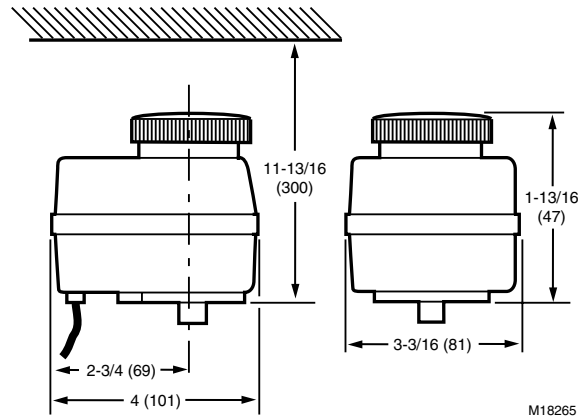
Ambient Temperature Range: 32°F to 140°F (0°C to 60°C)
Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Operating Humidity Range (% RH): Less than 90% RH, non-condensing

Supply Voltage: 24V, Power Supply Rating – 3VA, SPDT or SP3T (tri-state) for proportional control



Distance for installation



| Material Number | Controller Compatibility | Control Signal | Comments | Used With |
|-----------------|--|-----------------|--|-----------------------------|
| M6063A4007 | PI or PID tri-state control signal for proportional control action, such as supplied by AQ252 and AQ254 Aquatrol modules | 24 Vac Floating | Cross Reference: M6063 functionally replaces Centra VRK10-24 valve actuator when used with V5442 valve body. | V5442 Four-way mixing valve |

VC Series Cartridge Cage 3-way Mixing



Approximate, Dimensions: 3 9/16 in. high x 2 3/4 in. wide x 3 3/4 in. long (111 mm high x 68 mm wide x 89 mm long)

Coupling Controller: Integral

Aux Switch Ratings: 24 Vac, 2.2A pilot duty, Class 2, SPDT

Timing: 120 sec

Control Signal: 24 Vac Floating

Electrical Connections: Color-coded 40 in. (1 meter) cable

Voltage: 24V

Frequency: 50 Hz; 60 Hz

Control central heating and/or cooling systems, fan coil systems, radiators and convectors. Depending on the model selected, it can be controlled by either a low voltage SPST or SPDT or floating controller such as a room thermostat, Aquastat control, or flow switch.

- Three-way valves.
- Minimal actuator power consumption.
- Double insulated actuator.
- Quick-connect or one-meter cable electrical connections available.
- Safe for use with potable water.
- Quick and easy replacement of moving parts.
- Actuator head installation does not require draining the system.
- On/Off models with six second nominal timing (floating/modulating models available with 120 second timing).

Power Supply Rating: 6 VA, SPDT, or SP3T (tri-state) for proportional control.

Differential (close-off) Pressure Rating: 60 psi (4 Bar)

Static Pressure Rating: 300 psi (20 Bar)

Median Temperature Range: 34°F to 203°F (1°C to 95°C)

Ambient Temperature Range: 32°F to 140°F (0°C to 60°C)

Shipping Temperature Range: -40°F to +150°F (-40°C to +65°C)

Materials (Body): Bronze

Valve and Actuator Kit

| Material Number | Body Pattern | Pipe Size | | Pipe Connection | Capacity | Flow Characteristic | Comments |
|-----------------|--------------|-----------|------|-----------------|----------|---------------------|---|
| | | Inch | DN | | | | |
| VC6831ML6111/U | Three-way | 3/4 in. | DN20 | Sweat | 5.9 Cv | Linear | Comes with Valve VCZNB7100 and Actuator VC6831ZZ11; Use with max 50% glycol in water solution |
| VC6831MS6111/U | Three-way | 1 in. | DN25 | Sweat | 6.6 Cv | Linear | Comes with Valve VCZMA7100 and Actuator VC6831ZZ11; Use with max 50% glycol in water solution |

A La Carte Option

Actuators

| Material Number | Voltage | Frequency | Power Consumption | Stroke Timing | End Switch | Cable Length |
|-----------------|---------|--------------|-------------------|---------------|-----------------|--------------|
| VC6834ZZ11/U | 24 Vac | 50 Hz; 60 Hz | 6 VA | 120 seconds | 2-Position SPDT | 60 inches |

Valves

| Material Number | Body Pattern | Pipe Size | | Pipe Connection | Capacity | Flow Characteristic | Comments |
|-----------------|--------------|-----------|------|-----------------|----------|---------------------|---|
| | | Inch | DN | | | | |
| VCZMA7100/U | Three-way | 1/2 in. | DN15 | Sweat | 3.7 Cv | Linear | Use with max 50% glycol in water solution |
| VCZML7100/U | Three-way | 3/4 in. | DN20 | Sweat | 6.6 Cv | Linear | Use with max 50% glycol in water solution |
| VCZMR7100/U | Three-way | 1 in. | DN25 | NPT | 8.3 Cv | Linear | Use with max 50% glycol in water solution |
| VCZMS7100/U | Three-way | 1 in. | DN25 | Sweat | 8.3 Cv | Linear | Use with max 50% glycol in water solution |
| VCZND7100/U | Three-way | 1-1/4 in. | DN32 | NPT | 9 Cv | Linear | Use with max 50% glycol in water solution |
| VCZNE7100/U | Three-way | 1-1/4 in. | DN32 | Sweat | 9 Cv | Linear | Use with max 50% glycol in water solution |

Motorized Zone Valves

VC Series Quick Open Cartridge Cage 2-way Zone Valve



Control central heating and/or cooling systems, fan coil systems, radiators and convectors. Depending on the model selected, it can be controlled by either a low voltage SPST or SPDT or floating controller such as a room thermostat, Aquastat control, or flow switch.

- Two-way valves.
- Minimal actuator power consumption.
- Double insulated actuator.
- Quick-connect or one-meter cable electrical connections available.
- Safe for use with potable water.
- Quick and easy replacement of moving parts.
- Actuator head installation does not require draining the system.
- On/Off models with six second nominal timing (floating/modulating models available with 120 second timing).

Approximate, Dimensions: 3 9/16 in. high x 2 3/4 in. wide x 3 3/4 in. long (111 mm high x 68 mm wide x 89 mm long)

Coupling Controller: Integral

Aux Switch Ratings: 24 Vac, 2.2A pilot duty, Class 2, SPDT

Timing: 6 sec

Control Signal: 24 Vac Floating

Electrical Connections: Color-coded 40 in. (1 meter) cable

Voltage: 24V

Frequency: 50 Hz; 60 Hz

Power Supply Rating: 6 VA, SPDT, or SP3T (tri-state) for proportional control.

Differential (close-off) Pressure Rating: 60 psi (4 Bar)

Static Pressure Rating: 300 psi (20 Bar)

Median Temperature Range: 34°F to 203°F (1°C to 95°C)

Ambient Temperature Range: 32°F to 140°F (0°C to 60°C)

Shipping Temperature Range: -40°F to +150°F (-40°C to +65°C)

Materials (Body): Bronze

Valve and Actuator Kit

| Material Number | Body Pattern | Pipe Size | | Pipe Connection | Capacity | Flow Characteristic | Comments |
|-----------------|--------------|-----------|------|-----------------|----------|--------------------------|---|
| | | Inch | DN | | | | |
| VC8715AM1000/U | Two-way | 3/4 in. | DN20 | Sweat | 5.8 Cv | Quick Open; 6 Seconds | Comes with Valve VCZAM1100 and Actuator VC8715ZZ11; Use with max 50% glycol in water solution |
| VC8715AS1000/U | Two-way | 1 in. | DN25 | Sweat | 7.0 Cv | Quick Open; 6 Seconds | Comes with Valve VCZAS1100 and Actuator VC8715ZZ11; Use with max 50% glycol in water solution |

A La Carte Option

Actuators

| Material Number | Voltage | Frequency | Power Consumption | Stroke Timing | End Switch | Cable Length |
|-----------------|---------|-----------|-------------------|---------------|-----------------|--------------|
| VC8715ZZ11/U | 24 Vac | 60 Hz | 6 VA | 6 seconds | – | 60 inches |
| VC8714ZZ11/U | 24 Vac | 60 Hz | 6 VA | 6 seconds | 2-Position SPST | 60 inches |

Valves

| Material Number | Body Pattern | Pipe Size | | Pipe Connection | Capacity | Flow Characteristic | Comments |
|-----------------|--------------|-----------|------|-----------------|----------|---------------------|---|
| | | Inch | DN | | | | |
| VCZBB1100/U | Two-way | 1/2 in. | DN15 | NPT | 3.5 Cv | Quick Open | Use with max 50% glycol in water solution |
| VCZAA1100/U | Two-way | 1/2 in. | DN15 | Sweat | 3.5 Cv | Quick Open | Use with max 50% glycol in water solution |
| VCZAL1100/U | Two-way | 3/4 in. | DN20 | NPT | 4.7 Cv | Quick Open | Use with max 50% glycol in water solution |
| VCZAM1100/U | Two-way | 3/4 in. | DN20 | Sweat | 4.7 Cv | Quick Open | Use with max 50% glycol in water solution |
| VCZAR1100/U | Two-way | 1 in. | DN25 | NPT | 6.6 Cv | Quick Open | Use with max 50% glycol in water solution |
| VCZAS1100/U | Two-way | 1 in. | DN25 | Sweat | 6.6 Cv | Quick Open | Use with max 50% glycol in water solution |
| VCZBD1100/U | Two-way | 1-1/4 in. | DN32 | NPT | 7 Cv | Quick Open | Use with max 50% glycol in water solution |
| VCZBE1100/U | Two-way | 1-1/4 in. | DN32 | Sweat | 7 Cv | Quick Open | Use with max 50% glycol in water solution |

VC Series Linear/Modulating Cartridge Cage 2-way Zone Valve



Approximate, Dimensions: 3 9/16 in. high x 2 3/4 in. wide x 3 3/4 in. long (111 mm high x 68 mm wide x 89 mm long)

Coupling Controller: Integral

Aux Switch Ratings: 24 Vac, 2.2A pilot duty, Class 2, SPDT

Timing: 120 sec

Control Signal: 24 Vac Floating

Electrical Connections: Color-coded 40 in. (1 meter) cable

Voltage: 24V

Frequency: 50 Hz; 60 Hz

Control central heating and/or cooling systems, fan coil systems, radiators and convectors. Depending on the model selected, it can be controlled by either a low voltage SPST or SPDT or floating controller such as a room thermostat, Aquastat control, or flow switch.

- Two-way valves.
- Minimal actuator power consumption.
- Double insulated actuator.
- Quick-connect or one-meter cable electrical connections available.
- Safe for use with potable water.
- Quick and easy replacement of moving parts.
- Actuator head installation does not require draining the system.
- On/Off models with six second nominal timing (floating/modulating models available with 120 second timing).

Power Supply Rating: 6 VA, SPDT, or SP3T (tri-state) for proportional control.

Differential (close-off) Pressure Rating: 60 psi (4 Bar)

Static Pressure Rating: 300 psi (20 Bar)

Median Temperature Range: 34°F to 203°F (1°C to 95°C)

Ambient Temperature Range: 32°F to 140°F (0°C to 60°C)

Shipping Temperature Range: -40°F to +150°F (-40°C to +65°C)

Materials (Body): Bronze

Valve and Actuator Kit

| Material Number | Body Pattern | Pipe Size | | Pipe Connection | Capacity | Flow Characteristic | Comments |
|-----------------|--------------|-----------|------|-----------------|----------|---------------------|---|
| | | Inch | DN | | | | |
| VC6831AA1111/U | Two-way | 1/2 in. | DN15 | Sweat | 3.2 Cv | Linear | Comes with Valve VCZAA3100 and Actuator VC6831ZZ11; Use with max 50% glycol in water solution |
| VC6831AM1111/U | Two-way | 3/4 in. | Dn20 | Sweat | 4.6 Cv | Linear | Comes with Valve VCZAM3100 and Actuator VC6831ZZ11; Use with max 50% glycol in water solution |

A La Carte Option

Actuators

| Material Number | Voltage | Frequency | Power Consumption | Stroke Timing | End Switch | Cable Length |
|-----------------|---------|--------------|-------------------|---------------|-----------------|--------------|
| VC6834ZZ11/U | 24 Vac | 50 Hz; 60 Hz | 6 VA | 120 seconds | 2-Position SPDT | 60 inches |

Valves

| Material Number | Body Pattern | Pipe Size | | Pipe Connection | Capacity | Flow Characteristic | Comments |
|-----------------|--------------|-----------|------|-----------------|----------|---------------------|---|
| | | Inch | DN | | | | |
| VCZBB3100/U | Two-way | 1/2 in. | DN15 | NPT | 3.5 Cv | Linear | Use with max 50% glycol in water solution |
| VCZAA3100/U | Two-way | 1/2 in. | DN15 | Sweat | 3.5 Cv | Linear | Use with max 50% glycol in water solution |
| VCZAL3100/U | Two-way | 3/4 in. | DN20 | NPT | 4.7 Cv | Linear | Use with max 50% glycol in water solution |
| VCZAR3100/U | Two-way | 1 in. | DN25 | NPT | 6.6 Cv | Linear | Use with max 50% glycol in water solution |
| VCZAS3100/U | Two-way | 1 in. | DN25 | Sweat | 6.6 Cv | Linear | Use with max 50% glycol in water solution |
| VCZBD3100/U | Two-way | 1-1/4 in. | DN32 | NPT | 7 Cv | Linear | Use with max 50% glycol in water solution |
| VCZBE3100/U | Two-way | 1-1/4 in. | DN32 | Sweat | 7 Cv | Linear | Use with max 50% glycol in water solution |

Motorized Zone Valves

V4043 Line Voltage Zone Valves



Flare Connection



Sweat Connection



NPT Connection

Two way on-off line voltage valves consist of an actuator motor and valve assembly for controlling the flow of hot or chilled water.

- Manual opener (on all models, except straight-through, normally open valves) for valve operation on power failure; valve returns to automatic position when power is restored.
- All models may be installed without disassembling the valve.
- Compact construction for easy installation.
- Complete powerhead may be removed or replaced without breaking plumbing line connections or draining the system.
- Motor may be replaced without removing the valve body or draining the system.
- Suitable for heating and cooling applications.

Application: Hydronic Control

Valve Type: Zone Valve

Body Pattern: Two-way, Straight-through

Frequency: 60 Hz

Actuation: Two position

Electrical Connections: 18 in. leads (457 mm leads)

Ambient Temperature Range: 125°F Maximum (52°C Maximum)

Fluid Temperature: 40°F to 200°F (5°C to 93°C)

Static Pressure Rating (psi): 125 psi

Static Pressure Rating (kPa): 862 kPa

Materials (Body): Brass

Materials (Seat): Brass

Materials (Stem): Stainless Steel

Materials (Plug / Ball / Disc): Buna-N (NBR) Rubber Ball

Materials (Packing): EPDM rubber

Timing: Nominal Open – 15 sec

Operating Humidity Range (% RH): 5 to 95% relative humidity, non-condensing.

Approvals, Underwriters Laboratories Inc.: UL Component Listed: File MH11826 Vol. 1

Approvals, CSA: CSA Certified: File 1322

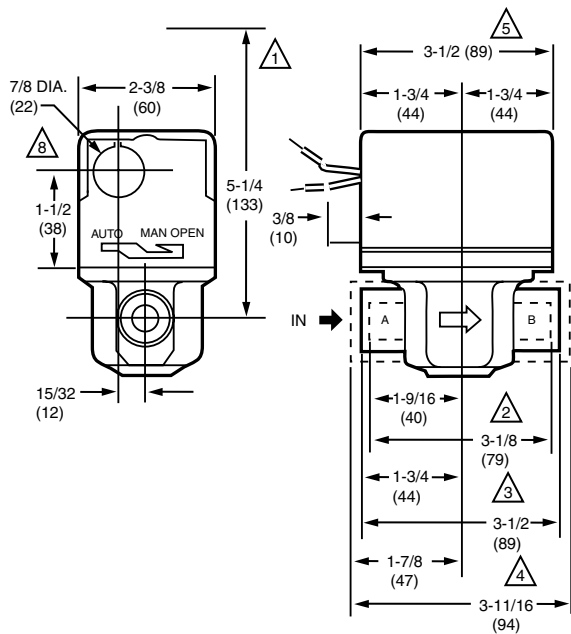
Comments: Use this valve in closed loop hydronic systems that do not contain dissolved oxygen in system water, such as fresh water from frequent source of makeup water. Valve designed for cycling (not constantly powered on) applications.

| Material Number | Capacity (Cv) | Capacity (Kv) | Pipe Size (inch) | Pipe Size (DN) | Connection Type | Maximum Differential Pressure Ratings (Close-off) (psi) | Maximum Differential Pressure Ratings (Close-off) (kPa) | De-energized Position | Valve Action | Voltage | Current Draw | Manual Opener |
|-----------------|---------------|---------------|------------------|----------------|-----------------|---|---|-----------------------|------------------------|-------------------------------------|--------------|---------------|
| V4043A1002/U | 3.5 Cv | 3 Kv | 1/2 in. | DN15 | Flare | 20 psi | 138 kPa | Normally Closed | Spring return to close | 120 Vac; Power Consumption – 9.6 VA | 0.08A | Yes |
| V4043A1010/U | 3.5 Cv | 3 Kv | 1/2 in. | DN15 | Sweat | 20 psi | 138 kPa | Normally Closed | Spring return to close | 120 Vac; Power Consumption – 9.6 VA | 0.08A | Yes |
| V4043A1184/U | 1 Cv | 0.9 Kv | 1/2 in. | DN15 | Sweat | 50 psi | 345 kPa | Normally Closed | Spring return to close | 120 Vac; Power Consumption – 9.6 VA | 0.08A | Yes |
| V4043A1259/U | 8 Cv | 6.9 Kv | 3/4 in. | DN20 | Sweat | 8 psi | 55 kPa | Normally Closed | Spring return to close | 120 Vac; Power Consumption – 9.6 VA | 0.08A | Yes |
| V4043A1317/U | 8 Cv | 6.9 Kv | 1 in. | DN25 | Sweat | 8 psi | 55 kPa | Normally Closed | Spring return to close | 120 Vac; Power Consumption – 9.6 VA | 0.08A | Yes |
| V4043A1689/U | 3.5 Cv | 3 Kv | 1/2 in. | DN15 | NPT | 20 psi | 138 kPa | Normally Closed | Spring return to close | 120 Vac; Power Consumption – 9.6 VA | 0.08A | Yes |
| V4043A1697/U | 10 Cv | 8.6 Kv | 1 in. | DN25 | NPT | 6.5 psi | 45 kPa | Normally Closed | Spring return to close | 120 Vac; Power Consumption – 9.6 VA | 0.08A | Yes |
| V4043A1705/U | 3.5 Cv | 3 Kv | 3/4 in. | DN20 | NPT | 20 psi | 138 kPa | Normally Closed | Spring return to close | 120 Vac; Power Consumption – 9.6 VA | 0.08A | Yes |
| V4043B1018/U | 3.5 Cv | 3 Kv | 1/2 in. | DN15 | Sweat | 20 psi | 138 kPa | Normally Open | Spring return to open | 120 Vac; Power Consumption – 9.6 VA | 0.08A | No |

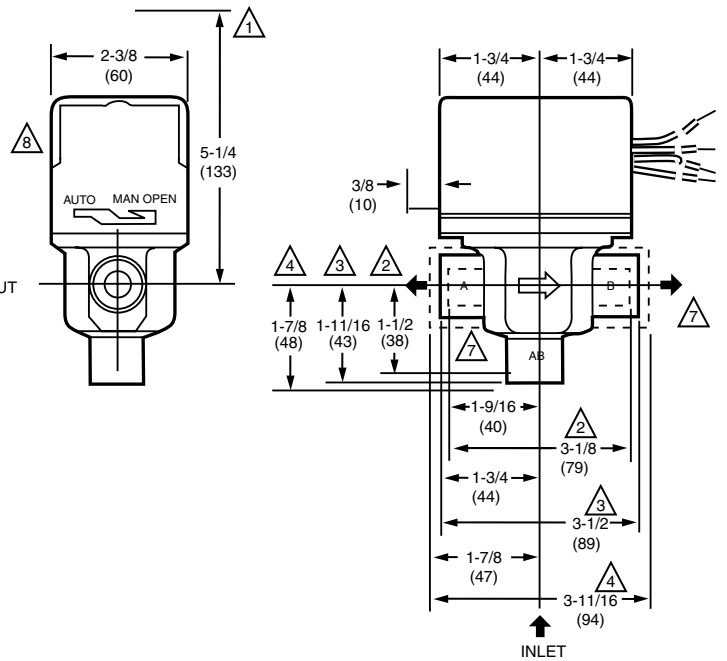
Motorized Zone Valves

Dimensions in inches (millimeters)

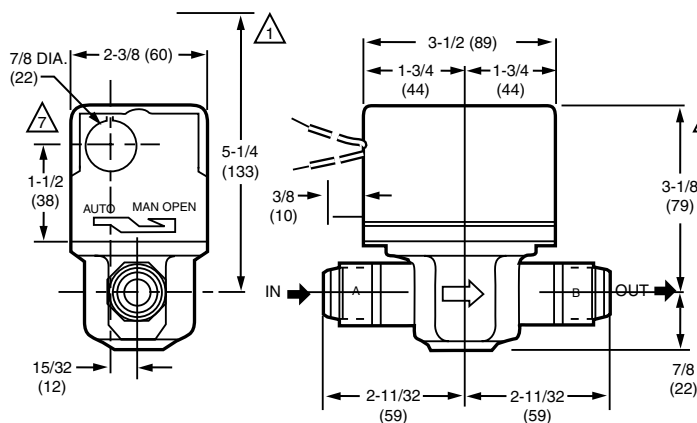
V4043, V8043 SWEAT COPPER CONNECTION MODELS ^{△8}



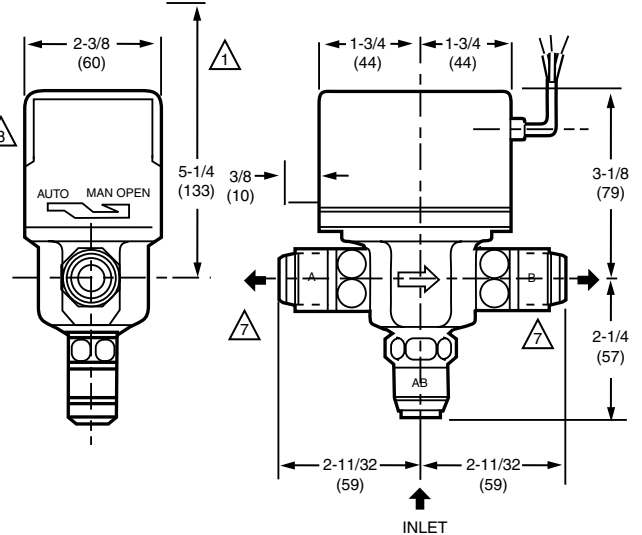
V4044, V8044 SWEAT COPPER CONNECTION MODELS



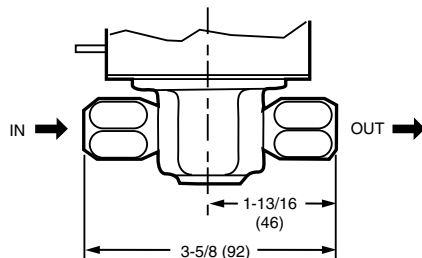
V4043, V8043 FLARE-FITTING MODELS ^{△6}



V4044, V8044 FLARE-FITTING MODELS



V8043 INVERTED FLARE MODELS



- ^{△1} HEIGHT NEEDED TO REMOVE COVER.
- ^{△2} DIMENSIONS FOR 1/2 IN. COPPER TUBING.
- ^{△3} DIMENSIONS FOR 3/4 IN COPPER TUBING.
- ^{△4} DIMENSIONS FOR 1 IN. COPPER TUBING.
- ^{△5} 4-7/8 IN. (124) MAX ON V8034F WITH TERMINAL BOARD ENCLOSURE.
- ^{△6} V4034B AND V8043B VALVES THAT ARE NORMALLY OPEN IN THE DE-ENERGIZED POSITION HAVE NO MANUAL LEVER. THE VALVES ALSO HAVE A REVERSED POWERHEAD WHERE THE LEADWIRES EXIT THE POWERHEAD ABOVE THE B (OUTLET) PORT RATHER THAN ABOVE THE A (INLET) PORT.
- ^{△7} REFER TO MOUNTING INSTRUCTIONS.
- ^{△8} OPENING FOR 1/2 IN. CONDUIT ON MANUAL LEVER SIDE FOR V4043, V8043; OPENING ON OPPOSITE SIDE FOR V4044, V8044.

M10175

Motorized Zone Valves

V4043 Line Voltage Zone Valves for Steam



Flare Connection



Sweat Connection

Application: Steam (low pressure) Control

Valve Type: Zone Valve

Pipe Size (inch): 1/2 in.

Pipe Size (DN): DN15

Body Pattern: Two-way, Straight-through

Capacity (Cv): 3.5 Cv

Capacity (Kv): 3 Kv

Frequency: 60 Hz

Actuation: Two position

Ambient Temperature Range: 125°F Maximum (52°C Maximum)

Fluid Temperature: 40°F to 240°F (5°C to 116°C)

Pressure Range (psi): Steam – 15 psi

Pressure Range (kPa): Steam – 103 kPa

Static Pressure Rating (psi): 125 psi

Two way on-off line voltage valves consist of an actuator motor and valve assembly for controlling the flow of low pressure steam.

- Manual opener (on all models, except straight-through, normally open valves) for valve operation on power failure; valve returns to automatic position when power is restored.
- All models may be installed without disassembling the valve.
- Compact construction for easy installation.
- Complete powerhead may be removed or replaced without breaking plumbing line connections or draining the system.
- Motor may be replaced without removing the valve body or draining the system.
- Suitable for heating applications.

Static Pressure Rating (kPa): 862 kPa

Materials (Body): Brass

Materials (Seat): Brass

Materials (Stem): Stainless Steel

Materials (Plug / Ball / Disc): EPDM Rubber Ball

Materials (Packing): EPDM rubber

Timing: Nominal Open – 15 sec

Operating Humidity Range (% RH): 5 to 95% relative humidity, non-condensing.

Approvals, Underwriters Laboratories Inc.: UL Component Listed: File MH11826 Vol. 1

Approvals, CSA: CSA Certified: File 1322

Comments: For low pressure (15 psi) steam application

Dimensions in inches (millimeters). See page 219.

| Material Number | Electrical Connections | Connection Type | Maximum Differential Pressure Ratings (Close-off) (psi) | Maximum Differential Pressure Ratings (Close-off) (kPa) | De-energized Position | Valve Action | Voltage | Current Draw | Manual Opener |
|-----------------|--------------------------------|-----------------|---|---|-----------------------|------------------------|-------------------------------------|--------------|---------------|
| V4043E1003/U | 18 in. leads (457 mm leads) | Sweat | 20 psi | 138 kPa | Normally Closed | Spring return to close | 120 Vac; Power Consumption – 9.6 VA | 0.08A | Yes |
| V4043E1011/U | 18 in. leads (457 mm leads) | Sweat | 20 psi | 138 kPa | Normally Closed | Spring return to close | 208 Vac; Power Consumption – 9.6 VA | 0.04A | Yes |
| V4043E1029/U | 18 in. leads (457 mm leads) | Sweat | 20 psi | 138 kPa | Normally Closed | Spring return to close | 240 Vac; Power Consumption – 9.6 VA | 0.04A | Yes |

V4044 Line Voltage Diverting Valves



Flare Connection



Sweat Connection

Application: Hydronic Control
Valve Type: Zone Valve
Body Pattern: Three-way, Diverting
Valve Action: Spring Return to port A
Voltage: 120 Vac; Power Consumption – 9.6 VA
Frequency: 60 Hz
Actuation: Two position
De-energized Position: Port A Normally Closed
Electrical Connections: 18 in. leads (457 mm leads)
Ambient Temperature Range: 125°F Maximum (52°C Maximum)
Fluid Temperature: 40°F to 200°F (5°C to 93°C)
Static Pressure Rating (psi): 125 psi
Static Pressure Rating (kPa): 862 kPa
Materials (Body): Brass
Materials (Seat): Brass

On-off and diverting line voltage valves consist of an actuator motor and valve assembly for controlling the flow of hot or chilled water.

- Manual opener (on all models, except straight-through, normally open valves) for valve operation on power failure; valve returns to automatic position when power is restored.
- All models may be installed without disassembling the valve.
- Compact construction for easy installation.
- Complete powerhead may be removed or replaced without breaking plumbing line connections or draining the system.
- Motor may be replaced without removing the valve body or draining the system.
- Suitable for heating and cooling applications.

Materials (Stem): Stainless Steel

Materials (Plug / Ball / Disc): Buna-N (NBR) Rubber Ball

Materials (Packing): EPDM rubber

Timing: Nominal Open – 30 sec

Operating Humidity Range (% RH): 5 to 95% relative humidity, non-condensing.

Manual Opener: Yes

Approvals, Underwriters Laboratories Inc.: UL Component Listed: File MH11826 Vol. 1

Comments: Use this valve in closed loop hydronic systems that do not contain dissolved oxygen in system water, such as fresh water from frequent source of makeup water. Valve designed for cycling (not constantly powered on) applications.

Current Draw: 0.08A

Dimensions in inches (millimeters). See page 219.

| Material Number | Capacity (Cv) | Capacity (Kv) | Pipe Size (inch) | Pipe Size (DN) | Connection Type | Maximum Differential Pressure Ratings (Close-off) (psi) | Maximum Differential Pressure Ratings (Close-off) (kPa) | Changeover Aquastat |
|-----------------|---------------|---------------|------------------|----------------|-----------------|---|---|---------------------|
| V4044A1001/U | 4 Cv | 3.4 Kv | 1/2 in. | DN15 | Flare | 20 psi | 138 kPa | |
| V4044A1019/U | 4 Cv | 3.4 Kv | 1/2 in. | DN15 | Sweat | 20 psi | 138 kPa | |
| V4044A1191/U | 7.0 Cv | 6 Kv | 3/4 in. | DN20 | Sweat | 10 psi | 69 kPa | |
| V4044B1017/U | 4 Cv | 3.4 Kv | 1/2 in. | DN15 | Sweat | 20 psi | 138 kPa | Yes, SPDT |

Motorized Zone Valves

V8043 Low Voltage Normally Closed Zone Valves



Flare Connection



Sweat Connection



NPT Connection



Sweat Connection with terminal block



Inverted Flare

Two-way on-off low voltage valves consist of an actuator and valve assembly for controlling the flow of hot water.

- Manual opener (on all models, except straight-through, normally open valves) for valve operation on power failure; valve returns to automatic position when power is restored.
- All models may be installed without disassembling the valve.
- Compact construction for easy installation.
- Complete powerhead may be removed or replaced without breaking plumbing line connections or draining the system.
- Actuator motor may be replaced without removing the valve body or draining the system.

Application: Hydronic Control

Valve Type: Zone Valve

Body Pattern: Two-way, Straight-through

Valve Action: Spring return to close

Voltage: 24 Vac; Power Consumption – 7.7 VA

Frequency: 50 Hz; 60 Hz

Actuation: Two position

De-energized Position: Two position

Ambient Temperature Range: 125°F Maximum (52°C Maximum)

Fluid Temperature: 50°F to 200°F (10°C to 93°C)

Static Pressure Rating (psi): 125 psi

Static Pressure Rating (kPa): 862 kPa

Materials (Body): Brass

Materials (Seat): Brass

Materials (Stem): Stainless Steel

Materials (Plug / Ball / Disc): Buna-N (NBR) Rubber Ball

Materials (Packing): EPDM rubber

Timing: Nominal Open – 15 sec

Operating Humidity Range (% RH): 5 to 95% relative humidity, non-condensing.

Manual Opener: Yes

Approvals, Underwriters Laboratories Inc.: UL Listed: File MH11826

Approvals, CSA: CSA Certified: File 1322

Comments: Use this valve in closed loop hydronic systems that do not contain dissolved oxygen in system water, such as fresh water from frequent source of makeup water. Valve designed for cycling (not constantly powered on) applications.

Current Draw: 0.32A

Dimensions in inches (millimeters). See page 219.

Replacement Parts:

802360JA/U – 24V Replacement motor for V8043/44

802360UA/U – 24V, 50/60 Hz Replacement motor for steam and heating Zone Valves

| Material Number | Capacity (Cv) | Capacity (Kv) | Pipe Size (inch) | Pipe Size (DN) | Connection Type | Maximum Differential Pressure Ratings (Close-off) (psi) | Maximum Differential Pressure Ratings (Close-off) (kPa) | End Switch Rating | Electrical Connections | Auxiliary End Switch |
|-----------------|---------------|---------------|------------------|----------------|-----------------|---|---|---|------------------------|----------------------|
| V8043A1003/U | 3.5 Cv | 3 Kv | 1/2 in. | DN15 | Flare | 20 psi | 138 kPa | | 18 in. (457 mm) leads | |
| V8043A1011/U | 3.5 Cv | 3 Kv | 1/2 in. | DN15 | Sweat | 20 psi | 138 kPa | | 18 in. (457 mm) leads | |
| V8043A1029/U | 3.5 Cv | 3 Kv | 3/4 in. | DN20 | Sweat | 20 psi | 138 kPa | | 18 in. (457 mm) leads | |
| V8043A1037/U | 3.5 Cv | 3 Kv | 1 in. | DN25 | Sweat | 20 psi | 138 kPa | | 18 in. (457 mm) leads | |
| V8043A1185/U | 8 Cv | 6.9 Kv | 3/4 in. | DN20 | Sweat | 8 psi | 55 kPa | | 18 in. (457 mm) leads | |
| V8043A1219/U | 3.5 Cv | 3 Kv | 1/2 in. | DN15 | Sweat | 20 psi | 138 kPa | | 18 in. (457 mm) leads | |
| V8043A1227/U | 3.5 Cv | 3 Kv | 1/2 in. | DN15 | NPT | 20 psi | 138 kPa | | 18 in. (457 mm) leads | |
| V8043E1004/U | 3.5 Cv | 3 Kv | 1/2 in. | DN15 | Sweat | 20 psi | 138 kPa | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | 18 in. (457 mm) leads | N.O. SPST |
| V8043E1012/U | 3.5 Cv | 3 Kv | 3/4 in. | DN20 | Sweat | 20 psi | 138 kPa | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | 18 in. (457 mm) leads | N.O. SPST |
| V8043E1020/U | 3.5 Cv | 3 Kv | 1 in. | DN25 | Sweat | 20 psi | 138 kPa | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | 18 in. (457 mm) leads | N.O. SPST |
| V8043E1061/U | 8 Cv | 6.9 Kv | 3/4 in. | DN20 | Sweat | 8 psi | 55 kPa | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | 18 in. (457 mm) leads | N.O. SPST |

Motorized Zone Valves

| Material Number | Capacity (Cv) | Capacity (Kv) | Pipe Size (inch) | Pipe Size (DN) | Connection Type | Maximum Differential Pressure Ratings (Close-off) (psi) | Maximum Differential Pressure Ratings (Close-off) (kPa) | End Switch Rating | Electrical Connections | Auxiliary End Switch |
|-----------------|---------------|---------------|------------------|----------------|-----------------|---|---|---|------------------------|----------------------|
| V8043E1079/U | 8 Cv | 6.9 Kv | 1 in. | DN25 | Sweat | 8 psi | 55 kPa | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | 18 in. (457 mm) leads | N.O. SPST |
| V8043E1137/U | 10 Cv | 8.6 Kv | 1 in. | DN25 | NPT | 6.5 psi | 45 kPa | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | 18 in. (457 mm) leads | N.O. SPST |
| V8043E1145/U | 3.5 Cv | 3 Kv | 3/4 in. | DN20 | NPT | 20 psi | 138 kPa | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | 18 in. (457 mm) leads | N.O. SPST |
| V8043F1028/U | 3.5 Cv | 3 Kv | 1/2 in. | DN15 | Sweat | 20 psi | 138 kPa | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | screw terminal block | N.O. SPST |
| V8043F1036/U | 3.5 Cv | 3 Kv | 3/4 in. | DN20 | Sweat | 20 psi | 138 kPa | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | screw terminal block | N.O. SPST |
| V8043F1051/U | 3.5 Cv | 3 Kv | 1 in. | DN25 | Sweat | 20 psi | 138 kPa | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | screw terminal block | N.O. SPST |
| V8043F1093/U | 8 Cv | 6.9 Kv | 3/4 in. | DN20 | Sweat | 8 psi | 55 kPa | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | screw terminal block | N.O. SPST |
| V8043F1101/U | 8 Cv | 6.9 Kv | 1 in. | DN25 | Sweat | 8 psi | 55 kPa | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | screw terminal block | N.O. SPST |

Motorized Zone Valves

V8043 Low Voltage Normally Closed Zone Valves for Canada



Flare Connection



Sweat Connection



NPT Connection



Sweat Connection with terminal block



Inverted Flare

Two-way on-off low voltage valves consist of an actuator and valve assembly for controlling the flow of hot water.

- Manual opener (on all models, except straight-through, normally open valves) for valve operation on power failure; valve returns to automatic position when power is restored.
- All models may be installed without disassembling the valve.
- Compact construction for easy installation.
- Complete powerhead may be removed or replaced without breaking plumbing line connections or draining the system.
- Actuator motor may be replaced without removing the valve body or draining the system.

Application: Hydronic Control

Valve Type: Zone Valve

Body Pattern: Two-way, Straight-through

Valve Action: Spring return to close

Voltage: 24 Vac; Power Consumption – 7.7 VA

Actuation: Two position

De-energized Position: Normally Closed

Electrical Connections: 18 in. (457 mm) leads (except for V8043F1135/U which has screw terminals)

Ambient Temperature Range: 125°F Maximum (52°C Maximum)

Fluid Temperature: 50°F to 200°F (10°C to 93°C)

Materials (Body): Brass

Materials (Seat): Brass

Materials (Stem): Stainless Steel

Materials (Plug / Ball / Disc): Buna-N (NBR) Rubber Ball

Materials (Packing): EPDM rubber

Timing: Nominal Open – 15 sec

Operating Humidity Range (% RH): 5 to 95% relative humidity, non-condensing.

Manual Opener: Yes

Approvals, Underwriters Laboratories Inc.: UL Listed: File MH11826

Approvals, CSA: CSA Certified: File 1322

Comments: Use this valve in closed loop hydronic systems that do not contain dissolved oxygen in system water, such as fresh water from frequent source of makeup water. Valve designed for cycling (not constantly powered on) applications.

Current Draw: 0.32A

Dimensions in inches (millimeters). See page 219.

Replacement Parts:

802360JA/U – 24V Replacement motor for V8043/44

802360UA/U – 24V, 50/60 Hz Replacement motor for steam and heating Zone Valves

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Connection Type | Frequency | Capacity (Cv) | Capacity (Kv) | Auxiliary End Switch | Maximum Differential Pressure Ratings Closeoff (psi [kPa]) | Static Pressure Rating (psi [kPa]) | End Switch Rating | Includes |
|-----------------|------------------|----------------|-----------------|-----------------|---------------|---------------|----------------------|--|------------------------------------|---|---|
| V8043C1033/U | 3/8 in. | DN10 | Flare | 50 Hz; 60 Hz | 3.5 Cv | 3 Kv | | 20 psi (138 kPa) | 125 psi (862 kPa) | | With 2 straight 3/4 in. sweat adapters. |
| V8043C1058/U | 3/4 in. | DN20 | Sweat | 50 Hz; 60 Hz | 3.5 Cv | 3 Kv | | 20 psi (138 kPa) | 125 psi (862 kPa) | | |
| V8043C1066/U | 1 in. | DN25 | Sweat | 50 Hz; 60 Hz | 3.5 Cv | 3 Kv | | 20 psi (138 kPa) | 125 psi (862 kPa) | | |
| V8043C1116/U | 3/8 in. | DN10 | Flare | 50 Hz; 60 Hz | 3.5 Cv | 3 Kv | | 20 psi (138 kPa) | 125 psi (862 kPa) | | Less Adapters |
| V8043C1124/U | 1/2 in. | DN15 | Inverted Flare | 50 Hz; 60 Hz | 3.5 Cv | 3 Kv | | 20 psi (138 kPa) | 125 psi (862 kPa) | | Less Adapters |
| V8043C3302/U | 3/8 in. | DN10 | Flare | 50 Hz; 60 Hz | 3.5 Cv | 3 Kv | | 20 psi (138 kPa) | 300 psi (2068 kPa) | | With 2 straight 3/4 in. sweat adapters. |
| V8043C3310/U | 1/2 in. | DN15 | Inverted Flare | 60 Hz | 3.5 Cv | 3 Kv | | 20 psi (138 kPa) | 300 psi (2068 kPa) | | Less Adapters |
| V8043F1135/U | 3/4 in. | DN20 | Sweat | 50 Hz; 60 Hz | 3.5 Cv | 3 Kv | N.O. SPST | 20 psi (138 kPa) | 125 psi (862 kPa) | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | End Switch enclosure. |
| V8043G1000/U | 1/2 in. | DN15 | Sweat | 50 Hz; 60 Hz | 3.5 Cv | 3 Kv | N.O. SPST | 20 psi (138 kPa) | 125 psi (862 kPa) | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | |
| V8043G1018/U | 3/4 in. | DN20 | Sweat | 50 Hz; 60 Hz | 3.5 Cv | 3 Kv | N.O. SPST | 20 psi (138 kPa) | 125 psi (862 kPa) | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | |

Motorized Zone Valves

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Connection Type | Frequency | Capacity (Cv) | Capacity (Kv) | Auxiliary End Switch | Maximum Differential Pressure Ratings Closeoff (psi [kPa]) | Static Pressure Rating (psi [kPa]) | End Switch Rating | Includes |
|-----------------|------------------|----------------|-----------------|-----------------|---------------|---------------|----------------------|--|------------------------------------|---|---|
| V8043G1026/U | 1 in. | DN25 | Sweat | 50 Hz; 60 Hz | 3.5 Cv | 3 Kv | N.O. SPST | 20 psi (138 kPa) | 125 psi (862 kPa) | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | |
| V8043G1034/U | 3/8 in. | DN10 | Flare | 50 Hz; 60 Hz | 3.5 Cv | 3 Kv | N.O. SPST | 20 psi (138 kPa) | 125 psi (862 kPa) | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | With 2 straight 3/4 in. sweat adapters. |
| V8043G1109/U | 3/4 in. | DN20 | NPT | 50 Hz; 60 Hz | 3.5 Cv | 3 Kv | N.O. SPST | 20 psi (138 kPa) | 125 psi (862 kPa) | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | |
| V8043G1125/U | 1/2 in. | DN15 | Inverted Flare | 50 Hz; 60 Hz | 3.5 Cv | 3 Kv | N.O. SPST | 20 psi (138 kPa) | 125 psi (862 kPa) | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | Less Adapters |
| V8043G1133/U | 3/8 in. | DN10 | Flare | 50 Hz; 60 Hz | 3.5 Cv | 3 Kv | N.O. SPST | 20 psi (138 kPa) | 125 psi (862 kPa) | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | Less Adapters |
| V8043G1158/U | 1 in. | DN25 | Sweat | 50 Hz; 60 Hz | 8 Cv | 6.9 Kv | N.O. SPST | 8 psi (55 kPa) | 125 psi (862 kPa) | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | |
| V8043G1182/U | 1 in. | DN25 | NPT | 50 Hz; 60 Hz | 10 Cv | 8.5 Kv | N.O. SPST | 6.5 psi (45 kPa) | 125 psi (862 kPa) | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | |
| V8043G1216/U | 3/4 in. | DN20 | Sweat | 60 Hz | 3.5 Cv | 3 Kv | N.O. SPST | 20 psi (138 kPa) | 125 psi (862 kPa) | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | |
| V8043G3311/U | 1/2 in. | DN15 | Inverted Flare | 60 Hz | 3.5 Cv | 3 Kv | N.O. SPST | 20 psi (138 kPa) | 300 psi (2068 kPa) | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | Less Adapters |

Motorized Zone Valves

V8043 Low Voltage Normally Open Valves for Steam



NPT Connection

Application: Steam (low pressure) Control
Valve Type: Zone Valve
Body Pattern: Two-way, Straight-through
Valve Action: Spring return to open
Voltage: 24 Vac; Power Consumption – 7.7 VA
Frequency: 50 Hz; 60 Hz
Actuation: Two position
Electrical Connections: 18 in. leads (457 mm leads)
Ambient Temperature Range: 125°F Maximum (52°C Maximum)
Fluid Temperature: 50°F to 240°F (10°C to 116°C)
Static Pressure Rating (psi): 125 psi
Static Pressure Rating (kPa): 862 kPa
Materials (Body): Brass

On-off and two way low voltage valves consist of an actuator and valve assembly for controlling the flow of low pressure steam.

- All models may be installed without disassembling the valve.
- Compact construction for easy installation.
- Complete powerhead may be removed or replaced without breaking plumbing line connections or draining the system.
- Actuator motor may be replaced without removing the valve body or draining the system.
- Suitable for use 15 psi low pressure steam application.

Materials (Seat): Brass
Materials (Stem): Stainless Steel
Materials (Plug / Ball / Disc): EPDM Rubber Ball
Materials (Packing): EPDM rubber
Timing: Nominal Open – 15 sec
Operating Humidity Range (% RH): 5 to 95% relative humidity, non-condensing.
Approximate, Dimensions: 4 in. high x 3 23/32 in. wide x 2 3/8 in. deep (102 mm high x 94 mm wide x 60 mm deep)
Approvals, Underwriters Laboratories Inc.: UL Component Listed: File MH11826 Vol. 1
Comments: For low pressure (15 psi) steam application
Dimensions in inches (millimeters). See page 219.

| Material Number | Capacity (Cv) | Capacity (Kv) | Pipe Size (inch) | Pipe Size (DN) | Connection Type | Maximum Differential Pressure Ratings (Close-off) (psi) | Maximum Differential Pressure Ratings (Close-off) (kPa) | De-energized Position | Current Draw | Manual Opener |
|-----------------|---------------|---------------|------------------|----------------|-----------------|---|---|-----------------------|--------------|---------------|
| V8043J1029/U | 3.5 Cv | 3 Kv | 1/2 in. | DN15 | NPT | 20 psi | 138 kPa | Normally Open | 0.42A | No |
| V8043J1037/U | 3.5 Cv | 3 Kv | 3/4 in. | DN20 | NPT | 20 psi | 138 kPa | Normally Open | 0.42A | No |

V8043 Low Voltage Normally Open Zone Valves



Sweat Connection



Inverted Flare



Flare Connection



NPT Connection

On-off and two-way low voltage valves consist of an actuator and valve assembly for controlling the flow of hot water.

- All models may be installed without disassembling the valve.
- Compact construction for easy installation.
- Complete powerhead may be removed or replaced without breaking plumbing line connections or draining the system.
- Actuator motor may be replaced without removing the valve body or draining the system.
- No Manual opener

Application: Hydronic Control

Valve Type: Zone Valve

Body Pattern: Two-way, Straight-through

Valve Action: Spring return to open

Voltage: 24 Vac; Power Consumption – 7.7 VA

Capacity (Cv): 3.5 Cv

Capacity (Kv): 3 Kv

Actuation: Two position

De-energized Position: Normally Open

Electrical Connections: 18 in. leads (457 mm leads)

Ambient Temperature Range: 125°F Maximum (52°C Maximum)

Fluid Temperature: 40°F to 200°F (5°C to 93°C)

Maximum Differential Pressure Ratings (Close-off) (psi): 20 psi

Maximum Differential Pressure Ratings (Close-off) (kPa): 138 kPa

Static Pressure Rating (psi): 125 psi

Static Pressure Rating (kPa): 862 kPa

Materials (Body): Brass

Materials (Seat): Brass

Materials (Stem): Stainless Steel

Materials (Plug / Ball / Disc): Buna-N (NBR) Rubber Ball

Materials (Packing): EPDM rubber

Timing: Nominal Open – 15 sec

Operating Humidity Range (% RH): 5 to 95% relative humidity, non-condensing.

Manual Opener: No

Approvals, Underwriters Laboratories Inc.: UL Component Listed: File MH11826 Vol. 1

Approvals, CSA: CSA Certified: File 1322

Comments: Use this valve in closed loop hydronic systems that do not contain dissolved oxygen in system water, such as fresh water from frequent source of makeup water. Valve designed for cycling (not constantly powered on) applications.

Current Draw: 0.32A

Dimensions in inches (millimeters). See page 219.

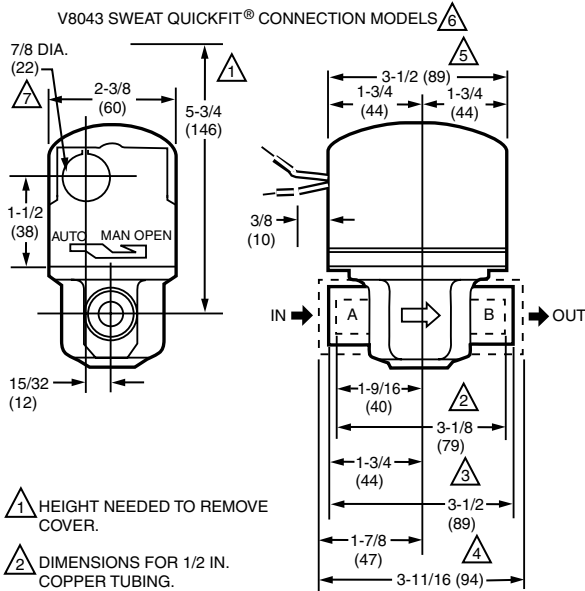
| Material Number | Pipe Size (inch) | Pipe Size (DN) | Connection Type | Frequency | Auxiliary End Switch | End Switch Rating | Includes |
|-----------------|------------------|----------------|-----------------|--------------|----------------------|---------------------|---|
| V8043B1019/U | 1/2 in. | DN15 | Sweat | 60 Hz | | | |
| V8043B1027/U | 3/4 in. | DN20 | Sweat | 60 Hz | | | |
| V8043B1076/U | 3/4 in. | DN20 | NPT | 50 Hz; 60 Hz | | | |
| V8043D1031/U | 3/4 in. | DN20 | NPT | 50 Hz; 60 Hz | | | |
| V8043D1049/U | 3/4 in. | DN20 | Sweat | 50 Hz; 60 Hz | | | With 1/16 in. bypass hole |
| V8043D1064/U | 3/4 in. | DN20 | Sweat | 50 Hz; 60 Hz | | | |
| V8043D1080/U | 3/8 in. | DN10 | Flare | 50 Hz; 60 Hz | | | With 2 straight 3/4 in. sweat adapters. |
| V8043D1156/U | 1/2 in. | DN15 | Sweat | 50 Hz; 60 Hz | | | |
| V8043D1197/U | 3/8 in. | DN10 | Flare | 50 Hz; 60 Hz | | | Less Adapters Order separately - 272704A (1/2 in. sweat), 272704B (3/4 in. sweat) |
| V8043D1205/U | 1/2 in. | DN15 | Inverted Flare | 50 Hz; 60 Hz | | | Less Adapters Order separately - 272704A (1/2 in. sweat), 272704B (3/4 in. sweat) |
| V8043D1239/U | 1/2 in. | DN15 | Inverted Flare | 50 Hz; 60 Hz | N.C. SPST | 2.2 A @ 120Vac 60Hz | Less Adapters |

Motorized Zone Valves

V8043 Low Voltage Series 5000 QuickFit® Zone Valves



Dimensions in inches (millimeters)



- 1 HEIGHT NEEDED TO REMOVE COVER.
- 2 DIMENSIONS FOR 1/2 IN. COPPER TUBING.
- 3 DIMENSIONS FOR 3/4 IN COPPER TUBING.
- 4 DIMENSIONS FOR 1 IN. COPPER TUBING.
- 5 4-7/8 IN. (124) MAX ON V8034F WITH TERMINAL BOARD ENCLOSURE.
- 6 V8043B VALVES THAT ARE NORMALLY OPEN IN THE DE-ENERGIZED POSITION HAVE NO MANUAL LEVER. THE VALVES ALSO HAVE A REVERSED POWERHEAD WHERE THE LEADWIRES EXIT THE POWERHEAD ABOVE THE B (OUTLET) PORT RATHER THAN ABOVE THE A (INLET) PORT.
- 7 OPENING FOR 1/2 IN. CONDUIT ON MANUAL LEVER SIDE FOR V8043

M23257

Two-way on-off low voltage valves consist of an actuator and valve assembly for controlling the flow of hot water.

- All models may be installed without disassembling the valve.
- Compact construction for easy installation.
- Manual opener (on all models, except straight-through, normally open valves) for valve operation on power failure; valve returns to automatic position when power is restored.
- Complete powerhead may be removed or replaced without breaking plumbing line connections or draining the system.
- “Quick Fit” pushbutton powerhead makes it easy to remove for service.
- Series 5000 replacement powerhead is backward compatible with series 1000 zone valves.
- Innovative motor technology offers silent operation, water hammer resist and longer life.

Application: Hydronic Control

Valve Type: Zone Valve

Body Pattern: Two-way, Straight-through

Valve Action: Spring return to close

Connection Type: Sweat

Voltage: 24 Vac; Power Consumption – 7.2 VA

Frequency: 60 Hz

Actuation: Two position

De-energized Position: Normally Closed

Ambient Temperature Range: 125°F Maximum (52°C Maximum)

Fluid Temperature: 50°F to 200°F (10°C to 93°C)

Static Pressure Rating (psi): 300 psi

Static Pressure Rating (kPa): 2068 kPa

Materials (Body): Brass

Materials (Seat): Brass

Materials (Stem): Stainless Steel

Materials (Plug / Ball / Disc): Buna-N (NBR) Rubber Ball

Materials (Packing): EPDM rubber

Timing: Nominal Open – 15 sec

Operating Humidity Range (% RH): 5 to 95% relative humidity, non-condensing.

Manual Opener: Yes

Approvals, CSA: CSA Certified: File 1322

Comments: Use this valve in closed loop hydronic systems that do not contain dissolved oxygen in system water, such as fresh water from frequent source of makeup water. Valve designed for cycling (not constantly powered on) applications.

Current Draw: 0.32A

| Material Number | Capacity (Cv) | Capacity (Kv) | Pipe Size (inch) | Pipe Size (DN) | Auxiliary End Switch | Electrical Connections | End Switch Rating | Maximum Differential Pressure Ratings (Close-off) (psi) | Maximum Differential Pressure Ratings (Close-off) (kPa) |
|-----------------|---------------|---------------|------------------|----------------|----------------------|------------------------|---|---|---|
| V8043A5029/U | 3.5 Cv | 3 Kv | 3/4 in. | DN20 | | 18 in. (457 mm) leads | | 20 psi | 138 kPa |
| V8043E5004/U | 3.5 Cv | 3 Kv | 1/2 in. | DN15 | N.O. SPST | 18 in. (457 mm) leads | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | 20 psi | 138 kPa |
| V8043E5012/U | 3.5 Cv | 3 Kv | 3/4 in. | DN20 | N.O. SPST | 18 in. (457 mm) leads | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | 20 psi | 138 kPa |
| V8043E5020/U | 3.5 Cv | 3 Kv | 1 in. | DN25 | N.O. SPST | 18 in. (457 mm) leads | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | 20 psi | 138 kPa |
| V8043E5061/U | 8 Cv | 6.9 Kv | 3/4 in. | DN20 | N.O. SPST | 18 in. (457 mm) leads | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | 8 psi | 55 kPa |
| V8043E5079/U | 8 Cv | 6.9 Kv | 1 in. | DN25 | N.O. SPST | 18 in. (457 mm) leads | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | 8 psi | 55 kPa |
| V8043F5036/U | 3.5 Cv | 3 Kv | 3/4 in. | DN20 | N.O. SPST | screw terminal block | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | 20 psi | 138 kPa |
| V8043F5051/U | 3.5 Cv | 3 Kv | 1 in. | DN25 | N.O. SPST | screw terminal block | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | 20 psi | 138 kPa |
| V8043F5093/U | 8 Cv | 6.9 Kv | 3/4 in. | DN20 | N.O. SPST | screw terminal block | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | 8 psi | 55 kPa |

V8043 Low Voltage Series 5000 QuickFit® Zone Valves for Canada

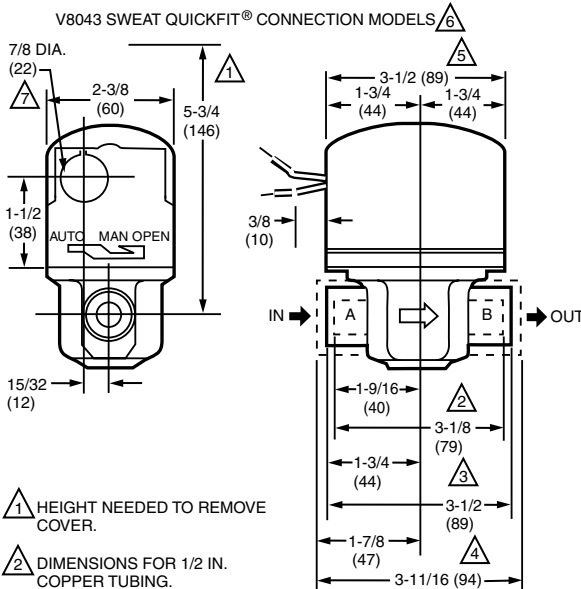


Flare Connection



Inverted Flare

Dimensions in inches (millimeters)



1 HEIGHT NEEDED TO REMOVE COVER.

2 DIMENSIONS FOR 1/2 IN. COPPER TUBING.

3 DIMENSIONS FOR 3/4 IN. COPPER TUBING.

4 DIMENSIONS FOR 1 IN. COPPER TUBING.

5 4-7/8 IN. (124) MAX ON V8034F WITH TERMINAL BOARD ENCLOSURE.

6 V8043B VALVES THAT ARE NORMALLY OPEN IN THE DE-ENERGIZED POSITION HAVE NO MANUAL LEVER. THE VALVES ALSO HAVE A REVERSED POWERHEAD WHERE THE LEADWIRES EXIT THE POWERHEAD ABOVE THE B (OUTLET) PORT RATHER THAN ABOVE THE A (INLET) PORT.

7 OPENING FOR 1/2 IN. CONDUIT ON MANUAL LEVER SIDE FOR V8043 M23257

Two-way on-off low voltage valves consist of an actuator and valve assembly for controlling the flow of hot water.

- All models may be installed without disassembling the valve.
- Compact construction for easy installation.
- Manual opener (on all models, except straight-through, normally open valves) for valve operation on power failure; valve returns to automatic position when power is restored.
- Complete powerhead may be removed or replaced without breaking plumbing line connections or draining the system.
- “Quick Fit” pushbutton powerhead makes it easy to remove for service.
- Series 5000 replacement powerhead is backward compatible with series 1000 zone valves.
- Innovative motor technology offers silent operation, water hammer resist and longer life.

Application: Hydronic Control

Valve Type: Zone Valve

Body Pattern: Two-way, Straight-through

Valve Action: Spring return to close

Voltage: 24 Vac; Power Consumption – 7.2 VA

Frequency: 50 Hz; 60 Hz

Capacity (Cv): 3.5 Cv

Capacity (Kv): 3 Kv

Actuation: Two position

De-energized Position: Normally Closed

Auxiliary End Switch: N.O. SPST

Ambient Temperature Range: 125°F Maximum (52°C Maximum)

Fluid Temperature: 50°F to 200°F (10°C to 93°C)

Maximum Differential Pressure Ratings (Close-off) (psi): 20 psi

Maximum Differential Pressure Ratings (Close-off) (kPa): 138 kPa

Static Pressure Rating (psi): 300 psi

Static Pressure Rating (kPa): 2068 kPa

Materials (Body): Brass

Materials (Seat): Brass

Materials (Stem): Stainless Steel

Materials (Plug / Ball / Disc): Buna-N (NBR) Rubber Ball

Materials (Packing): EPDM rubber

Timing: Nominal Open – 15 sec

Operating Humidity Range (% RH): 5 to 95% relative humidity, non-condensing.

End Switch Rating: 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V

Manual Opener: Yes

Approvals, CSA: CSA Certified: File 1322

Comments: Use this valve in closed loop hydronic systems that do not contain dissolved oxygen in system water, such as fresh water from frequent source of makeup water. Valve designed for cycling (not constantly powered on) applications.

Current Draw: 0.32A

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Connection Type | Includes |
|-----------------|------------------|----------------|-----------------|---|
| V8043C5058/U | 3/4 in. | DN20 | Sweat | |
| V8043G5000/U | 1/2 in. | DN15 | Sweat | |
| V8043G5018/U | 3/4 in. | DN20 | Sweat | |
| V8043G5034/U | 3/8 in. | DN10 | Flare | With 2 straight 3/4 in. sweat adapters. |
| V8043G5125/U | 1/2 in. | DN15 | Inverted Flare | Less Adapters |

Motorized Zone Valves

V8044 Low Voltage Diverting Valves



Flare Connection



Sweat Connection



NPT Connection



Inverted Flare

On-off and diverting low voltage valves consist of an actuator and valve assembly for controlling the flow of hot water.

- Manual opener (on all models, except straight-through, normally open valves) for valve operation on power failure; valve returns to automatic position when power is restored.
- All models may be installed without disassembling the valve.
- Compact construction for easy installation.
- Complete powerhead may be removed or replaced without breaking plumbing line connections or draining the system.
- Actuator motor may be replaced without removing the valve body or draining the system.

Application: Hydronic Control

Valve Type: Zone Valve

Body Pattern: Three-way, Diverting

Valve Action: Spring Return

Voltage: 24 Vac; Power Consumption – 7.7 VA

Frequency: 50 Hz; 60 Hz

Actuation: Two position

De-energized Position: Port A Normally Closed

Electrical Connections: 18 in. leads (457 mm leads)

Ambient Temperature Range: 125°F Maximum (52°C Maximum)

Fluid Temperature: 40°F to 200°F (5°C to 93°C)

Static Pressure Rating (psi): 125 psi

Static Pressure Rating (kPa): 862 kPa

Materials (Body): Brass

Materials (Seat): Brass

Materials (Stem): Stainless Steel

Materials (Plug / Ball / Disc): Buna-N (NBR) Rubber Ball

Materials (Packing): EPDM rubber

Timing: Nominal Open – 30 sec

Operating Humidity Range (% RH): 5 to 95% relative humidity, non-condensing.

Manual Opener: Yes

Approvals, Underwriters Laboratories Inc.: UL Component Listed: File MH11826 Vol. 1

Approvals, CSA: CSA Certified: File 1322

Comments: Use this valve in closed loop hydronic systems that do not contain dissolved oxygen in system water, such as fresh water from frequent source of makeup water. Valve designed for cycling (not constantly powered on) applications.

Current Draw: 0.32A

Dimensions in inches (millimeters). See page 219.

| Material Number | Capacity (Cv) | Capacity (Kv) | Pipe Size (inch) | Pipe Size (DN) | Connection Type | Maximum Differential Pressure Ratings (Close-off) (psi) | Maximum Differential Pressure Ratings (Close-off) (kPa) | Auxiliary End Switch | End Switch Rating | Includes |
|-----------------|---------------|---------------|------------------|----------------|-----------------|---|---|----------------------|---|---------------------------------------|
| V8044A1002/U | 4 Cv | 3.4 Kv | 1/2 in. | DN15 | Flare | 20 psi | 138 kPa | | | |
| V8044A1010/U | 4 Cv | 3.4 Kv | 1/2 in. | DN15 | Sweat | 20 psi | 138 kPa | | | |
| V8044A1044/U | 7.0 Cv | 6 Kv | 3/4 in. | DN20 | Sweat | 10 psi | 69 kPa | | | |
| V8044A1135/U | 4 Cv | 3.4 Kv | 1/2 in. | DN15 | NPT | 20 psi | 138 kPa | | | |
| V8044A1143/U | 4 Cv | 3.4 Kv | 3/4 in. | DN20 | NPT | 20 psi | 138 kPa | | | |
| V8044E1003/U | 4 Cv | 3.4 Kv | 1/2 in. | DN15 | Sweat | 20 psi | 138 kPa | N.O. SPST | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | |
| V8044E1011/U | 7.0 Cv | 6 Kv | 3/4 in. | DN20 | Sweat | 10 psi | 69 kPa | N.O. SPST | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | |
| V8044E1078/U | 3.5 Cv | 3 Kv | 1/2 in. | DN15 | Inverted Flare | 20 psi | 138 kPa | N.C. SPST | 50 VA pilot duty @ 24 V; 4.4 A running with 26.4 A inrush @ 120 V | With normally closed SPST end switch. |

Y496 Zone Control Builder Packs



Contain devices necessary for temperature control of a single zone in a hydronic heating system.

- Include thermostat with special heat anticipator designed for best performance when used with the V8043 Zone Valve.
- Require 24 V power source.
- Custom packed with 10 Valves and 10 thermostats per carton.

Color: Thermostat – Premier White®

Body Pattern: Two-way

Pipe Connection: Sweat

Voltage: Valve – 24 Vac; Thermostat – 24V

Frequency: Valve – 50 Hz or 60 Hz; Thermostat – 50 Hz or 60 Hz

Valve Action: Spring return to close

Approvals, Underwriters Laboratories Inc.: UL Listed: Models V8043A,B,E,J & V8044A,B,E; UL Component Recognized: V8043F

Tradeline Value: Tradeline






Auxiliary Switch Ratings: 4.4 A running @ 120 V; 50 VA pilot duty @ 24 V

| Material Number | Application | Y-Pack Includes | Mounting |
|-----------------|----------------------------------|-----------------------|-----------------------|
| Y496A1074/U | Single Stage Heating Only | V8043E1012, T822K1018 | Thermostat – Vertical |
| Y496A1082/U | Single Stage Heating Only | V8043E1004, T822K1018 | Thermostat – Vertical |
| Y496A1090/U | Single Stage Heating Only | V8043E1061, T822K1018 | Thermostat – Vertical |
| Y496B1024/U | Single Stage Heating/ Cooling | V8043E1012, T87K1007 | Thermostat – Round |
| Y496B1040/U | Single Stage Heating/ Cooling | V8043F1036, T87K1007 | Thermostat – Round |

| Material Number | Pipe Size (inch) | Maximum Differential Pressure Ratings (Close-off) (kPa) | Maximum Differential Pressure Ratings (Close-off) (psi) | Capacity (Cv) | Capacity (Kv) | Temperature Range | Electrical Connections | Thermostat Anticipator Setting | Includes | Comments |
|-----------------|------------------|---|---|---------------|---------------|-------------------------|--|--|-------------------|-----------------------------------|
| Y496A1074/U | 3/4 in. | 138 kPa | 20 psi | 3.5 Cv | 3 Kv | 55 to 95°F (13 to 35°C) | Valve – 18 in. leads; Thermostat – Screw Terminals | | | See V8043, T822K for more details |
| Y496A1082/U | 1/2 in. | 138 kPa | 20 psi | 3.5 Cv | 3 Kv | 55 to 95°F (13 to 35°C) | Valve – 18 in. leads; Thermostat – Screw Terminals | | | See V8043, T822K for more details |
| Y496A1090/U | 3/4 in. | 55 kPa | 8 psi | 8 Cv | 6.9 Kv | 55 to 95°F (13 to 35°C) | Valve – 18 in. leads; Thermostat – Screw Terminals | | | See V8043, T822K for more details |
| Y496B1024/U | 3/4 in. | 138 kPa | 20 psi | 3.5 Cv | 3 Kv | 40 to 90°F (4 to 32°C) | Valve – 18 in. leads; Thermostat – Screw Terminals | Heating – 0.1 to 1.2 A; Cooling – 0.0 to 1.5 A | 104456B Wallplate | See V8043, T87K for more details |
| Y496B1040/U | 3/4 in. | 138 kPa | 20 psi | 3.5 Cv | 3 Kv | 40 to 90°F (4 to 32°C) | Valve – Screw Terminal Block; Thermostat – Screw Terminals | Heating – 0.1 to 1.2 A; Cooling – 0.0 to 1.5 A | 104456B Wallplate | See V8043, T87K for more details |



Motorized Zone Valves

Zone Valve Replacement Parts


| Material Number | Description | |
|-----------------|--|---|
| 272704A/U | Two 3/8 in. flare to 1/2 in. sweat adapters |  |
| 272704B/U | Two 3/8 in. flare to 3/4 in. sweat adapters |  |
| 272708A/U | Two 1/2 in. inverted flare to 1/2 in. sweat adapters | |
| 272708B/U | Two 1/2 in. inverted flare to 3/4 in. sweat adapters | |
| 272708C/U | Two 1/2 in. inverted flare to 1 in. sweat adapters | |
| 272748AB/U | 24V Replacement motor (international) | |
| 272748ABP/U | 24V, 50/60Hz replacement motor for V8043 zone valves |  |
| 272752DBP/U | 120V, 60Hz replacement motor for V4043, V4044 zone valves | |
| 40003918-001/U | Adaptor kit for converting three-way non-removable head style zone valves to removable head style | |
| 40003918-002/U | Adaptor kit for converting straight-through (two-way) non-removable head style zone valves to removable head style | |
| 40003918-006/U | Adaptor kit for V4043, V8043, 2-way hydronic valves | |
| 40003918-007/U | Adaptor kit for V4044, V8044, 3-way diverting valves | |
| 40003918-008/U | Adaptor kit for V4043E, J, V8043J, low pressure steam valves |  |
| 40004705-001/U | Compression Olive, 28 mm for valve fittings | |
| 40004750-001/U | Replacement kit for 300 PSI rated Zone Valve including Adaptor plate, O-ring, Ball and Shaft, and 4 screws | |
| 40004781-001/U | Resistor (1W) 470ohms | |
| 40007008-0ML/U | 3/4 in. Sweat 3-Way Valve Body | |
| 40007028-0ME/U | 1/2 in. BSPP 3-Way Valve Body | |
| 40007035-003/U | Cable harness | |
| 40007035-004/U | Cable harness | |
| 40007142-001/U | Strain relief molex | |
| 40007441-001/U | LV2000 actuator (ML7300A1004) | |
| 40007442-211/U | VU12A1017, 2-way valve, 22mm compression | |
| 40007442-221/U | VU12A1009, 2-way valve, 22mm sweat | |
| 40007443-311/U | VU13A1015, 3-way valve, 22mm compression | |
| 40007443-321/U | VU13A1007, 3-way valve, 22mm sweat | |
| 802360JA/U | 24V, 50/60Hz replacement motor for V8043 zone valves | |
| 802360LA/U | 120V, 60Hz replacement motor for V4043, V4044 zone valves | |
| 802360NA/U | 220V/50Hz; 240V/60Hz replacement motor for V4043, V4044 zone valves | |
| 802360QA/U | 277V, 60Hz replacement motor for V4043, V4044 zone valves | |
| 802360UA/U | 24V, 50/60 Hz Replacement motor for steam and heating Zone Valves |  |

Zone Valves Replacement Heads

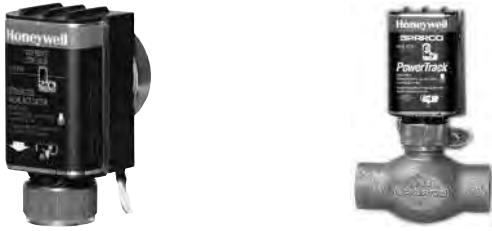
Ambient Temperature Range: 125°F Maximum (52°C Maximum)

| Material Number | Description | Electrical Connections | Voltage | Frequency | Auxiliary Switch Ratings | Used With | |
|-----------------|---|--|---------|--------------|--|---|---|
| 40003916-001/U | 240V, 50 Hz Replacement actuator for V4043 | 1 m | 240V | 50 Hz | | |  |
| 40003916-002/U | 240V, 50 Hz Replacement actuator for V4044 | 1 m | 240V | 50 Hz | | | |
| 40003916-003/U | 240V, 50 Hz Replacement actuator for V4073 | 1 m | 240V | 50 Hz | | | |
| 40003916-011/U | 24V, 60 Hz Replacement actuator for V8043C | 18 in. (457 mm) leads on same side of manual lever | 24V | 60 Hz | | | |
| 40003916-012/U | 24V, 60 Hz Replacement actuator for V8043G | 18 in. (457 mm) leads on same side of manual lever | 24V | 60 Hz | | | |
| 40003916-013/U | 24V, 60 Hz Replacement actuator for V8043F | | 24V | 60 Hz | | | |
| 40003916-014/U | 24V, 60 Hz Replacement actuator for V8043D | 18 in. (457 mm) leads on same side of manual lever | 24V | 60 Hz | | Valves with Action of Spring return to open | |
| 40003916-021/U | 24 Vac, 50/60 Hz Replacement head for V8043A | 18 in. (457 mm) leads on same side of manual lever | 24 Vac | 50 Hz; 60 Hz | | Valves with Action of Spring return to close | |
| 40003916-023/U | 240 Vac, 50 Hz Replacement head for V4043A, 240V, 50Hz | 18 in. (457 mm) leads on same side of manual lever | 240 Vac | 50 Hz | | Two-way valves; Valves with Action of Spring return to close | |
| 40003916-024/U | 120 Vac, 60 Hz Replacement head for V4043A | 18 in. (457 mm) leads on same side of manual lever | 120 Vac | 60 Hz | | Two-way valves; Valves with Action of Spring return to close | |
| 40003916-025/U | 24 Vac, 50/60 Hz Replacement head with End Switch for V8044E | 18 in. (457 mm) leads on same side of manual lever | 24 Vac | 50 Hz; 60 Hz | 4.4 A running @ 120 V; 50 VA pilot duty @ 24 V | Diverting Valves; Valves with Action of Spring return to close "A" port | |
| 40003916-026/U | 24 Vac, 50/60 Hz Replacement head with End Switch for V8044E | 18 in. (457 mm) leads on same side of manual lever | 24 Vac | 50 Hz; 60 Hz | 4.4 A running @ 120 V; 50 VA pilot duty @ 24 V | Two-way valves; Valves with Action of Spring return to close | |
| 40003916-027/U | 24 Vac, 50/60 Hz, N.O. Replacement head for V8043B | 18 in. (457 mm) leads on same side of manual lever | 24 Vac | 50 Hz; 60 Hz | | Two-way valves; Valves with Action of Spring return to open | |
| 40003916-031/U | 120 Vac, 60 Hz, N.O. Replacement head for V4043B | 18 in. (457 mm) leads on same side of manual lever | 120 Vac | 60 Hz | | Two-way valves; Valves with Action of Spring return to open | |
| 40003916-032/U | 24 Vac, 50/60 Hz Replacement head for V8044A | 18 in. (457 mm) leads on opposite side of manual lever | 24 Vac | 50 Hz; 60 Hz | | Diverting Valves; Valves with Action of Spring return to close "A" port | |
| 40003916-036/U | 120 Vac, 60 Hz Replacement head for V4044 | 18 in. (457 mm) leads on opposite side of manual lever | 120V | 60 Hz | | Diverting Valves; Valves with Action of Spring return to close "A" port | |
| 40003916-041/U | 120 Vac, 60 Hz Replacement head for V4043E, Steam Valve | 18 in. (457 mm) leads on same side of manual lever | 120 Vac | 60 Hz | | Two-way valves; Valves with Action of Spring return to close | |
| 40003916-048/U | 24 Vac, 50/60 Hz Replacement head for V8043F, With End Switch | screw terminal block on same side of manual lever | 24 Vac | 50 Hz; 60 Hz | 4.4 A running @ 120 V; 50 VA pilot duty @ 24 V | Two-way valves; Valves with Action of Spring return to close | |
| 40003916-511/U | 24V, 60 Hz Replacement actuator for V8043C "5000" series | 18 in. (457 mm) leads on same side of manual lever | 24V | 60 Hz | | |  |
| 40003916-512/U | 24V, 60 Hz Replacement actuator for V8043C "5000" series | 18 in. (457 mm) leads on same side of manual lever | 24V | 60 Hz | | | |
| 40003916-521/U | 24 Vac, 50/60 Hz Replacement head for V8043A 5000 series | 18 in. (457 mm) leads on same side of manual lever | 24 Vac | 50 Hz; 60 Hz | | Two-way valves; Valves with Action of Spring return to close | |
| 40003916-526/U | 24 Vac, 50/60 Hz Replacement head with End Switch, for V8043E 5000 series | 18 in. (457 mm) leads on same side of manual lever | 24 Vac | 50 Hz; 60 Hz | 4.4 A running @ 120 V; 50 VA pilot duty @ 24 V | Two-way valves; Valves with Action of Spring return to close | |
| 40003916-526/Z | 24 Vac, 50/60 Hz Replacement head with End Switch, for V8043E 5000 series | 18 in. (457 mm) leads on same side of manual lever | 24 Vac | 50 Hz; 60 Hz | 4.4 A running @ 120 V; 50 VA pilot duty @ 24 V | Two-way valves; Valves with Action of Spring return to close | |

Motorized Zone Valves

| Material Number | Description | Electrical Connections | Voltage | Frequency | Auxiliary Switch Ratings | Used With | |
|-----------------|--|---|---------|--------------|--|--|---|
| 40003916-548/U | 24 Vac, 50/60 Hz Replacement head for V8043F, With End Switch | screw terminal block on same side of manual lever | 24 Vac | 50 Hz; 60 Hz | 4.4 A running @ 120 V; 50 VA pilot duty @ 24 V | Two-way valves; Valves with Action of Spring return to close |  |
| 802343/U | small o-ring; .114 inside dia.; .070 thickness; material: rubber | | | | | | |

MZV Series Motorized Zone Valves



Honeywell MZV Series is the first linear zone valve with a built-in balancing plug that permits pre-balancing for each zone.

- Rack and pinion linear design.
- Fast acting, 15 seconds to open, 5 seconds to close.
- Two piece rack design to extend service life.
- Low power consumption, 8 valves, 40 VA transformer.
- External valve position indicator.
- Quiet operation, no water hammer.
- Built-in tamper resistant balancing valve for pre-balancing.
- High torque, constant speed synchronous motor.
- Cooler running, longer life motor.
- Operator can be replaced without draining system.
- Manual opening feature.
- Replaceable valve cartridge.
- Large adjustable flow, 1/2 in. 3/4 in. Cv 5.8; 1 in. 7.0 Cv; 1-1/4 in. Cv 7.0.
- Motor CSA recognized.
- 4 wire operator with auxiliary switch.
- 2 wire without switch, 24 in. leads.
- Compatible with programmable thermostats.
- Bronze casting; brass/stainless trim.
- USA Patent Nos. 5,529,282; D369,650; 5,941,500; 6,032,924.
- UK Patent No. 2,052,382. 24 VAC, 60 Hz, 0.25 ampere.
- 30 mm collar (valve/actuator interface)

Application: Residential or Commercial Zoning for hot water heating or chilled water air conditioning systems, fan coil units or indirect water heater service.

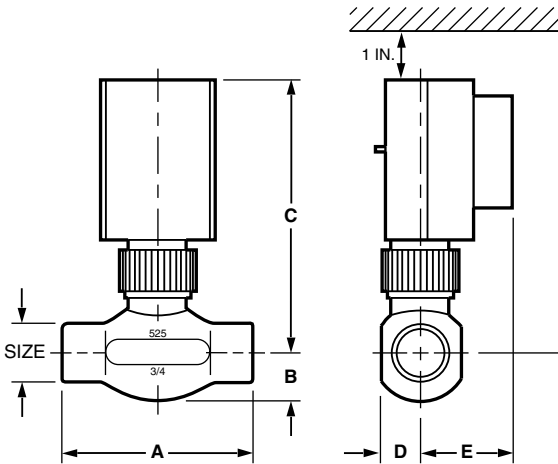
Valve Type: Zone Valve

Body Pattern: Two-way

Voltage: 24 Vac

Frequency: 60 Hz

Dimensions in inches (millimeters)



| MZV SERIES | VALVE SIZE | DIMENSIONS IN INCHES (MM) | | | | |
|------------|------------|---------------------------|------------|---------------|------------|------------|
| | | A | B | C | D | E |
| 524 | 1/2 IN. | 3-5/16 (84) | 1 (25) | 4-13/16 (122) | 11/16 (17) | 1-5/8 (41) |
| 525 | 3/4 IN. | 3-5/16 (84) | 13/16 (21) | 4-13/16 (122) | 11/16 (17) | 1-5/8 (41) |
| 526 | 1 IN. | 3-13/16 (97) | 1 (25) | 4-13/16 (122) | 13/16 (21) | 1-5/8 (41) |
| 527 | 1-1/4 IN. | 3-13/16 (97) | 1 (25) | 4-13/16 (122) | 13/16 (21) | 1-5/8 (41) |

M23259B

Auxiliary End Switch: SPST

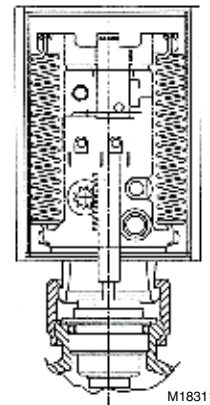
Ambient Temperature Range: 125°F Maximum (52°C Maximum)

Pressure Range (psi): Maximum Water – 125 psi

Pressure Range (kPa): Maximum Water – 862 kPa

Operating Humidity Range (% RH): 5 to 95% relative humidity, non-condensing.



Patented long life rack and pinion design with built-in balancing valve



| Material Number | Capacity (Cv) | Pipe Size (inch) | Pipe Size (DN) | Connection Type | Maximum Differential Pressure Ratings (Close-off) (psi) |
|-----------------|---------------|------------------|----------------|-----------------|---|
| MZV524E-T/U | 5.8 Cv | 1/2 in. | DN15 | NPT | 20 psi |
| MZV525E/U | 5.8 Cv | 3/4 in. | DN20 | Sweat | 20 psi |
| MZV525E-T/U | 5.8 Cv | 3/4 in. | DN20 | NPT | 20 psi |
| MZV526E/U | 7.0 Cv | 1 in. | DN25 | Sweat | 17.5 psi |
| MZV526E-T/U | 7.0 Cv | 1 in. | DN25 | NPT | 17.5 psi |
| MZV527E/U | 7.0 Cv | 1 1/4 in. | DN32 | Sweat | 17.5 psi |

Motorized Zone Valves

MZV Series Replacement Parts

| Material Number | Description | Voltage | Frequency | Auxiliary End Switch | Maximum Differential Pressure Ratings (Close-off) (psi) | Pressure Range (psi) | Pressure Range (kPa) | Ambient Temperature Range | |
|-----------------|--|---------|-----------|----------------------|---|-------------------------|-------------------------|-------------------------------|---|
| MZV520-RP/U | Replacement operator for MZV 524/525/526/527 with end switch | 24 Vac | 60 Hz | SPST | | | | 240°F Maximum (115°C Maximum) |  |
| MZV521-RP/U | Replacement operator for MZV 524/525/526/527 without end switch | 24 Vac | 60 Hz | No | | | | 240°F Maximum (115°C Maximum) | |
| MZV525-RP/U | Replacement valve cartridge for 1/2 in. (MZV524, MZV524E) and 3/4 in. (MZV525, MZV525E) valves | 24 Vac | 60 Hz | | 20 psi | Maximum Water – 125 psi | Maximum Water – 862 kPa | 240°F Maximum (115°C Maximum) |  |
| MZV526-RP/U | Replacement valve cartridge for 1 in. (MZV526, MZV526E) and 1 1/4 in. (MZV527, MZV527E) valves | 24 Vac | 60 Hz | | 17.5 psi | Maximum Water – 125 psi | Maximum Water – 862 kPa | 240°F Maximum (115°C Maximum) | |

AquaPUMP Hydronic Circulating Pump

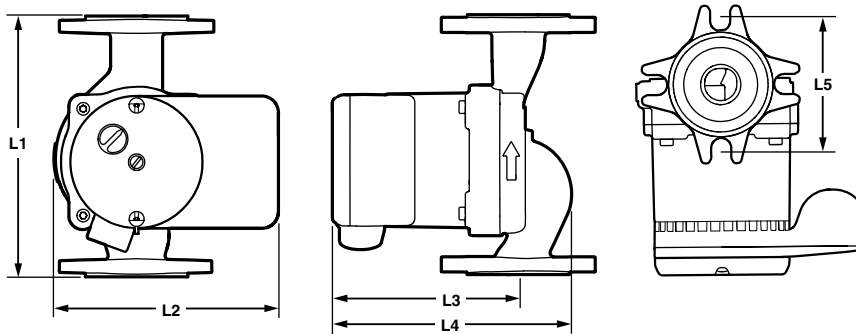
AquaPUMP™ Hydronic Circulating Pumps



The PC3F in-line, wet rotor circulator with universal flange is designed for applications in closed-loop hydronic heating and cooling systems, as well as in solar systems. The pump is non-submersible and for use in dry, frost-free, well-ventilated installations.

- Twist-To-Fit Universal Flange, Rotates 90° to fit most installations with a single product
- Three pump sizes cover every application
- 3-Speed Versatility maximizes efficiency and provides sufficient flow rates with a single pump
- Universal Design replaces wide range of competitive models with just one brand
- Check valves included with each pump

Dimensions in inches (millimeters)



| MATERIAL NUMBER | L1 | L2 | L3 | L4 | L5 |
|-----------------|-------------|-----------|-------------|------------|------------|
| PC3F1558IUF00 | 6.5 (165.5) | 5.5 (140) | 4.7 (118) | 6.6 (167) | 3.2 (80.2) |
| PC3F2699IUF00 | 6.5 (165.5) | 6.1 (155) | 6.5 (165.5) | 7.75 (197) | 3.2 (80.2) |
| PC3F4344IUF00 | 8.5 (216) | 6.1 (155) | 6.9 (174) | 8.9 (227) | 3.4 (87.3) |

M34725

Voltage: 115V at 60 Hz

Maximum Water Pressure (psi): 145 psi

Ambient Temperature Range: 32°F to 104°F (0°C to 40°C)

Materials: Housing – Cast Iron; Bearings and Shaft – Ceramic

Fluid Temperature: 230°F Maximum (110°C Maximum)

Maximum Noise Rating: Driving (dB(A) @ 1m) – 43

Common Product Name: AquaPUMP

| Material Number | Maximum Flow Rate (gpm) | Pressure Head | Approximate, Dimensions (in.) | Current Draw | Description |
|-----------------|-------------------------|---------------|-----------------------------------|--|--------------------------|
| PC3F1558IUF00/U | 15 gpm | 19 | 6-1/2 in. A to B ports End to End | Nominal (minimum speed) – 0.3; Nominal (maximum speed) – 0.75 | 3-Speed Circulation Pump |
| PC3F2699IUF00/U | 25 gpm | 31 | 6-1/2 in. A to B ports End to End | Nominal (minimum speed) – 1.1; Nominal (maximum speed) – 1.7 | 3-Speed Circulation Pump |
| PC3F4344IUF00/U | 45 gpm | 17 | 8-1/2 in. A to B ports End to End | Nominal (minimum speed) – 1.1; Nominal (maximum speed) – 1.7 | 3-Speed Circulation Pump |

AquaPUMP™ Accessories

| Material Number | Fluid Temperature | Approximate, Dimensions (in.) | Description | |
|-----------------|-------------------------------|-------------------------------|---|--|
| PCG100/U | 230°F Maximum (110°C Maximum) | 1 in. | 1 inch Circulating Pump Flange Gasket | |
| PCG125/U | 230°F Maximum (110°C Maximum) | 1-1/4 in. | 1-1/4 inch Circulating Pump Flange Gasket | |
| PCG150/U | 230°F Maximum (110°C Maximum) | 1-1/2 in. | 1-1/2 inch Circulating Pump Flange Gasket | |
| PCV100/U | 200°F Maximum (93°C Maximum) | 1 in. | 1 inch Circulating Pump Check Valve | |
| PCV125/U | 200°F Maximum (93°C Maximum) | 1-1/4 in. | 1-1/4 inch Circulating Pump Check Valve | |
| PCV150/U | 200°F Maximum (93°C Maximum) | 1-1/2 in. | 1-1/2 inch Circulating Pump Check Valve | |

Differential Pressure Regulators

D146 Differential Pressure Regulators



The differential pressure regulator eliminates excessive pump head pressure, when most radiator valves are closed due to reduced demand, by controlling flow through a bypass line when the difference between supply/return exceeds the setpoint.

- Install between supply and return sides of a hydronic system to stabilize pressure differential and reduce the effects of demand changes.
- Control maintains a constant differential between the two sides by opening a bypass whenever the difference between supply and return reaches the setpoint.
- Provides silent, trouble-free service.
- Easy installation; requires no electrical hookup.
- Easy adjustment of pressure by turning regulating cap.
- Built-in differential pressure indicator.
- Brass valve body with thermoplastic and stainless steel parts.
- Diaphragm of EPDM.

Valve Type: Pressure Regulating Valve

Connection Type: Angle type, female threaded NPT

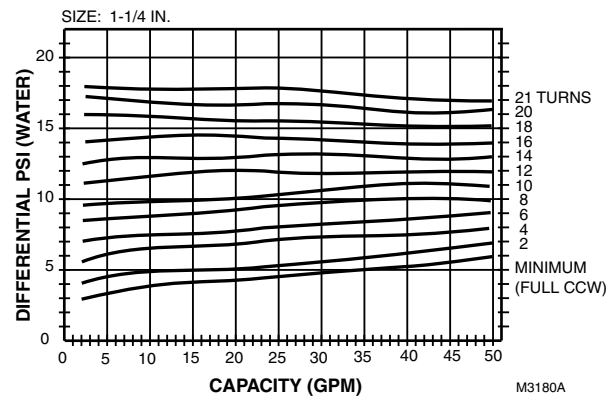
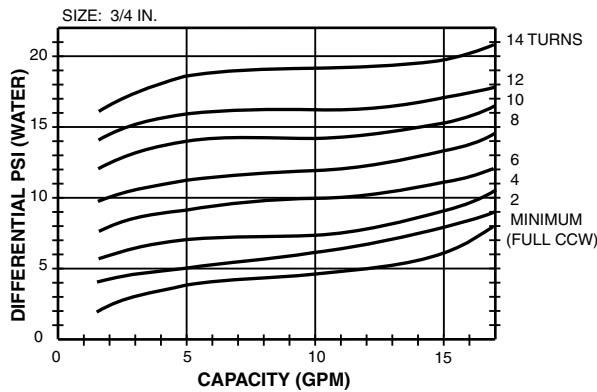
Materials (Body): Brass (body), Stainless steel and engineered thermoplastics. EPDM diaphragm.

Outlet Pressure Adjustment Range (psi): 0-17 psi

Max. Inlet Pressure Rating (psi): 85 Psi

Operating Temperature Range: 230°F Maximum (110°C Maximum)

D146 Capacities



| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity | Approximate, Dimensions | Description | Includes |
|-----------------|------------------|----------------|---------------------------|--|--|--|
| D146M1032 | 3/4 in. | DN20 | 120,000 Btu/hr; 18 gpm | 6 1/4 in. high x 3 3/8 in. wide (160 mm high x 86 mm wide) | Differential Pressure Regulator, 3/4 in. | Built-in differential pressure indicator |
| D146M1040 | 1 1/4 in. | DN32 | 395,000 Btu/hr; 50 gpm | 8 1/2 in. high x 4 1/4 in. wide (213 mm high x 109 mm wide) | Differential Pressure Regulator, 1 1/4 in. | Built-in differential pressure indicator |

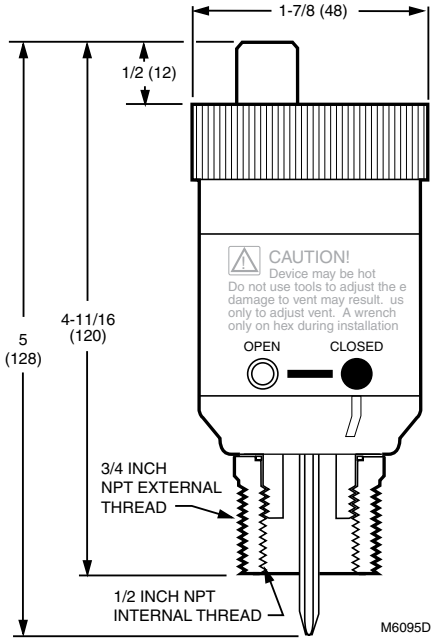
EA79 Industrial Air Vents



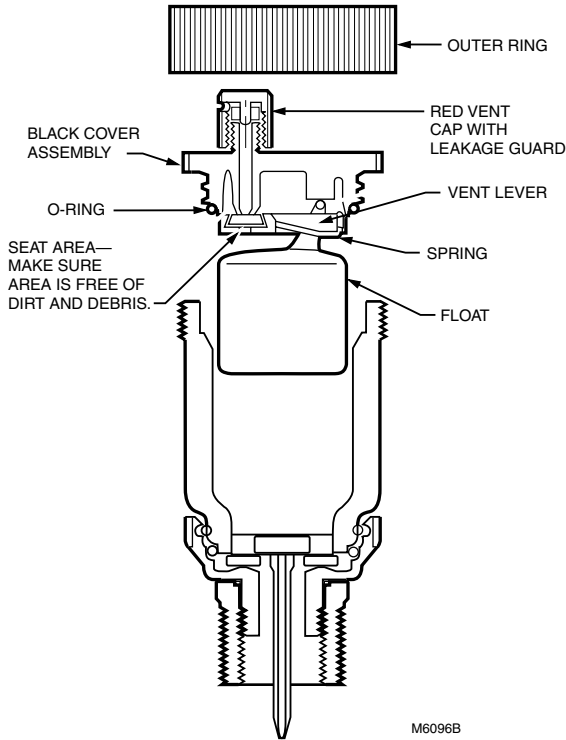
The Honeywell EA79 Industrial Air Vent purges air from high pressure mains and equipment in hot or cold closed water systems.

- Built-in shutoff valve for servicing without system shutdown.
- Built-in vacuum breaker.
- Removable float/valve assembly for easy servicing.
- Safety drain connection and vent cap with leakage guard.
- Brass shell construction.
- Internal parts made of corrosion-resistant and chemical-resistant materials for use with water systems containing propylene glycol, mineral oils, or petroleum-based oils. Replaces Hoffman # 79 or Dole # 75 Vents.
- Maintains quiet and efficient operation.

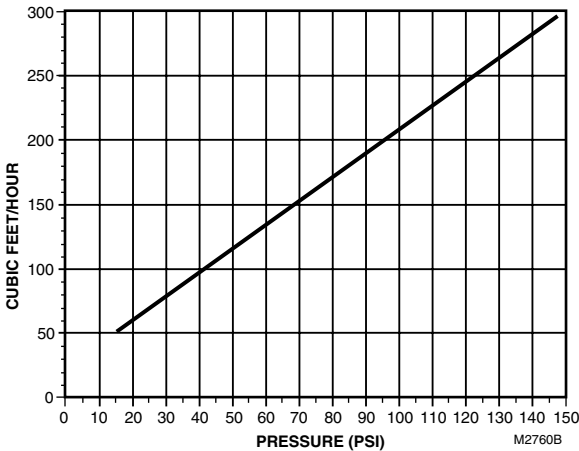
Dimensions in inches (millimeters)



EA79 construction



EA79 capabilities



Application: Hydronics
Operating Temperature Range: 250°F Maximum (120°C Maximum)
Maximum Safe Operating Pressure (psi): 150 psi
Maximum Safe Operating Pressure (kPa): 1034 kPa
Approximate Dimensions: 5 in. long x 1 7/8 in. diameter (128 mm long x 48 mm diameter)
Comments: Internal parts made of corrosion-resistant and chemical-resistant materials for use with hydronic systems that may contain concentrations of propylene or ethylene glycol.

Hydronic Controls

| Material Number | Connection Type | Connection Size (in.) | Description |
|-----------------|--|-----------------------|-------------------------------|
| EA79A1004 | 3/4 in. male NPT pipe thread with 1/2 in. female NPT pipe thread | 3/4 in. | Industrial automatic air vent |

Air Vents and Eliminators

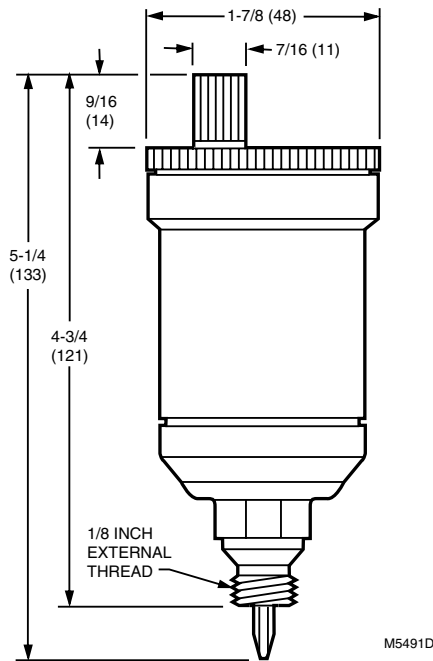
EA122A Automatic Air Vent for Non-Heating System Applications



The Honeywell EA122A Automatic Air Vent purges air from high pressure mains and equipment in hot or cold potable water systems.

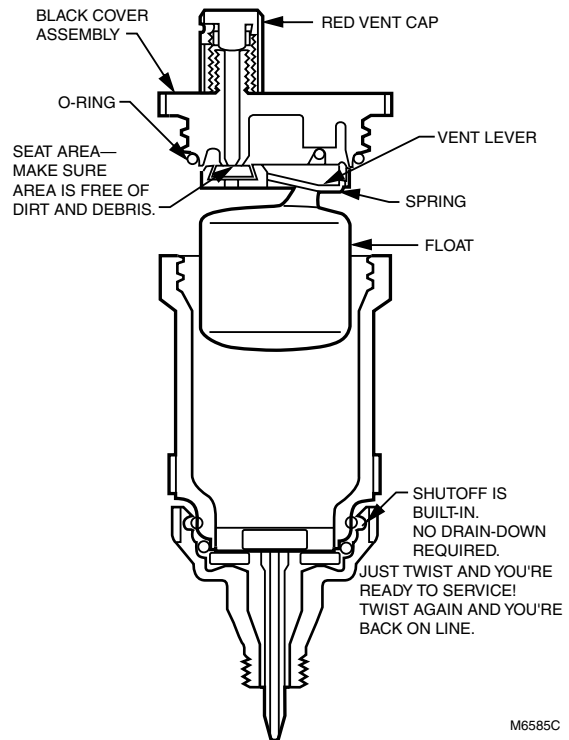
- Includes removable float/valve assembly for easy servicing.
- Not for use in steam systems.
- Body, cover and float assembly made of thermoplastics.
- Internal parts made of corrosion-resistant and chemical-resistant materials for use with water systems containing light concentrations of propylene glycol, mineral oils, or petroleum-based oils.
- Oil resistant seal.
- EPDM seat disc and O-ring.

Dimensions in inches (millimeters)



M5491D

EA122A construction



M6585C

Application: Potable water installations

Operating Temperature Range: 212°F Maximum (100°C Maximum)

Maximum Safe Operating Pressure (psi): 90 psi

Maximum Safe Operating Pressure (kPa): 620 kPa

Approximate Dimensions: 5 1/4 in. long x 1 7/8 in. diameter (133 mm long x 48 mm diameter)

Comments: Internal parts made of corrosion-resistant and chemical-resistant materials for use with hydronic systems that may contain concentrations of propylene or ethylene glycol.

| Material Number | Connection Type | Connection Size (in.) | Description |
|-----------------|-----------------|-----------------------|---|
| EA122A1028 | Male NPT | 1/8 in. | Automatic air vent with built-in shut off valve; includes EPDM seat disc and O-ring. |
| EA122B117 | Male NPT | 1/8 in. | Automatic Air vent without built-in shutoff valve or leakage guard; includes EPDM seat disc and O-ring. |

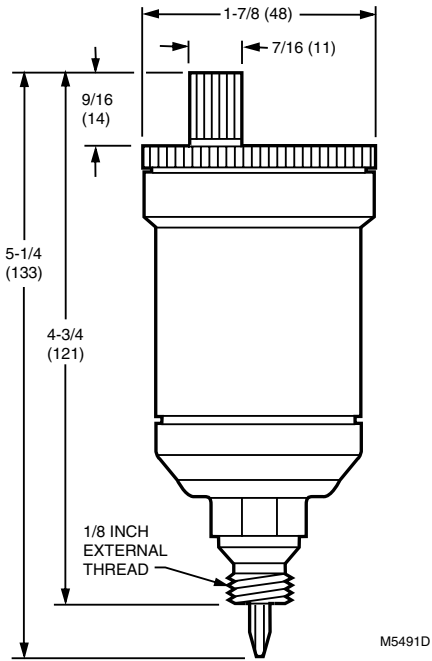
EA122A Automatic Air Vent for Heating System Applications



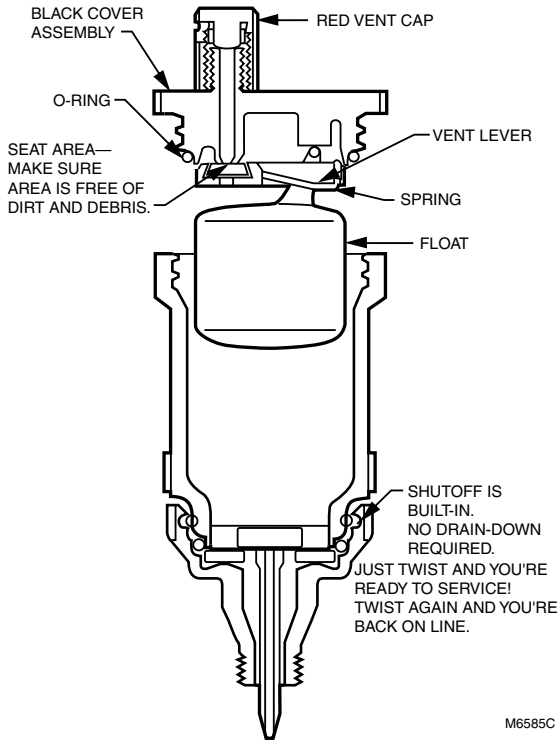
The Honeywell EA122A Automatic Air Vent purges air from high pressure mains and equipment in hot or cold closed water systems.

- Includes removable float/valve assembly for easy servicing.
- Not for use in steam systems.
- Body, cover and float assembly made of thermoplastics.
- Internal parts made of corrosion-resistant and chemical-resistant materials for use with water systems containing light concentrations of propylene glycol, mineral oils, or petroleum-based oils.
- Oil resistant seal.
- NBR seat disc and O-ring.

Dimensions in inches (millimeters)



EA122A construction



Application: Hydronic heating and cooling
Operating Temperature Range: 212°F Maximum (100°C Maximum)
Maximum Safe Operating Pressure (psi): 90 psi
Maximum Safe Operating Pressure (kPa): 620 kPa

Approximate, Dimensions: 5 1/4 in. long x 1 7/8 in. diameter (133 mm long x 48 mm diameter)
Comments: Internal parts made of corrosion-resistant and chemical-resistant materials for use with hydronic systems that may contain concentrations of propylene or ethylene glycol.

| Material Number | Connection Type | Connection Size (in.) | Description |
|-----------------|-----------------|-----------------------|---|
| EA122A1002 | Male NPT | 1/8 in. | Automatic air vent with built-in shutoff valve and leakage guard, oil resistant |

Hydronic Controls

Air Vents and Eliminators

GoldTop™—Universal Air Vent for Residential and Commercial Heating and Cooling Systems



The GoldTop offers a convenient, one-fits-all concept, to stock one vent for all your venting needs, between 1 and 150 psi systems. Honeywell's revolutionary patented fulcrum design offers a venting rate of 3-4 times that of other products.

- Patent No. 5,988,201.

Application: Residential or commercial heating and cooling systems
Operating Temperature Range: 240°F Maximum (115°C Maximum)
Maximum Safe Operating Pressure (psi): 150 psi
Maximum Safe Operating Pressure (kPa): 1034 kPa
Approximate, Dimensions: 1 27/32 in. diameter x 3 1/4 in. long
 (24 mm diameter x 83 mm long)
Materials: Brass

| Material Number | Connection Type | Connection Size (in.) | Weight | Description |
|-----------------|-----------------|-----------------------|------------------|--|
| FV180/U | Male NPT | 1/8 in. | 0.4 lb (0.18 kg) | 1/8 in. NPT Goldtop Universal Air Vent for heating and cooling systems |
| FV180A/U | Male NPT | 1/4 in. | 0.4 lb (0.18 kg) | 1/4 in. NPT Goldtop Universal Air Vent for heating and cooling systems |

MaxiVent™ Air Vent for Heating and Cooling Systems



The Maxivent features a low profile, fit anywhere solid brass body and cover, and a high temperature polypropylene float.

Application: Residential or commercial heating and cooling systems
Operating Temperature Range: 240°F Maximum (115°C Maximum)
Maximum Safe Operating Pressure (psi): 150 psi
Maximum Safe Operating Pressure (kPa): 1034 kPa
Approximate, Dimensions: 2 in. high x 1 5/32 in. diameter (51 mm high x 29 mm diameter)
Materials: Brass

| Material Number | Connection Type | Connection Size (in.) | Weight | Description |
|-----------------|-----------------|-----------------------|-------------------|--|
| FV147/U | Male NPT | 1/8 in. | 0.12 lb (0.06 kg) | 1/8 in. NPT Air Vent for heating and cooling systems |
| FV147A/U | Male NPT | 1/4 in. | 0.12 lb (0.06 kg) | 1/4 in. NPT Air Vent for heating and cooling systems |

AP400 Air Purger



Replacement Parts - Old Style AM Series (Aquamix)

- Heavy Duty cast iron construction
- 1 inch, 1 1/4 and 1 1/2 inch models (inlet and outlet)
- 1/2 inch bottom tapping for expansion tank mount
- 1/8 inch top tapping for air vent mount
- Directional flow arrow for correct installation

Application: Closed heating systems
Operating Temperature Range: 275°F Maximum (135°C Maximum)
Maximum Safe Operating Pressure (psi): 125 psi
Maximum Safe Operating Pressure (kPa): 862 kPa
Approximate, Dimensions: 6 in. long x 3-3/4 in. high x 2-3/8 in. wide
 (152 mm long x 95 mm high x 60 mm wide)
Materials: Cast Iron

| Material Number | Connection Type | Pipe Size (inch) | Connection Size (in.) | Weight | Description |
|-----------------|-----------------|------------------|----------------------------------|-----------------|---|
| AP400/U | Female NPT | 1 in. | Bottom: 1/2 in.; Top: 1/8 in. | 4.2 lb (1.9 kg) | 1 in. NPT Air Purger for closed heating systems |
| AP401/U | Female NPT | 1 1/4 in. | Bottom: 1/2 in.; Top: 1/8 in. | 3.8 lb (1.7 kg) | 1 1/4 in. NPT Air Purger for closed heating systems |
| AP402/U | Female NPT | 1 1/2 in. | Bottom: 1/2 in.; Top: 1/8 in. | 8.6 lb (3.9 kg) | 1 1/2 in. NPT Air Purger for closed heating systems |

SuperVent® Air Eliminator — Eliminates Air from Hydronic Heating Systems without Bleeding

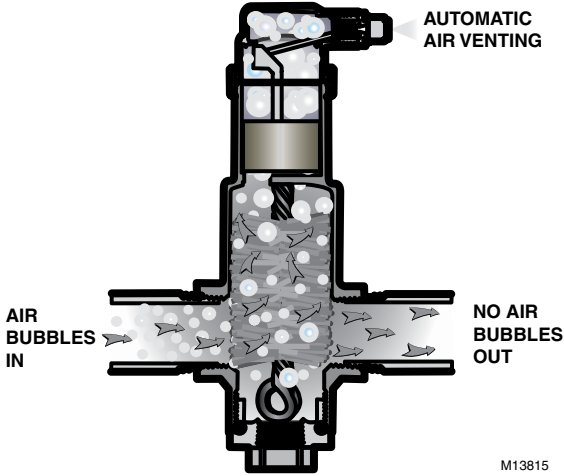


The Honeywell SuperVent, purges air through a no clog vent assembly, to control dirt and debris and minimize air vent fouling in Hydronic heating systems, while eliminating the need for bleeding.

- No clog vent.
- Dirt and Debris resistant.
- 360 degree adjustable collar ring for installation flexibility.
- Stainless steel concentrator which eliminates gurgling noise.
- Bronze body for rigid construction.
- Threaded connections.

Application: Residential or Commercial closed loop hydronic heating or chilled water systems
Operating Temperature Range: 240°F Maximum (115°C Maximum)
Maximum Safe Operating Pressure (psi): 125 psi
Maximum Safe Operating Pressure (kPa): 862 kPa
Materials: Bronze

How it works



M13815

| Material Number | Pipe Size (inch) | Approximate, Dimensions | Connection Type | Connection Size (in.) | Capacity (Cv) | Weight |
|-----------------|------------------|--|-----------------|-----------------------|---------------|------------------|
| PV075/U | 3/4 in. | 6 29/32 in. high x 2 11/16 in. wide; Maximum diameter: 1 13/16 in. (176 mm high x 68 mm wide; Maximum diameter: 46 mm) | Female NPT | 1/2 in. | 13 Cv | 2 lb (0.9 kg) |
| PV075S/U | 3/4 in. | 6 29/32 in. long x 3 3/16 in. wide; Maximum diameter: 1 13/16 in. (176 mm high x 81 mm long; Maximum diameter: 46 mm) | Sweat | 1/2 in. | 13 Cv | 2 lb (0.9 kg) |
| PV100/U | 1 in. | 6 1/2 in. high x 3 3/32 in. wide; Maximum diameter: 2 3/32 in. (192 mm high x 79 mm long; Maximum diameter: 53 mm) | Female NPT | 1/2 in. | 22 Cv | 2.75 lb (1.2 kg) |
| PV100S/U | 1 in. | 6 1/2 in. high x 3 11/16 in. wide; Maximum diameter: 2 3/32 in. (192 mm long x 94 mm wide; Maximum diameter: 53 mm) | Sweat | 1/2 in. | 22 Cv | 2.75 lb (1.2 kg) |
| PV125/U | 1 1/4 in. | 7 27/32 in. high x 3 11/16 in. wide; Maximum diameter: 2 1/2 in. (199 mm high x 94 mm wide; Maximum diameter: 64 mm) | Female NPT | 1/2 in. | 38 Cv | 3.5 lb (1.6 kg) |
| PV125S/U | 1 1/4 in. | 7 27/32 in. high x 4 13/32 in. wide; Maximum diameter: 2 1/2 in. (199 mm high x 112 mm wide; Maximum diameter: 64 mm) | Sweat | 1/2 in. | 38 Cv | 3.5 lb (1.6 kg) |
| PV150/U | 1 1/2 in. | 9 5/32 in. high x 4 5/16 in. long; Maximum diameter: 3 3/32 in. (233 mm high x 110 mm long; Maximum diameter: 79 mm) | Female NPT | 1/2 in. | 50 Cv | 5.2 lb (2.4 kg) |
| PV150S/U | 1 1/2 in. | 9 5/32 in. high x 4 5/16 in. long; Maximum diameter: 3 3/32 in. (233 mm high x 110 mm long; Maximum diameter: 79 mm) | Sweat | 1/2 in. | 50 Cv | 5.2 lb (2.4 kg) |
| PV200/U | 2 in. | 10 9/32 in. high x 5 3/16 in. long; Maximum diameter: 4 in. (261 mm high x 132 mm long; Maximum diameter: 102 mm) | Female NPT | 1/2 in. | 95 Cv | 8 lb (3.6 kg) |
| PV200S/U | 2 in. | 10 9/32 in. high x 5 3/16 in. long; Maximum diameter: 4 in. (261 mm high x 132 mm long; Maximum diameter: 102 mm) | Sweat | 1/2 in. | 95 Cv | 8 lb (3.6 kg) |

Hydronic Controls

Air Vents and Eliminators

SuperVent® Air Eliminator Universal Models — Eliminate Air from Hydronic Heating Systems without Bleeding



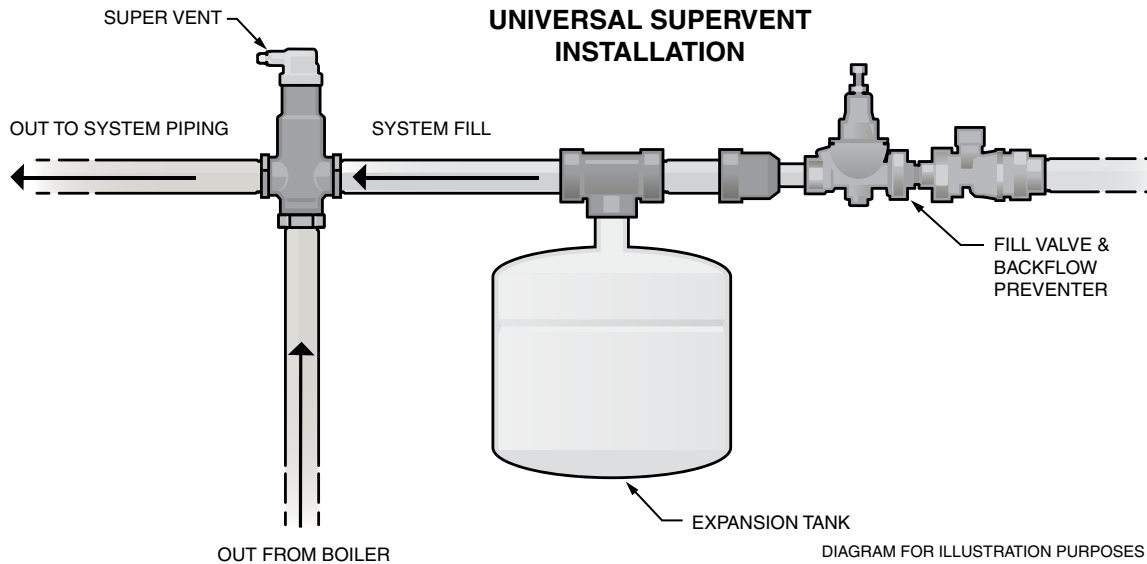
The Honeywell SuperVent, purges air through a no clog vent assembly, to control dirt and debris and minimize air vent fouling in Hydronic heating systems, while eliminating the need for bleeding.

- No clog vent.
- Dirt and Debris resistant.
- 360 degree adjustable collar ring for installation flexibility.
- Stainless steel concentrator which eliminates gurgling noise.
- Bronze body for rigid construction.
- Threaded connections.

Application: Residential or Commercial closed loop hydronic heating or chilled water systems
Connection Type: Female NPT
Operating Temperature Range: 240°F Maximum (115°C Maximum)

Maximum Safe Operating Pressure (psi): 125 psi
Maximum Safe Operating Pressure (kPa): 862 kPa
Materials: Bronze

Typical Installation



M13834

| Material Number | Pipe Size (inch) | Connection Size (in.) | Capacity (Cv) | Approximate, Dimensions | Weight |
|-----------------|------------------|------------------------|---------------|--|-----------------|
| PVU075/U | 3/4 in. | 3/4 in. bottom inlet | 3.6 Cv | 7 9/32 in. long x 2 11/16 in. wide; Maximum diameter: 1 13/16 in. (185 mm long x 68 mm wide; Maximum diameter: 46 mm) | 2.1 lb (0.9 kg) |
| PVU100/U | 1 in. | 1 in. bottom inlet | 6.2 CV | 7 27/32 in. high x 4 13/32 in. wide; Maximum diameter: 2 3/32 in. (199 mm high x 112 mm wide; Maximum diameter: 53 mm) | 2.8 lb (1.3 kg) |
| PVU125/U | 1 1/4 in. | 1 1/4 in. bottom inlet | 10.5 Cv | 8 1/4 in. high x 3 11/16 in. wide; Maximum diameter: 2 1/2 in. (212 mm high x 94 mm long; Maximum diameter: 64 mm) | 3.6 lb (1.6 kg) |
| PVU150/U | 1 1/2 in. | 1 1/2 in. bottom inlet | 14.3 Cv | 9 13/32 in. high x 4 5/16 in. wide; Maximum diameter: 3 3/32 in. (239 mm high x 110 mm long; Maximum diameter: 79 mm) | 5.2 lb (2.4 kg) |

SuperVent® Vent Top for Heating and Cooling Systems



The SuperVent has high venting capacity and incorporates a check valve. Use with SuperVent PV Series products.

Application: Residential or commercial heating and cooling systems
Operating Temperature Range: 240°F Maximum (115°C Maximum)
Maximum Safe Operating Pressure (psi): 150 psi

Maximum Safe Operating Pressure (kPa): 1034 kPa
Materials: Brass

| Material Number | Connection Type | Pipe Size (inch) | Pipe Size (DN) | Connection Size (in.) | Weight | Approximate, Dimensions |
|-----------------|-----------------|------------------|----------------|-----------------------|-------------------|---|
| SV173/U | NPT | 3/8 in. | DN10 | 3/8 in. | 0.43 lb (0.19 kg) | 3 in. high x 2 in. diameter; Maximum diameter: 2 in. (76 mm high x 51 mm diameter; Maximum diameter: 51 mm) |
| SV175/U | NPT | 1/2 in. | | 1/2 in. | 0.43 lb (0.19 kg) | 3 in. high x 2 in. diameter; Maximum diameter: 2 in. (76 mm high x 51 mm diameter; Maximum diameter: 51 mm) |

SuperVent Replacement Parts

| Material Number | Description |
|-----------------|--|
| PV-001RP/U | Replacement Air Vent Assembly for PowerVent (pre 2004) size 3/4 in., 1 in., 1 1/4 in., 1 1/2 in. and 2 in. |
| PV-020RP/U | PV SuperVent Vent Top Replacement (New Style 90 Degree) |

Air Vents and Eliminators

Backflow Preventers with Intermediate Atmospheric Vent for Heating Systems



Honeywell BP900 backflow preventer is designed for continuous pressure applications on small supply lines. It uses an intermediate vacuum breaker to protect against backflow and back siphonage of contaminated water into portable water supplies.

- Ideal for boiler feed lines, livestock drinking fountains, trailer park water hook-ups, laboratory equipment and numerous other applications
- Suitable for hot or cold water service
- Designed for non-continuous backflow temperatures up to 250°F and working supply pressures up to 175 psi

Application: Backflow Preventer

Connection Type: NPT

Ambient Temperature Range: 250°F Maximum (121°C Maximum)

Maximum Safe Operating Pressure (psi): 175 psi

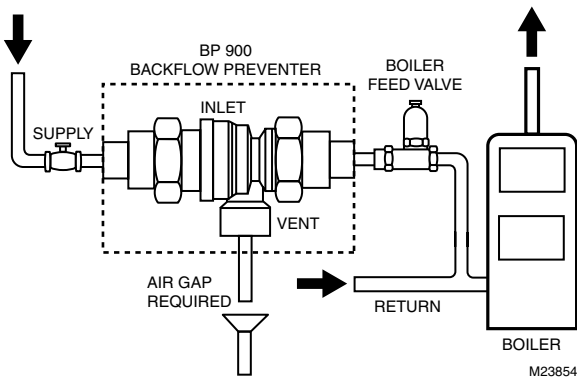
Maximum Safe Operating Pressure (kPa): 1207 kPa

Approximate Dimensions: 4 7/8 in. long x 2 1/2 in. wide (124 mm long x 63 mm wide)

Approvals, CSA: Certified

Approvals, Others: ASSE Certified

Typical Installation



| Material Number | Pipe Size (inch) | Pipe Size (DN) | Connection Size (in.) | Description | Weight |
|-----------------|------------------|----------------|-----------------------|--|------------------|
| BP900/U | 1/2 in. | DN15 | 1/2 in. | Double check intermediate vacuum breaker - 1/2 in. NPT | 1.2 lb (0.54 kg) |

“DialSet” Boiler Fill Valves



Pressure regulating valve for automatic control of boiler feed water and other pressure reducing applications. Especially constructed for expansion tank mounting.

- DialSet Fill Valve.
- Built in check valve.

Valve Type: DialSet Fill Valve

Pipe Size (inch): 1/2 in. Inlet Size – 1/2 in.

Connection Type: NPT; Inlet – Sweat or Threaded

Ambient Temperature Range: 212°F Maximum (100°C Maximum)

Pressure Range (psi): 8 psi to 50 psi

Materials (Body): Brass

| Material Number | Application | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Weight | Description |
|------------------|--|---------------------------------------|---------------------------------------|-----------------|---|
| FM911/U | DialSet boiler fill valve pressure reducing valve 15 psi preset and backflow preventer (VF06-100-SUSUT and BP900 assembly) | 150 psi | 1034 kPa | 4 lb (1.8 kg) | 1/2 in. NPT Backflow preventer and DialSet boiler fill assembly, includes union nut and both sweat and NPT tailpiece |
| VF06-100-SUSUT/U | DialSet Fill Valve pressure regulating boiler feed valve with check valve. | 150 psi | 1034 kPa | 1.8 lb (0.8 kg) | 1/2 in. sweat union pressure reducing valve, DialSet boiler fill valve, includes union nut and both sweat and NPT tailpiece |

Thermometers and Tridicators

Sweat and Threaded Thermometers with Thermowells



Thermometer with Sweat or Threaded Connection.

- Brass thermowell is included to allow the thermometer to be removed without draining the system.
- 2 inch or 2 1/2 inch Dial.

Application: Brass thermowell is included to allow the thermometer to be removed without draining the system.

Temperature Range: 32°F to 250°F (0°C to 121°C)

Materials: Case: steel; Well: brass

Comments: Brass thermowell is included to allow the thermometer to be removed without draining the system.

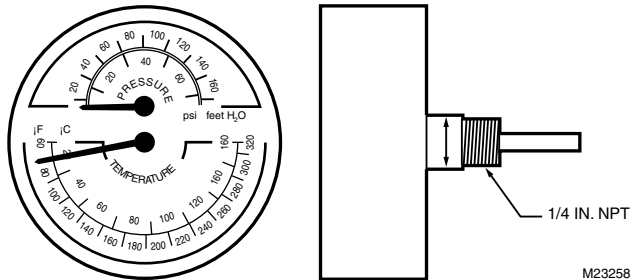
| Material Number | Connections | Approximate, Dimensions | Weight |
|-----------------|---------------|---|--------------------|
| GS200/U | 1/2 in. Sweat | Dial Size – 2 in.; Stem length – 1 1/4 in. (Dial Size – 51 mm; Stem length – 51 mm) | 0.21 lb (0.095 kg) |
| GS250/U | 1/2 in. Sweat | Dial Size – 2 1/2 in.; Stem length – 1 1/4 in. (Dial Size – 63.5 mm; Stem length – 51 mm) | 0.25 lb (0.114 kg) |
| GT161/U | 1/2 in. NPT | Dial Size – 2 in.; Stem length – 1 1/2 in. (Dial Size – 51 mm; Stem length – 51 mm) | 0.21 lb (0.095 kg) |
| GT162/U | 1/2 in. NPT | Dial Size – 2 1/2 in.; Stem length – 1 1/2 in. (Dial Size – 63.5 mm; Stem length – 51 mm) | 0.25 lb (0.114 kg) |

Tridicators



Pressure/temperature gauge with relief set point indicator for boilers and shut off valve.

Dimensions Diagram



Application: Pressure/temperature gauge with relief set point indicator

Maximum Safe Operating Pressure (psi): 75 psi

Temperature Range: 60°F to 320°F (15°C to 160°C)

| Material Number | Connections | Approximate, Dimensions | Weight | Comments |
|-----------------|-------------|--|------------------|---|
| TD-090/U | 1/4 in. NPT | Dial Size – 3 1/8 in.; Stem length – 1 21/32 in. (Dial Size – 79.4 mm; Stem length – 23 mm) | 0.3 lb (0.14 kg) | Pressure/temperature gauge with relief set point indicator |
| TD-165/U | 1/4 in. NPT | Dial Size – 3 1/8 in.; Stem length – 2 in. (Dial Size – 79.4 mm; Stem length – 42.1 mm) | 0.3 lb (0.14 kg) | Pressure/temperature gauge with relief set point indicator |
| TDV-040/U | 1/2 in. NPT | Dial Size – 3 1/8 in.; Stem length – 29/32 in. (Dial Size – 79.4 mm; Stem length – 23.02 mm) | 0.4 lb (0.18 kg) | Pressure/temperature gauge with relief set point indicator and shut off valve |

Residential Expansion Tanks

TK300 Series Expansion Tanks—Heating



Honeywell Expansion Tanks absorb hot water expansion in closed heating systems. They are equipped with butyl diaphragms to separate the air from the system water. Pre-pressurized, the tank keeps fluids circulating and maintains minimum pressure.

- Butyl/EPDM diaphragm - 9 times better than natural rubber
- Deep-drawn steel tank
- Controls system pressure
- Air-tight cushion-factory pre-charged to 12 psig and 100% tested

Maximum Safe Operating Pressure (psi): 100 psi
Maximum Safe Operating Pressure (kPa): 689 kPa

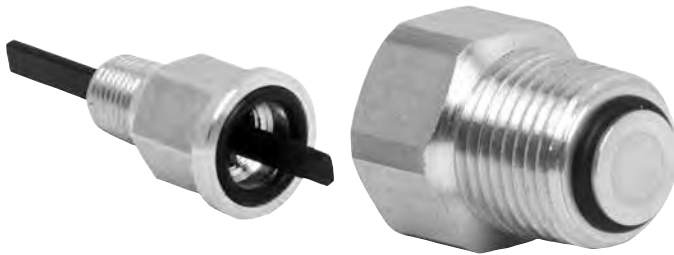
Operating Temperature Range: 240°F Maximum (115°C Maximum)
Comments: Heating

| Material Number | Connection Size (in.) | Connection Type | Diameter | Height | Volume | Weight | Maximum Acceptance Volume | Materials |
|-----------------|-----------------------|-----------------|-----------------------|---------------------|-------------------|-----------------|---------------------------|---|
| TK300-15/U | 1/2 in. | Male NPT | 8 in. (203.2 mm) | 12 5/8 in. (321 mm) | 2.0 gal (7.6 L) | 5 lb (2.3 kg) | 1 gal (3.8 L) | Steel shell; Heavy duty Butyl diaphragm |
| TK300-30/U | 1/2 in. | Male NPT | 11 in. (279 mm) | 15 1/2 in. (394 mm) | 4.4 gal (16.7 L) | 9 lb (4.1 kg) | 2.5 gal (9.5 L) | Steel shell; Heavy duty Butyl diaphragm |
| TK300-60/U | 1/2 in. | Male NPT | 11 in. (279 mm) | 23 in. (584 mm) | 7.6 gal (28.8 L) | 14 lb (6.4 kg) | 2.5 gal (9.5 L) | Steel shell; Heavy duty Butyl diaphragm |
| TK300-90/U | 1/2 in. | Male NPT | 15 3/8 in. (390.5 mm) | 21 in. (533 mm) | 14.0 gal (53.1 L) | 23 lb (10.4 kg) | 11.5 gal (40.1 L) | Steel shell; Heavy duty Butyl diaphragm |

Expansion Tank Sizing based on BTU's

| Boiler | Type of Radiation | | | |
|--------------------------------|--|----------------------------|---------------------|---------------------|
| | Finned Tube Baseboard or Radiant Panel | Convectors or Unit Heaters | Radiators Cast Iron | Baseboard Cast Iron |
| Net Output in 1000's of BTU/Hr | Use Model | Use Model | Use Model | Use Model |
| 25 | TK300-15 | TK300-15 | TK300-15 | TK300-15 |
| 50 | TK300-15 | TK300-15 | TK300-30 | TK300-30 |
| 75 | TK300-30 | TK300-30 | TK300-30 | TK300-60 |
| 100 | TK300-30 | TK300-30 | TK300-60 | TK300-60 |
| 125 | TK300-30 | TK300-60 | TK300-60 | TK300-90 |
| 150 | TK300-30 | TK300-60 | TK300-90 | TK300-90 |
| 175 | TK300-60 | TK300-60 | XPS-030V | XPS-030V |
| 200 | TK300-60 | TK300-60 | XPS-030V | XPS-030V |
| 250 | TK300-60 | TK300-90 | XPS-030V | XPS-040V |
| 300 | TK300-90 | XPS-030V | XPS-030V | XPS-040V |
| 350 | XPS-030V | XPS-030V | XPS-040V | XPS-060V |
| 400 | XPS-030V | XPS-040V | XPS-040V | XPS-060V |

Service Check Valves



Service Check Valves for air vents and expansion tanks allow easy field service without draining system.

CAUTION: Reduce system temperature to ambient and pressure to 0 psi before servicing component. Failure to do so may result in injuries.

Maximum Safe Operating Pressure (psi): 100 psi
Maximum Safe Operating Pressure (kPa): 689 kPa
Operating Temperature Range: 240°F Maximum (115°C Maximum)

| Material Number | Connection Size (in.) | Connection Type |
|-----------------|-----------------------|-------------------------|
| SCV-0125/U | 1/8 in. | Inlet FNPT, Outlet MNPT |
| SCV-050/U | 1/2 in. | Inlet FNPT, Outlet MNPT |

Residential Expansion Tanks

Boiler Trim Kit with SuperVent



Honeywell TK Series Combo Boiler Trim kits are a quick way to purchase boiler trim when doing a boiler change out. All kits with SuperVent include expansion tank and a high performance air eliminator.

Maximum Safe Operating Pressure (psi): 100 psi
Maximum Safe Operating Pressure (kPa): 689 kPa
Operating Temperature Range: 240°F Maximum (115°C Maximum)
Diameter: 11 in. (279 mm)

| Material Number | Connection Size (in.) | Connection Type | Height | Volume | Weight | Maximum Acceptance Volume | Includes |
|------------------|--|--|------------------------|-------------------|-------------------|---------------------------|----------------------------------|
| TK30PV100FM/U | SuperVent: 1 in.; Tank: 1/2 in. | Tank: Male NPT; SuperVent: Female NPT | 15 1/2 in. (394 mm) | 4.4 gal. (16.7 L) | 16 lb (7.3 kg) | 2.5 gal. (9.5 L) | TK300-30, PV100, SCV-050, FM911 |
| TK30PV100SFM/U | SuperVent: 1 in.; Tank: 1/2 in. | Tank: Male NPT; SuperVent: Sweat | 15 1/2 in. (394 mm) | 4.4 gal. (16.7 L) | 16 lb (7.3 kg) | 2.5 gal. (9.5 L) | TK300-30, PV100S, SCV-050, FM911 |
| TK30PV125FM/U | SuperVent: 1 1/4 in.; Tank: 1/2 in. | SuperVent: Female NPT; Tank: Male NPT | 15 1/2 in. (394 mm) | 4.4 gal. (16.7 L) | 16.8 lb (7.6 kg) | 2.5 gal. (9.5 L) | TK300-30, PV125, SCV-050, FM911 |
| TK30PV125SFM/U | SuperVent: 1 1/4 in.; Tank: 1/2 in. | Tank: Male NPT; SuperVent: Sweat | 15 1/2 in. (394 mm) | 4.4 gal. (16.7 L) | 16.8 lb (7.6 kg) | 2.5 gal. (9.5 L) | TK300-30, PV125S, SCV-050, FM911 |
| TK60PV100SFMNC/U | SuperVent: 1 1/4 in.; Tank: 1/2 in. | Tank: Male NPT; SuperVent: Female NPT | 23 in. (584 mm) | 4.4 gal. (16.7 L) | 15.3 lb (6.9 kg) | 2.5 gal. (9.5 L) | TK300-60, PV100S, FM911 |
| TK60PV125FMNC/U | SuperVent: 1 1/4 in.; Tank: 1/2 in. | Tank: Male NPT; SuperVent: Female NPT | 23 in. (584 mm) | 7.5 gal. (28.8 L) | 17.5 lb (7.95 kg) | 2.5 gal. (9.5 L) | TK300-60, PV125, FM911 |

Boiler Trim Kit with Air Purger



Honeywell TK Series Boiler Trim kits are convenient when doing a boiler change out. They include expansion tank, air purger and air vent; selected models include FM911 combination boiler fill valve/backflow preventer and/or service check valves.

Maximum Safe Operating Pressure (psi): 100 psi
Maximum Safe Operating Pressure (kPa): 689 kPa
Operating Temperature Range: 240°F Maximum (115°C Maximum)
Diameter: 11 in. (279 mm)

| Material Number | Connection Size (in.) | Connection Type | Height | Volume | Weight | Maximum Acceptance Volume | Includes |
|-----------------|---|---|------------------------|-------------------|------------------|---------------------------|--|
| TK300-30A-1FM/U | Tank: 1/2 in.; Air Purger: 1 in. | Tank: Male NPT; Air Purger: Female NPT | 15 1/2 in. (394 mm) | 4.4 gal. (16.7 L) | 16.6 lb (7.5 kg) | 2.5 gal. (9.5 L) | TK300-30, AP400, FV180, SCV-0125, SCV-050, FM911 |
| TK300-30A-2FM/U | Air Purger: 1 1/4 in.; Tank: 1/2 in. | Tank: Male NPT; Air Purger: Female NPT | 15 1/2 in. (394 mm) | 4.4 gal. (16.7 L) | 16.6 lb (7.5 kg) | 2.5 gal. (9.5 L) | TK300-30, AP401, FV180, SCV-0125, SCV-050, FM911 |

Thermostatic Radiator Valves and Actuators

V135 Thermostatic Mixing or Diverting Valves



Thermostatic Mixing or Diverting Valves for use in hydronic heating systems as a three-way mixing or diverting valve; controls loop temperature in radiant heating systems.

- Includes plastic handle for manual operation.
- Knurled ring on T100R control head for easy attachment to V135.

Application: Thermostatic mixing/diverting valve for use in hydronic heating systems. Controls loop temperature in radiant heating systems.

Capacity: Standard

Temperature Range: 248°F Maximum (120°C Maximum)

Collar Diameter: 1 3/16 in. (30 mm)

Materials (Body): Bronze

Pressure Ratings (psi): Steam – 232 psi maximum

Pressure Ratings (kPa): Steam – 1601 kPa

Maximum Differential Pressure Ratings (Close-off) (psi): 17 psi maximum

| Material Number | Approximate, Dimensions | Pipe Size (inch) | Pipe Size (DN) | Body Pattern | Capacity (Cv) | Connection Type | Used With |
|-----------------|--|------------------|----------------|--------------|---------------|-----------------|-----------|
| V135A1006 | 2 9/16 in. x 5 1/8 in. (64 mm x 128 mm) | 3/4 in. | DN20 | Three-way | 3.7 Cv | Sweat | T100R |
| V135A1014 | 2 15/16 in. x 5 13/16 in. (74 mm x 148 mm) | 1 in. | DN25 | Three-way | 5.8 Cv | Sweat | T100R |
| V135A1063 | 3 3/8 in. x 6 3/8 in. (86 mm x 162 mm) | 1 1/4 in. | DN32 | Three-way | 5.8 Cv | Sweat | T100R |

T100R Thermostatic Mixing or Diverting Valve Actuator



For use in hydronic heating systems with V135 Valves in a three-way mixing or diverting application. Controls loop temperature in radiant heating systems.

- T100R Thermostatic Actuator includes strap-on-pipe sensor.
- Knurled ring on T100R control head for easy attachment to V135.

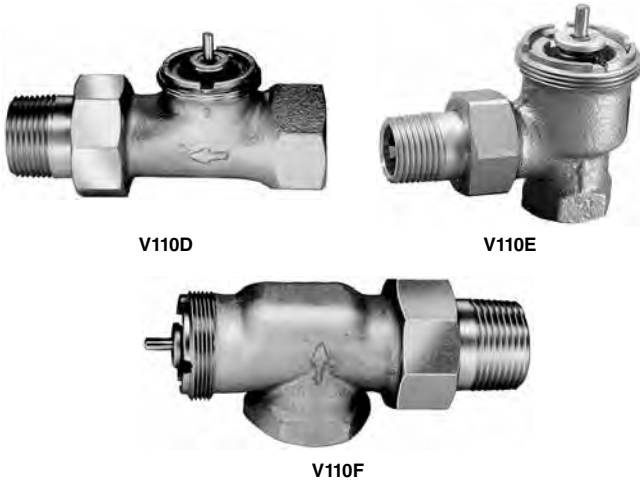
Collar Diameter: 1 3/16 in. (30 mm)

Used With: V135

| Material Number | Application | Capillary Length | Temperature Range | Sensor (Integral or Remote) | Setpoint (Integral or Remote) |
|-----------------|---|-------------------|------------------------------|-----------------------------|-------------------------------|
| T100R1004 | Thermostatic Radiator Controller for use with V135 valve body for diverting or mixing applications. | 6 ft. 8 in. (2 m) | 50°F to 122°F (10°C to 50°C) | Remote | Remote |
| T100R1012 | Thermostatic Radiator Controller for use with V135 valve body for diverting or mixing applications. | 6 ft. 8 in. (2 m) | 86°F to 158°F (30°C to 70°C) | Remote | Remote |

Thermostatic Radiator Valves and Actuators

V110 High Capacity Thermostatic Radiator Valves



High Capacity Thermostatic Radiator Valves with T104 Actuators provide control of temperature by modulating the flow of hot water or steam through free-standing radiators, convectors and other heating units with high capacity requirements.

- Designed with the higher capacity normally required by North American heating systems.
- Valve seat disc, which is made of resilient material (EPDM), ensures tight shutoff on steam or hot water systems.
- Nickel-plated bronze casted body with working parts in cartridge insert for ease of service.
- All working parts are replaceable using service tool (MT110C1011) while valve remains in service, in-line, under pressure.
- Valves normally open without control mounted.
- Valves may be used with T104 Thermostatic Actuators.
- Meet ASHRAE Standard 102-1989.

Capacity: high

Temperature Range: 248°F Maximum (120°C Maximum)

Used With: T104

Pressure Ratings (psi): Hot Water – 150 psi maximum; Steam – 15 psi maximum

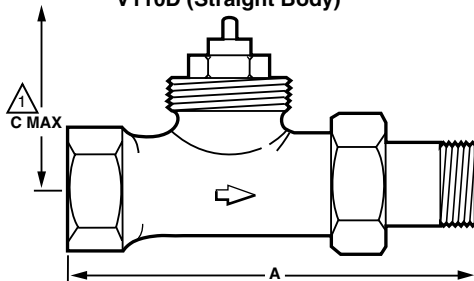
Pressure Ratings (kPa): Hot Water – 1034 kPa maximum; Steam – 103 kPa

Maximum Differential Pressure Ratings (Close-off) (psi): 17 psi maximum

| Material Number | Application | Pipe Size (inch) | Pipe Size (DN) | Body Pattern | Capacity (Cv) | Capacity (Btu / hr - steam) | Connection Type | Materials (Body) | Cartridge Change Tool |
|-----------------|---|------------------|----------------|------------------|---------------|-----------------------------|-----------------|----------------------|-----------------------|
| V110D1000/U | Precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through high capacity heating units. | 1/2 in. | DN15 | Straight | 4.6 Cv | 127,000 Btu/hr | Threaded | Nickel Plated Bronze | Yes - Use MT110C1011 |
| V110D1008/U | | 3/4 in. | DN20 | Straight | 5.8 Cv | 162,000 Btu/hr | Threaded | Nickel Plated Bronze | Yes - Use MT110C1011 |
| V110D1016/U | | 1 in. | DN25 | Straight | 7.0 Cv | 193,000 Btu/hr | Threaded | Nickel Plated Bronze | Yes - Use MT110C1011 |
| V110D1024/U | | 1 1/4 in. | DN32 | Straight | 8 Cv | 193,000 Btu/hr | Threaded | Nickel Plated Bronze | Yes - Use MT110C1011 |
| V110E1004/U | Precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through high capacity heating units when used with T104 Thermostatic Actuators | 1/2 in. | DN15 | Angle | 4.6 Cv | 127,000 Btu/hr | Threaded | Bronze | |
| V110E1012/U | | 3/4 in. | DN20 | Angle | 5.8 Cv | 162,000 Btu/hr | Threaded | Bronze | |
| V110E1020/U | | 1 in. | DN25 | Angle | 7.0 Cv | 193,000 Btu/hr | Threaded | Bronze | |
| V110E1028/U | | 1 1/4 in. | DN32 | Angle | 8 Cv | 193,000 Btu/hr | Threaded | Bronze | |
| V110F1002/U | | 1/2 in. | DN15 | Horizontal Angle | 4.6 Cv | 127,000 Btu/hr | Threaded | Bronze | |
| V110F1010/U | | 3/4 in. | DN20 | Horizontal Angle | 5.8 Cv | 162,000 Btu/hr | Threaded | Bronze | |
| V110F1018/U | | 1 in. | DN25 | Horizontal Angle | 7.0 Cv | 193,000 Btu/hr | Threaded | Bronze | |

Dimensions in inches (millimeters)

V110D (Straight Body)



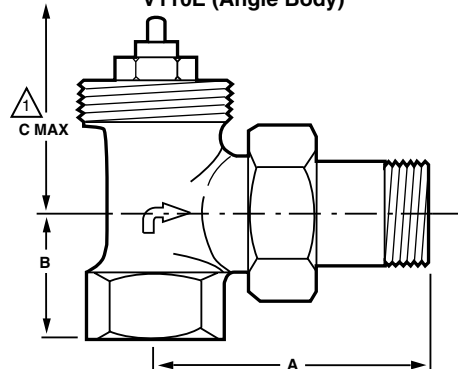
| PIPE SIZE | A IN. (MM) | C MAX IN. (MM) |
|------------|---------------|----------------|
| 1/2 INCH | 3-3/4 (95) | 4-3/4 (121) |
| 3/4 INCH | 4-1/8 (105) | 4-3/4 (121) |
| 1 INCH | 4-15/16 (125) | 4-3/4 (121) |
| 1-1/4 INCH | 5-7/8 (149) | 5 (127) |

Δ C MAX DIMENSION IS WITH T104 CONTROL INSTALLED.

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Dimensions in inches (millimeters)

V110E (Angle Body)



| PIPE SIZE | A IN. (MM) | B IN. (MM) | C MAX IN. (MM) |
|------------|-------------|--------------|----------------|
| 1/2 INCH | 2-9/16 (65) | 1 (25) | 4-3/4 (121) |
| 3/4 INCH | 2-5/8 (67) | 1-1/8 (29) | 4-3/4 (121) |
| 1 INCH | 3 (76) | 1-5/16 (33) | 4-3/4 (121) |
| 1-1/4 INCH | 3-5/8 (90) | 1-11/16 (43) | 5 (127) |

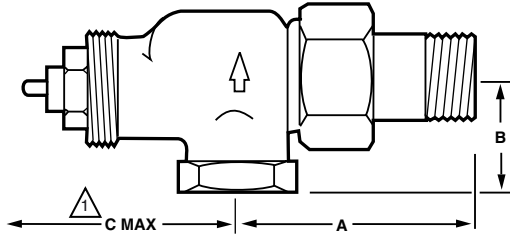
Δ C MAX DIMENSION IS WITH T104 CONTROL INSTALLED.

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Thermostatic Radiator Valves and Actuators

Dimensions in inches (millimeters)

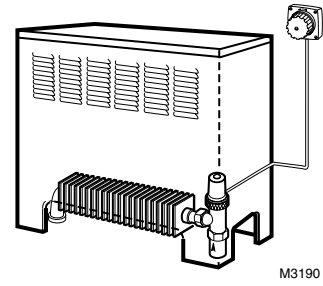
V110F (Horizontal Angle Body)



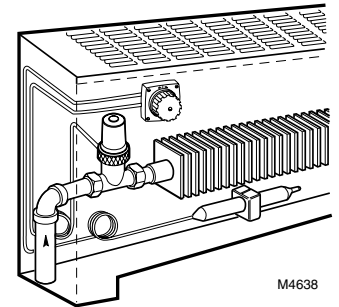
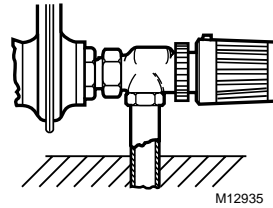
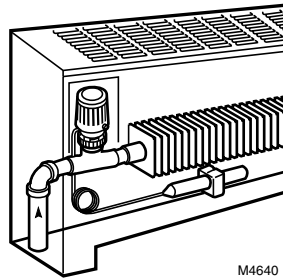
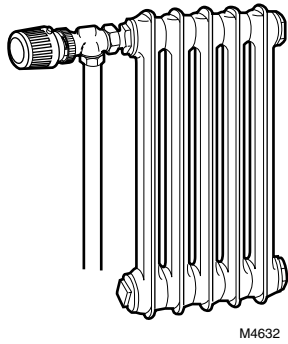
| PIPE SIZE | A IN. (MM) | B IN. (MM) | \triangle C MAX IN. (MM) |
|------------|---------------|---------------|-------------------------------|
| 1/2 INCH | 2-1/4 (57) | 1 (25) | 5-1/8 (130) |
| 3/4 INCH | 2-9/16 (65) | 1-1/8 (29) | 5-1/4 (133) |
| 1 INCH | 2-15/16 (74) | 1-3/16 (30) | 5-1/4 (133) |
| 1-1/4 INCH | 3-1/2 (89) | 2-3/16 (56) | 5-1/4 (133) |

\triangle C MAX DIMENSION IS WITH T104 CONTROL INSTALLED. M18961A

Typical Installation



Typical Installations



Thermostatic Radiator Valves and Actuators

HR90 TheraPro Electronic Radiator Controller



Honeywell TheraPro HR90 is an electronic radiator controller with a modern design and provides features for convenience and energy saving. It is used as stand-alone controller for radiator heating control applications. For optimized readability of the backlight display the display position can be adjusted as well. The display is switched on as soon as a button is pressed or the wheel is rotated. Fast installation due to the simple lock mechanism closing the device at the radiator valve. Up to 3 pre-set standard time programs are selectable. After the installation the HR90 operates immediately to the factory set program.

- With the auto-window function, the radiator valve is closed when ventilating the room.
- In ECO mode, the room temperature is lowered by 6°F.
- Optimized control of the room temperature by start/stop the radiator controller calculates when to open or closing the valve in order to achieve the desired room temperature at the set time.
- Works with V2040 valves and Danfoss RA valve.

Application: For use on radiators

Controlled Fluid: Water or Steam

Temperature Range (F): 32°F to 122°F

Temperature Range (C): 0°C to 50°C

Scale Markings: Screen

Approximate, Dimensions (in.): 2.4 x 2.1 x 3.8

Approximate, Dimensions (mm): 60 x 54 x 96

Connection Type: M30x1.5

Materials (Body): Polycarbonate

Sensor Range: 40°F to 86°F (5°C to 30°C)

Electrical Ratings: 2 batteries 1,5V: LR6, AA, AM3, Lithium, or 2 rechargeable batteries 1,2V NiMH

Comments: IP30 Protection Class

| Material Number | Description | Includes |
|-----------------|--|---|
| HR90 | Honeywell TheraPro HR90 is an electronic radiator controller with a modern design and provides features for convenience and energy saving. | Controller, Base plate, Display holder, Batteries, Screws, Adapter(s) |

Thermostatic Radiator Valves and Actuators

T104 High Capacity Thermostatic Radiator Valve Actuators



T104A



T104B



T104C



T104F



T104V

Provide precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through free-standing radiators, convectors and other heating units with high capacity requirements.

- Continually monitor and adjust room temperature for consistent comfort and relief from under-heating and overheating.
- Designed with the higher capacity normally required by North American heating systems.
- Valve seat disc, which is made of resilient material (EPDM), ensures tight shutoff on steam or hot water systems.

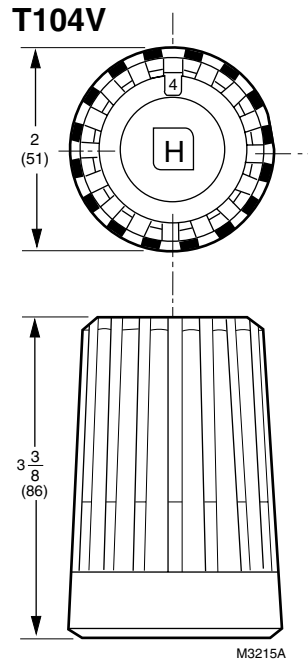
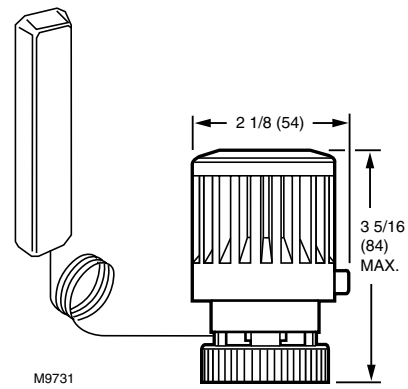
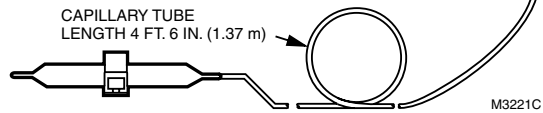
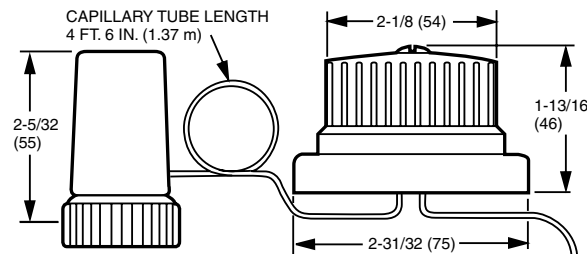
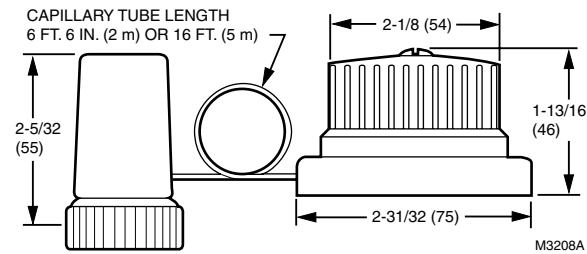
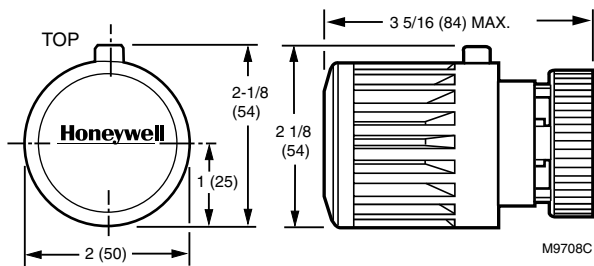
- Nickel-plated bronze casted body with working parts in cartridge insert for ease of service.
- Controls include sensor, setpoint dial and valve actuator; components may be integral or connected by capillary tubes.
- Require no electrical connections.
- Meet ASHRAE Standard 102-1989.
- 40 mm collar diameter.

Collar Diameter: 1 19/32 in. (40 mm)
Used With: V110

| Material Number | Application | Capillary Length | Temperature Range | Sensor (Integral or Remote) | Setpoint (Integral or Remote) | Comments |
|-----------------|---|--------------------------|----------------------------|-----------------------------|-------------------------------|-------------------|
| T104A1040 | Self-contained controller with sensor, setpoint dial and valve actuator in one unit. Adjustable limits. Mount horizontal. Not for use inside enclosures or in locations with restricted airflow around sensor. For V110 valves. | | 43°F to 79°F (6°C to 26°C) | Integral | Integral | Adjustable Limits |
| T104B1038 | Controller with combined remote setpoint and sensor mounted on a wall. Setpoint/sensor connect with a capillary tube to an actuator, which mounts on the valve body. For V110 valves. | 6 ft. 8 in. (2 m) | 48°F to 79°F (9°C to 26°C) | Remote | Remote | |
| T104B1046 | Controller with combined remote setpoint and sensor mounted on a wall. Setpoint/sensor connect with a capillary tube to an actuator, which mounts on the valve body. For V110 valves. | 16 ft (4.9 m) | 48°F to 79°F (9°C to 26°C) | Remote | Remote | |
| T104C1036 | Controller with remote setpoint and sensor normally mounted with setpoint dial mounted on outside cabinet or enclosure; sensor mounted beneath heating coils in cold air return. Double capillaries. For V110 valves. | Two 4 1/2 ft (Two 1.4 m) | 48°F to 79°F (9°C to 26°C) | Remote | Remote | |
| T104F1512 | Thermostatic radiator valve controller for use with V110 series valves. With remote temperature sensing and integral setpoint. Adjustable limits. | 6 ft. 8 in. (2 m) | 43°F to 79°F (6°C to 26°C) | Remote | Integral | Adjustable Limits |

Thermostatic Radiator Valves and Actuators

Dimensions in inches (millimeters)



V2000 Series Valve Bodies Cross Reference to V100 Series

Use T100 Actuators With New V2000 Series Valve Bodies

| V2000 Series (Current) | V100 Series (Obsolete) | Product Description |
|------------------------|------------------------|---|
| V2040DSL15 | V100D1056 | 1/2 in. TRV Straight Body, Female NPT Inlet, Male NPT Tail-piece Outlet |
| V2040DSL20 | V100D1064 | 3/4 in. TRV Straight Body, Female NPT Inlet, Male NPT Tail-piece Outlet |
| V2040DSL25 | V100D1072 | 1 in. TRV Straight Body, Female NPT Inlet, Male NPT Tail-piece Outlet |
| V2040ESL15 | V100E1055 | 1/2 in. TRV Vertical Body, Female NPT Inlet, Male NPT Tail-piece Outlet |
| V2040ESL20 | V100E1063 | 3/4 in. TRV Vertical Body, Female NPT Inlet, Male NPT Tail-piece Outlet |
| V2040ESL25 | V100E1071 | 1 in. TRV Vertical Body, Female NPT Inlet, Male NPT Tail-piece Outlet |
| V2040ASL15 | V100F1054 | 1/2 in. TRV Horizontal, Female NPT Inlet, Male NPT Tail-piece Outlet |
| V2040ASL20 | V100F1062 | 3/4 in. TRV Horizontal, Female NPT Inlet, Male NPT Tail-piece Outlet |
| V2040ASL25 | V100F1070 | 1 in. TRV Horizontal, Female NPT Inlet, Male NPT Tail-piece Outlet |
| V200LDSL15 | V100G5054 | 1/2 in. TRV Straight Body, Sweat Inlet, Sweat Outlet No Tail-piece |
| V200LDSL20 | V100G5062 | 3/4 in. TRV Straight Body, Sweat Inlet, Sweat Outlet No Tail-piece |
| V2042HSL10 | V100P1046 | 1/8 in. TRV (1/2 in. Body With 1/8 in. Adapter) Male NPT Inlet, Female NPT Outlet. One Pipe Steam |
| V2043HSL10 | Y100P1001 | 1/8 in. TRV (1/2 in. Body With 1/8 in. Adapter) Male NPT Inlet, Female NPT Outlet. One Pipe Steam Includes SA123A1003 |
| VS1200SL01 | | Replacement Cartridge New V2000 Series |

Thermostatic Radiator Valves and Actuators

V200; V2000 Series Standard Capacity Thermostatic Radiator Valves Body



V200LD



V2040D



V2040A, V2040E
(Straight body)



V2040E
(Angle body)

One-Pipe Steam Thermostatic Radiator Valves - Allow automatic temperature control in one-pipe steam or hot water systems for free standing radiators, convectors and other heating units with standard capacity requirements.

- Continually monitors and adjusts room temperature for consistent comfort and relief from under-heating and overheating.
- Adjustable balancing cartridge design made from resilient material (EPDM), ensures tight shut-off on steam and hot water systems.
- Nickel plated brass casted body.
- Replaceable cartridge for easy service with service tool.
- Controls include valve body, steam air vent.
- Used with T100 set point and capillary actuators.
- No electrical connection required for non-electric actuators.
- Normally open without control mounted.

Capacity: Standard

Temperature Range: 248°F Maximum (120°C Maximum)

Materials (Body): Nickel Plated Bronze

Cartridge Change Tool: Yes - Use VA8200A001

Pressure Ratings (psi): Hot Water – 150 psi maximum; Steam – 15 psi maximum

Pressure Ratings (kPa): Hot Water – 1034 kPa maximum; Steam – 103 kPa

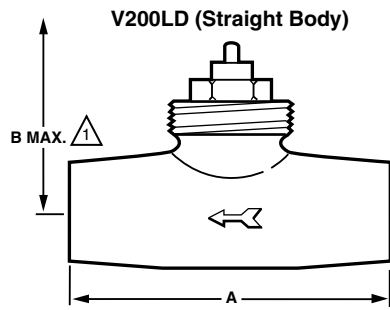
Maximum Differential Pressure Ratings (Close-off) (psi): With T100 or T200: 15 psi, With MV100: 36 psi, For low noise: 3 psi

Maximum Differential Pressure Ratings (Close-off) (kPa): With T100 or T200: 103 kPa, With MV100: 248 kPa, For low noise: 20 kPa

| Material Number | Application | Pipe Size (inch) | Pipe Size (DN) | Body Pattern | Capacity (Cv) | Capacity (Btu / hr - steam) | Connection Type | Connection Size | Used With |
|-----------------|---|------------------|----------------|------------------|---------------|-----------------------------|---|-----------------|--|
| V200LDSL15 | For baseboards and other installations with copper tubing. | 1/2 in. | DN15 | Straight | 2.5 Cv | 59,100 Btu/hr | Inlet – NPT; Outlet – Sweat both ends, no union | 1/2 in. | T100 |
| V200LDSL20 | | 3/4 in. | DN20 | Straight | 2.7 Cv | 63,800 Btu/hr | Inlet – NPT; Outlet – Sweat both ends, no union | 3/4 in. | T100 |
| V2040ASL15 | Replaces most manual valves with minimum piping changes. | 1/2 in. | DN15 | Horizontal Angle | 2.5 Cv | 59,100 Btu/hr | Inlet – NPT; Outlet – Threaded | 1/2 in. | T100A, M and V controls to conform to horizontal mounting requirements |
| V2040ASL20 | | 3/4 in. | DN20 | Horizontal Angle | 2.7 Cv | 63,800 Btu/hr | Inlet – NPT; Outlet – Threaded | 3/4 in. | T100A, M and V controls to conform to horizontal mounting requirements |
| V2040ASL25 | | 1 in. | DN25 | Horizontal Angle | 2.7 Cv | 70,500 Btu/hr | Inlet – NPT; Outlet – Threaded | 1 in. | T100A, M and V controls to conform to horizontal mounting requirements |
| V2040DSL15 | Especially suited for baseboards and straight runs where manual valves were not originally installed. | 1/2 in. | DN15 | Straight | 2.5 Cv | 59,100 Btu/hr | Inlet – NPT; Outlet – Threaded | 1/2 in. | |
| V2040DSL20 | | 3/4 in. | DN20 | Straight | 2.7 Cv | 63,800 Btu/hr | Inlet – NPT; Outlet – Threaded | 3/4 in. | |
| V2040DSL25 | | 1 in. | DN25 | Straight | 2.7 Cv | 70,500 Btu/hr | Inlet – NPT; Outlet – Threaded | 1 in. | |
| V2040ESL15 | Use where installation space is limited | 1/2 in. | DN15 | Angle | 2.5 Cv | 59,100 Btu/hr | Inlet – NPT; Outlet – Threaded | 1/2 in. | T100C, T100B, T100F |
| V2040ESL20 | | 3/4 in. | DN20 | Angle | 2.7 Cv | 63,800 Btu/hr | Inlet – NPT; Outlet – Threaded | 3/4 in. | T100C, T100B, T100F |
| V2040ESL25 | | 1 in. | DN25 | Angle | 2.7 Cv | 70,500 Btu/hr | Inlet – NPT; Outlet – Threaded | 1 in. | T100C, T100B, T100F |

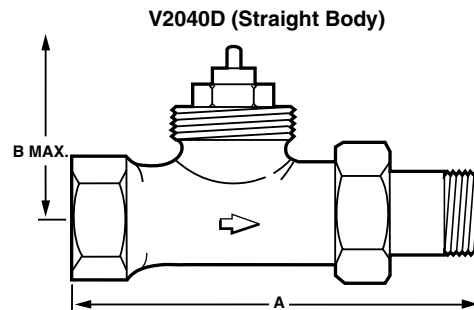
Thermostatic Radiator Valves and Actuators

Dimensions in inches (millimeters)



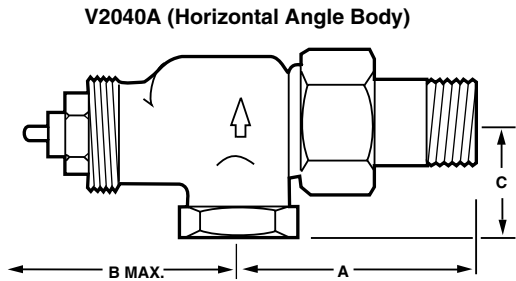
| PIPE SIZE | A IN. (MM) | \triangle B MAX IN. (MM) |
|-----------|---------------|-------------------------------|
| 1/2 INCH | 2-5/8 (66) | 4-1/16 (104) |
| 3/4 INCH | 2-15/16 (74) | 4-1/16 (104) |

\triangle B MAX DIMENSION IS WITH T100A CONTROL INSTALLED.
M12933C



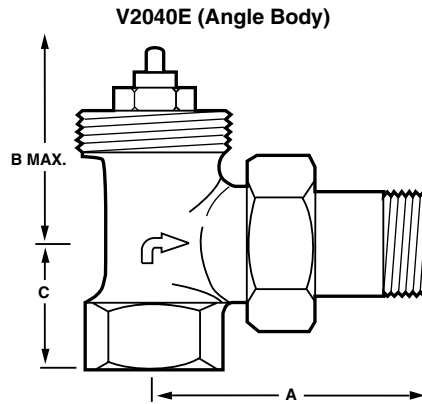
| PIPE SIZE | A IN. (MM) | \triangle B MAX IN. (MM) |
|-----------|---------------|-------------------------------|
| 1/2 INCH | 3-3/4 (95) | 4-1/6 (104) |
| 3/4 INCH | 4-3/16 (106) | 4-1/6 (104) |
| 1 INCH | 4-1/2 (114) | 4-1/2 (114) |

\triangle B MAX DIMENSION IS WITH T100A CONTROL INSTALLED.
M12930D



| PIPE SIZE | A IN. (MM) | \triangle B MAX IN. (MM) | C IN. (MM) |
|-----------|---------------|-------------------------------|---------------|
| 1/2 INCH | 2-1/8 (54) | 4-1/2 (115) | 1-1/8 (29) |
| 3/4 INCH | 2-1/2 (64) | 5-3/16 (132) | 1-3/16 (31) |
| 1 INCH | 2-15/16 (74) | 5-3/16 (132) | 1-7/16 (37) |

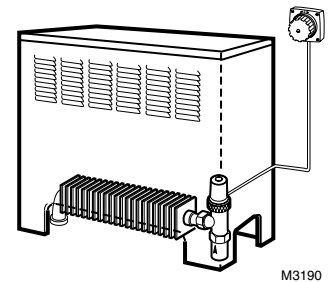
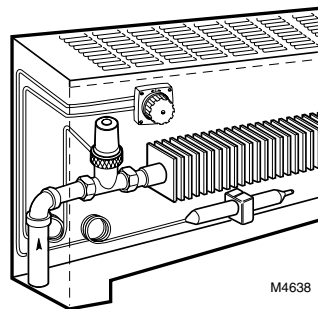
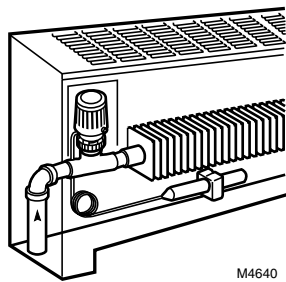
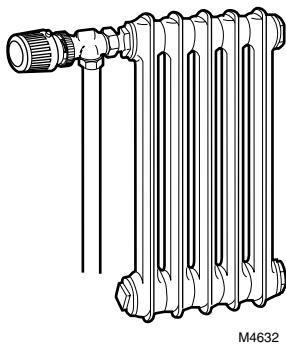
\triangle B MAX DIMENSION IS WITH T100A CONTROL INSTALLED.
M12932C



| PIPE SIZE | A IN. (MM) | \triangle B MAX IN. (MM) | C IN. (MM) |
|-----------|---------------|-------------------------------|---------------|
| 1/2 INCH | 2-5/16 (58) | 3-13/16 (97) | 1 (25) |
| 3/4 INCH | 2-5/8 (66) | 3-13/16 (97) | 1-1/8 (29) |
| 1 INCH | 2-15/16 (74) | 4-5/16 (110) | 1-5/16 (34) |

\triangle B MAX DIMENSION IS WITH T100A CONTROL INSTALLED.
M12931D

Typical Installation



Thermostatic Radiator Valves and Actuators

T100 Standard Capacity Thermostatic Radiator Actuators



T100B



T100C



T100F

Allow automatic temperature control in two-pipe steam or hot water systems for free standing radiators, convectors, and other heating units with standard capacity requirements. Provide comfort and energy savings at affordable prices.

- Continually monitor and adjust room temperature for consistent comfort and relief from under-heating and overheating.
- Valve seat disc, which is made of resilient material (EPDM), ensures tight shutoff on steam or hot water systems.
- Nickel-plated brass casted body with working parts in cartridge insert for ease of service.
- Controls include sensor, setpoint dial and valve actuator; components may be integral or connected by capillary tubes.
- Require no electrical connections.
- All working parts are replaceable using service tool (MT100C1016) while valve remains in service, in-line, under pressure.
- Valves normally open without control mounted.
- Valves may also be used with MV100 Electric Zone Valve Actuator.

Collar Diameter: 1 3/16 in. (30 mm)

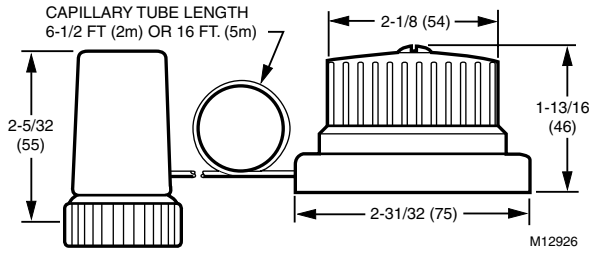
Used With: V100, V2000

| Material Number | Application | Capillary Length | Temperature Range | Sensor (Integral or Remote) | Setpoint (Integral or Remote) | Replaces | Comments |
|-----------------|---|--------------------------|----------------------------|-----------------------------|-------------------------------|---|-------------------|
| T1002WONA | A self-contained control with sensor, setpoint dial and valve actuator in one unit. Mounts horizontal. Not for use inside enclosures or where airflow around sensor is restricted. Adjustable limits. | | 43°F to 79°F (6°C to 26°C) | Integral | Integral | American Steam - 02-100-00. Taco - 5202. Danfoss RA2000 - 013G8200. Ammark - 72. TM Macon - TM B22000. NT Macon - NTB B24000. (in combination with V2000) | Adjustable Limits |
| T100B1035 | A control with combined remote setpoint and sensor mounted on wall. Connected by a capillary tube to an actuator, which is mounted on the valve body. | 6 1/2 ft (2 m) | 48°F to 79°F (9°C to 26°C) | Remote | Remote | American Steam - 02-300-00. Taco - 5206. Danfoss RA2000 - 013G8262. Ammark - 76. TM Macon - TML B42000. NT Macon - NTL B45000. in combination with V2000 | |
| T100B1043 | A control with combined remote setpoint and sensor mounted on wall. Connected by a capillary tube to an actuator, which is mounted on the valve body. | 16 ft (5 m) | 48°F to 79°F (9°C to 26°C) | Remote | Remote | Taco - 5207. Danfoss RA2000 - 013G8265. Ammark - 76L. (in combination with V2000) | |
| T100C1026 | A control with remote setpoint and sensor mounted with setpoint dial on outside of heating cabinet; sensor mounted beneath heating coils in cold air return. Dual capillary. | Two 4 1/2 ft (Two 1.4 m) | 48°F to 79°F (9°C to 26°C) | Remote | Remote | American Steam - 02-320-00. Taco - 5211. Danfoss RA2000 - 013G8233. Ammark - 74. TM Macon - TMLZ B52000. NT Macon - NTL B55000. (in combination with V2000) | |
| T100F1395 | A control with remote temperature sensing and integral setpoint. Adjustable limits. | 6 ft. 8 in. (2 m) | 43°F to 79°F (6°C to 26°C) | Integral | Integral | American Steam - 02-120-00. Taco - 5203. Danfoss RA2000 - 013G8202. Ammark - 73. TM Macon - TMZ B32000. NT Macon - NTZ B35000. (in combination with V2000) | Adjustable Limits |

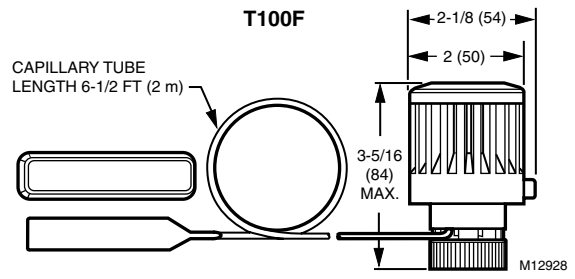
Thermostatic Radiator Valves and Actuators

Dimensions in inches (millimeters)

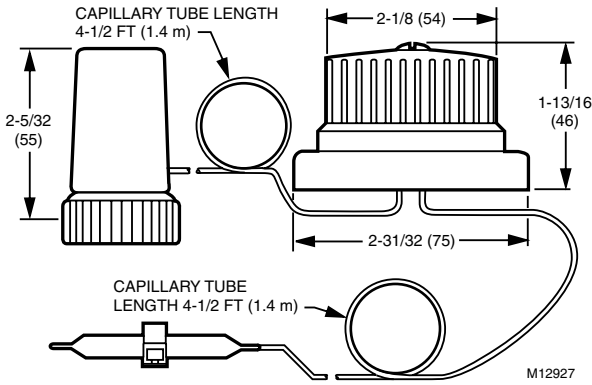
T100B



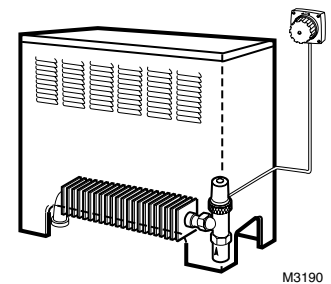
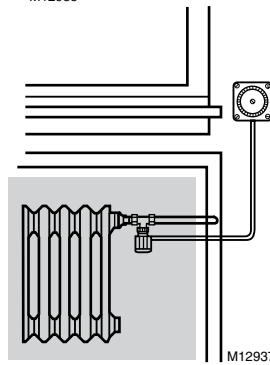
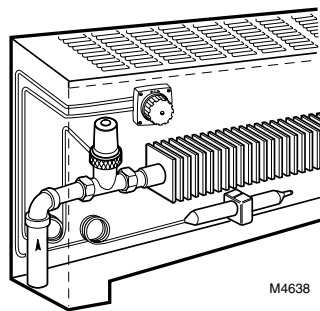
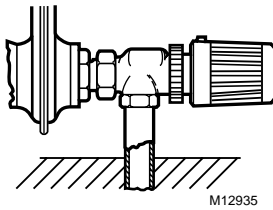
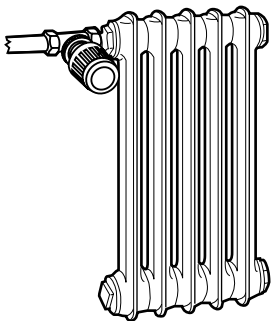
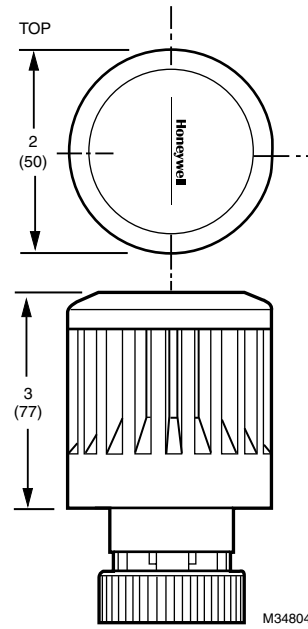
T100F



T100C



T1002W



V2042H; V2043H One-pipe Steam Thermostatic Radiator Valve



Application: Use for one pipe steam applications.
Pipe Size (inch): 1/8 in.
Body Pattern: Angle
Capacity: Standard
Temperature Range: 248°F Maximum (120°C Maximum)
Connection Type: Inlet – NPT; Outlet – Threaded
Connection Size (in.): 1/8 in.

One-Pipe Steam Thermostatic Radiator Valves - Allow automatic temperature control in one-pipe steam or hot water systems for free standing radiators, convectors and other heating units with standard capacity requirements.

- Continually monitors and adjusts room temperature for consistent comfort and relief from under-heating and overheating.
- Adjustable balancing cartridge design made from resilient material (EPDM), ensures tight shut-off on steam and hot water systems.
- Nickel plated brass casted body.
- Replaceable cartridge for easy service with service tool.
- Controls include valve body, steam air vent.
- Used with T100 set point and capillary actuators.
- No electrical connection required for non-electric actuators.
- Normally open without control mounted.

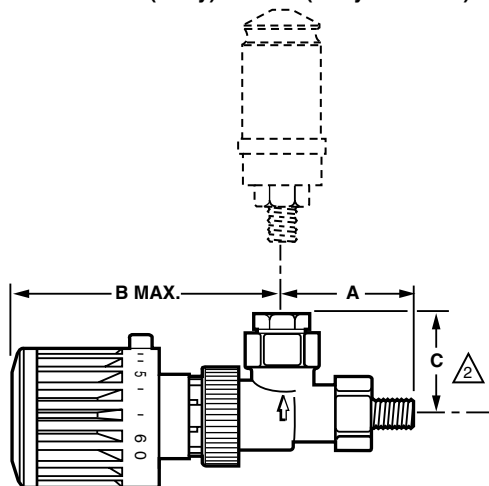
Materials (Body): Nickel Plated Bronze
Cartridge Change Tool: Yes - Use VA8200A001
Used With: T100

Maximum Differential Pressure Ratings (Close-off) (psi): With T100 or T200: 15 psi, With MV100: 36 psi, For low noise: 3 psi
Maximum Differential Pressure Ratings (Close-off) (kPa): With T100 or T200: 103 kPa, With MV100: 248 kPa, For low noise: 20 kPa

| Material Number | Pressure Ratings (psi) | Pressure Ratings (kPa) | Includes |
|-----------------|--|--|--------------------------------|
| V2042HSL10 | Steam – 15 psi maximum | Steam – 103 kPa maximum | |
| V2043HSL10 | Steam – Valve: 15 psi maximum; Vent: 6 psi maximum | Steam – Valve: 103 kPa maximum; Vent: 41 kPa maximum | V2042HSL10 plus steam/air vent |

Dimensions in inches (millimeters)

V2042H (Body)/V2043H (Body with Vent)



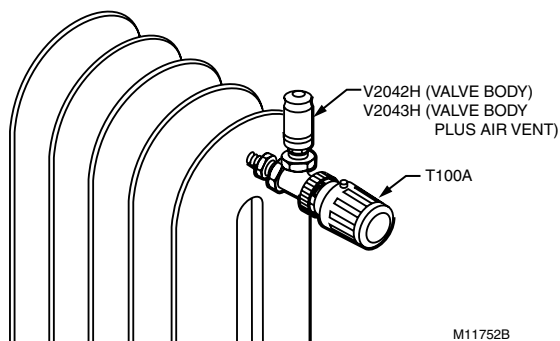
| PIPE SIZE | A IN. (MM) | B MAX IN. (MM) | C IN. (MM) |
|-----------|---------------|-------------------|---------------|
| 3/8 INCH | 1-11/16 (43) | 3-13/16 (97) | 1-3/16 (31) |

B MAX DIMENSION IS WITH T100A CONTROL INSTALLED.

C DIMENSION IS WITHOUT THE STEAM/AIR VENT INSTALLED.

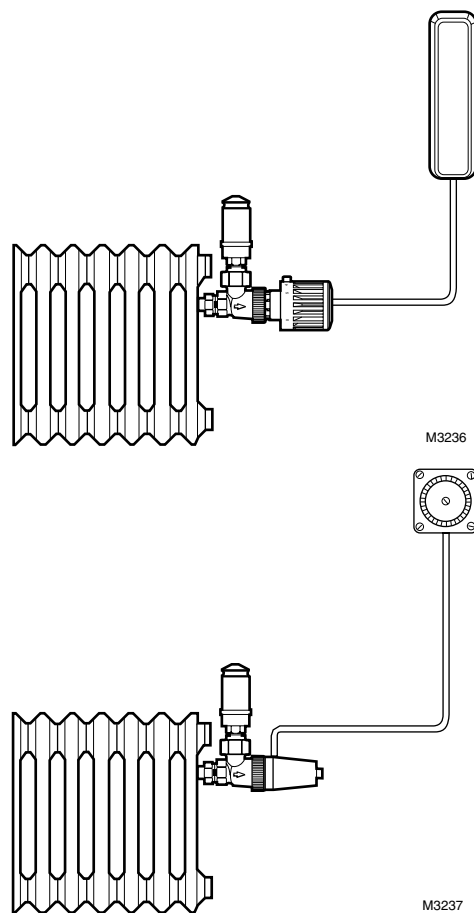
M17016B

Typical Installation



M11752B

Typical Installation



Thermostatic Radiator Valves and Actuators

V2000 Series Thermostatic Radiator Valve Accessories

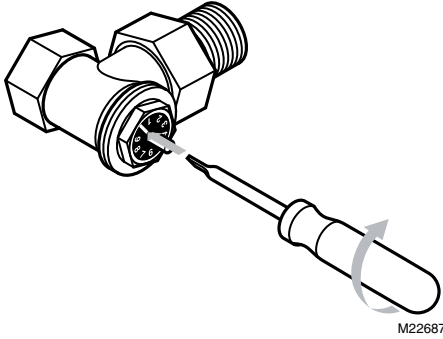
Approximate, Dimensions: (95 mm length)

Materials (Body): Bronze

Cartridge Change Tool: VA8200A001

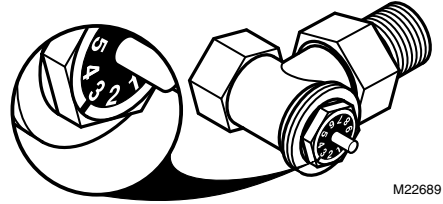


V2000 Series Cartridge Balancing Procedure Step 1



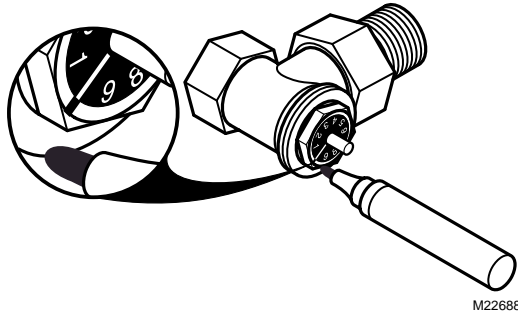
M22687

V2000 Series Cartridge Balancing Procedure Step 3



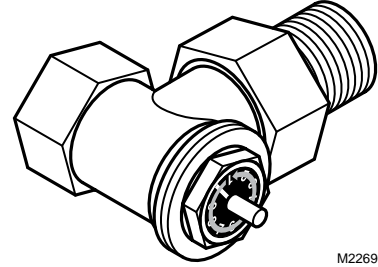
M22689

V2000 Series Cartridge Balancing Procedure Step 2



M22688

V2000 Series Cartridge Balancing Procedure Step 4



M22690

| Material Number | Application | Description | Used With |
|-----------------|-------------------------------|--|-----------|
| VS1200SL01 | Accessory or Replacement Part | Replacement cartridge for NEW V2000 (adjustable cartridge) | T100 |

Thermostatic Radiator Valves and Actuators

MT100; MT110 Cartridge Changing Tool

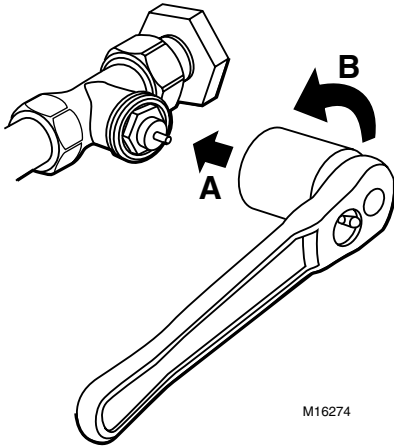


The MT110 Valve Cartridge Changing Tool enables the user to remove, and clean or replace the valve cartridge while the valve remains pressurized. Boiler shutdown is not required.

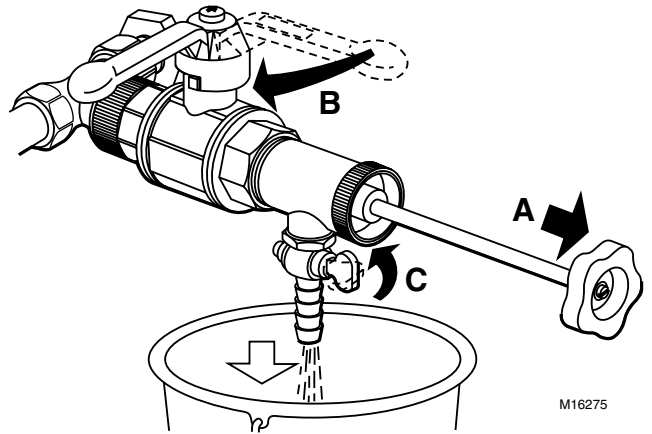
- MT110 for V110 Series valves.

Collar Diameter: 1 19/32 in. (40 mm)

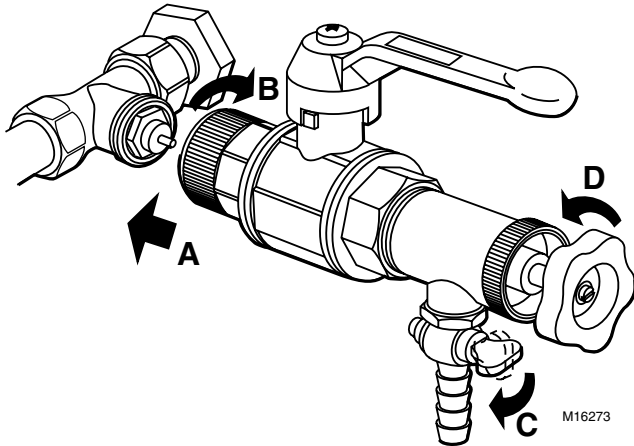
Remove control and loosen valve cartridge slightly.



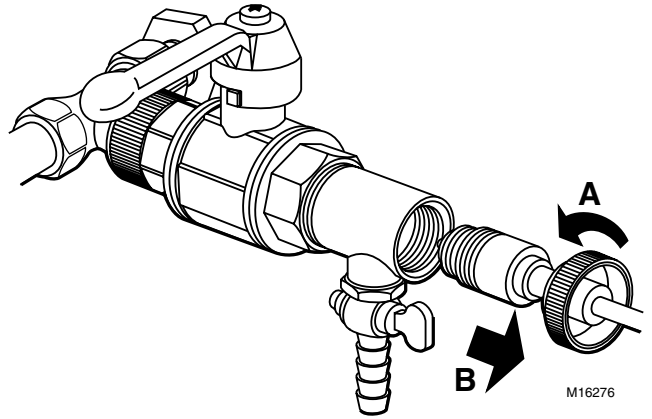
Open shut-off on drain cock, removing excess water and steam from chamber.



Tighten Cartridge Changer to valve body and close off drain cock.



Unscrew end cap and remove cartridge from chamber. Clean or replace cartridge.



| Material Number | Application | Description | Used With |
|-----------------|---|--|-----------|
| MT110C1011/U | Cartridge changing tool, in service, in line, under pressure for V110 series valve. | Cartridge Changing Tool for in-line service of V110 valves | V100 |

Thermostatic Valve Accessories

Used With: V100 Series

| Material Number | Description | Used With |
|-----------------|---|-------------|
| CA100B1008 | Replacement cartridge for old style V100 (metal cartridge body) | V100 Series |
| CA110C1007/U | Replacement Cartridge for V110 | V110 Series |

Hydronic Controls

Commercial Expansion Tanks

Expansion Tank Sizing based on BTU's

| Boiler Net Output in 1000's of BTU/Hr | Type of Radiation | | | |
|--|--|----------------------------|---------------------|---------------------|
| | Finned Tube Baseboard or Radiant Panel | Convectors or Unit Heaters | Radiators Cast Iron | Baseboard Cast Iron |
| MBH | Use Model | Use Model | Use Model | Use Model |
| 25 | TK300-15 | TK300-15 | TK300-15 | TK300-15 |
| 50 | TK300-15 | TK300-15 | TK300-30 | TK300-30 |
| 75 | TK300-30 | TK300-30 | TK300-30 | TK300-60 |
| 100 | TK300-30 | TK300-30 | TK300-60 | TK300-60 |
| 125 | TK300-30 | TK300-60 | TK300-60 | TK300-90 |
| 150 | TK300-30 | TK300-60 | TK300-90 | TK300-90 |
| 175 | TK300-60 | TK300-60 | XPS-030V | XPS-030V |
| 200 | TK300-60 | TK300-60 | XPS-030V | XPS-030V |
| 250 | TK300-60 | TK300-90 | XPS-030V | XPS-040V |
| 300 | TK300-90 | XPS-030V | XPS-030V | XPS-040V |
| 350 | XPS-030V | XPS-030V | XPS-040V | XPS-060V |
| 400 | XPS-030V | XPS-040V | XPS-040V | XPS-060V |

TAXV Series Expansion Tanks—Commercial Usage



TAX Series (commercial) Expansion Tanks are designed to absorb hot water expansion in closed heating systems of large installations. TAX tanks are equipped with butyl diaphragms to separate the air from the system water (glycol).

- ASME construction: Horizontal TAX Series tanks.

Maximum Safe Operating Pressure (psi): 125 psi

Maximum Safe Operating Pressure (kPa): 862 kPa

Precharge (psi): 12 psi

Materials: Steel shell; Heavy duty Butyl diaphragm

Operating Temperature Range: 240°F Maximum (115°C Maximum)

Comments: ASME Construction

| Material Number | Connection Size (in.) | Diameter | Height | Volume | Weight | Maximum Acceptance Volume |
|-----------------|-----------------------|-----------------------|------------------------|---------------------|-------------------|---------------------------|
| TAXV-015/U | 1/2 in. | 12 in. (304.8 mm) | 19 1/4 in. (489 mm) | 7.8 gal (29.6 L) | 48 lb (21.8 kg) | 2.5 gal (9.5 L) |
| TAXV-020/U | 1/2 in. | 12 in. (304.8 mm) | 26 in. (660 mm) | 10.9 gal (40.2 L) | 61 lb (27.7 kg) | 2.5 gal (9.5 L) |
| TAXV-040/U | 1/2 in. | 16 1/4 in. (412.7 mm) | 29 1/2 in. (749 mm) | 21.7 gal (82.2 L) | 116 lb (52.7 kg) | 11.3 gal (42.8 L) |
| TAXV-060/U | 1/2 in. | 16 1/4 in. (412.7 mm) | 45 1/8 in. (1146 mm) | 33.6 gal (127.3 L) | 145 lb (65.9 kg) | 11.3 gal (42.8 L) |
| TAXV-080/U | 1/2 in. | 16 1/4 in. (412.7 mm) | 56 in. (1422 mm) | 44.4 gal (168.3 L) | 70 lb (89.1 kg) | 22.6 gal (85.6 L) |
| TAXV-100/U | 1/2 in. | 16 1/4 in. (412.7 mm) | 68 1/4 in. (1734 mm) | 55.7 gal (211 L) | 231 lb (105 kg) | 22.6 gal (85.6 L) |
| TAXV-120/U | 1 in. | 24 in. (609.6 mm) | 44 1/4 in. (1124 mm) | 68 gal (257.7 L) | 233 lb (105.9 kg) | 34 gal (128.9 L) |
| TAXV-144/U | 1 in. | 24 in. (609.6 mm) | 49 1/8 in. (1247.8 mm) | 77.0 gal (291.8 L) | 256 lb (116.4 kg) | 34 gal (128.9 L) |
| TAXV-180/U | 1 in. | 24 in. (609.6 mm) | 56 1/2 in. (1435 mm) | 90 gal (341.1 L) | 286 lb (130 kg) | 34 gal (128.9 L) |
| TAXV-200/U | 1 in. | 24 in. (609.6 mm) | 63 in. (1600 mm) | 110 gal (416.9 L) | 326 lb (148.2 kg) | 34 gal (128.9 L) |
| TAXV-240/U | 1 in. | 30 in. (762 mm) | 49 1/8 in. (1368.4 mm) | 132.0 gal (500.3 L) | 456 lb (207.3 kg) | 46 gal (174.3 L) |
| TAXV-260/U | 1 in. | 30 in. (762 mm) | 49 1/8 in. (1247.8 mm) | 158.0 gal (500.3 L) | 435 lb (207.3 kg) | 56 gal (174.3 L) |
| TAXV-280/U | 1 in. | 30 in. (762 mm) | 49 1/8 in. (1247.8 mm) | 211.0 gal (500.3 L) | 435 lb (207.3 kg) | 84 gal (174.3 L) |

XPS Series Honeywell Expansion Tanks



XPS Series Expansion Tanks absorb hot water expansion in closed heating systems in larger installations. They have butyl diaphragms to separate clamped design, keep fluids circulating and maintain minimum system pressure.

- For ASME construction consult factory.

Connection Type: Female NPT

Maximum Safe Operating Pressure (psi): 100 psi

Maximum Safe Operating Pressure (kPa): 689 kPa

Materials: Steel shell; Heavy duty Butyl diaphragm

Operating Temperature Range: 240°F Maximum (115°C Maximum)

Comments: Heating

| Material Number | Connection Size (in.) | Diameter | Height | Volume | Weight | Maximum Acceptance Volume |
|-----------------|-----------------------|--------------------------|--------------------------|--------------------|------------------|---------------------------|
| XPS-030V/U | 1 in. | 15 3/8 in. (390.5 mm) | 23 7/8 in. (606 mm) | 14.0 gal (53.1 L) | 25 lb (11.4 kg) | 11.3 gal (42.8 L) |
| XPS-040V/U | 1 in. | 15 3/8 in. (390.5 mm) | 31 5/8 in. (803 mm) | 20.0 gal (75.8 L) | 33 lb (15 kg) | 11.3 gal (42.8 L) |
| XPS-060V/U | 1 in. | 15 3/8 in. (390.5 mm) | 46 1/2 in. (584 mm) | 32 gal (121.3 L) | 43 lb (19.5 kg) | 11.3 gal (42.8 L) |
| XPS-090V/U | 1 1/4 in. | 22 in. (558.8 mm) | 36 in. (914 mm) | 44 gal (166.8 L) | 69 lb (31.4 kg) | 34 gal (128.9 L) |
| XPS-110V/U | 1 1/4 in. | 22 in. (558.8 mm) | 46 3/4 in. (876.3 mm) | 62 gal (235 L) | 92 lb (41.8 kg) | 34 gal (128.9 L) |
| XPS-160V/U | 1 1/4 in. | 26 in. (660.4 mm) | 47 1/4 in. (1200 mm) | 86.0 gal (325.9 L) | 123 lb (55.9 kg) | 46 gal (174.3 L) |

AM-1 Series Thermostatic Mixing Valve



NPT



AM-R "Heating Only"



Sweat



Union Standard and C

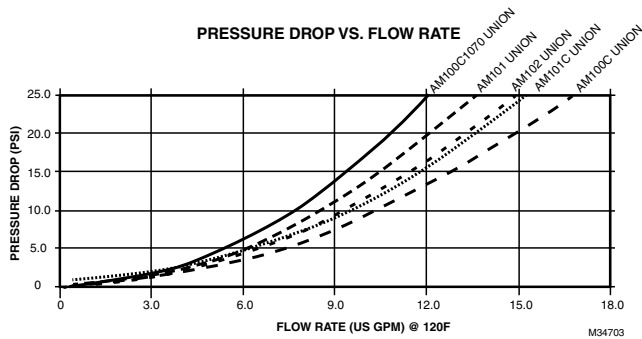
Honeywell AM-1 series adjusts, maintains, and limits the hot water temperature settings to provide comfort and protect equipment at home. While increasing the amount of safe, usable hot water, it efficiently offers anti-scald, anti-chill protection.

- Features dual purpose mixing or diverting valves
- Offers constant water temperature under changing operating conditions
- Temperature is limited at any point and if cold water supply is interrupted, flow reduction occurs in seconds
- Provides reliable performance at minimum flow of 0.5 gpm and proportional valve for simultaneous control of hot and cold

- Maximum pressure 150 psi and maximum temperature of 212°F (100°C)
- Tamper-resistant design with nickel-plated brass construction and EPDM O-rings
- Designed for easy maintenance and Teflon® coating prevents mineral build-up and extends life
- Lead free products have products numbers end in LF

Applications: Domestic water; Nursing homes; Public facilities; Automatic faucets; Radiant floor heating; Space heating; Combo systems; Solar hot water; Greenhouses; Industrial applications; Photo processing

Pressure Drop Chart







| Material Number | Pipe Size in/(DN) | Connection Type | Capacity (Cv) | Operating Temperature °F (°C) | Approvals, ASSE | Comments | Includes |
|--------------------|-------------------|-----------------|---------------|-------------------------------|-----------------|--|------------------------------------|
| AM100-1LF/U | 1/2 in. (DN15) | NPT | 3.2 Cv | 70°F to 145°F (21°C to 63°C) | 1017 | Low lead Content <.25% by weighted average | |
| AM100C1070UCPVC1LF | 1/2 in. (DN15) | Union CPVC | 1.8 Cv | 70°F to 120°F (21°C to 49°C) | 1070 | Low lead Content <.25% by weighted average | Check valves on hot and cold ports |
| AM100C1070-UPEX1LF | 1/2 in. (DN15) | Union PEX | 1.8 Cv | 70°F to 120°F (21°C to 49°C) | 1070 | Low lead Content <.25% by weighted average | |
| AM100C1070-US-1LF | 1/2 in. (DN15) | Union Sweat | 1.8 Cv | 70°F to 120°F (21°C to 49°C) | 1070 | Low lead Content <.25% by weighted average | |
| AM100C1070-UT-1LF | 1/2 in. (DN15) | Union NPT | 1.8 Cv | 70°F to 120°F (21°C to 49°C) | 1070 | Low lead Content <.25% by weighted average | |
| AM100C-1LF/U | 1/2 in. (DN15) | NPT | 3.2 Cv | 70°F to 120°F (21°C to 49°C) | 1017 | Low lead Content <.25% by weighted average | |
| AM100C-UCPVC-1LF/U | 1/2 in. (DN15) | Union CPVC | 3.9 Cv | 70°F to 120°F (21°C to 49°C) | 1017 | Low lead Content <.25% by weighted average | |
| AM100C-UPEX-1LF/U | 1/2 in. (DN15) | Union PEX | 3.9 Cv | 70°F to 120°F (21°C to 49°C) | 1017 | Low lead Content <.25% by weighted average | |
| AM100C-US-1LF/U | 1/2 in. (DN15) | Union Sweat | 3.9 Cv | 70°F to 120°F (21°C to 49°C) | 1017 | Low lead Content <.25% by weighted average | |
| AM100C-UT-1LF/U | 1/2 in. (DN15) | Union NPT | 3.9 Cv | 70°F to 120°F (21°C to 49°C) | 1017 | Low lead Content <.25% by weighted average | Check valves on hot and cold ports |
| AM100R-UPEX-1/U | 1/2 in. (DN15) | Union PEX | 3.9 Cv | 70°F to 180°F (21°C to 82°C) | No Approval | Heating Only | |
| AM100R-US-1/U | 1/2 in. (DN15) | Union Sweat | 3.9 Cv | 70°F to 180°F (21°C to 82°C) | No Approval | Heating Only | |
| AM100R-UT-1/U | 1/2 in. (DN15) | Union NPT | 3.9 Cv | 70°F to 180°F (21°C to 82°C) | No Approval | Heating Only | |
| AM100-UCPVC-1LF/U | 1/2 in. (DN15) | Union CPVC | 3.9 Cv | 70°F to 145°F (21°C to 63°C) | 1017 | Low lead Content <.25% by weighted average | CPVC NPT Union |

Mixing Valves

| Material Number | Pipe Size in/(DN) | Connection Type | Capacity (Cv) | Operating Temperature °F (°C) | Approvals, ASSE | Comments | Includes |
|--------------------|-------------------|-----------------|---------------|-------------------------------|-----------------|--|------------------------------------|
| AM100-UPEX-1LF/U | 1/2 in. (DN15) | Union PEX | 3.9 Cv | 70°F to 145°F (21°C to 63°C) | 1017 | Low lead Content <.25% by weighted average | |
| AM100-US-1LF/U | 1/2 in. (DN15) | Union Sweat | 3.9 Cv | 70°F to 145°F (21°C to 63°C) | 1017 | Low lead Content <.25% by weighted average | Check valves on hot and cold ports |
| AM100-UT-1LF/U | 1/2 in. (DN15) | Union NPT | 3.9 Cv | 70°F to 145°F (21°C to 63°C) | 1017 | Low lead Content <.25% by weighted average | Check valves on hot and cold ports |
| AM101-1LF/U | 3/4 in. (DN20) | NPT | 3.8 Cv | 70°F to 145°F (21°C to 63°C) | 1017 | Low lead Content <.25% by weighted average | |
| AM101C1070UCPVC1LF | 3/4 in. (DN20) | Union CPVC | 1.8 Cv | 70°F to 120°F (21°C to 49°C) | 1070 | Low lead Content <.25% by weighted average | |
| AM101C1070-UPEX1LF | 3/4 in. (DN20) | Union PEX | 1.8 Cv | 70°F to 120°F (21°C to 49°C) | 1070 | Low lead Content <.25% by weighted average | |
| AM101C1070-US-1LF | 3/4 in. (DN20) | Union Sweat | 1.8 Cv | 70°F to 120°F (21°C to 49°C) | 1070 | Low lead Content <.25% by weighted average | |
| AM101C1070-UT-1LF | 3/4 in. (DN20) | Union NPT | 1.8 Cv | 70°F to 120°F (21°C to 49°C) | 1070 | Low lead Content <.25% by weighted average | |
| AM101C-1LF/U | 3/4 in. (DN20) | NPT | 3.8 Cv | 70°F to 120°F (21°C to 49°C) | 1017 | Low lead Content <.25% by weighted average | |
| AM101C-UCPVC-1LF/U | 3/4 in. (DN20) | Union CPVC | 3.9 Cv | 70°F to 120°F (21°C to 49°C) | 1017 | Low lead Content <.25% by weighted average | |
| AM101C-UPEX-1LF/U | 3/4 in. (DN20) | Union PEX | 3.9 Cv | 70°F to 120°F (21°C to 49°C) | 1017 | Low lead Content <.25% by weighted average | Check valves on hot and cold ports |
| AM101C-US-1LF/U | 3/4 in. (DN20) | Union Sweat | 3.9 Cv | 70°F to 120°F (21°C to 49°C) | 1017 | Low lead Content <.25% by weighted average | Check valves on hot and cold ports |
| AM101C-UT-1LF/U | 3/4 in. (DN20) | Union NPT | 3.9 Cv | 70°F to 120°F (21°C to 49°C) | 1017 | Low lead Content <.25% by weighted average | |
| AM101R-UPEX-1/U | 3/4 in. (DN20) | Union PEX | 3.9 Cv | 70°F to 180°F (21°C to 82°C) | No Approval | Heating Only | |
| AM101R-US-1/U | 3/4 in. (DN20) | Union Sweat | 3.9 Cv | 70°F to 180°F (21°C to 82°C) | No Approval | Heating Only | |
| AM101R-UT-1/U | 3/4 in. (DN20) | Union NPT | 3.9 Cv | 70°F to 180°F (21°C to 82°C) | No Approval | Heating Only | |
| AM101-UCPVC-1LF/U | 3/4 in. (DN20) | Union CPVC | 3.9 Cv | 70°F to 145°F (21°C to 63°C) | 1017 | Low lead Content <.25% by weighted average | Check valves on hot and cold ports |
| AM101-UPEX-1LF/U | 3/4 in. (DN20) | Union PEX | 3.9 Cv | 70°F to 145°F (21°C to 63°C) | 1017 | Low lead Content <.25% by weighted average | |
| AM101-US-1LF/U | 3/4 in. (DN20) | Union Sweat | 3.9 Cv | 70°F to 145°F (21°C to 63°C) | 1017 | Low lead Content <.25% by weighted average | |
| AM101-UT-1LF/U | 3/4 in. (DN20) | Union NPT | 3.9 Cv | 70°F to 145°F (21°C to 63°C) | 1017 | Low lead Content <.25% by weighted average | Check valves on hot and cold ports |
| AM102-1LF/U | 1 in. (DN25) | NPT | 4.3 Cv | 70°F to 145°F (21°C to 63°C) | 1017 | Low lead Content <.25% by weighted average | |
| AM102C1070-US-1LF | 1 in. (DN25) | Union Sweat | 1.8 Cv | 70°F to 120°F (21°C to 49°C) | 1070 | Low lead Content <.25% by weighted average | |
| AM102C-1LF/U | 1 in. (DN25) | NPT | 4.3 Cv | 70°F to 120°F (21°C to 49°C) | 1017 | Low lead Content <.25% by weighted average | |
| AM102C-US-1LF/U | 1 in. (DN25) | Union Sweat | 3.9 Cv | 70°F to 120°F (21°C to 49°C) | 1017 | Low lead Content <.25% by weighted average | |
| AM102C-UT-1LF/U | 1 in. (DN25) | Union NPT | 3.9 Cv | 70°F to 120°F (21°C to 49°C) | 1017 | Low lead Content <.25% by weighted average | |
| AM102R-US-1/U | 1 in. (DN25) | Union Sweat | 3.9 Cv | 70°F to 180°F (21°C to 82°C) | No Approval | Heating Only | |
| AM102R-UT-1/U | 1 in. (DN25) | Union NPT | 3.9 Cv | 70°F to 180°F (21°C to 82°C) | No Approval | Heating Only | |
| AM102-US-1LF/U | 1 in. (DN25) | Union Sweat | 3.9 Cv | 70°F to 145°F (21°C to 63°C) | 1017 | Low lead Content <.25% by weighted average | Check valves on hot and cold ports |
| AM102-UT-1LF/U | 1 in. (DN25) | Union NPT | 3.9 Cv | 70°F to 145°F (21°C to 63°C) | 1017 | Low lead Content <.25% by weighted average | |
| YWAM102R-US-1/U | 1 in. (DN25) | Union Sweat | 3.9 Cv | 70°F to 145°F (21°C to 63°C) | 1017 | | Check valves on hot and cold ports |

Mixing Valve Accessories

| Material Number | Pipe Size in/(DN) | Connection Type | Operating Temperature °F (°C) | Description | Comments | |
|-----------------|----------------------------|-----------------|-------------------------------|---|---|---|
| AM08-024LF/U | 1/2 in. (DN15) | Union NPT | 140°F Maximum (60°C Maximum) | Three 1/2 in. NPT Lead-Free Tailpieces | Low lead Content <.25% by weighted average | |
| AM08-025LF/U | 3/4 in. (DN20) | Union NPT | 140°F Maximum (60°C Maximum) | Three 3/4 in. NPT Lead-Free Tailpieces | Low lead Content <.25% by weighted average | |
| AM08-026LF/U | 1 in. (DN25) | Union NPT | 140°F Maximum (60°C Maximum) | Three 1 in. Lead-free NPT Tailpieces | Low lead Content <.25% by weighted average | |
| AM09-061LF/U | 1/2 in. (DN15) | Union Sweat | 140°F Maximum (60°C Maximum) | Three 1/2 in. Lead-free Sweat Tailpieces | Low lead Content <.25% by weighted average | |
| AM09-062LF/U | 3/4 in. (DN20) | Union Sweat | 140°F Maximum (60°C Maximum) | Three 3/4 in. Lead-free Sweat Tailpieces | Low lead Content <.25% by weighted average | |
| AM09-063LF/U | 1 in. (DN25) | Union Sweat | 140°F Maximum (60°C Maximum) | Three 1 in. Lead-free Sweat Tailpieces | Low lead Content <.25% by weighted average | |
| AM206-003LF/U | 1/2 in. (DN20) | Union PEX | 140°F Maximum (60°C Maximum) | Three 1/2 in. Lead-free PEX Tailpieces | Low lead Content <.25% by weighted average | |
| AM206-004LF/U | 3/4 in. (DN20) | Union PEX | 140°F Maximum (60°C Maximum) | Three 3/4 in. Lead-free PEX Tailpieces | Low lead Content <.25% by weighted average | |
| AM206-039/U | 1/2 in. (DN20) | Union CPVC | 140°F Maximum (60°C Maximum) | 1/2 inch CPVC union kit. Includes tailpiece, union nut and gasket | | |
| AM206-040/U | 3/4 in. (DN20) | Union CPVC | 140°F Maximum (60°C Maximum) | 3/4 inch CPVC union kit. Includes tailpiece, union nut and gasket | | |
| AM206-041/U | 1/2 in. (DN20) | PEX | 140°F Maximum (60°C Maximum) | 1/2 inch PEX union kit. Includes tailpiece, union nut and gasket | | |
| AM206-042/U | 3/4 in. (DN20) | PEX | 140°F Maximum (60°C Maximum) | 3/4 inch PEX union kit. Includes tailpiece, union nut and gasket | | |
| CVT-050/U | 1/2 in. (DN15) | NPT | 140°F Maximum (60°C Maximum) | 1/2 in. female NPT x 1/2 in. male NPT Check Adapter. For AM-1 NPT valves | |  |
| CVT-075/U | 3/4 in. (DN20) | NPT | 140°F Maximum (60°C Maximum) | 3/4 in. female NPT x 3/4 in. Check Adapter. For AM-1 NPT valves | |  |
| TS205-064/U | Use with All Mixing Valves | Adhesive strip | 110°F to 140°F (43°C to 60°C) | Thermal Temperature Indicator Strip for Mixing Valve Setup and Outlet Temperature Monitoring. Included in all AM-1 Series STD and C models and AMX Series. Available as separate item | Included in all AM-1 Series STD and C models and AMX Series. Available as separate item |  |
| TS206-080/U | Use with All Mixing Valves | Adhesive strip | 105°F to 180°F (41°C to 82°C) | Thermal Temperature Indicator Strip for Mixing Valve Setup and Outlet Temperature Monitoring. Included in all AM-1 Series R models. Available as separate item | Included in all AM-1 Series R models. Available as separate item |  |

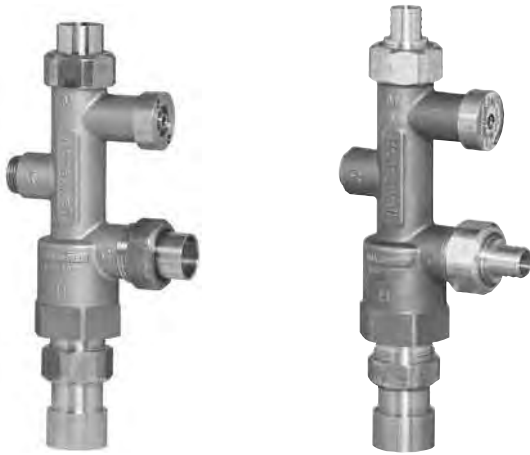
Mixing Valves

New Style AM-1 Series Valves Replacement Parts

| Material Number | Capacity (Cv) | Operating Temperature °F (°C) | Description |
|-----------------|---------------|---|---|
| AM-1-020RP/U | | 80°F to 120°F (C Range); 60°F to 100°F (B Range) (15°C to 38°C (C Range); 27°C to 49°C (B Range)) | AM-1 Series B or C Range Element, Spring, Diffuser, and plug assembly |
| AM-1-030RP/U | | 70°F to 120°F (21°C to 49°C) | AM-1 1070 Series element, spring diffuser and plug assembly; AM-1 1070 Series Element, Spring, Diffuser, and plug assembly; Standard and R range |
| AMCU-001RP/U | 8 Cv | 70°F to 120°F (21°C to 49°C) | AM-1 Union model check valve kit. Contains one AMCU100 and O-ring for original AM1 and all AMX100 mixing valves. Contains one AMCU200 and two O-rings for newer AM-1 valves where the check valve fits flush with valve body. |
| AMCU100/U | 8 Cv | 70°F to 120°F (21°C to 49°C) | AM-1 Union check valve for original AM-1 valves where the check valve does not fit flush with valve body. Also for all AMX100 mixing valves. Contains one O-ring |



AMX Series DirectConnect™ Thermostatic Mixing Valves



Sweat or NPT

PEX

Honeywell AMX series DirectConnect™ reduces water heater installation time as the cold and hot port position eliminates the need for typical elbows and tees. Designed for safety to prevent scalding, it also increases user comfort.

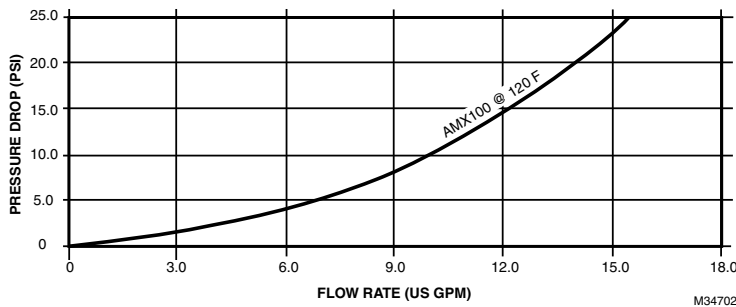
- Designed to be directly installed on water heater hot outlet port
- Offers constant water temperature under changing operating conditions
- Temperature is adjustable using 3/16 allen wrench and if cold water supply is interrupted, flow reduction occurs in seconds
- Features brass/stainless construction and Teflon coated wear surfaces
- Heat trapping not required and recirculation portion option allows for fast response
- Lead free products have products numbers end in LF

Applications: Heat Pump Systems; Domestic water; Nursing homes; Public facilities; Automatic faucets; Radiant floor heating; Space heating; Combo systems; Solar hot water; Greenhouses; Industrial applications; Photo processing

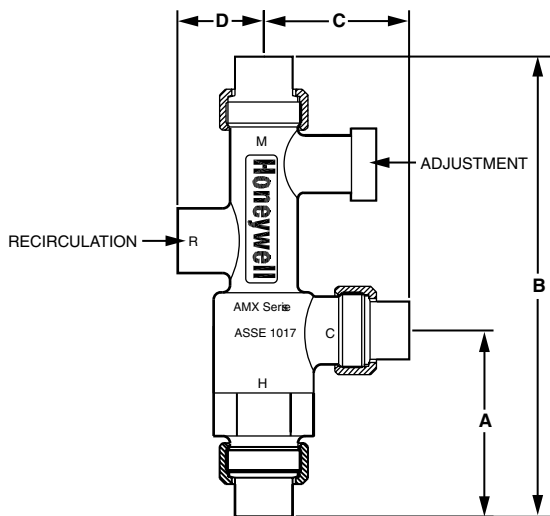
Approvals, ASSE: 1017

Pressure Drop Chart

PRESSURE DROP VS. FLOW RATE



Dimensions in inches

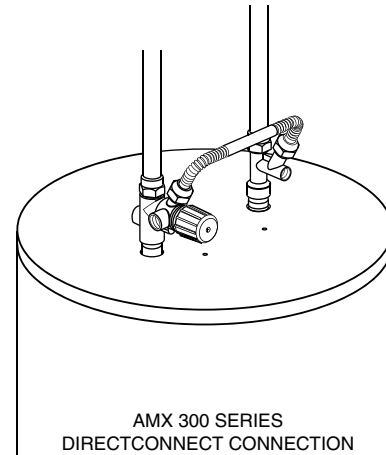
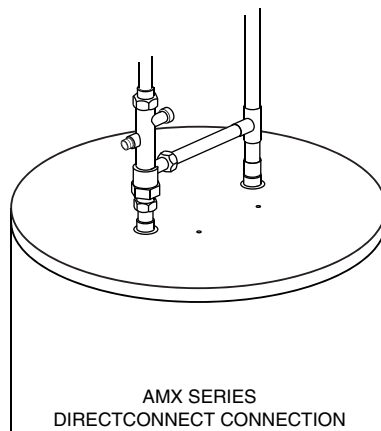
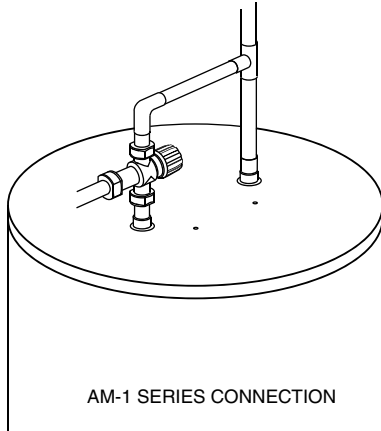


| PRODUCT NUMBER | DIMENSIONS (INCHES) | | | |
|-------------------|---------------------|---------|---------|-------|
| | A | B | C | D |
| AMX100-UCPVC-1-LF | 3-1/2 | 8-7/16 | 2-11/16 | 1-1/2 |
| AMX100-UPEX-1-LF | 3-1/2 | 8-5/8 | 2-15/16 | 1-1/2 |
| AMX100-US-1-LF | 3-1/2 | 8-3/16 | 2-1/2 | 1-1/2 |
| AMX100-UT-1-LF | 3-1/2 | 8-1/2 | 2-13/16 | 1-1/2 |
| AMX101-UCPVC-1-LF | 4-3/16 | 9 | 2-1/2 | 1-1/2 |
| AMX101-UPEX-1-LF | 4-3/16 | 9-3/16 | 2-11/16 | 1-1/2 |
| AMX101-US-1-LF | 4-3/16 | 9 | 2-1/2 | 1-1/2 |
| AMX101-UT-1-LF | 4-3/16 | 9-11/16 | 3-1/2 | 1-1/2 |
| AMX102-US-1-LF | 4-1/2 | 10 | 3-1/2 | 1-1/2 |
| AMX102-UT-1-LF | 4-1/2 | 10.3 | 3-13/16 | 1-1/2 |

M27478B

Mixing Valves

Thermostatic Replacement Mixing Valve Installation



M31168

| Material Number | Pipe Size in/(DN) | Connection Type | Capacity (Cv) | Operating Temperature °F (°C) | Comments | Includes |
|--------------------|-------------------|-----------------------------|---------------|-------------------------------|--|---|
| AMX100-UCPVC-1LF/U | 1/2 in. (DN15) | Union CPVC, 3/4 in. Bottom | 4 Cv | 90°F to 130°F (32°C to 54°C) | Low lead Content <.25% by weighted average | Check valves on hot and cold ports |
| AMX100-UPEX-1LF/U | 1/2 in. (DN15) | Union PEX, 3/4 in. Bottom | 4 Cv | 90°F to 130°F (32°C to 54°C) | Low lead Content <.25% by weighted average | 3/4" FNPT Inlet, 2 1/2" Union Sweat fittings |
| AMX100-US-1LF/U | 1/2 in. (DN15) | Union Sweat, 3/4 in. Bottom | 4 Cv | 90°F to 130°F (32°C to 54°C) | Low lead Content <.25% by weighted average | 3/4" FNPT Inlet, 2 1/2" Union Sweat fittings |
| AMX101-UPEX-1LF/U | 3/4 in. (DN20) | Union PEX, 3/4 in. Bottom | 4 Cv | 90°F to 130°F (32°C to 54°C) | Low lead Content <.25% by weighted average | 3/4" FNPT Inlet, 2 3/4" Union Sweat fittings |
| AMX101-US-1LF/U | 3/4 in. (DN20) | Union Sweat, 3/4 in. Bottom | 4 Cv | 90°F to 130°F (32°C to 54°C) | Low lead Content <.25% by weighted average | Check valves on hot and cold ports |
| AMX101-UT-1LF/U | 3/4 in. (DN20) | Union NPT, 3/4 in. Bottom | 4 Cv | 90°F to 130°F (32°C to 54°C) | Low lead Content <.25% by weighted average | 3/4" FNPT Inlet, 2 3/4" Union Threaded fittings |
| AMX102-US-1LF/U | 1 in. (DN25) | Union Sweat, 1 in. Bottom | 4 Cv | 90°F to 130°F (32°C to 54°C) | Low lead Content <.25% by weighted average | 1" FNPT Inlet, 2 1" Union Sweat fittings |
| AMX102-UT-1LF/U | 1 in. (DN25) | Union NPT, 1 in. Bottom | 4 Cv | 90°F to 130°F (32°C to 54°C) | Low lead Content <.25% by weighted average | 1" FNPT Inlet, 2 1" Union Threaded fittings |

AMX300 Series DirectConnect™ Thermostatic Mixing Valve and Kits



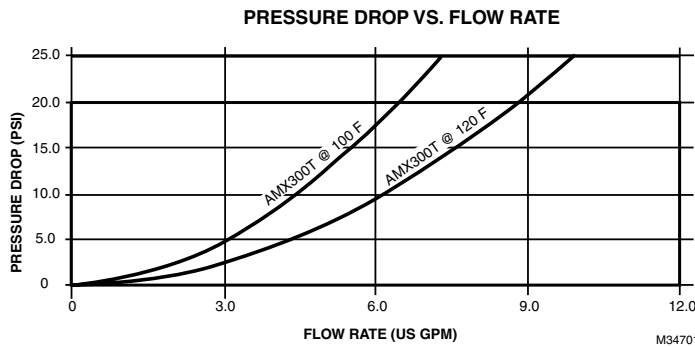
Honeywell AMX300 series DirectConnect™ kits reduce installation time while providing Honeywell's industry-leading mixing valve technology, which offers excellent temperature stability and control and minimizes scalding risk to building occupants.

- Temperature is adjustable using push-twist-release locking hand wheel design and if cold water supply is interrupted, flow reduction occurs in seconds
- Kit (AMX300TLF or AMX302TLF) includes mixing valve, cold water tee fitting and flexible stainless steel connector. Does NOT include adapters.
- Recirculation portion option offers fast delivery of heated water to the furthest fixtures, increasing user comfort with more available hot water
- The alternate hot port bypasses hot water directly from the tank to non-mixed temperature applications
- Brass/stainless construction with Teflon coated wear surfaces for extended surface
- Lead free products have products numbers end in LF

Applications: Domestic Hot Water
Fluid Temperature: Mixed Water Supply — 100°F to 145°F (Mixed Water Supply — 38°C to 63°C)

Minimum Flow Rate: 0.95 lpm; Recirculation Port: 1/2 in. NPT; Alternate Hot Port: 1/2 in. NPT (0.25 gpm; Recirculation Port: 1/2 in. NPT; Alternate Hot Port: 1/2 in. NPT)
Maximum Safe Operating Pressure (psi): 150 psi




Pressure Drop Chart



| Material Number | Pipe Size in/(DN) | Connection Type | Capacity (Cv) | Operating Temperature °F (°C) | Description | Comments |
|-----------------|-------------------|---|---------------|---|--|--|
| AMX300TLF/U | 1/2 in. (DN15) | Hot Inlet - Female NPT; Mixed Outlet - Male NPT | 2.3 Cv | 33°F to 80°F (cold water inlet); 100°F to 212°F (hot water inlet) (0.5°C to 27°C (cold water inlet); 38°C to 100°C) (hot water inlet) | DirectConnect water heater kit with 3/4 in. mixing valve, 3/4 in. cold water tee, and 8-in. SS flex connector | Low lead Content <.25% by weighted average |
| AMX302TLF/U | 1 in. (DN25) | Hot Inlet - Female NPT; Mixed Outlet - Male NPT | 2.3 Cv | 33°F to 80°F (cold water inlet); 100°F to 212°F (hot water inlet) (0.5°C to 27°C (cold water inlet); 38°C to 100°C) (hot water inlet) | DirectConnect water heater kit with 3/4-in. ASSE 1017 mixing valve, 3/4-in. cold water tee, and 11-in. SS flex connector | Low lead Content <.25% by weighted average |

Mixing Valves

AMX Series DirectConnect Replacement Part

| Material Number | Capacity (Cv) | Operating Temperature °F (°C) | Description | |
|-----------------|---------------|---|--|---|
| AMX-001RP/U | | 90°F to 130°F (32°C to 54°C) | AMX element, spring, plug assembly. For AMX100 series valves. | |
| AMX300-008/U | | 90°F to 130°F (32°C to 54°C) | Replacement 8" flex connector for AMX300T |  |
| AMX300-011/U | | 90°F to 130°F (32°C to 54°C) | Replacement 11" flex connector for AMX300T |  |
| AM-1-025RP/U | | 90°F to 130°F (32°C to 54°C) | Thermal element, spring, and plug assembly; Rebuild kit for AM-1 "Standard" (70 -145°F; 21-49°C) series and AMX300 series valves | |
| AMX300LF/U | 2.1 Cv | 33°F to 80°F (cold water inlet); 100°F to 212°F (hot water inlet) (0.5°C to 27°C (cold water inlet); 38°C to 100°C) (hot water inlet) | 3/4 in. mixing valve (Replacement valve for AMX300T and AMX302T DirectConnect mixing valve kits.) |  |

MX Series Large Flow Proportional Mixing or Diverting Valve. Protects People and Equipment, Saves Energy

The MX Series is a state-of-the-art mixing valve that manages the hot and cold supply based on control settings. Accurate control of temperature provides energy savings, increased comfort and safety. The Teflon wear surfaces prevent calcium buildup.

- Dual purpose mixing or diverting valve.
- Constant water temperature under different operating conditions.
- Proportional valve (control of hot and cold water).
- Flow reduction in seconds if cold water supply is interrupted.
- Maintains temperature with extremely low minimum flows.
- Temperature adjustable, tamper evident.
- Install in any position, heat trapping not required.
- Recirculation connection for fast response.
- Bronze/stainless construction.
- Wear surfaces Teflon coated to prevent deposit build-up.
- Union/tailpiece connections included.
- Tapped flange connections 2-1/2 in. and 3 in.
- Allen wrench for temperature adjustment included.
- ASSE 1017 and CSA listed (Union Models)



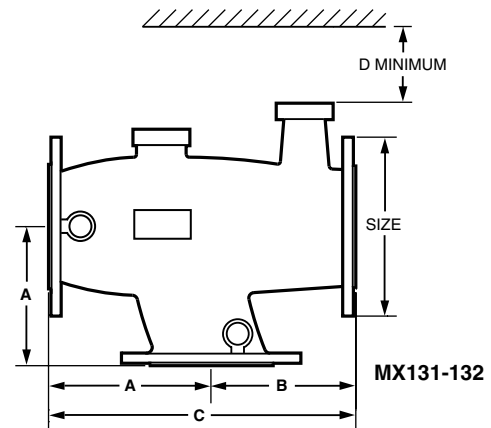
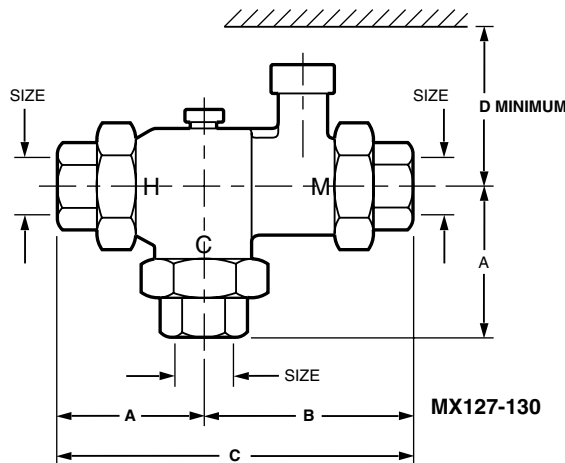
Threaded



Flanged

Applications: Any application requiring accurate control of hot water temperature based on the mixing of hot and cold water, such as: domestic water for homes, apartment, hotels, schools, nursing homes, offices, public facilities, space heating, radiant floor heating,
Weight (lb): 3.6 lb

Dimensions in inches (millimeters)



| Product Number | Size NPT | Recir Port Size | Dimensions in inches (millimeters) | | | |
|----------------|----------|-----------------|------------------------------------|---------------|---------------|---------------|
| | | | A | B | C | D |
| MX127 | 1" | 1/2 (13) | 2-51/64 (71) | 3-45/64 (94) | 6-1/2 (165) | 6 (152) |
| MX128 | 1-1/4" | 1/2 (13) | 3-19/64 (84) | 4-13/32 (112) | 7-45/64 (196) | 6-29/32 (175) |
| MX129 | 1-1/2" | 1/2 (13) | 3-19/32 (91) | 5 (127) | 8-19/32 (218) | 7 (178) |
| MX130 | 2" | 1/2 (13) | 4-13/64 (107) | 5-51/64 (147) | 10 (254) | 7-19/64 (211) |
| MX127C | 1" | 1/2 (13) | 2-51/64 (71) | 3-45/64 (94) | 6-1/2 (165) | 6 (152) |
| MX128C | 1-1/4" | 1/2 (13) | 3-19/64 (84) | 4-13/32 (112) | 7-45/64 (196) | 6-29/32 (175) |
| MX129C | 1-1/2" | 1/2 (13) | 3-19/32 (91) | 5 (127) | 8-19/32 (218) | 7 (178) |
| MX130C | 2" | 1/2 (13) | 4-13/64 (107) | 5-51/64 (147) | 10 (254) | 7-19/64 (211) |

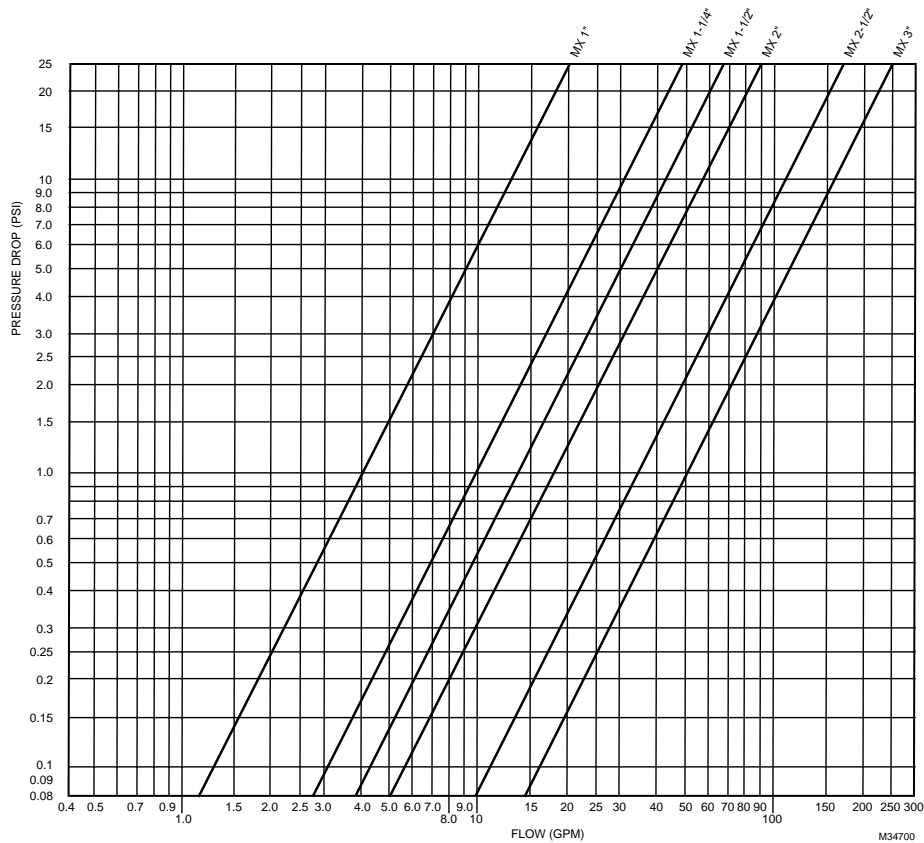
M23243C

| Product Number | Size NPT | Recir Port Size | Dimensions Inches (mm) | | | |
|----------------|---------------|-----------------|------------------------|---------------|----------------|---------|
| | | | A | B | C | D |
| MX131 | 2-1/2" Flange | 1 (25) | 5-45/64 (145) | 5-45/64 (145) | 11-13/32 (290) | 4 (102) |
| MX132 | 3" Flange | 1-1/4 (32) | 6-7/64 (155) | 6-7/64 (155) | 12-13/64 (310) | 4 (102) |

M27479

Mixing Valves

Pressure Drop Chart



| Material Number | Pipe Size in/(DN) | Connection Type | Capacity (Cv) | Operating Temperature °F (°C) | Description | Approvals, ASSE |
|-----------------|-------------------|-----------------|---------------|-------------------------------|-------------------------------------|-----------------|
| MX127/U | 1 in. (DN25) | NPT | 4 Cv | 113°F to 149°F (45°C to 65°C) | 1 inch NPT MX Mixing Valves | 1017 |
| MX127C/U | 1 in. (DN25) | NPT | 4 Cv | 86°F to 113°F (30°C to 45°C) | 1 inch NPT MX Mixing Valves | 1017 |
| MX128/U | 1 1/4 in. (DN32) | NPT | 9.3 Cv | 113°F to 149°F (45°C to 65°C) | 1 1/4 inch MX NPT Mixing Valves | 1017 |
| MX128C/U | 1 1/4 in. (DN32) | NPT | 9.3 Cv | 86°F to 113°F (30°C to 45°C) | 1 1/4 inch NPT MX Mixing Valves | 1017 |
| MX129/U | 1 1/2 in. (DN40) | NPT | 13.5 Cv | 113°F to 149°F (45°C to 65°C) | 1 1/2 inch NPT MX Mixing Valves | 1017 |
| MX129C/U | 1 1/2 in. (DN40) | NPT | 13.5 Cv | 86°F to 113°F (30°C to 45°C) | 1 1/2 inch NPT MX Mixing Valves | 1017 |
| MX130/U | 2 in. (DN50) | NPT | 18 Cv | 113°F to 149°F (45°C to 65°C) | 2 inch NPT MX Mixing Valves | 1017 |
| MX130C/U | 2 in. (DN50) | NPT | 18 Cv | 86°F to 113°F (30°C to 45°C) | 2 inch NPT MX Mixing Valves | 1017 |
| MX131/U | 2 1/2 in. (DN65) | Flanged | 34 Cv | 113°F to 149°F (45°C to 65°C) | 2 1/2 inch Flanged MX Mixing Valves | |
| MX132/U | 3 in. (DN80) | Flanged | 50 Cv | 113°F to 149°F (45°C to 65°C) | 3 inch Flanged MX Mixing Valves | |

MX Series Valves Replacement Parts

| Material Number | Pipe Size in/(DN) | Description |
|-----------------|-------------------|---|
| MX050-RP/U | 1/2 in. (DN15) | 1/2 in. Recirculation adapter kit MX127 mixing valves. Includes 1/2 in. MNPT union nut and gasket |
| MX100-RP/U | 1 in. (DN25) | Replacement gasket kit for MX127 mixing valves. Includes 3, 1-in. gaskets |
| MX125-RP/U | 1 1/4 in. (DN32) | Replacement gasket kit for MX128 mixing valves. Includes 3, 1-1/4-in. gaskets |
| MX150-RP/U | 1 1/2 in. (DN40) | Replacement gasket kit for MX129 mixing valves. Includes 3, 1-1/2-in. gaskets |
| MX200-RP/U | 2 in. (DN50) | Replacement gasket kit for MX130 mixing valves. Includes 3, 2-in. gaskets |
| MX250-RP/U | 2 1/2 in. (DN65) | Replacement gasket kit for MX131 mixing valves. Includes 3, 2-1/2-in. gaskets |
| MX300-RP/U | 3 in. (DN80) | Replacement gasket kit for MX132 mixing valves. Includes 3, 3-in. gaskets |

TX Series Expansion Tanks—Domestic Hot Water



The Honeywell Thermal Expansion Absorber is an expansion tank with a butyl diaphragm. The Thermal Expansion Tank controls pressure build-up in the system, eliminates relief valve spillage, protects fixtures and extends water heater life.

- Heavy duty butyl rubber diaphragm (FDA approved) isolates water from air.
- Polypropylene liner, 100% non-metallic, non-corrosive water reservoir.
- Prevents water hammer.
- Maintenance free.
- Protects water heater from harmful pressure cycling.
- Allows storage of expanded water with no increase in system pressures.
- Prevents backflow when supply pressure falls below system pressure.

Operating Temperature Range: 200°F Maximum (93°C Maximum)

Comments: Potable

Maximum Safe Operating Pressure (psi): 150 psi
Maximum Safe Operating Pressure (kPa): 1034 kPa
Precharge (psi): 40 psi

| Material Number | Connection Size (in.) | Connection Type | Diameter | Height | Volume | Weight | Maximum Acceptance Volume | Materials |
|-----------------|-----------------------|-----------------|-----------------------|---------------------|-------------------|------------------|---------------------------|---|
| TX-5/U | 3/4 in. | Male NPT | 8 in. (203.2 mm) | 12 5/8 in. (321 mm) | 2.0 gal (7.6 L) | 5 lb (2.27 kg) | 0.9 gal (3.41 L) | Steel shell; Brass connection; Polypropylene liner; Butyl diaphragm |
| TX-12/U | 3/4 in. | Male NPT | 11 in. (279 mm) | 12 5/8 in. (321 mm) | 4.4 gal (16.7 L) | 5 lb (2.27 kg) | 3.2 gal (12.1 L) | Steel shell; Butyl diaphragm; Polypropylene liner; Brass connection |
| TX-25V/U | 3/4 in. | Female NPT | 15 3/8 in. (390.5 mm) | 19 1/4 in. (489 mm) | 10.3 gal (39 L) | 23 lb (10.43 kg) | 10.3 gal (39 L) | Steel shell; Butyl diaphragm; Brass connection; Polypropylene liner |
| TX-30V/U | 3/4 in. | Female NPT | 15 3/8 in. (390.5 mm) | 23 7/8 in. (606 mm) | 14.0 gal (53.1 L) | 25 lb (11.34 kg) | 11.3 gal (42.8 L) | Steel shell; Brass connection; Polypropylene liner; Butyl diaphragm |
| TX-42V/U | 3/4 in. | Female NPT | 15 3/8 in. (390.5 mm) | 31 5/8 in. (803 mm) | 20.0 gal (75.7 L) | 33 lb (14.97 kg) | 11.4 gal (43.2 L) | Steel shell; Butyl diaphragm; Polypropylene liner; Brass connection |

Pressure Regulating Valve

DS06 “DialSet” Low Lead Pressure Regulating Valve



With the Honeywell DialSet Pressure Regulating Valve, you don't need a pressure gauge. The built-in adjustment dial eliminates the need for a gauge when adjusting the static pressure setting, but there is also an easily accessible gauge port on either side if you need it. This product has the capability to be installed by one individual and the reliability that helps to increase your profits through fewer callbacks. Plus, the DialSet PRV has the flexibility to work in a variety of applications.

- Built-In Dial-Set™- no guage is needed to install or set static pressure.
- Noncorroding Unitized Cartridge - contains all working parts and is easily replaceable
- Outlet adjustment range of 25 psi to 90 psi make it suitable for household, commercial, industrial and turf-and-irrigation applications.
- Install it just about anywhere. The internal and external threading allows for use in thread-by-thread, singleunion or double-union configurations.
- 1/4" NPT tap accessible from both sides to validate output
- Built in strainer to simplify maintenance
- Approvals - ASSE 1003, IAPMO, CSA, Low Lead Compliant

Materials: Bronze (body), Fabric Reinforced Diaphragm, Stainless Steel and Engineered Thermoplastics.

Outlet Pressure Adjustment Range (psi): 25-90 psi

Maximum Inlet Pressure Rating (psi): 250 psi

Gauge Tap: 1/4 in. NPT (two, one on each side of body).

Calibrated Adjustment Dial: Yes

Reducing Ratio: 10:1 Maximum

Union Fittings: Double-Union Sweat

Approvals, ASSE: Certified 1003-2009

Approvals, IAPMO: Listed

Approvals, CSA: Certified (B356-10)

| Material Number | Pipe Size in/(DN) | Connection Type | Operating Temperature °F (°C) | Description |
|-------------------|-------------------|---|-------------------------------|---|
| DS06-100-DUS-LF/U | 1/2 in. (DN15) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 1/2 Inch DS06 “dialset” low lead pressure regulating valve (PRV) - double union sweat |
| DS06-100-DUT-LF/U | 1/2 in. (DN15) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 1/2 Inch DS06 “dialset” low lead pressure regulating valve (PRV) - double union NPT |
| DS06-100-LF/U | 1/2 in. (DN15) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 1/2 Inch DS06 “dialset” low lead pressure regulating valve (PRV) - union body only |
| DS06-100-SUS-LF/U | 1/2 in. (DN15) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 1/2 Inch DS06 “dialset” low lead pressure regulating valve (PRV) - single union sweat |
| DS06-100-SUT-LF/U | 1/2 in. (DN15) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 1/2 Inch DS06 “dialset” low lead pressure regulating valve (PRV) - single union NPT |
| DS06-101-DUS-LF/U | 3/4 in. (DN20) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 3/4 Inch DS06 “dialset” low lead pressure regulating valve (PRV) - double union sweat |
| DS06-101-DUT-LF/U | 3/4 in. (DN20) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 3/4 Inch DS06 “dialset” low lead pressure regulating valve (PRV) - double union NPT |
| DS06-101-LF/U | 3/4 in. (DN20) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 3/4 Inch DS06 “dialset” low lead pressure regulating valve (PRV) - union body only |
| DS06-101-SUS-LF/U | 3/4 in. (DN20) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 3/4 Inch DS06 “dialset” low lead pressure regulating valve (PRV) - single union sweat |
| DS06-101-SUT-LF/U | 3/4 in. (DN20) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 3/4 Inch DS06 “dialset” low lead pressure regulating valve (PRV) - single union NPT |
| DS06-102-DUS-LF/U | 1 in. (DN25) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 1 Inch DS06 “dialset” low lead pressure regulating valve (PRV) - double union sweat |
| DS06-102-DUT-LF/U | 1 in. (DN25) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 1 Inch DS06 “dialset” low lead pressure regulating valve (PRV) - double union NPT |
| DS06-102-LF/U | 1 in. (DN25) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 1 Inch DS06 “dialset” low lead pressure regulating valve (PRV) - union body only |
| DS06-102-SUS-LF/U | 1 in. (DN25) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 1 Inch DS06 “dialset” low lead pressure regulating valve (PRV) - single union sweat |
| DS06-102-SUT-LF/U | 1 in. (DN25) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 1 Inch DS06 “dialset” low lead pressure regulating valve (PRV) - single union NPT |
| DS06-103-DUS-LF/U | 1 1/4 in. (DN32) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 1 1/4 Inch DS06 “dialset” low lead pressure regulating valve (PRV) - double union sweat |
| DS06-103-DUT-LF/U | 1 1/4 in. (DN32) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 1 1/4 Inch DS06 “dialset” low lead pressure regulating valve (PRV) - double union NPT |
| DS06-103-SUS-LF/U | 1 1/4 in. (DN32) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 1 1/4 Inch DS06 “dialset” low lead pressure regulating valve (PRV) - single union sweat |
| DS06-103-SUT-LF/U | 1 1/4 in. (DN32) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 1 1/4 Inch DS06 “dialset” low lead pressure regulating valve (PRV) - single union NPT |
| DS06-104-DUS-LF/U | 1 1/2 in. (DN40) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 1 1/2 Inch DS06 “dialset” low lead pressure regulating valve (PRV) - double union sweat |
| DS06-104-DUT-LF/U | 1 1/2 in. (DN40) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 1 1/2 Inch DS06 “dialset” low lead pressure regulating valve (PRV) - double union NPT |

Pressure Regulating Valve

| Material Number | Pipe Size in/(DN) | Connection Type | Operating Temperature °F (°C) | Description |
|-------------------|-------------------|--|---------------------------------|---|
| DS06-104-LF/U | 1-1/2 in. (DN40) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 1-1/2 Inch DS06 "dialset" low lead pressure regulating valve (PRV) - union body only |
| DS06-104-SUS-LF/U | 1 1/2 in. (DN40) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 1 1/2 Inch DS06 "dialset" low lead pressure regulating valve (PRV) - single union sweat |
| DS06-104-SUT-LF/U | 1 1/2 in. (DN40) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 1 1/2 Inch DS06 "dialset" low lead pressure regulating valve (PRV) - single union NPT |
| DS06-105-DUS-LF/U | 2 in. (DN50) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 2 Inch DS06 "dialset" low lead pressure regulating valve (PRV) - double union sweat |
| DS06-105-DUT-LF/U | 2 in. (DN50) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 2 Inch DS06 "dialset" low lead pressure regulating valve (PRV) - double union NPT |
| DS06-105-SUS-LF/U | 2 in. (DN50) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 2 Inch DS06 "dialset" low lead pressure regulating valve (PRV) - single union sweat |
| DS06-105-SUT-LF/U | 2 in. (DN50) | Female NPT Threaded Inlet & Outlet Externally threaded for Unions | 140°F Maximum (60°C Maximum) | 2 Inch DS06 "dialset" low lead pressure regulating valve (PRV) - single union NPT |

DS06LF Pressure Regulating Valves—Repair Parts

| Material Number | Description |
|-----------------|---|
| D06FA-1/2 | DS06 Low-Lead Replacement Parts 1/2" & 3/4" Valve Insert without Filter |
| D06FA-11/2 | DS06 Low-Lead Replacement Parts 1 1/2" & 2" Valve Insert without Filter |
| D06FA-1B | DS06 Low-Lead Replacement Parts 1" & 1 1/4" Valve Insert without Filter |
| ES06F-1/2A | DS06 Low-Lead Replacement Parts 1/2" & 3/4" Replacement Filter Insert |
| ES06F-11/2A | DS06 Low-Lead Replacement Parts 1 1/2" & 2" Replacement Filter Insert |
| ES06F-1B | DS06 Low-Lead Replacement Parts 1" & 1 1/4" Replacement Filter Insert |
| SB06T-1 | DS06 Low-Lead Replacement Parts 1" & 1 1/4" Black Filter Bowl with O-Ring |
| SB06T-1/2 | DS06 Low-Lead Replacement Parts 1/2" & 3/4" Black Filter Bowl with O-Ring |
| SB06T-11/2 | DS06 Low-Lead Replacement Parts 1 1/2" & 2" Black Filter Bowl with O-Ring |

Pressure Regulating Valve

D05/DS05 Pressure Regulating Valves (Obsolete valves)— Accessories

| Material Number | Description | Used With |
|-----------------|--|---|
| 272840/U | Union gaskets for 1/2 in. D05/DS05 (package of 2) | D05A, D05D, D05G, DS05C, DS05D, DS05 |
| 272841/U | Union gaskets for 3/4 in. D05/DS05 (package of 2) | |
| K06U1069/U | Union kit for D05 for 1/2-in. NPT valves. Includes union nut, threaded tailpiece, and gasket | |
| K06U1077/U | Union kit for D05 for 3/4-in. NPT valves. Includes union nut, threaded tailpiece, and gasket | |
| K06U1085/U | Union kit for D05 for 1-in. NPT valves. Includes union nut, threaded tailpiece, and gasket | |
| K06U1093/U | Union kit for D05 for 1/2-in. sweat valves. Includes union nut, sweat tailpiece, and gasket | |
| K06U1101/U | Union kit for D05 for 3/4-in. sweat valves. Includes union nut, sweat tailpiece, and gasket | |
| K06U1119/U | Union kit for D05 for 1-in. sweat valves. Includes union nut, sweat tailpiece, and gasket | |
| K06U1135/U | Union kit for D05 for 1-1/4-in. NPT valves. Includes union nut, threaded tailpiece, and gasket | |
| K06U1143/U | Union kit for D05 for 1-1/4-in. sweat valves. Includes union nut, sweat tailpiece, and gasket | |

D05/DS05 Pressure Regulating Valves (Obsolete valves)— Repair Parts

| Material Number | Description | Used With |
|-----------------|--|--|
| K05A1017 | Repair Kit for old style D05A,G; DS05G 1 in. and 1-1/4 in. valves. Includes cartridge, screen and O-rings | D05A, D05D, D05G, DS05C, DS05D, DS05G |
| K05A1025 | Repair kit for new D05T, DC05C,D,G 1/2 in., 3/4 in., and 1-in. valves. Includes cartridge, screen and O-ring | D05A, D05D, D05G, D05T, DS05C, DS05D, DS05G |
| K05B1007 | Repair Kit for new D05T; DS05C,D,G 1/2-in. and 3/4-in. valves. Includes screen and O-rings | |
| K05B1015/U | Repair Kit for new D05T and DS05C,D,G 1-in. valves. Includes screen and O-rings | D05A, D05D, D05G, DS05C, DS05D, DS05G |
| K06A1003/U | Cartridge kit for D05G and DS05G 1/2 and 3/4 in. valves. Includes cartridge, screen and O-rings | |
| K06A1011/U | Cartridge kit for D05G and DS05G 1 and 1-1/4 in. valves. Includes cartridge, screen and O-rings | |
| K06A1019/U | Cartridge kit for D05G and DS05G 1/2 and 3/4 in. valves. Includes screen, plug and O-rings | |
| K06B1002/U | Cartridge kit for D05G and DS05G 1 and 1-1/4 in. valves. Includes screen, plug and O-rings | |
| K06B1018/U | Cartridge kit for D05G and DS05G 1 and 1-1/4 in. valves. Includes screen, plug and O-rings | |
| K06C1036/U | Spring kit for D05G and DS05G 1 and 1-1/4 in. valves. 21-85 psi. Includes spring and adjustment knob (grey) | |
| K06D1001/U | Cartridge kit for D05G and DS05G 1/2 and 3/4 in. valves. Includes cartridge and O-rings | |

D06/DS06 Pressure Regulating Valves (Obsolete valves)— Accessories

| Material Number | Description | Used With |
|-----------------|--|-----------------------------|
| 272858/U | Union Gasket for 1 1/2 in. D06 and DS06 valves | D06F, D06G, DS06D, DS06G |
| 272859/U | 2 in. D06/DS06 union gaskets. Price per piece. Comes 10 pieces per bag | |
| K06U1037/U | Union kit with threaded tailpiece for 1 1/2 in. D06 and DS06G valves | |
| K06U1045/U | Union Kit with threaded tailpiece for 2in. D06 and DS06 valves | |
| K06U5034/U | Union Kit for 1 1/2 in. Sweat D06 and DS06. | |
| K06U5042/U | Union Kit for 2 in. Sweat D06 and DS06. | |

D06/DS06 Pressure Regulating Valves (Obsolete valves)— Repair Parts

| Material Number | Description | Used With |
|-----------------|---|-----------------------------|
| K06B1030 | Cartridge kit for D06G and DS06G 1-1/2-in. and 2-in. valves. Includes strainer, support and 2 O-rings | D06F, D06G, DS06D, DS06G |
| K06C1060/U | Spring kit for D06G and DS06G 1-1/2 and 2 in. valves. 21-85 psi. Includes spring and adjustment knob (grey) | |
| K06D1017/U | Cartridge kit for D06G and DS06G 1-1/2 and 2 in. valves. Includes cartridge and O-rings | |
| K06D1044 | Cartridge kit for D06G,T,U and DS06G 1-1/2-in. and 2in. valves. Includes cartridge, screen and O-rings. | |

Lyric™ Water Leak and Freeze Detector



The average water leak causes \$7000 in damage*. Be notified of a water leak while it's measured in drops. The Lyric™ Water Leak and Freeze Detector detects water with sensors on base of unit or has expanded coverage with included 4 ft. water sensing cable. Entire cable detects water.

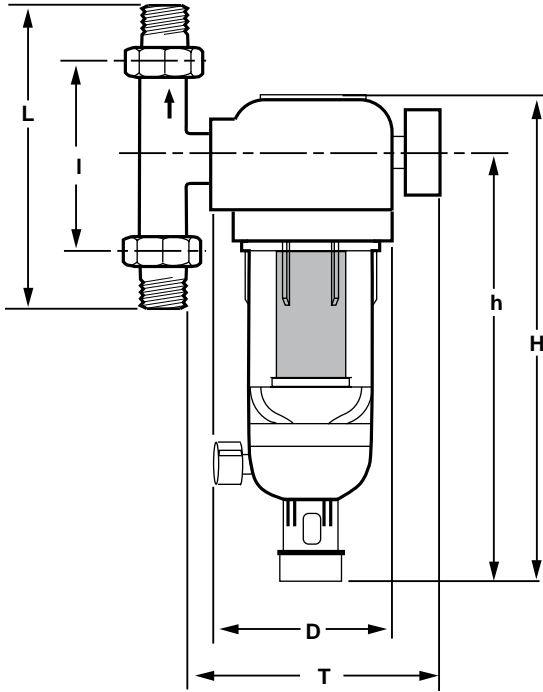
- Conveniently place near sinks, washers, water heaters, sump pumps—anywhere leaks could happen. Battery life lasts up to 3 years without incident.
- Notification messages can alert you or your family/ friends, wherever you are, while audible (100 dB alarm) alerts sound when you are at home.
- Use to detect temperatures that can freeze pipes, and humidity that could damage valuables.
- Runs on WiFi - No Extra Hub or hardware purchase required.
- Daisy chain extra cable sensors and cover up to 500 feet of space with one leak detector.
- Reusable even after detecting an incident. After an alarm, simply wipe dry the detector and cable sensors and place them back into service.

* American Insurance Association

| Material Number | Description | Power Method |
|-----------------|--|------------------|
| CHW3610W1001/U | Water Leak Detector and Cable Sensor with 3 AA Batteries | Battery Operated |
| CHWES41013/U | Accessory Cable Sensor for Lyric Water Leak Detector | |

Water Sediment Filters

F74C Reversing Rinsing Filter



| DIMENSION | IN INCHES (MM) |
|-----------|----------------|
| | F74C1015 |
| H | 12-13/16 (324) |
| h | 11-3/16 (285) |
| L | 6-3/8 (162) |
| I | 3-9/16 (90) |
| D | 4-1/8 (105) |
| T | 5-5/16 (150) |

M34736

F74C Reverse Rinsing Filters ensure a continuous supply of filtered water. The fine filter prevents the ingress of foreign bodies, such as rust particles and grains of sand. Both horizontal and vertical installations are possible.

- Whole House Protection
- Filtered water supplied even during reverse rinsing. Patented reverse rinsing system.
- Fast and thorough cleaning of the filter with a small amount of water.
- Bayonet connection enables simple retro-fitting of reverse rinsing actuator.
- Large filter surface.
- Shock resistant, clear synthetic material filter bowl enables easy inspection of filter contamination.
- Filter insert fully interchangeable.
- Simple operation.
- Tested for reliability.

Connection Type: Sweat and threaded

Materials: Body: Plastic with Brass Fittings; Sump: Clear Plastic

Screen Size: 100 micron screen

| Material Number | Pipe Size in/(DN) | Ambient Temperature Range | Maximum Safe Operating Pressure (psi) | Weight | Capacity (Cv) | Description | Includes |
|-----------------|-------------------|-----------------------------|---------------------------------------|---------------|---------------|-----------------------|------------------|
| F74C1015 | 3/4 in. (DN20) | 86°F Maximum (30°C Maximum) | 230 psi | 6 lb (2.7 kg) | 6.4 Cv | 3/4 inch Water filter | gauge and wrench |

F76 Water Filters



High flow capacity water filter used to remove sediment and debris from residential or commercial water systems.

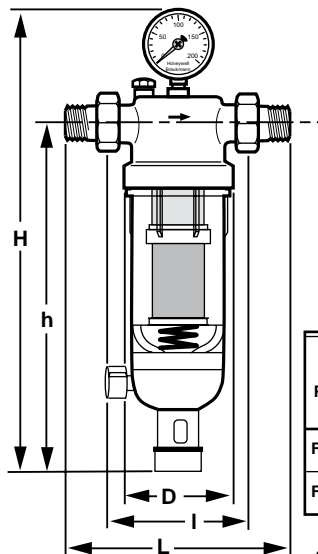
- Whole House Protection
- Ideally suited for sediment removal applications that would quickly plug and restrict the flow of normal filters.
- Used as a prefilter, the F76 protects elements of the water system, including specialized treatment devices or other common fixtures and appliances.
- The flow filtering capacity and ease of cleaning make the F76S ideal for the most demanding applications.
- Built-in secondary filter provides an uninterrupted supply of filtered water during backwashing.


Connection Type: NPT External Threaded and Sweat

Approximate Dimensions: 17 11/16 in. high x 6 11/16 in. wide x 3 13/16 in. deep (449 mm high x 170 mm wide x 97 mm deep)

Materials: Body: Brass; Sump: Clear Plastic

Screen Size: 100 micron screen



| PRODUCT NUMBER AND SIZE | DIMENSIONS IN INCHES (MM) | | | | | WEIGHT  |
|-------------------------|---------------------------|--------------|--------------|----------------|----------------|--|
| | L | I | D | H | h | |
| F76S1007 1/2 IN. | 6-11/16 (170) | 4-5/16 (110) | 3-13/16 (97) | 17-11/16 (449) | 13-13/16 (350) | 6.4 (2.9) |
| F76S1015 3/4 IN. | 7 (178) | 4-5/16 (110) | 3-13/16 (97) | 17-11/16 (449) | 13-13/16 (350) | 6.4 (2.9) |

 WEIGHT IN POUNDS (KILOGRAMS)

M34737

| Material Number | Pipe Size in/(DN) | Ambient Temperature Range | Maximum Safe Operating Pressure (psi) | Weight | Capacity (Cv) | Description | Includes |
|-----------------|-------------------|------------------------------|---------------------------------------|-----------------|---------------|-----------------------|--------------------------|
| F76S1007 | 1/2 in. (DN15) | 104°F Maximum (40°C Maximum) | 230 psi | 6.4 lb (2.9 kg) | 5.6 Cv | 1/2 inch Water filter | gauge and service wrench |
| F76S1015 | 3/4 in. (DN20) | 104°F Maximum (40°C Maximum) | 230 psi | 6.4 lb (2.9 kg) | 8.4 Cv | 3/4 inch Water filter | gauge and service wrench |

Water Sediment Filters

MV876 Automatic Backwash Control



The MV876B Automatic-Backwash Control is available as an accessory. This control is fitted to the drain valve and is programmed by the user to automatically perform the backwash function according to the desired interval.

- Bayonet fitting simplifies upgrade to automatic backwash.
- 16 field-selectable backwash intervals (from every four minutes to once every three months) eliminate need for external timer.
- Connections for external control on the MV876 provide for use in automated systems and differential pressure control.
- MV876 can be manually activated to initiate backwash.
- Battery (AA) backup to ensure completion of backwash cycle in spite of power loss.

Backwash Intervals and Selection: 16 intervals from 4 min to 3 months, field adjustable via keypad

Display: Digital

Approximate Dimensions: 6 in. high, 2-3/4 in wide, 6-5/16 in. deep (152 mm high, 70 mm wide, 160 mm deep)

Electrical Ratings: 24 Vac, 10 W

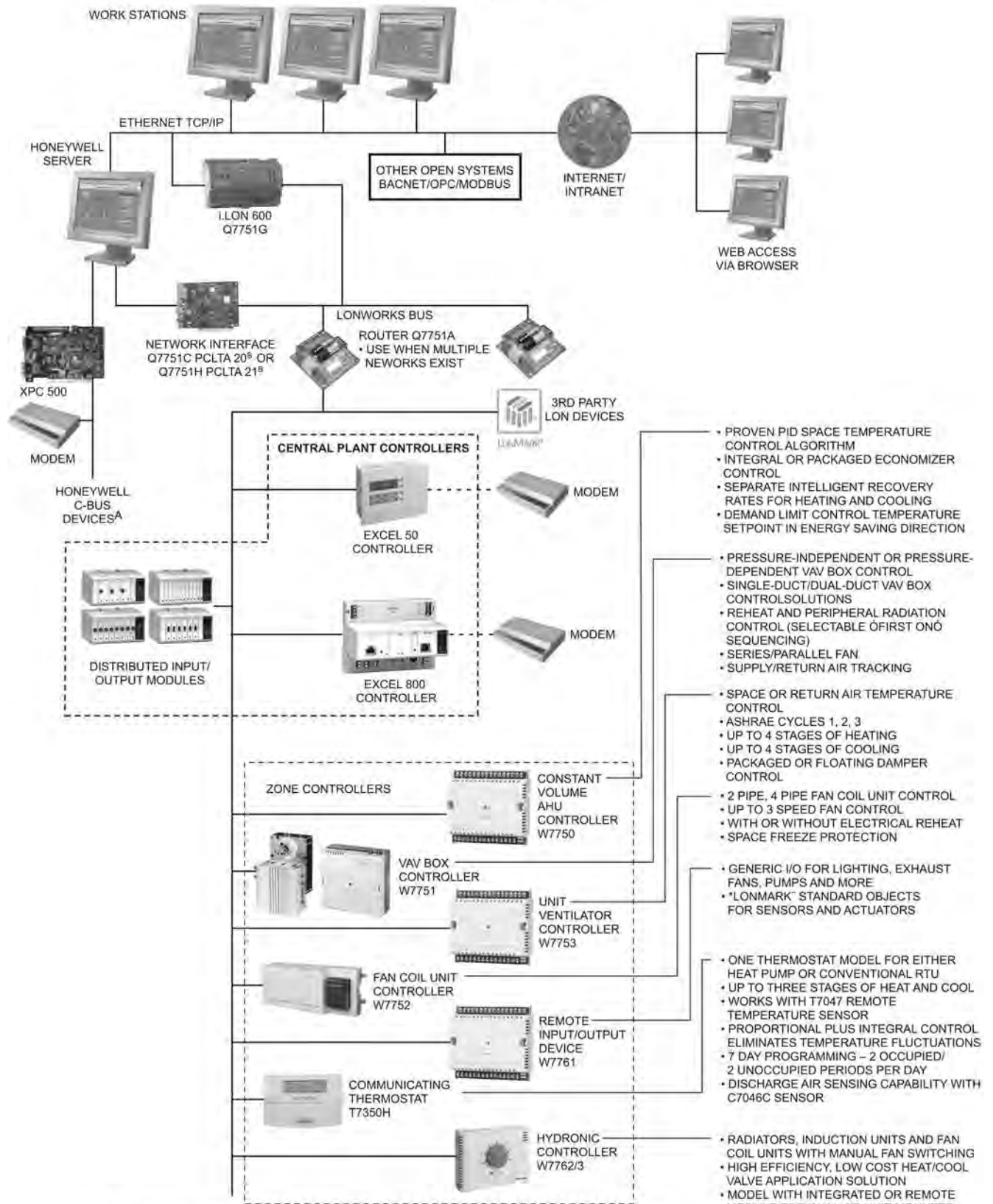
Cycle Time (sec): 20 sec

| Material Number | Description |
|-----------------|--|
| MV876B1018 | Automatic backwash control, fits 1/2 in. to 2 in. F76S models and F74C models. |

Water Sediment Filter Parts and Accessories

| Material Number | Description | Used With |
|-----------------|---|----------------------|
| 901444 | F76S Gasket 1/2-3/4" | F74C or F76S or FF06 |
| 901445 | F76S Gasket 1" | F74C or F76S or FF06 |
| 901446 | F76S Gasket 1-1/4" | F76S |
| 901447 | F76S Gasket 1-1/2" | F76S |
| 901448 | F76S Gasket 2" | F76S |
| AF11S-11/2A | Screen kit for F76S Water Filter 1-1/2 in. to 2 in. | F76S |
| AF11S-11/2B | Screen kit for F76S Water Filter 1-1/2 in. to 2 in. | F76S |
| AF11S-11/2C | Screen kit for F76S Water Filter 1-1/2 in. to 2 in. | F76S |
| AF11S-11/2D | Screen kit for F76S Water Filter 1-1/2 in. to 2 in. | F76S |
| AF11S-1A | Screen kit for F76S Water Filter 1/2 in. to 1-1/4 in. | F76S |
| AF11S-1B | Screen kit for F76S Water Filter 1/2 in. to 1-1/4 in. | F76S |
| AF11S-1C | Screen kit for F76S Water Filter 1/2 in. to 1-1/4 in. | F76S |
| AF11S-1D | Screen kit for F76S Water Filter 1/2 in. to 1-1/4 in. | F76S |
| AS06-1A | Filter mesh and sump O-ring (5 pcs) | |

EXCEL 5000 SYSTEM ARCHITECTURE

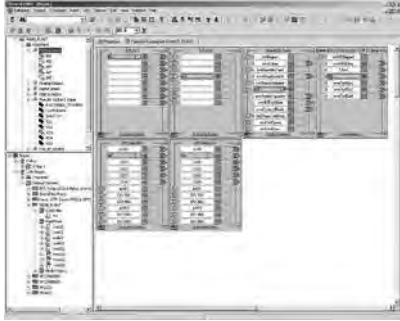


^A PLANT CONTROLLERS MAY BE CONFIGURED TO COMMUNICATE ON THE LONWORKS BUS FOR OPEN SYSTEM JOBS OR THE HONEYWELL C-BUS.
^B THE SYSTEM ONLY REQUIRES THE LON 600 OR THE PCLTA FOR EACH APPLICATION, NOT BOTH.

M23221B

Excel 5000 System

Controller Tools



The Excel CARE and Live CARE software packages are graphic tools to easily and quickly create and simulate application programs that run controllers in EXCEL 5000® Systems. Users can perform these functions without extensive knowledge of a programming language. Users systematically select control system graphic elements such as lighting and Heating, Ventilating, and Air Conditioning (HVAC) equipment and create control sequences in a Microsoft® Windows® environment. CARE software validates as the designer works, thus keeping the process free of errors. Work is completed quickly and efficiently. As part of the design process, CARE automatically creates comprehensive documentation and materials listings.

NOTE: All CARE products require a signed SOFTWARE LICENSE AGREEMENT prior to purchase. Ordering CARE via this website does not guarantee that you are approved for the purchase. Honeywell reserves the right to refuse shipment, if appropriate.

- Point-and-click programming
- Schematic drawing
- Control strategy
- Switching logic
- Time function
- Mathematical editor
- Standard library
- Documentation
- Control program simulation
- Applicable to EXCEL 5000 System controllers
- Password security

Application: Tool

Application Size: Small to Large

Compatible With: Excel 5000 System Controllers

Building Management Interface: EBI; SymmetrE; XBS

Network Communications: LonWorks Bus; C-Bus

| Material Number | Description | Commissioning Software | Output Type | Used With | Includes |
|-----------------|--|------------------------|---------------------|-------------------------------|--|
| CARE-80-LNS | CARE: Graphic Programming Tool | CARE | Graphical Interface | Excel 5000 System Controllers | USB Drive with full installation of CARE 8 with voucher number |
| PROTPLUG-UP | CARE: Graphic Programming Tool Upgrade | CARE | Graphical Interface | Excel 5000 System Controllers | USB Drive with CARE 8 upgrade |

SymmetrE

The Honeywell SymmetrE™ building management system brings your building's occupant needs, operational issues and budget pressures into perfect balance by monitoring and controlling heating, ventilation and air conditioning equipment.

Honeywell's SymmetrE™ PC workstation redefines what to expect from monitoring and controlling your building management system. The scalable software brings your building's occupant needs, operational issues and budget pressures into perfect balance.

- Total solution for Heating, Ventilation & Air conditioning Building Management Systems.
- Integration with a diverse range of devices, Internet and Intranet sources allowing intelligent management of key facility information.
- Uses Industry standard hardware and Windows® 2000 Professional and Windows XP® Professional Operating Systems
- Supports the leading open standards: BACnet®, LONMARK®, ODBC, OPC®, AdvanceDDE and Modbus®.
- Easy-to-use web-style interface reduces operator training costs and puts the user in control of every situation.
- Designed and developed to International Standard ISO® 9001:2000 for quality assurance.

SymmetrE R310; R410 Workstation

Application: Workstation Software

Used With: SymmetrE

Building Management Interface: SymmetrE

| Material Number | Description |
|--------------------|--|
| SYM-DB10-20-EXP/U | Expansion pack - 1000 to 2000 Point DB |
| SYM-DB10K-15K-EXP | Expansion Pack - 10,000 to 15,000 point DB |
| SYM-DB15K-20K-EXP | Expansion Pack - 15,000 to 20,000 point DB |
| SYM-DB20-35-EXP/U | Expansion pack - 2000 to 3500 Point DB |
| SYM-DB2-5-EXP/U | Expansion Pack - 250 to 500 point DB |
| SYM-DB35-50-EXP/U | Expansion pack - 3500 to 5000 Point DB |
| SYM-DB50-75-EXP/U | Expansion pack - 5000 to 7500 Point DB |
| SYM-DB5-10-EXP/U | Expansion pack - 500 to 1000 Point DB |
| SYM-DB75-10K-EXP/U | Expansion Pack - 7500 to 10,000 point DB |
| SYM-IF-ADVDEDECL/U | Advance DDE Interface |
| SYM-IF-BAC/U | BACnet Client (R200 and later) |
| SYM-IF-OPCCL/U | OPC Client Interface |
| SYM-IF-XL5DIRDIAL | EXCEL 5000 Dial-up |
| SYM-NW-OPCSERV/U | OPC Server |
| SYM-OP-WEBPCTL/U | Web Point Control |

SymmetrE Software

Application Size: Small to Large

Used With: Used with SymmetrE

Building Management Interface: SymmetrE

| Material Number | Description |
|----------------------------------|-------------------------|
| SymmetrE Software | |
| SYM-CD-310/U | CD for SymmetrE R310 |
| SYM-DB250-500-EXP | SymmetrE Software |
| SYM-IF-XLDIAL/U | XL5000 Dialup Interface |
| SymmetrE Upgrade Software | |
| SYMR3UPG-1000/U | SymmetrE Software |
| SYMR3UPG-10K/U | SymmetrE Software |
| SYMR3UPG-15K/U | SymmetrE Software |
| SYMR3UPG-2000/U | SymmetrE Software |
| SYMR3UPG-20K/U | SymmetrE Software |
| SYMR3UPG-3500/U | SymmetrE Software |
| SYMR3UPG-500/U | SymmetrE Software |
| SYMR3UPG-5000/U | SymmetrE Software |
| SYMR3UPG-7500/U | SymmetrE Software |
| SYMSTB/U | SymmetrE Software |

Excel 5000 System

SymmetrE Upgrades

| Material Number | Description |
|------------------|---|
| SYM-DB0500-UPG/U | Software version upgrade with 500 point DB |
| SYM-DB1000-UPG/U | Software version upgrade with 1000 point DB |
| SYM-DB10K-UPG/U | Software version upgrade with 10,000 point DB |
| SYM-DB15K-UPG/U | Software version upgrade with 15,000 point DB |
| SYM-DB2000-UPG/U | Software version upgrade with 2000 point DB |
| SYM-DB20KUPG/U | Software version upgrade with 20,000 point DB |
| SYM-DB20K-UPG/U | Software version upgrade with 20,000 point DB |
| SYM-DB3500-UPG/U | Software version upgrade with 3500 point DB |
| SYM-DB7500-UPG/U | Software version upgrade with 7500 point DB |

SymmetrE R410 - Software/ Media

Application: Workstation Software

Building Management Interface: SymmetrE

| Material Number | Description |
|-----------------|-------------------------------|
| SYM-BASE01/U | SymmetrE R410 Base Package 1 |
| SYM-BASE02/U | SymmetrE R410 Base Package 2 |
| SYM-BASE03/U | SymmetrE R410 Base Package 3 |
| SYM-ZZDVD410/U | SymmetrE R410 Software on DVD |

SymmetrE R410 - Upgrades

Application: Workstation Software

Building Management Interface: SymmetrE

| Material Number | Description |
|-----------------|------------------------------------|
| SYM-UPGDR1/U | SYM Upgrade Unit - Release Minus 1 |
| SYM-UPGDR2/U | SYM Upgrade Unit - Release Minus 2 |
| SYM-UPGDR3/U | SYM Upgrade Unit - Release Minus 3 |
| SYM-UPGDRX/U | SYM Upgrade Unit - Release Minus X |

SymmetrE R310; R410 - Options

Application: Workstation Software

Building Management Interface: SymmetrE

| Material Number | Description |
|------------------|---|
| SYM-DBP00250/U | 250 Point Adder to Database Size |
| SYM-IF-BACNET/U | BACnet Client (R200 and later) |
| SYM-IF-MODBUS/U | Modbus Interface |
| SYM-OP-ALMPAG/U | Alarm Pager |
| SYM-OP-BACSERV/U | BACnet Server (R200 and later) |
| SYM-OP-DTXL/U | OPC Data Transfer - Local |
| SYM-OPEASYMB/U | Easy Mobile Services |
| SYM-OP-LNS/U | LNS Server |
| SYM-OP-LNSUPG/U | LNS Database Upgrade for systems with existing LNS Database |
| SYM-STB-UP-STN/U | Upgrade Browser client to full station client, R310 ONLY |

Excel 800 Controller



With more power and fewer pieces to buy, the new Excel 800 Controller is the plant controller you can count on for years to come. Along with easy programming and extensive memory, it offers all the flexibility you've come to depend on from the Honeywell Excel 5000 product line. Best of all, you won't have to learn any new programming, because your old Excel 500 application programs work perfectly with the Excel 800 controller.

- Double the memory
- Reduced training needs, use your current Excel 500 application programs
- Hot-swappable replacement of defective I/O modules
- Easy-Access Terminals
- Simplified Installation

Frequency: 50 Hz; 60 Hz

Power Consumption: Max 5 VA (max. 4 W)

Voltage: 24 Vac/Vdc ±20%

Shipping and Storage Temperature Range: -4°F to +158°F (-20°C to +70°C)

Operating Humidity Range (% RH): 5 to 93% RH, non-condensing

Building Management Interface: EBI; SymmetrE; ACSELON

Network Communications: LonWorks Bus; C-Bus

Commissioning Software: CARE 8

| Material Number | Application | Description | Output Type | Comments | Approvals, Underwriters Laboratories Inc. |
|-----------------|--|--------------------------|--|------------|---|
| XCL8010A | Built-up AHU; Hydronic; Chiller; Cooling Tower; Discharge Air; Boiler; Freely Programmable | Excel 800 Control System | Staged On/Off; Floating; Pulse Width Modulation; Analog/Modulating | CPU Module | UL 916 |
| XCL8010AU | Built-up AHU; Hydronic; Chiller; Cooling Tower; Discharge Air; Boiler; Freely Programmable | Excel 800 Control System | Staged On/Off; Floating; Pulse Width Modulation; Analog/Modulating | CPU Module | UL916 and UL864 |

Used With: Excel 800 Controller

Frequency: 50 Hz; 60 Hz

Voltage: 24 Vac/Vdc ±20%

Shipping and Storage Temperature Range: -4°F to +158°F (-20°C to +70°C)

Operating Humidity Range (% RH): 5 to 93% RH, non-condensing

Building Management Interface: EBI; SymmetrE; ACSELON

Network Communications: Panel Bus

Commissioning Software: CARE 8

| Material Number | Application | Description | I/O Count | Approvals, Underwriters Laboratories Inc. |
|-----------------|---------------------|-----------------------|--|---|
| XF821A | Input Module | Analog Input Module | 8 analog input module (Panel) | UL916 |
| XF821AU | Input Module | Analog Input Module | 8 analog input module (Panel) | UL916 and UL864 |
| XF822A | Output Module | Analog Output Module | 8 Analog Outputs with override (Panel) | UL916 |
| XF822AU | Output Module | Analog Output Module | 8 Analog Outputs with override (Panel) | UL916 and UL864 |
| XF823A | Input Module | Digital Input Module | 12 binary input module (Panel) | UL916 |
| XF823AU | Input Module | Digital Input Module | 12 binary input module (Panel) | UL916 and UL864 |
| XF824A | Output Module | Digital Output Module | 6 relay output module (Panel) | UL916 |
| XF824AU | Output Module | Digital Output Module | 6 relay output module (Panel) | UL916 and UL864 |
| XFU830A | Input/Output Module | Mixed I/O Module | 8 analog input module (Panel); 8 AI's, 12 DI's, 8 AO's, 6 RO's | UL916 |
| XFU830A/U | Input/Output Module | Mixed I/O Module | 8 analog input module (Panel); 8 AI's, 12 DI's, 8 AO's, 6 RO's | UL916 |

Excel 5000 System

Excel Distributed I/O



Distributed input/output modules allow you to monitor and control remote points with just a two-wire communication bus back to the main controller.

- LonMark Compliant.
- 2-wire LonWorks bus interface between controller and I/O.
- No additional field terminals required.
- Usable with Excel 800 controllers in conjunction with standard internal I/O modules.
- Automatic binding and commissioning to Excel 800 controllers when using CARE.

Application: Distributed I/O
Used With: Excel 800 Controller

Building Management Interface: EBI; SymmetrE; ACSELON
Commissioning Software: CARE 8

| Material Number | Description | Network Communications | I/O Count | Comments | Approvals, CE |
|-----------------|---|------------------------|--|--|-----------------|
| XFL821A | Distributed I/O - Analog input module | LonWorks Bus | 8 analog input module (LON) | | UL916 |
| XFL821AU | Distributed I/O - Analog input module | LonWorks Bus | 8 analog input module (LON) | | UL916 and UL864 |
| XFL822A | Distributed I/O - Analog output module | LonWorks Bus | 8 analog output module (LON) | | UL916 |
| XFL822AU | Distributed I/O - Analog output module | LonWorks Bus | 8 analog output module (LON) | | UL916 and UL864 |
| XFL823A | Distributed I/O - Digital input module | LonWorks Bus | 12 binary input module (LON) | Includes 12 LEDs | UL916 |
| XFL823AU | Distributed I/O - Digital input module | LonWorks Bus | 12 binary input module (LON) | Includes 12 LEDs | UL916 and UL864 |
| XFL824A | Distributed I/O - Digital output module | LonWorks Bus | 6 relay output module (LON) | | UL916 |
| XFL824AU | Distributed I/O - Digital output module | LonWorks Bus | 6 relay output module (LON) | | UL916 and UL864 |
| XFLR822A | Analog output manual override module | LonWorks Bus | 8 Analog Outputs with override (LON) | The manual override module works even if the CPU is not working. | UL916 |
| XFLR822AU | Analog output manual override module | LonWorks Bus | 8 Analog Outputs with override (LON) | The manual override module works even if the CPU is not working. | UL916 and UL864 |
| XFLR824A | Digital output manual override module | LonWorks Bus | 6 relays with override (LON) | The manual override module works even if the CPU is not working. | UL916 |
| XFLR824AU | Digital output manual override module | LonWorks Bus | 6 relays with override (LON) | The manual override module works even if the CPU is not working. | UL916 and UL864 |
| XFR822A | Analog output manual override module | Panel Bus | 8 Analog Outputs with override (Panel) | The manual override module works even if the CPU is not working. | UL916 |
| XFR822AU | Analog output manual override module | Panel Bus | 8 Analog Outputs with override (Panel) | The manual override module works even if the CPU is not working. | UL916 and UL864 |
| XFR824A | Digital output manual override module | Panel Bus | 6 relays with override (Panel) | The manual override module works even if the CPU is not working. | UL916 |
| XFR824AU | Digital output manual override module | Panel Bus | 6 relays with override (Panel) | The manual override module works even if the CPU is not working. | UL916 and UL864 |
| XFR825A | Actuator output module | Panel Bus | Actuator output module (Panel) | | UL916 |
| XFR825AU/U | Actuator output module | Panel Bus | Actuator output module (Panel) | | UL916 and UL864 |

Excel 100 Controller



Application: Programmable Controller

Frequency: 50 Hz; 60 Hz

Power Consumption: 25 VA Max.

Voltage: 24 Vac/Vdc

Operating Temperature Range: 32°F to 122°F (0°C to 50°C)

Approximate, Dimensions: 9.25 in. high x 7.56 in. wide x 2.83 in. deep
(235 mm high x 192 mm wide x 72 mm deep)

The Excel 100 Controllers are direct-digital control, microprocessor-based, programmable controllers that manage building functions.

- Stand-alone or networked operation for flexible use or expansion.
- CARE generated application programs for comprehensive control strategies.
- Analog or digital inputs and outputs for flexible point use.
- Multiple operator interface options for local or easy on-site changes.
- Point trending for timely information.
- Alarm handling facility to locally display the problem and remote dial out to act on it.
- Battery-backed RAM data to keep controller programming in place during power outage.
- Bus-Wide MMI provides local viewing/modification of point information of all controllers attached to the Communication Bus.

Shipping and Storage Temperature Range: -4°F to +140°F (-20°C to +60°C)

Approvals, Underwriters Laboratories Inc.: Form UL916

Approvals, FCC: Meets FCC Part 15, Subpart J for Class A equipment

Approvals, CE: Approved

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Building Management Interface: EBI; SymmetrE; ACSELON

Commissioning Software: CARE

| Material Number | Description | Network Communications | I/O Count | Output Type |
|-----------------|------------------------------------|------------------------|--|----------------|
| XL100CU | Freely Programmable DDC controller | C-Bus | 12 Digital Inputs; 12 Universal Inputs; 12 Universal Outputs | 0-10 Vdc, 20mA |

Excel 50 Controllers



Application: Built-up AHU, Chiller, Cooling Tower, Boiler, Freely Programmable

Frequency: 50 Hz; 60 Hz

Power Consumption: 72 VA, if fully equipped

Voltage: 24 Vac ± 20%

Operating Temperature Range: 32°F to 122°F (0°C to 50°C)

Approximate, Dimensions: 5.90 in. high x 7.79 in. wide x 3.19 in. deep
(150 mm high x 198 mm wide x 81 mm deep)

A compact, programmable controller that manages small building control applications. Available with or without operator interface. Provides perfect solution for managing small building control applications and HVAC equipment control applications.

- Direct communication to C-bus & LonWorks bus and/or modems.
- DIN rail or panel door mounting.
- Available with or without operator interface.
- Stand-alone or networked operation.
- CARE-generated application programs; ability to reuse available CARE applications.
- Flash-EPROM for efficient downloads.
- Wiring simplicity: accessible and removable screw terminal blocks.
- Capacitor-backed RAM; no battery required.

Shipping and Storage Temperature Range: -4°F to +158°F (-20°C to +70°C)

Approvals, Underwriters Laboratories Inc.: Form UL916

Approvals, FCC: Meets FCC Part 15, Subpart J for Class A equipment

Operating Humidity Range (% RH): 5 to 93% RH, non-condensing

Building Management Interface: EBI; SymmetrE; ACSELON

Commissioning Software: CARE

| Material Number | Description | Network Communications | I/O Count | Output Type | Comments | Includes | Approvals, CE |
|-------------------|---|------------------------|--|--|----------------------------------|---|---------------|
| XL50A-UMMIPCCBLON | Freely Programmable DDC controller, with operator interface | LonWorks Bus; C-Bus | 4 Digital Inputs, 8 Universal Inputs, 4 Universal Outputs, 6 Digital Outputs | Floating; Pulse Width Modulation; Analog/Modulating; Staged On/Off | Includes Operator Interface | C-Bus / LonWorks Bus communication card | Approved |
| XL50A-UPCCBLON | Freely Programmable DDC controller | LonWorks Bus; C-Bus | 4 Digital Inputs, 8 Universal Inputs, 4 Universal Outputs, 6 Digital Outputs | Floating; Pulse Width Modulation; Analog/Modulating; Staged On/Off | Does not have Operator Interface | C-Bus / LonWorks Bus communication card | UL916 |

Excel 5000 System

Excel Smart I/O



Excel Smart I/O modules feature software-configurable inputs and outputs and are suitable for installation throughout your buildings. They convert input signals to network variables and network variables into output signals for operating actuators.

- Flexible, software-configurable inputs/outputs.
- Flash memory for downloading applications.
- 2-wire FTT-10A LonWorks bus interface.
- Easily-accessible service button and a service LED.
- DIN rail mounting and wall-mounting supported.

Application: Configurable I/O

Frequency: 50 Hz; 60 Hz

Voltage: 24 Vac

Operating Temperature Range: 32°F to 122°F (0°C to 50°C)

Approximate, Dimensions: 5 in. wide x 3 in. length x 4.33 in. high
(126 mm wide x 76 mm length x 110 mm high)

Shipping and Storage Temperature Range: -22°F to +158°F (-30°C to +70°C)

Approvals, CE: CE and EN 50081-1, LonMark Application Layer Guidelines Version 3.2

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Building Management Interface: ACSELON; EBI; SymmetrE

Commissioning Software: CARE

| Material Number | Description | Network Communications | I/O Count | Includes |
|-----------------|---|------------------------|--|--|
| XFC3A06001 | Smart I/O module. Lon mark certified. Fixed terminals | LonWorks Bus | 4 Digital Inputs; 2 Analog Outputs; 4 Universal Inputs | |
| XFC3D06001 | Smart I/O module with Removable terminals, Lon mark Certified | LonWorks Bus | 4 Digital Inputs; 2 Analog Outputs; 4 Universal Inputs | Six 3-position manual overrides and 10 colored status LEDs |

Compact I/O



The Honeywell Compact I/O are LON modules with a certain number of digital inputs, analog inputs, digital outputs, analog outputs, and hubs used to record or control network variable points (SNVT's) on a LonWorks bus.

- Configured via LNS Plug-in.
- Easy Installation saves time and money.
- Easy to expand.
- Compact Design.

Application: Input / Output Module

Compatible With: Compact I/O Family

Voltage: 20 - 28 V AC/DC

Operating Temperature Range: 23°F to 131°F (-5°C to 55°C)

Shipping and Storage Temperature Range: -4°F to +158°F (-20°C to 170°C)

Approvals, Underwriters Laboratories Inc.: UL 916

Approvals, CE: Approved

Network Communications: LonWorks Bus

Commissioning Software: LNS Plug-in

| Material Number | Description | I/O Count | Power Consumption | Approximate, Dimensions |
|-----------------|--------------------------------------|-------------------|---------------------------|---|
| XIO-10DI/U | Digital Input Module with 10 Inputs | 10 Digital Inputs | 63 mA (AC) / 21 mA (DC). | 1.4 in. wide x 2.8 in. high x 2.6 in. deep (35 mm wide x 71 mm high x 66 mm deep) |
| XIO-4AO/U | Analog Output Module with 4 Outputs | 4 Analog Outputs | 150 mA (AC) / 70 mA (DC). | 1.4 in. wide x 2.8 in. high x 2.6 in. deep (35 mm wide x 71 mm high x 66 mm deep) |
| XIO-4DI/U | Digital Input Module with 4 Inputs | 4 Digital Inputs | 63 mA (AC) / 21 mA (DC). | 1.4 in. wide x 2.7 in. high x 2.6 in. deep (35 mm wide x 69 mm high x 66 mm deep) |
| XIO-4DO/U | Digital Output Module with 4 Outputs | 4 Digital Outputs | 205 mA (AC) / 67 mA (DC). | 1.4 in. wide x 2.8 in. high x 2.9 in. deep (35 mm wide x 71 mm high x 74 mm deep) |
| XIO-8AI/U | Analog Input Module with 8 Inputs | 8 Analog Inputs | 57 mA (AC) / 30 mA (DC). | 2.0 in. wide x 2.7 in. high x 2.6 in. deep (50 mm wide x 69 mm high x 66 mm deep) |

Excel Operator Terminals



Application: Interface; Display

Comments: Desktop or Panel/Wall Mounted

Used With: Excel 100 Controller; Excel 50 Controllers; Excel 800 Controller; Excel 500 Controller

The Excel 5000 Operator Interfaces provide local access to Excel 5000 Controllers. XI581 functions as a controller mounted interface. XI582 functions as a desktop or panel/wall mounted interface. XI882 functions as a panel/wall mounted interface.

- Each terminal provides a simple, menu-driven display with extensive functions to view and modify data, such as setpoint values, actual temperature values, control status, and switching status.
- Menu-driven operation for user ease.
- Simple key functions to reduce customer training.
- Password protected operation, for multiple level users.
- Alarm handling capability to display critical alarms for on-site action.
- Backlit LCD display.
- 6 line by 32 character display (the XI882 is a 5.7 inch -320x240 pixel- color touchscreen).

Compatible With: Excel 50, 100, 500, and 800 controllers

Operating Temperature Range: 32°F to 122°F (0°C to 50°C)

| Material Number | Description | Voltage | Approximate, Dimensions | Shipping and Storage Temperature Range | Operating Humidity Range (% RH) |
|-----------------|---|--------------------------------------|---|--|---------------------------------|
| XI582B-EU | Excel Operator Terminals (Desktop/Wall Mounted) | 5 Vdc ± 10% (supplied by controller) | 5.67 in. high x 7.68 in. wide x 1.24 in. deep (144 mm high x 192 mm wide x 31 mm deep) | -40°F to +158°F (-40°C to +70°C) | 5 to 95% RH, non-condensing |
| XI882A | Excel Operator Terminals (Desktop/Wall Mounted) | 24 Vac/Vdc | 4 31/32 in. high x 6 39/64 in. wide x 1 49/64 in. deep (126 mm high x 168 mm wide x 45 mm deep) | -13°F to +158°F (-25°C to +70°C) | 10 to 95% RH, non-condensing |

Excel Web II Control System



Excel Web II is Honeywell's Ethernet-based, freely programmable Building Automation controller offering a combination of BACnet IP, BACnet MS/TP, and LONWORKS® communication. It demonstrates Honeywell's full commitment to reducing total installed cost and total building lifecycle cost for building investors and building operators.

- Reduced the total installed cost
- Universal operation
- Reduced cost for service, operation and maintenance
- Vendor independence
- 100 datapoints can be trended
- Fast application control
- Reliable control performance
- Embedded e-mail/SMS alarming
- Uses Honeywell CARE tool
- Flexible mounting options

Application: Communications adapter



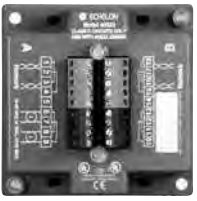
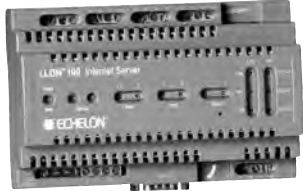

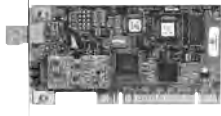
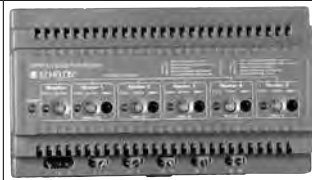

Used With: Excel Web II


Voltage: 19 to 29 Vac or 20 to 30 Vdc; 9 VA

| Material Number | Description |
|-----------------|------------------------------------|
| IF-LON | External USB-LON interface adapter |


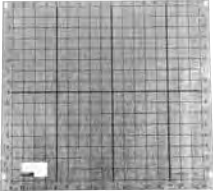



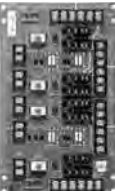
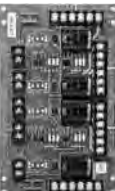
Excel 5000 System

LonWorks Bus Accessories

| Material Number | Description | Used With | |
|-----------------|---|---------------------|---|
| Q7740A1008/U | Two way repeater with connections for two network segments | LonMark Controllers |  |
| Q7740B1006/U | Four way repeater with connections for four network segments | LonMark Controllers | |
| Q7750A2003 | Excel 10 Zone Manager | LonMark Controllers |  |
| Q7751A2010/U | Excel 10 router used for connection with four network segments, FT-10/FT-10 | LonMark Controllers |  |
| Q7751F1011/U | I.LON 100 - TP/FT - 10 NO MODEM | LonMark Controllers |  |
| Q7751F1029/U | I.LON 100 - TP/FT - 10 NO MODEM | LonMark Controllers | |
| Q7751G2009/U | I.LON 600 FT - 10 | LonMark Controllers |  |
| Q7751H2007/U | PCLTA-21/TP-1250 | |  |
| Q7751J2002/U | MPR-50 Multi-Port Router | |  |
| Q7752B2009/U | Serial LonTalk Adapter, FTT-10A | LonMark Controllers |  |

| Material Number | Description | Used With | |
|-----------------|--|-----------|---|
| Q7752C2007/U | U10 - USB Network Interface with Cable | |  |










Excel Controller Accessories

| Material Number | Description | Used With | |
|-----------------|---|--------------------------------------|---|
| 14500087-004/U | Dodd relay with 12 Vdc coil, switches 120 Vac or 28 Vdc @ 3 amps, used with 14507222 Relay for XL100 Controller | 14507222 |  |
| 14506747-001/U | SUB PANEL, 1/2 Ring, ALUMINUM, UNDRILLED | Panels |  |
| 14506747-002/U | SUB PANEL, Full Ring, ALUMINUM, UNDRILLED | Panels |  |
| 14507063-002/U | Power Supply Cable To Connect Power To Excel Controller | Excel 5000 System Controllers |  |
| 14507063-003/U | Power Supply Cable (Tinned Ends) To Connect Power Module To Excel Controller | Excel 5000 System Controllers |  |
| 14507222-001/U | Relay Module, Four Relays. Includes Hand-Off-Auto Switches And LEDs | Excel 100B; Excel 500/600 Controller |  |
| 14507222-002/U | Relay Module, Four Relays. Includes LEDs | 14507222 |  |

Excel 5000 System

| Material Number | Description | Used With | |
|-----------------|--|-------------------------------|---|
| 14507287-001/U | Power Module, 120 Vac Input, 50 Va Controller Transformer With Convertible Outlet And Breaker | Excel 5000 System Controllers |  |
| 14507287-002/U | Power Module, 120 Vac Input, 50 Va Controller Transformer Plus 100 Va Accessory Transformer With Convertible Outlet And Breaker, | Excel 5000 System Controllers |  |
| 14507287-003/U | Power Module, 120 Vac Input, 50 Va Controller Transformer Plus 100 Va Accessory Transformer And 24 Vdc Accessory Transformer With Convertible Output And Breaker | Excel 5000 System Controllers |  |
| 14507287-004/U | Power Module, 220/240 Vac Input, 50 Va Controller Transformer, With Convertible Outlet And Breaker | Excel 5000 System Controllers |  |
| 14507287-006/U | Power Module, 220/240 Vac Input, 50 Va Controller Transformer Plus 100 Va Accessory Transformer And 24 Vdc Accessory Transformer With Convertible Outlet And Breaker | Excel 5000 System Controllers |  |
| 14507287-007/U | 50 VA Excel 5000 access power module for Excel 5000 applications | Excel 5000 System Controllers |  |
| 14507324-001/U | High speed, C-bus network repeater, panel mount (without cover) to extend bus length. | Excel 5000 System Controllers |  |
| 14507324-002/U | High speed, C-bus network repeater, field mount (with cover) to extend bus length. | Excel 5000 System Controllers |  |
| 14507547-001/U | C-bus to DB-25 connector cable, to connect internal RS-485 adapter board to C-bus | Excel 5000 System Controllers |  |

Excel 5000 System

| Material Number | Description | Used With | |
|-----------------|---|---|---|
| 14507549-001/U | ADAPTER MODULE, RS232 TO RS485 | C-Bus |  |
| 14507551-001/U | Cable assembly, com port to adapter module, 30 in. | 14507549 |  |
| 14507551-002/U | Cable assembly, com port to adapter module, 10 ft | 14507549 |  |
| 14507552-001/U | Cable assembly, power to adapter module, used with C-Bus and XBS, 11 inches long | 14507549 |  |
| 14507552-002/U | Cable assembly, power to adapter module, used with C-Bus and XBS, 15 inches long | 14507549 |  |
| 14507741-003/U | C-Bus Building Network Adapter for 10BaseT Ethernet | C-Bus | |
| 206168B/B | Controller Assembly for W7751F or D, (Bulk pack only, must be purchased in packs of 10) | Excel 10 Controllers |  |
| 206168BB/U | Electronics for Excel 10 - W7751D and F Controller (Subbases not included) order in increments of 10 | W7751D, F | |
| EXCELON | LonWork Network Management Tool | Excel 5000 System Controllers |  |
| MCE3 | Relay Module, Two Spat Outputs, One Spat Output | |  |
| S7760A2031/U | Excel 15 Command Display | Excel 10 Controllers; Excel 15 Controllers; Command Display |  |
| XAL10/U | Labels (Package Of 10) | Excel 800 Controller | |
| XI882-ACC | Excel Touch Accessory kit including replacement Power Wire Terminal, Touch Pen & Holder, Mounting Clips, and Ethernet Cable | XI882 | |
| XL-ONLINE | Excel Online, Commissioning tool for EXCEL 5000 Controllers | Excel 5000 System Controllers | |
| XL-ONLINE-CD/U | Excel Online, Commissioning tool for EXCEL 5000 Controllers | Excel 5000 System Controllers | |

Excel 5000 System

| Material Number | Description | Used With | |
|-----------------|---|-------------------------------|---|
| XM500-US/U | Remote communication module, TCP/IP WAN Modem. Emulates a Hayes compatible phone modem to convert serial data to Ethernet - TCP/IP packets. | Excel 5000 System Controllers |  |
| XS812 | Test Connector | Excel 800 Distributed I/O | |
| XS814 | Auxiliary terminal block (10) | Excel 800 Distributed I/O |  |
| XS815 | Cross Connector 6 Relays (20) | Excel 800 Distributed I/O |  |
| XS816 | Bus Bridge (10) | Excel 800 Distributed I/O |  |
| XS830 | 10 Auxiliary Terminal Blocks for Distribution of Signals and Power | Excel 800 Distributed I/O | |
| XS831 | 10 Auxiliary Terminal Blocks for Current Inputs | Excel 800 Distributed I/O | |
| XSU821-22 | Terminal socket analog modules | Excel 800 Distributed I/O | |
| XSU823 | Terminal socket binary input | Excel 800 Distributed I/O |  |
| XSU824-25 | Terminal socket relay output | Excel 800 Distributed I/O |  |
| XW565 | Cable to XI582 Connects operator interface to controller, 15 ft (5m) | Excel 500/600 Controller |  |
| XW882 | Cable from XI582 to XL800-RS232 (RJ45) | Excel 800 Distributed I/O | |
| XW884 | Adapter cable, XI582 (RJ45) to old XL500 | Excel 800 Distributed I/O | |
| XW885 | Cable from PC to XL800-RS232 (RJ45) | Excel 800 Distributed I/O | |

WEBS-AX™ System Integration



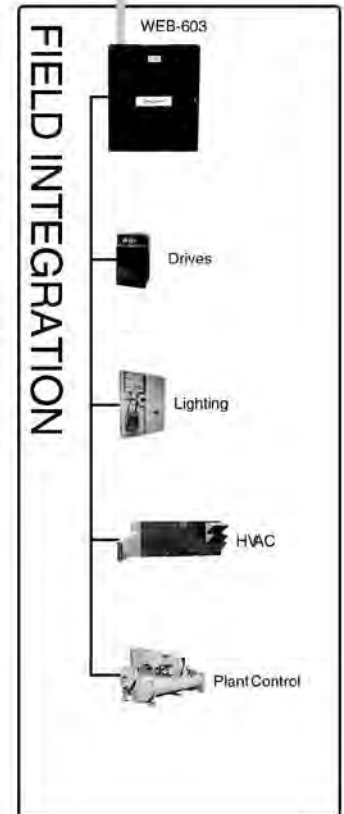
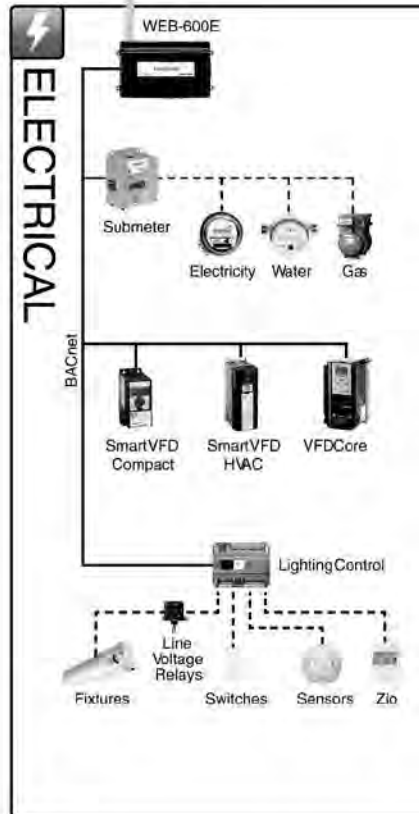
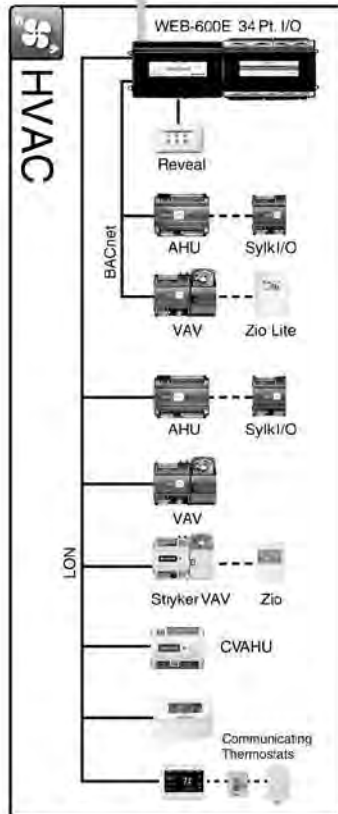
- Software Platform**
- WEBs-AX Supervisor
 - WEBs-AX Enterprise Security
 - WEBs-AX Energy Analytics
 - WEBs-AX Tenant Billing



Ethernet/LAN

HTTP, BACnet, oBIX, SNMP, XML, Fox

Ethernet/LAN



HVAC OPTIONS:

| PROGRAMMABLE ZONE CONTROLLERS | | |
|-------------------------------|--|--------------------------------|
| | PUB6438S PUL6438S PUB1012S PUL1012S PUB4024S PUL4024S | CONSTANT VOLUME AHU CONTROLLER |
| | PVB6438NS PVL6438NS PVB4024NS PVL4024NS | VAV BOX CONTROLLER |
| | PVB0000AS PVL0000AS PVL4022AS PVB4022AS PVB6436AS PVL6436AS | VAV BOX CONTROLLER W/ACTUATOR |

| ZONE CONTROLLERS | | |
|------------------|----------------|--------------------------------|
| | T7350H | COMMUNICATING THERMOSTAT |
| | W7750 | CONSTANT VOLUME AHU CONTROLLER |
| | W7751 | VAV BOX CONTROLLER |
| | W7752 | FAN COIL UNIT CONTROLLER |
| | W7753 | UNIT VENTILATOR CONTROLLER |
| | W7761 | REMOTE INPUT/OUTPUT DEVICE |
| | W7762 W7763 | HYDRONIC CONTROLLER |

| CENTRAL PLANT CONTROLLERS | | |
|---------------------------|----------------------------------|--|
| | EXCEL 50 CONTROLLER | |
| | EXCEL 800 CONTROLLER | |
| | DISTRIBUTED INPUT/OUTPUT MODULES | |

M34718B

Building Automation

WEBS-AX™ System Options

| HVAC | Product | Part Number | Operating System ^a | Device Limit | Open License Available | Description |
|----------------------------|---------------------------|-------------------|-------------------------------|--------------|--|---|
| | Small Building Supervisor | WEB-S-AX-3-0/U | Windows 32/64 Bit | 3 | Yes | WEBS-AX Supervisor software 32bit or 64bit Windows Open License. Includes Niagara Historical Database, Workplace AX, and OBIX client-server driver to connect to Niagara based devices. Max of 3 Connected WEBS Controllers |
| Medium Building Supervisor | WEB-S-AX-100-0/U | Windows 32/64 Bit | 100 | Yes | WEBS-AX Open License Supervisor software for 32bit or 64bit Windows. Includes Niagara Historical Database, Workplace AX, OBIX client-server driver for connecting to Niagara based controllers only. 100 Max device Limit. | |
| Large Building Supervisor | WEB-S-AX-UNL-0/U | Windows 32/64 Bit | No Limit | Yes | WEBS-AX Open License Supervisor software for 32bit or 64bit Windows. Includes Niagara Historical Database, Workplace AX, OBIX client-server driver for connecting to Niagara based controllers only. No device limit | |
| Supervisor Upgrade | WEB-S-AX-100-UP/U | Windows 32/64 Bit | N/A | N/A | Upgrade Small building Windows supervisor from a max of 3 WEBS Controllers to a max of 100 WEBS Controllers. | |
| | WEB-S-AX-UNL-UP/U | Windows 32/64 Bit | N/A | N/A | Upgrade Medium Building Windows Supervisor from a max of 100 WEBS-AX Controllers to an unlimited number of WEBS Controllers. | |
| Small Building Supervisor | W-S-AX-LNX3-0/U | Linux | 3 | Yes | WEBS-AX Open License Supervisor software for 32bit or 64bit Linux. Includes Niagara Historical Database, Workplace AX, OBIX client-server driver for connecting to Niagara based controllers only. 3 Device Max | |
| Medium Building Supervisor | W-S-AX-LNX100-0/U | Linux | 100 | Yes | WEBS-AX Open License Supervisor software for 32bit or 64bit Linux. Includes Niagara Historical Database, Workplace AX, OBIX client-server driver for connecting to Niagara based controllers only. 100 Device Limit | |
| Large Building Supervisor | W-S-AX-LNXUNL-0/U | Linux | No Limit | Yes | WEBS-AX Open License Supervisor software for 32bit or 64bit Windows. Includes Niagara Historical Database, Workplace AX, OBIX client-server driver for connecting to Niagara based controllers only. No device limit | |
| Supervisor Upgrade | W-S-AX-LNX100-UP/U | Linux | N/A | N/A | WEBS-AX Supervisor software for 32-bit or 64-bit Linux. Includes Niagara Historical Database, Workplace AX, OBIX client-server driver for connecting to Niagara based controllers only. No device limit. | |
| | WEB-S-AX-LNXUNL-UP/U | Linux | N/A | N/A | Upgrade Small Building Linux Supervisor from a max of 3 WEBS Controllers to a max of 100 WEBS Controllers. | |

^a Windows 32-Bit operating system: Windows XP Pro, Windows 7, Windows 2003 or 2008 server VMware Server Version 2
 Windows 64-Bit operating system Win64 version of Windows XP Professional or Win64 version of Windows 7 VMware Server Version 2,
 Linux operating system Red Hat Enterprise Linux 5

Applications

| ENERGY | Product | Part Number | Device Limit | Description |
|------------------|----------------|--------------|---|--|
| | Tenant Billing | WEB-TBS-AX/U | 10 Tenants | WEBS Tenant Billing Service (TBS), includes license for 10 tenants. Must be installed on WEBStation-AX |
| WEB-TBS-AX-10/U | | 10 Tenants | Adds 10 tenants to a TBS License | |
| WEB-TBS-AX-25/U | | 25 Tenants | Adds 25 tenants to a TBS License | |
| WEB-TBS-AX-50/U | | 50 Tenants | Adds 50 tenants to a TBS License | |
| WEB-TBS-AX-100/U | | 100 Tenants | Adds 100 tenants to a TBS License | |
| Energy Analytics | WES-STA-AX/U | 1 Controller | Allows multiple points within 1 controller to be retrieved and used within energy analytics | |
| | WES-PNT-AX/U | 1 Point | Allows 1 point to be retrieved and used within energy analytics | |

Driver

| WEB Station | Driver | Connectivity | Open Protocol |
|-------------|---------------|--------------|---------------|
| | Assure ID* | Ethernet | |
| | BACnet | | Yes |
| | DB2 | | Yes |
| | File (CSV) | | Yes |
| | HTTPS (SSL) | | Yes |
| | LON | | Yes |
| | MODBUS | | Yes |
| | MSSQL | | Yes |
| | MySQL | | Yes |
| | Niagara (Fox) | | |
| | OBIX (XML) | | Yes |
| | OPC | | Yes |
| | OpenADR | | Yes |
| | Oracle | | Yes |
| | RedLINK | | |
| SNMP | Yes | | |
| Video | | | |

*Available as an option for Enterprise Security







| WEB Controller | Driver | Connectivity | Open Protocol |
|----------------|-------------------|------------------------------|---------------|
| | AmericanAuto | Serial | |
| | AndoverAC-256 | Serial | |
| | Andover (INF) | Serial | |
| | BACnet | Ethernet/Serial | Yes |
| | Carrier (CCN) | Serial | |
| | Flex Serial | Serial | |
| | GPRS | Wireless | Yes |
| | Honeywell (C-bus) | Serial | |
| | HTTPS (SSL) | Ethernet | Yes |
| | LON | Ethernet/FTT-10 Twisted Pair | Yes |
| | McQuay (OPL) | Serial | |
| | MODBUS | Ethernet/Serial | Yes |
| | OPC | Ethernet | Yes |
| | OpenADR | Ethernet | Yes |
| | RedLINK | Wireless | |
| | Security Comm.* | Serial | Yes |
| | SMS | Ethernet | Yes |
| | SNMP | Ethernet | Yes |
| | Video | Ethernet | |
| Z-Wave | Wireless | Yes | |

*Available as an option for Security Controllers

NOTE: A list of available drivers is posted on the Honeywell Buildings Forum (<http://buildingsforum.honeywell.com>)

M34734

Controllers

| | Platform | Memory | I/O | Open License | Communication Ports | Description |
|---|------------|----------------------------|--|--------------|--|---|
|  | WEB-300E | 256 MB 128 MB Flash | Din 16/34 | 0 | 2 10/100 MB Ethernet ports, NDI0 port and 2 communication card option slots, 2 serial (RS232, RS485) | The WEB-300E standard features include Niagara station and Web User Interface Standard drivers include oBIX client/server and Niagara Network (Fox) client/server. |
| | AX3-PPC | 256 MB 128 MB Flash | Din 16/34 | 0 | 2 10/100 MB Ethernet ports, NDI0 port and 2 communication card option slots, 1 USB, 2 serial (RS232, RS485) | The AX3-PPC special licensed product with limited drivers features include Niagara station and Web User Interface. Standard drivers include oBIX client/server and Niagara Network (Fox) client/server Requires AX release 3.7 or higher. |
|  | WEB-600E | 128 MB 128 MB Flash | Din 16/34 | 0 | 2 10/100 MB Ethernet ports NDI0 Port 2 serial (RS-232, RS-485) 2 Communication card option slots | The WEB-600E standard features include WEBS-AX station and Web User Interface and SRAM Module. Standard drivers include oBIX Client / Server and Niagara Network (Fox) Client / Server. The WEB-600E is designed for Battery less operation and DIN rail mounting. Requires release 3.6.47 or higher |
|  | WEB-603 | 128 MB 128 MB Flash | 6 Universal Inputs, 4 Form C Relay Outputs | 0 | 2 10/100 MB Ethernet ports 2 serial (RS-232, RS-485) 1 LonWorks port – FTT-10A 1 Option slot | The WEB-603 standard features include Web User Interface and Niagara Connectivity, and oBIX Client/Server driver. Includes steel wall mountable enclosure with 120V power supply. Can host either a WEB R2 station 2.301.535 or higher or a WEBS-AX station release 3.6.47 or higher. |
| | WEB-645 | 128 MB 128 MB Flash | — | 0 | 2 10/100 MB Ethernet ports, 2 RJ-45 Connectors for RS-232 port 4 Screw Terminal RS-485 ports 1 Communication Card Option Slot | The WEB-645 standard features include Niagara Station, Web User Interface and WEBS Connectivity, and oBIX Client/Server driver. Includes steel wall mountable enclosure with 120V power supply. Can host either a WEB R2 station 2.301.535 or higher or a WEBS-AX station release 3.6.47 or higher |
|  | WEB-RB-603 | 128 MB 128 MB Flash | 6 Universal Inputs, 4 Form C Relay Outputs | 0 | 2 10/100 MB Ethernet ports 2 serial (RS-232, RS-485) 1 LonWorks port – FTT-10A 1 Option slot | Direct-fit replacement circuit board for a WEB-603 controller, with matching connector sockets for unplug-replug installation with existing controller wiring. The WEB-RB-603 standard features include Web User Interface and Niagara Connectivity, and oBIX Client/Server driver. The unit can host either a WEB R2 station 2.301.535 or higher or a WEBS-AX station release 3.6.47 or higher. |
| | WEB-RB-645 | 128 MB 128 MB Flash | — | 0 | 2 10/100 MB Ethernet ports, 2 RJ-45 Connectors for RS-232 port 4 Screw Terminal RS-485 ports 1 Communication Card Option Slot | Direct-fit replacement circuit board for a WEB-645 controller, with matching connector sockets for unplug-replug installation with existing controller wiring. The WEB-645 standard features include Niagara Station, Web User Interface and WEBS Connectivity, and oBIX Client/Server driver. The unit can host either a WEB R2 station 2.301.535 or higher or a WEBS-AX station release 3.6.47 or higher. |
|  | WEB-700 | 1 GB 1 GB Flash | Ext. 16 | 0 | 2 Gigabit Ethernet ports, 2 standard communication card slots, 2 serial (RS232, RS485) | The WEB-700 standard features include Niagara station and Web User Interface. Standard drivers include oBIX client/server and Niagara Network (Fox) client/server. Requires AX Release 3.5 or higher |
|  | SEC-H-602 | 256 MB RAM 128 MB Flash | 6 Supervised Inputs, 4 Form C Relay Outputs, and 3 Digital Inputs | * | Connections for 2 Card Readers, includes 2 10/100 MB Ethernet ports, (1) RS-485 serial port, (1) RS-232 serial port, and 2 communication card option slots | Includes WEBS Security Appliance, Web UI and the following standard drivers: oBIX client/server, Niagara Network (Fox) client/server and BACNet IP Server, and BACNet IP Server. Supports up to 32 card readers, 20,000 personnel records and 50,000 transactional history records and security/BAS from single controller |
| | SEC-H-616 | 256 MB RAM 128 MB Flash | 6 Supervised Inputs, 4 Form C Relay Outputs, and 3 Digital Inputs | * | Connections for 2 Card Readers, 2 10/100 MB Ethernet ports, (1) RS-485 serial port, (1) RS-232 serial port, and 2 communication card option slots | Includes WEBS Security Appliance, Web UI and the following standard drivers: oBIX client/server, Niagara Network (Fox) client/server and BACNet IP Server, and BACNet IP Server. Supports up to 32 card readers, 20,000 personnel records and 50,000 transactional history records and security/BAS from single controller |

0 = Open licensed controller is optional
* = Controller comes standard with open license.

| SECURITY | Product | Part Number | Operating System | Device Limit | Open License Available | Description |
|----------|-------------------------------------|-----------------|-------------------|--------------|------------------------|--|
| | Security Small Building Supervisor | SEC-H-ENT-8/U | Windows 32/64 Bit | 6 | No | WEBS-AX Security SBS, includes enterprise security application with 32 reader license, both MySQL and MS SQL Server database drivers and oBIX client/server driver for connecting to Niagara based controllers only. 6 Controller and 64 Reader Limit. |
| | Security Medium Building Supervisor | SEC-H-ENT-100/U | Windows 32/64 Bit | 100 | No | Security Supervisor with MySQL and MS SQL. Includes enterprise security application with 32 reader license, WEBS-AX Security Supervisor, both MySQL and MS SQL Server database drivers and oBIX client/server driver for connecting to Niagara based controllers only. Max of 100 Security Controllers. |
| | Security Large Building Supervisor | SEC-H-ENT-250/U | Windows 32/64 Bit | 250 | No | Security Large System Supervisor with MySQL and MS SQL. Includes enterprise security application with 32 reader license, WEBS-AX Security, and both MySQL and MS SQL Server database drivers. 250 Controller Limit. Includes OBIX client/server driver for connecting to Niagara based controllers only. |
| | Supervisor Upgrade | SEC-H-U-100/U | Windows 32/64 Bit | N/A | N/A | Security ENT upgrade. Upgrade an existing SEC-H-ENT-6 SBS Security Supervisor to a SEC-H-ENT-100 Security Supervisor. Supervisor requires additional reader licenses to expand system capacity. |
| | | SEC-H-U-250/U | Windows 32/64 Bit | N/A | N/A | Security ENT upgrade. Upgrade an existing SEC-H-ENT-100 Security AX Supervisor to a SEC-H-ENT-250 Large System Security Supervisor. Supervisor requires additional reader licenses to expand system capacity. |

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WEBS-AX System

Accessories

| Product Options | Part Number | Serial/ Wireless/ Twisted Pair | Description |
|---|-------------------|--------------------------------------|--|
| Reveal – small display (color & grayscale) | LCD-CT043A100/U | Serial | Color LCD Touchscreen |
| | LCD-GT043A100/U | Serial | Grayscale LCD Touchscreen |
| I/O modules – din mount (16/34 points), remote (16) | IO-16-H/U | Serial | Includes 8 Universal Inputs, 4 Form A Relay Outputs, and 4 0-10 VDC Analog Outputs. 16 Point I/O Module |
| | IO-34-H/U | Serial | Includes 16 Universal Inputs, 10 Form A Relay Outputs, and 8 0-10 VDC Analog Outputs. This IO-34 also contains an on-board 24V AC/DC power supply |
| | IO-16-REM-H/U | Serial | Includes 8 Universal Inputs, 4 Form A Relay Outputs, and 4 0-10 VDC Analog Outputs. |
| | SEC-H-RIO/U | Serial | Security Remote I/O |
| | SEC-H-R2R/U | Serial | Security Remote Reader |
| Option Cards | NPB-2X-RS485/U | Serial | RS 485 Card |
| | NPB-2X-RedLINK | Serial | Honeywell RedLINK Card |
| | NPB-GPRS-W-H/U | Wireless | GPRS Modem Kit |
| | NPB-RS232/U | Serial | RS 232 Card |
| | NPB-ZWAVE/U | Wireless | Z-wave Card |
| | TB-VWG-APP-1014/U | Wireless | Wireless Zigbee Card |

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WEBS-AX™ System HVAC Controllers Options

Programmable Field Controllers

| | Controller Model ¹ | Communication Protocol ² | Equipment Type | UI | DI | AO | DO | Velocity Pressure Sensor (Microbridge) | Series 60 Floating Actuator |
|---|-------------------------------|-------------------------------------|----------------|----------------|----|----|----------------|--|-----------------------------|
| | | | | | | | | | |
|  | PUB6438S | BACnet MS/TP | Unitary | 6 | 4 | 3 | 8 | NO | NO |
| | PUL6438S | LonWorks | | 6 | 4 | 3 | 8 | NO | NO |
| | PUB6438SR | BACnet MS/TP | | 6 | 4 | 3 | 8 ³ | NO | NO |
| | PUL6438SR | LonWorks | | 6 | 4 | 3 | 8 ³ | NO | NO |
| | PVB6438NS | BACnet MS/TP | VAV | 6 | 4 | 3 | 8 | YES | NO |
| | PVL6438NS | LonWorks | | 6 | 4 | 3 | 8 | YES | NO |
|  | PVB6436AS | BACnet MS/TP | VAV | 6 | 4 | 3 | 6 | YES | YES |
| | PVL6436AS | LonWorks | | 6 | 4 | 3 | 6 | YES | YES |
|  | PUL1012S | LonWorks | Unitary | 1 ⁴ | 0 | 1 | 2 | NO | NO |
| | PUB1012S | BACnet MS/TP | | | | | | | |
| | PUL4024S | LonWorks | | 4 ⁵ | 0 | 2 | 4 | NO | NO |
| | PUB4024S | BACnet MS/TP | | | | | | | |
| | PVL4024NS | LonWorks | VAV | 4 ⁵ | 0 | 2 | 4 | YES | NO |
| | PVB4024NS | BACnet MS/TP | | | | | | | |
|  | PVL0000AS | LonWorks | VAV | 0 | 0 | 0 | 0 | YES | YES |
| | PVB0000AS | BACnet MS/TP | | | | | | | |
| | PVL4022AS | LonWorks | | 4 ⁵ | 0 | 2 | 2 | YES | YES |
| | PVB4022AS | BACnet MS/TP | | | | | | | |

UI - Universal Input, DI - Digital Input, AO - Analog Output, and DO - Digital Output


¹ BACnet models BTL listed

² One Universal Input (UI-1*) is user selectable as a fast digital pulse meter


³ DO's are 24 VAC relays (1.0 amp running)

⁴ Spyder Individually Licensed Controller (ILC) is a fully programmable controller for any Niagara^{AX} Framework[®] platform providing the greatest flexibility. Each model listed as an ILC model

Additional I/O Module






| | Model | Communication Protocol | Universal Input | Digital Input | Analog Output | Digital Output |
|---|----------|------------------------|-----------------|---------------|---------------|----------------|
|  | SIO6042 | Sytk | 6 | 0 | 4 | 2 |
| | SIO4022 | Sytk | 4 | 0 | 2 | 2 |
| | SIO12000 | Sytk | 12 | 0 | 0 | 0 |

Advanced Configurable Field Controllers

| | Model | Communication Protocol | Programmable Type | UI | DI | AO | DO | Velocity Pressure Sensor (Microbridge) | Series 60 Floating Actuator |
|---|----------------|------------------------|-------------------|----|----|----|----------------|--|-----------------------------|
| | | | | | | | | | |
|  | CUL6438SR-CV1 | LonWorks | CVAHU | 6 | 4 | 3 | 8 ³ | NO | NO |
| | CVL4024NS-VAV1 | LonWorks | VAV | 4 | 0 | 2 | 4 | YES | NO |
| | CVL4022AS-VAV1 | LonWorks | VAV | 4 | 0 | 2 | 2 | YES | YES |

³ DO's are 24 VAC relays (1.0 amp running)

Configurable Field Controllers

| | Model | Application | Inputs | | | | | Outputs | | | | |
|---|------------|--------------------------|-------------|-----------|---------|---------------------|---------------|---------------------|-------|-------|--------|-----|
| | | | Wall Module | Resistive | Voltage | Dry Contact Digital | Bypass Button | Integrated Actuator | Relay | Triac | Analog | LED |
|  | W7750A | CVAHU | * | 1 | | 2 | * | | 6 | | | 1 |
| | W7750B | CVAHU | * | 4 | 2 | 4 | * | | | 8 | | 1 |
| | W7750C | CVAHU | * | 4 | 2 | 4 | * | | | 5 | 3 | 1 |
| | W7753 | Unit Ventilator | * | 2 | 2 | 4 | * | | | 8 | | |
| | W7761 | Remote Input/Output | | 2 | 2 | 4 | | | | 8 | | |
|  | W7751H | VAV | * | 1 | 1 | | * | * | | 4 | | 1 |
| | W7751B/D/F | VAV | * | 2 | 1 | 3 | * | | | 8 | | 1 |
|  | W7752 | FCU | * | | | 1 | * | | 3 | | | 1 |
|  | W7762/3 | Hydronic Controller | * | | | | | | 1 | 4 | | |
|  | T7350H | Communicating Thermostat | | | | | | | 8 | | | |

* = Comes standard

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WEBS-AX System

WEB-600E Controller



The WEB-600E is ideal for smaller facilities, remote sites, and for distributing control and monitoring throughout large facilities. Optional input/output modules can be plugged in for applications where local control is required. The WEB-600E also supports a wide range of field busses for connection to remote I/O and stand-alone controllers. In small facility applications, the WEB-600E is all you need for a complete system.

The WEB-600E serves data and rich graphical displays to a standard web browser via an Ethernet LAN or remotely over the Internet, or dial-up modem. In larger facilities, multibuilding applications and large-scale control system integrations, WEBS-AX Supervisor™ software can be used to aggregate information (real-time data, history, alarms, etc.) from large numbers of WEBS into a single unified application. The WEBS-AX Supervisor can manage global control functions, support data passing over multiple networks, connect to enterprise level software applications, and host multiple, simultaneous client workstations connected over the local network, the Internet, or dial-up modem.

- Embedded PowerPC Platform@ 524 MHz
- Supports open and legacy protocols
- QNX Real-time Operating System
- Web User interface (standard) serves rich graphical browser presentations
- Run stand-alone control, energy management, and integration applications within the WEB-600E series controllers
- Supports two optional communications boards
- Optional 16 and 34 point I/O Modules
- Data Recovery Services prevents data loss during power interruptions
- Optional battery is available for extended runtime

| Material Number | Description | Application | Used With |
|------------------|---|-------------|------------------|
| W-600E-AX-DEMO/U | 128 MB RAM/128 MB Flash, 2 10/100 Mb Ethernet ports, 1 RS-485 serial port, 1 RS232 serial port, NDIO port, 2 comm card slots, and SRAM module. Includes oBIX Client/Server and Fox Client/Server. Requires AX release 3.6 or higher. | | WEBS-AX |
| WEB-600E/U | The WEB-600E is designed for Battery less operation and DIN rail mounting. Standard features include WEBS-AX station and Web User Interface. Standard drivers include oBIX Client / Server and Niagara Network (Fox) Client / Server. | Controller | WEBS-AX Platform |
| WEB-600E-O/U | The WEB-600E is designed for Battery less operation and DIN rail mounting. Standard features include WEBS-AX station and Web User Interface. Standard drivers include oBIX Client / Server and Niagara Network (Fox) Client / Server. | Controller | WEBS-AX Platform |
| WEB-600E-US/U | The WEB-600E is designed for Battery less operation and DIN rail mounting. Standard features include WEBS-AX station and Web User Interface. Standard drivers include oBIX Client/Server and Niagara Network (Fox) Client/Server. Made in USA | Controller | WEBS-AX Platform |
| WEB-600E-US-O/U | The WEB-600E is designed for Battery less operation and DIN rail mounting. Standard features include WEBS-AX station and Web User Interface. Standard drivers include oBIX Client/Server and Niagara Network (Fox) Client/Server. Made in USA | Controller | WEBS-AX Platform |

WEB-201; WEB-600; WEB-600E Accessories



Used With: WEB-201; WEB-600

Compatible With: WEB-201 Platform; WEB-600 Platform

Operating Temperature Range: 32°F to 122°F (0°C to 50°C)

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Building Management Interface: WEBs-AX

| Material Number | Description | I/O Count | Commissioning Software | Approvals, Underwriters Laboratories Inc. | Approvals, CSA | Approvals, FCC | Approvals, CE |
|--|---|---|------------------------|---|--|---------------------|---------------|
| Enclosure | | | | | | | |
| ENC-H-001/U | WEBs Small Enclosure including 24 Vac Power Supply and 120 Vac Power Input (18 in. high x 12 in. wide x 4 in. deep) | | | | | | |
| ENC-H-002/U | WEBs Large Enclosure including 24 Vac Power Supply and 120 Vac Power Input (28 in. high x 12 in. wide x 4 in. deep) | | | | | | |
| ENC-H-BPK-1/U | WEBs Small Enclosure Backplate (8 in. x 11 in.) | | | | | | |
| ENC-H-BPK-2/U | WEBs Large Enclosure Backplate (11 in. x 11 in.) | | | | | | |
| Input / Output Expansion Module | | | | | | | |
| IO-16-H/U | 16 Point Input / Output Expansion Module | 8 Universal Inputs, 4 Digital Relay Outputs, 4 Analog Outputs | | UL 916, cUL listed | CSA C22.2 No. 205-M1983 Signal Equipment | FCC part 15 Class A | Approved |
| IO-16-H-US/U | 16 Point Input / Output Expansion Module (Manufactured in USA) | 8 Universal Inputs, 4 Digital Relay Outputs, 4 Analog Outputs | | UL 916, cUL listed | CSA C22.2 No. 205-M1983 Signal Equipment | FCC part 15 Class A | Approved |
| IO-34-H/U | 34 Point Input / Output Expansion Module including Internally dedicated 24 Volt Power Supply | 16 Universal Inputs, 10 Digital Relay Outputs, 8 Analog Outputs | | UL 916, cUL listed | CSA C22.2 No. 205-M1983 Signal Equipment | FCC part 15 Class A | Approved |
| IO-34-H-US/U | 34 Point Input / Output Expansion Module (Manufactured in USA) including Internally dedicated 24 Volt Power Supply | 17 Universal Inputs, 10 Digital Relay Outputs, 8 Analog Outputs | | UL 916, cUL listed | CSA C22.2 No. 205-M1983 Signal Equipment | FCC part 15 Class A | Approved |
| Modem Option Card | | | | | | | |
| NPB-GPRS-H/U | WEBs Cellular Modem without SIM Card | | WEBs AX | | | | |
| NPB-GPRS-W-H/U | WEBs Cellular Modem with Wyleless SIM Card | | WEBs AX | | | | |
| Power Adapter | | | | | | | |
| NPB-WPM-US/U | Wall Power Adapter - US Plug type | | | UL 916, cUL listed | CSA C22.2 No. 205-M1983 Signal Equipment | FCC part 15 Class A | Approved |
| Power Module | | | | | | | |
| NPB-PWR-H/U | 24 Volt DIN mounted power module | | | UL 916, cUL listed | CSA C22.2 No. 205-M1983 Signal Equipment | FCC part 15 Class A | Approved |
| Service Fee | | | | | | | |
| WEBS-REIMAGE/U | Re-imaging service for Out of Warranty WEBs controllers | | | | | | |

WEBS-AX System

WEB-201/WEB-600 Drivers

Honeywell WEB-201 Platform

Applications: Software-Driver

Building Management Interface: WEBS-AX

| Material Number | Description | Compatible With | Used With |
|-----------------|---|------------------|-----------|
| NPM-128/U | WEB-201 Memory Expansion License from 64 to 128 MB | WEB-201 Platform | WEB-201 |
| NPM-256MB/U | WEB-600 Memory Expansion License from 128 to 256 MB | WEB-600 Platform | WEB-600 |

WEB-300E Controller



The WEB-300E is a member of Honeywell's suite of Java-based controller/server products, software applications and tools, which are designed to integrate a variety of devices and protocols into unified, distributed systems. Honeywell WEBS-AX products are powered by the revolutionary WEBS-AX Framework, the industry's first software technology designed to integrate diverse systems and devices into a seamless system.

- Embedded Power PC platform @ 400 MHz
- Supports open and legacy protocols
- QNX Real-time Operating System
- Web User interface (standard) serves rich graphical browser presentations
- Run stand-alone control, energy management, and integration applications within the WEB-300E series controllers
- Supports two optional communications boards
- Optional 16 and 34 point I/O Modules
- Data Recovery Services prevents data loss during power interruptions
- Optional battery is available for extended runtime
- Open or closed licensing options

Includes: Two Ethernet ports, one RS-232 port, and one RS-485 port. Web User Interface and Niagara Connectivity included. oBIX Client/Server driver included.

Operating Temperature Range: 32°F to 140°F (0°C to 60°C)

Approvals, Underwriters Laboratories Inc.: UL 916

Approvals, CSA: CSA C22.2

Approvals, FCC: FCC part 15 Class A

Approvals, CE: Approved

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Building Management Interface: WEBS-AX

| Material Number | Description | Application | Used With |
|------------------|--|---|------------------|
| WEB-300E | Includes two Ethernet ports, one RS-232 port, and one RS-485 port. Web User Interface and Niagara Connectivity included. oBIX Client/Server driver included. | Controller is ideal for smaller facilities, remote sites, and for distributing control and monitoring throughout large facilities | WEBS-AX Platform |
| WEB-300E-AX-DEMO | Web 300E demo kit | Demo Controller Kit | WEBS AX Platform |
| WEB-300E-O | WEB-300E with Open License, includes two Ethernet ports, one RS-232 port, and one RS-485 port. Web User Interface and Niagara Connectivity included. oBIX Client/Server driver included. | Controller is ideal for smaller facilities, remote sites, and for distributing control and monitoring throughout large facilities | WEBS-AX Platform |

WEB-700 Controller



The WEB-700/O is a next generation embedded server product that runs on the standard NiagaraAX platform. This embedded server platform supports multiple applications like building automation and energy management on the same platform. The WEB-700 is designed to provide high performance for control functions in a convenient din-rail mounted package. The WEB-700 can be accessed by remote Web browsers over a local Intranet or via the Internet or an optional GPRS Modem card.

For medium to large facilities, the WEB-700 is an ideal solution – this powerful platform with its embedded user interface and rich graphical displays is all that’s needed to handle the control, monitoring, and energy applications of a medium to large sized facility.

Includes: WEB User Interface, Niagara Connectivity (Fox), oBix Client/Server driver

Compatible With: WEBs-AX Platform

Operating Temperature Range: 32°F to 122°F (0°C to 50°C)

Approximate, Dimensions: 6 3/8 in. wide x 4 7/64 in. high x 2.5 in. deep; 8 1/2 in. wide x 6 in. high x 2 5/8 in. high (215.9 mm wide x 152.4 mm high x 68.3 mm high; 16.2 cm wide x 10.5 cm high x 6.4 cm deep)

Shipping and Storage Temperature Range: 32°F to 140°F (0°C to 60°C)

Approvals, Underwriters Laboratories Inc.: UL 916, cUL listed

Approvals, CSA: CSA C22.2 No. 205-M1983 Signal Equipment

For multi-site enterprise applications, or large scale control applications, the WEB-700 is ideal for providing the distributed control and monitoring required for reliable operation of a large scale system. The WEBs-AX Supervisor may be used to aggregate data from multiple sites and controllers, manage global control functions, monitor energy usage, support multiple networks, and host multiple client connections for a single unified system presentation.

- QNX® Operating System with IBM J9 Java Virtual Machine
- Supports standard Niagara objects and feature set components
- Powerful 440Epx PowerPC processor @ 667 MHz.
- Scalable Plug-in DDR-2 memory (field upgradable)
- Gigabit Ethernet & USB ports
- RS-232 and Isolated RS-485 ports
- Communication option slots for optional communication interface cards
- Supports Serial RS-232, RS-485 communication protocols with optional drivers
- Supports LonWorks with optional communication card, BACnet, Modbus, Sedona Framework with optional wireless option card, and Remote I/O modules
- Power - 15 volts DC @ 20 W from optional universal input Din-rail mounted supply
- Rechargeable internal NIMH battery backup, for short term power fail events
- Built-in recharging and monitoring support for an external 12V sealed lead-acid backup battery, for longer power fail durations. Built-in contact inputs are also available for UPS monitoring
- Multiple Mounting Options – DIN rail mounting or panel mounting using tabs on unit base

Approvals, FCC: FCC part 15 Class A

Approvals, CE: Approved

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Building Management Interface: WEBs-AX

Replacement Parts:

WEB-700/U – WEB-700 Controller

Accessories:

WEB-700/U – WEB-700 Controller

WEB-700-O/U – WEB-700 Controller

| Material Number | Description | Application | Used With |
|-----------------|--------------------|-------------|------------------|
| WEB-700/U | WEB-700 Controller | Controller | WEBs-AX Platform |
| WEB-700-O/U | WEB-700 Controller | Controller | WEBs-AX Platform |

WEBS-AX System

AX3-PPC Programmable Plant Controller



Honeywell's AX3-PPC Programmable Plant Controller is part of Honeywell's portfolio of Java-based controller/server products, software applications and tools, designed to integrate a variety of devices and protocols into unified, distributed systems.

- 34 hardware control points (expandable with NDIO and NRIO modules).
- Pre-Licensed for five remote devices – either BACnet, Modbus or Lon.
- Web User interface serves rich presentations and live data to any browser.
- Two Communications board sockets for optional communications card.
- Built-in 24 volt AC/DC input power supply.
- Din Rail mountable for quick installation.
- Supports up to 150 total points and up to 5 remote devices.

Includes: Standard drivers include oBIX Client / Server and Niagara Network (Fox) Client / Server. Also includes Modbus, BACnet and Lon drivers limited to a total of 5 devices or 150 points per controller.
I/O Count: 16 Universal Inputs (Type 3 (10k) Thermistors, 0-1000 ohm, 0-10 volts, 0-20 mA with external resistor); 10 relay outputs (Form A contacts, 24 VAC @ .5 amp rated); 8 analog outputs (0-10 volt DC)
Voltage: Requires 24 Vac or 24 Vdc Power Source
Operating Temperature Range: 32°F to 140°F (with battery 32°F to 122°F) (0°C to 60°C (with battery 0°C to 50°C))
Approximate, Dimensions: Including mounting ears 13-3/32 in. wide x 4-13/16 in. high (including connectors) x 2-7-16 in. deep (Including mounting ears 33.26 cm wide x 12.24 cm high (including connectors) x 6.19 cm deep)
Shipping and Storage Temperature Range: 32°F to 140°F (0°C to 60°C)
Approvals, Underwriters Laboratories Inc.: UL 916

Approvals, CSA: cUL listed to Canadian Standards Association (CSA) C22.2 No. 205-M1983 "Signal Equipment"
Approvals, FCC: FCC part 15 Class B
Approvals, CE: Approved
Operating System: WEBS-AX 3.8 or later
Power Input: 24 Volt AC or DC input power supply; Termination is via screw type terminal block
Operating Humidity Range (% RH): 5 to 95% RH, non-condensing
Building Management Interface: WEBS-AX
Network Communications: 2 Ethernet Ports – 10/100 Mbps (RJ-45 Connectors); 1 RS 232 Port (RJ-45 connector); 1 RS 485 non isolated port (Screw Connector on base board); 2 card slots for optional communication cards

| Material Number | Description | Application | Used With |
|-----------------|--|--|------------------|
| AX3-PPC | AX 334 PROGRAMMABLE PLANT CONTROLLER 34 IO | Controller is ideal for controlling and monitoring a building system including HVAC equipment, lighting, and meters. | WEBS-AX Platform |
| AX3-PPC-O | AX 334 PROGRAMMABLE PLANT CONTROLLER 34 IO WITH OPEN LICENSE | Controller is ideal for controlling and monitoring a building system including HVAC equipment, lighting, and meters. | WEBS-AX Platform |

WEB-603; WEB-645 Controller



Honeywell's WEB-603 and WEB-645 are embedded platform controller/servers designed for remote monitoring and control applications. The units combine integrated control, supervision, data logging, alarming, scheduling and network management functions with Internet connectivity and web serving capabilities in a small, compact platform. The controller/servers make it possible to control and manage external devices over the Internet and present real time information to users in web-based graphical views. In addition to supporting WEBs-AX Framework applications, the controller/servers can optionally support Niagara R2 applications. This option provides the ideal platform for projects currently utilizing WEBs-R2 technology where a cost-effective migration to the flagship WEBs-AX Framework is desired. The WEBs-AX platform can be installed and optionally configured to support a facility utilizing a WEBs-R2 Framework application today. At a later date, the facility can migrate to a WEBs-AX Framework application, thus spreading the cost of the migration across multiple phases. These controller/servers are ideal for smaller facilities, remote sites, and for distributing control and monitoring throughout large facilities. It is also ideal for managing and controlling today's energy applications.

- Embedded PowerPC Platform @ 524 MHz
- One LON FTT10A port for LON device integration
- Web UI services to support many simultaneous users using an optional internal modem over the intranet or Internet via a standard web browser

WEB-603 Connections

- Direct, on-board I/O with six universal inputs, and 4 Form C relay outputs
- One RS-485 port for connection to open and proprietary protocol devices
- One RS-232 port for Integration or technical support
- One option slot supporting NPB-XXX option modules

WEB-645 Connections

- Four RS-485 ports for connection to open and proprietary protocol devices
- Two RS-232 ports (electrically isolated) for Integration or technical support
- One WEBs-AX option slot supporting NPB-XXX option modules

Application: Controller

Used With: WEBs-AX Platform

Operating Temperature Range: 32°F to 122°F (0°C to 50°C)

Approximate, Dimensions: 11 in. wide x 14 in. high x 2 1/2 in. deep (27.94 cm wide x 35.56 cm high x 6.35 cm deep)

Shipping and Storage Temperature Range: 32°F to 158°F (0°C to 70°C)

Approvals, Underwriters Laboratories Inc.: UL 916, cUL listed

Approvals, CSA: CSA C22.2 No. 205-M1983 Signal Equipment

Approvals, FCC: FCC part 15 Class B

Approvals, CE: Approved

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Building Management Interface: WEBs-AX

| Material Number | Description | Includes |
|-----------------|--|--|
| WEB-603-AX/U | WEB-603 controller, with on-board I/O points with metal enclosure. Requires WEBs-AX 3.6.47 Release or later when operating an AX workstation. | Base Unit including two Ethernet ports, one RS-232 port, one RS-485 port, one LonWorks® FTT-10A port, six universal inputs, four Form C relay outputs, and closed NiCS. Web User Interface and Niagara Connectivity included. oBIX Client/Server driver included. |
| WEB-603-AX-O/U | WEB-603 controller Open license, with on-board I/O points with metal enclosure. Requires WEBs-AX 3.6.47 Release or later when operating an AX workstation. | Base Unit including two Ethernet ports, one RS-232 port, one RS-485 port, one LonWorks® FTT-10A port, six universal inputs, four Form C relay outputs, and open NiCS. Web User Interface and Niagara Connectivity included. oBIX Client/Server driver included. |
| WEB-603I-AX/U | Controller | International version of Base Unit including two Ethernet ports, one RS-232 port, one RS-485 port, one LonWorks® FTT-10A port, six universal inputs, four Form C relay outputs, and closed NiCS. Web User Interface and Niagara Connectivity included. oBIX Client/Server driver included. |
| WEB-603I-AX-O/U | Controller | International version of Base Unit including two Ethernet ports, one RS-232 port, one RS-485 port, one LonWorks® FTT-10A port, six universal inputs, four Form C relay outputs, and open NiCS. Web User Interface and Niagara Connectivity included. oBIX Client/Server driver included. |
| WEB-645-AX/U | WEB-645 controller with on-board I/O points with metal enclosure. Requires WEBs-AX 3.6.47 Release or later when operating an AX workstation. | Base Unit including two Ethernet ports, two RS-232 ports, four RS-485 ports, one LonWorks® FTT-10A port, and closed NiCS. Web User Interface and WEBs Connectivity included. oBIX Client/Server driver included. |
| WEB-645-AX-O/U | WEB-645 controller Open license, with on-board I/O points with metal enclosure. Requires WEBs-AX 3.6.47 Release or later when operating an AX workstation. | Base Unit including two Ethernet ports, two RS-232 ports, four RS-485 ports, one LonWorks® FTT-10A port, and open NiCS. Web User Interface and WEBs Connectivity included. oBIX Client/Server driver included. |
| WEB-645I-AX/U | Controller | International version of the Base Unit including two Ethernet ports, two RS-232 ports, four RS-485 ports, one LonWorks® FTT-10A port, and closed NiCS. Web User Interface and WEBs Connectivity included. oBIX Client/Server driver included. |
| WEB-645I-AX-O/U | Controller | International version of the Base Unit including two Ethernet ports, two RS-232 ports, four RS-485 ports, one LonWorks® FTT-10A port, and open NiCS. Web User Interface and WEBs Connectivity included. oBIX Client/Server driver included. |

WEBS-AX System

WEB-403 and WEB-545 Replacement Boards



Honeywell's WEB-RB-603 and WEB-RB-645 are embedded replacement controller/server platforms designed for remote monitoring and control applications. These specially designed units provide direct replacement/upgrade capabilities for the older WEB-403 and WEB-545 controllers respectively. The embedded controllers combine integrated control, supervision, data logging, alarming, scheduling and network management functions, integrated I/O with Internet connectivity and web serving capabilities in a small, compact platform. The WEB-RB-603 and WEB-RB-645 make it possible to control and manage external devices over the Internet and present real time information to users in web-based graphical views.

In addition to supporting WEBS-AX powered by NiagaraAX Framework applications, the WEB-RB-603 and WEB-RB-645 can optionally support WEBS-R2 applications. This option provides the ideal platform for projects currently utilizing WEBS-R2 technology where a cost-effective migration to WEBS-AX solution is desired. The WEBS-AX compatible platform can be installed and optionally configured to support a facility utilizing a WEBS-R2 Framework application today. At a later date, the facility can migrate to a NiagaraAX Framework application, thus spreading the cost of the migration across multiple phases.

The WEB-RB-603 and WEB-RB-645 are designed to provide installers an optimized approach to upgrading older Niagara R2 based installations or NiagaraAX installations which currently utilize the WEB-403 or WEB-545 controllers. The WEB-RB-603 or WEB-RB-645 is an exact format replacement circuit board with all connectors and mounting holes in the same locations as the original WEB-403 and WEB-545 products. This design facilitates an easy removal and replacement process requiring minimal time to achieve.

WEB-RB-603 Communications

- Two 10/100 Mb Ethernet port – RJ-45 connection
- One RJ-45 connector for RS-232 port
- One screw terminal RS-485 port (up to 78,600 baud for MSTP)
- One LonWorks port – FTT-10A with Weidmuller connector
- One option slot

WEB-RB-645 Communications

- Two 10/100 Mb Ethernet port – RJ-45 connection
- Two RJ-45 connectors for RS-232 port
- Four screw terminal RS-485 ports (up to 78,600 baud for MSTP)
- One LonWorks port – FTT-10A with Weidmuller connector
- One option slot

Application: Controller

Used With: WEBS-AX Platform

Operating Temperature Range: 32°F to 122°F (0°C to 50°C)

Shipping and Storage Temperature Range: 32°F to 158°F (0°C to 70°C)

Approvals, Underwriters Laboratories Inc.: UL 916, cUL listed

Approvals, CSA: CSA C22.2 No. 205-M1983 Signal Equipment

Approvals, FCC: FCC part 15 Class B

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Building Management Interface: WEBS-AX

| Material Number | Description | Includes |
|-------------------|---|---|
| WEB-R2-RB-6XX-0/U | R2 License for Replacement Board | WEBS-R2 application option which allows the installer to utilize an R2 based station on either the WEB-RB-603 or WEB-RB-645 platforms. Includes WEBS-R2 station license and individual drivers transferred from original license. |
| WEB-RB-603/U | Direct-fit replacement circuit board for a WEB-403 controller | Base Unit including two Ethernet ports, two RS-232 ports, four RS-485 ports, one LonWorks® FTT-10A port, and closed NiCS. Web User Interface and WEBS Connectivity included. oBIX Client/Server driver included. |
| WEB-RB-645/U | Direct-fit replacement circuit board for a WEB-545 controller | Base Unit including two Ethernet ports, two RS-232 ports, four RS-485 ports, one LonWorks® FTT-10A port, and open NiCS. Web User Interface and WEBS Connectivity included. oBIX Client/Server driver included. |

WEBS-AX Software Controller

PC/ Workstation-based Controller.

Compatible With: W-SJ-1M-AX

Building Management Interface: WEBS-AX

| Material Number | Description | Application | Used With |
|-----------------|--|-----------------|-------------------------|
| SJ-2M-UPG-AX/U | Upgrade for WEBS-AX SoftJACE. Increases Niagara point count from 10M to 30M. | Software-Driver | WEBS-AX Soft Controller |
| W-SJ-1M-AX/U | WEBS-AX SoftJACE software for Windows XP | Controller | WEBS-AX Platform |

WEBs-AX Platform - Displays



Reveal™ is an easy-to-operate and robust operator unit for the entire range of WEBs-AX and ComfortPoint (CP) supervisory Controllers. Reveal's touch-panel operation screens allow for easy and self-explanatory operation by finger-tip. User-configurable fast-access lists can contain selected data points, time programs, and parameters, thus permitting plant oriented and customer-oriented operation. Reveal uses Honeywell's patent pending EZ-Nav™ technology to provide real-time status information on an easy-to-use, wall-mounted touch-screen LCD. Reveal has a 480 x 272, High Definition, 24-bit Full Color backlit LCD display. It is also available in a 16-level Extended Temperature gray-scale display. Both displays have a viewing area of 8 in² (51.6 cm²). Reveal has customizable user screens, multi-language capability, and permission-based access control. With these features it provides site personnel the ability to quickly and conveniently access setpoint changes, local alarm data, and other system information. This device can be configured through the WEBs or ComfortPoint (CP) workbench/supervisor using a software driver.

- Multi-Language capable
- Password protection
- Upgrade of installed systems
- System-wide information access
- Multiple Displays for a single Controller
- Protocol independent
- Maintenance free
- Network security

Application: Display

Compatible With: WEB-545, WEB-403; WEB-201, WEB-600

Voltage: 24 Vac

Approximate, Dimensions: 6 9/16 in. long x 3 11/16 in. wide x 1 7/16 in. deep (167 mm long x 93 mm wide x 36 mm deep)

Approvals, CSA: Certified

Approvals, FCC: FCC part 15 Class B requirements

Approvals, CE: CE Mark

Operating System: Windows CE

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Building Management Interface: WEBs-AX

Commissioning Software: WEBs AX

| Material Number | Description | Network Communications | Output Type | Operating Temperature Range | Shipping and Storage Temperature Range | Used With |
|-----------------|-------------------------------|------------------------|---------------------|--------------------------------|--|---------------------|
| LCD-CT043A100/U | Reveal Color Touch screen | 1 RS 485 | Graphical Interface | 14°F to 122°F (-10°C to +50°C) | -4°F to +140°F (-20°C to +60°C) | WEBs-AX Controllers |
| LCD-GT043A100/U | Reveal Grayscale Touch screen | 1 RS 485 | Graphical Interface | -4°F to 158°F (-20°C to 70°C) | -22°F to 176°F (-30°C to 80°C) | WEBs-AX Controllers |

WEBS-AX System

WEBS-AX Platform - Drivers for Controllers

Honeywell AX software drivers and options for P/C Workstations

Application: Software-Driver

Compatible With: WEBS-AX Controllers

Building Management Interface: WEBS-AX

| Material Number | Description | Used With |
|-------------------|--|---------------------|
| DR-AAMPHP-AX/U | American Automatrix PHP Driver over RS-232 or RS-485 | WEBS-AX Controllers |
| DR-AAMPUP-AX/U | American Automatrix PUP Driver over RS-232 or RS-485 | WEBS-AX Controllers |
| DR-AC256-AX/U | AC256 Driver | WEBS-AX Controllers |
| DR-AINF-AX/U | Anfover Infinity Driver for WEBS-AX controllers | WEBS-AX Controllers |
| DR-BAC-CLI-AX/U | BACnet IP Client Driver over Ethernet | WEBS-AX Controllers |
| DR-BAC-SR-EXP-AX | BACnet server option to add to client | WEBS-AX Controllers |
| DR-BAC-SRV-AX/U | BACNet Server includes BACNet IP Client | WEBS-AX Controllers |
| DR-CBUS-AX/U | C-BUS DRIVER LICENSE FOR WEBS AX | WEBS-AX Controllers |
| DR-EIB-AX | EIB Konnex IP Driver | WEBS-AX Platform |
| DR-FLX-AX/U | Flex Driver over RS-232 or RS-485 | WEBS-AX Controllers |
| DR-GLOBAL-AX/U | Enables control of IR controlled AV equipment via an RS-323 connection to a Global Cache FC module | WEBS-AX Controllers |
| DR-HELVAR-AX/U | Helvar Lighting Control Driver | WEBS-AX Controllers |
| DR-HORTS-AX/U | Driver for European Hortsmann meters | WEBS-AX Controllers |
| DR-JOSAM-AX/U | Josam Grease Trap Sensor Driver | WEBS-AX Controllers |
| DR-LANGOVN-AX/U | Lang Oven over RS-232 or RS-485 | WEBS-AX Controllers |
| DR-LONDRIV-AX/U | LON works FTT10 Driver | WEBS-AX Controllers |
| DR-LON-IP-AX/U | LON over IP Driver | WEBS-AX Controllers |
| DR-MBUS232-AX/U | M-Bus RS-232 Driver | WEBS-AX Controllers |
| DR-MCQUAY-AX/U | McQuay Driver for OPM | |
| DR-MDB-AX/U | Driver for Modbus RTU or ASCII over RS-485 or RS232 | WEBS-AX Controllers |
| DR-MDB-S-AX/U | Data server to Modbus Master devices over RS485 | WEBS-AX Controllers |
| DR-MDB-TCP-AX/U | Driver for Modbus TCP (25 node limit recommended) | WEBS-AX Controllers |
| DR-MDB-TS-AX/U | Data server to Modbus Master devices over TCP | WEBS-AX Controllers |
| DR-MSTP-AX/U | MSTP BACnet communications via RS-485 port | WEBS-AX Controllers |
| DR-NS-SIMADR-1/U | AX SUPERVISOR DRIVER FOR ONE ADDITIONAL OPENADR CLIENT CONNECTIVITY TO DRAS SERVER. DR-NS-SIMADR-AX MUST BE ALREADY PRESENT ON HOST | |
| DR-NS-SIMADR-AX/U | AX SUPERVISOR DRIVER FOR OPENADR CLIENT CONNECTIVITY TO DRAS SERVER | |
| DR-REVEAL-ILD | Driver for Reveal LCD Programmable Display | WEBS-AX Controllers |
| DR-S-EIB-500 | KNX and EIB Driver additional 500 points | WEBS-AX Platform |
| DR-S-EIB-AX | KNX and EIB Driver first 500 points | WEBS-AX Platform |
| DR-SIMADR-1/U | AX CONTROLLER DRIVER FOR ONE ADDITIONAL OPENADR CLIENT CONNECTIVITY TO DRAS SERVER. DR-SIMADR-AX MUST BE ALREADY PRESENT ON HOST | |
| DR-SIMADR-AX/U | AX CONTROLLER DRIVER FOR OPENADR CLIENT CONNECTIVITY TO DRAS SERVER | |
| DR-SMSALRM-AX/U | Enables SMS alarms to be sent to any mobile phone via a GSM/GPRS modem connected to the RS-232 | WEBS-AX Controllers |
| DR-SNMP-AX/U | Driver for importing data from SNMP compliant devices. Also exports WEBS alarms to SNMP devices. | WEBS-AX Controllers |
| DR-SPYDER-BAC/U | BACnet Spyder Controllers Driver for WEBS AX | WEBS-AX Controllers |
| DR-SPYDER-LON/U | Lon Spyder Controllers Driver for WEBS AX | WEBS-AX Controllers |
| DR-VDR00T-AX/U | VeederRoot Driver | WEBS-AX Controllers |
| H-SP-SSL/U | BACnet IP Client Driver over Ethernet | WEBS-AX Controllers |
| WEB-AX-EMB/U | Embedded WEBPro-AX tool | WEBS-AX Controllers |

WEBS-AX Platform - Software

Application: Software

Building Management Interface: WEBS-AX

| Material Number | Description | Used With |
|-----------------|---|------------------|
| W-ALARM-CONSL/U | WEBS-AX Alarm Console software for Windows XP | WEBS-AX Platform |
| WEB-S-AX-W/U | AX Workbench | WEBS-AX Platform |

WEBS-AX Platform - Supervisor Software

Application: Software

Building Management Interface: WEBS-AX

Accessories:

WEB-S-AX/U – WEBStation-AX Workstation software for Windows XP

| Material Number | Description | Used With |
|---|---|------------------|
| Honeywell AX Supervisor Software | | |
| WEB-S-AX/U | WEBStation-AX Workstation software for Windows XP | WEBS-AX Platform |
| WEB-S-AX-100-O/U | WEBS-AX Open License Supervisor software for 32bit or 64bit Windows. Includes Niagara Historical Database, Workplace AX, OBIX client-server driver for connecting to Niagara based controllers only. Request CD at time of purchase. 100 Max device Limit. | |
| WEB-S-AX-100-UP/U | Upgrade Small building Windows supervisor from a max of 3 WEBS Controllers to a max of 100 WEBS Controllers. | |
| WEB-S-AX-3-O/U | WEBS-AX Supervisor software 32bit or 64bit Windows Open License. Includes Niagara Historical Database, Workplace AX, and OBIX client-server driver to connect to Niagara based devices. Request CD at time of Purchase. Max of 3 Connected WEBS Controllers | |
| WEB-S-AX-O/U | WEBStation-AX Workstation software for Windows XP | WEBS-AX Platform |
| WEB-S-AX-UNL-O/U | WEBS-AX Open License Supervisor software for 32bit or 64bit Windows. Includes Niagara Historical Database, Workplace AX, OBIX client-server driver for Niagara based controller connectivity only. Request CD at time of purchase. No Controller Device Limit | |
| WEB-S-AX-UNL-UP/U | Upgrade Medium building Windows supervisor from a max of 100 WEBS Controllers to unlimited connectivity (as many WEBS Controllers as the PC can handle) | |
| W-S-AX-LNX100-O/U | WEBS-AX Open License Supervisor software for 32bit or 64bit Linux. Includes Niagara Historical Database, Workplace AX, OBIX client-server driver for connecting to Niagara based controllers only. Request CD at time of purchase. 100 Device Limit | |
| W-S-AX-LNX100-UP/U | Upgrade Small Building Linux Supervisor from a max of 3 WEBS Controllers to a max of 100 WEBS Controllers | |
| W-S-AX-LNX3-O/U | WEBS-AX Open License Supervisor software for 32bit or 64bit Linux. Includes Niagara Historical Database, Workplace AX, OBIX client-server driver for connecting to Niagara based controllers only. Request CD at time of purchase. 3 Device Max | |
| W-S-AX-LNXUNL-O/U | WEBS-AX Supervisor software for 32-bit or 64-bit Linux. Includes Niagara Historical Database, Workplace AX, OBIX client-server driver for connecting to Niagara based controllers only. Request CD at time of purchase. No device limit. | |
| W-S-AX-LNXUNL-UP/U | Upgrade Medium building Linux supervisor from a max of 100 WEBS Controllers to unlimited connectivity (as many WEBS Controllers as the PC can handle) | |
| Honeywell WEBS-AX™ Enterprise Security is a comprehensive access control and security management solution built on a truly open, IP based platform. It uses NiagaraAX Framework, for unparalleled interoperability in traditional security environments. | | |
| SEC-H-ENT-100/U | Includes enterprise security application with 32 reader license, WEBS-AX Security Supervisor, both MySQL and MS SQL Server database drivers and OBIX client/server driver for connecting to Niagara based controllers only. Max of 100 Security Controllers. | |
| SEC-H-ENT-100-MA/U | Annual software maintenance agreement when purchased with any Enterprise Security Supervisor. Includes new and interim releases for one year from date of purchase. | |
| SEC-H-ENT-250/U | Includes enterprise security application with 32 reader license, WEBS-AX Security, and both MySQL and MS SQL Server database drivers. 250 Controller Limit. Includes OBIX client/server driver for connecting to Niagara based controllers only. | |
| SEC-H-ENT-250-MA/U | Annual software maintenance agreement when purchased with any Large Scale Enterprise Security Supervisor. Includes new and interim releases for one year from date of purchase. | |
| SEC-H-ENT-6/U | WEBS-AX Security SBS, includes enterprise security application with 32 reader license, both MySQL and MS SQL Server database drivers and OBIX client/server driver for connecting to Niagara based controllers only. 6 Controller and 64 Reader Limit. | |
| SEC-H-ENT-6-MA/U | Annual software maintenance agreement when purchased with any Security Small Building Supervisor. Includes new and interim releases for one year from date of purchase. | |
| SEC-H-REV-100/U | New release software upgrade for Enterprise Security Supervisor. Price includes all applications and drivers licensed for the Supervisor. Upgrades the Supervisor to the current release. | |
| SEC-H-REV-250/U | New release software upgrade for Enterprise Security Large System Supervisor. Price includes all applications and drivers licensed for the Supervisor. Upgrades the Supervisor to the current release. | |
| SEC-H-REV-6/U | New release software upgrade for Enterprise Security Small Building Supervisor. Price includes all applications and drivers licensed for the Supervisor. Upgrades the Supervisor to the current release. | |
| SEC-H-U-100/U | Security ENT upgrade. Upgrade an existing SEC-H-ENT-6 SBS Security Supervisor to a SEC-H-ENT-100 Security Supervisor. Supervisor requires additional reader licenses to expand system capacity. | |
| SEC-H-U-250/U | Security ENT upgrade. Upgrade an existing SEC-H-ENT-100 Security AX Supervisor to a SEC-H-ENT-250 Large System Security Supervisor. Supervisor requires additional reader licenses to expand system capacity. | |

WEBS-AX System

WEBS-AX Platform - Drivers for Supervisors

Application: Software-Driver

Building Management Interface: WEBS-AX

| Material Number | Description | Used With |
|---|--|---------------------|
| Honeywell AX software drivers and options for P/C Workstations | | |
| DR-NS-BAC-500/U | Additional 500 point block for WEBStation-AX BACnet driver | WEBS-AX Supervisors |
| DR-NS-BAC-AX/U | AX Supervisor BACnet Driver | WEBS-AX Supervisors |
| DR-NS-MDB-500/U | Additional 500 point block for WEBStation-AX MDB TCP Driver | WEBS-AX Supervisors |
| DR-NS-MDB-AX/U | AX Supervisor Modbus TCP Driver | WEBS-AX Supervisors |
| DR-NS-OBIX500/U | Additional 500 point block for AX Supervisor oBix Driver | WEBS-AX Supervisors |
| DR-NS-OBIX-AX/U | AX Supervisor oBix Driver | WEBS-AX Supervisors |
| DR-NS-OPC-500/U | Additional 500 point block for WEBStation-AX OPC Client Driver | WEBS-AX Supervisors |
| DR-NS-OPC-AX/U | AX Supervisor OPC Driver | WEBS-AX Supervisors |
| DR-NS-SNMP-500/U | Additional 500 point block for WEBStation-AX SNMP Driver | WEBS-AX Supervisors |
| DR-NS-SNMP-AX/U | AX Supervisor SNMP Driver | WEBS-AX Supervisors |
| S-AX-BCSRV-AX/U | AX Supervisor BACNet IP Server Driver | WEBS-AX Supervisors |
| S-DB-CSV/U | File Network Device Driver for importing CSV files | WEBS-AX Supervisors |
| S-DB-DB2/U | WEBStation-AX driver for DB2 database | WEBS-AX Supervisors |
| S-DB-MYSQL/U | WEBStation-AX driver for Microsoft MySQL database | WEBS-AX Supervisors |
| S-DB-ORCL/U | WEBStation-AX driver for Oracle database | WEBS-AX Supervisors |
| S-DB-SQL/U | WEBStation-AX driver for Microsoft SQL database | WEBS-AX Supervisors |
| Honeywell AX Supervisor Software | | |
| SUP-REN-ASD/U | Annual Renewals for ASD | WEBS-AX Supervisors |
| SUP-REN-CON/U | Annual Renewals for Contractors | WEBS-AX Supervisors |
| SUP-SWAM-AX | Annual Maintenance for Supervisors | WEBS-AX Supervisors |
| Honeywell Energy Analytics Solution based on WEBS-AX platform | | |
| WES-PNT-AX/U | WEBS Energy Analytics Point License. Licenses one point for monitoring on a WEBS-AX Supervisor | WEBS-AX Supervisors |
| WES-STA-AX/U | WEBS Energy Analytics Station License. Licenses one controller station connection to Energy Analytics with unlimited points. | WEBS-AX Supervisors |

WEBS-AX Platform - Accessories

Application: Accessory-Parts

Compatible With: WEB-201, WEB-600

Approximate, Dimensions: 6 ft Long (2 Meter Long)

Building Management Interface: WEBS-AX

| Material Number | Description | Used With |
|------------------|--|------------------|
| H-GPRS-CBL-EXT/U | GPRS Modem Extension Cable | WEB-201; WEB-600 |
| H-GPRS-SIM-W/U | Wysless SIM card for GPRS Modem | WEB-201; WEB-600 |
| NPB-BATT-7/U | Replacement NiMH Battery for WEB/CP-700 Controller | WEB-700, CP-700 |
| NPB-BATTERY/U | REPLACEMENT BATTERY ASSEMBLY FOR WEB-201 AND WEB-600 CONTROLLERS | WEB-201; WEB-600 |

WEBs Platform - Accessories

Application: Accessory-Parts

Building Management Interface: WEBs

| Material Number | Description | Used With |
|-----------------|---|---|
| H10429/U | 6 POSITION CONNECTOR FOR IO-16-H AND WEB-IO-16 | WEB-545; WEB-403; WEB-201; WEB-600 |
| H10598/U | 2 POSITION CONNECTOR FOR IO-34-H AND WEB IO-34 | WEB-545; WEB-403; WEB-201; WEB-600 |
| H10599/U | 12 POSITION CONNECTOR FOR IO-34-H AND WEB-IO-34 | WEB-545; WEB-403; WEB-201; WEB-600 |
| H10600/U | 15 POSITION CONNECTOR FOR IO-34-H AND WEB IO-34 | WEB-545; WEB-403; WEB-201; WEB-600 |
| H10713/U | 3 POSITION SCREW PIN MOUNT CONNECTOR | WEBs-AX Controllers |
| H10714/U | 4 POSITION SCREW PIN MOUNT CONNECTOR | WEBs-AX Controllers |
| H10716/U | 6 POSITION SCREW PIN MOUNT CONNECTOR | WEBs-AX Controllers |
| H10717/U | 7 POSITION SCREW PIN MOUNT CONNECTOR | WEBs-AX Controllers |
| H10747/U | End of Line Resistor Pack | SEC-H-600, SEC-H-201 |
| H10763/U | 6 Conductor Wiring Harness | SEC-H-600, SEC-H-201 |
| H10764/U | 6 Conductor Wiring Harness | SLA BATTERY WIRING HARNESSS; SEC-H-600, SEC-H-201 |
| H10765/U | SECURITY ENCLOSURE LOCK W/ KEYS | SEC-H-600, SEC-H-201 |
| H10767/U | Tamper Switch for Security Enclosure | SEC-H-600, SEC-H-201 |
| H11166/U | Replacement right-angle GPRS modem stub antenna | WEB-602-XPR, CP-602-XPR |
| H11686/U | NPB-ZWAVE replacement RP-SMA coax-mounted antenna (915 MHz) | |
| H11696/U | Hardware Bag for WEB/CP-700 | WEB-700, CP-700 |
| H-CBL-SED-EXT/U | Z-WAVE EXTENSION CABLE | |

WEBs-AX System

WEBs-AX Platform

Application: Option Card

Building Management Interface: WEBS-AX

| Material Number | Description | Used With |
|---|---|------------------|
| Option Card – Option Cards for WEB-201, 600 controllers. | | |
| DR-NS-BAC-CLI/U | BACnet IP Client Driver, includes license for 500 BACnet points. WEBS-AX Supervisor License | WEBS-AX Platform |
| Software-Driver – Honeywell AX software drivers and options for P/C Workstations | | |
| DR-NS-BAC-AWS-UP/U | Upgrade from an Operator Workstation (OWS) to an Advanced Workstation (AWS). WEBS-AX Supervisor Upgrade | |
| DR-NS-BAC-CL-UP/U | BACnet Client Upgrade, adds BACnet IP client functions to a BACnet IP server for the WEB-AX Supervisor. Includes license for 500 BACnet points. | WEBS-AX Platform |
| DR-NS-BACNET/U | BACnet IP Client driver with BACnet Export functions for WEBS-AX Supervisor. Includes license for 500 BACnet points. Note: Adding OWS and AWS to this part invalidates the BTL listing | |
| DR-NS-BAC-OWS/U | Add BACnet Operator Workstation (OWS) to the WEBS-AX Supervisor, requires the BACnet IP Client driver | |
| DR-NS-BAC-SRV/U | BACnet IP Server for the WEBS-AX Supervisor | WEBS-AX Platform |
| DR-NS-BAC-SRV-UP/U | Add BACnet export functions to a BACnet IP Client Driver for the WEBS-AX Supervisor | WEBS-AX Platform |
| DR-SOX-ETH-AX/U | Sedona Framework SOX driver allows for WEBS Controller communication to Sedona Framework enabled Ethernet and Wi-Fi networks. Unlimited network point and device counts. Controller Wi-Fi option card NOT INCLUDED. Requires WEBS-AX 3.6 or later. | WEBS-AX Platform |
| DR-SOX-JEN-AX/U | Allows WEBS Controller to communicate to Sedona Framework enabled Jennic 802.15.4 wireless networks. Unlimited network point and device counts. Sedona Framework Jennic Option Card for RF communication NOT INCLUDED. Requires WEBS-AX 3.6 or later. | WEBS-AX Platform |
| DR-S-SOX-ETH-500/U | Additional 500 point block for Sedona Framework SOX communication driver allowing for Supervisor communication to Sedona Framework enabled Ethernet and Wi-Fi networks. Requires WEBS-AX 3.6 or later. | WEBS-AX Platform |
| DR-S-SOX-ETH-AX/U | Sedona Framework SOX driver allows for WEBS Controller communication to Sedona Framework enabled Ethernet and Wi-Fi networks. Unlimited network point and device counts. Controller Wi-Fi option card NOT INCLUDED. Requires WEBS-AX 3.6 or later. | WEBS-AX Platform |

WEBs-AX Software

Application: Software

Used With: WEBS-AX Platform

Building Management Interface: WEBS-AX

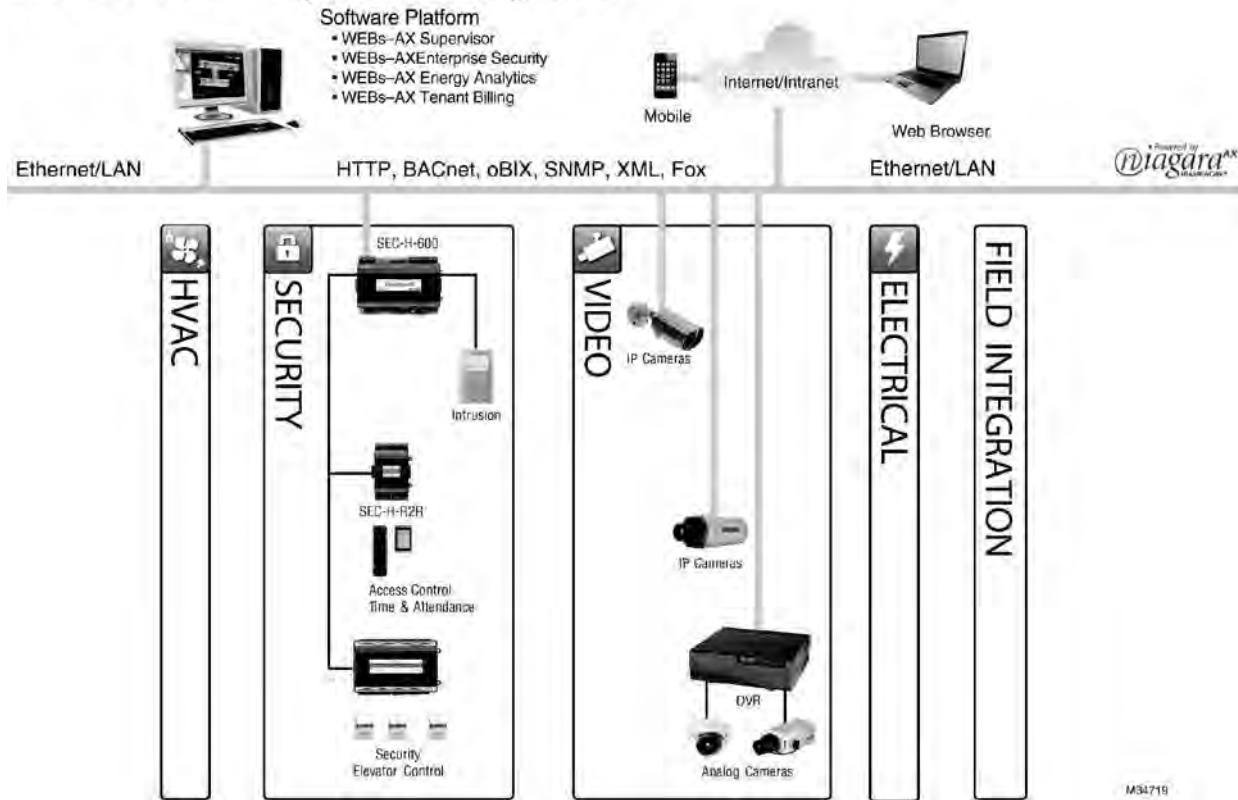
| Material Number | Description |
|-----------------|-------------------------------------|
| WEB-MA-AX/U | WEBS-AX Annual Software Maintenance |

Honeywell Security Portfolio

Flexibility is the key to Honeywell WEBs-AX™ Security, which is built on the NiagaraAX Framework®. Whether you need single site or enterprise access control, intrusion detection, video surveillance or a combination of all, WEBs-AX Security has the solution for you.

WEBs-AX Security can work as a standalone system or integrate easily with other WEBs-AX products as well as third-party devices for information-sharing on the enterprise level.

WEBs-AX™ System Integration



WEBs-AX Security Solution Options

- **WEBs-AX Enterprise Security**—A comprehensive security and access control system for one or more facilities and integration with existing building systems including HVAC, lighting, video, and energy analysis. Ideal for single medium to large facilities or multi-site facilities.
- **WEBs-AX Standalone Security**—An out-of-the-box, Web-enabled solution for access control, intrusion detection, and video surveillance. Ideal for small to medium sized facilities.
- **WEBs-AX Compact Security**—A cost-effective solution for integrating access control, security, video surveillance, and building automation systems. A cost-effective solution for small to medium sized facilities.
- **WEBs-AX Integrated Video**—Video drivers that provide an open video framework designed to integrate with diverse manufacturer IP and analog devices and protocols.

WEBs-AX Security Solutions

| Facility | Doors | Open System Integration Capable | Solution | Selection Information |
|-------------------|-----------|---------------------------------|---------------------|--|
| Single Facility | < 32 | No | Standalone Security | See Security Controllers on page 8 |
| Single Facility | < 16 | Yes | Compact Security | See Security Controller with Compact Drivers on page 8 |
| Single Facility | 32+ | Yes | Enterprise Security | See Security Controllers (page 8); Security with Compact Drivers (page 8) and Enterprise Security (page 9) |
| Multiple Facility | Unlimited | Yes | Enterprise Security | See Security Controllers (page 8); Security with Compact Drivers (page 8) and Enterprise Security (page 9) |

WEBS-AX Security System

WEBS-AX Security Controllers Selection

| Features and Options | | | |
|----------------------------|-----------------------------|------------------------------------|------------------------------------|
| Controllers | | SEC-H-602 | SEC-H-616 |
| | Card Readers | 2 with option for 32 max* | 16 with option for 16 max* |
| | Digital Input/Output Points | 120/120* | 120/120* |
| | Remote Reader Modules (R2R) | 15* | 15* |
| | Remote I/O Modules (RIO) | 15* | 15* |
| | Intrusion Keypads | 6 | 6 |
| | Personnel | 20,000 | 20,000 |
| | Access Rights | 250 | 250 |
| | Access Zones | 50 | 50 |
| | Intrusion Zones | 25 | 25 |
| | On-line Historical Records | 50,000 | 50,000 |
| | Simultaneous System Users | 10 | 10 |
| Video Drivers | DR-JAC-MAXPRO-4 | **MAXPRO NVR & 4 Cameras | **MAXPRO NVR & 4 Cameras |
| | DR-JAC-DED-AX/U | **Dedicated Micros DVR & 4 Cameras | **Dedicated Micros DVR & 4 Cameras |
| | DR-JAC-AXS-4/U | **4 Axis IP Cameras | **4 Axis IP Cameras |
| | DR-JAC-MLS-4/U | **Mileston NVR & 4 Cameras | **Mileston NVR & 4 Cameras |
| | DR-JAC-RPD-4/U | **Rapid Eye DVR & 4 Cameras | **Rapid Eye DVR & 4 Cameras |
| Integration Options | Video (Cameras) | 16 | 16 |

* A total of 15 modules can be connected to the SEC-H-602 or SEC-H-616 controllers in any combination. Points and reader counts depend on mix of reader modules up to a maximum of 120 I/O regardless of number of modules.

** Any combination of Video Drivers can be added to enable a maximum of 16 cameras per controller.

WEBS-AX Compact Security Selection

| Features and Options | | DR-SEC-LON (LON Focus) | DR-SEC-BAC (BACnet Focus) | DR-SEC-LON-FTT | DR-SEC-BAC-MSTP | DR-SEC-BAC-TCP | DR-SEC-MDB-RTU | DR-SEC-MDB-TCP |
|-------------------------------------|-------------------------------------|---|------------------------------|----------------|-----------------|----------------|----------------|----------------|
| Controller | | SEC-H-616 or SEC-H-602 with the addition of the SEC-H-602-UP option | | | | | | |
| Security Capabilities | Card Readers | 16* | | | | | | |
| | Digital Inputs/Output Points | 120/120* | | | | | | |
| | Remote Reader Modules (R2R) | 15** | | | | | | |
| | Remote I/O Modules (RIO) | 15** | | | | | | |
| | Intrusion Keypads | 2 | | | | | | |
| | Personnel | 20,000 | | | | | | |
| | Access Zones | 50 | | | | | | |
| | Intrusion Zones | 25 | | | | | | |
| | On-line Historical Records | 50,000 | | | | | | |
| | Point Histories | No Limit | No Limit | 300 | 300 | 300 | 300 | 300 |
| | Simultaneous System Users | 10 | | | | | | |
| Video Drivers | DR-JAC-MAXPRO-4 | **MAXPRO NVR & 4 Cameras | | | | | | |
| | DR-JAC-DED-AX/U | Dedicated Micros DVR & 4 Cameras | | | | | | |
| | DR-JAC-AXS-4/U | 4 Axis IP Cameras | | | | | | |
| | DR-JAC-MLS-4/U | **Mileston NVR & 4 Cameras | | | | | | |
| | DR-JAC-RPD-4/U | **Rapid Eye DVR & 4 Cameras | | | | | | |
| Open Device/Points Supported | LonWorks Devices/Points | 60 / 2000 | 5 / 100 | 60 / 2000 | | | | |
| | BACnet Devices/Points (IP or MSTP) | 5 / 100 | 60 / 2000 | | 60 / 2000 | | | |
| | BACnet IP Devices/Points | | | | | 60 / 2000 | | |
| | Modbus TCP Devices/Points | 5 / 100 | 5 / 100 | | | | | 60 / 2000 |
| | Modbus RTU Devices/Points | 5 / 100 | 5 / 100 | | | | 60 / 2000 | |
| | SNMP (over Ethernet) Devices/Points | 5 / 100 | 5 / 100 | | | | | |
| Integration Capabilities | Video (Cameras) | 16 Cameras | | | | | | |
| | HVAC | . | | | | | | |
| | Lighting | . | | | | | | |
| | Other Open Systems | . | | | | | | |

* A total of 16 modules can be connected to the SEC-H-602 or SEC-H-616 controllers in any combination. Points and reader counts depend on mix of reader modules.

** A total of 15 modules can be connected to the SEC-H-602 or SEC-H-616 in any combination. Points and reader counts depend on mix of reader modules.

WEBS-AX™ Enterprise Security Software

WEBS-AX Enterprise Security is a comprehensive access control and security management solution, built on a truly open, IP based platform. Developed using the NiagaraAX Framework, WEBS-AX Enterprise Security provides unparalleled interoperability within traditional security environments and extends seamlessly to create a unified, intelligent building by integrating with today's diverse facility systems including environmental controls, lighting, energy management, and video.

Enterprise Security provides scalability ranging from single door solutions to multi-building/multi-campus deployments. Entirely accessible from any standard web browser, the solution provides flexible access into the system any time, anywhere, while liberating end users from dedicated client workstations in the traditional client /server model. WEBS-AX Enterprise Security is open – open architecture, open framework, open distribution, and open protocol support.

- Truly open solution-connectivity via oBIX, BACnet, SNMP, Modbus, Lon, and other optional non-proprietary protocols

- Web based security application – easily managed via a standard browser anytime, anywhere
- Supports database connectivity to MS SQL Server 2003 and MySQL
- Distributed architecture for increased reliability and control at remote locations
- Centrally managed card holder and credential database
- Quick click access to video playback related to individual alarm events
- UL-294 and CE listed systems
- Advanced occupancy restriction rules through access zone functionality
- Alarm Escalation
- Scheduled unlock on first validation
- Elevator control
- Live credential enrollment from any card reader
- Intrusion detection
- Configurable Operator Access Levels
- Simultaneous support for multiple credential formats

System Capacities

| Personnel | Card Readers | Access Rights | Schedules | Access Zones | On-Line History Records | Simultaneous System Users | Area Controllers | Integrated Cameras |
|-----------|--------------|---------------|-----------|--------------|-------------------------|---------------------------|------------------|--------------------|
| 1,000,000 | 10,000 | 25,000 | 25,000 | 25,000 | 25,000,000 | 25 | 500 | No Limit |

| Product Number | Description |
|--|--|
| WEBS-AX Enterprise Security Server Software | |
| SEC-H-ENT-6/U | WEBS-AX Security SBS, includes enterprise security application with 32 reader license, both MySQL and MS SQL Server database drivers and OBIX client/server driver for connecting to Niagara based controllers only. 6 Controller and 64 Reader Limit. |
| SEC-H-ENT-100/U | Security Supervisor with MySQL and MS SQL Includes enterprise security application with 32 reader license, WEBS-AX Security Supervisor, both MySQL and MS SQL Server database drivers and OBIX client/server driver for connecting to Niagara based controllers only. Max of 100 Security Controllers. |
| SEC-H-ENT-250/U | Security Large System Supervisor with MySQL and MS SQL. Includes enterprise security application with 32 reader license, WEBS-AX Security, and both MySQL and MS SQL Server database drivers. 250 Controller Limit. Includes OBIX client/server driver for connecting to Niagara based controllers only. |
| SEC-H-U-100/U | Security ENT upgrade. Upgrade an existing SEC-H-ENT-6 SBS Security Supervisor to a SEC-H-ENT-100 Security Supervisor. Supervisor requires additional reader licenses to expand system capacity. |
| SEC-H-U-250/U | Security ENT upgrade. Upgrade an existing SEC-H-ENT-100 Security AX Supervisor to a SEC-H-ENT-250 Large System Security Supervisor. Supervisor requires additional reader licenses to expand system capacity. |
| SEC-H-REV-6/U | New release software upgrade for Enterprise Security Small Building Supervisor. Price includes all applications and drivers licensed for the Supervisor. Upgrades the Supervisor to the current release. |
| SEC-H-REV-100/U | New release software upgrade for Enterprise Security Supervisor. Price includes all applications and drivers licensed for the Supervisor. Upgrades the Supervisor to the current release. |
| SEC-H-REV-250/U | New release software upgrade for Enterprise Security Large System Supervisor. Price includes all applications and drivers licensed for the Supervisor. Upgrades the Supervisor to the current release. |
| SEC-H-ENT-6-MA/U | Annual software maintenance agreement when purchased with any Security Small Building Supervisor. Includes new and interim releases for one year from date of purchase. |
| SEC-H-ENT-100-MA/U | Annual software maintenance agreement when purchased with any Enterprise Security Supervisor. Includes new and interim releases for one year from date of purchase. |
| SEC-H-ENT-250-MA/U | Annual software maintenance agreement when purchased with any Large Scale Enterprise Security Supervisor. Includes new and interim releases for one year from date of purchase. |

WEBS-AX Security System

Option Cards





Option Cards for WEB-201, 600 controllers.

Operating Temperature Range: 32°F to 122°F (0°C to 50°C)

Shipping and Storage Temperature Range: 32°F to 140°F (0°C to 60°C)

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Building Management Interface: WEBS-AX

| Material Number | Application | Description | Operating System | |
|-----------------|---------------------------------------|---|--|---|
| NPB-2X-REDLINK | Optional RedLINK Communications Card | RedLINK Communication Card for WEB-201/600/700 | |  |
| NPB-2X-RS485/U | Optional Communications Card | Dual Port RS-485 Communication Card for WEB-201/600/700 | The controller requires NiagaraAX build level 3.1.24 or higher |  |
| NPB-LON/U | Optional Communications Card | LonWorks Communication Card for WEB-201/600/700 | |  |
| NPB-RS232/U | Optional Communications Card | Single Port RS-232 Communication Card for WEB-201/600/700 | | |
| NPB-WIFI-7/U | Optional Wireless LAN Connection Card | MiniPCI WiFi 802.11 b/g option card for WEBS-700 | Requires a WEB-700 controller with QNX operating system and WEBS-AX Release 3.6 or later for operation |  |

Modules

Honeywell WEBs-AX™ Security Modules expand the capacity of WEBs-AX Security Controllers.

- Available in SEC-H-RIO, remote input/output module, and SEC-H-R2R remote reader modules

Used With: WEBs-AX Platform

Operating Temperature Range: 32°F to 122°F (0°C to 50°C)

Shipping and Storage Temperature Range: 32°F to 140°F (0°C to 60°C)



Approvals, Underwriters Laboratories Inc.: UL Listed

Approvals, CSA: CSA C22.2 No. 205-M1983 Signal Equipment

Approvals, FCC: FCC part 15 Class A

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Building Management Interface: WEBs-AX

| Material Number | Application | Description | I/O Count | Network Communications | Approvals, CE | Includes | |
|-----------------|---------------------------------|---|--|--|---------------|--|---|
| IO-16-REM-H/U | Input / Output Expansion Module | 16 Point Remote Input / Output Expansion Module to monitor and control building automation points | 8 Universal Inputs, 4 Digital Relay Outputs, 4 Analog Outputs | | Approved | |  |
| SEC-H-R2R/U | WEBs-AX Remote Reader Module | WEBs-AX Security 2 Reader Module to expand the capacity of your WEBs-AX Security Controller | 2 proximity card readers, 4 Supervised Inputs, 2 Form C Relay Outputs, 2 Digital Inputs. | 2 Ethernet Ports - 10/100 Mbps (RJ-45 Connectors); 1 RS 232 Port (9 pin D-shell connector); 1 RS 485 | | Contains removable screw terminal connectors, and status indication LEDs |  |
| SEC-H-RIO/U | WEBs-AX Input / Output Module | WEBs-AX Security Input/Output Module to expand the capacity of your WEBs-AX Security Controller | 8 Supervised Inputs, 8 Form C Relay Outputs, 2 Digital Inputs | 2 Ethernet Ports - 10/100 Mbps (RJ-45 Connectors); 1 RS 232 Port (9 pin D-shell connector); 1 RS 485 | | Contains removable screw terminal connectors, and status indication LEDs | |

Compact Security Solution Drivers

WEBs Security Solution provides a cost-wise option on the SEC-H-600 platform. A LON or BACnet Focused Driver Option Pack determines device integration. WEBs-AX applications allow thin-client configuration of the access control and security functions.

Application: Software-Driver

Used With: WEB-S-AX; WEB-S-AX-LNX; WEB-S-AX-64; WEB-S-AX-SBS

Compatible With: WEB-S-AX, WEB-S-AX-SBS, W-SJ-1M-AX

Building Management Interface: WEBs-AX

| Material Number | Description | Includes |
|-----------------|---|--|
| DR-SUP-AXS-4/U | WEB Supervisor Video Driver for 4 additional Axis cameras | Driver for 4 additional cameras. Requires DR-SUP-DED-AX. |
| DR-SUP-AXS-AX/U | WEB Supervisor BASE Video Driver for Axis Cameras | Base driver for Dedicated Micros DVR and 16 cameras |
| DR-SUP-DED-4/U | WEB Supervisor Video Driver for 4 additional cameras | Driver for 4 additional cameras. Requires DR-SUP-DED-AX. |
| DR-SUP-DED-AX/U | WEB Supervisor BASE Video Driver for Dedicated Micros DVR | Base driver for Dedicated Micros DVR and 16 cameras |
| DR-SUP-MLS-4/U | WEB Supervisor Video Driver for 4 additional Axis cameras | Driver for 4 additional cameras. Requires DR-SUP-DED-AX. |
| DR-SUP-MLS-AX/U | WEB Supervisor BASE Video Driver for Axis Cameras | Base driver for Dedicated Micros DVR and 16 cameras |

WEBs-AX Security System

Compact Security Solution Drivers

WEBs Compact Security Solution provides a cost-effective solution for integrating access control, security, video surveillance, and building automation on the SEC-H-600 platform. A Lon or BACnet Focused Driver Option Pack determines the mix of controlled devices that can be integrated onto the platform. The embedded WEBs-AX security control application allows thin-client configuration of the access control and security functions. WEBs-AX Workbench software is required for configuration of the HVAC devices. Note that card reader and personnel record capacities are reduced when using the Compact Security Drivers. Option cards to interface with BACnet, Lon, Modbus, and SNMP are ordered separately.

- Web based security application easily managed via a standard browser anytime, anywhere
- Truly open solution-connectivity via oBIX, BACnet, SNMP, Modbus, Lon, and other optional nonproprietary protocols

- Supports database connectivity to MS SQL Server 2003 and MySQL
- Distributed architecture provides increased reliability and control at remote locations
- Centrally managed card holder and credential database. Live credential enrollment from any card reader, and simultaneous support for multiple credential formats.
- UL-294 and CE listed systems
- Configurable Operator Access Levels
- Advanced occupancy restriction rules through access zone functionality
- Features alarm escalation, elevator control, intrusion detection, scheduled unlock on first validation, and quick click access to video playback related to individual alarm events

Application: Software-Driver

Building Management Interface: WEBs-AX

| Material Number | Description | Compatible With | Used With | Includes |
|---|-------------------------------------|--------------------|--------------------|---|
| Compact Security Solution Drivers | | | | |
| DR-JAC-AXS-4/U | WEB Video Driver for 4 Axis cameras | SEC-H-600, WEB-600 | SEC-H-600; WEB-600 | Driver for Dedicated Micros DVR and 4 cameras. 16 camera limit for each WEB-600 or SEC-H-600. |
| WEBs-AX Enterprise Security Software | | | | |
| DR-JAC-DED-AX/U | WEB Video Driver for 4 cameras | SEC-H-600, WEB-600 | WEB-600; SEC-H-600 | Driver for Dedicated Micros DVR and 4 cameras. 16 camera limit for each WEB-600 or SEC-H-600. |
| DR-JAC-MLS-4/U | WEB Video Driver for 4 Axis cameras | SEC-H-600, WEB-600 | SEC-H-600; WEB-600 | Driver for Dedicated Micros DVR and 4 cameras. 16 camera limit for each WEB-600 or SEC-H-600. |
| DR-SEC-BAC/U | BACnet focused Driver Pack | SEC-H-600 | SEC-H-600 | Driver for 60 LON devices, 2000 LON points, 5 BACnet Devices, 100 BACnet points, 5 Modbus devices (TCP or RTU), 100 Modbus points, 5 SNMP devices, 100 SNMP points; Driver for 60 BACnet devices, 2000 BACnet points, 5 Lon devices, 100 Lon points, 5 Modbus |
| DR-SEC-LON/U | LON focused Driver Pack | SEC-H-600 | SEC-H-600 | Driver for 60 LON devices, 2000 LON points, 5 BACnet Devices, 100 BACnet points, 5 Modbus devices (TCP or RTU), 100 Modbus points, 5 SNMP devices, 100 SNMP points |

Readers and Keypads

OmniProx™ Proximity Card Readers

Honeywell's OmniProx™ family is a complete line of 125 kHz HID compatible proximity readers that delivers outstanding and consistent performance in a small package with attractive styling and colors to fit any décor.

All OmniProx™ readers (except the OP90) include three bezels: black, charcoal gray and ivory and are constructed with rugged polycarbonate materials potted for both indoor and outdoor applications.

For locations that require a proximity reader able to withstand the vandal-prone environments, such as: universities, schools, elevators and prisons, the OP90 vandal-resistant reader comes standard in a zinc die-cast metal housing.

Building Management Interface: WEBS-AX

| Material Number | Description | Application | Used With | |
|-----------------|---|--------------------|------------------|---|
| OKH2N34 | OmniClass 16K PVC Card plus HID Prox (34-Bit) | Card plus HID Prox | WEBS-AX Platform | |
| OKP2N34 | OmniClass 16K PVC Card (34-Bit) | OmniClass PVC Card | WEBS-AX Platform |  |
| OP10HONE | OmniProx Small Mount Reader with Honeywell Logo | Card Reader | |  |
| OP10HONR | OmniProx HID Compatible, Smallest Mullion Reader 2"/5 cm - Honeywell logo RoHS Compliant | Card Reader | | |
| OP30HONE | OmniProx Mullion Mount Reader with Honeywell Logo | Card Reader | |  |
| OP30HONR | OmniProx HID Compatible, Mini Mullion Reader 3.5"/8.9 cm - Honeywell logo RoHS Compliant | Card Reader | | |
| OP40HONE | OmniProx Wall Mount Reader with Honeywell Logo | Card Reader | |  |
| OP40HONR | OmniProx HID Compatible, Single-Gang (US) Reader 4"/10.2 cm - Honeywell Logo RoHS Compliant | Card Reader | | |
| OP90HONE | OmniProx Vandal Resistant Mount Reader with Honeywell Logo | Card Reader | |  |
| OP90HONR | OmniProx HID Compatible, metal, single or double-gang (US) reader 2"/5 cm - Honeywell logo RoHS Compliant | Card Reader | |  |

WEBs-AX Security System

Readers and Keypads

Smartkey Intrusion Keypad and Display

The SEC-H-INT-KP Smartkey Intrusion Keypad and Display is used for arming and disarming areas protected by intrusion monitoring. Requires NPB-2X-RS485 Option card to interface with and SEC-H-600 and SEC-H-201.

Comments: Requires NPB-2X-RS485 Option Card

Compatible With: SEC-H-201, SEC-H-600

Power Consumption: 150 mA

Voltage: 12 Vdc


Operating Temperature Range: 14°F to 131°F (-10°C to 44°C)

Approximate, Dimensions: 3-5/32 in. wide x 5 in. high (80 mm wide x 127 mm high)

Shipping and Storage Temperature Range: 14°F to 131°F (-10°C to 55°C)

Building Management Interface: WEBS-AX

Network Communications: RS-485

| Material Number | Description | Application | |
|-----------------|--|----------------|---|
| SEC-H-INT-KP/U | WEBS Security Intrusion Keypad / Display | Display/Keypad |  |

Enclosures



Custom enclosures are available for secure mounting of the WEBS-AX Security controller and the Remote Reader and Input/Output modules. Three sizes are available to allow for various combinations of controllers and remote modules and all are equipped with a key lock and tamper switch. The medium and large enclosures may be ordered with a factory mounted universal voltage power supply (NPB-PWR-UN-H) covered by a protective metal shield. Knockouts are provided on top, bottom and sides for external connections. The enclosure interiors have a generous amount of space for cable management. These enclosures are

required to maintain the UL access control and FCC listing. The Security controller **MUST** be mounted in a WEBS-AX Security enclosure with integral supply to properly charge the on-board NiMH batteries and maintain the controller listings.

- Three sizes of custom enclosures available for various combinations of controllers/modules
- Enclosures equipped with key lock and tamper switch

Used With: WEBS-AX Platform

Building Management Interface: WEBS-AX

| Material Number | Application | Description | |
|-----------------|--------------|--|---|
| SEC-ENC-H-1/U | Enclosure | Security panel medium enclosure with integral NPB-PWR-UN-H universal power supply. 17" W x 15" H x 4" D with DIN rail, tamper switch, key lock, and capacity for 2 user provided SLA backup batteries. Can enclose one Security Controller, or 2 reader modules or one Remote I/O module. |  |
| SEC-ENC-H-1NP/U | Enclosure | Security panel medium enclosure. 17" W x 15" H x 4" D with DIN rail, tamper switch, key lock, and capacity for 2 user provided SLA backup batteries. Can enclose 2 reader modules or one Remote I/O module plus one additional reader module in place of the integral power supply not included with this part. | |
| SEC-ENC-H-2/U | Enclosure | Security panel large enclosure with integral NPB-PWR-UN-H universal power supply. 17" W x 22" H x 4" D with DIN rails, tamper switch, key lock, and capacity for 2 user provided SLA backup batteries. Can enclose one Security Controller and up to four Reader Modules, or two I/O modules, or two Reader Modules and one I/O Module. | |
| SEC-ENC-H-2NP/U | Enclosure | Security panel large enclosure. 17" W x 22" H x 4" D with DIN rails, tamper switch, key lock, and capacity for 2 user provided SLA backup batteries. Can enclose up to seven Reader modules or three I/O modules plus one additional Reader module in place of the integral power supply not included with this part. Other combinations of Reader and I/O modules are possible. | |
| SEC-ENC-H-3/U | Enclosure | WEBS-AX Security Small enclosure 6 in. W x 9 in. H x 4 in. D with DIN rail, tamper switch and key lock. Encloses one Reader module. | |
| NPB-PWR-UN-H/U | Power Module | 90 - 263 V AC 50/60 Hz Auto sensing Power Supply Module, DIN Rail Mountable 15 VDC Output. |  |

SEC-H-6XX Controllers



WEBsAX provides automation, allowing users to combine multiple protocols with legacy systems and use the web to view and edit underlying systems. The Security Controller is a web based out of the box answer for access control and intrusion detection.

- Integrated management of access control, alarm monitoring, and credential database
- Pre-defined custom reports on-screen or exported
- Web-based security application - easily managed via a web browser anytime, anywhere
- Web User Interface serves rich presentations and live data to a browser
- No thick client software required
- Custom graphic floor plans and equipment displays
- User-definable Wiegand card formats
- Intuitive, guided setup wizard
- Robust, modular solution for smaller facilities
- Seamlessly integrates to HVAC, Lighting, and Energy Management in the WEBsAX Automation System
- Connectivity to any BAS system via BACnet®, and oBIX
- IT connectivity includes XML, oBIX, SNMP
- Built on the NiagaraAX Framework - the industry's leading facility management software platform
- SEC-H-201: Expandable to 16 readers and 64 input and 64 output points. Up to 2500 personnel credentials
- SEC-H-600: Expandable to 32 readers / 120 input and 120 output points. Up to 10,000 personnel credentials.

Application: Controller

Includes: 256 MB RAM/128 MB Flash, (2) 10/100 Mb Ethernet ports, (1) RS-485 serial port, (1) RS-232 serial port, and 2 communication card option slots.

Used With: WEBs-AX Platform

Frequency: 50 Hz; 60 Hz

Operating Temperature Range: 32°F to 122°F (0°C to 50°C)

Shipping and Storage Temperature Range: 32°F to 140°F (0°C to 60°C)

Approvals, FCC: FCC part 15 Class A

Operating System: QNX RTOS; IBM J9 JVM Java Virtual Machine; NiagaraAX

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing
System Requirements: PowerPC 440 524 MHz processor with 256 MB DDR RAM & 128 MB Serial Flash

Building Management Interface: WEBs-AX

Network Communications: 2 Ethernet Ports - 10/100 Mbps (RJ-45 Connectors); 1 RS 232 Port (9 pin D-shell connector); 1 RS 485

| Material Number | Description | Comments |
|-----------------|--|--|
| SEC-H-602 | WEBs-AX Security Enhanced Controller | The Security Controller is designed for DIN rail mounting; Licensed for 2 Card Readers, Security and Videos, Connections for 2 Card Readers, 6 Supervised Inputs, 4 Form C Relay Outputs, and 3 Digital Inputs. |
| SEC-H-616 | WEBs-AX Security Enhanced Controller | The Security Controller is designed for DIN rail mounting; Licensed for 16 Card Readers, Security, Videos and HVAC, Connections for 2 Card Readers, 6 Supervised Inputs, 4 Form C Relay Outputs, and 3 Digital Inputs. |
| SEC-H-616-DEMO | WEBs-AX Security 616 Demo Controller Kit | Licensed for 16 Card Readers, Security, Videos and HVAC, Connections for 2 Card Readers, 6 Supervised Inputs, 4 Form C Relay Outputs, and 3 Digital Inputs. |

SEC-H-6XX Controller Accessories

Used With: WEBs-AX Platform

| Material Number | Description | Compatible With |
|-----------------|--|----------------------|
| SEC-602-UP | Security SEC-H-602 controller upgrade. Upgrades the SEC-H-602 controller to a SEC-H-616 controller license, supporting a minimum of 16 card readers. Upgrade also enables support for HVAC drivers on the security controller. | SEC-H-602 |
| SEC-8-RDR | Security eight reader expansion module. Increases the maximum number of readers on a SEC-H-602 or SEC-H-616 by eight readers. | SEC-H-602, SEC-H-616 |

WEBS-AX Security System

WEBS-AX™ Enterprise Security Software

Honeywell WEBS-AX™ Enterprise Security is a comprehensive access control and security management solution built on a truly open, IP based platform. It uses NiagaraAX Framework, for unparalleled interoperability in traditional security environments.

- Web based security application easily managed via a standard browser anytime, anywhere
- Truly open solution-connectivity via oBIX, BACnet, SNMP, Modbus, Lon, and other optional nonproprietary protocols
- Supports database connectivity to MS SQL Server 2003 and MySQL
- Distributed architecture provides increased reliability and control at remote locations

- Centrally managed card holder and credential database. Live credential enrollment from any card reader, and simultaneous support for multiple credential formats.
- UL-294 and CE listed systems
- Configurable Operator Access Levels
- Advanced occupancy restriction rules through access zone functionality
- Features alarm escalation, elevator control, intrusion detection, scheduled unlock on first validation, and quick click access to video playback related to individual alarm events

Building Management Interface: WEBS-AX

| Material Number | Description | Application | Compatible With | Operating System | Used With |
|-----------------|--|---------------------|-------------------------|----------------------------------|-------------------------|
| SEC-H-BAS-U/U | Upgrade security supervisor to allow BAS driver functionality. | Software-Driver | SEC-H-201, SEC-H-600 | Windows NT, Windows 64, Linux | SEC-H-600, SEC-H-201 |
| SEC-H-ENT-U/U | Adds Enterprise Security to WEBS-AX or SBS Supervisor. Includes 32 reader license and both SQL/MySQL database drivers. | Security Supervisor | | | |
| SEC-H-R-1024/U | Expands enterprise security license by 1024 readers. | Software-Driver | SEC-H-201, SEC-H-600 | | SEC-H-600, SEC-H-201 |
| SEC-H-R-16/U | Expands enterprise security license by 16 readers. | Software-Driver | SEC-H-201, SEC-H-600 | | SEC-H-600, SEC-H-201 |
| SEC-H-R-256/U | Expands enterprise security license by 256 readers. | Software-Driver | SEC-H-201, SEC-H-600 | | SEC-H-600, SEC-H-201 |
| SEC-H-R-64/U | Expands enterprise security license by 64 readers. | Software-Driver | SEC-H-201, SEC-H-600 | | SEC-H-600, SEC-H-201 |

WEBS-AX Enterprise Security Software

Honeywell WEBS-AX™ Enterprise Security is a comprehensive access control and security management solution built on a truly open, IP based platform. It uses NiagaraAX Framework, for unparalleled interoperability in traditional security environments.

- Web based security application easily managed via a standard browser anytime, anywhere
- Truly open solution-connectivity via oBIX, BACnet, SNMP, Modbus, Lon, and other optional nonproprietary protocols
- Supports database connectivity to MS SQL Server 2003 and MySQL
- Distributed architecture provides increased reliability and control at remote locations

- Centrally managed card holder and credential database. Live credential enrollment from any card reader, and simultaneous support for multiple credential formats.
- UL-294 and CE listed systems
- Configurable Operator Access Levels
- Advanced occupancy restriction rules through access zone functionality
- Features alarm escalation, elevator control, intrusion detection, scheduled unlock on first validation, and quick click access to video playback related to individual alarm events

Application: Software

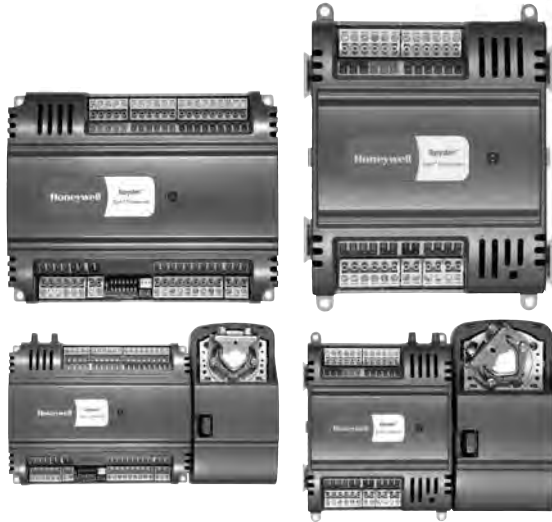
Building Management Interface: WEBS-AX

| Material Number | Description | Used With |
|-----------------|---------------------------------------|------------------|
| SEC-H-MT-AX/U | WEBS-AX Security Maintenance Software | WEBS-AX Platform |

Miscellaneous

| Material Number | Description | Used With |
|-----------------|--|----------------------|
| H10499/U | Replacement NiMH Battery Pack for Security Controllers | SEC-H-600, SEC-H-201 |

Spyder Programmable Controllers



Spyder® continues to evolve and is now a more flexible controller that is easier to use and designed for faster installation and programming. Built to work with the WEBS-AX system, Spyder gives you the versatility you need to control more of your building's systems, and the flexibility to communicate with the protocols you're using. So whether you choose the Spyder, Spyder Micro or Spyder with Relays, you'll have the right controllers, which can be installed faster for more competitive bids.

Application Size: Small to Large

Comments: Onboard 20 VDC power supply

Compatible With: WEBS AX

Frequency: 50 Hz; 60 Hz

Voltage: 24 Vac with a valid range of 20 to 30 Vac

Setpoint Temperature Range: Programmable

Shipping and Storage Temperature Range: -40°F to 150°F (-40°C to 65.5°C)

Approvals, Underwriters Laboratories Inc.: UL 916

Approvals, CSA: Certified

Approvals, FCC: FCC Part 15, Subpart B, Class B

Approvals, CE: Approved

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Commissioning Software: WEBS AX

| Material Number | Description | I/O Count | Output Type | Power Consumption | Operating Temperature Range | Approximate, Dimensions | Building Management Interface | Network Communications | Includes |
|-------------------|--|------------------------|---|-------------------|----------------------------------|--|-------------------------------|------------------------|----------|
| Unitary | | | | | | | | | |
| PUB1012S/U | Spyder Programmable Unitary Controller | 1 UI, 0 DI, 1 AO, 2 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | -40°F to 150°F (-40°C to 65.5°C) | 6.27 in. high x 4.8125 in. wide x 2.26 in. deep (159 mm high x 122 mm wide x 57 mm deep) | WEBS-AX | BACnet MS/TP | |
| PUB1012S-ILC/U | Spyder ILC Programmable Unitary Controller | 1 UI, 0 DI, 1 AO, 2 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | -40°F to 150°F (-40°C to 65.5°C) | | | BACnet | |
| PUB4024S/U | Spyder Programmable Unitary Controller | 4 UI, 0 DI, 2 AO, 4 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | -40°F to 150°F (-40°C to 65.5°C) | | WEBS-AX | BACnet MS/TP | |
| PUB4024S-ILC/U | Spyder ILC Programmable Unitary Controller | 4 UI, 0 DI, 2 AO, 4 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | -40°F to 150°F (-40°C to 65.5°C) | | | BACnet | |
| PUB6438S/U | Spyder Programmable Unitary Controller | 6 UI, 4 DI, 3 AO, 8 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | -40°F to 150°F (-40°C to 65.5°C) | 5.45 in. high x 6.85 in. wide x 2.26 in. deep (138.4 mm high x 174 mm wide x 57.4 mm deep) | | BACnet MS/TP | |
| PUB6438S-ILC/U | Spyder ILC Programmable Unitary Controller | 6 UI, 4 DI, 3 AO, 8 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | -40°F to 150°F (-40°C to 65.5°C) | | | BACnet MS/TP | |
| PUB6438S-ILC-US/U | Spyder ILC Programmable Unitary Controller | 6 UI, 4 DI, 3 AO, 8 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | -40°F to 150°F (-40°C to 65.5°C) | | | BACnet MS/TP | |
| PUB6438SR/U | Spyder Programmable Unitary Controller | 6 UI, 4 DI, 3 AO, 8 DO | Relay DO's, Staged On/Off | 5 VA | -40°F to 150°F (-40°C to 65.5°C) | | | BACnet | |
| PUB6438SR-ILC/U | Spyder ILC Programmable Unitary Controller | 6 UI, 4 DI, 3 AO, 8 DO | Relay DO's, Staged On/Off | 5 VA | -40°F to 150°F (-40°C to 65.5°C) | | | BACnet | |

Spyder Controllers

| Material Number | Description | I/O Count | Output Type | Power Consumption | Operating Temperature Range | Approximate, Dimensions | Building Management Interface | Network Communications | Includes |
|-------------------|---|------------------------|---|-------------------|----------------------------------|--|-------------------------------|------------------------|---------------------------------------|
| PUL1012S/U | Spyder Programmable Unitary Controller | 1 UI, 0 DI, 1 AO, 2 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | -40°F to 150°F (-40°C to 65.5°C) | 6.27 in. high x 4.8125 in. wide x 2.26 in. deep (159 mm high x 122 mm wide x 57 mm deep) | | LonWorks | |
| PUL1012S-ILC/U | Spyder ILC Programmable Unitary Controller | 1 UI, 0 DI, 1 AO, 2 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | -40°F to 150°F (-40°C to 65.5°C) | | | LonWorks | |
| PUL1012S-ILC-US/U | Spyder ILC Programmable Unitary Controller | 1 UI, 0 DI, 1 AO, 2 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | -40°F to 150°F (-40°C to 65.5°C) | | | LonWorks | |
| PUL4024S/U | Spyder Programmable Unitary Controller | 4 UI, 0 DI, 2 AO, 4 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | -40°F to 150°F (-40°C to 65.5°C) | | | LonWorks | |
| PUL4024S-ILC/U | Spyder ILC Programmable Unitary Controller | 4 UI, 0 DI, 2 AO, 4 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | -40°F to 150°F (-40°C to 65.5°C) | | | LonWorks | |
| PUL4024S-ILC-US/U | Spyder ILC Programmable Unitary Controller | 4 UI, 0 DI, 2 AO, 4 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | -40°F to 150°F (-40°C to 65.5°C) | | | LonWorks | |
| PUL6438S/U | Spyder Programmable Unitary Controller | 6 UI, 4 DI, 3 AO, 8 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | -40°F to 150°F (-40°C to 65.5°C) | 5.45 in. high x 6.85 in. wide x 2.26 in. deep (138.4 mm high x 174 mm wide x 57.4 mm deep) | | LonWorks | |
| PUL6438S-ILC/U | Spyder ILC Programmable Unitary Controller | 6 UI, 4 DI, 3 AO, 8 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | -40°F to 150°F (-40°C to 65.5°C) | | | LonWorks | |
| PUL6438S-ILC-US/U | Spyder ILC Programmable Unitary Controller | 6 UI, 4 DI, 3 AO, 8 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | -40°F to 150°F (-40°C to 65.5°C) | | | LonWorks | |
| PUL6438SR/U | Spyder Programmable Unitary Controller | 6 UI, 4 DI, 3 AO, 8 DO | Relay DO's, Staged On/Off | 5 VA | -40°F to 150°F (-40°C to 65.5°C) | | | LonWorks | |
| PUL6438SR-ILC/U | Spyder ILC Programmable Unitary Controller | 6 UI, 4 DI, 3 AO, 8 DO | Relay DO's, Staged On/Off | 5 VA | -40°F to 150°F (-40°C to 65.5°C) | | | LonWorks | |
| | | | | | | | | | |
| VAV | | | | | | | | | |
| PVB0000AS/U | Spyder Programmable VAV Controller | 0 UI, 0 DI, 0 AO, 0 DO | Pulse Width Modulation, Floating, Staged On/Off | 9 VA | 32°F to 122°F (0°C to 50°C) | 6.27 in. high x 8.27 in. wide x 2.26 in. deep (159 mm high x 211 mm wide x 57 mm deep) | WEBS-AX | BACnet MS/TP | Integrated Actuator & Pressure Sensor |
| PVB0000AS-ILC/U | Spyder ILC Programmable VAV Controller with Integrated Actuator | 0 UI, 0 DI, 0 AO, 0 DO | Pulse Width Modulation, Floating, Staged On/Off | 9 VA | 32°F to 122°F (0°C to 50°C) | | | BACnet | Integrated Actuator & Pressure Sensor |
| PVB4022AS/U | Spyder Programmable VAV Controller | 4 UI, 0 DI, 2 AO, 2 DO | Pulse Width Modulation, Floating, Staged On/Off | 9 VA | 32°F to 122°F (0°C to 50°C) | | WEBS-AX | BACnet MS/TP | Integrated Actuator & Pressure Sensor |
| PVB4022AS-ILC/U | Spyder ILC Programmable VAV Controller with Integrated Actuator | 4 UI, 0 DI, 2 AO, 2 DO | Pulse Width Modulation, Floating, Staged On/Off | 9 VA | 32°F to 122°F (0°C to 50°C) | | | BACnet | Integrated Actuator & Pressure Sensor |
| PVB4024NS/U | Spyder Programmable VAV Controller | 4 UI, 0 DI, 2 AO, 4 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | 32°F to 122°F (0°C to 50°C) | 6.27 in. high x 4.8125 in. wide x 2.26 in. deep (159 mm high x 122 mm wide x 57 mm deep) | WEBS-AX | BACnet MS/TP | Onboard Pressure Sensor |
| PVB4024NS-ILC/U | Spyder ILC Programmable VAV Controller | 4 UI, 0 DI, 2 AO, 4 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | 32°F to 122°F (0°C to 50°C) | | | BACnet | Onboard Pressure Sensor |

Spyder Controllers

| Material Number | Description | I/O Count | Output Type | Power Consumption | Operating Temperature Range | Approximate, Dimensions | Building Management Interface | Network Communications | Includes |
|--------------------|--|------------------------|---|-------------------|-----------------------------|---|-------------------------------|------------------------|---------------------------------------|
| PVB6436AS/U | Spyder Programmable VAV Controller | 6 UI, 4 DI, 3 AO, 6 DO | Pulse Width Modulation, Floating, Staged On/Off | 9 VA | 32°F to 122°F (0°C to 50°C) | 6.27 in. high x 10.32 in. wide x 2.26 in. deep (159.2 mm high x 262 mm wide x 57.4 mm deep) | | BACnet MS/TP | Integrated Actuator & Pressure Sensor |
| PVB6436AS-ILC/U | Spyder ILC Programmable VAV Controller | 6 UI, 4 DI, 3 AO, 6 DO | Pulse Width Modulation, Floating, Staged On/Off | 9 VA | 32°F to 122°F (0°C to 50°C) | | | BACnet MS/TP | Integrated Actuator & Pressure Sensor |
| PVB6436AS-ILC-US/U | Spyder ILC Programmable VAV Controller | 6 UI, 4 DI, 3 AO, 6 DO | Pulse Width Modulation, Floating, Staged On/Off | 9 VA | 32°F to 122°F (0°C to 50°C) | | | BACnet MS/TP | Integrated Actuator & Pressure Sensor |
| PVB6438NS/U | Spyder Programmable VAV Controller | 6 UI, 4 DI, 3 AO, 8 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | 32°F to 122°F (0°C to 50°C) | 5.76 in. high x 6.85 in. wide x 2.26 in. deep (146.2 mm high x 174 mm wide x 57.4 mm deep) | | BACnet MS/TP | Onboard Pressure Sensor |
| PVB6438NS-ILC/U | Spyder ILC Programmable VAV Controller | 6 UI, 4 DI, 3 AO, 8 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | 32°F to 122°F (0°C to 50°C) | | | BACnet MS/TP | Onboard Pressure Sensor |
| PVB6438NS-ILC-US/U | Spyder ILC Programmable VAV Controller | 6 UI, 4 DI, 3 AO, 8 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | 32°F to 122°F (0°C to 50°C) | | | BACnet MS/TP | Onboard Pressure Sensor |
| PVL0000AS/U | Spyder Programmable VAV Controller | 0 UI, 0 DI, 0 AO, 0 DO | Pulse Width Modulation, Floating, Staged On/Off | 9 VA | 32°F to 122°F (0°C to 50°C) | 6.27 in. high x 8.27 in. wide x 2.26 in. deep (159 mm high x 211 mm wide x 57.4 mm deep) | | LonWorks | Integrated Actuator & Pressure Sensor |
| PVL0000AS-ILC/U | Spyder ILC Programmable VAV Controller | 0 UI, 0 DI, 0 AO, 0 DO | Pulse Width Modulation, Floating, Staged On/Off | 9 VA | 32°F to 122°F (0°C to 50°C) | | | LonWorks | Integrated Actuator & Pressure Sensor |
| PVL0000AS-ILC-US/U | Spyder ILC Programmable VAV Controller | 0 UI, 0 DI, 0 AO, 0 DO | Pulse Width Modulation, Floating, Staged On/Off | 9 VA | 32°F to 122°F (0°C to 50°C) | | | LonWorks | Integrated Actuator & Pressure Sensor |
| PVL4022AS/U | Spyder Programmable VAV Controller | 4 UI, 0 DI, 2 AO, 2 DO | Pulse Width Modulation, Floating, Staged On/Off | 9 VA | 32°F to 122°F (0°C to 50°C) | | | LonWorks | Integrated Actuator & Pressure Sensor |
| PVL4022AS-ILC/U | Spyder ILC Programmable VAV Controller | 4 UI, 0 DI, 2 AO, 2 DO | Pulse Width Modulation, Floating, Staged On/Off | 9 VA | 32°F to 122°F (0°C to 50°C) | | | LonWorks | Integrated Actuator & Pressure Sensor |
| PVL4022AS-ILC-US/U | Spyder ILC Programmable VAV Controller | 4 UI, 0 DI, 2 AO, 2 DO | Pulse Width Modulation, Floating, Staged On/Off | 9 VA | 32°F to 122°F (0°C to 50°C) | | | LonWorks | Integrated Actuator & Pressure Sensor |
| PVL4024NS/U | Spyder Programmable VAV Controller | 4 UI, 0 DI, 2 AO, 4 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | 32°F to 122°F (0°C to 50°C) | 6.27 in. high x 4.8125 in. wide x 2.26 in. deep (159 mm high x 122 mm wide x 57 mm deep) | | LonWorks | Onboard Pressure Sensor |
| PVL4024NS-ILC/U | Spyder ILC Programmable VAV Controller | 4 UI, 0 DI, 2 AO, 4 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | 32°F to 122°F (0°C to 50°C) | | | LonWorks | Onboard Pressure Sensor |
| PVL4024NS-ILC-US/U | Spyder ILC Programmable VAV Controller | 4 UI, 0 DI, 2 AO, 4 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | 32°F to 122°F (0°C to 50°C) | | | LonWorks | Onboard Pressure Sensor |
| PVL6436AS/U | Spyder Programmable VAV Controller | 6 UI, 4 DI, 3 AO, 6 DO | Pulse Width Modulation, Floating, Staged On/Off | 9 VA | 32°F to 122°F (0°C to 50°C) | 6.27 in. high x 10.32 in. wide x 2.26 in. deep (159.2 mm high x 262 mm wide x 57.4 mm deep) | | LonWorks | Integrated Actuator & Pressure Sensor |
| PVL6436AS-ILC/U | Spyder ILC Programmable VAV Controller | 6 UI, 4 DI, 3 AO, 6 DO | Pulse Width Modulation, Floating, Staged On/Off | 9 VA | 32°F to 122°F (0°C to 50°C) | | | LonWorks | Integrated Actuator & Pressure Sensor |
| PVL6436AS-ILC-US/U | Spyder ILC Programmable VAV Controller | 6 UI, 4 DI, 3 AO, 6 DO | Pulse Width Modulation, Floating, Staged On/Off | 9 VA | 32°F to 122°F (0°C to 50°C) | | | LonWorks | Integrated Actuator & Pressure Sensor |

Spyder Controllers

| Material Number | Description | I/O Count | Output Type | Power Consumption | Operating Temperature Range | Approximate, Dimensions | Building Management Interface | Network Communications | Includes |
|--------------------|--|------------------------|---|-------------------|-----------------------------|--|-------------------------------|------------------------|-------------------------|
| PVL6438NS/U | Spyder Programmable VAV Controller | 6 UI, 4 DI, 3 AO, 8 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | 32°F to 122°F (0°C to 50°C) | 5.76 in. high x 6.85 in. wide x 2.26 in. deep (146.2 mm high x 174 mm wide x 57.4 mm deep) | | LonWorks | Onboard Pressure Sensor |
| PVL6438NS-ILC/U | Spyder ILC Programmable VAV Controller | 6 UI, 4 DI, 3 AO, 8 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | 32°F to 122°F (0°C to 50°C) | | | LonWorks | Onboard Pressure Sensor |
| PVL6438NS-ILC-US/U | Spyder ILC Programmable VAV Controller | 6 UI, 4 DI, 3 AO, 8 DO | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | 32°F to 122°F (0°C to 50°C) | | | LonWorks | Onboard Pressure Sensor |

Spyder Accessories



Accessories for Spyder Controllers.

Approximate, Dimensions: 7.20 in. high x 7.48 in. wide x 2.30 in. deep (183 mm high x 190 mm wide x 58 mm deep)

| Material Number | Description | Used With |
|-----------------|---|--------------|
| WB10707/U | Spyder Micro Wiring Box (must be ordered in multiple of 10) | Spyder Micro |

Stryker Configurable Controllers



Stryker is the controller you want when you need to do an install and want the job done quickly. It's perfect for jobs with a large number of variable air volume (VAV) boxes or constant volume air handling units (CVAHU) where programming time can be significant. With Stryker you'll have a robust controller that can be easily installed. Its off-the-shelf configurations will be functioning in seconds.

- Uses the Echelon® LONWORKS® network protocol.
- Free Topology Transceiver (FTT) high-speed 78 kilobit communications network.
- Capable of stand-alone operation, but can also use LONWORKS® Bus network communications.
- Sylk™ bus for use with Sylk-enabled sensors.
- 120 controllers per Q7751A, B Router when configured as a repeater.
- Field configurable for control, input, and output functions using the NIAGARA FRAMEWORK® software.
- Built-in Zone Control functions include a remote wall module interface and a scheduler.
- Pressure-independent or pressure-dependent single Variable Air Volume (VAV) control.
- Microbridge air flow sensor with dual integral restrictor design.
- Easy user access to air flow sensor inputs.
- Actuator (CVL4022AS-VAV1 only) mounts directly onto VAV box damper shaft and has up to 44 lb-in. (5 Nm) torque, 90-degree stroke, and 90 second timing at 60 Hz.
- All wiring connections are made to removable terminal blocks to simplify controller installation and replacement.
- Both controller housing and actuator are UL plenum rated.

Application Size: Small to Large
Comments: Onboard 20 VDC power supply
Compatible With: WEBs AX
Frequency: 50 Hz; 60 Hz
Voltage: 24 Vac with a valid range of 20 to 30 Vac
Shipping and Storage Temperature Range: -40°F to 150°F (-40°C to 65.5°C)
Approvals, Underwriters Laboratories Inc.: UL 916

Approvals, CSA: Certified
Approvals, FCC: FCC Part 15, Subpart B, Class B
Approvals, CE: Approved
Operating Humidity Range (% RH): 5 to 95% RH, non-condensing
Building Management Interface: WEBs AX
Network Communications: LonWorks
Commissioning Software: WEBs AX

| Material Number | Description | Application | I/O Count | Output Type | Power Consumption | Setpoint Temperature Range | Operating Temperature Range | Approximate, Dimensions | Includes |
|------------------|--|-------------|---|---|-------------------|----------------------------|----------------------------------|--|---------------------------------------|
| CUL6438SR-CV1/U | Stryker Lon Configurable CVAHU Controller, 6 Universal/ 4 Digital Inputs, 3 Analog/8 Relay Outputs | CVAHU | 6 Universal Inputs, 4 Digital Inputs, 3 Analog Outputs, 8 Relay Outputs | | 5 VA | Configurable | -40°F to 150°F (-40°C to 65.5°C) | 5.45 in. high x 6.85 in. wide x 2.26 in. deep (138 mm high x 174 mm wide x 57 mm deep) | |
| CVL4022AS-VAV1/U | Spyder Programmable VAV Controller | VAV | 4 Universal Inputs, 0 Digital Inputs, 2 Analog Outputs, 2 Digital Outputs | Pulse Width Modulation, Floating, Staged On/Off | 9 VA | Programmable | 32°F to 122°F (0°C to 50°C) | 6.27 in. high x 8.27 in. wide x 2.26 in. deep (159 mm high x 211 mm wide x 57 mm deep) | Integrated Actuator & Pressure Sensor |
| CVL4024NS-VAV1/U | Spyder Programmable VAV Controller | VAV | 4 Universal Inputs, 0 Digital Inputs, 2 Analog Outputs, 4 Digital Outputs | Pulse Width Modulation, Floating, Staged On/Off | 5 VA | Programmable | 32°F to 122°F (0°C to 50°C) | 6.27 in. high x 4.8125 in. wide x 2.26 in. deep (159 mm high x 122 mm wide x 57 mm deep) | Onboard Pressure Sensor |

Spyder Controllers

Sylk IO Modules



The Sylk IO devices are part of the Spyder family. The three IO devices are designed to seamlessly integrate with Spyder with relay controllers using only Sylk™ for communication. These devices expand the footprint of a single Spyder, increasing the controller's ability to be applied in applications that require a large amount of physical I/O. The Sylk IO devices are programmable using existing Spyder wire sheets through the Niagara Framework® software. Since the Sylk IO devices are extensions of the Spyder LON and Spyder BACnet controllers, the same Spyder feature will be leveraged in the WebPro workbench tool and the WEBS-AX JACE controller.

The Sylk IO devices are intended for use in HVAC applications that require a programmable controller where the IO count is more than the full sized Spyder point count. All devices provide flexible, universal inputs for external sensors while SIO6042 and SIO4022 provide a combination of analog and digital outputs.

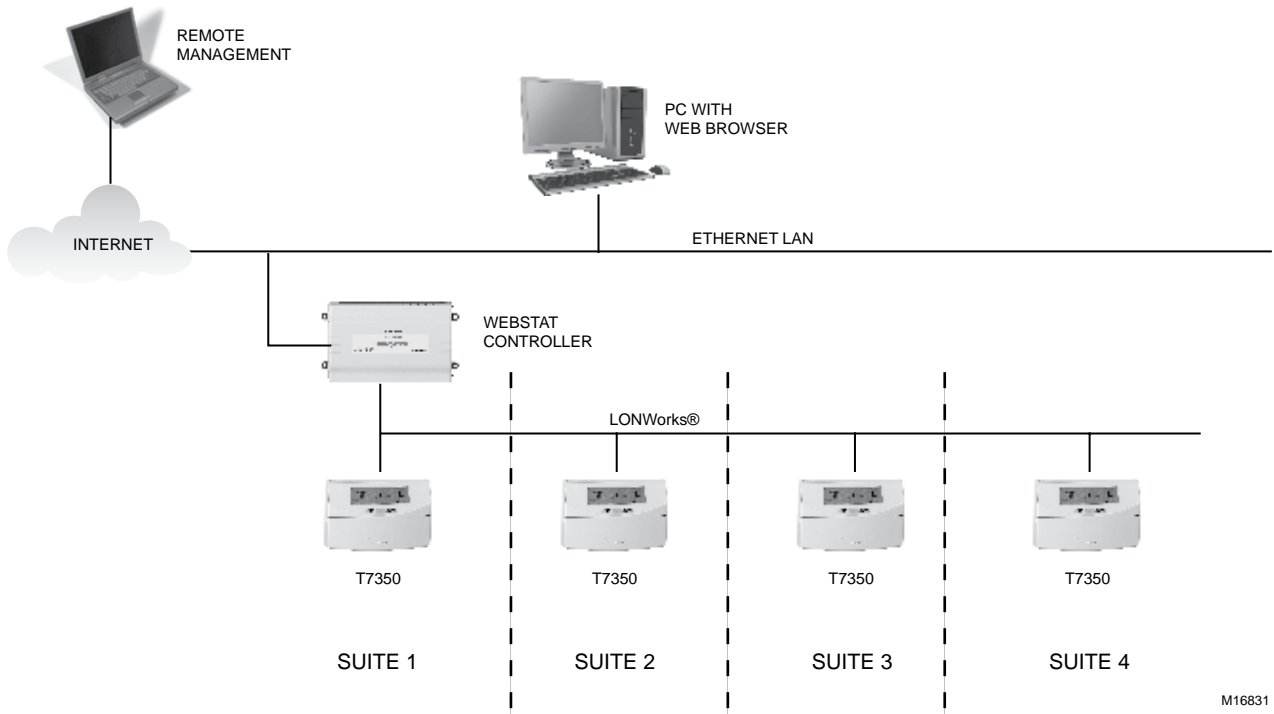
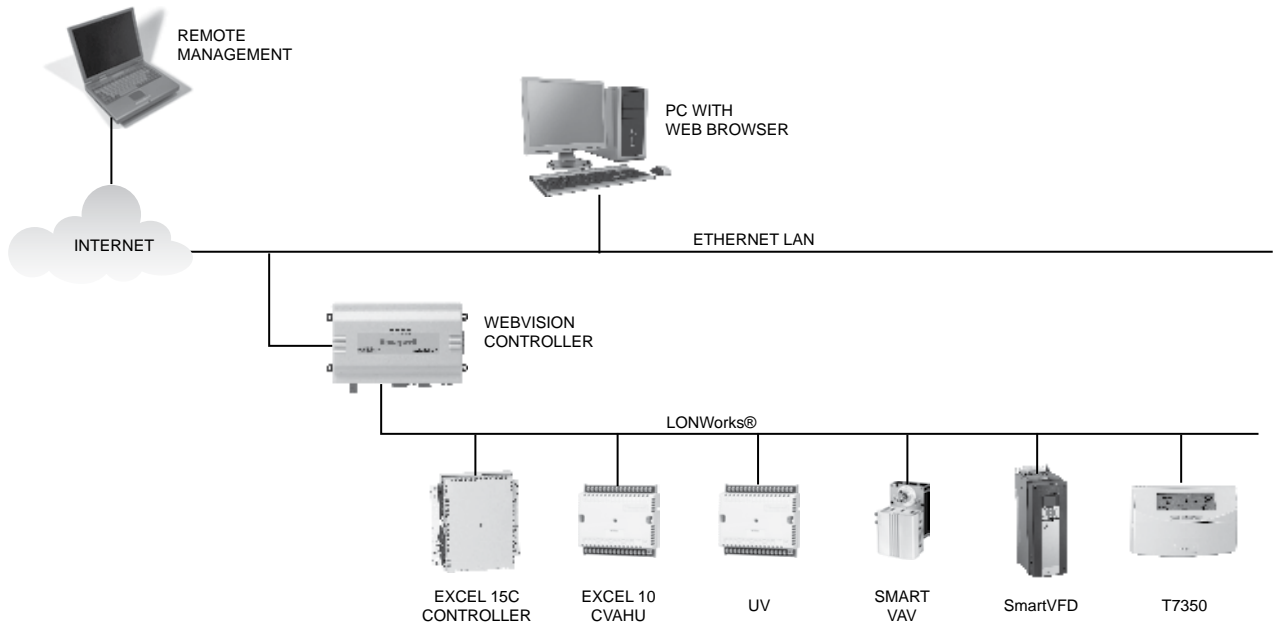
- Expands a single Spyder controller's IO count by 8-12 IO per device.
- Up to three devices for LON Spydres and up to two devices for BACnet Spydres can be applied.
- Communicates through Sylk™ bus freeing up IO for more applications.
- Program logic resides in a single controller and uses the existing Spyder wire sheet.
- Programming is built directly into the Spyder tool.
- Installation can be done locally or remotely.
- Field configurable and programmable for control, input, and output functions using the Niagara Framework® software.
- All wiring connections are made to removable terminal blocks to simplify device installation and replacement.
- The device housing is UL plenum rated.

Application: Accessory
Application Size: Small to Large
Compatible With: WEBS AX
Setpoint Temperature Range: Programmable
Operating Temperature Range: -40°F to 150°F (-40°C to 65.5°C)
Approximate, Dimensions: 6.27 in. high x 4.75 in. wide x 2.26 in. deep (159 mm high x 120.6 mm wide x 57.4 mm deep)
Shipping and Storage Temperature Range: -40°F to 150°F (-40°C to 65.5°C)

Approvals, Underwriters Laboratories Inc.: UL 916
Approvals, CSA: Certified
Approvals, FCC: FCC Part 15, Subpart B, Class B
Approvals, CE: Approved
Operating Humidity Range (% RH): 5 to 95% RH, non-condensing
Building Management Interface: WEBS AX
Network Communications: Sylk
Commissioning Software: WEBS AX

| Material Number | Description | I/O Count | Frequency | Power Consumption | Voltage |
|-----------------|---|---|--------------|-------------------|---|
| SIO12000 | Sylk IO Module, 12 Universal/0 Digital Inputs, 0 Analog/0 Digital Outputs | 12 Universal/0 Digital Inputs, 0 Analog/0 Digital Outputs | 51 Hz; 60 Hz | 3 VA | 25 Vac with a valid range of 20 to 30 Vac |
| SIO4022 | Sylk IO Module, 4 Universal/0 Digital Inputs, 2 Analog/2 Digital Outputs | 4 Universal/0 Digital Inputs, 2 Analog/2 Digital Outputs | 53 Hz; 60 Hz | 4 VA | 27 Vac with a valid range of 20 to 30 Vac |
| SIO6042 | Sylk IO Module, 6 Universal/0 Digital Inputs, 4 Analog/2 Digital Outputs | 6 Universal/0 Digital Inputs, 4 Analog/2 Digital Outputs | 52 Hz; 60 Hz | 5 VA | 26 Vac with a valid range of 20 to 30 Vac |

Building Automation Appliances



M16831

Building Automation Appliances

WebStat Controller



Application: Controller

Application Size: Up to 20 T7350H Thermostats with free software upgrade

Operating Temperature Range: 32°F to 122°F (0°C to 50°C)

Approximate, Dimensions: 6 3/8 in. wide x 4 7/64 in. high x 2.5 in. deep (16.2 cm wide x 10.5 cm high x 6.4 cm deep)

Honeywell Integrated Building Automation Solution based on WEBS-AX

- Remote Monitoring
- Remote Programming
- Up to 20 T7350H Thermostats
- Plug-and-Play Setup
- Universal Programming, Commissioning and Graphics Tool
- Alarm Email Notification
- Trending
- Thermostat Self-Discovery
- Wiring Diagram Generation Tool.

Shipping and Storage Temperature Range: 32°F to 140°F (0°C to 60°C)

Approvals, Underwriters Laboratories Inc.: UL 916, cUL listed

Approvals, CSA: CSA C22.2 No. 205-M1983 Signal Equipment

Approvals, FCC: FCC part 15 Class A

Approvals, CE: Approved

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

| Material Number | Description | Network Communications | Commissioning Software | Used With | Compatible With | Includes |
|-----------------|--------------------|------------------------|------------------------|--------------|----------------------------------|---------------------------|
| W7350A1000/U | WebStat Controller | LonWorks | WebStat | LonWorks bus | T7350H Communicating Thermostats | Lon Card and Power Supply |

WebVision Controller



Application: Controller; Building Automation Appliance

Application Size: Up to 120 LON devices, including EXCEL 10s, EXCEL 15C, T7350, and VFDs

Operating Temperature Range: 32°F to 122°F (0°C to 50°C)

Approximate, Dimensions: 6 3/8 in. wide x 4 7/64 in. high x 2.5 in. deep (16.2 cm wide x 10.5 cm high x 6.4 cm deep)

Honeywell WebVision is a low cost building manager with remote monitoring and programming for complete HVAC system management from a single interface. A step-up from WebStat, it extends the scope to support HVAC zone and unitary controllers.

- Web-based monitoring, control, commissioning and programming of up to 120 LON devices
- Easy installation (plug-and-play setup) of embedded software
- Single universal tool for device configuration and customization of graphics
- Alarms, schedules and trends to completely manage building automation system
- Demand Limit Control (DLC) and VAV Balancing
- Allows different user profiles for customized access: contractor, facility manager and tenant

Shipping and Storage Temperature Range: 32°F to 140°F (0°C to 60°C)

Approvals, Underwriters Laboratories Inc.: UL 916, cUL listed

Approvals, CSA: CSA C22.2 No. 205-M1983 Signal Equipment

Approvals, FCC: FCC part 15 Class A

Approvals, CE: Approved

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

| Material Number | Description | Network Communications | Commissioning Software | Used With | Compatible With | Includes |
|-----------------|----------------------|------------------------|------------------------|--------------|--|---|
| WWS-VL1A1000/U | WebVision Controller | LonWorks | WebVision | LonWorks bus | Excel 10s; Excel 15C; T7350H Communicating Thermostats | Pre-installed LON card and Power Supply |

Accessories for WebStat and WebVision

Honeywell Integrated Building Automation Solution based on WEBS-AX

- Remote Monitoring
- Remote Programming
- Up to 20 T7350H Thermostats
- Plug-and-Play Setup
- Universal Programming, Commissioning and Graphics Tool
- Alarm Email Notification
- Trending
- Thermostat Self-Discovery
- Wiring Diagram Generation Tool.

Application: Accessory-Parts

Compatible With: W7350A1000|WWS-VL1A1000

Building Management Interface: WebStat|WebVision

| Material Number | Description | Used With |
|-----------------|--|------------------------|
| W-BATTERY/U | REPLACEMENT BATTERY ASSEMBLY FOR WEBSTAT AND WEBVISION | WSS-VLA1000 W7350A1000 |

Lighting Stryker Configurable Lighting Controllers



Using Honeywell Lighting Stryker to integrate lighting into building automation systems makes smart buildings even brighter. Honeywell Lighting Stryker delivers low voltage control and integration with building automation systems. It's the easy way to add lighting automation, including scheduling, lighting scenes, demand response and much more.

- Pre-programmed and Configurable
- Through WEBS-AX can network multiple zones
- Configured for 0-10V dimming and switching control
- Relay output option allows for full "off" of 0-10V systems
- Zio Smart Scene Selector serves as both configuration tool and scene selector
- Designed for the HVAC Contractor to install, configure and maintain
- Easier to install and takes less time to configure than proprietary lighting control systems
- BMS connectivity via BACnet objects for easy commissioning and integration to Honeywell and other building automation systems

Application: Pre-programmed low voltage lighting control device designed to accept inputs from occupancy/vacancy sensors, switches, photocells and networks to drive line voltage relays and dimming for energy efficient lighting systems.

Application Size: Small to Large

Comments: Onboard 20 VDC power supply

Compatible With: BACnet, WEBS AX and can Standalone

Frequency: 50 Hz; 60 Hz

Power Consumption: 5 VA

Voltage: 24 Vac with a valid range of 20 to 30 Vac

Operating Temperature Range: -40°F to 150°F (-40°C to 65.5°C)

Approximate, Dimensions: 5.45 in. high x 6.85 in. wide x 2.26 in. deep (138.4 mm high x 174 mm wide x 57.4 mm deep)

Shipping and Storage Temperature Range: -40°F to 150°F (-40°C to 65.5°C)

Approvals, Underwriters Laboratories Inc.: UL 916

Approvals, CSA: Certified

Approvals, FCC: FCC Part 15, Subpart B, Class B

Approvals, CE: Approved

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

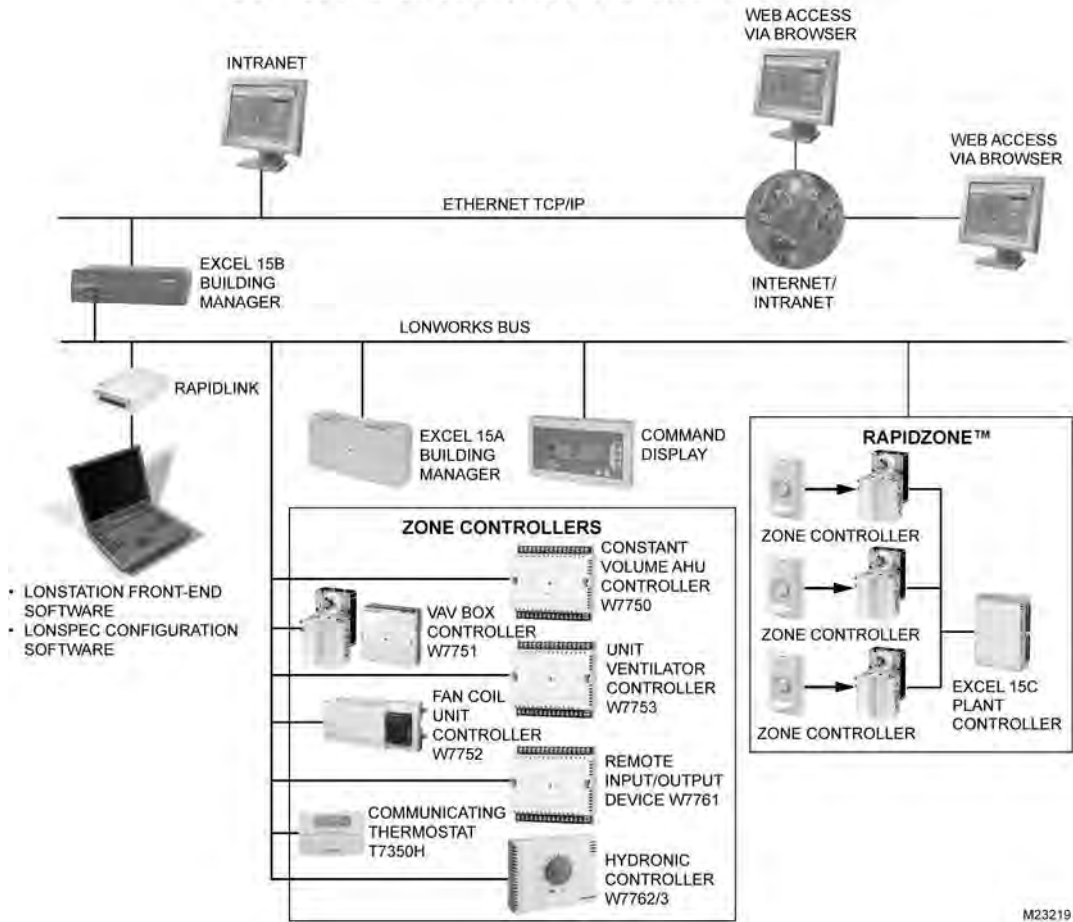
Building Management Interface: WEBS AX, TR75 Zio

Network Communications: BACnet

| Material Number | Description | Includes | Output Type | Commissioning Software |
|-----------------|--|--|---|-------------------------|
| CLB6438S/U | Lighting Stryker Programmable Lighting Control - BACnet | | Pulse Width Modulation, Floating, Staged On/Off | Built-In - Through TR75 |
| YCLB6438S-1 | Lighting Stryker Programmable Lighting Control - BACnet with TR75 Configuration/Scene Selection Device | TR75 Zio Plus Configuration/Scene Selection Device | Pulse Width Modulation, Floating, Staged On/Off | Built-In - Through TR75 |

Light Commercial Building Systems

LIGHT COMMERCIAL BUILDING SYSTEMS ARCHITECTURE



M23219

LonStation Software



LONSTATION. Software is a Windows® based application / PC workstation used for monitoring and managing the Light Commercial Building Solution (LCBS) controllers.

- Easy-to-use drag and drop setup of LonWorks networks and devices.
- Configuration, monitoring and binding of LCBS devices.
- Familiar Windows platform user interface Training available through the Honeywell Authorized Trainer Program.

Application: Software

Building Management Interface: LonStation

Network Communications: LonWorks Bus

| Material Number | Description | Commissioning Software | Comments |
|-----------------|-----------------------------|------------------------|------------------|
| ZL7762A1026/U | LonStation - Software 5.1.0 | LonSpec | Excel LonStation |

Q7770 RapidLink



The Excel 10 Q7770A RapidLink device is a complete network interface unit for a FTT LonWorks® Bus network. RapidLink is equipped with an on-board modem that eliminates the requirement for an on-site modem for remote connections.

- High performance communications protocol provides for faster communication of data to your LonWorks network.
- Fixed 115,200 bits per second (bps) serial bit rate with auto-baud detection.
- Uses LonTalk® LonWorks® network protocol.
- 9 to 24 Vac or Vdc power input using removable screw terminals or a 9 Vdc barrel connector.
- Color-coded, removable screw terminals for network and power wiring.

Operating Temperature Range: 32°F to 100°F (0°C to 38°C)

Shipping and Storage Temperature Range: -40°F to +185°F (-40°C to +85°C)

Operating Humidity Range (% RH): 25 to 95% RH at 50°C

Building Management Interface: LonWorks Bus

Network Communications: LonWorks Bus

| Material Number | Description | Application | Voltage | Commissioning Software | Comments |
|-----------------|-----------------------------------|--|--------------------|------------------------|--|
| Q7770A1001/U | RapidLink Dial Up Network Adapter | Interface- Small to Large Applications | 9 to 24 Vac or Vdc | | Transceiver Type: Transformer isolated, differential Manchester transceiver Display Two service LEDs indicate service request information for each segment; Status LED indicates when network traffic is occurring |
| 50000591-001/U | RapidLink Accessory Kit (U.S.) | Accessory or Replacement Part | | LCBS | |

Light Commercial Building Systems

W7760A Excel 15 Controller



The Excel 15 W7760A Building Manager is a LonMark® compliant device, used to monitor and control HVAC equipment and other miscellaneous loads in a distributed network. The optional lithium battery allows up to four years of continuous power.

- Programmable control of mechanical equipment and auxiliary points.
- Configurable inputs/outputs are expandable with up to three Excel 10 Remote Input/Output (RIO) devices.
- 6 General Purpose Configurable (PID) Control Loops.
- 6 General Purpose Configurable (Non-Linear) Control Loops.
- 8 Start/Stop Control Loops (max of 6 events per day).
- Easy Programming the LonSpec™ Software. Two piece construction for easy installation.
- Easy access to all I/O points for checkout while operations.
- LonTalk® Network communication protocol.
- LonWorks® Free Topology Transceiver (FFT).
- Adaptive Intelligent Recovery.
- Setpoint reset.
- Remote Equipment Monitoring and Control.
- 8 schedules of five different occupancy states (when used with a W7760A Building Manager).
- Demand Limit Control (from a W7760 Building Manager).

Application: Built-up AHU; Packaged RTU; Chiller; Boiler; Heat Pump Systems

Application Size: 20 Nodes

Frequency: 50 Hz; 60 Hz

Power Consumption: 20 VA (with no digital outputs), 100 VA (with digital outputs)

Operating Temperature Range: 32°F to 113°F (0°C to 45°C)

Approximate, Dimensions: 6 5/32 in. high x 10 19/32 in. wide x 3 7/32 in. deep (156 mm high x 259 mm wide x 82 mm deep)

Shipping and Storage Temperature Range: -4°F to +158°F (-20°C to +50°C)

Approvals, Underwriters Laboratories Inc.: UL and cUL listed UL916 as a Class 2 device

Approvals, FCC: Listed Part 15 Subpart J, Class A

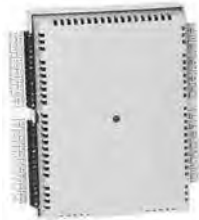
Building Management Interface: LonStation

Network Communications: LonWorks Bus

Commissioning Software: LonSpec; RapidZone

| Material Number | Description | I/O Count | Output Type | Used With | Comments |
|-----------------|---------------------------|--|--|--------------------------------------|--|
| W7760A2011/U | Excel 15 building manager | 4 Digital Inputs, 8 Analog Inputs, 8 Digital Outputs, 2 Analog Outputs | Analog/Modulating, Staged On/Off, Floating, Pulse Width Modulation | LonWorks bus; S7760A Command Display | Can also be used to provide timekeeping abilities to the Excel 15C |

W7760C Excel 15 Controller



The Excel 15 W7760C Plant Controller, monitors and controls HVAC equipment and other miscellaneous loads in a distributed network. The W7760C Plant Controller communicates via the 78 kilobaud LonWorks Network, using a free topology transceiver (FTT).

- Programmable control of mechanical equipment and auxiliary points.
- Configurable inputs/outputs are expandable with up to three Excel 10 Remote Input/Output (RIO) devices.
- Eight digital inputs, eight analog inputs.
- Eight optically isolated digital outputs, six 0-20 mA analog outputs.
- Easy programming with LonSpec software.
- Two-piece construction.
- Easy access to all I/O point for check-out while operational.
- LonTalk Network communication protocol.
- LonWorks Free Topology Transceiver (FTT).

Application: Built-up AHU; Packaged RTU; Chiller; Boiler; Heat Pump Systems

Frequency: 50 Hz; 60 Hz

Power Consumption: 18 VA max, with no digital outputs

Voltage: 24 Vac

Operating Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approximate, Dimensions: 7 1/2 in. high x 5 1/4 in. wide x 1 15/16 in. deep (191 mm high x 133 mm wide x 49 mm deep)

Shipping and Storage Temperature Range: -4°F to +122°F (-20°C to +50°C)

Approvals, Underwriters Laboratories Inc.: UL/cUL Listed: UL916 (E14480)

Approvals, FCC: Listed: Part 15 Subpart J, Class A; European Community Mark: Conforms to European Consortium standards

Building Management Interface: LonStation

Network Communications: LonWorks Bus

| Material Number | Description | Commissioning Software | I/O Count | Output Type | Used With | Comments |
|-----------------|-------------------------|------------------------|--|--|--------------------------------------|---|
| W7760C2017/U | Excel 15C Plant Manager | LonSpec; RapidZone | 8 Analog Inputs, 6 Analog Outputs, 8 Digital Inputs, 8 Digital Outputs | Analog/Modulating, Pulse Width Modulation, Staged On/Off | S7760A Command Display; LonWorks bus | Designed to be used with the Light Commercial building solution. Requires a W7760A be connected to the LonWorks bus in order to have scheduling information |

W7750 Constant Volume Air Handling Unit



The W7750A, B, C are LonMark® compliant Constant Volume Air Handling Unit Controllers used to control single zone and heat pump air handlers.

- High side triac switching (B and C only).
- Freezestat protection for HVAC equipment (B and C only).
- Analog outputs (C only).
- Factory configured via EEPROM with critical user parameter default values.
- Uses LonTalk® network (E-Bus) communications protocol.
- High-speed 78 kilobit communications network.
- Conforms with Echelon® LonMark® HVAC Interoperability standard for Roof Top Unit controllers (profile number 8030).
- Free Topology Transceiver (FTT) network technology is insensitive to polarity, simplifying installation.
- Capable of stand-alone operation and has enhanced features available when using the E-Bus network communications.

- Designed for both staged heating/cooling control and modulating heating/cooling control.
- Uses either Series 60 Floating Control or PWM (W7750B only) providing modulating control for heating/cooling equipment.
- Supports two types of economizer control: modulating control and enable/disable control.
- Provides Proportional Integral Derivative (PID) temperature control.
- Uses an adaptive algorithm (patent pending) that continuously adjusts the discharge air setpoint as needed (W7750B only).
- Motion sensor interface for enhanced energy savings.
- Window sensor input for additional energy savings.

Used With: See Application Selection Guide (63-7046)

Output Type: Staged On/Off, Floating, Pulse Width Modulation

Frequency: 50 Hz; 60 Hz

Voltage: 24 Vac

Setpoint Temperature Range: 45°F to 99°F (7°C to 37°C)

Operating Temperature Range: -40°F to +150°F (-40°C to +66°C)

Approximate, Dimensions: 5 5/8 in. high x 6 in. wide x 2 1/8 in. deep (143 mm high x 152 mm wide x 54 mm deep)

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approvals, Underwriters Laboratories Inc.: UL 916 (E7741) and cUL (E87741)

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Network Communications: LonWorks Bus

Commissioning Software: CARE; LonSpec; RapidZone; LNS Plug-in

| Material Number | Description | Application | Application Size | I/O Count | Contact Ratings | Power Consumption |
|-----------------|--------------------------------|---|------------------|--|---|-------------------|
| W7750A2005/U | Constant Volume AHU Controller | Packaged RTU; Conventional or Heat Pump Systems | 2 Heat / 2 Cool | 6 Digital Outputs (relay), 3 Analog Inputs, 3 Digital Inputs | 1.5 A Run @ 24 Vac; 7.5 A inrush @ 24 Vac | 6 VA |
| W7750B2011/U | Constant Volume AHU Controller | Packaged RTU; Heat Pump Systems | 3 Heat / 3 Cool | 6 Analog Inputs, 5 Digital Inputs, 8 Digital Outputs (triac) | .5 A @ 24Vac (triac) | 12 VA |
| W7750C2001/U | Constant Volume AHU Controller | Packaged RTU; Heat Pump Systems | 3 Heat / 3 Cool | 3 Analog Outputs, 6 Analog Inputs, 5 Digital Inputs, 5 Digital Outputs (triac) | .5 A @ 24Vac (triac); 4 to 20 mA (analog) | 12 VA |

Light Commercial Building Systems

W7751 Variable Air Volume Controllers



W7751B, D & F VAV II Controllers provide pressure independent or dependent airflow control and series and parallel fan control with one and two duct applications. W7751H & J Smart VAV Actuator are VAV Box Controllers with an ML6174B Actuator.

- Uses Echelon® LonWorks® protocol.
- W7751B, D, F use Free Topology Transceiver (FTT) networks and are compliant with VAV device object type number 8010 functional LonMark® profile.
- Energy saving setpoint reset for electrical demand limit control.
- Actuator included with W7751H mounts directly onto VAV box damper shaft and has up to 70 lb-in. torque, 90 degrees stroke, and 90 sec.
- Timing at 60 Hz.
- High speed 78 kilobit communications network.
- Capable of standalone operation, but uses E-Bus network communications.
- Easy user-access to the network communications jack.
- Uses enhanced microbridge-type airflow sensor with dual integral restrictor design.
- Easy user-access to airflow sensor inputs.
- Provides Proportional Integral Derivative (PID) temperature control.
- Designed for pressure independent Variable Air Volume (VAV) control.
- Floating hot water and three-stage electric or modulating hot water heat.
- Provides nonlinear floating algorithm for velocity control loops.
- Individual zone pressurization for supply and exhaust control.
- Factory configured via EEPROM with critical user parameters default values.
- Motion sensor interface for enhanced energy savings.
- Supports Terminal Regulated Air Volume (TRAV) concept.
- Pressurize and depressurize, night purge, and morning warm-up sequences supported.
- Wall module options for sensor, setpoint and bypass.
- Software selectable limits on remote setpoint adjustments.
- Three integrated 8 bit pipelined microprocessors running at 10 MHz.
- 14 bit A/D converter.
- 32K by 8 ROM/PROM, 512 bytes of EEPROM, and 2048 bytes of static RAM.
- W7751D, F mount to a standard 4 x 4 in. and 5 x 5 in. junction box or snapped to 35 by 7.5 mm EN50022 DIN Rail.
- Subbase provides the slotted hole pattern for the R7450 series IRC devices (118 x 87 mm).

Application: VAV Terminal Box

Output Type: Pulse Width Modulation, Floating, Staged On/Off

Compatible With: See Application Selection Guide (63-7045)

Frequency: 50 Hz; 60 Hz

Voltage: 24 Vac with a valid range of 20 to 30 Vac

Setpoint Temperature Range: 45 to 99°F (7 to 37°C)

Operating Temperature Range: 32°F to 125°F (0°C to 52°C)

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approvals, Underwriters Laboratories Inc.: UL 916 (E7741) and cUL (E87741)

Approvals, CE: Approved

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Network Communications: LonWorks Bus

Commissioning Software: CARE; LonSpec; RapidZone; LNS Plug-in

| Material Number | Description | Power Consumption | Approvals, CSA | Approvals, FCC | Comments |
|-----------------|--|-------------------|-------------------------------|--|---|
| W7751B2010/U | Excel 10 VAV II Controller Printed Wiring Board | 10 VA | Listed: File number LR95329-3 | Meets FCC part 15 Class A and Class B requirements | Mountable on Snaptrack |
| W7751D2016/U | Excel 10 VAV II Controller | 10 VA | Listed: File number LR95329-3 | Meets FCC part 15 Class A and Class B requirements | Internally wired subbase, UUKL approval for use on fire systems |
| W7751F2011/U | Excel 10 VAV II Controller | 10 VA | Listed: File number LR95329-3 | Meets FCC part 15 Class A and Class B requirements | Externally wired subbase, UUKL approval for use on fire systems |
| W7751H2025/U | Excel 10 Smart VAV Actuator includes ML6161 Actuator mounted directly on the VAV box | 6 VA | | Meets FCC part 15 Class B requirements | UUKL approval for use on fire systems |
| W7751J2004/U | Excel 10 Smart VAV Actuator includes ML6161 Actuator mounted directly on the VAV box | 6 VA maximum | | Meets FCC part 15 Class B requirements | Does not have pressure sensor, supports pressure dependent only |

W7752 Fan Coil Unit Controllers



Application: Fan Coil Unit
Used With: See Application Selection Guide (63-7043)
Frequency: 50 Hz; 60 Hz
Power Consumption: 30 VA maximum
Setpoint Temperature Range: 32°F to 104°F (0°C to 40°C)
Operating Temperature Range: 32°F to 122°F (0°C to 50°C)
Approximate, Dimensions: 4 1/8 in. high x 10 1/8 in. wide x 2 1/2 in.

deep (101 mm high x 257 mm wide x 60 mm deep)

| Material Number | Description | Application Size | I/O Count | Output Type | Voltage | Includes |
|-----------------|---------------------------|------------------------------------|---|---|--|--|
| W7752D2007 | Fan Coil Unit Controllers | 2-pipe; 4-pipe; 3 Heat / 3 Cool | 3 Analog Inputs, 1 Digital Input, 1 Digital Output (3 speed fan control), 2 Analog Outputs (H/C triac), 1 Digital Output | Staged On/Off, Floating, Pulse Width Modulation | 230 Vac (+10%, -15%) with electric heat relay | 250 Vac 10A electric reheat relay and 3 fan speed relays |
| W7752G2000 | Fan Coil Unit Controllers | 3 Heat / 3 Cool; 2-pipe; 4-pipe | 3 Analog Inputs, 1 Digital Input, 1 Digital Output (3 speed fan control), 2 Analog Outputs (H/C triac), 1 Digital Output | Staged On/Off, Floating, Pulse Width Modulation | 115 Vac (+10%, -15%) without electric heat relay | 3 fan speed relays |

W7752 Fan Coil Unit Controllers provide room temperature control for two & four pipe fan coil units with optional electric heating coils and can control single, two or three speed fans. Is suitable for systems using electric heat and compressors.

- LonMark® Fan Coil Unit HVAC profile #8020.
- Stand-alone operation or on high-speed 78 kilobit Echelon® Bus (E-Bus) network direct connection of thermal actuators, fan switch, electric heat.
- Factory-configured default parameters.
- Wide range of supported valves and actuators.
- Interlocks and time delays to protect equipment.
- Slim design fits into narrow fan coil units.
- Terminations all on one side allow controller to be positioned at back of fan coil unit.
- Integral 115 Vac or 230 Vac transformer.

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +70°C)

Approvals, FCC: Meets FCC part 15 class B requirements

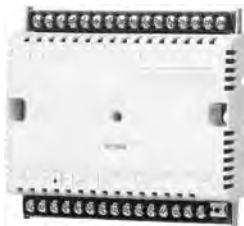
Approvals, CE: CE mark; EN50081-1; EN50082-1

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Network Communications: LonWorks Bus

Commissioning Software: CARE; LonSpec; RapidZone; LNS Plug-in

W7753 Unit Vent Controllers



Application: Unit Ventilator
Application Size: 2 Heat / 2 Cool
Frequency: 50 Hz; 60 Hz
Power Consumption: 6 VA
Setpoint Temperature Range: 55°F to 85°F (13°C to 29°C)
Approximate, Dimensions: 5 5/8 in. high x 6 in. wide x 2 1/8 in. deep
 (143 mm high x 152 mm wide x 54 mm deep)

W7753A is a direct digital controller for unit ventilators with staged, floating, or pulse width modulation output using pre-programmed heating, cooling, economizer, and ASHRAE cycles I, II, or III algorithms.

- Uses standard Echelon® LonMark Unit Ventilator functional profile for openness and interoperability with LonMark devices.
- Applications include unit ventilators with up to two stages heat/cool; floating heat/cool/economizer, pulse width modulating (PWM) heat/cool/economizer; ASHRAE Cycles I, II, III.
- Two unused digital outputs can be used as free points controlled by the network for lighting, exhaust fan.
- Can be used for indoor air quality control using an external sensor/control and economizer minimum position reset.
- Provides optional energy-saving setpoints for heating/cooling in unoccupied/occupied and standby modes.
- Optional control sequence shutdown via window/door open digital input.
- On-board network jacks for quick commissioning and troubleshooting using the E-Vision configuration tool.
- On-board status LED.
- Free topology transceiver (FTT) for flexible installation.
- UL94-5V flame-retardant construction.

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approvals, Underwriters Laboratories Inc.: UL 916

Approvals, FCC: FCC part 15 Class B requirements

Network Communications: LonWorks Bus

Commissioning Software: CARE; LonSpec; RapidZone; LNS Plug-in

| Material Number | Description | I/O Count | Output Type | Used With | Comments |
|-----------------|----------------------------|---|--|--|--------------------------------|
| W7753A2002/U | Unit Ventilator Controller | 8 Digital Outputs (triac), 2 Analog Inputs (resistive), 2 Analog Inputs (voltage), 4 Digital Inputs | Staged On/Off, Floating, Pulse Width Modulation | See Application Selection Guide (63-7044) | One T7770 wall module input |

Light Commercial Building Systems

W7761 Remote Input/Output Device



The W7761 extends the distribution of input and output devices across an Echelon network.

- Each input/output is individually controlled from the Zone Manager.
- Uses Echelon LonTalk® communication protocol.
- Free topology transceiver (FTT) for flexible installation.
- On-board network jacks.
- On-board status LED.
- Flame retardant construction (UL94-V5 rated).

Application: Remote I/O

Application Size: 2 Heat / 2 Cool

Frequency: 50 Hz; 60 Hz

Power Consumption: 6 VA maximum

Voltage: 24 Vac with a valid range of 20 to 30 Vac

Operating Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approximate, Dimensions: 5 5/8 in. high x 6 in. wide x 2 1/8 in. deep
(143 mm high x 152 mm wide x 54 mm deep)

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approvals, Underwriters Laboratories Inc.: Component Recognized: File No. SA481

Approvals, CSA: Listed: File No. LR95329-3

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Network Communications: LonWorks Bus

| Material Number | Description | Commissioning Software | I/O Count | Output Type | Comments |
|-----------------|---------------------|---------------------------------------|---|---|---------------------------------------|
| W7761A2010/U | Excel 10 Remote IOD | LNS Plug-in; CARE; LonSpec; RapidZone | 2 Analog Inputs (voltage), 4 Analog Inputs (resistive), 4 Digital Inputs, 8 Digital Outputs (triac) | Staged On/Off, Floating, Pulse Width Modulation | UUKL approval for use on fire systems |

W7762; W7763 Hydronic Controller



W7762 Hydronic controllers cover a wide range of control applications including radiators, induction units, fan coil units with manual switching, and simple VAV. They are suitable for unit/wall mounting as stand-alone or part of a LonWorks bus network.

- High efficiency, low cost Heat/Cool valve application solution.
- Model with integrated or remote wall module LonWorks Open protocol: flexibility now and for the future.
- LonMark profile #8020.
- Direct connection of thermal actuators.
- Wide range of supported valves and actuators.

Application: Hydronic Controller

Application Size: 2-pipe; 4-pipe; 3 Heat / 3 Cool

Output Type: Floating, Pulse Width Modulation, Staged On/Off, Multi-stage Electric

Frequency: 50 Hz; 60 Hz

Power Consumption: 0.5 VA maximum (no load)

Voltage: 24 Vac ± 20%

Setpoint Temperature Range: 32°F to 158°F (0°C to 70°C)

Operating Temperature Range: 32°F to 122°F (0°C to 50°C)

Approximate, Dimensions: 3 5/32 in. high x 4 11/32 in. wide x 1 21/32 in. deep (80 mm high x 110 mm wide x 42 mm deep)

Shipping and Storage Temperature Range: -4°F to +158°F (-20°C to +70°C)

Approvals, Underwriters Laboratories Inc.: Component Recognized: File No. SA481

Approvals, CSA: Listed: File No. LR95329-3

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Network Communications: LonWorks Bus

| Material Number | Description | Commissioning Software | Comments | Includes |
|-----------------|------------------------------|---------------------------------------|--------------------------------|---|
| W7762B1027 | Excel 10 Hydronic Controller | CARE; LonSpec; RapidZone; LNS Plug-in | 2 inputs and 2 control outputs | |
| W7763C1016 | Excel 10 Hydronic Controller | CARE; LonSpec; RapidZone; LNS Plug-in | 3 Inputs, 2 Control Outputs | An integral setpoint knob, sensor, bypass button, and LED |
| W7763C1024 | Excel 10 Hydronic Controller | CARE; LNS Plug-in | Relative Setpoint Adjustment | An integral setpoint knob, sensor, bypass button, and LED |
| W7763C1032 | Excel 10 Hydronic Controller | CARE; LNS Plug-in | Relative Setpoint Adjustment | An integral setpoint knob, sensor, bypass button, and LED |

Y7751- W7751F VAV Unit Controller and ML6161B Actuator



W7751F2003 VAV II Controllers provide pressure independent or dependent airflow control and series and parallel fan control. Extra outputs control VAV box reheat coils. ML6161B2024 controls dampers in VAV terminal units and mounting on ball valves.

- Uses Echelon LonWorks Protocol.
- High Speed 78 kilobit communications network.
- Easy user-access to the network communications jack.
- Easy user-access to the airflow sensor inputs.
- Provides Proportional Integral Derivative (PID) temperature control.
- Designed for pressure independent Variable Air Volume (VAV) control.
- Floating hot water and three-stage electric or modulating hot water heat.
- Provides nonlinear floating algorithm for velocity control loops.
- Factory configured via EEPROM with critical user parameters default values.
- ML6161B2024 is a Direct Couple, General Purpose, Non-Spring Return Actuator.
- Rated at 35 lb-in. torque with a 90 degree stroke.

Building Management Interface: EBI; SymmetrE; ACSELON

| Material Number | Application | Description | Network Communications | Commissioning Software | Includes |
|-----------------|--|--|------------------------|---------------------------------------|--------------------------------------|
| Y7751F2001/U | VAV Controller with FFT base with enclosure and outward facing terminal strips | Package containing a W7751F VAV Controller and a ML6161 Actuator | LonWorks Bus | CARE; LonSpec; RapidZone; LNS Plug-in | One W7751F 2003 and one ML6161B 2024 |

W7760B Excel 15 Controller



The Excel 15 W7760B Building Manager is a Light Commercial Building Solution (LCBS) operator interface (network server) and LONWORKS® Bus supervisory device, used to connect the user to the Internet/LAN/WAN and provide multi-user access to web pages.

- Internet Network appliance with hard drive.
- Supports up to 120 Excel 10 and Excel 15 W7760C controllers.
- Self-discovery of devices (nodes) on the LONWORKS® network.
- Automatically creates a Device Status List (DSL).
- Automatically creates display pages for each supported Excel 10 and Excel 15 W7760C controller.
- Automatically configures Trends Log for supported Excel 10 and Excel 15 W7760C controller.
- Up to 100 user configured Trend Logs.
- Scheduling of Excel 10 devices and Excel 15 W7760C objects.
- Reports and logs alarm data.
- E-mails reports of alarm data.
- View Excel 10 and Excel 15 W7760C data, modify setpoints and command Occupied bypass.
- Real Time Clock (RTC) for time stamping with time synchronization.
- Multi-user access.

Application: Built-up AHU; Packaged RTU; Chiller; Boiler; Heat Pump Systems

Application Size: 120 nodes

Used With: LonWorks bus; S7760A Command Display

Output Type: Staged On/Off, Graphical Interface, Floating, Pulse Width Modulation, Analog/Modulating

Frequency: 50 Hz; 60 Hz

Power Consumption: 20 VA

Operating Temperature Range: 41°F to 95°F (5°C to 35°C)

Approximate, Dimensions: 6 5/32 in. high x 10 19/32 in. wide x 3 7/32 in. deep (156 mm high x 259 mm wide x 82 mm deep)

Shipping and Storage Temperature Range: -4°F to +149°F (-20°C to +65°C)

Approvals, Underwriters Laboratories Inc.: UL and cUL listed UL916 as a Class 2 device

Approvals, FCC: Listed Part 15 Subpart J. Class A

Operating Humidity Range (% RH): 10% to 85% non-condensing

System Requirements: Internet Explorer 5.5 or higher

Building Management Interface: Excel 15B

Network Communications: LonWorks Bus

| Material Number | Description | Comments |
|-----------------|---------------------------|--|
| W7760B2001/C | Excel 15 building manager | Can also be used to provide timekeeping abilities to the Excel 15C |
| W7760B2001/U | Excel 15 building manager | Can also be used to provide timekeeping abilities to the Excel 15C |

Light Commercial Building Systems

T7067 Thermostat and Transmitter



Application: Module

Application Size: Depends on Logic Panel (W973)

Output Type: Voltage Ramp

Voltage: 20 Vdc from W973 panel

Setpoint Temperature Range: 55°F to 85°F (13°C to 29°C)

Approximate, Dimensions: 4 5/8 in. high x 2 13/16 in. wide x 1 1/4 in. deep (118 mm high x 71 mm wide x 32 mm deep)

T7067A Thermostat and T7067B Transmitter control space temperature when used with W973 Logic Panel.

- Separate heat and cool adjustable setpoint levers provide adjustable deadband from 3°F to 30°F (2°C to 17°C).
- Separate 1-16 Vdc voltage ramps provide independent heating and cooling signals to W973 Single Zone Logic Panel.
- Two light-emitting diodes (LEDs) under T7067 cover for system checkout.
- C7046A Discharge Air Sensor provides temperature anticipation.
- One T7067 can control up to 6 W973 panels in parallel.
- Mount on standard 2 x 4 in. vertical outlet box or on a non-conductive flat surface.
- All models include wiring plate and locking cover.

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approvals, DOD Guidelines: Meets

Approvals, ASHRAE Guidelines: Meets ASHRAE 90-75

Accessories:

S963D1001/U – 2 Potentiometers that simulate the ramp signals of a T7067 Thermostat

| Material Number | Control System | Compatible With | Description | Comments |
|-----------------|------------------|--------------------------------|---|--|
| T7067A1008/U | W973 single zone | Q667 subbase, W973 Logic Panel | Solid State Thermostat designed to be used with the W973 logic panel to control the operation of single zone packaged air conditioning equipment. | Integral temperature sensor without thermometer; Number of stages of heating and cooling depends on the chosen Logic Panel |
| T7067B1006/U | W973 single zone | Q667 subbase, W973 Logic Panel | Transmitter designed for use with a T7047C1025 or T7022A1010 remote temperature sensor | Must order T7047C, G remote temperature sensor or T7022A remote duct temperature sensor separately |

T7080 Electronic Dual Setpoint Thermostat



Application Size: 3 Heat / 3 Cool

Control System: W7080 control system

Voltage: 24 Vdc

Setpoint Temperature Range: 55°F to 85°F (13°C to 29°C)

Approximate, Dimensions: 4 5/8 in. high x 2 13/16 in. wide x 1 1/4 in. deep (118 mm high x 71 mm wide x 32 mm deep)

Used in W7080 control system to provide modulating space temperature control.

- Separate heat and cool adjustable setpoint levers provide adjustable deadband from 3°F to 30°F (2°C to 17°C).
- Single 2 to 22 Vdc voltage ramp provides heating/cooling signal to W7080 Load Analyzer.
- Outputs constant 12 Vdc when sensed temperature is within deadband range.
- Ramp output decreases on call for heat; increases on call for cooling.
- C7100B or C7046B Air Temperature Sensors are used to provide heating/cooling anticipation (one required for each zone thermostat) and can also be optionally used as remote return air temperature sensors with the T7080B transmitter.
- Operates on 24 Vdc supplied by W7080A Load Analyzer.
- Mounts on standard 2 x 4 in. outlet box or on nonconductive flat surface.

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approvals, DOD Guidelines: Meets

Approvals, ASHRAE Guidelines: Meets ASHRAE 90-75

| Material Number | Application | Output Type |
|-----------------|--|--------------|
| T7080A1019/U | Packaged RTU; Furnace; Split System | Voltage Ramp |
| T7080B1017/U | Packaged RTU; Furnace; Heat Pump Systems; Split System | Voltage Ramp |

W7080 Load Analyzer



Application Size: 3 Heat / 3 Cool
Contact Ratings: NO 240 VA inrush @ 24 Vac, 60 VA running @ 24 Vac; NC 75 VA inrush @ 24 Vac, 30 VA running @ 24 Vac
Electrical Connections: 1/4 in. quick-connect male terminals
Frequency: 50 Hz; 60 Hz
Voltage: 24 Vdc
Operating Temperature Range: -40°F to +150°F (-40°C to +65°C)

Controls heating, cooling and space demand oriented economizer operation in the Honeywell Electronic Dual Setpoint Multizone control system.

- Controls 3 stages of on/off heating, modulated heating, modulated economizer, 3 stages of on/off cooling and modulated cooling.
- Responds to highest heating and cooling demand signal from up to 12 T7080 Zone Thermostat/Transmitters.
- Analyzer is short-circuit protected source of 24 Vdc power for zone thermostat/transmitter, sensor and W7081A Limit Controller Package.
- Switches all stages off when power is interrupted; switches stages on when power is restored.
- Compressor turn-on time delays must be incorporated for each compressor.
- No adjustment or calibrations required.
- Night setback and cooling shutdown for individual or all zones by addition of time-clock.
- Mounts with 4 No. 8 Screws (not provided) through holes in base.

Approximate, Dimensions: 6 1/4 in. high x 4 1/8 in. wide x 2 5/16 in. deep (159 mm high x 105 mm wide x 59 mm deep)

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approvals, Underwriters Laboratories Inc.: Component Recognized
Approvals, CSA: Component Recognized
Approvals, DOD Guidelines: Meets
Approvals, ASHRAE Guidelines: Meets ASHRAE 90-75

| Material Number | Application | Control System | Compatible With | Description | Comments |
|-----------------|-------------------------------------|----------------------|------------------|-------------------------------|---|
| W7080A1016/U | Packaged RTU; Furnace; Split System | W7080 control system | T7080 Thermostat | Load Analyzer, 3 Heat/ 3 Cool | Load analyzer provides control of On/Off and modulated cooling and modulated economizer functions |

W7081 Limit Controller



Application Size: Small (<20 I/O Points)
Electrical Connections: 1/4 in. quick-connect male terminals
Power Consumption: 0.29 VA maximum
Operating Temperature Range: -40°F to +150°F (-40°C to +65°C)
Approximate, Dimensions: 6 1/4 in. high x 4 1/8 in. wide x 2 5/16 in. deep (159 mm high x 105 mm wide x 59 mm deep)

Used with W7080A Load Analyzer to provide cold deck low limit, hot deck high limit, and economizer/mixed air low limit functions.

- Limits the maximum and minimum temperatures of the hot and cold deck and of the mixed air by supplying modified demand signals to the W7080A Load Analyzer and to the economizer.
- The positive limits stabilize deck temperatures under light load conditions providing greater comfort and reducing energy usage.
- Has jumper selectable setpoints for each of its 3 functions.
- Compact to fit easily in HVAC system control panel.
- Mounts with 4 No. 8 screws (not provided) through holes in base.

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approvals, Underwriters Laboratories Inc.: Component Recognized
Approvals, CSA: Component Recognized
Approvals, DOD Guidelines: Meets
Approvals, ASHRAE Guidelines: Meets ASHRAE 90-75

| Material Number | Application | Control System | Compatible With | Description |
|-----------------|--|----------------------|---------------------|------------------|
| W7081A1015/U | Packaged RTU; Furnace; Heat Pump Systems; Split System | W7080 control system | W7080 Load analyzer | Limit Controller |

W7100A, C Discharge Air Temperature Controller



Maintains an average discharge air temperature in variable air volume (VAV) systems, or other systems requiring discharge air control of multistage cooling or heating. Reduces kilowatt demand and consumption by maintaining the minimum amount of heating or cooling capacity required to hold the discharge air setpoint. Utilizes economizer for free cooling when available.

- W7100 Controller maintains an average discharge air temperature in variable air volume (VAV) cooling systems by modulating an economizer and sequencing stages of mechanical cooling
- The W7100 can be applied to electric makeup air and other systems requiring discharge air control of multistage heating or cooling
- Staging capacity of the W7100A, C can be extended six stages using a W7101A Satellite Sequencer
- When power is interrupted, the system cycles to all stages off
- When power is restored, the economizer will first be modulated open (if enthalpy is suitable), then stages of mechanical cooling will be sequenced on
- If enthalpy is not suitable for economizer operation, the first stage of cooling or heating is energized within five minutes
- Reset signal from either space sensor or outdoor air sensor

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Accessories:

S963B1037/U – Manual Potentiometer (480 ohm)

S963B1078/U – Manual Potentiometer (500 ohm)

S963B1128/U – Manual Potentiometer (135 ohm)

Electrical Connections: 1/4 in. quick-connect male terminals

Frequency: 50 Hz; 60 Hz

Power Consumption: 12 VA at 24 Vac, 50/60 Hz (max).

Voltage: 20 to 30 Vac

Setpoint Temperature Range: 40°F to 90°F (4°C to 32°C)

Operating Temperature Range: 40°F to 90°F (4°C to 32°C)

Approximate, Dimensions: 8 5/8 in. high x 6 1/2 in. wide x 3 in. deep
(219 mm high x 161 mm wide x 76 mm deep)

| Material Number | Application | Application Size | Control System | Output Type | Contact Ratings | Description | Comments |
|-----------------|---------------|------------------|----------------|---------------|---|---|--|
| W7100A1053/U | Discharge Air | 0 Heat / 6 Cool | W7100 family | Staged On/Off | NO 240 VA inrush @ 24 Vac, 60 VA running @ 24 Vac; NC 75 VA inrush @ 24 Vac, 30 VA running @ 24 Vac; NO 750 VA inrush @ 120/240 Vac, 75 VA running @ 120/240 Vac; NC 240 VA inrush @ 40 Vac, 30 VA running @ 24 Vac | 20 to 30 Vac Discharge air temperature controller | Additional stages of heating and cooling can be achieved by adding a W7101 Satellite Sequencer |
| W7100C1018/U | Discharge Air | 2 Heat / 4 Cool | W7100 family | Staged On/Off | NO 750 VA inrush @ 120/240 Vac, 75 VA running @ 120/240 Vac; NC 240 VA inrush @ 40 Vac, 30 VA running @ 24 Vac; NO 240 VA inrush @ 24 Vac, 60 VA running @ 24 Vac; NC 75 VA inrush @ 24 Vac, 30 VA running @ 24 Vac | 20 to 30 Vac Discharge air temperature controller | Additional stages of heating and cooling can be achieved by adding a W7101 Satellite Sequencer |

W7100G Discharge Water Temperature Controller



Controls discharge water temperature in reciprocating chiller and cooling tower applications.

- The W7100G maintains average discharge water temperature by staging on and off compressors, unloaders of water tower fans as required.
- Provides up to six stages of cooling.
- Use W7101A for expanding up to 10 cooling stages.
- Advanced proportional plus integral microprocessor control algorithm minimizes droop.
- Soft start to minimize compressor cycling during system start up.
- Adjustable minimum on/off timing and time delay between stages of either 30 or 60 seconds.
- Reset of discharge water temperature based on either outdoor air or space sensor signal.
- Use C7170 Sensor for sensing water temperature.
- LEDs indicate which stages of cooling are energized.
- Use S963B Potentiometer for remote setpoint capability.

Contact Ratings: NO 750 VA inrush @ 120/240 Vac, 75 VA running @ 120/240 Vac; NC 240 VA inrush @ 40 Vac, 30 VA running @ 24 Vac; NO 240 VA inrush @ 24 Vac, 60 VA running @ 24 Vac; NC 75 VA inrush @ 24 Vac, 30 VA running @ 24 Vac

Electrical Connections: 1/4 in. quick-connect male terminals

Frequency: 50 Hz; 60 Hz

Power Consumption: 12 VA at 24 Vac, 50/60 Hz (max).

Voltage: 20 to 30 Vac

Operating Temperature Range: -40°F to +150 F

Approximate, Dimensions: 8 5/8 in. high x 6 1/2 in. wide x 3 in. deep (219 mm high x 161 mm wide x 76 mm deep)

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Accessories:

- S963B1037/U – Manual Potentiometer (480 ohm)
- S963B1078/U – Manual Potentiometer (500 ohm)
- S963B1128/U – Manual Potentiometer (135 ohm)

| Material Number | Application | Application Size | Control System | Output Type | Compatible With | Description | Comments |
|-----------------|-------------|------------------|----------------|---------------|----------------------------------|--|---|
| W7100G1001/U | Chiller | 0 Heat / 6 Cool | W7100 family | Staged On/Off | W7101 Satellite Expansion Module | 20 to 30 Vac Discharge Air or Water Temperature Controller | 4 additional stages of cooling can be added with W7101A |

W9076 Digital Temperature Indicator



W9076 temperature indicators provide continuous LED display of temperature in commercial building uses. Allows user selection of Fahrenheit or Celsius readings in the range of -40°F to 199°F (-40°C to 93°C).

- Fahrenheit or Celsius display is field selectable.
- Solid state sensor provides fast response, accurate temperature readings.
- The 3-1/2 digit LED display has 0.3 inch numerals.
- Front mounting permits fast, easy installation.

Application: Monitors temperature is space or ducts, and fluid in hot or cold water pipes

Contact Ratings: 49 mm diameter, 70 mm long

Frequency: 50 Hz; 60 Hz

Voltage: 24 Vac, +25%, -15%. For each volt above 26 Vac, derate ambient temperature by 5°F (2.8°C)

Operating Temperature Range: -40°F to +199°F (-40°C to +93°C)

Approximate, Dimensions: 4 9/16 in. high x 1 15/16 wide x 2 3/4 in. deep (116 mm high x 49 mm wide x 70 mm deep)

Accessories:

- 107324A – Capillary Holder Assembly for duct insertion, 8 3/8 in. long
- 131524A/U – Capillary Holder Assembly, 8 3/8 in. long, duct insertion

Replacement Parts:

- 121371A/U – Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. NPT. Includes mounting clamp.
- 121371E/U – Stainless steel. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 1/2 in. (13 mm) NPT. Includes mounting clamp.
- 131524A/U – Capillary Holder Assembly, 8 3/8 in. long, duct insertion
- 230038A/U – Replacement Faceplate Lens for use with W9076

| Material Number | Description | Comments | Includes | Used With |
|-----------------|--|---|----------------|---|
| W9076A1000/U | Digital Temperature indicator that provides a continuous LED display for temperature (includes sensor) | Solid state sensor usable up to 300 ft (91 m) | 194950E Sensor | T7047C1090 Case (for wall mounting the remote sensor), 121371A Immersion Well, 131524A/107324A/311266D Holders for duct mounting sensor, 107408 Heat-inductive compound |

Legacy Building Systems

W973 Logic Panel



Compatible With: T7067 Thermostat with Q667 subbase
Contact Ratings: NO 240 VA inrush @ 24 Vac, 60 VA running @ 24 Vac; NC 75 VA inrush @ 24 Vac, 30 VA running @ 24 Vac
Electrical Connections: 1/4 in. quick-connect male terminals
Frequency: 50 Hz; 60 Hz
Power Consumption: 8 VA
Control System: W973 single zone
Voltage: 24 Vac
Operating Temperature Range: -40°F to +150°F (-40°C to +66°C)
Approximate Dimensions: 6 1/4 in. high x 4 1/8 in. wide x 2 5/16 in. deep (159 mm high x 105 mm wide x 59 mm deep)

Control heating, cooling and economizer operation in commercial air conditioning and heat pump equipment.

- Proven, reliable temperature control.
- Many flexible versions to meet your application needs.
- Panels can be used with staged gas, oil, or electric heat; modulating gas, hot water, or steam heat; and direct expansion or modulating chilled water cooling.
- Control up to 3 on-off heat or cool stages or up to 10 on-off heat and/or cool stages using W975 Satellite Sequencers.
- Modulating dc current signal controls economizer heating or cooling valve motors.
- T7067 Dual Setpoint Thermostat/Transmitter located in controlled space provides heating and cooling input signal based on space demand.
- C7046A sensor located in discharge air duct provides heating/cooling anticipation and economizer modulating low limit signal.
- System cycles all stages off on power interruption.
- When power is restored, system sequences required stages on with timed inter-stage delay.

Shipping and Storage Temperature Range: -30°F to +150°F (-34°C to +65°C)

Approvals, Underwriters Laboratories Inc.: Component Recognized: File No. SA481

Approvals, CSA: File No. LR95329-3

Accessories:

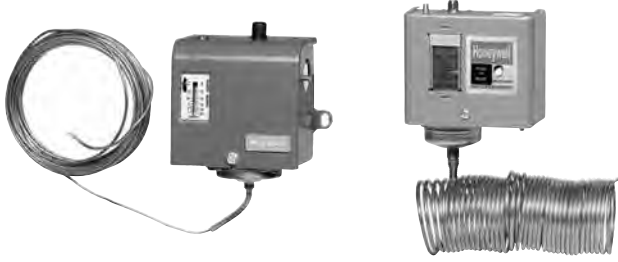
4074EAC/U – Resistor Kit. Required for use when using M7364, M7164, M7184, M7186, M7685, or M7185 motors with W973

| Material Number | Application | Application Size | Output Type | Comments |
|-----------------|--|------------------|---------------|--|
| W973A1017/U | Packaged RTU; Furnace; Heat Pump Systems; Split System | 2 Heat / 2 Cool | Staged On/Off | |
| W973B1016/U | Packaged RTU; Furnace; Heat Pump Systems; Split System | 3 Heat / 3 Cool | Staged On/Off | Provides modulating heating output and modulating cooling output |
| W973B1024/U | Packaged RTU; Furnace; Heat Pump Systems; Split System | 3 Heat / 3 Cool | Staged On/Off | Provides modulating heating output and modulating cooling output |
| W973E1005/U | Packaged RTU; Furnace; Heat Pump Systems; Split System | 0 Heat / 4 Cool | Staged On/Off | |
| W973J1017/U | Packaged RTU; Furnace; Heat Pump Systems; Split System | 4 Heat / 4 Cool | Staged On/Off | |
| W973J1025/U | Packaged RTU; Furnace; Heat Pump Systems; Split System | | | |

Environmental Control Systems Accessories

| Material Number | Description | Used With | |
|-----------------|---|--------------|--|
| 230038A/U | Replacement Faceplate Lens for use with W9076 | W9076 | |
| S963B1003/U | Manual Potentiometer (360 ohm) | T7022; T7023 | |
| S963B1037/U | Manual Potentiometer (480 ohm) | | |
| S963B1078/U | Manual Potentiometer (500 ohm) | | |
| S963B1086/U | Manual Potentiometer (1000 ohm) | | |
| S963B1128/U | Manual Potentiometer (135 ohm) | | |
| S963B1136/U | Manual Potentiometer (270 ohm) | | |
| S963B1177/U | Manual Potentiometer (480 ohm) | | |
| S963D1001/U | 2 Potentiometers that simulate the ramp signals of a T7067 Thermostat | | |

L480; L482 Refrigeration Controller



Used to limit or control temperature in air conditioning systems or refrigerated enclosures.

- Applications include freezer cabinets, display cases, beverage coolers, milk cooling tanks and air conditioners.
- Can act as a frost alarm operator in storehouses or orchards where frost would damage crops or equipment.
- Dual temperature scaleplate provided for both Fahrenheit and Celsius readings.

Type: Averaging element

Voltage: 120 Vac; 240 Vac

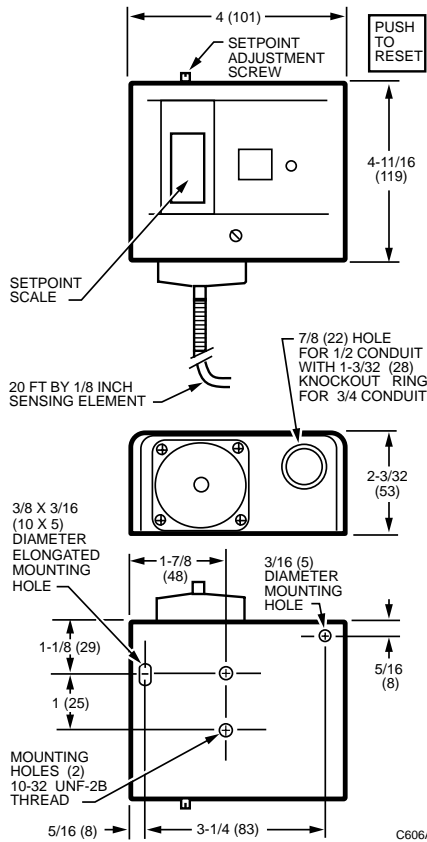
Frequency: 50 Hz; 60 Hz

Capillary Length: 20 ft (6.1 m)

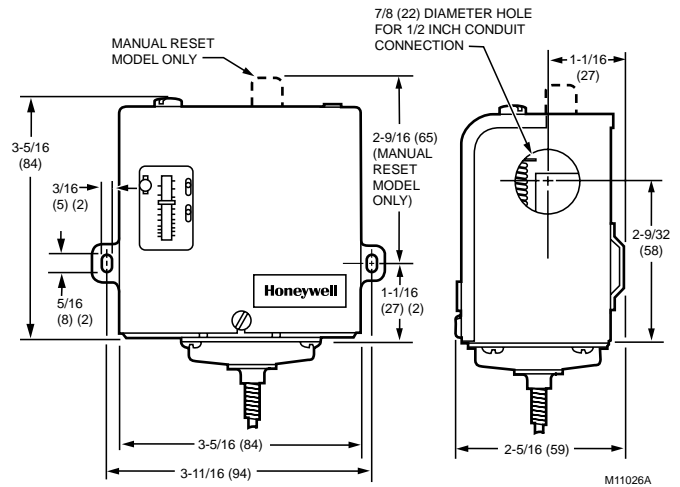
Approvals, Underwriters Laboratories Inc.: File: SA481, Guide: SDFY

Approvals, CSA: Certified: File No. LR95329-1

L482 Dimensions in inches (millimeters)



L482 Dimensions in inches (millimeters)



| Material Number | Application | Differential Temperature | Operating Temperature Range | Setpoint Temperature Range | Switching | Contact Ratings | Comments |
|-----------------|---|--------------------------|------------------------------|----------------------------|----------------------------|--|--|
| L480B1239/U | Acts as frost alarm in storehouses, orchards, or other locations where frost could damage crops or equipment. | 10°F (5.6°C) | 125°F Maximum (52°C Maximum) | 20°F to 60°F | 1 SPDT | 120 Vac – 10.2 AFL, 61.2 ALR; 240 Vac – 6.5 AFL, 39.0 ALR | |
| L480G1044/U | For temperature or limit control of air conditioning systems and refrigeration units. | 15°F (8°C) | 125°F Maximum (52°C Maximum) | 20°F to 60°F | 1 SPST | 120 Vac – 10.2 AFL, 61.2 ALR; 240 Vac – 6.5 AFL, 39.0 ALR | Manual reset |
| L482A1004/U | Provides temperature or limit control of air conditioning systems by operating electric motors for dampers, valves, compressors, or fans. | 5°F (2.8°C) | 140°F Maximum (60°C Maximum) | 34°F to 55°F | 2 SPST, one N.O., one N.C. | 120 Vac – Main: 8.0 AFL, 48.0 ALR, Aux: 6.0 AFL, 36.0 ALR; 240 Vac – Main: 5.1 AFL, 30.6 ALR, Aux: 3.0 AFL, 18.0 ALR | Manual reset; Range stop cannot be removed |

Refrigeration Controllers

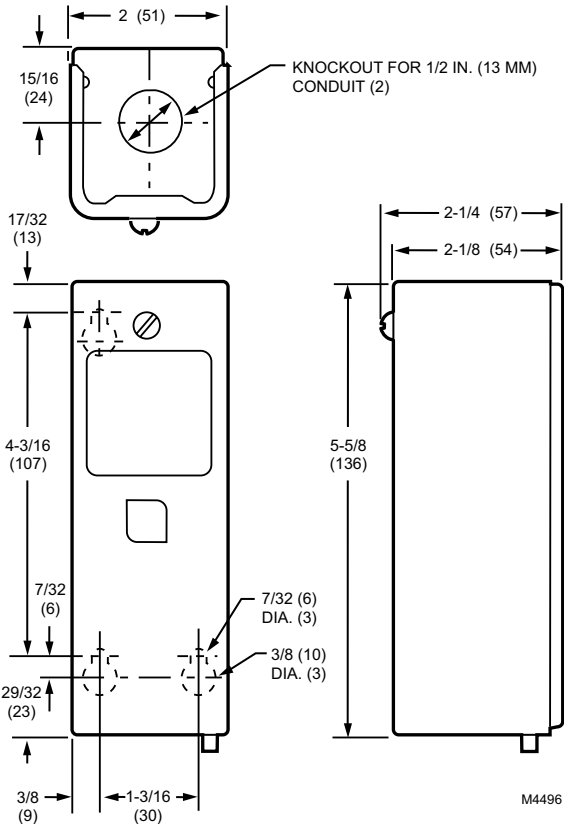
T4031A; T6031A Refrigeration Temperature Controller



Provide limit or temperature control in refrigerated areas where remote mounting of sensing element is required.

- Liquid-filled copper elements provide rapid sensing to control the compressor system.
- Control temperature in a duct, tank, freezer or cooler.
- Controller element can be directly immersed in the controlled medium.
- Adjustable control setpoint.
- Ambient temperature compensation provides good temperature control.
- Refer to T775 Electronic Remote Temperature Controller where more exact control is required and/or remote controller location is preferred.

Dimensions in inches (millimeters)



Type: Remote bulb

Voltage: 120 Vac; 240 Vac

Contact Ratings: 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR

Approximate, Dimensions: 5 5/8 in. high x 2 in. wide x 2 1/4 in. deep (143 mm high x 51 mm wide x 57 mm deep)

Sensor Element: Copper bulb

Operating Temperature Range: 125°F Maximum (52°C Maximum)

Bulb Size: 3/8 in. diameter x 3 in. long (10 mm diameter x 76 mm long)

Approvals, Underwriters Laboratories Inc.: File SA481, Vol. 3, Sec. 5, Guide SPFY

Approvals, CSA: Certified: File No. LR95329-1

| Material Number | Application | Switching | Capillary Length | Differential Temperature | Setpoint Temperature Range | Tradeline Value | Comments |
|-----------------|--|-----------|------------------|--------------------------|----------------------------|-----------------|--|
| T4031A1073/U | Provides control of cooled or refrigerated space | 1 SPST | 8 ft (2.44 m) | 3.5°F | -30°F to +90°F | | |
| T6031A1011/U | Provides control of cooled or refrigerated space | 1 SPDT | 5 ft (1.5 m) | 3.5°F to 16°F | 15°F to 90°F | | |
| T6031A1029/U | Provides control of cooled or refrigerated space | 1 SPDT | 8 ft (2.4 m) | 3.5°F to 16°F | -30°F to +90°F | Super Tradeline | Includes mounting plate, hanger and screws |
| T6031A1052/U | Provides control of cooled or refrigerated space | 1 SPDT | 5 ft (1.5 m) | 3.5°F to 16°F | -30°F to +90°F | | |
| T6031A1060/U | Provides control of cooled or refrigerated space | 1 SPDT | 20 ft (6.1 m) | 3.5°F to 16°F | -30°F to +90°F | | |
| T6031A1086/U | Provides control of cooled or refrigerated space | 1 SPDT | 8 ft (2.4 m) | (1.9°C to 8.9°C) | (-35°C to +30°C) | | Celsius model |
| T6031A1136/U | Provides control of cooled or refrigerated space | 1 SPDT | 8 ft (2.4 m) | 3.5°F to 16°F | -30°F to +90°F | | |
| T6031A1219/U | Provides control of cooled or refrigerated space | 1 SPDT | 8 ft (2.4 m) | (1.9°C to 8.9°C) | (-35°C to +30°C) | | Celsius model, Bi-lingual French |
| T6031A1227/U | Provides control of cooled or refrigerated space | 1 SPDT | 5 ft (1.5 m) | (1.9°C to 8.9°C) | (-35°C to +30°C) | | Celsius model, Bi-lingual French |
| T6031A1235/U | Provides control of cooled or refrigerated space | 1 SPDT | 20 ft (6.1 m) | (1.9°C to 8.9°C) | (-35°C to +30°C) | | Celsius model, Bi-lingual French |

S437; S637 Sail Switch



S437 Sail Switches respond to the air velocity in heating or warm air ducts, such as used in farm crop dryers. The switch completes a 24V or line voltage burner control circuit only when the blower or fan has produced a preset air velocity.

- Micro Switch SPST snap switch is operated by metal sail inserted in an air stream.
- Sail can be trimmed to one-half the original size to double the velocity required to close the snap switch contacts.
- Switch differential can be manually adjusted by turning a knurled knob on the snap switch.
- A conduit knockout is located on each end of the case for wiring convenience.

Application: Sail Switch

Contact Ratings (AFL): 8.0 A @ 120 Vac; 5.1 A @ 240 Vac; 2.0 A @ 24 Vac; 15.0 A @ 6 Vdc; 7.5 A @ 12 Vdc

Contact Ratings (ALR): 48.0 A @ 120 Vac; 30.6 A @ 240 Vac

Ambient Temperature Range: 150°F Maximum (66°C Maximum)

Approvals, CSA: CSA: Guide: MFHZ

Approvals, Underwriters Laboratories Inc.: UL: File: MP2618

| Material Number | Switching | Operating Velocity (fpm) | Operating Velocity (m/s) | Approximate, Dimensions | Insertion Length |
|-----------------|-----------|--------------------------|--------------------------|--|-------------------|
| S437A1009/U | 1 SPST | 1900 fpm-2250 fpm | 9.7 m/s-11.4 m/s | 2 15/16 in. high x 3 3/4 in. wide x 2 in. deep; Sail Dimensions – 1 in. x 3 in. (59 mm high x 95 mm wide x 51 mm deep; Sail Dimensions – 25 mm x 76 mm) | 3 1/2 in. (89 mm) |
| S437A1025/U | 1 SPST | 1900 fpm-2250 fpm | 9.7 m/s-11.4 m/s | 2 15/16 in. high x 3 3/4 in. wide x 2 in. deep; Sail Dimensions – 1 1/2 in. x 4 in. (59 mm high x 95 mm wide x 51 mm deep; Sail Dimensions – 38 mm x 102 mm) | 3 1/2 in. (89 mm) |
| S637A1004/U | 1 SPDT | 1900 fpm-2250 fpm | 9.7 m/s-11.4 m/s | 2 15/16 in. high x 3 3/4 in. wide x 2 in. deep; Sail Dimensions – 1 in. x 3 in. (59 mm high x 95 mm wide x 51 mm deep; Sail Dimensions – 25 mm x 76 mm) | 3 1/2 in. (89 mm) |

Temperature Controllers

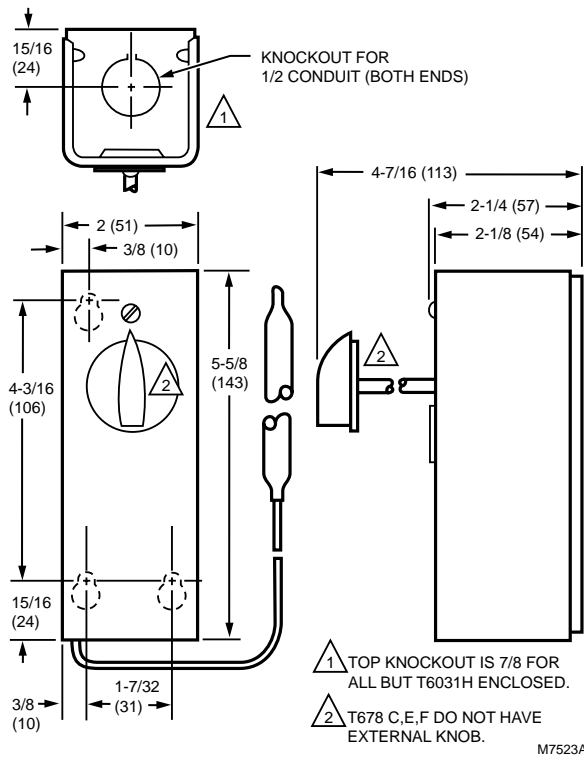
T4031C; T6031C, D Ambistat Controller



Ambient temperature compensated, high-limit controllers for HVAC, agriculture, and industrial applications.

- Suitable for line-voltage, low voltage, or millivolt (PowerPile) control of bulk milk tanks, beverage dispensing machines, ice cube machines, dishwashers, crop drying, tobacco curing, and similar applications.
- Enclosed snap action switches available with SPST or SPDT action.
- Models available that make or break on temperature rise.
- Screwdriver adjustment for temperature setting; external knob option.
- Immersion well not included.

Dimensions in inches (millimeters)



Application: Line-voltage, low-voltage or millivolt (PowerPile) control of bulk milk tanks, beverage dispensing machines, ice cube machines, dishwashers, crop drying, tobacco curing and similar applications.

Type: Remote bulb

Output: relay

Voltage: 120 Vac; 240 Vac

Frequency: 50 Hz; 60 Hz

Approximate, Dimensions: 5 5/8 in. high x 2 in. wide x 2 1/8 in. deep (143 mm high x 51 mm wide x 54 mm deep)

Sensor Inputs: 1

Bulb Size: 3/8 in. diameter x 2 7/8 in. long (10 mm diameter x 73 mm long)

Color: Gray

Approvals, Underwriters Laboratories Inc.: Component Recognized

| Material Number | Sensor Element | Capillary Length | Differential Temperature | Setpoint Temperature Range | Operating Temperature Range | Relay Outputs | Contact Ratings | Tradeline Value | Comments |
|-----------------|----------------------|------------------|--------------------------|--------------------------------|-------------------------------|-----------------------------------|--|-----------------|---------------------------|
| T4031C1012/U | Copper bulb | 5 1/2 ft (1.7 m) | 5°F (2.8°C) | 40°F to 180°F (4°C to 82°C) | 205°F Maximum (96°C Maximum) | 1 SPST, break on temperature rise | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR | | Break on temperature rise |
| T6031C1009/U | Copper bulb | 5 1/2 ft (1.7 m) | 2°F (1.1°C) | 40°F to 180°F (4°C to 82°C) | 205°F Maximum (96°C Maximum) | 1 SPDT | 120 and 240 Vac – 120 VA pilot duty | Tradeline | |
| T6031C1058/U | Stainless steel bulb | 5 ft (1.5 m) | 2°F (1.1°C) | 100°F to 240°F (38°C to 116°C) | 265°F Maximum (130°C Maximum) | 1 SPDT | 120 and 240 Vac – 120 VA pilot duty | | |
| T6031D1015/U | Copper bulb | 5 1/2 ft (1.7 m) | 5°F (2.8°C) | 40°F to 180°F (4°C to 82°C) | | 1 SPDT | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR | | |
| T6031D1031/U | Copper bulb | 5 1/2 ft (1.7 m) | 5°F (2.8°C) | 0°F to 70°F (-18°C to +21°C) | 170°F Maximum (77°C Maximum) | 1 SPDT | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR | | |
| T6031D1049/U | Copper bulb | 5 1/2 ft (1.7 m) | 7°F (3.9°C) | 30°F to 270°F (-1°C to +132°C) | 305°F Maximum (152°C Maximum) | 1 SPDT | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR | | |

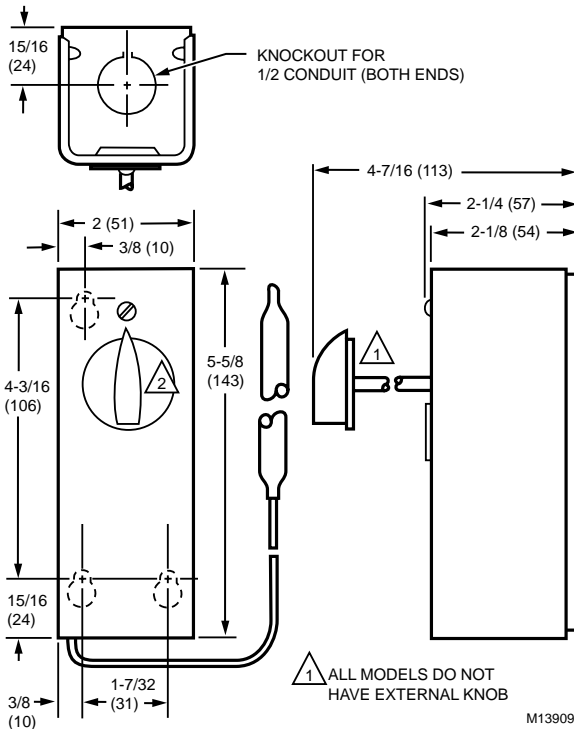
T6031E Unit Thermostat



Ambient temperature compensated, high-limit controllers for HVAC, agriculture and industrial applications.

- Suitable for line-voltage, low voltage, or millivolt (Powerpile) control of bulk milk tanks, beverage dispensing machines, ice cube machines, dishwashers, crop drying, tobacco curing, and similar applications.
- Enclosed snap action switches available with SPST or SPDT action.
- Models available that make or break on temperature rise.
- Screwdriver adjustment for temperature setting; external knob option.
- Immersion well not included.

Dimensions in inches (millimeters)



Application: Remote bulb temperature control

Type: Remote bulb

Voltage: 120 Vac; 240 Vac

Frequency: 50 Hz; 60 Hz

Contact Ratings: 120 Vac – 3.2 AFL, 19.2 ALR; 240 Vac – 1.6 AFL, 9.6 ALR

Approximate, Dimensions: 5 5/8 in. high x 2 in. wide x 2 1/8 in. deep (143 mm high x 51 mm wide x 54 mm deep)

Sensor Element: Copper bulb

Bulb Size: 5/16 in. diameter x 11 11/16 in. long (8 mm diameter x 297 mm long)

Operating Temperature Range: 150°F Maximum (66°C Maximum)

Color: Gray

Approvals, Underwriters Laboratories Inc.: Component Listed

Approvals, CSA: Listed

| Material Number | Setpoint Temperature Range | Differential Temperature | Capillary Length | Relay Outputs | Output | Sensor Inputs |
|-----------------|-----------------------------|--------------------------|------------------|---------------|--------|---------------|
| T6031E1004/U | 55°F to 90°F (13°C to 32°C) | 1.5°F (0.8°C) | 5 1/2 ft (1.7 m) | 1 SPDT | relay | 1 |

Temperature Controllers

T4054 Return Air Controller



Provides SPDT heavy-duty, line-voltage temperature control in ventilation, heating or cooling systems.

- Use in a variety of farm, industrial or commercial applications.
- Wall or duct mount in any position.
- Fast response, tin-plated element not affected by adverse environment.
- Rugged case.
- Mounts on flat surface with three screws.
- T6064 provides fast response with hydraulic temperature sensing elements mounted on the unit.

Application: Provides control in heating systems

Type: Filled element

Voltage: 120 Vac; 240 Vac

Frequency: 50 Hz; 60 Hz

Approximate, Dimensions: 7 5/8 in. high x 2 5/8 in. wide x 2 in. deep
(194 mm high x 67 mm wide x 51 mm deep)

Sensor Element: Fast response capillary

Operating Temperature Range: 125°F Maximum (52°C Maximum)

Accuracy: ±6°F (±3.3°C)

Differential Temperature: 3.5°F (1.9°C)

Color: Gray

Approvals, Underwriters Laboratories Inc.: Listed: E4436, vol. 5, sec. 12, Guide XAPX

Approvals, CSA: CSA Listed: Report -1

| Material Number | Application | Setpoint Temperature Range | Relay Outputs | Output | Sensor Inputs | Contact Ratings | Comments |
|-----------------|-------------------------------------|-----------------------------|---------------|--------|---------------|--|---------------------------------|
| T4054A1000/U | Provides control in heating systems | 36°F to 100°F (2°C to 38°C) | 1 SPST | relay | 1 | 120 Vac – 16.0 AFL, 96.0 ALR; 240 Vac – 8.0 AFL, 48.0 ALR | Make R to B on temperature fall |
| T4054B1016/U | Provides control in cooling systems | 36°F to 100°F (2°C to 38°C) | 1 SPST | relay | 1 | 120 Vac – 16.0 AFL, 80.0 ALR; 240 Vac – 8.0 AFL, 40.0 ALR | Make R to W on temperature rise |

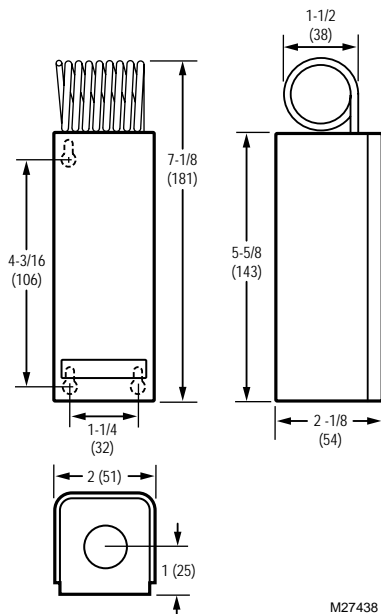
T6054 Utility Line Voltage Thermostat



Provides SPDT heavy-duty, line-voltage temperature control in ventilation, heating or cooling systems.

- Use in a variety of farm, industrial or commercial applications.
- Wall or duct mount in any position.
- Fast response, tin-plated element not affected by adverse environment.
- Rugged case.
- Mounts on flat surface with three screws.

Dimensions in inches (millimeters)



Application: Provides control in ventilation, heating, cooling or heating-cooling systems

Type: Filled element

Voltage: 120 Vac; 240 Vac

Frequency: 50 Hz; 60 Hz

Contact Ratings: 120 Vac – 7.4 AFL, 44.4 ALR; 240 Vac – 3.7 AFL, 22.2 ALR

Approximate, Dimensions: 7 1/4 in. high x 2 5/8 in. wide x 2 in. deep
(184 mm high x 67 mm wide x 51 mm deep)

Sensor Element: Copper filled element

Accuracy: ±10°F (±5.6°C)

Color: Gray

Tradeline Value: Tradeline

Approvals, Underwriters Laboratories Inc.: Listed: E4436, vol. 5, sec. 12, Guide XAPX

Approvals, CSA: CSA Listed: Report -1

| Material Number | Operating Temperature Range | Setpoint Temperature Range | Differential Temperature | Relay Outputs | Output | Sensor Inputs | Includes |
|-----------------|------------------------------|----------------------------------|--------------------------|---------------|--------|---------------|----------|
| T6054A1005/U | 125°F Maximum (52°C Maximum) | -30°F to +110°F (-34°C to +43°C) | 3.5°F (1.9°C) | 1 SPDT | relay | 1 | Case |

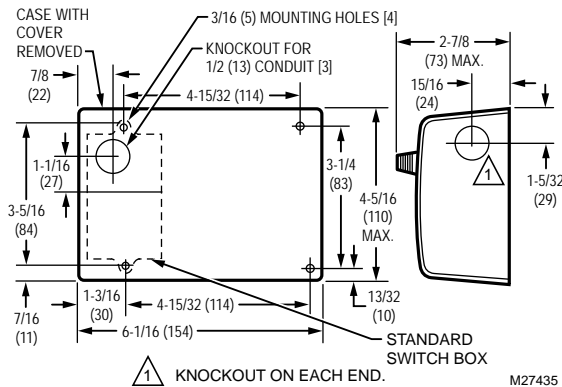
T631A, B, C Farm Controllers



Provide line voltage control of heating, cooling and ventilating systems in farm buildings or storage areas.

- Use in barns, poultry houses, hog barns, pump houses, milk houses and crop storage houses.
- Treated to resist corrosion.
- Slots in front and bottom of case provide maximum air circulation over the coiled sensing element.
- SPDT snap switches permanently sealed against corrosion.
- Easy mounting using screws through holes in back of case.

Dimensions in inches (millimeters)



Application: Provide line voltage control of heating, cooling and ventilating systems in farm buildings or storage areas

Type: Agricultural Temperature Controller

Frequency: 50 Hz; 60 Hz

Approximate, Dimensions: 4 5/16 in. high x 6 1/16 in. wide x 2 7/8 in. deep (110 mm high x 154 mm wide x 73 mm deep)

Sensor Element: Coiled Copper Tube

Color: T631A, B-Red finish; T631C-Gray finish

Approvals, Underwriters Laboratories Inc.: File No. E4436 Vol. 1 Sec. UL Guide XAPX

Approvals, CSA: Certified: File No. LR1620, Guide No. 400-E-O

| Material Number | Contact Ratings |
|-----------------|--|
| T631A1006/U | 24 Vac – 2.0A AFL; 120 Vac – 7.4 AFL, 44.4 ALR; 240 Vac – 3.7 AFL, 22.2 ALR |
| T631A1022/U | 24 Vac – 2.0A AFL; 120 Vac – 7.4 AFL, 44.4 ALR; 240 Vac – 3.7 AFL, 22.2 ALR |
| T631A1030/U | 24 Vac – 2.0A AFL; 120 Vac – 7.4 AFL, 44.4 ALR; 240 Vac – 3.7 AFL, 22.2 ALR |
| T631A1063/U | 24 Vac – 2.0A AFL; 120 Vac – 7.4 AFL, 44.4 ALR; 240 Vac – 3.7 AFL, 22.2 ALR |
| T631A1113/U | 120 Vac – 16.0 AFL, 96.0 ALR; 240 Vac – 8.0 AFL, 48.0 ALR |
| T631A1154/U | 24 Vac – 2.0A AFL; 120 Vac – 7.4 AFL, 44.4 ALR; 240 Vac – 3.7 AFL, 22.2 ALR |
| T631A1162/U | 24 Vac – 2.0A AFL; 120 Vac – 16.0 AFL, 96.0 ALR; 240 Vac – 8.0 AFL, 48.0 ALR |
| T631B1005/U | 24 Vac – 2.0A AFL; 120 Vac – 7.4 AFL, 44.4 ALR; 240 Vac – 3.7 AFL, 22.2 ALR |
| T631B1054/U | 120 Vac – 16.0 AFL, 96.0 ALR; 240 Vac – 8.0 AFL, 48.0 ALR |
| T631B1070/U | 24 Vac – 2.0A AFL; 120 Vac – 16.0 AFL, 96.0 ALR; 240 Vac – 8.0 AFL, 48.0 ALR |
| T631C1012/U | 120 Vac – 16.0 AFL, 96.0 ALR; 240 Vac – 8.0 AFL, 48.0 ALR |
| T631C1020/U | 24 Vac – 2.0A AFL; 120 Vac – 7.4 AFL, 44.4 ALR; 240 Vac – 3.7 AFL, 22.2 ALR |
| T631C1038/U | 24 Vac – 2.0A AFL; 120 Vac – 7.4 AFL, 44.4 ALR; 240 Vac – 3.7 AFL, 22.2 ALR |
| T631C1046/U | 24 Vac – 2.0A AFL; 120 Vac – 7.4 AFL, 44.4 ALR; 240 Vac – 3.7 AFL, 22.2 ALR |
| T631C1053/U | 24 Vac – 2.0A AFL; 120 Vac – 7.4 AFL, 44.4 ALR; 240 Vac – 3.7 AFL, 22.2 ALR |
| T631C1103/U | 120 Vac – 16.0 AFL, 96.0 ALR; 240 Vac – 8.0 AFL, 48.0 ALR |
| T631C1160/U | 24 Vac – 2.0A AFL; 120 Vac – 7.4 AFL, 44.4 ALR; 240 Vac – 3.7 AFL, 22.2 ALR |

| Material Number | Operating Temperature Range | Setpoint Temperature Range | Differential Temperature | Output | Interstage Differential Temperature | Voltage | Comments |
|-----------------|------------------------------|----------------------------|--------------------------|-------------------------|---|-----------------------|---------------|
| T631A1006/U | 120°F Maximum (49°C Maximum) | 35°F to 100°F | 2°F (1.1°C) | 1 SPDT | | 24 Vac or 120/240 Vac | |
| T631A1022/U | 150°F Maximum (66°C Maximum) | 70°F to 140°F | 2°F (1.1°C) | 1 SPDT | | 24 Vac or 120/240 Vac | |
| T631A1030/U | 125°F Maximum (52°C Maximum) | 0°F to 70°F | 3°F (1.7°C) | 1 SPDT | | 24 Vac or 120/240 Vac | |
| T631A1063/U | 125°F Maximum (52°C Maximum) | -10°F to +100°F | 3°F (1.7°C) | 1 SPDT | | 24 Vac or 120/240 Vac | |
| T631A1113/U | 120°F Maximum (49°C Maximum) | 35°F to 100°F | 3.5°F (1.9°C) | 1 SPDT (1 hp at 0.7 kW) | | 120 Vac; 240 Vac | |
| T631A1154/U | 120°F Maximum (49°C Maximum) | (0°C to 40°C) | 2°F (1.1°C) | 1 SPDT | | 24 Vac or 120/240 Vac | Celsius model |
| T631A1162/U | 120°F Maximum (49°C Maximum) | 35°F to 100°F | 2°F (1.1°C) | 1 SPDT (1 hp at 0.7 kW) | | 24 Vac or 120/240 Vac | |
| T631B1005/U | 120°F Maximum (49°C Maximum) | 35°F to 100°F | 2°F (1.1°C) | 2 SPDT | 1.9°C (3.5°F) | 120 Vac; 240 Vac | |
| T631B1054/U | 120°F Maximum (49°C Maximum) | 35°F to 100°F | 2°F (1.1°C) | 2 SPDT (1 hp at 0.7 kW) | 0°C to 4°C adjustable (0°F to 7°F adjustable) | 120 Vac; 240 Vac | |
| T631B1070/U | 120°F Maximum (49°C Maximum) | 35°F to 100°F | 2°F (1.1°C) | 2 SPDT (1 hp at 0.7 kW) | 1.9°C (3.5°F) | 24 Vac or 120/240 Vac | |
| T631C1012/U | 125°F Maximum (52°C Maximum) | 20°F to 90°F | 3°F (1.7°C) | 1 SPDT (1 hp at 0.7 kW) | | 120 Vac; 240 Vac | |
| T631C1020/U | 150°F Maximum (66°C Maximum) | 70°F to 140°F | 2°F (1.1°C) | 1 SPDT | | 24 Vac or 120/240 Vac | |

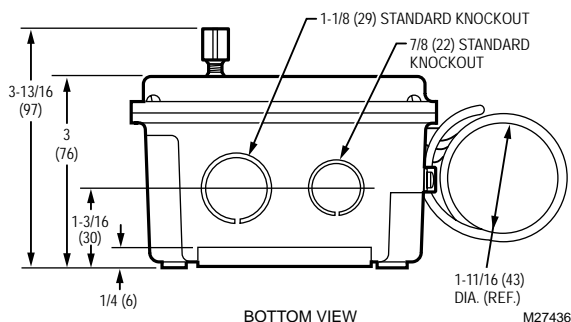
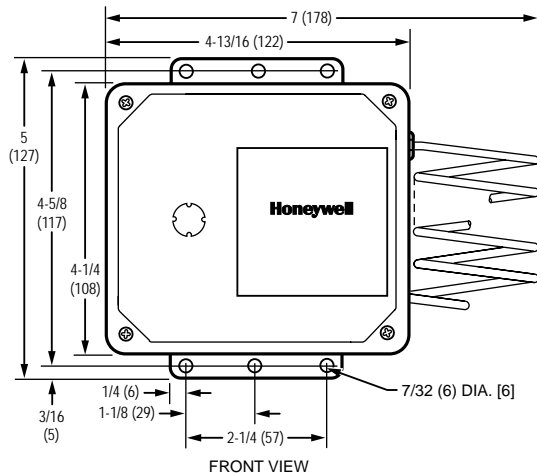
Temperature Controllers

| Material Number | Operating Temperature Range | Setpoint Temperature Range | Differential Temperature | Output | Interstage Differential Temperature | Voltage | Comments |
|-----------------|------------------------------|----------------------------|--------------------------|-------------------------|-------------------------------------|-----------------------|------------------|
| T631C1038/U | 125°F Maximum (52°C Maximum) | (-10°C to +30°C) | 3°F (1.7°C) | 1 SPDT | | 24 Vac or 120/240 Vac | Celsius model |
| T631C1046/U | 150°F Maximum (66°C Maximum) | (20°C to 60°C) | 2°F (1.1°C) | 1 SPDT | | 24 Vac or 120/240 Vac | Celsius model |
| T631C1053/U | 120°F Maximum (49°C Maximum) | 35°F to 100°F | 2°F (1.1°C) | 1 SPDT | | 120 Vac; 240 Vac | |
| T631C1103/U | 125°F Maximum (52°C Maximum) | -30°F to +100°F | 5°F (2.8°C) | 1 SPDT (1 hp at 0.7 kW) | | 24 Vac or 120/240 Vac | |
| T631C1160/U | 150°F Maximum (66°C Maximum) | (20°C to 60°C) | 2°F (1.1°C) | 1 SPDT | | 24 Vac or 120/240 Vac | Scale in Celsius |

T631F, G NEMA IV Controllers



Dimensions in inches (millimeters)



Provide line voltage control of heating, cooling and ventilating systems in farm buildings, storage areas and industrial environments; watertight, dust-proof enclosure.

- Use in barns, brooder houses, poultry houses, hog barns, pump houses, milk houses, crop storage houses and industrial environments. NEMA 4X enclosure protects thermostat and wiring connections from oil, water, dust, and corrosion.
- Clear plastic cover reveals setpoint, discourages tampering.
- Sensing element externally mounted for fast response and tin plated to resist corrosion.
- Reliable snap switches sealed against contamination.
- Insulated case has internal grounding screw for safety.
- Meet National Electrical Code Article 547-4 requirements.
- Easy mounting with screws through holes in flanges on case.

Application: Provide line voltage control of heating, cooling and ventilating systems in farm buildings or storage areas

Type: Agricultural Temperature Controller

Frequency: 50 Hz; 60 Hz

Approximate, Dimensions: 5 in. high x 6 1/2 in. wide x 3 13/16 in. deep (127 mm high x 165 mm wide x 97 mm deep)

Sensor Element: Coiled, Tin-plated Copper Tube

Setpoint Temperature Range: 35°F to 100°F

Operating Temperature Range: 145°F Maximum (63°F Maximum)

Differential Temperature: 2°F (1.1°C)

Interstage Differential Temperature: 0°C to 4°C adjustable (0°F to 7°F adjustable)

Color: Gray finish

Approvals, Underwriters Laboratories Inc.: File No. E4436 Vol. 1 Sec. UL Guide XAPX

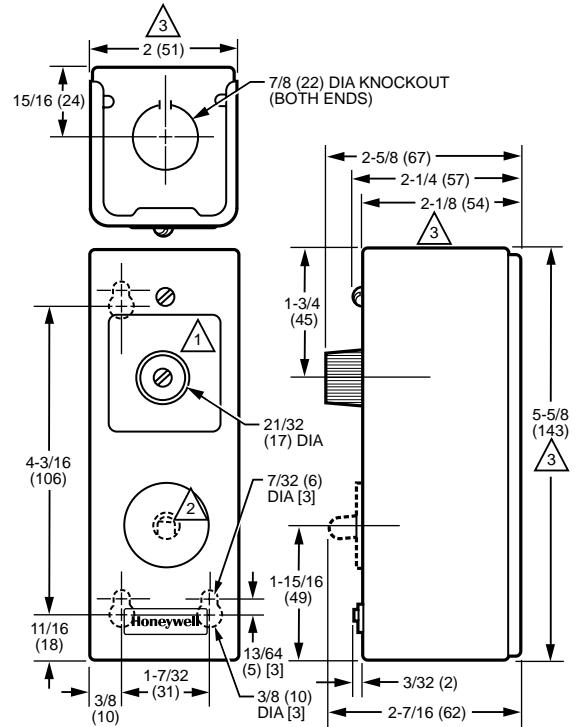
Approvals, CSA: Certified: File No. LR1620, Guide No. 400-E-O

| Material Number | Voltage | Output | Contact Ratings | Comments |
|-----------------|-----------------------|---------------|---|------------------------------|
| T631F1068/U | 24 Vac or 120/240 Vac | 1 SPDT | 24 Vac – 2.0A AFL; 120 Vac – 7.4 AFL, 44.4 ALR; 240 Vac – 3.7 AFL, 22.2 ALR | Internal Setpoint Adjustment |
| T631F1084/U | 24 Vac or 120/240 Vac | 1 SPDT | 24 Vac – 2.0A AFL; 120 Vac – 7.4 AFL, 44.4 ALR; 240 Vac – 3.7 AFL, 22.2 ALR | External Setpoint Adjustment |
| T631F1092/U | 120 Vac; 240 Vac | 1 SPDT (1 hp) | 120 Vac – 16.0 AFL, 96.0 ALR; 240 Vac – 8.0 AFL, 48.0 ALR | External Setpoint Adjustment |
| T631G1059/U | 120 Vac; 240 Vac | 2 SPDT (1 hp) | 120 Vac – 16.0 AFL, 96.0 ALR; 240 Vac – 8.0 AFL, 48.0 ALR | External Setpoint Adjustment |

T675A, B; T678A Remote Bulb Controllers



Dimensions in inches (millimeters)



- △ 1 T675B DOES NOT HAVE AN ADJUSTMENT KNOB.
- △ 2 T675B HAS A MANUAL RESET BUTTON (INDICATED BY DASHED LINES).
- △ 3 TRADELINE MODELS T675A, T678A ONLY – NOREL COVER INCREASES THESE DIMENSIONS BY APPROXIMATELY 1/8 IN. (3).

M23928

Remote bulb thermostats regulate temperature of air or liquids in ducts, pipes, tanks and boilers.

- Suitable for applications requiring temperature control of air or liquids where controller must be placed outside the sensing area.
- Typical uses include control of dampers and valves in heating, cooling and heating-cooling systems.
- Fast response models (available for use in return air duct) operate approximately four times faster than standard models.
- Controller can be mounted in any position.
- Ambient temperature compensation provides good temperature control.
- Refer to T775 Electronic Remote Temperature Controller where more exact control is required and/or remote controller location is preferred.
- T675A models with fixed differential have an electrical rating of 125 VA at 120/208/240 and 277 Vac.
- T675B models have 125 VA pilot duty up to 277 Vac.
- T678 models have a maximum connected load of 2000 VA.

Application: Regulates temperature of air or liquids in ducts, pipes, tanks and boilers

Type: Remote bulb

Output: relay

Relay Outputs: T675A, B-1 SPDT; T678A-2 SPDT switch contacts

Voltage: 120 Vac or 240/277 Vac

Frequency: 50 Hz; 60 Hz

Approximate Dimensions: 5 5/8 in. high x 2 in. wide x 2 5/8 in. deep
(143 mm high x 51 mm wide x 67 mm deep)

Sensor Inputs: 1

Approvals, Underwriters Laboratories Inc.: UL Listed

Approvals, CSA: Certified

| Material Number | Contact Ratings |
|-----------------|--|
| T675A1003/U | 120 Vac – 8.0 AFL, 48.0 ALR. 125 VA Pilot Duty; 240 Vac – 5.1 AFL, 30.6 ALR, 125 VA Pilot Duty; 277 Vac – 4.2 AFL, 25.2 ALR, 125 VA Pilot Duty |
| T675A1029/U | 120 Vac – 8.0 AFL, 48.0 ALR. 125 VA Pilot Duty; 240 Vac – 5.1 AFL, 30.6 ALR, 125 VA Pilot Duty; 277 Vac – 4.2 AFL, 25.2 ALR, 125 VA Pilot Duty |
| T675A1045/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |
| T675A1102/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |
| T675A1136/U | 120, 240, and 277 Vac – 125 VA |
| T675A1169/U | 120 Vac – 8.0 AFL, 48.0 ALR. 125 VA Pilot Duty; 240 Vac – 5.1 AFL, 30.6 ALR, 125 VA Pilot Duty; 277 Vac – 4.2 AFL, 25.2 ALR, 125 VA Pilot Duty |
| T675A1243/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |
| T675A1284/U | 120 Vac – 8.0 AFL, 48.0 ALR. 125 VA Pilot Duty; 240 Vac – 5.1 AFL, 30.6 ALR, 125 VA Pilot Duty; 277 Vac – 4.2 AFL, 25.2 ALR, 125 VA Pilot Duty |
| T675A1425/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |
| T675A1458/U | 120, 240, and 277 Vac – 125 VA |
| T675A1466/U | 120 Vac – 8.0 AFL, 48.0 ALR. 125 VA Pilot Duty; 240 Vac – 5.1 AFL, 30.6 ALR, 125 VA Pilot Duty; 277 Vac – 4.2 AFL, 25.2 ALR, 125 VA Pilot Duty |
| T675A1474/U | 120 Vac – 8.0 AFL, 48.0 ALR. 125 VA Pilot Duty; 240 Vac – 5.1 AFL, 30.6 ALR, 125 VA Pilot Duty; 277 Vac – 4.2 AFL, 25.2 ALR, 125 VA Pilot Duty |
| T675A1508/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |
| T675A1516/U | 120, 240, and 277 Vac – 125 VA |
| T675A1524/U | 120, 240, and 277 Vac – 125 VA |
| T675A1532/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |
| T675A1540/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |
| T675A1565/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |
| T675A1706/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |
| T675A1722/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |
| T675A1771/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |
| T675A1805/U | 120 Vac – 8.0 AFL, 48.0 ALR. 125 VA Pilot Duty; 240 Vac – 5.1 AFL, 30.6 ALR, 125 VA Pilot Duty; 277 Vac – 4.2 AFL, 25.2 ALR, 125 VA Pilot Duty |
| T675A1920/U | 120 Vac – 8.0 AFL, 48.0 ALR. 125 VA Pilot Duty; 240 Vac – 5.1 AFL, 30.6 ALR, 125 VA Pilot Duty; 277 Vac – 4.2 AFL, 25.2 ALR, 125 VA Pilot Duty |
| T675A2068/U | 120 Vac – 8.0 AFL, 48.0 ALR. 125 VA Pilot Duty; 240 Vac – 5.1 AFL, 30.6 ALR, 125 VA Pilot Duty; 277 Vac – 4.2 AFL, 25.2 ALR, 125 VA Pilot Duty |
| T675A2076/U | 120 Vac – 8.0 AFL, 48.0 ALR. 125 VA Pilot Duty; 240 Vac – 5.1 AFL, 30.6 ALR, 125 VA Pilot Duty; 277 Vac – 4.2 AFL, 25.2 ALR, 125 VA Pilot Duty |
| T675A2084/U | 120 Vac – 8.0 AFL, 48.0 ALR. 125 VA Pilot Duty; 240 Vac – 5.1 AFL, 30.6 ALR, 125 VA Pilot Duty; 277 Vac – 4.2 AFL, 25.2 ALR, 125 VA Pilot Duty |

Temperature Controllers

| Material Number | Contact Ratings |
|-----------------|--|
| T675A2100/U | 120 Vac – 8.0 AFL, 48.0 ALR; 125 VA Pilot Duty; 240 Vac – 5.1 AFL, 30.6 ALR, 125 VA Pilot Duty; 277 Vac – 4.2 AFL, 25.2 ALR, 125 VA Pilot Duty |
| T675A2118/U | 120 Vac – 8.0 AFL, 48.0 ALR; 125 VA Pilot Duty; 240 Vac – 5.1 AFL, 30.6 ALR, 125 VA Pilot Duty; 277 Vac – 4.2 AFL, 25.2 ALR, 125 VA Pilot Duty |
| T675B1002/U | 120, 240, and 277 Vac – 125 VA |
| T675B1010/U | 120, 240, and 277 Vac – 125 VA |
| T675B1028/U | 120, 240, and 277 Vac – 125 VA |
| T678A1015/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |
| T678A1155/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |
| T678A1163/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |
| T678A1353/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |
| T678A1361/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |
| T678A1437/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |
| T678A1445/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |
| T678A1478/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |
| T678A1494/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |
| T678A1627/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |
| T678A1692/U | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR |

| Material Number | Operating Temperature Range | Setpoint Temperature Range | Differential Temperature | Interstage Differential Temperature | Sensor Element | Capillary Length | Bulb Size | Tradeline Value | Comments |
|-----------------|-------------------------------|--------------------------------|------------------------------|-------------------------------------|-------------------------|------------------|---|-----------------|--|
| T675A1003/U | 125°F Maximum (52°C Maximum) | 0°F to 100°F | 3°F to 10°F (1.7°C to 5.6°C) | | Copper bulb | 5 ft (1.5 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | | |
| T675A1029/U | 125°F Maximum (52°C Maximum) | 0°F to 100°F | 3°F to 10°F (1.7°C to 5.6°C) | | Copper bulb | 20 ft (6.1 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | | |
| T675A1045/U | 125°F Maximum (52°C Maximum) | 0°F to 100°F (-18°C to +38°C) | 3°F to 10°F (1.7°C to 5.6°C) | | Stainless steel bulb | 20 ft (6.1 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | | Stainless Steel Bulb |
| T675A1102/U | 280°F Maximum (138°C Maximum) | 160°F to 260°F (71°C to 127°C) | 3°F to 10°F (1.7°C to 5.6°C) | | Copper bulb | 20 ft (6.1 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | | |
| T675A1136/U | 125°F Maximum (52°C Maximum) | 0°F to 100°F (-18°C to +38°C) | 1°F fixed (0.6°C fixed) | | Copper bulb | 20 ft (6.1 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | | |
| T675A1169/U | (52°C Maximum) | (-15°C to +35°C) | (1.7°C to 5.6°C) | | Copper bulb | 5 ft (1.5 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | | Celsius model |
| T675A1243/U | (52°C Maximum) | (75°C to 125°C) | (1.7°C to 5.6°C) | | Copper bulb | 5 ft (1.5 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | | Celsius model |
| T675A1284/U | (52°C Maximum) | (-15°C to +35°C) | (0.6°C fixed) | | Copper bulb | 5 ft (1.5 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | | Celsius model |
| T675A1425/U | 200°F Maximum (93°C Maximum) | 55°F to 175°F (13°C to 79°C) | 3.6°F to 12°F (2°C to 6.7°C) | | Copper bulb | 20 ft (6.1 m) | 1/2 in. x 3 9/16 in. (13 mm x 90 mm) | | |
| T675A1458/U | 200°F Maximum (93°C Maximum) | 55°F to 175°F (13°C to 79°C) | 1°F fixed (0.6°C fixed) | | Copper bulb | 5 ft (1.5 m) | 1/2 in. x 3 9/16 in. (13 mm x 90 mm) | | |
| T675A1466/U | (93°C Maximum) | (15°C to 75°C) | (2°C to 6.6°C) | | Copper bulb | 5 ft (1.5 m) | 1/2 in. x 3 9/16 in. (13 mm x 90 mm) | | Celsius model |
| T675A1474/U | (93°C Maximum) | (15°C to 75°C) | (2°C to 6.6°C) | | Copper bulb | 20 ft (6.1 m) | 1/2 in. x 3 9/16 in. (13 mm x 90 mm) | | Celsius model |
| T675A1508/U | 125°F Maximum (52°C Maximum) | 0°F to 100°F (-18°C to +38°C) | 3°F to 10°F (1.7°C to 5.6°C) | | Copper bulb | 5 ft (1.5 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | Tradeline | Includes 107324A Duct Bulb Holder |
| T675A1516/U | 125°F Maximum (52°C Maximum) | 0°F to 100°F (-18°C to +38°C) | 1°F fixed (0.6°C fixed) | | Copper bulb | 5 ft (1.5 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | Tradeline | Includes 107324A Duct Bulb Holder |
| T675A1524/U | 200°F Maximum (93°C Maximum) | 55°F to 175°F (13°C to 79°C) | 1°F fixed (0.6°C fixed) | | Copper bulb | 20 ft (6.1 m) | 1/2 in. x 3 9/16 in. (13 mm x 90 mm) | | |
| T675A1532/U | 280°F Maximum (138°C Maximum) | 160°F to 260°F (71°C to 127°C) | 3°F to 10°F (1.7°C to 5.6°C) | | Copper bulb | 5 ft (1.5 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | Tradeline | Includes 107324A Duct Bulb Holder |
| T675A1540/U | 200°F Maximum (93°C Maximum) | 55°F to 175°F (13°C to 79°C) | 3.6°F to 12°F (2°C to 6.7°C) | | Copper bulb | 5 ft (1.5 m) | 1/2 in. x 3 9/16 in. (13 mm x 90 mm) | Tradeline | Includes 107324A Duct Bulb Holder |
| T675A1565/U | 125°F Maximum (52°C Maximum) | 0°F to 100°F (-18°C to +38°C) | 3°F to 10°F (1.7°C to 5.6°C) | | Copper bulb | 20 ft (6.1 m) | 1/2 in. x 4 3/16 in. (13 mm x 90 mm) | Tradeline | Includes 107324A Duct Bulb Holder |
| T675A1706/U | 125°F Maximum (52°C Maximum) | 0°F to 100°F (-18°C to +38°C) | 3°F to 10°F (1.7°C to 5.6°C) | | Fast response capillary | 5 ft (1.5 m) | coil 1 1/2 in. diameter x 5 in. (coil 38.1 mm x 127 mm) | Tradeline | Fast response model, includes 107324A Duct Bulb Holder |

Temperature Controllers

| Material Number | Operating Temperature Range | Setpoint Temperature Range | Differential Temperature | Interstage Differential Temperature | Sensor Element | Capillary Length | Bulb Size | Tradeline Value | Comments |
|-----------------|------------------------------|---------------------------------|------------------------------|--|-------------------------|------------------|---|-----------------|---|
| T675A1722/U | 200°F Maximum (93°C Maximum) | 55°F to 175°F (13°C to 79°C) | 3.6°F to 12°F (2°C to 6.7°C) | | Fast response capillary | 5 ft (1.5 m) | coil 1 1/2 in. diameter x 5 in. (coil 38.1 mm x 127 mm) | Tradeline | Fast response model, includes 107324A Duct Bulb Holder |
| T675A1771/U | 200°F Maximum (93°C Maximum) | 55°F to 175°F (13°C to 79°C) | 1°F fixed (0.6°C fixed) | | Fast response capillary | 5 ft (1.5 m) | coil 1 1/2 in. diameter x 5 in. (coil 38.1 mm x 127 mm) | | Fast response model, includes 107324A Duct Bulb Holder |
| T675A1805/U | 125°F Maximum (52°C Maximum) | 0°F to 100°F (-18°C to +38°C) | 3°F to 10°F (1.7°C to 5.6°C) | | Copper bulb | 20 ft (6.1 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | | |
| T675A1920/U | (52°C Maximum) | (-15°C to +35°C) | (1.7°C to 5.6°C) | | Copper bulb | 20 ft (6.1 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | | Bi-lingual French, Celsius Model |
| T675A2068/U | (52°C Maximum) | (-15°C to +35°C) | (1.7°C to 5.6°C) | | Copper bulb | 5 ft (1.5 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | Tradeline | Celsius model |
| T675A2076/U | (52°C Maximum) | (-15°C to +35°C) | (0.6°C fixed) | | Copper bulb | 5 ft (1.5 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | Tradeline | Celsius model |
| T675A2084/U | (52°C Maximum) | (-15°C to +35°C) | (1.7°C to 5.6°C) | | Copper bulb | 20 ft (6.1 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | Tradeline | Celsius model |
| T675A2100/U | (93°C Maximum) | (15°C to 75°C) | (2°C to 6.6°C) | | Copper bulb | 5 ft (1.5 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | Tradeline | Celsius model |
| T675A2118/U | (52°C Maximum) | (75°C to 125°C) | (1.7°C to 5.6°C) | | Copper bulb | 5 ft (1.5 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | Tradeline | Celsius model |
| T675B1002/U | 125°F Maximum (52°C Maximum) | 30°F to 50°F (-1°C to +10°C) | Manual Reset | | Copper bulb | 10 ft (3 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | | |
| T675B1010/U | 125°F Maximum (52°C Maximum) | 30°F to 50°F (-1°C to +10°C) | Manual Reset | | Copper bulb | 20 ft (6.1 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | | |
| T675B1028/U | 125°F Maximum (52°C Maximum) | -20°F to +50°F (-29°C to +10°C) | Manual Reset | | Copper bulb | 10 ft (3 m) | 3/8 in. x 3 in. (9.5 mm dia x 76.2 mm long) | | |
| T678A1015/U | 125°F Maximum (52°C Maximum) | 0°F to 100°F (-18°C to +38°C) | 3°F fixed (1.7°C fixed) | 1.7°C to 5.6°C adjustable (3°F to 10°F adjustable) | Copper bulb | 20 ft (6.1 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | | maximum connected load = 2000VA |
| T678A1155/U | (52°C Maximum) | (-15°C to +35°C) | (1.7°C) | 1.7°C to 5.6°C adjustable | Copper bulb | 5 ft (1.5 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | | Bi-lingual French, Celsius Model; maximum connected load = 2000VA |
| T678A1163/U | (52°C Maximum) | (-15°C to +35°C) | (1.7°C fixed) | 1.7°C to 5.6°C adjustable | Copper bulb | 20 ft (6.1 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | | Celsius model; maximum connected load = 2000VA |
| T678A1353/U | 200°F Maximum (93°C Maximum) | 55°F to 175°F | 3.6°F (2.0°C) | 2.0°C to 6.7°C (3.6°F to 12°F) | Copper bulb | 5 ft (1.5 m) | 1/2 in. x 3 9/16 in. (13 mm dia. x 106 mm long) | | maximum connected load = 2000VA |
| T678A1361/U | 200°F Maximum (93°C Maximum) | 55°F to 175°F (13°C to 79°C) | 3.6°F fixed (2.0°C fixed) | 2.0°C to 6.7°C adjustable (3.6°F to 12°F adjustable) | Copper bulb | 20 ft (6.1 m) | 1/2 in. x 3 9/16 in. (13 mm x 90 mm) | | maximum connected load = 2000VA |
| T678A1437/U | 125°F Maximum (52°C Maximum) | 0°F to 100°F (-18°C to +38°C) | 3°F fixed (1.7°C fixed) | 1.7°C to 5.6°C adjustable (3°F to 10°F adjustable) | Copper bulb | 5 ft (1.5 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | Tradeline | maximum connected load = 2000VA |
| T678A1445/U | 200°F Maximum (93°C Maximum) | 55°F to 175°F (13°C to 79°C) | 3.6°F fixed (2.0°C fixed) | 2.0°C to 6.7°C adjustable (3.6°F to 12°F adjustable) | Copper bulb | 5 ft (1.5 m) | 1/2 in. x 3 9/16 in. (13 mm x 90 mm) | Tradeline | maximum connected load = 2000VA |
| T678A1478/U | 125°F Maximum (52°C Maximum) | 0°F to 100°F (-18°C to +38°C) | 3°F fixed (1.7°C fixed) | 1.7°C to 5.6°C adjustable (3°F to 10°F adjustable) | Fast response capillary | 5 ft (1.5 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | Tradeline | Fast response model; maximum connected load = 2000VA |
| T678A1494/U | 200°F Maximum (93°C Maximum) | 55°F to 175°F (13°C to 79°C) | 3.6°F fixed (2.0°C fixed) | 2.0°C to 6.7°C adjustable (3.6°F to 12°F adjustable) | Fast response capillary | 5 ft (1.5 m) | 1/2 in. x 3 9/16 in. (13 mm x 90 mm) | Tradeline | Fast response model; maximum connected load = 2000VA |
| T678A1627/U | 125°F Maximum (52°C Maximum) | 0°F to 100°F (-18°C to +38°C) | 3.6°F fixed (2.0°C fixed) | 2.0°C to 6.7°C adjustable (3.6°F to 12°F adjustable) | Averaging capillary | 10 ft (3 m) | 1/2 in. x 4 3/16 in. (13 mm dia. x 106 mm long) | | maximum connected load = 2000VA |
| T678A1692/U | (93°C Maximum) | (15°C to 75°C) | (2.0°C) | 2.0°C to 6.7°C | Copper bulb | 5 ft (1.5 m) | 1/2 in. x 4 in. (13 mm diameter x 102 mm long) | Tradeline | Celsius model; maximum connected load = 2000VA |

Temperature Controllers

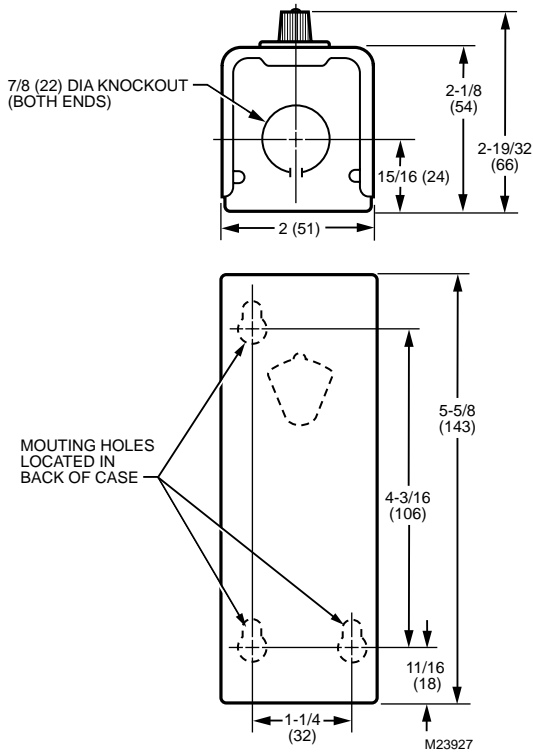
T675F Crop-Trol Controller



Used to control an oil burning, portable crop dryer.

- Suitable for line-voltage, low-voltage or millivolt (Powerpile) switching.
- Mounts directly on dryer with sensing bulb in discharge air duct.
- Knob extends through case for manual control point adjustment.
- Differential setting wheel, located under cover, adjusts difference between cut-in and cut-out temperatures.

Dimensions in inches (millimeters)



Application: Crop-trol, provides control of portable crop drying equipment.

Output: relay

Relay Outputs: 1 SPDT

Voltage: 120 Vac or 240/277 Vac

Frequency: 50 Hz; 60 Hz

Contact Ratings: 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR; 277 Vac – 4.2 AFL, 25.2 ALR

Approximate, Dimensions: 5 5/8 in. high x 2 in. wide x 2 5/8 in. deep (143 mm high x 51 mm wide x 67 mm deep)

Sensor Inputs: 1

Capillary Length: 10 ft 3 in (3.1 m)

Operating Temperature Range: 245°F Maximum (118°C Maximum)

Differential Temperature: 5°F to 30°F (2.8°C to 17°C)

| Material Number | Description | Type | Sensor Element | Bulb Size | Setpoint Temperature Range | Approvals, Underwriters Laboratories Inc. |
|-----------------|---|-------------|---------------------|---------------------------------|-------------------------------|--|
| T675F1016/U | Remote bulb Commercial Temperature Controller, 80°F to 220°F, 10 ft. 3 in. capillary, Averaging capillary sensing element | | Averaging capillary | 5 ft. 3 in. (1.3 m) | 80°F to 220°F | UL Listed: E4436, Vol. 6, Sec. 3, Guide XAPX |
| T675F1032/U | Remote bulb Commercial Temperature Controller, 80°F to 220°F, 10 ft. capillary, Copper bulb sensing element | Remote bulb | Copper bulb | 3/8 in. x 3 in. (10 mm x 76 mm) | 80°F to 220°F (27°C to 104°C) | Component Listed |

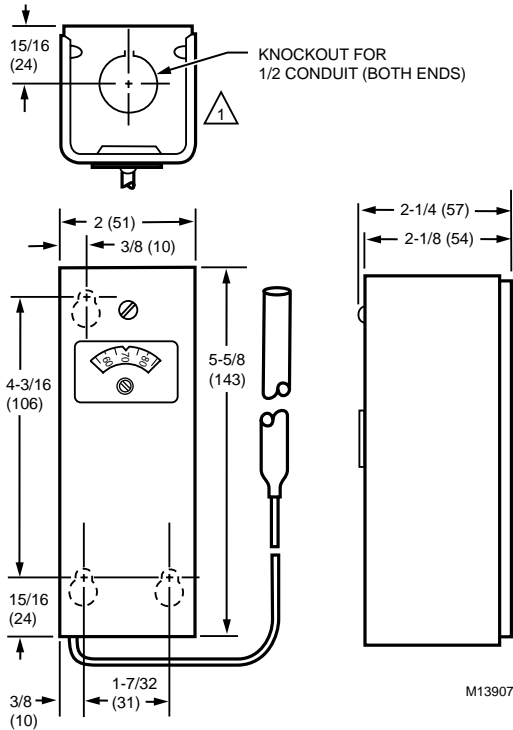
T678C, E, F Changeover Temperature Controller



Remote bulb thermostats regulate temperature of air or liquids in ducts, pipes, tanks and boilers.

- Suitable for applications requiring temperature control of air or liquids where controller must be placed outside the sensing area.
- Typical uses include control of dampers and valves in heating, cooling and heating-cooling systems.
- Fast response models (available for use in return air duct) operate approximately four times faster than standard models.
- Controller can be mounted in any position. Ambient temperature compensation provides good temperature control.
- Refer to T775 Electronic Remote Temperature Controller where more exact control is required and/or remote controller location is preferred.
- T678 models have a maximum connected load of 2000 VA.

Dimensions in inches (millimeters)



Application: Changeover temperature control

Type: Remote bulb

Output: relay

Relay Outputs: 2 SPDT switch contacts

Voltage: 120 Vac; 240 Vac

Frequency: 50 Hz; 60 Hz

Approximate Dimensions: 5 5/8 in. high x 2 in. wide x 2 5/8 in. deep
(143 mm high x 51 mm wide x 67 mm deep)

Sensor Inputs: 1

Sensor Element: Copper bulb

| Material Number | Operating Temperature Range | Setpoint Temperature Range | Differential Temperature | Bulb Size | Capillary Length | Interstage Differential Temperature | Contact Ratings | Approvals, CSA | Comments |
|-----------------|---------------------------------|--------------------------------|--|---|---------------------|-------------------------------------|---|-------------------------|----------------------------|
| T678C1005/U | 205°F Maximum (96°C Maximum) | 55°F to 85°F (13°C to 29°C) | 5°F (2.8°C) | 3/8 in. x 3 in. (10 mm x 76 mm) | 5 1/2 ft (1.7 m) | | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR | | |
| T678E1003/U | 210°F Maximum (99°C Maximum) | 40°F to 180°F (4°C to 82°C) | 2°F (1.1°C) | 1/8 in. x 42 in. (3 mm x 1064 mm) | 17 ft (5.2 m) | 3.9°C (7°F) | 120 Vac – Control: 2.6 AFL, 15.6 ALR; Hi Limit: 7.4 AFL, 44.4 ALR; 240 Vac – Control: 1.3 AFL, 7.8 ALR; Hi Limit: 5.1 AFL, 30.6 ALR | | Does not include enclosure |
| T678E1011/U | 210°F Maximum (99°C Maximum) | 50°F to 190°F | Control: 2°F; Hi Limit: 5°F (Control: 1.1°C; Hi Limit: 2.8°C) | 1/8 in. x 30 in. (3 mm x 762 mm) | 10 ft (3 m) | 3.9°C (7°F) | 120 Vac – Control: 2.6 AFL, 15.6 ALR; Hi Limit: 7.4 AFL, 44.4 ALR; 240 Vac – Control: 1.3 AFL, 7.8 ALR; Hi Limit: 5.1 AFL, 30.6 ALR | | |
| T678F1002/U | 130°F Maximum (54°C Maximum) | 55°F to 85°F (13°C to 29°C) | 2°F (1.1°C) | 5/16 in. x 11 11/16 in. (8 mm x 297 mm) | 5 1/2 ft (1.7 m) | | 120 Vac – 8.0 AFL, 48.0 ALR; 240 Vac – 5.1 AFL, 30.6 ALR | CSA Listed: Report-1 | |

Temperature Controllers

T775 Series 2000 Stand-Alone Controllers



The T775 electronic remote temperature controllers are the next generation of commercial and agricultural controls capable of remote sensing of temperature and providing switched and/or proportional outputs to various types of loads.

- Save time on installations with the easy-to-use graphical Interface, large display, and the intuitive programming.
- Use the time clock scheduler or digital input to control the setback and disable output options to help save energy.
- Protect equipment from freezing or overheating on models with the modulating high or low limit control option.
- Get pinpoint control on modulating outputs by setting the integral and derivative times (PI or PID).
- Configure models with reset in a few easy steps.
- Control floating actuators with floating outputs on select models.
- Eliminate the need for a separate time delay device and protect equipment with the minimum off time option.
- Sensor 50021579-001 included with non-NEMA 4X models.
- Sensor T775-SENS-WR included with NEMA-4X models.

Application: On/off or analog controller for applications where electronic accuracy and remote sensing of temperature is required.

Voltage: 24 Vac or 120/240 Vac

Frequency: 50 Hz; 60 Hz

Relay Contact Ratings: 24 Vac – 10.0A resistive; 120 Vac – 1/2 hp; 9.8 AFL, 58.8 ALR, 125 VA Pilot Duty; 240 Vac – 1/2 hp; 4.9 AFL, 29.4 ALR, 125 VA Pilot Duty

Approximate, Dimensions: 8 5/32 in. high x 4 13/32 in. wide x 2 15/16 in. deep (207.1 mm high x 112.1 mm wide x 74 mm deep)

Sensor Element: 1097 ohms PTC at 77°F (25°C)

Maximum distance to sensor: Up to 1,000 ft (up to 304 m)

Bulb Size: 1/4 in. diameter x 2 in. long (6.35 mm diameter x 50.8 mm)

Setpoint Temperature Range: -40°F to 248°F (-40°C to 120°C)

Operating Temperature Range: Ambient – -40°F to 125°F @ 50 Hz; -40°F to 140°F @ 60 Hz (Ambient – -40°C to 52°C @ 50 Hz; -40°C to 60°C @ 60 Hz)

Accuracy: ±1°F at 77°F (±1°C at 25°C)

Throttling Range: 1°F to 150°F (0.5°C to 66°C)

Differential Temperature: 1°F to 150°F (0.5°C to 66°C)

Approvals, Canadian Underwriters Laboratories Inc.: Approved

Approvals, Underwriters Laboratories Inc.: Approved

Approvals, CE: Approved

Approvals, C-Tick: Approved

Accessories:

107324A/U – Capillary Holder Assembly, 8 3/8 in. long

50001774-001/U – Immersion Well, stainless steel 304, 1/2 in. threading

C7031D2003/U – PT1000 Immersion Temperature Sensor, 5 in. immersion, operating range -40°F to 350°F

C7031J2009/U – PT1000 Electronic Duct Temperature Sensor, 12 ft

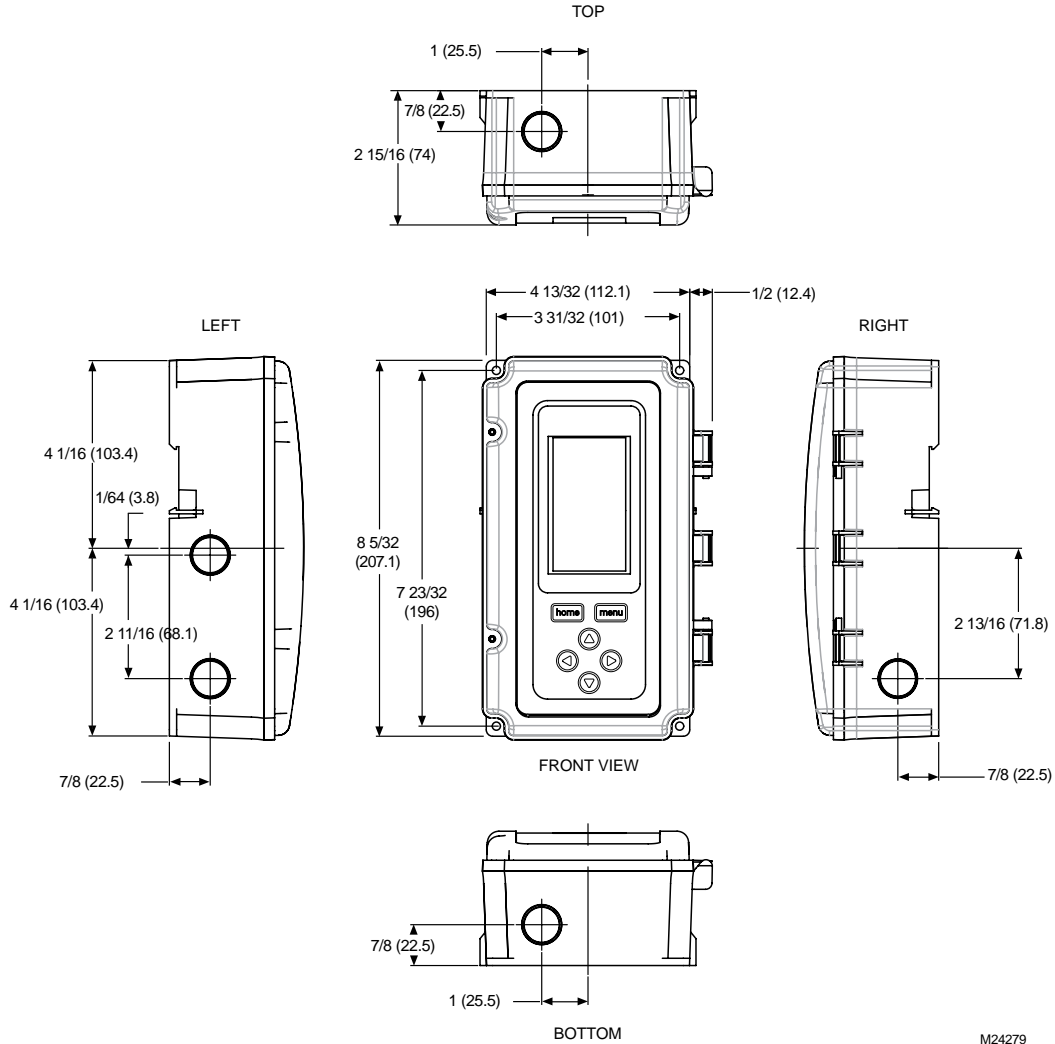
C7100D1001/U – PT1000 Duct Averaging Temperature Sensor, 13 in., 40°F to 150°F

C7130B1009/U – Wall mount Room Sensor

| Material Number | Type | Output | Sensor Inputs | Analog Output | Relay Outputs | Sensors Included | Replaces | High/Low Mod Limit | Approvals, Others |
|-----------------|---------------------|----------------|---------------|--|---------------|------------------|---|--------------------|-------------------|
| T775A2009/U | Standard-NEMA 1 | | 1 | | 1 SPDT | 50021579-001 (1) | T775A1001 | | |
| T775B2016/U | Standard-NEMA 4X | | 2 | | 2 SPDT | T775-SENS-WR (1) | | | IP65: Approved |
| T775B2024/U | Standard-NEMA 4X | | 2 | | 4 SPDT | T775-SENS-WR (1) | T775C1009; T775D1008 | | IP65: Approved |
| T775B2032/U | Standard-NEMA 1 | | 2 | | 2 SPDT | 50021579-001 (1) | T775A1019; T775B1000 | | |
| T775B2040/U | Standard-NEMA 1 | | 2 | | 4 SPDT | 50021579-001 (1) | T775A1027; T775A1035; T775B1018; T775B1026; T775B1042 | | |
| T775M2006/U | Modulating-NEMA 1 | | 2 | 2, Electronic Series 90; 4-20 mA; 0-10 Vdc; 2-10 Vdc | None | 50021579-001 (1) | | | |
| T775M2014/U | Modulating-NEMA 4X | | 2 | Electronic Series 90; 4-20 mA; 0-10 Vdc; 2-10 Vdc,2 | 4 SPDT | T775-SENS-WR (1) | T775G1005; T775G1013; T775G1021; T775G1039 | Yes | IP65: Approved |
| T775M2022/U | Modulating-NEMA 4X | | 2 | 2, Electronic Series 90; 4-20 mA; 0-10 Vdc; 2-10 Vdc | 2 SPDT | T775-SENS-WR (1) | | Yes | IP65: Approved |
| T775M2030/U | Modulating-NEMA 1 | | 2 | 2, Electronic Series 90; 4-20 mA; 0-10 Vdc; 2-10 Vdc | 4 SPDT | 50021579-001 (1) | T775E1114; T775F1022; T775F1055; T775F1089 | Yes | IP65: Approved |
| T775M2048/U | Modulating-NEMA 1 | | 2 | 2, Electronic Series 90; 4-20 mA; 0-10 Vdc; 2-10 Vdc | 2 SPDT | 50021579-001 (1) | T775E1015; T775E1023; T775E1056; T775E1064; T775E1098 | Yes | |
| T775R2001/U | Reset option-NEMA 1 | relay w/ RESET | 2 | | 4 SPDT | 50021579-001 (2) | | | |
| T775R2019/U | Reset option-NEMA 1 | relay w/ RESET | 2 | 2, Electronic Series 90; 4-20 mA; 0-10 Vdc; 2-10 Vdc | 4 SPDT | 50021579-001 (2) | | | |

| Material Number | Type | Output | Sensor Inputs | Analog Output | Relay Outputs | Sensors Included | Replaces | High/Low Mod Limit | Approvals, Others |
|-----------------|---------------------|----------------|---------------|--|---------------|------------------|---------------------------------|--------------------|-------------------|
| T775R2027/U | Reset option-NEMA 1 | relay w/ RESET | 2 | 2, Electronic Series 90; 4-20 mA; 0-10 Vdc; 2-10 Vdc | 2 SPDT | 50021579-001 (2) | T775J1043; T775J1050; T775J1068 | | |
| T775R2035/U | Reset option-NEMA 1 | relay w/ RESET | 2 | | 2 SPDT | 50021579-001 (2) | T775J1001; T775J1076 | | |
| T775R2043/U | Reset option-NEMA 1 | relay w/ RESET | 2 | 2, Electronic Series 90; 4-20 mA; 0-10 Vdc; 2-10 Vdc | | 50021579-001 (2) | T775J1019; T775J1027; T775J1035 | Yes | |

Dimensions in inches (millimeters)



M24279

Temperature Controllers

T775 Series 2000 Special Stand-Alone Controllers



T775 electronic remote temperature controller, is the next generation in commercial/agricultural control - capable of remote sensing temperature, humidity, pressure, etc., and providing switched and/or proportional outputs to various types of loads.

- Universal model (T775U) can control pressure, humidity, or any variable analog input.
- Special boiler model (T775P) for boiler control.
- Special Staged Sequencing Model (T775L) for sequence staging of relays with one or two setpoints.
- Special Expansion Model (T775S) for staging up to 12 relays with two setpoints (each T775S provides 4 relays).
- Save time on installations with the easy-to-use graphical Interface, large display, and the intuitive programming.
- Use the time clock scheduler or digital input to control the setback and disable output options to help save energy.
- Provide very fast or very fast response times on modulating outputs by adjusting the integral and derivative times (PI or PID).
- Configure models with reset in a few easy steps.
- Eliminate the need for a separate time delay device and protect equipment with the minimum off time option.
- Use the T775L and T775P to stage up to 12 relays (with optional T775S) from two independent heat or cool setpoints.
- Support for digital output alarm on the T775P configurable based on minimum, maximum, or differential temperature.

Analog Output: 4-20 mA; 0-10 Vdc; 2-10 Vdc; Electronic Series 90
Voltage: 24 Vac or 120/240 Vac
Frequency: 50 Hz; 60 Hz
Relay Contact Ratings: 24 Vac – 10.0A resistive; 120 Vac – 1/2 hp; 9.8 AFL, 58.8 ALR, 125 VA Pilot Duty; 240 Vac – 1/2 hp; 4.9 AFL, 29.4 ALR, 125 VA Pilot Duty

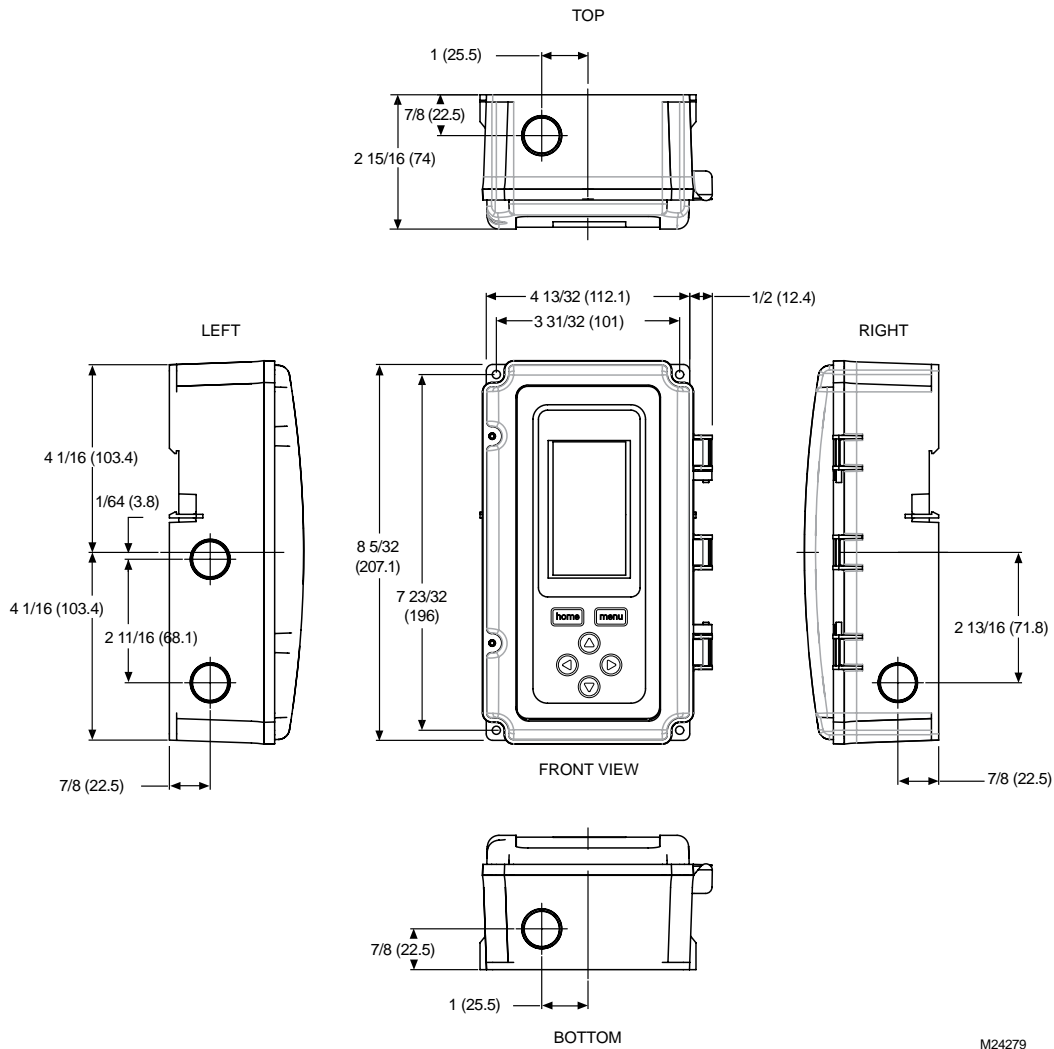
Approximate, Dimensions: 8 5/32 in. high x 4 13/32 in. wide x 2 15/16 in. deep (207.1 mm high x 112.1 mm wide x 74 mm deep)
Sensor Element: 1097 ohms PTC at 77°F (25°C)
Setpoint Temperature Range: -40°F to 248°F (-40°C to 120°C)
Operating Temperature Range: Ambient – -40°F to 125°F @ 50 Hz; -40°F to 140°F @ 60 Hz (Ambient – -40°C to 52°C @ 50 Hz; -40°C to 60°C @ 60 Hz)
Accuracy: ±1°F at 77°F (±1°C at 25°C)
Throttling Range: 1°F to 150°F (0.5°C to 66°C)
Differential Temperature: 1°F to 150°F (0.5°C to 66°C)
Expandable: T775L or T775P - Add 1 or 2 T775Ss (4 relays ea)
Replaces: T775U2006/U can be used to replace H775A1006; H775A1022; H775A1048; H775A1063; H775B1005; H775C1004; H775D1003; or H775E1002
Approvals, Canadian Underwriters Laboratories Inc.: Approved
Approvals, Underwriters Laboratories Inc.: Approved
Approvals, Others: IP65: Approved
Approvals, CE: Approved
Approvals, C-Tick: Approved

Accessories:

107324A/U – Capillary Holder Assembly, 8 3/8 in. long
H7655A1001/U – Wall Humidity Sensor, 5% RH, 0-10 Vdc fixed output
H7655B2014/U – Duct Humidity Sensor, 5% RH, Selectable 4-20mA or 0-5/10Vdc, with 20K ohm temp
P7640A1000/U – Panel Differential Pressure Transmitter, 0-.1", 0-.25", 0-.5", 0-1" Selectable
P7640A1018/U – Panel Differential Pressure Transmitter, 0-.1", 0-.25", 0-.5", 0-1" Selectable
P7640A1026/U – Panel Differential Pressure Transmitter, 0-1", 0-2.5", 0-5", 0-10" Selectable
P7640A1034/U – Panel Differential Pressure Transmitter, 0-1", 0-2.5", 0-5", 0-10" Selectable
P7640B1008/U – Duct Differential Pressure Transmitter, 0-.1", 0-.25", 0-.5", 0-1" Selectable
P7640B1016/U – Duct Differential Pressure Transmitter, 0-.1", 0-.25", 0-.5", 0-1" Selectable
P7640B1024/U – Duct Differential Pressure Transmitter, 0-1", 0-2.5", 0-5", 0-10" Selectable
P7640B1032/U – Duct Differential Pressure Transmitter, 0-1", 0-2.5", 0-5", 0-10" Selectable

| Material Number | Application | Type | Stages Loop Control | Output | Bulb Size | Relay Outputs | Sensor Included | Digital Output Alarm Ratings | Sensor Inputs |
|-----------------|--|---|---------------------|----------------|--|---------------|------------------|--|--|
| T775L2007/U | Sequence staging of relays with one or two setpoints | Stage Sequencer with Reset Option-NEMA 1 | Yes | relay w/ RESET | 1/4 in. diameter x 2 in. long (6.35 mm diameter x 50.8 mm) | 4 SPDT | 50021579-001 (1) | | 2 (max distance 1,000 ft [304 m]) |
| T775P2003/U | Boiler Control | Special Boiler with Reset-NEMA 1 | Yes | relay w/ RESET | 1/4 in. diameter x 2 in. long (6.35 mm diameter x 50.8 mm) | 4 SPDT | 50021579-001 (3) | AC – 30 Vac RMS; 1.5 A steady 3A inrush P.F. 0.45 N.C.; 20 Vac RMS; 100 mA minimum load on N.O. and N.C. contacts, DC – 1 mA at 100 mV DC minimum load | 3 (max distance 1,000 ft [304 m]) |
| T775S2008/U | Staging up to 12 relays with two setpoints | Relay Expansion Module-NEMA 1 | | | | 4 SPDT | None | | |
| T775U2006/U | Control pressure, humidity, or any medium with an analog input | Universal - Humidity, Pressure, etc.-NEMA 1 | | relay w/ RESET | | 2 SPDT | None | | 2 (Sensor B used for reset only) (max distance 1,000 ft [304 m]) |
| T775U2016/U | Control pressure, humidity, or any medium with an analog input | Universal - Humidity, Pressure, etc.-NEMA 1 | | relay w/ RESET | | 2 SPDT | None | | 2 (Control to Sensor A (Universal Input) or Sensor B (temp) Independently) (max distance 1,000 ft [304 m]) |

Dimensions in inches (millimeters)



M24279

T915 Proportional Temperature Controller



Proportional (135 ohm) remote bulb controllers for ducts, tanks, boilers, pipes and other heat exchangers.

- Provide proportioning control of three-wire, low-voltage valve or damper motors.
- Used to regulate temperatures of either air or liquids.
- All models ambient compensated. Ambient temperature compensation provides good temperature control. Refer to T775 Electronic Remote Temperature Controller where more exact control is required and/or remote controller location is preferred.
- Temperature setting scale markings in both Fahrenheit and Celsius. Steel case has a clear plastic cover to make setting readily visible.
- Surface mount using two screws through back of case.

Application: Used with Series 90 Modutrol Motors for proportional control of valves and dampers

Type: Remote bulb

Output: analog

Approximate, Dimensions: 5 1/2 in. high x 4 1/2 in. wide x 2 3/4 in. deep (140 mm high x 114 mm wide x 70 mm deep)

Sensor Inputs: 1

Bulb Size: 1/2 in. diameter x 4 in. long (13 mm diameter x 102 mm long)

Color: Gray

| Material Number | Setpoint Temperature Range | Operating Temperature Range | Throttling Range | Capillary Length | Analog Output | Sensor Element |
|-----------------|-------------------------------|-------------------------------|-------------------------------|------------------|---------------------------|------------------------------------|
| T915C1407/U | 15°F to 90°F (-10°C to +32°C) | 200°F Maximum (93°C Maximum) | 7°F to 38°F (3.9°C to 21.1°C) | 20 ft (6.1 m) | One 135 Ohm Potentiometer | Copper bulb, fade-out fill |
| T915C1928/U | 80°F to 210°F (27°C to 99°C) | 230°F Maximum (110°C Maximum) | 6°F to 32°F (3.3°C to 17.8°C) | 5 ft (1.5 m) | One 135 Ohm Potentiometer | Copper bulb, high temperature fill |
| T915C1936/U | 80°F to 210°F (27°C to 99°C) | 230°F Maximum (110°C Maximum) | 6°F to 32°F (3.3°C to 17.8°C) | 20 ft (6.1 m) | One 135 Ohm Potentiometer | Copper bulb, high temperature fill |

Temperature Controllers

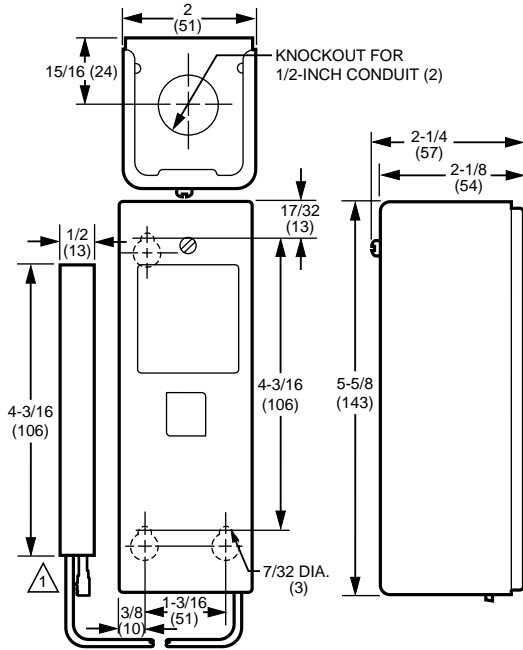
T991A Proportional Temperature Controller



Proportional (135 ohm) remote bulb controllers for modulating control of water or air temperature in ducts, tanks and similar applications.

- Fast response models (for duct mounting) have coiled sensing element giving at least four times faster response than standard models.
- Ambient temperature compensated for the case and tubing.
- Sensing element capillary tubing allows remote mounting of sensing element.
- Setpoint may be read and adjusted through cover.
- Throttling dial inside case adjusts proportional throttling range.

Dimensions in inches (millimeters)



1 BULB LENGTH IS 3-9/16 (91), ON 55 TO 175 F AND 15 TO 75 C RANGE.

M23881

Output: analog
Voltage: 24 Vac to 30 Vac
Frequency: 50 Hz; 60 Hz
Sensor Inputs: 1
Color: Gray

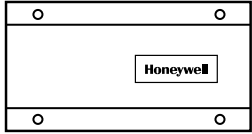
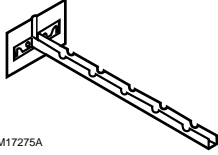
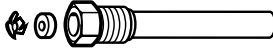
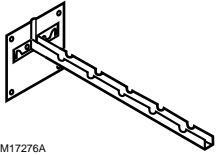


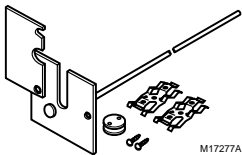
| Material Number | Setpoint Temperature Range | Operating Temperature Range | Throttling Range | Bulb Size | Capillary Length | Analog Output | Sensor Element | Type | Approximate, Dimensions | Includes | Comments |
|---|--------------------------------------|--|----------------------------------|--|------------------|------------------------------|----------------|---------------------------|---|------------------|----------|
| Provide modulating control of water or air temperature in ducts or tanks | | | | | | | | | | | |
| T991A1012/U | 0°F to 100°F (-18°C to +38°C) | 125°F Maximum (52°C Maximum) | 3°F to 30°F (1.7°C to 16.7°C) | 1/2 in. diameter x 4 3/16 in. long (13 mm diameter x 107 mm long) | 20 ft (6.1 m) | One 135 Ohm Potentiometer | Copper bulb | Modulating Remote bulb | 5 5/8 in. high x 2 in. wide x 2 1/4 in. deep (143 mm high x 51 mm wide x 57 mm deep) | | |
| T991A1061/U | 160°F to 260°F (71°C to 127°C) | 280°F Maximum (138°C Maximum) | 3°F to 30°F (1.7°C to 16.7°C) | 1/2 in. diameter x 4 3/16 in. long (13 mm diameter x 107 mm long) | 5 ft (1.5 m) | One 135 Ohm Potentiometer | Copper bulb | Modulating Remote bulb | 5 5/8 in. high x 2 in. wide x 2 1/4 in. deep (143 mm high x 51 mm wide x 57 mm deep) | | |
| T991A1079/U | 160°F to 260°F (71°C to 127°C) | 280°F Maximum (138°C Maximum) | 3°F to 30°F (1.7°C to 16.7°C) | 1/2 in. diameter x 4 3/16 in. long (13 mm diameter x 107 mm long) | 20 ft (6.1 m) | One 135 Ohm Potentiometer | Copper bulb | Modulating Remote bulb | 5 5/8 in. high x 2 in. wide x 2 1/4 in. deep (143 mm high x 51 mm wide x 57 mm deep) | | |
| T991A1095/U | 5°F to 95°F (-15°C to +35°C) | 125°F Maximum (52°C Maximum) | 3°F to 30°F (1.7°C to 16.7°C) | 1/2 in. diameter x 4 3/16 in. long (13 mm diameter x 107 mm long) | 5 ft (1.5 m) | One 135 Ohm Potentiometer | Copper bulb | Modulating Remote bulb | 5 5/8 in. high x 2 in. wide x 2 1/4 in. deep (143 mm high x 51 mm wide x 57 mm deep) | Celsius scale | |

Temperature Controllers

| Material Number | Setpoint Temperature Range | Operating Temperature Range | Throttling Range | Bulb Size | Capillary Length | Analog Output | Sensor Element | Type | Approximate, Dimensions | Includes | Comments |
|--|-------------------------------|------------------------------|-------------------------------|---|------------------|---------------------------|------------------------------|------------------------|--|--------------------------|---------------|
| T991A1186/U | 55°F to 175°F (13°C to 79°C) | 200°F Maximum (93°C Maximum) | 3°F to 30°F (1.7°C to 16.7°C) | 1/2 in. diameter x 4 3/16 in. long (13 mm diameter x 107 mm long) | 5 ft (1.5m) | One 135 Ohm Potentiometer | Copper bulb | Modulating Remote bulb | 5 5/8 in. high x 2 in. wide x 2 1/4 in. deep (143 mm high x 51 mm wide x 57 mm deep) | | |
| T991A1756/U | 55°F to 175°F (13°C to 79°C) | 200°F Maximum (93°C Maximum) | 3.5°F to 36°F (1.9°C to 20°C) | 1/8 in. diameter x 76 3/8 in. long (3 mm diameter x 1.9 m long) | 5 ft (1.5 m) | One 135 Ohm Potentiometer | Copper fast response element | Fast response element | 5 5/8 in. high x 2 in. wide x 2 1/4 in. deep (143 mm high x 51 mm wide x 57 mm deep) | 131524A duct coil holder | |
| T991A1764/U | 0°F to 100°F (-18°C to +38°C) | 125°F Maximum (52°C Maximum) | 3°F to 30°F (1.7°C to 16.7°C) | 7/64 in. diameter x 24 ft. long (2.8 mm diameter x 7.3 m long) | 24 ft (7.3 m) | One 135 Ohm Potentiometer | Copper averaging element | Averaging element | 5 5/8 in. high x 2 in. wide x 2 1/4 in. deep (143 mm high x 51 mm wide x 57 mm deep) | | |
| T991A2069/U | 0°F to 100°F (-18°C to +38°C) | 125°F Maximum (52°C Maximum) | 3°F to 30°F (1.7°C to 16.7°C) | 1/8 in. diameter x 76 3/8 in. long (3 mm diameter x 1.9 m long) | 20 ft (6.1 m) | One 135 Ohm Potentiometer | Copper fast response element | Fast response element | 5 5/8 in. high x 2 in. wide x 2 1/4 in. deep (143 mm high x 51 mm wide x 57 mm deep) | 131524A duct coil holder | |
| Provide modulating control of water or air temperature in ducts or tanks, setpoint automatically reset as outdoor temperature changes | | | | | | | | | | | |
| T991A1194/U | 55°F to 175°F (13°C to 79°C) | 200°F Maximum (93°C Maximum) | 3.5°F to 36°F (1.9°C to 20°C) | 1/2 in. diameter x 3 9/16 in. long (13 mm diameter x 90 mm long) | 20 ft (6.1m) | One 135 Ohm Potentiometer | Copper bulb | Modulating Remote bulb | 5 5/8 in. high x 2 in. wide x 2 1/4 in. deep (143 mm high x 51 mm wide x 57 mm deep) | | |
| T991A1210/U | 59°F to 167°F (15°C to 75°C) | 200°F Maximum (93°C Maximum) | 3°F to 10°F (1.7°C to 16.7°C) | 1/2 in. diameter x 4 3/16 in. long (13 mm diameter x 107 mm long) | 5 ft (1.5m) | One 135 Ohm Potentiometer | Copper bulb | Modulating Remote bulb | 5 5/8 in. high x 2 in. wide x 2 1/4 in. deep (143 mm high x 51 mm wide x 57 mm deep) | | Celsius Scale |
| T991A1244/U | 55°F to 175°F (13°C to 79°C) | 200°F Maximum (93°C Maximum) | 3.5°F to 36°F (1.9°C to 20°C) | 1/2 in. diameter x 3 9/16 in. long (13 mm diameter x 90 mm long) | 5 ft (1.5m) | One 135 Ohm Potentiometer | Copper bulb | Modulating Remote bulb | 5 5/8 in. high x 2 in. wide x 2 1/4 in. deep (143 mm high x 51 mm wide x 57 mm deep) | 107324A Duct Bulb holder | |
| T991A1269/U | 55°F to 175°F (13°C to 79°C) | 200°F Maximum (93°C Maximum) | 3.5°F to 36°F (1.9°C to 20°C) | 1/2 in. diameter x 3 9/16 in. long (13 mm diameter x 90 mm long) | 20 ft (6.1m) | One 280 Ohm Potentiometer | Copper bulb | Modulating Remote bulb | 5 5/8 in. high x 2 in. wide x 2 1/4 in. deep (143 mm high x 51 mm wide x 57 mm deep) | | 280 ohm |
| T991A1343/U | 55°F to 175°F (13°C to 79°C) | 200°F Maximum (93°C Maximum) | 3.5°F to 36°F (1.9°C to 20°C) | 1/2 in. diameter x 3 9/16 in. long (13 mm diameter x 90 mm long) | 5 ft (1.5m) | One 280 Ohm Potentiometer | Copper bulb | Modulating Remote bulb | 5 5/8 in. high x 2 in. wide x 2 1/4 in. deep (143 mm high x 51 mm wide x 57 mm deep) | 107324A Duct Bulb holder | |
| Provides on/off and modulating control of water or air temperature in ducts or tanks | | | | | | | | | | | |
| T991A1350/U | 55°F to 175°F (13°C to 79°C) | 200°F Maximum (93°C Maximum) | 3.5°F to 36°F (1.9°C to 20°C) | 7/64 in. diameter x 24 ft. long (2.8 mm diameter x 7.3 m long) | 24 ft (7.3 m) | One 135 Ohm Potentiometer | Copper averaging element | Remote bulb | 5 7/8 in. high x 4 1/8 in. wide x 2 3/16 in. deep (149 mm high x 105 mm wide x 56 mm deep) | | |
| T991A1426/U | 0°F to 100°F (-18°C to +38°C) | 125°F Maximum (52°C Maximum) | 3°F to 10°F (1.7°C to 16.7°C) | 1/2 in. diameter x 4 3/16 in. long (13 mm diameter x 107 mm long) | 5 ft (1.5 m) | One 135 Ohm Potentiometer | Copper bulb | Remote bulb | 5 7/8 in. high x 4 1/8 in. wide x 2 3/16 in. deep (149 mm high x 105 mm wide x 56 mm deep) | 107324A Duct Bulb holder | |
| T991A1715/U | 0°F to 100°F (-18°C to +38°C) | 125°F Maximum (52°C Maximum) | 3°F to 10°F (1.7°C to 16.7°C) | 1/8 in. diameter x 76 3/8 in. long (3 mm diameter x 1.9 m long) | 5 ft (1.5 m) | One 135 Ohm Potentiometer | Copper fast response element | Remote bulb | 5 7/8 in. high x 4 1/8 in. wide x 2 3/16 in. deep (149 mm high x 105 mm wide x 56 mm deep) | 131524A duct coil holder | |

Temperature Controllers

Remote Bulb Controller Accessories

| Material Number | Description | |
|-----------------|---|--|
| 107323A/U | Remote Bulb Shield Assembly, 3/8 in. diameter bulbs, < 5 in. long |  <p>M17284A</p> <p>107323A</p> |
| 107324A/U | Capillary Holder Assembly, 8 3/8 in. long |  <p>M17275A</p> <p>107324A</p> |
| 107408/U | Heat Conductive Compound, 4 ounces | |
| 112620AA/U | Well Assembly, 3 3/4 in. (95 mm) insertion, 3/8 in. (10 mm) diameter, copper 1/2 in. NPT, used with T675 and T678 |  <p>M17401A</p> |
| 112622AA/U | Well Assembly, 4 in. (102 mm) insertion, 1/2 in. (13 mm) diameter, copper 1/2 in. NPT, used with T675 and T678 | |
| 112624AA/U | Well Assembly, 4 3/4 in. (121 mm) insertion, 1/2 in. (13 mm) diameter, stainless steel 1/2 in. NPT, used with T675 and T678 | |
| 112630AA/U | Well Assembly, 4 1/4 in. (108 mm) insertion, 1/2 in. (13 mm) diameter, copper 3/4 in. NPT, used with T675 and T678 | |
| 131524A/U | Capillary Holder Assembly, 8 3/8 in. long, duct insertion |  <p>M17276A</p> <p>131524A</p> |
| 193987GA/U | Encapsulated platinum sensing element used with the T7075 and T775. 2 5/8 in. long, 3/8 in. diameter, 6 in. leads. Use with the T775 Series 1000 Only. |  |
| 198212CA/U | Encapsulated platinum sensing element used with the T7075 and T775. Water resistant, 60 in. leads. Use with the T775 Series 1000 Only. |  |
| 203401B/U | Encapsulated platinum PT3000 sensing element used with the T7075 and T775. Water tight, 20 in. leads, requires 1/2 in. diameter well. Use with the T775 Series 1000 Only. | |
| 311266D/U | Bulb Holder Assembly, T4031, use with copper elements only |  <p>M17277A</p> <p>311266D</p> |
| 7617M/U | Compression Fitting, brass 1/2 in. NPT plug | |
| Q615A1004/U | Splash proof enclosure, for use with T675, T678, T991. | |

Remote Bulb Controller Parts

| Material Number | Description |
|-----------------|---|
| 112719/U | Packing Ring, Remote Bulb Well |
| 124186/U | Knob, T675/T678 |
| 34886A/U | Sun shield for remote bulb controllers, T475, T991B, T678B, T675A |
| 7617ABY/U | Compression Fitting, brass 1/2 in. NPT plug for direct immersion applications |
| 801737A/U | Potentiometer and Bracket Assembly, T991, 140 ohms |

D1 Series Ultra-low Leakage Design Airfoil Control Damper



The D1 series control damper is an ultra-low leakage damper, with rugged steel airfoil blades designed to meet the highest standards established. It is leakage and pressure drop tested according to the AMCA 500D standard, and meets leakage Class 1 and Class 1A, which also qualifies the damper for the International Energy Conservation Code (IECC). It is intended for application in medium to high pressure and velocity systems.

The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Programs, (applies to air performance ratings only).

Size Range¹:

Minimum Size:

- One Blade – 6 in. wide by 6 in. high
- Two Blade – 6 in. wide by 10 in. high

Maximum Size:

- Single Section – 60 in. wide by 74 in. high
- Multiple Section – unlimited

Temperature Rating: 180°F (82°C) maximum²

Maximum Pressure: 10 in. wg.

Standard Construction:

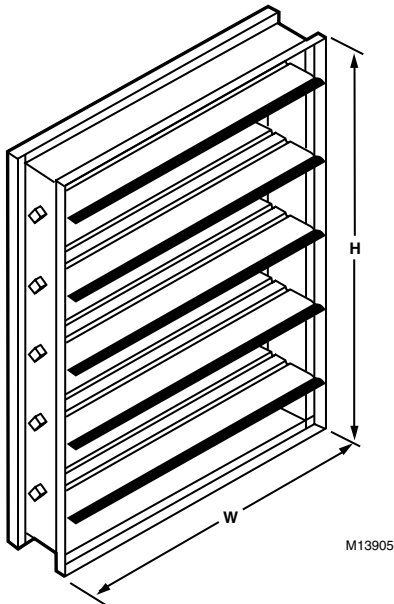
- Blades:** 14 gauge galvanized steel, airfoil shaped
- Blade Action:** Parallel or Opposed
- Frame³:** 16 gauge galvanized steel Hat-channel
- Blade Axle Bearings³:** Synthetic (Delrin™)
- Internal Linkage:** Steel, out of airstream (concealed in frame)
- Axles³:** 1/2 in. plated steel
- Jamb Seals³:** 304 Stainless Steel
- Blade Edge Seals³:** TPE

¹ Width and height dimensions furnished 1/4 in. undersized - standard

² Temperature rating with standard options (up to 250°F custom)

³ Customized options are available

Dimensions Diagram



M13905

Leakage Rate

Leakage Class Definitions

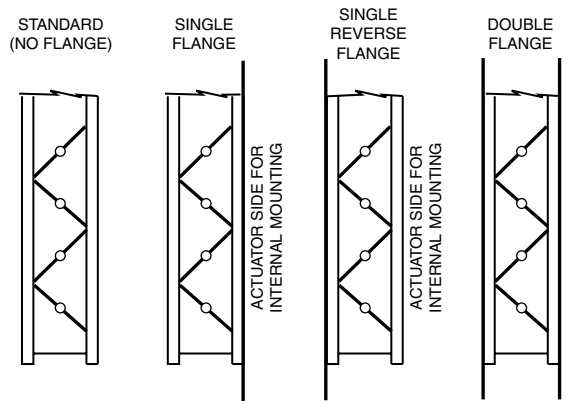
The maximum allowable leakage is defined by AMCA as the following:

- Leakage Class 1A:
 - 3 cfm/ft² @ 1 in. wg (Class 1A is only defined at 1 in. wg).
- Leakage Class 1:
 - 4 cfm/ft² @ 1 in. wg.
 - 8 cfm/ft² @ 4 in. wg.
 - 11 cfm/ft² @ 8 in. wg.
 - 12.6 cfm/ft² @ 10 in. wg.

Performance Data

| D1 Velocity Limits. | |
|------------------------|-------------------------|
| Damper Size in inches. | Maximum System Velocity |
| 12 x 12 | 4000 fpm |
| 24 x 24 | 4000 fpm |
| 36 x 36 | 3500 fpm |
| 48 x 48 | 3000 fpm |
| 60 x 60 | 2500 fpm |

Flange Options



M18986

Commercial Rectangular Dampers

D2 and D3 Series Rectangular Volume Control Dampers



The D2 series control damper is an ultra-low leakage damper, with strong 3V blades. It is leakage and pressure drop tested according to the AMCA 500D standard, and meets leakage Class 1 and Class 1A, which also qualifies the damper for the International Energy Conservation Code (IECC). The D3 series features the same blades and hardware as the D2 damper, but lacks the seals, making it a damper intended for applications where low leakage performance is not necessary. D2 and D3 dampers are intended for application in low to medium pressure and velocity systems.



The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Programs, (applies to air performance ratings only).

Size Range¹:

Minimum Size:

- One Blade – 6 in. wide by 6 in. high
- Two Blade – 6 in. wide by 10 in. high

Maximum Size:

- Single Section – 60 in. wide by 74 in. high
- Multiple Section – unlimited

Temperature Rating:

180°F (82°C) maximum²

Maximum Pressure:

5 in. wg.

Standard Construction:

- Blades:** 16 gauge galvanized steel, 3V shaped
- Blade Action:** Parallel or Opposed
- Frame³:** 16 gauge galvanized steel Hat-channel
- Blade Axle Bearings³:** Synthetic (Delrin™)
- Internal Linkage:** Steel, out of airstream (concealed in frame)
- Axles³:** 1/2 in. plated steel
- Jamb Seals³:** 304 Stainless Steel
- Blade Edge Seals³:** TPE (D2 only)

Leakage Rate (Applies to D2 only)

Leakage Class Definitions

The maximum allowable leakage is defined by AMCA as the following:

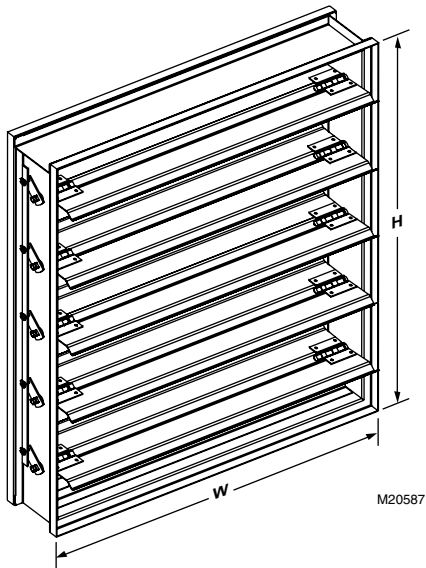
- Leakage Class 1A:
 - 3 cfm/ft² @ 1 in. wg (Class 1A is only defined at 1 in. wg).
- Leakage Class 1:
 - 4 cfm/ft² @ 1 in. wg.
 - 8 cfm/ft² @ 4 in. wg.

Performance Data

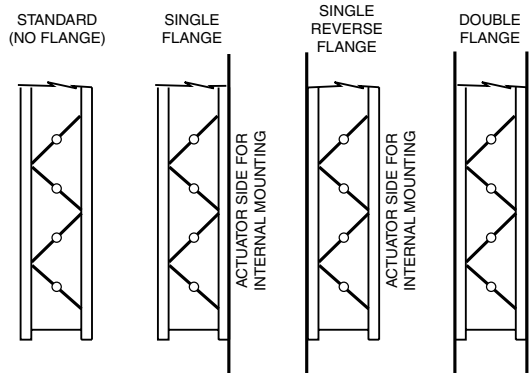
| D2, D3 Velocity Limits. | |
|-------------------------|-------------------------|
| Damper Size in inches. | Maximum System Velocity |
| 12 x 12 | 3000 fpm |
| 24 x 24 | 3000 fpm |
| 36 x 36 | 2500 fpm |
| 48 x 48 | 2000 fpm |

¹ Width and height dimensions furnished 1/4 in. undersized - standard
² Temperature rating with standard options (up to 250°F custom)
³ Customized options are available

Dimensions Diagram



Flange Options



Standard Models

Commercial Rectangular Dampers

| | | | |
|-----------|---|---|--|
| D1 | Class 1/1A leakage, Airfoil blades with seals | | Damper Type |
| D2 | Class 1/1A leakage, 3V blades with seals | | |
| D3 | No leakage rating, 3V blades without seals | | |
| | P | Parallel blades | Blade Action |
| | O | Opposed blades | |
| | A | 16 gauge galvanized frame (with galvanized linkage and axles) | Frame |
| | A | Synthetic bearings/No blade seals | Seal selection for D1 and D2 dampers only |
| | B | Synthetic bearings/TPE blade seals and 304SS jamb seals | |
| | C | Bronze bearings/No blade seals | |
| | D | Bronze bearings/TPE blade seals and 304SS jamb seals | |
| | 006 to 144 | Standard Rectangular Damper Width | 2 inch increments through 46 inch, then 4 inch increments. |
| | 006 to 144 | Standard Rectangular Damper Height | |
| | N | Nominal Sizing | 1/4 inch undersized in Width and Height. |
| | A | No flange | Flange options are custom (see below) |
| | A | External Left actuator mount | Actuator mount. External mount is extension pin, or jack-shaft for larger sizes. Internal mount requires additional hardware. |
| | B | Internal actuator mount | |
| | C | External Right actuator mount | |

D2 **O** **A** **B** **048** **048** **N** **A** **A** Example

Contact Customer Care, or download the damper pricing tool (available at <https://customer.honeywell.com>, see "estimating tools") for additional options, features, and models.

Options

| | Leakage @ 1 in. wg cfm/ft2 | Max Velocity fpm | Max pressure in wg | Material | | Frame Gauge | | Blade Seals | | Jamb Seals | Blade Axle Bearings | | Axles | | Linkage Material | | Flange | |
|----------------------|----------------------------|------------------|--------------------|------------|-----------|-------------|----|-------------|----------|------------|---------------------|-------------------|------------|-----------|------------------|-----------|--------|-------------------------|
| | | | | Galvanized | Stainless | 16 | 12 | TPE | Silicone | Stainless | Synthetic | Bronze, Stainless | Galvanized | Stainless | Galvanized | Stainless | None | Single, Double, Reverse |
| D1 Ultra-low Leakage | 3 | 4000 | 10 | S | O | S | O | S | O | S | S | O | S | O | S | O | S | O |
| D2 Ultra-low Leakage | 3 | 3000 | 5 | S | O | S | O | S | O | S | S | O | S | O | S | O | S | O |
| D3 Volume Control | 120 | 3000 | 5 | S | O | S | O | N/A | N/A | N/A | S | O | S | O | S | O | S | O |

Commercial Round Dampers

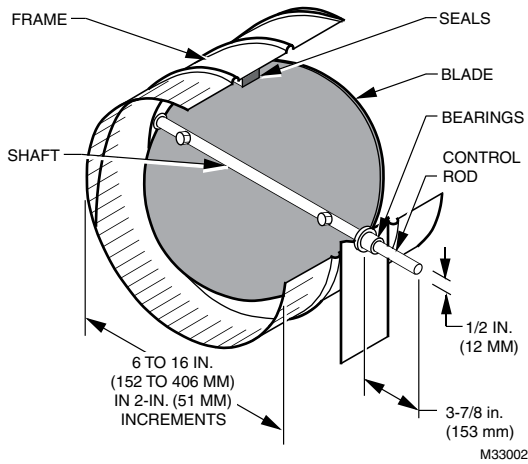
D690 Low-Leakage, Single-Blade, Round Dampers



The D690 Round Control Damper is used in commercial air handling system zone applications to control airflow, but is also suitable for residential zoning applications where the ML6161 actuator is used. The damper is designed for use with all low torque Honeywell Direct Coupled Actuators.

- Neoprene seal for tight closing and low leakage.
- Oilite bearings for long life.

Dimensions in inches (millimeters)



Application: Heating, cooling, ventilating

Damper Type: Single-blade, round

Used With: Honeywell direct coupled actuators up to 44 lb-in.

Temperature Range: 32°F to 130°F (0°C to 54°C)

Tradeline Value: Tradeline

| Material Number | Size | Maximum Approach Velocity (ft/ min) | Input Signal | Description |
|-----------------|-----------------------------------|-------------------------------------|--------------|--|
| D690A1002/U | 6 in. diameter (152 mm diameter) | 2500 ft/min | None | 6 inch, Single Blade Round Damper, for use with all low torque Honeywell Direct Coupled Actuators |
| D690A1010/U | 8 in. diameter (203 mm diameter) | 2500 ft/min | None | 8 inch, Single Blade Round Damper, for use with all low torque Honeywell Direct Coupled Actuators |
| D690A1028/U | 10 in. diameter (254 mm diameter) | 2500 ft/min | None | 10 inch, Single Blade Round Damper, for use with all low torque Honeywell Direct Coupled Actuators |
| D690A1036/U | 12 in. diameter (305 mm diameter) | 2500 ft/min | None | 12 inch, Single Blade Round Damper, for use with all low torque Honeywell Direct Coupled Actuators |
| D690A1044/U | 14 in. diameter (356 mm diameter) | 2500 ft/min | None | 14 inch, Single Blade Round Damper, for use with all low torque Honeywell Direct Coupled Actuators |
| D690A1051/U | 16 in. diameter (406 mm diameter) | 2500 ft/min | None | 16 inch, Single Blade Round Damper, for use with all low torque Honeywell Direct Coupled Actuators |

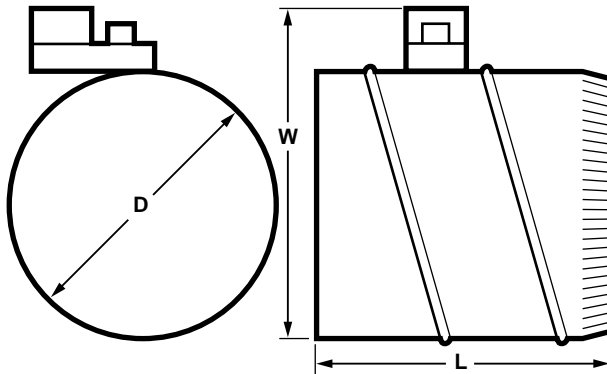
DM7600 Commercial Zone Damper



The DM7600 Commercial Zone Damper is used in zoning systems to control airflow. The damper consists of a D690 Control damper, and a Honeywell floating ML6161 or modulating ML7161 actuator that is factory mounted to simplify field installation.

- Neoprene seal for tight closing and low leakage.
- Oilite bearings for long life.

Dimensions in inches (millimeters)



Application: Heating, cooling, ventilating

Damper Type: Single-blade, round

Voltage: 24 Vac

Frequency: 50 Hz; 60 Hz

Temperature Range: 32°F to 130°F (0°C to 54°C)

| DAMPER DIAMETER (D) | | WIDTH (W) | | LENGTH (L) | |
|---------------------|-----|-----------|-----|------------|-----|
| in. | mm | in. | mm | in. | mm |
| 6 | 152 | 9-1/2 | 241 | 12 | 305 |
| 8 | 203 | 11-1/2 | 292 | 12 | 305 |
| 10 | 254 | 13-1/2 | 343 | 12 | 305 |
| 12 | 305 | 15-1/2 | 394 | 13 | 330 |
| 14 | 356 | 17-1/2 | 445 | 15 | 381 |
| 16 | 406 | 19-1/2 | 495 | 17 | 432 |

M17412

| Material Number | Size | Maximum Approach Velocity (ft/ min) | Actuator Control Signal | Includes |
|-----------------|-----------------------------------|-------------------------------------|---------------------------|-------------------------------|
| DM7600A1005/U | 6 in. diameter (152 mm diameter) | 2500 ft/min | 2 to 10 Vdc or 4 to 20 mA | Integral actuator ML7161A2008 |
| DM7600A1013/U | 8 in. diameter (203 mm diameter) | 2500 ft/min | 2 to 10 Vdc or 4 to 20 mA | Integral actuator ML7161A2008 |
| DM7600A1021/U | 10 in. diameter (254 mm diameter) | 2500 ft/min | 2 to 10 Vdc or 4 to 20 mA | Integral actuator ML7161A2008 |
| DM7600A1039/U | 12 in. diameter (305 mm diameter) | 2500 ft/min | 2 to 10 Vdc or 4 to 20 mA | Integral actuator ML7161A2008 |
| DM7600A1047/U | 14 in. diameter (356 mm diameter) | 2500 ft/min | 2 to 10 Vdc or 4 to 20 mA | Integral actuator ML7161A2008 |
| DM7600A1054/U | 16 in. diameter (406 mm diameter) | 2500 ft/min | 2 to 10 Vdc or 4 to 20 mA | Integral actuator ML7161A2008 |
| DM7600B1004/U | 6 in. diameter (152 mm diameter) | 2500 ft/min | SPDT Floating | Integral actuator ML6161A2009 |
| DM7600B1012/U | 8 in. diameter (203 mm diameter) | 2500 ft/min | SPDT Floating | Integral actuator ML6161A2009 |
| DM7600B1020/U | 10 in. diameter (254 mm diameter) | 2500 ft/min | SPDT Floating | Integral actuator ML6161A2009 |
| DM7600B1038/U | 12 in. diameter (305 mm diameter) | 2500 ft/min | SPDT Floating | Integral actuator ML6161A2009 |
| DM7600B1046/U | 14 in. diameter (356 mm diameter) | 2500 ft/min | SPDT Floating | Integral actuator ML6161A2009 |
| DM7600B1053/U | 16 in. diameter (406 mm diameter) | 2500 ft/min | SPDT Floating | Integral actuator ML6161A2009 |

Direct Coupled Actuators - Non-Spring Return

ML6161; ML7161

Non-Spring Return Direct Coupled Damper Actuators, 35 lb-in.



Used to control dampers in HVAC applications and for mounting on ball valves; suitable for use with modulating (2-10 Vdc) thermostats or building automation controls.

- Control for air damper applications with up to 10 sq. ft. assuming 3.5 lb-in. per sq. ft. of damper area, velocity independent
- Superior A/C synchronous submotor for consistent timing and actuator longevity
- Eliminate need for limit switches or mechanical stops by providing magnetic coupling
- All models include manual declutch lever, and bag assembly with two minimum position setscrews
- Mount directly on 3/8 inch or 1/2 inch square or round damper shaft
- Selectable 45, 60, and 90 stroke in either clockwise or counterclockwise direction

Application: HVAC

Actuator Type: Damper

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: Non-Spring Return

Torque Rating (lb-in.): 35 lb-in.

Torque Rating (Nm): 4 Nm

Additional Torque Ratings (lb-in.): Maximum Stall – 70 lb-in.

Additional Torque Ratings (Nm): Maximum Stall – 8 Nm

Internal Auxiliary Switch: 0

Rotation to Open: ML6161 - By wiring; ML7161 - By switch

Rotational Stroke Adjustment: Mechanically limited at 45 or 60 degrees in CW or CCW directions

Stroke: 90 degrees

Electrical Connections: Screw terminals

Mounting: Direct Coupled

Environmental, Electrical, or Ingress Protection Rating: NEMA 1

Materials: Steel plate and Plenum rated plastic

Maximum Noise Rating: Driving (dB(A) @ 1m) – 45

Shaft Adapter Type: Aluminum Hub, two set screws

Manual operation: Declutch mechanism

Shaft Dimensions: 3/8 to 1/2 in. square or round (10 to 13 mm square/round)

Ambient Temperature Range: 20°F to 125°F (-18°C to +50°C)

Shipping and Storage Temperature Range: 20°F to 130°F (-18°C to +54°C)

Approvals, Canadian Underwriters Laboratories Inc.: cUL C22.2 No. 24-93

Approvals, C-Tick: N314

Approvals, Underwriters Laboratories Inc.: UL873, Plenum Rated

Approvals, CE: 89/336/ECC, 73/23/EEC

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

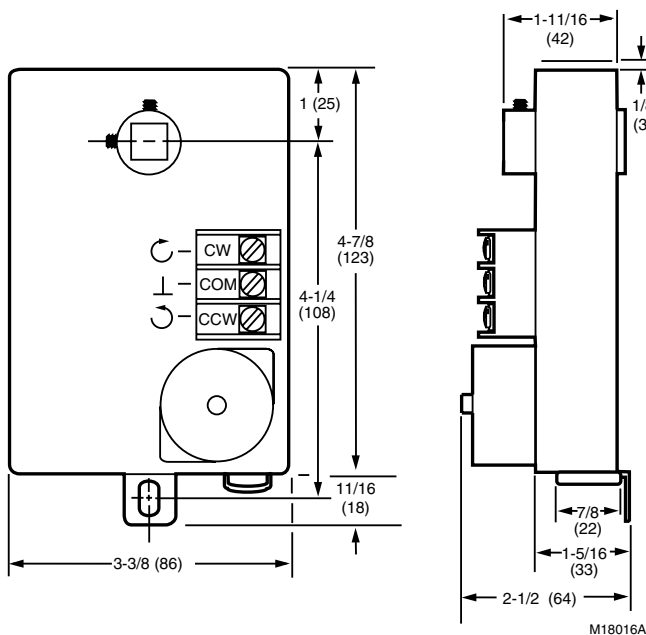
Includes: 4074ENY Bag Assembly

Supply Voltage: 24 Vac ±20%

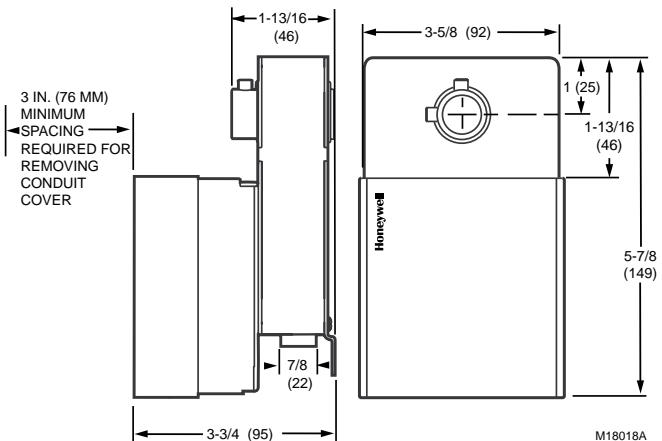
| Material Number | Control Signal | Power Consumption | Timing, Nominal | Feedback | Input Impedance | Weight | Comments |
|-----------------|------------------------|-------------------|---------------------------|----------------|--|------------------|--|
| ML6161A2009/U | Floating; SPDT; On/Off | Driving – 1.8 VA | Driving @ 60 Hz – 90 sec | With accessory | | 1.5 lb (0.68 kg) | |
| ML6161A2017/U | Floating; SPDT; On/Off | Driving – 1.8 VA | Driving @ 60 Hz – 420 sec | With accessory | | 1.5 lb (0.68 kg) | |
| ML6161A2025/U | Floating; SPDT; On/Off | Driving – 1.8 VA | Driving @ 60 Hz – 180 sec | With accessory | | 1.5 lb (0.68 kg) | |
| ML6161B2024/U | Floating; SPDT; On/Off | Driving – 1.8 VA | Driving @ 60 Hz – 90 sec | | | 1.5 lb (0.68 kg) | |
| ML6161B2032/U | Floating; SPDT; On/Off | Driving – 1.8 VA | Driving @ 60 Hz – 420 sec | | | 1.5 lb (0.68 kg) | |
| ML6161B2073/U | Floating; SPDT; On/Off | Driving – 1.8 VA | Driving @ 60 Hz – 180 sec | | | 1.5 lb (0.68 kg) | |
| ML6161C2007/U | Floating; SPDT; On/Off | Driving – 1.8 VA | Driving @ 60 Hz – 90 sec | With accessory | | 2 lb (0.91 kg) | Includes two 5/8 x 7/8 in. double knock-out conduit openings |
| ML6161D2006/U | Floating; SPDT; On/Off | Driving – 1.8 VA | Driving @ 60 Hz – 90 sec | | | 2 lb (0.91 kg) | Includes two 5/8 x 7/8 in. double knock-out conduit openings |
| ML7161A2008/U | 2-10 Vdc; 4-20 mA | Driving – 5.4 VA | Driving @ 60 Hz – 90 sec | | 45K ohm (2-10 Vdc signal), 536 ohm (4-20 mA signal) | 2.4 lb (1.1 kg) | |

Direct Coupled Actuators - Non-Spring Return

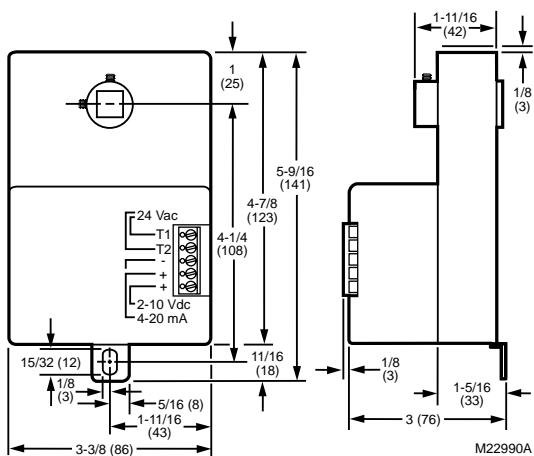
ML6161A, B or ML6174A, B Dimensions in inches (millimeters)



ML6161A, B or ML6174A, B Dimensions in inches (millimeters)



ML6161A, B or ML6174A, B Dimensions in inches (millimeters)



Direct Coupled Actuators - Non-Spring Return

ML6174; ML7174, Non-Spring Return Direct Coupled Damper Actuators, 70 lb-in.



Used to control dampers in HVAC applications and for mounting on ball valves; suitable for use with modulating (2-10 Vdc) thermostats or building automation controls.

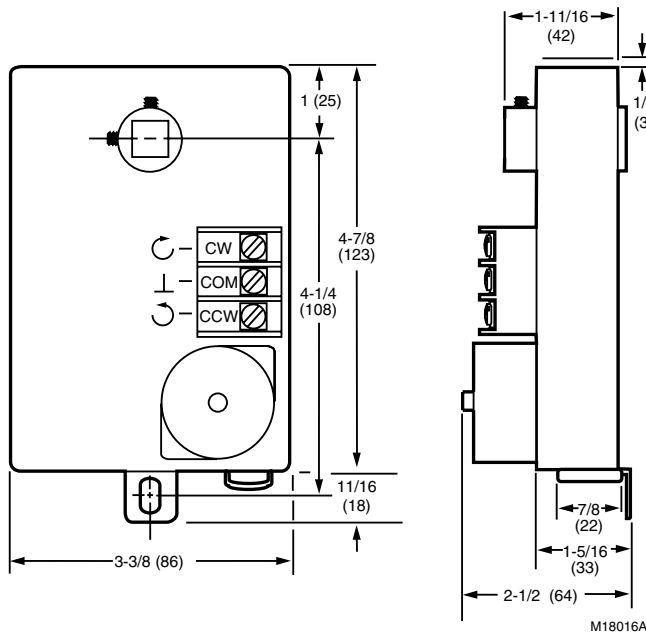
- Control for air damper applications with up to 20 sq. ft. assuming 3.5 lb-in. per sq. ft. of damper area, velocity independent
- Magnetic coupling eliminates the need for mechanical stops or limit switch adjustments by limiting stall torque to 130 lb-in. maximum
- Mount directly on 3/8 to 1/2 in. round and square damper shafts
- All models include manual declutch lever for ease of mounting, and bag assembly with two minimum position setscrews
- 90 second timing models are suitable for use with pressure independent VAV systems
- Selectable 45, 60, and 90 degree stroke in either clockwise or counterclockwise direction

Application: HVAC
Actuator Type: Damper
Frequency: 50 Hz; 60 Hz
Fail Safe Mode: Non-Spring Return
Torque Rating (lb-in.): 70 lb-in.
Torque Rating (Nm): 8 Nm
Additional Torque Ratings (lb-in.): Maximum Stall – 130 lb-in.
Additional Torque Ratings (Nm): Maximum Stall – 15 Nm
Internal Auxiliary Switch: 0
Rotation to Open: ML6174 - By wiring; ML7174 - By switch
Rotational Stroke Adjustment: Mechanically limited at 45 or 60 degrees in CW or CCW directions
Stroke: 90 degrees
Electrical Connections: Screw Terminals
Mounting: Direct Coupled
Environmental, Electrical, or Ingress Protection Rating: NEMA 1

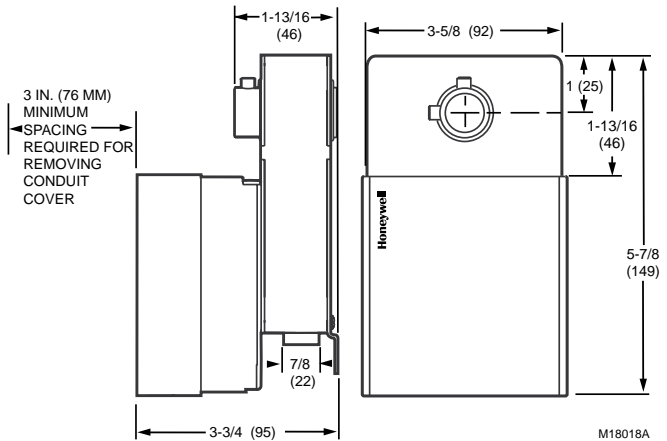
Materials: Steel plate and Plenum rated plastic
Maximum Noise Rating: Driving (dB(A) @ 1m) – 45
Shaft Adapter Type: Aluminum Hub, two set screws
Manual operation: Declutch mechanism
Shaft Dimensions: 3/8 to 1/2 in. square or round (10 to 13 mm square/round)
Ambient Temperature Range: 20°F to 125°F (-18°C to +50°C)
Shipping and Storage Temperature Range: 20°F to 130°F (-18°C to +54°C)
Approvals, Canadian Underwriters Laboratories Inc.: cUL C22.2 No. 24-93
Approvals, Underwriters Laboratories Inc.: UL873, Plenum Rated
Operating Humidity Range (% RH): 5 to 95% RH, non-condensing
Includes: 4074ENY Bag Assembly
Supply Voltage: 24 Vac ±20%

| Material Number | Control Signal | Power Consumption | Timing, Nominal | Feedback | Input Impedance | Weight | Comments |
|-----------------|------------------------|-------------------|---------------------------|----------------|---|------------------|--|
| ML6174A2002/U | Floating; SPDT; On/Off | Driving – 2.4 VA | Driving @ 60 Hz – 90 sec | With accessory | | 1.5 lb (0.68 kg) | |
| ML6174A2010/U | Floating; SPDT; On/Off | Driving – 2.4 VA | Driving @ 60 Hz – 180 sec | With accessory | | 1.5 lb (0.68 kg) | |
| ML6174B2019/U | Floating; SPDT; On/Off | Driving – 2.4 VA | Driving @ 60 Hz – 90 sec | | | 1.5 lb (0.68 kg) | |
| ML6174D2009/U | Floating; SPDT; On/Off | Driving – 2.4 VA | Driving @ 60 Hz – 90 sec | | | 2 lb (0.91 kg) | Includes two 5/8 x 7/8 in. double knock-out conduit openings |
| ML7174A2001/U | 2-10 Vdc; 4-20 mA | Driving – 5.4 VA | Driving @ 60 Hz – 90 sec | | 45K ohm (2-10 Vdc signal), 536 ohm (4-20 mA signal) | 2.4 lb (1.1 kg) | |

Dimensions in inches (millimeters)

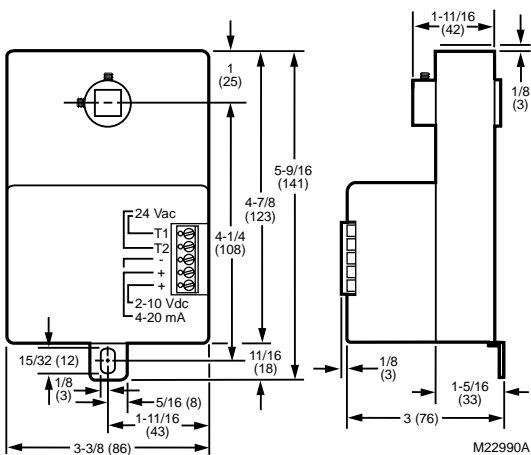


Dimensions in inches (millimeters)



Direct Coupled Actuators - Non-Spring Return

Dimensions in inches (millimeters)



Commercial Components

Direct Coupled Actuators - Non-Spring Return

N05 Series: MN6105; MN7505

Non-Spring Return Direct Coupled Actuator, 44 lb-in.



MN6105, MN7505 44 lb-in. (5 Nm), non-spring return, direct coupled, low voltage actuators that accept adjustable modulating (0/2-10 Vdc) or on/off (SPDT) control are used within heating, ventilating, and air-conditioning (HVAC) systems. They can drive a variety of quarter-turn, final control elements for: air dampers, air handling units, ventilation flaps, louvers, and ball valves. The W model includes a 3-foot whip.

- Declutch for manual adjustment
- Adjustable mechanical end limits
- Removable access cover for direct wiring
- Mountable in any orientation
- Function selection switch for selecting modulating or floating/2-position control
- Models available with three-foot, 18 AWG color-coded cable

Application: HVAC

Actuator Type: Damper; Valve

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: Non-Spring Return

Torque Rating (lb-in.): 44 lb-in.

Torque Rating (Nm): 5 Nm

Additional Torque Ratings (lb-in.): Maximum Stall – 70 lb-in.

Additional Torque Ratings (Nm): Maximum Stall – 8 Nm

Rotation to Open: By switch

Rotational Stroke Adjustment: Dual Integral Adj. Stops (3 degree increments)

Stroke: 95 ±3 degrees

Mounting: Direct Coupled

Environmental, Electrical, or Ingress Protection Rating: NEMA 2; IP54

Materials: Plenum rated plastic housing

Maximum Noise Rating: Driving (dB(A) @ 1m) – 35

Shaft Adapter Type: U-bolt clamp

Manual operation: Declutch mechanism (3 degree increments)

Shaft Dimensions: 1/4 to 1/2 in. square or 3/8 to 5/8 in. round (6 to 13 mm square or 8 to 16 mm round)

Weight: 1 lb (0.45 kg)

Approximate Dimensions: 5.23 in. high x 2.60 in. wide x 2.44 in. deep (134 mm high x 66 mm wide x 62 mm deep.)

Ambient Temperature Range: -5°F to +140°F (-20°C to +60°C)

Shipping and Storage Temperature Range: -22°F to +176°F (-30°C to +80°C)

Approvals, Canadian Underwriters Laboratories Inc.: cUL C22.2 No. 24-93

Approvals, C-Tick: N314

Approvals, Underwriters Laboratories Inc.: UL873, Plenum Rated

Approvals, CE: 89/336/ECC, 73/23/EEC

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

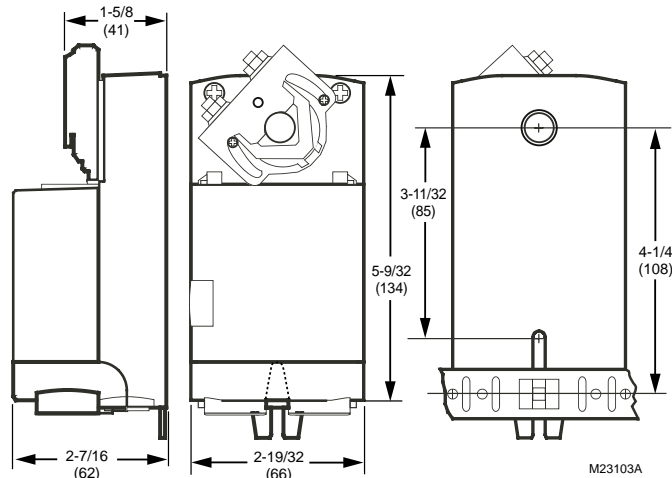
Includes: Mounting bracket, screws, shaft adapter, water-tight strain-relief cable fittings

Comments: Integral 1/2 in. NPSM conduit connection.

Tradeline Value: Tradeline

Supply Voltage: 24 Vac +20%, -15%; 24 Vdc

Dimensions in inches (millimeters)



| Material Number | Control Signal | Feedback | Timing, Nominal | Switch Ratings | Power Consumption | Cable | Electrical Connections | Electrical Connections Size | Internal Auxiliary Switch |
|-----------------|--|-------------------------------------|-----------------------------|------------------------------|-------------------|----------------------------|--|-----------------------------|---------------------------|
| MN6105A1011/U | Floating; SPDT; On/Off | | Driving @ 60 Hz – 95 sec | | Driving – 5 VA | | Enclosed screw terminal strip (22 to 14 AWG) | | 0 |
| MN6105A1201/U | Floating; SPDT; On/Off | | Driving @ 60 Hz – 95 sec | 30 Vdc max., 3 A Class II | Driving – 5 VA | | Enclosed screw terminal strip (22 to 14 AWG) | | 2 |
| MN6105W1011/U | Floating; SPDT; On/Off | | Driving @ 60 Hz – 95 sec | | Driving – 5 VA | Threaded conduit connector | 18 AWG color-coded cable | 36 in. (0.9 m) | 0 |
| MN7505A2001/U | Floating; SPDT; On/Off; (0) 2-10 Vdc (4-20 mA w/500 ohm resistor) | (0) 2-10 Vdc (max. output: ±1.0 mA) | Driving @ 60 Hz – 95 sec | | Driving – 5 VA | | Enclosed screw terminal strip (22 to 14 AWG) | | 0 |
| MN7505A2209/U | Floating; SPDT; On/Off; (0) 2-10 Vdc (4-20 mA w/500 ohm resistor) | (0) 2-10 Vdc (max. output: ±1.0 mA) | Driving @ 60 Hz – 95 sec | 30 Vdc max., 3 A Class II | Driving – 5 VA | | Enclosed screw terminal strip (22 to 14 AWG) | | 2 |
| MN7505W2001/U | Floating; SPDT; On/Off; (0) 2-10 Vdc (4-20 mA w/500 ohm resistor) | (0) 2-10 Vdc (max. output: ±1.0 mA) | Driving @ 60 Hz – 95 sec | | Driving – 5 VA | Threaded conduit connector | 18 AWG color-coded cable | 36 in. (0.9 m) | 0 |

N10 Series: MN6110; MN7510

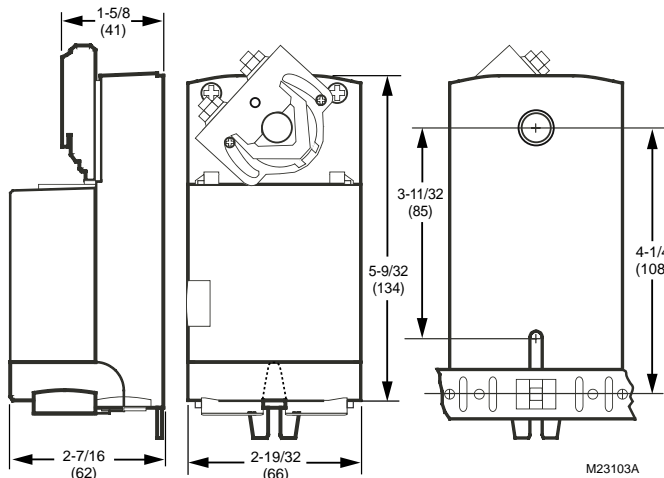
Non-Spring Return Direct Coupled Actuator, 88 lb-in.



MN6110, MN7510 88 lb-in. (10 Nm), non-spring return, direct-coupled, low voltage actuators that accept adjustable modulating (0/2-10 Vdc) or on/off (SPDT) control are used within heating, ventilating, and air-conditioning (HVAC) systems. They can drive a variety of quarter-turn, final control elements for: air dampers, air handling units, ventilation flaps, louvers, and ball valves.

- Declutch for manual adjustment
- Adjustable mechanical end limits
- Removable access cover for direct wiring
- Mountable in any orientation
- Function selection switch for selecting modulating or floating/2-position control

Dimensions in inches (millimeters)



Application: HVAC

Actuator Type: Damper; Valve

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: Non-Spring Return

Torque Rating (lb-in.): 88 lb-in.

Torque Rating (Nm): 10 Nm

Additional Torque Ratings (lb-in.): Maximum Stall – 130 lb-in.

Additional Torque Ratings (Nm): Maximum Stall – 15 Nm

External Auxiliary Switches Available: Yes, SSW2-1M

Rotation to Open: By switch

Rotational Stroke Adjustment: Dual Integral Adj. Stops (3 degree increments)

Stroke: 95 ±3 degrees

Electrical Connections: Enclosed screw terminal strip (22 to 14 AWG)

Mounting: Direct Coupled

Environmental, Electrical, or Ingress Protection Rating: NEMA 2; IP54

Materials: Plenum rated plastic housing

Maximum Noise Rating: Driving (dB(A) @ 1m) – 35

Shaft Adapter Type: U-bolt clamp

Manual operation: Declutch mechanism

Shaft Dimensions: 1/4 to 1/2 in. square or 3/8 to 5/8 in. round (6 to 13 mm square or 8 to 16 mm round)

Weight: 1 lb (0.45 kg)

Approximate Dimensions: 5.23 in. high x 2.60 in. wide x 2.44 in. deep (134 mm high x 66 mm wide x 62 mm deep.)

Ambient Temperature Range: -5°F to +140°F (-20°C to +60°C)

Shipping and Storage Temperature Range: -22°F to +176°F (-30°C to +80°C)

Approvals, Canadian Underwriters Laboratories Inc.: cUL C22.2 No. 24-93

Approvals, C-Tick: N314

Approvals, Underwriters Laboratories Inc.: UL873, Plenum Rated

Approvals, CE: 89/336/ECC, 73/23/EEC

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Includes: Mounting bracket, screws, shaft adapter, water-tight strain-relief cable fittings

Comments: Integral 1/2 in. NPSM conduit connection.

Tradeline Value: Tradeline

Supply Voltage: 24 Vac +20%, -15%; 24 Vdc

| Material Number | Control Signal | Feedback | Timing, Nominal | Switch Ratings | Power Consumption | Internal Auxiliary Switch |
|-----------------|--|------------------------------------|--------------------------|---------------------------|-------------------|---------------------------|
| MN6110A1003/U | Floating; SPDT; On/Off | | Driving @ 60 Hz – 95 sec | | Driving – 5 VA | 0 |
| MN6110A1201/U | Floating; SPDT; On/Off | | Driving @ 60 Hz – 95 sec | 30 Vdc max., 3 A Class II | Driving – 5 VA | 2 |
| MN7510A2001/U | Floating; SPDT; On/Off; (0)2-10 Vdc (4-20 mA w/500 ohm resistor) | (0)2-10 Vdc (max. output: ±1.0 mA) | Driving @ 60 Hz – 95 sec | | Driving – 5 VA | 0 |
| MN7510A2209/U | Floating; SPDT; On/Off; (0)2-10 Vdc (4-20 mA w/500 ohm resistor) | (0)2-10 Vdc (max. output: ±1.0 mA) | Driving @ 60 Hz – 95 sec | 30 Vdc max., 3 A Class II | Driving – 5 VA | 2 |

Direct Coupled Actuators - Non-Spring Return

N20 Series: MN6120; MN7220

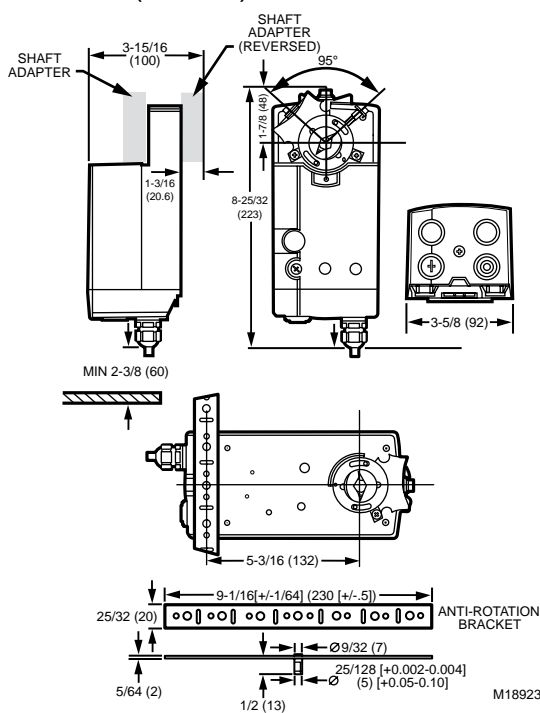
Non-Spring Return Direct Coupled Actuator, 175 lb-in.



MN6120, MN7220 175 lb-in. (20 Nm), non-spring return, direct coupled, low voltage actuators that accept adjustable modulating (0/2-10 Vdc) control are used within heating, ventilating, and air-conditioning (HVAC) systems. They can drive a variety of quarter-turn, final control elements for: air dampers, air handling units, ventilation flaps, louvers, and ball valves.

- Control for air damper applications with up to 50 sq. ft. assuming 3.5 lb-in. per sq. ft. of damper area, velocity independent.
- Patented self-centering shaft adapter
- Access cover to facilitate connectivity
- Declutch for manual adjustment
- Mechanical end limits
- Field-installable auxiliary switches
- Rotation direction selectable by switch
- Mountable in any orientation (no IP54 if upside down)
- Mechanical position indicator
- CE approved. UL approved

Dimensions in inches (millimeters)



Application: HVAC

Actuator Type: Damper; Valve

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: Non-Spring Return

Torque Rating (lb-in.): 175 lb-in.

Torque Rating (Nm): 20 Nm

External Auxiliary Switches Available: Yes, SW2-US

Rotation to Open: By switch

Rotational Stroke Adjustment: Dual Integral Adj. Stops (3 degree increments)

Stroke: 95 ±3 degrees

Electrical Connections: Enclosed screw terminal strip (22 to 14 AWG)

Mounting: Direct Coupled

Power Consumption: Driving – 6 VA, 6 W

Timing, Nominal: Driving @ 60 Hz – 95 sec

Environmental, Electrical, or Ingress Protection Rating: NEMA 2; IP54

Materials: Plenum rated plastic housing

Maximum Noise Rating: Driving (dB(A) @ 1m) – 40

Shaft Adapter Type: Self-centering clamping

Manual operation: Declutch mechanism

Shaft Dimensions: 3/8 to 1.06 in. round or 3/8 to 11/16 in. square (10 to 27 mm round or 10 to 18 mm square)

Approximate Dimensions: 8.78 in. high x 3.62 in. wide x 3.15 in. deep (223 mm high x 92 mm wide x 80 mm deep)

Ambient Temperature Range: -5°F to +140°F (-20°C to +60°C)

Shipping and Storage Temperature Range: -40°F to +175°F (-40°C to +80°C)

Approvals, Canadian Underwriters Laboratories Inc.: cUL C22.2 No. 24-93

Approvals, C-Tick: N314

Approvals, Underwriters Laboratories Inc.: UL873, Plenum Rated

Approvals, CE: 89/336/ECC, 73/23/EEC

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Includes: Mounting bracket, self-centering shaft adapter

Comments: Integral 1/2 in. NPSM conduit connection.

Tradeline Value: Tradeline

Supply Voltage: 24 Vac ±15%

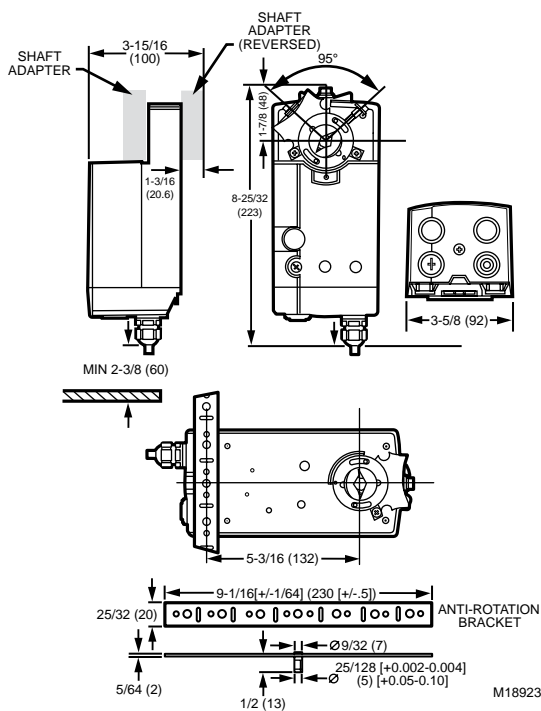
| Material Number | Control Signal | Feedback | Additional Torque Ratings (lb-in.) | Additional Torque Ratings (Nm) | Switch Ratings | Input Impedance | Weight | Internal Auxiliary Switch |
|-----------------|---|-------------------------------------|------------------------------------|--------------------------------|----------------------------|---------------------------------------|-------------------|---------------------------|
| MN6120A1002 | Floating; SPDT; On/Off | | Maximum Stall – 221 lb-in. | Maximum Stall – 25 Nm | | | 3.2 lb (1.45 kg) | 0 |
| MN6120A1200 | Floating; SPDT; On/Off | | Maximum Stall – 221 lb-in. | Maximum Stall – 25 Nm | 250 Vac, 5 A res (3 A ind) | | 3.2 lb (1.45 kg) | 2 |
| MN7220A2007 | (0) 2-10 Vdc (4-20 mA w/500 ohm resistor) | | Maximum Stall – 257 lb-in. | Maximum Stall – 29 Nm | | 100K ohm (voltage), 500 ohm (current) | 2.98 lb (1.35 kg) | 0 |
| MN7220A2205 | (0) 2-10 Vdc (4-20 mA w/500 ohm resistor) | (0) 2-10 Vdc (max. output: ±1.0 mA) | Maximum Stall – 257 lb-in. | Maximum Stall – 29 Nm | 250 Vac, 5 A res (3 A ind) | 100K ohm (voltage), 500 ohm (current) | 2.98 lb (1.35 kg) | 2 |

N34 Series: MN6134; MN7234

Non-Spring Return Direct Coupled Actuator, 300 lb-in.



Dimensions in inches (millimeters)



The MN6134; MN7234 300 lb-in. (34 Nm), non-spring return, direct-coupled, low voltage actuators that accept adjustable modulating (0/2-10 Vdc) control are used within heating, ventilating, and air-conditioning (HVAC) systems. They can drive a variety of quarter-turn, final control elements for: air dampers, air handling units, ventilation flaps, louvers, and ball valves.

- Control for air damper applications with up to 85 sq. ft. assuming 3.5 lb-in. per sq. ft. of damper area, velocity independent
- Patented self-centering shaft adapter
- Access cover to facilitate connectivity
- Declutch for manual adjustment
- Mechanical end limits
- Field-installable auxiliary switches
- Rotation direction selectable by switch
- Mountable in any orientation (no IP54 if upside down)
- Mechanical position indicator
- CE approved. UL approved

Application: HVAC

Actuator Type: Damper; Valve

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: Non-Spring Return

Torque Rating (lb-in.): 300 lb-in.

Torque Rating (Nm): 34 Nm

Internal Auxiliary Switch: 0

External Auxiliary Switches Available: Yes, SW2-US

Rotation to Open: By switch

Stroke: 95 ±3 degrees

Electrical Connections: Enclosed screw terminal strip (22 to 14 AWG)

Mounting: Direct Coupled

Timing, Nominal: Driving @ 60 Hz – 95 sec

Environmental, Electrical, or Ingress Protection Rating: NEMA 2

Materials: Plenum rated plastic housing

Maximum Noise Rating: Driving (dB(A) @ 1m) – 40

Shaft Adapter Type: Self-centering clamping

Manual operation: Declutch mechanism

Shaft Dimensions: 3/8 to 1.06 in. round or 3/8 to 11/16 in. square (10 to 27 mm round or 10 to 18 mm square)

Approximate, Dimensions: 8.78 in. high x 3.62 in. wide x 3.15 in. deep (223 mm high x 92 mm wide x 80 mm deep)

Ambient Temperature Range: -5°F to +140°F (-20°C to +60°C)

Shipping and Storage Temperature Range: -40°F to +175°F (-40°C to +80°C)

Approvals, Canadian Underwriters Laboratories Inc.: cUL C22.2 No. 24-93

Approvals, C-Tick: N314

Approvals, Underwriters Laboratories Inc.: UL873, Plenum Rated

Approvals, CE: 89/336/ECC, 73/23/EEC

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Includes: Mounting bracket, self-centering shaft adapter

Comments: Integral 1/2 in. NPSM conduit connection.

Tradeline Value: Tradeline

Supply Voltage: 24 Vac ±15%; 24 Vdc

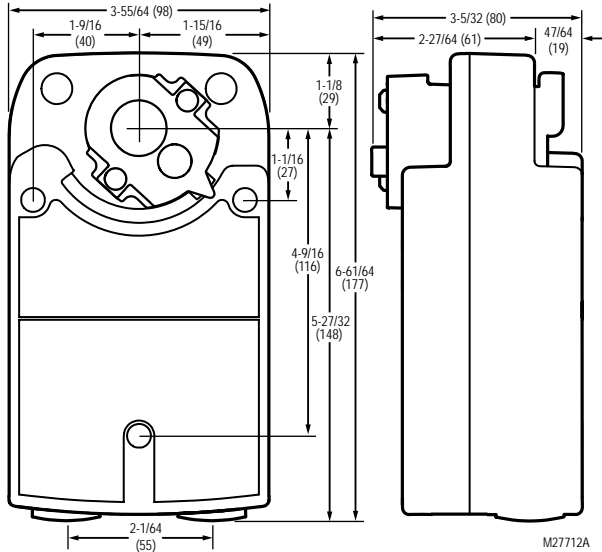
| Material Number | Control Signal | Feedback | Additional Torque Ratings (lb-in.) | Additional Torque Ratings (Nm) | Power Consumption | Weight | Input Impedance |
|-----------------|--|------------------------------------|------------------------------------|--------------------------------|---------------------|-------------------|---------------------------------------|
| MN6134A1003 | Floating; SPDT; On/Off | | Maximum Stall – 327 lb-in. | Maximum Stall – 37 Nm | Driving – 9 VA, 9 W | 3.2 lb (1.45 kg) | |
| MN7234A2008 | (0)2-10 Vdc (4-20 mA w/500 ohm resistor) | (0)2-10 Vdc (max. output: ±1.0 mA) | Maximum Stall – 354 lb-in. | Maximum Stall – 40 Nm | Driving – 8 VA, 6 W | 2.98 lb (1.35 kg) | 100K ohm (voltage), 500 ohm (current) |

Direct Coupled Actuators - Spring Return

Zelix™ S03 Series: MS3103; MS4103; MS7403; MS7503; MS8103 Spring Return Direct Coupled Actuator, 27 lb-in.



Dimensions in inches (millimeters)



MS3103, MS3105, MS4103, MS4105, MS7403, MS7405, MS7503, MS7505, MS8103, MS8105 27 lb-in. (3 Nm), spring return direct-coupled, line voltage actuators accept two-position (SPST) control are used within heating, ventilating, and air-conditioning (HVAC) systems. They can drive a variety of quarter-turn, final control elements requiring spring return fail-safe operation for: air dampers, air handlers, ventilation flaps, louvers, and ball valves.

- Brushless DC submotor with electronic stall protection on all models
- Self-centering shaft adaptor (shaft coupling) for wide range of shaft sizes
- Models available for use with two-position, SPST, line- (Series 40) or low- (Series 80) voltage controls
- Models available for use with floating or switched SPDT (Series 60) controls
- Models available for use with proportional current or voltage (Series 70) controls
- Models available with combined floating and modulating control in a single device
- Models available with an internal end switch
- Models available with three-foot, 18 AWG color-coded cable
- Access cover to facilitate connectivity
- Durable plastic housing with built-in mechanical end limits
- Spring return direction field selectable
- Shaft position indicator and scale
- UL (cUL) listed and CE compliant
- All models are plenum rated per UL873

Application: HVAC

Actuator Type: Damper; Valve

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: Spring Return

Torque Rating (lb-in.): 27 lb-in.

Torque Rating (Nm): 3 Nm

Spring Return Torque/Force (lb-in., lbf): 27 lb-in

Spring Return Torque/Force (Nm, N): 3 Nm

Additional Torque Ratings (lb-in.): Maximum Stall – 70 lb-in.

Additional Torque Ratings (Nm): Maximum Stall – 8 Nm

External Auxiliary Switches Available: No

Rotation to Open: By switch

Rotational Stroke Adjustment: Mechanically limited 5 degree increments

Stroke: 95 ±3 degrees

Electrical Connections: Enclosed screw terminal strip (22 to 14 AWG)

Mounting: Direct Coupled

Spring Return Timing: Maximum – 25 sec

Environmental, Electrical, or Ingress Protection Rating: NEMA 2; IP54

Materials: Plenum rated plastic housing

Shaft Adapter Type: Self-centering clamping

Shaft Dimensions: 3/8 to 5/8 in. round or 1/4 to 1/2 in. square (9 to 16 mm round or 6 to 13 mm square)

Spring Return Direction: By orientation

Weight: 3.5 lb (1.6 kg)

Ambient Temperature Range: -40°F to +149°F; -22°F to +149°F Two position only (-40°C to +65°C; -30°C to +65°C Two position only)

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approvals, Canadian Underwriters Laboratories Inc.: cUL C22.2 No. 24-93

Approvals, C-Tick: N314

Approvals, Underwriters Laboratories Inc.: UL 873

Approvals, CE: EMC 2004/108/EC; Certification Low Voltage Directive 2006/95/EC; IEC 60730-1 and Part 2-14

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Includes: Mounting bracket, self-centering shaft adapter

| Material Number | Control Signal | Feedback | Internal Auxiliary Switch | Switches | Switch Ratings | Power Consumption | Timing, Nominal | Maximum Noise Rating | Supply Voltage | Input Impedance |
|-----------------|----------------|--------------|---------------------------|----------|----------------|-------------------|--------------------------|---|----------------|-----------------|
| MS3103J1030/U | Sylk-enabled | Sylk-enabled | 0 | | | Driving – 6/3 VA | Driving @ 60 Hz – 90 sec | Driving (dB(A) @ 1m) – 40; Holding (dB(A) @ 1m) – 20 (no audible noise) | 24 Vac or Vdc | |

Direct Coupled Actuators - Spring Return

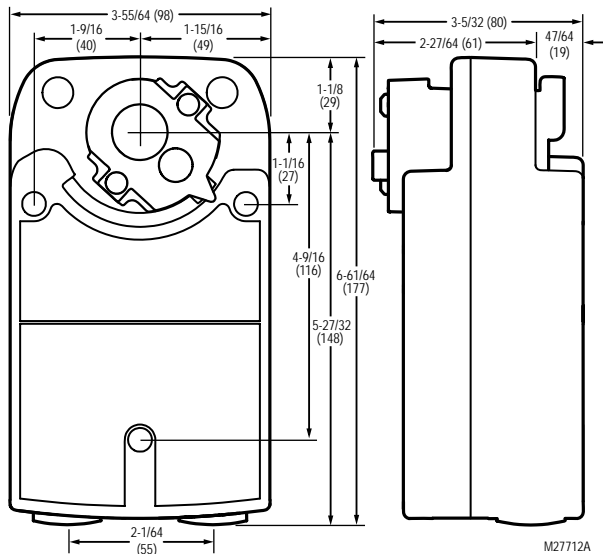
| Material Number | Control Signal | Feedback | Internal Auxiliary Switch | Switches | Switch Ratings | Power Consumption | Timing, Nominal | Maximum Noise Rating | Supply Voltage | Input Impedance |
|-----------------|--|-------------|---------------------------|--|----------------------------|-------------------|--------------------------|---|----------------|-----------------|
| MS4103A1030/U | Two position; SPST | | 0 | | | Driving – 6/9 VA | Driving @ 60 Hz – 45 sec | Driving (dB(A) @ 1m) – 50; Holding (dB(A) @ 1m) – 20 (no audible noise) | 100 to 250 Vac | |
| MS4103A1130/U | Two position; SPST | | 1 | Internal Auxiliary - adjustable 0-95 degrees | 250 Vac, 8 A res (5 A ind) | Driving – 6/9 VA | Driving @ 60 Hz – 45 sec | Driving (dB(A) @ 1m) – 50; Holding (dB(A) @ 1m) – 20 (no audible noise) | 100 to 250 Vac | |
| MS7403A2030/U | Three position; SPDT; Floating; On/Off; 3 kOhm; 2-10 Vdc (4-20 mA w/ 500 ohm resistor) | 2-10 Vdc | 0 | Internal Auxiliary - Minimum position | | Driving – 6/3 VA | Driving @ 60 Hz – 90 sec | Driving (dB(A) @ 1m) – 40; Holding (dB(A) @ 1m) – 20 (no audible noise) | 24 Vac or Vdc | Min. 95 kOhm |
| MS7503A2030/U | SPDT; Floating; On/Off; (0)2-10 Vdc (4-20 mA w/500 ohm resistor) | (0)2-10 Vdc | 0 | | | Driving – 6/3 VA | Driving @ 60 Hz – 90 sec | Driving (dB(A) @ 1m) – 40; Holding (dB(A) @ 1m) – 20 (no audible noise) | 24 Vac or Vdc | Min. 95 kOhm |
| MS7503A2130/U | SPDT; Floating; On/Off; (0)2-10 Vdc (4-20 mA w/500 ohm resistor) | (0)2-10 Vdc | 1 | Internal Auxiliary - adjustable 0-95 degrees | 250 Vac, 8 A res (5 A ind) | Driving – 6/3 VA | Driving @ 60 Hz – 90 sec | Driving (dB(A) @ 1m) – 40; Holding (dB(A) @ 1m) – 20 (no audible noise) | 24 Vac or Vdc | Min. 95 kOhm |
| MS8103A1030/U | Two position; SPST | | 0 | | | Driving – 6/3 VA | Driving @ 60 Hz – 45 sec | Driving (dB(A) @ 1m) – 50; Holding (dB(A) @ 1m) – 20 (no audible noise) | 24 Vac or Vdc | |
| MS8103A1130/U | Two position; SPST | | 1 | Internal Auxiliary - adjustable 0-95 degrees | 250 Vac, 8 A res (5 A ind) | Driving – 6/3 VA | Driving @ 60 Hz – 45 sec | Driving (dB(A) @ 1m) – 50; Holding (dB(A) @ 1m) – 20 (no audible noise) | 24 Vac or Vdc | |

Direct Coupled Actuators - Spring Return

Zelix™ S05 Series: MS3105; MS4105; MS7405; MS7505; MS8105 Spring Return Direct Coupled Actuator, 44 lb-in.



Dimensions in inches (millimeters)



MS3103, MS3105, MS4103, MS4105, MS7403, MS7405, MS7503, MS7505, MS8103, MS8105 44 lb-in. (5 Nm), spring return direct-coupled, line voltage actuators that accept two-position (SPST) control are used within heating, ventilating, and air-conditioning (HVAC) systems. They can drive a variety of quarter-turn, final control elements requiring spring return fail-safe operation for: air dampers, air handlers, ventilation flaps, louvers, and ball valves.

- Brushless DC submotor with electronic stall protection on all models
- Self-centering shaft adaptor (shaft coupling) for wide range of shaft sizes
- Models available for use with two-position, SPST, line- (Series 40) or low- (Series 80) voltage controls
- Models available for use with floating or switched SPDT (Series 60) controls
- Models available for use with proportional current or voltage (Series 70) controls
- Models available with combined floating and modulating control in a single device
- Models available with an internal end switch
- Models available with three-foot, 18 AWG color-coded cable
- Access cover to facilitate connectivity
- Durable plastic housing with built-in mechanical end limits
- Spring return direction field selectable
- Shaft position indicator and scale
- UL (cUL) listed and CE compliant
- All models are plenum rated per UL873
- Integral 1/2 in. NPSM conduit connection on some models

Application: HVAC

Actuator Type: Damper; Valve

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: Spring Return

Torque Rating (lb-in.): 44 lb-in.

Torque Rating (Nm): 5 Nm

Spring Return Torque/Force (lb-in., lbf): 44 lb-in.

Spring Return Torque/Force (Nm, N): 5 Nm

Additional Torque Ratings (lb-in.): Maximum Stall – 105 lb-in.

Additional Torque Ratings (Nm): Maximum Stall – 12 Nm

External Auxiliary Switches Available: No

Rotation to Open: By switch

Rotational Stroke Adjustment: Mechanically limited 5 degree increments

Stroke: 95 ±3 degrees

Mounting: Direct Coupled

Spring Return Timing: Maximum – 25 sec

Environmental, Electrical, or Ingress Protection Rating: NEMA 2; IP54

Materials: Plenum rated plastic housing

Shaft Adapter Type: Self-centering clamping

Shaft Dimensions: 3/8 to 5/8 in. round or 1/4 to 1/2 in. square (9 to 16 mm round or 6 to 13 mm square)

Spring Return Direction: By orientation

Weight: 3.5 lb (1.6 kg)

Ambient Temperature Range: -40°F to +149°F; -22°F to +149°F Two position only (-40°C to +65°C; -30°C to +65°C Two position only)

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approvals, Canadian Underwriters Laboratories Inc.: cUL C22.2 No. 24-93

Approvals, C-Tick: N314

Approvals, Underwriters Laboratories Inc.: UL 873

Approvals, CE: EMC 2004/108/EC; Certification Low Voltage Directive 2006/95/EC; IEC 60730-1 and Part 2-14

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Includes: Mounting bracket, self-centering shaft adapter

Direct Coupled Actuators - Spring Return

| Material Number | Electrical Connections Size | Feedback | Internal Auxiliary Switch | Switches | Switch Ratings | Electrical Connections | Power Consumption | Timing, Nominal | Maximum Noise Rating | Cable | Input Impedance | Supply Voltage | Comments |
|--|-----------------------------|-----------------|---------------------------|--|----------------------------|--|-------------------|--------------------------|---|----------------------------|-----------------|----------------|---|
| Floating; On/Off; (0)2-10 Vdc (4-20 mA w/500 ohm resistor); SPDT | | | | | | | | | | | | | |
| MS7505A2030/U | | (0) 2-10 Vdc | 0 | | | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 6/3 VA | Driving @ 60 Hz – 90 sec | Driving (dB(A) @ 1m) – 40; Holding (dB(A) @ 1m) – 20 (no audible noise) | | Min. 95 kOhm | 24 Vac or Vdc | |
| MS7505A2130/U | | (0) 2-10 Vdc | 1 | Internal Auxiliary - adjustable 0-95 degrees | 250 Vac, 8 A res (5 A ind) | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 6/3 VA | Driving @ 60 Hz – 90 sec | Driving (dB(A) @ 1m) – 40; Holding (dB(A) @ 1m) – 20 (no audible noise) | | Min. 95 kOhm | 24 Vac or Vdc | |
| MS7505W2030/U | 36 in. (0.9 m) | (0) 2-10 Vdc | 0 | | | 18 AWG color-coded cable | Driving – 8 VA | Driving @ 60 Hz – 90 sec | Driving (dB(A) @ 1m) – 40; Holding (dB(A) @ 1m) – 20 (no audible noise) | Threaded conduit connector | Min. 95 kOhm | 24 Vac or Vdc | Integral 1/2 in. NPSM conduit connection. |
| MS7505W2130/U | 36 in. (0.9 m) | (0) 2-10 Vdc | 1 | Internal Auxiliary - adjustable 0-95 degrees | 250 Vac, 8 A res (5 A ind) | 18 AWG color-coded cable | Driving – 8 VA | Driving @ 60 Hz – 90 sec | Driving (dB(A) @ 1m) – 40; Holding (dB(A) @ 1m) – 20 (no audible noise) | Threaded conduit connector | Min. 95 kOhm | 24 Vac or Vdc | Integral 1/2 in. NPSM conduit connection. |
| Sylk-enabled | | | | | | | | | | | | | |
| MS3105J3030/U | | Sylk-enabled | 0 | | | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 6/3 VA | Driving @ 60 Hz – 90 sec | Driving (dB(A) @ 1m) – 40; Holding (dB(A) @ 1m) – 20 (no audible noise) | | | 24 Vac or Vdc | |
| MS3105J3130/U | | Sylk-enabled | 1 | | | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 6/3 VA | Driving @ 60 Hz – 90 sec | Driving (dB(A) @ 1m) – 40; Holding (dB(A) @ 1m) – 20 (no audible noise) | | | 24 Vac or Vdc | |
| Three position; SPDT; Floating; On/Off; 3 kOhm; 2-10 Vdc (4-20 mA w/500 ohm resistor) | | | | | | | | | | | | | |
| MS7405A2030/U | | 2-10 Vdc | 0 | Internal Auxiliary - Minimum position | | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 6/3 VA | Driving @ 60 Hz – 90 sec | Driving (dB(A) @ 1m) – 40; Holding (dB(A) @ 1m) – 20 (no audible noise) | | Min. 95 kOhm | 24 Vac or Vdc | |
| Two position; SPST | | | | | | | | | | | | | |
| MS4105A1030/U | | | 0 | | | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 6/9 VA | Driving @ 60 Hz – 45 sec | Driving (dB(A) @ 1m) – 50; Holding (dB(A) @ 1m) – 20 (no audible noise) | | | 100 to 250 Vac | |

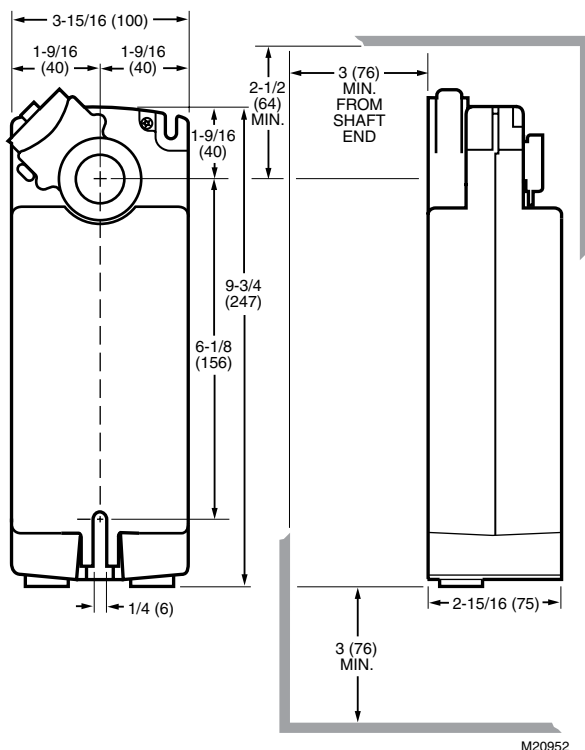
Direct Coupled Actuators - Spring Return

| Material Number | Electrical Connections Size | Feedback | Internal Auxiliary Switch | Switches | Switch Ratings | Electrical Connections | Power Consumption | Timing, Nominal | Maximum Noise Rating | Cable | Input Impedance | Supply Voltage | Comments |
|-----------------|-----------------------------|----------|---------------------------|--|----------------------------|--|-------------------|--------------------------|---|----------------------------|-----------------|----------------|---|
| MS4105A1130/U | | | 1 | Internal Auxiliary - adjustable 0-95 degrees | 250 Vac, 8 A res (5 A ind) | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 6/9 VA | Driving @ 60 Hz – 45 sec | Driving (dB(A) @ 1m) – 50; Holding (dB(A) @ 1m) – 20 (no audible noise) | | | 100 to 250 Vac | |
| MS8105A1030/U | | | 0 | | | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 6/3 VA | Driving @ 60 Hz – 45 sec | Driving (dB(A) @ 1m) – 50; Holding (dB(A) @ 1m) – 20 (no audible noise) | | | 24 Vac or Vdc | |
| MS8105A1130/U | | | 1 | Internal Auxiliary - adjustable 0-95 degrees | 250 Vac, 8 A res (5 A ind) | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 6/3 VA | Driving @ 60 Hz – 45 sec | Driving (dB(A) @ 1m) – 50; Holding (dB(A) @ 1m) – 20 (no audible noise) | | | 24 Vac or Vdc | |
| MS8105W1030/U | 36 in. (0.9 m) | | 0 | | | 18 AWG color-coded cable | Driving – 8 VA | Driving @ 60 Hz – 45 sec | Driving (dB(A) @ 1m) – 50; Holding (dB(A) @ 1m) – 20 (no audible noise) | Threaded conduit connector | | 24 Vac or Vdc | Integral 1/2 in. NPSM conduit connection. |
| MS8105W1130/U | 36 in. (0.9 m) | | 1 | Internal Auxiliary - adjustable 0-95 degrees | 250 Vac, 8 A res (5 A ind) | 18 AWG color-coded cable | Driving – 8 VA | Driving @ 60 Hz – 45 sec | Driving (dB(A) @ 1m) – 50; Holding (dB(A) @ 1m) – 20 (no audible noise) | Threaded conduit connector | | 24 Vac or Vdc | Integral 1/2 in. NPSM conduit connection. |

S10 Series: MS3110; MS4110; MS7510; MS8110 Spring Return Direct Coupled Actuator, 88 lb-in.



Dimensions in inches (millimeters)



MS3110, MS4110, MS7510, and MS8110 Spring Return Direct Coupled Actuators (DCA) are used within heating, ventilating, and air-conditioning (HVAC) systems. They can drive a variety of quarter-turn, final control elements requiring spring return fail-safe operation.

- Brushless DC submotor with electronic stall protection for floating/modulating models.
- Brush DC submotor with electronic stall protection for 2-position models.
- Self-centering shaft adapter (shaft coupling) for wide range of shaft sizes.
- Models available for use with two-position, single pole single throw (SPST), line- (Series 40) or low- (Series 80) voltage controls.
- Models available for use with floating or switched single-pole, double-throw (SPDT) (Series 60) controls.
- Models available for use with proportional current or voltage (Series 70) controls.
- Models available with combined floating/modulating control in a single device.
- Models available with adjustable zero and span.
- Models available with line-voltage internal end switches.
- Models available with three-foot, 18 AWG color-coded cable.
- Access cover to facilitate connectivity.
- Metal housing with built-in mechanical end limits.
- Spring return direction field-selectable.
- Shaft position indicator and scale.
- Manual winding capability with locking function.
- UL (cUL) listed and CE compliant.
- All Models are plenum-rated per UL873.

Application: HVAC

Actuator Type: Damper; Valve

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: Spring Return

Torque Rating (lb-in.): 88 lb-in.

Torque Rating (Nm): 10 Nm

Spring Return Torque/Force (lb-in., lbf): 88 lb-in.

Spring Return Torque/Force (Nm, N): 10 Nm

Additional Torque Ratings (lb-in.): Maximum Stall – 150 lb-in.

Additional Torque Ratings (Nm): Maximum Stall – 17 Nm

External Auxiliary Switches Available: Yes, SW2-US

Rotational Stroke Adjustment: Mechanically limited 5 degree increments

Stroke: 95 ±3 degrees

Mounting: Direct Coupled

Spring Return Timing: Maximum – 20 sec

Environmental, Electrical, or Ingress Protection Rating: NEMA 2

Materials: Aluminum housing, Plenum rated plastic access cover

Maximum Noise Rating: Driving (dB(A) @ 1m) – 40; Holding (dB(A) @ 1m) – 20 (no audible noise)

Shaft Adapter Type: Self-centering clamping

Manual operation: Manual crank

Shaft Dimensions: 3/8 to 1.06 in. round or 3/8 to 11/16 in. square (10 to 27 mm round or 10 to 18 mm square)

Spring Return Direction: By orientation

Weight: 6 lb (2.72 kg)

Ambient Temperature Range: -40°F to +140°F (-40°C to +60°C)

Shipping and Storage Temperature Range: -40°F to +158°F (-40°C to +70°C)

Approvals, Canadian Underwriters Laboratories Inc.: cUL C22.2 No. 24-93

Approvals, C-Tick: N314

Approvals, Underwriters Laboratories Inc.: UL873, Plenum Rated

Approvals, CE: 89/336/ECC, 73/23/EEC

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Includes: Mounting bracket, self-centering shaft adapter, 3 mm crank

Comments: Integral 1/2 in. NPSM conduit connection

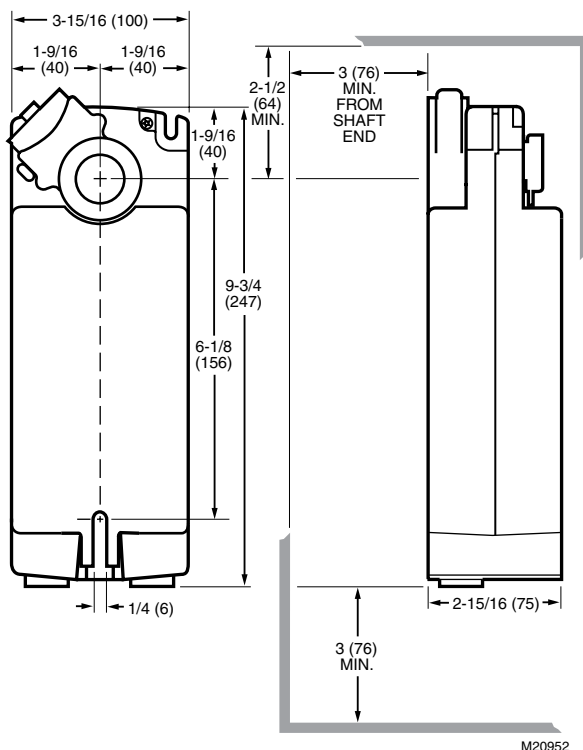
Direct Coupled Actuators - Spring Return

| Material Number | Electrical Connections Size | Feedback | Internal Auxiliary Switch | Rotation to Open | Switch Ratings | Electrical Connections | Power Consumption | Timing, Nominal | Cable | Input Impedance | Supply Voltage | Control Signal |
|-----------------|-----------------------------|---------------------------------|---------------------------|------------------|----------------------------|--|----------------------------------|--------------------------|----------------------------|-----------------|--------------------|---|
| MS3110J1008/U | | Sylk-enabled | 0 | By switch | | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 14 VA, Holding – 5 VA | Driving @ 60 Hz – 90 sec | | | 24 Vac ±20% or Vdc | Sylk-enabled |
| MS3110J1206/U | | Sylk-enabled | 2 | By switch | 250 Vac, 5 A res | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 14 VA, Holding – 5 VA | Driving @ 60 Hz – 90 sec | | | 24 Vac ±20% or Vdc | Sylk-enabled |
| MS4110A1002/U | | | 0 | | | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 45 VA, Holding – 13 VA | Driving @ 60 Hz – 45 sec | | | 100 to 250 Vac | Two position; SPST |
| MS4110A1200/U | | | 2 | | 250 Vac, 5 A res | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 45 VA, Holding – 13 VA | Driving @ 60 Hz – 45 sec | | | 100 to 250 Vac | Two position; SPST |
| MS7510A2008/U | | 2-10 Vdc (max. output: ±1.0 mA) | 0 | By switch | | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 14 VA, Holding – 5 VA | Driving @ 60 Hz – 90 sec | | Min. 95 kOhm | 24 Vac ±20% or Vdc | Floating; On/Off; (0) 2-10 Vdc (4-20 mA w/500 ohm resistor); SPDT |
| MS7510A2206/U | | 2-10 Vdc (max. output: ±1.0 mA) | 2 | By switch | 250 Vac, 5 A res | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 14 VA, Holding – 5 VA | Driving @ 60 Hz – 90 sec | | Min. 95 kOhm | 24 Vac ±20% or Vdc | Floating; On/Off; (0) 2-10 Vdc (4-20 mA w/500 ohm resistor); SPDT |
| MS7510H2209/U | | 2-10 Vdc (max. output: ±1.0 mA) | 2 | By switch | 250 Vac, 5 A res (3 A ind) | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 14 VA, Holding – 5 VA | Driving @ 60 Hz – 90 sec | | Min. 95 kOhm | 24 Vac ±20% or Vdc | Floating; On/Off; (0) 2-10 Vdc (4-20 mA w/500 ohm resistor); SPDT |
| MS7510W2008/U | 36 in. (0.9 m) | 2-10 Vdc (max. output: ±1.0 mA) | 0 | By switch | | 18 AWG color-coded cable | Driving – 14 VA, Holding – 5 VA | Driving @ 60 Hz – 90 sec | Threaded conduit connector | Min. 95 kOhm | 24 Vac ±20% or Vdc | Floating; (0) 2-10 Vdc (4-20 mA w/500 ohm resistor) |
| MS7510W2206/U | 36 in. (0.9 m) | 2-10 Vdc (max. output: ±1.0 mA) | 2 | By switch | 250 Vac, 5 A res (3 A ind) | 18 AWG color-coded cable | Driving – 14 VA, Holding – 5 VA | Driving @ 60 Hz – 90 sec | Threaded conduit connector | Min. 95 kOhm | 24 Vac ±20% or Vdc | Floating; (0) 2-10 Vdc (4-20 mA w/500 ohm resistor) |
| MS8110A1008/U | | | 0 | | | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 30 VA, Holding – 8 VA | Driving @ 60 Hz – 45 sec | | | 24 Vac ±20% or Vdc | Two position; SPST |
| MS8110A1206/U | | | 2 | | 250 Vac, 5 A res | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 30 VA, Holding – 8 VA | Driving @ 60 Hz – 45 sec | | | 24 Vac ±20% or Vdc | Two position; SPST |
| MS8110W1008/U | 36 in. (0.9 m) | | 0 | | | 18 AWG color-coded cable | Driving – 30 VA, Holding – 8 VA | Driving @ 60 Hz – 45 sec | Threaded conduit connector | | 24 Vac ±20% or Vdc | Two position; SPST |
| MS8110W1206/U | 36 in. (0.9 m) | | 2 | | 250 Vac, 5 A res (3 A ind) | 18 AWG color-coded cable | Driving – 30 VA, Holding – 8 VA | Driving @ 60 Hz – 45 sec | Threaded conduit connector | | 24 Vac ±20% or Vdc | Two position; SPST |

S20 Series: MS3120; MS4120; MS7520; MS8120 Spring Return Direct Coupled Actuator, 175 lb-in.



Dimensions in inches (millimeters)



M20952

MS3120, MS4120, MS7520, MS8120 Spring Return Direct Coupled Actuators (DCA) are used within heating, ventilating, and air-conditioning (HVAC) systems. They can drive a variety of quarter-turn, final control elements requiring spring return fail safe operation.

- Brushless DC submotor with electronic stall protection for floating/modulating models.
- Brush DC submotor with electronic stall protection for 2-position models.
- Self-centering shaft adapter (shaft coupling) for wide range of shaft sizes.
- Models available for use with two-position, single pole single throw (SPST), line- (Series 40) or low- (Series 80) voltage controls.
- Models available for use with floating or switched single-pole, double-throw (SPDT) (Series 60) controls.
- Models available for use with proportional current or voltage (Series 70) controls.
- Models available with combined floating/modulating control in a single device.
- Models available with adjustable zero and span.
- Models available with line-voltage internal end switches.
- Models available with three-foot, 18 AWG color-coded cable.
- Access cover to facilitate connectivity.
- Metal housing with built-in mechanical end limits.
- Spring return direction field-selectable.
- Shaft position indicator and scale.
- Manual winding capability with locking function.
- UL (cUL) listed and CE compliant.
- All models are plenum-rated per UL873.

Application: HVAC

Actuator Type: Damper; Valve

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: Spring Return

Torque Rating (lb-in.): 175 lb-in.

Torque Rating (Nm): 20 Nm

Spring Return Torque/Force (lb-in., lbf): 175 lb-in.

Spring Return Torque/Force (Nm, N): 20 Nm

Additional Torque Ratings (lb-in.): Maximum Stall – 300 lb-in.

Additional Torque Ratings (Nm): Maximum Stall – 34 Nm

External Auxiliary Switches Available: Yes, SW2-US

Rotational Stroke Adjustment: Mechanically limited 5 degree increments

Stroke: 95 ±3 degrees

Mounting: Direct Coupled

Spring Return Timing: Maximum – 20 sec

Environmental, Electrical, or Ingress Protection Rating: NEMA 2

Materials: Aluminum housing, Plenum rated plastic access cover

Maximum Noise Rating: Driving (dB(A) @ 1m) – 40; Holding (dB(A) @ 1m) – 20 (no audible noise)

Shaft Adapter Type: Self-centering clamping

Manual operation: Manual crank

Shaft Dimensions: 3/8 to 1.06 in. round or 3/8 to 11/16 in. square (10 to 27 mm round or 10 to 18 mm square)

Spring Return Direction: By orientation

Weight: 6 lb (2.72 kg)

Ambient Temperature Range: -40°F to +140°F (-40°C to +60°C)

Shipping and Storage Temperature Range: -40°F to +158°F (-40°C to +70°C)

Approvals, Canadian Underwriters Laboratories Inc.: cUL C22.2 No. 24-93

Approvals, C-Tick: N314

Approvals, Underwriters Laboratories Inc.: UL873, Plenum Rated

Approvals, CE: 89/336/ECC, 73/23/EEC

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Includes: Mounting bracket, self-centering shaft adapter, 3 mm crank

Comments: Integral 1/2 in. NPSM conduit connection

Direct Coupled Actuators - Spring Return

| Material Number | Electrical Connections Size | Feedback | Internal Auxiliary Switch | Rotation to Open | Switch Ratings | Electrical Connections | Power Consumption | Timing, Nominal | Cable | Input Impedance | Supply Voltage | Control Signal |
|-----------------|-----------------------------|---------------------------------|---------------------------|------------------|----------------------------|--|----------------------------------|--------------------------|----------------------------|-----------------|--------------------|--|
| MS3120J1007/U | | Sylk-enabled | 0 | By switch | | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 16 VA, Holding – 5 VA | Driving @ 60 Hz – 90 sec | | | 24 Vac ±20% or Vdc | Sylk-enabled |
| MS3120J1205/U | | Sylk-enabled | 2 | By switch | 250 Vac, 5 A res | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 16 VA, Holding – 5 VA | Driving @ 60 Hz – 90 sec | | | 24 Vac ±20% or Vdc | Sylk-enabled |
| MS4120A1001/U | | | 0 | | | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 60 VA, Holding – 13 VA | Driving @ 60 Hz – 45 sec | | | 100 to 250 Vac | Two position; SPST |
| MS4120A1209/U | | | 2 | | 250 Vac, 5 A res | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 60 VA, Holding – 13 VA | Driving @ 60 Hz – 45 sec | | | 100 to 250 Vac | Two position; SPST |
| MS7520A2007/U | | 2-10 Vdc (max. output: ±1.0 mA) | 0 | By switch | | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 16 VA, Holding – 5 VA | Driving @ 60 Hz – 90 sec | | Min. 95 kOhm | 24 Vac ±20% or Vdc | Floating; On/Off; (0)2-10 Vdc (4-20 mA w/500 ohm resistor); SPDT |
| MS7520A2205/U | | 2-10 Vdc (max. output: ±1.0 mA) | 2 | By switch | 250 Vac, 5 A res | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 16 VA, Holding – 5 VA | Driving @ 60 Hz – 90 sec | | Min. 95 kOhm | 24 Vac ±20% or Vdc | Floating; On/Off; (0)2-10 Vdc (4-20 mA w/500 ohm resistor); SPDT |
| MS7520H2208/U | | 2-10 Vdc (max. output: ±1.0 mA) | 2 | By switch | 250 Vac, 5 A res (3 A ind) | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 16 VA, Holding – 5 VA | Driving @ 60 Hz – 90 sec | | Min. 95 kOhm | 24 Vac ±20% or Vdc | Floating; On/Off; (0)2-10 Vdc (4-20 mA w/500 ohm resistor); SPDT |
| MS7520W2007/U | 36 in. (0.9 m) | 2-10 Vdc (max. output: ±1.0 mA) | 0 | By switch | | 18 AWG color-coded cable | Driving – 16 VA, Holding – 5 VA | Driving @ 60 Hz – 90 sec | Threaded conduit connector | Min. 95 kOhm | 24 Vac ±20% or Vdc | Floating; (0)2-10 Vdc (4-20 mA w/500 ohm resistor) |
| MS7520W2205/U | 36 in. (0.9 m) | 2-10 Vdc (max. output: ±1.0 mA) | 2 | By switch | 250 Vac, 5 A res (3 A ind) | 18 AWG color-coded cable | Driving – 16 VA, Holding – 5 VA | Driving @ 60 Hz – 90 sec | Threaded conduit connector | Min. 95 kOhm | 24 Vac ±20% or Vdc | Floating; (0)2-10 Vdc (4-20 mA w/500 ohm resistor) |
| MS8120A1007/U | | | 0 | | | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 40 VA, Holding – 8 VA | Driving @ 60 Hz – 45 sec | | | 24 Vac ±20% or Vdc | Two position; SPST |
| MS8120A1205/U | | | 2 | | 250 Vac, 5 A res | Enclosed screw terminal strip (22 to 14 AWG) | Driving – 40 VA, Holding – 8 VA | Driving @ 60 Hz – 45 sec | | | 24 Vac ±20% or Vdc | Two position; SPST |
| MS8120W1007/U | 36 in. (0.9 m) | | 0 | | | 18 AWG color-coded cable | Driving – 40 VA, Holding – 8 VA | Driving @ 60 Hz – 45 sec | Threaded conduit connector | | 24 Vac ±20% or Vdc | Two position; SPST |
| MS8120W1205/U | 36 in. (0.9 m) | | 2 | | 250 Vac, 5 A res (3 A ind) | 18 AWG color-coded cable | Driving – 40 VA, Holding – 8 VA | Driving @ 60 Hz – 45 sec | Threaded conduit connector | | 24 Vac ±20% or Vdc | Two position; SPST |

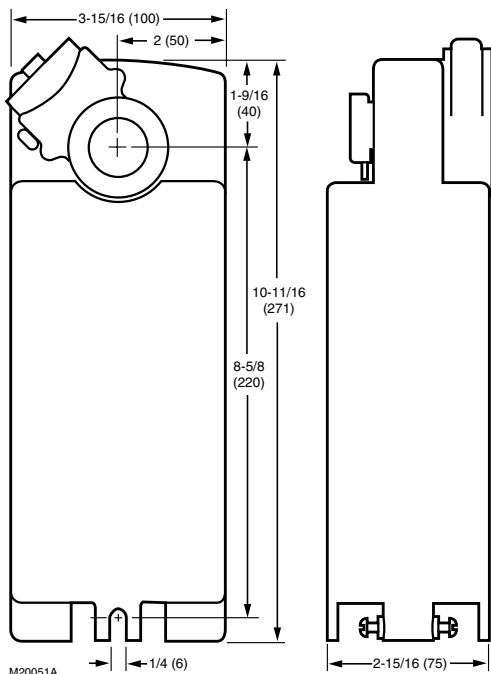
MS4120F; MS4620F; MS8120F

Fast-Acting, Two-Position Actuators, 175 lb-in.



The MS4120F; MS4620F and MS8120F are 175 lb-in. (20 Nm), spring return direct-coupled, 230 Vac, 120 Vac, 24 Vac actuators that accept two position (SPST) control with an integral junction box. The actuator accepts an on/off signal from a single-pole, single-throw (SPST) controller. They are designed to operate reliably in smoke control systems requiring Underwriter's Laboratories Inc. UL555S ratings up to 350°F.

Dimensions in inches (millimeters)



- Brush DC submotor with electronic stall protection for 2-position models
- Self-centering shaft adapter (shaft coupling) for wide range of shaft sizes
- Models available for use with two-position, single pole single throw (SPST), line- (Series 40) or low- (Series 80) voltage controls
- Metal housing with built-in mechanical end limits
- Spring return direction field-selectable
- Shaft position indicator and scale
- Manual winding capability with locking function
- UL (cUL) listed and CE compliant
- All Models are plenum-rated per UL60730

Application: Fire and Smoke
Actuator Type: Damper
Fail Safe Mode: Spring Return
Torque Rating (lb-in.): 175 lb-in.
Torque Rating (Nm): 20 Nm
Spring Return Torque/Force (lb-in., lbf): 175 lb-in.
Spring Return Torque/Force (Nm, N): 20 Nm
Additional Torque Ratings (lb-in.): Maximum Stall – 425 lb-in.; Minimum Driving at 350°F – 175 lb-in.
Additional Torque Ratings (Nm): Maximum Stall – 48 Nm; Minimum Driving at 175°C – 20 Nm
External Auxiliary Switches Available: No
Stroke: 95 ±3 degrees
Electrical Connections: Teflon-jacketed cable
Mounting: Direct Coupled
Spring Return Timing: Maximum – 15 sec
Environmental, Electrical, or Ingress Protection Rating: NEMA 2; IP54
Materials: Aluminum housing
Maximum Noise Rating: Driving (dB(A) @ 1m) – 70; Holding (dB(A) @ 1m) – 20 (no audible noise)
Shaft Adapter Type: Self-centering clamping
Manual operation: Manual crank
Shaft Dimensions: 3/8 to 1.06 in. round or 3/8 to 11/16 in. square (10 to 27 mm round or 10 to 18 mm square)
Weight: 8 lb (3.63 kg)
Approximate Dimensions: 10.67 in. high x 3.94 in. wide x 2.95 in. deep (271 mm high x 100 mm wide x 75 mm deep)
Ambient Temperature Range: -40°F to +130°F (-40°C to +55°C)
Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)
Approvals, Canadian Underwriters Laboratories Inc.: cUL C22.2 No. 24-93
Approvals, C-Tick: N314
Approvals, Underwriters Laboratories Inc.: UL60730, Plenum Rated
Approvals, CE: 89/336/ECC, 73/23/EEC
Operating Humidity Range (% RH): 5 to 95% RH, non-condensing
Includes: Self-centering shaft adapter, 3 mm crank
Comments: Two integral 3/8 in. flexible conduit connections
Electrical Connections Size: 40 in. (1 m)

| Material Number | Control Signal | Supply Voltage | Frequency | Timing, Nominal | Switch Ratings | Power Consumption | Internal Auxiliary Switch | Spring Return Direction |
|---------------------------------|--------------------|-------------------|--------------|--------------------------------|------------------|--|---------------------------|-------------------------|
| 175 lb-in. 230V | | | | | | | | |
| MS4620F1005/U | Two position; SPST | 230 Vac ±10% | 50 Hz; 60 Hz | Driving @ 60 Hz (sec) – 15 sec | | Driving – 0.20A, 35W, Holding – 0.14A, 10W | 0 | By orientation |
| MS4620F1203/U | Two position; SPST | 230 Vac ±10% | 50 Hz; 60 Hz | Driving @ 60 Hz (sec) – 15 sec | 250 Vac, 5 A res | Driving – 0.20A, 35W, Holding – 0.14A, 10W | 2 | By orientation |
| 175 lb-in. 24V Actuators | | | | | | | | |
| MS8120F1002/U | Two position; SPST | 24 Vac +20%, -10% | 50 Hz; 60 Hz | Driving @ 60 Hz (sec) – 15 sec | | Driving – 45 VA, Holding – 10 VA | 0 | By orientation |
| MS8120F1200/U | Two position; SPST | 24 Vac +20%, -10% | 50 Hz; 60 Hz | Driving @ 60 Hz (sec) – 15 sec | 250 Vac, 5 A res | Driving – 45 VA, Holding – 10 VA | 2 | By orientation |
| 80 lb-in. 120V | | | | | | | | |
| MS4120F1006/U | Two position; SPST | 120 Vac ±10% | 60 Hz | Driving @ 60 Hz (sec) – 15 sec | | Driving – 0.35A, 35W, Holding – 0.15A, 10W | 0 | By orientation |
| MS4120F1204/U | Two position; SPST | 120 Vac ±10% | 60 Hz | Driving @ 60 Hz (sec) – 15 sec | 250 Vac, 5 A res | Driving – 0.35A, 35W, Holding – 0.15A, 10W | 2 | By orientation |

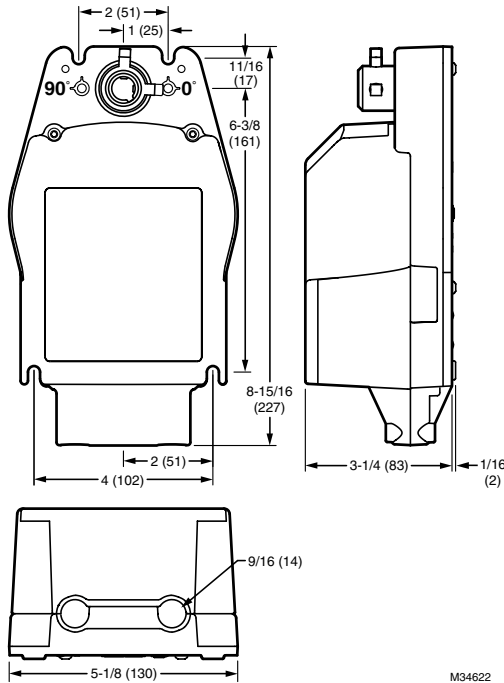
Direct Coupled Actuators - Fire and Smoke

MS4104F; MS4604F; MS8104F Fast-Acting, Two-Position Actuators, 30 lb-in.



The MS4104, MS4604, and MS8104 Fast-Acting, Two-Position Actuators are spring return direct coupled actuators (DCA) for Fire and Smoke dampers (on/off control). The actuator accepts an on/off signal from a single-pole, single-throw (SPST) controller. Reversible mounting allows actuator to be used for either clockwise (cw) or counterclockwise (ccw) spring rotation.

Dimensions in inches (millimeters)



M34622

- 30 lb-in. (3.4 N•m) minimum driving torque at 350°F (176°C).
- Reversible mounting facilitates use in either clockwise (cw) or counterclockwise (ccw) spring rotation
- Integral spring return ensures level of return torque
- Fifteen-second spring return timing
- No special cycling required during long-term holding
- No audible noise during holding
- Patent pending design eliminates need for limit switches to reduce power consumption
- Ninety-five degree angle of rotation
- Models available for 24, 120, and 230 Vac.
- Actuator holds rated torque at reduced power level

- Die-cast aluminum housing
- Housing design allows flush mounting to damper
- Designed to operate reliably in smoke control systems requiring Underwriter's Laboratories Inc. UL555S ratings up to 350°F
- Models available with SPST position-indicating switches (7 degree, 85 degree stroke)

Application: Fire and Smoke

Actuator Type: Damper

Control Signal: Two position; SPST

Fail Safe Mode: Spring Return

Torque Rating (lb-in.): 30 lb-in.

Torque Rating (Nm): 3.4 Nm

Spring Return Torque/Force (lb-in., lbf): 30 lb-in.

Spring Return Torque/Force (Nm, N): 3.4 Nm

Additional Torque Ratings (lb-in.): Maximum Stall – 150 lb-in.;

Minimum Driving at 350°F – 30 lb-in.

Additional Torque Ratings (Nm): Maximum Stall – 17 Nm; Minimum

Driving at 175°C – 3.4 Nm

External Auxiliary Switches Available: No

Stroke: 95 ±3 degrees

Mounting: Direct Coupled

Timing, Nominal: Driving @ 60 Hz – 15 sec

Spring Return Timing: 15 sec

Environmental, Electrical, or Ingress Protection Rating: NEMA 1,

IP40

Materials: Aluminum housing

Maximum Noise Rating: Driving (dB(A) @ 1m) – 80; Holding (dB(A)

@ 1m) – 20 (no audible noise)

Shaft Adapter Type: Aluminum Hub, two set screws

Shaft Dimensions: 3/8 to 1/2 in. round damper shafts and for 3/8 in.

square shafts

Spring Return Direction: By orientation

Weight: 5 lb (2.3 kg)

Approximate, Dimensions: 8.9 in. high x 5.13 in. wide x 3.32 in. deep

(227 mm high x 129 mm wide x 84 mm deep)

Ambient Temperature Range: 0°F to +130°F (-18°C to +55°C)

Shipping and Storage Temperature Range: -40°F to 140°F (-40°C to

+60°C)

Approvals, Canadian Underwriters Laboratories Inc.: cUL C22.2

No. 24-93

Approvals, C-Tick: N314

Approvals, Underwriters Laboratories Inc.: UL60730, Plenum Rated

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Comments: Two integral 3/8 in. clip-in flexible conduit connections

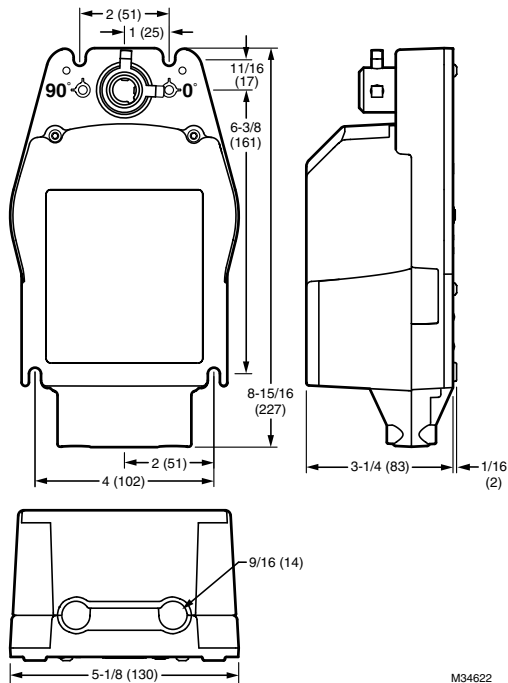
| Material Number | Frequency | Switch Ratings | Power Consumption | Internal Auxiliary Switch | Electrical Connections | Electrical Connections Size | Supply Voltage |
|--------------------------------|--------------|------------------------|--|---------------------------|------------------------|-----------------------------|-------------------|
| 30 lb-in. 120V | | | | | | | |
| MS4104F1010/U | 60 Hz | | Driving – 0.18A, 18W, Holding – 0.11A, 9W | 0 | Color-coded leads | 32 in. (0.8 m) | 120 Vac ±10% |
| MS4104F1210/U | 60 Hz | 125 Vac/24 Vdc, 3A res | Driving – 0.18A, 18W, Holding – 0.11A, 9W | 2 | Color-coded leads | 32 in. (0.8 m) | 120 Vac ±10% |
| 30 lb-in. 230V | | | | | | | |
| MS4604F1010/U | 50 Hz; 60 Hz | | Driving – 0.13A, 18W, Holding – 0.10A, 11W | 0 | Color-coded leads | 32 in. (0.8 m) | 230 Vac ±10% |
| MS4604F1210/U | 50 Hz; 60 Hz | 125 Vac/24 Vdc, 3A res | Driving – 0.13A, 18W, Holding – 0.10A, 11W | 2 | Color-coded leads | 32 in. (0.8 m) | 230 Vac ±10% |
| 30 lb-in. 24V Actuators | | | | | | | |
| MS8104F1010/U | 50 Hz; 60 Hz | | Driving – 16VA, Holding – 8 VA | 0 | Color-coded leads | 39 in. (1 m) | 24 Vac +20%, -10% |
| MS8104F1210/U | 50 Hz; 60 Hz | 24 Vac/dc, 3A res | Driving – 16VA, Holding – 8 VA | 2 | Color-coded leads | 39 in. (1 m) | 24 Vac +20%, -10% |

MS4109F; MS4609F; MS8109F Fast-Acting, Two-Position Actuators, 80 lb-in.



The MS4109, MS4609, and MS8109 Fast-Acting, Two-Position Actuators are spring return direct coupled actuators (DCA) for Fire and Smoke dampers (on/off control). The actuator accepts an on/off signal from a single-pole, single-throw (SPST) controller. Reversible mounting allows actuator to be used for either clockwise (cw) or counterclockwise (ccw) spring rotation.

Dimensions in inches (millimeters)



- 80 lb-in. (5.9 N•m) minimum driving torque at 350°F (176°C)
- Reversible mounting facilitates use in either clockwise (cw) or counterclockwise (ccw) spring rotation
- Integral spring return ensures level of return torque
- Fifteen-second spring return timing
- No special cycling required during long-term holding
- No audible noise during holding
- Patent pending design eliminates need for limit switches to reduce power consumption
- Models available for 24, 120, and 230 Vac
- Ninety-five degree angle of rotation
- Actuator holds rated torque at reduced power level

- Die-cast aluminum housing
- Housing design allows flush mounting to damper
- Designed to operate reliably in smoke control systems requiring Underwriter's Laboratories Inc. UL555S ratings up to 350°F
- Models available with SPST position-indicating switches (7 degree, 85 degree stroke)

Application: Fire and Smoke
Actuator Type: Damper
Control Signal: Two position; SPST
Fail Safe Mode: Spring Return
Torque Rating (lb-in.): 80 lb-in.
Torque Rating (Nm): 9 Nm
Spring Return Torque/Force (lb-in., lbf): 80 lb-in.
Spring Return Torque/Force (Nm, N): 9 Nm
Additional Torque Ratings (lb-in.): Maximum Stall – 240 lb-in.; Minimum Driving at 350°F – 80 lb-in.
Additional Torque Ratings (Nm): Maximum Stall – 27 Nm; Minimum Driving at 175°C – 9 Nm
External Auxiliary Switches Available: No
Stroke: 95 ±3 degrees
Mounting: Direct Coupled
Timing, Nominal: Driving @ 60 Hz – 15 sec
Spring Return Timing: 15 sec
Environmental, Electrical, or Ingress Protection Rating: NEMA 1, IP40
Materials: Aluminum housing
Maximum Noise Rating: Driving (dB(A) @ 1m) – 80; Holding (dB(A) @ 1m) – 20 (no audible noise)
Shaft Adapter Type: Aluminum Hub, two set screws
Shaft Dimensions: 3/8 to 1/2 in. round damper shafts and for 3/8 in. square shafts
Spring Return Direction: By orientation
Weight: 5 lb (2.3 kg)
Approximate, Dimensions: 8.9 in. high x 5.13 in. wide x 3.32 in. deep (227 mm high x 129 mm wide x 84 mm deep)
Ambient Temperature Range: 0°F to +130°F (-18°C to +55°C)
Shipping and Storage Temperature Range: -40°F to 140°F (-40°C to +60°C)
Approvals, Canadian Underwriters Laboratories Inc.: cUL C22.2 No. 24-93
Approvals, C-Tick: N314
Approvals, Underwriters Laboratories Inc.: UL60730, Plenum Rated
Operating Humidity Range (% RH): 5 to 95% RH, non-condensing
Comments: Two integral 3/8 in. clip-in flexible conduit connections

| Material Number | Frequency | Switch Ratings | Power Consumption | Internal Auxiliary Switch | Electrical Connections | Electrical Connections Size | Supply Voltage |
|--------------------------------|--------------|------------------------|---|---------------------------|------------------------|-----------------------------|-------------------|
| 80 lb-in. 120V | | | | | | | |
| MS4109F1010/U | 60 Hz | | Driving – 0.25A, 23W, Holding – 0.13A, 7W | 0 | Color-coded leads | 32 in. (0.8 m) | 120 Vac ±10% |
| MS4109F1210/U | 60 Hz | 125 Vac/24 Vdc, 3A res | Driving – 0.25A, 23W, Holding – 0.13A, 7W | 2 | Color-coded leads | 32 in. (0.8 m) | 120 Vac ±10% |
| 80 lb-in. 230V | | | | | | | |
| MS4609F1010/U | 50 Hz; 60 Hz | | Driving – 0.13A, 23W, Holding – 0.09A, 7W | 0 | Color-coded leads | 32 in. (0.8 m) | 230 Vac ±10% |
| MS4609F1210/U | 50 Hz; 60 Hz | 125 Vac/24 Vdc, 3A res | Driving – 0.13A, 23W, Holding – 0.09A, 7W | 2 | Color-coded leads | 32 in. (0.8 m) | 230 Vac ±10% |
| 80 lb-in. 24V Actuators | | | | | | | |
| MS8109F1010/U | 50 Hz; 60 Hz | | Driving – 23VA, Holding – 7 VA | 0 | Color-coded leads | 39 in. (1 m) | 24 Vac +20%, -10% |
| MS8109F1210/U | 50 Hz; 60 Hz | 24 Vac/dc, 3A res | Driving – 23VA, Holding – 7 VA | 2 | Color-coded leads | 39 in. (1 m) | 24 Vac +20%, -10% |

Direct Coupled Actuators - Accessories

Q7002 Interface Modules



The Q7002 Interface Modules allow controllers with an otherwise incompatible signal to control an Economizer Logic Module or Direct Coupled Actuator.

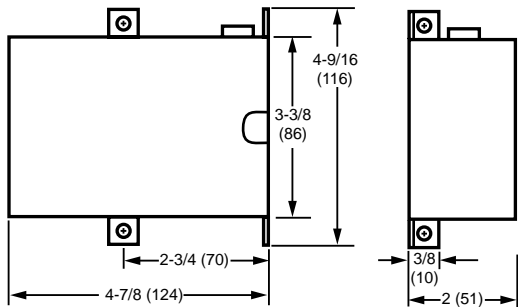
- 24 Vac or 24 Vdc power.
- Available for input signals: dc voltage, current, or resistive; and pulse-width modulation (PWM).
- Available to provide output: analog voltage or current for an actuator.
- Inputs and outputs are jumper-selectable and include adjustable zero and span.
- Output is jumper-selectable direct or reverse acting.
- Includes reference voltage and current to power an input device or sensor.
- PWM time base is user-selectable with positive or negative input reference; all ranges have 255-step resolution.
- Multiplex mode enables one PWM signal from a Building Automation System (BAS) controller to address and control up to eight interface modules.

Frequency: 60 Hz

Mounting: Enclosure (NEMA 1) with mounting tabs

Used With: Direct-Coupled Proportional Actuators and Modutrol Motors

Dimensions in inches (millimeters)



ENCLOSURE MODELS

M18985

| Material Number | Description | Comments | Supply Voltage |
|-----------------|--|---|--------------------------|
| Q7002B1009/U | Transducer, Accepts dc voltage, current, or resistive input and provides a voltage or current output | Input: dc voltage, current, or resistive, Output: voltage or current output | 24 Vac \pm 20%; 24 Vdc |
| Q7002C1007/U | Transducer, Accepts a pulse-width modulation (PWM) signal and provides a voltage output | Input: PWM signal, Output: analog voltage | 24 Vac \pm 20%; 24 Vdc |




Accessories for Direct Coupled Damper Actuators

| Compatibility Chart | | SPRING RETURN | | | | | | | | | | NON-SPRING RETURN | | | | |
|---|---|-------------------|---------|---------|--------|--------|--------|----------------|---------|---------|----------------|-------------------|---------|---------|--------|--------|
| | | MSxx03A, MSxx05A* | MSxx10A | MSxx20A | MLxx75 | MLxx85 | MLxx95 | ML41x5, ML81x5 | MSxx09F | MSxx20F | MLxx61, MLxx74 | MNxx05, MNxx10 | MNxx20A | MNxx34A | MLxx84 | MLxx94 |
| ACTUATOR ACCESSORIES | | | | | | | | | | | | | | | | |
| Control, Positioning, Feedback | | | | | | | | | | | | | | | | |
| SW2-US | Auxiliary Switch (2 SPDT) | | • | • | | | | | | | | | • | • | • | |
| 32003532-005 | High Temperature Auxiliary Switch (2 SPDT) | | | | | | | • | • | | | | | | | |
| 200976C | Feedback Potentiometer (2000 ohm) | | | | | | | | | | • | | | | | |
| 200976A | Feedback Potentiometer (500 ohm) | | | | | | | | | | • | | | | | |
| 205860 | Minimum Position Potentiometer | • | • | • | • | • | • | | | | • | • | • | • | • | • |
| 32006306-001 | Resistor Kit (500 ohm); converts 4-20 mA signal to 2-10 Vdc | • | • | • | • | • | • | | | | • | | | | • | • |
| Q7002B1009 | Universal Interface Module (Enclosed) | • | • | • | • | • | • | | | | • | • | • | • | • | • |
| Mounting | | | | | | | | | | | | | | | | |
| 32007205-001 | Actuator Mounting Plate | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 32007205-002 | Damper Blade Drive Lever (<24 in.) | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 32007205-003 | Damper Blade Drive Lever (>24 in.) | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 32007205-004 | Damper External Drive Pin Clip | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 32007205-005 | Damper External Drive Pin Kit | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 32007205-008 | Damper Axle Coupler | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 32007205-009 | Crank Arm (1 in.) | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 50001194-001 | Foot Mounting Kit | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 205649 | Mounting Bracket | | | | | | | • | • | • | | | | | | |
| 205784 | Mounting Bracket | | | | • | • | | | | | | | | | | |
| 50006427-001 | Flexible Anti-rotation Bracket | | • | • | | | | | | • | | | • | • | | |
| 50000407-001 | Tandem Mounting Kit | | • | • | | | | | | | | | • | • | | |
| STRN-BRKT | Anti-rotation Bracket | • | | | | | | | | | | | | | | |
| STRN-CRK-01 | Crank Arm Kit | • | | | | | | | | | | | | | | |
| STRN-ECONO-01 | Economizer Retrofit Kit | • | | | | | | | | | | | | | | |
| STRN-WMK-01 | Wall Mount Kit | • | | | | | | | | | | | | | | |
| Rotation Limiters, Position Indicators | | | | | | | | | | | | | | | | |
| 4074ENJ | Stroke Stop/Minimum Position Kit | | | | | | | | | | • | | | | | |
| 4074ENY | Stroke Stop Kit | | | | | | | | | | • | | | | | |
| Ball Joints, Push Rods | | | | | | | | | | | | | | | | |
| 103598 | Ball Joint (1/4 in.) | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 27518 | Ball Joint (5/16 in.) | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 27520Q | Push Rod (5/16 in. dia., 8 in. length) | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 27520B | Push Rod (5/16 in. dia., 10 in. length) | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 27520C | Push Rod (5/16 in. dia., 12 in. length) | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 27520E | Push Rod (5/16 in. dia., 18 in. length) | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 27520G | Push Rod (5/16 in. dia., 24 in. length) | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 27520K | Push Rod (5/16 in. dia., 36 in. length) | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 27520L | Push Rod (5/16 in. dia., 48 in. length) | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |

Direct Coupled Actuators - Accessories



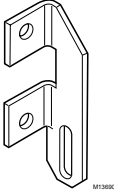
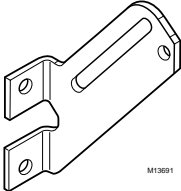





| Compatibility Chart | | SPRING RETURN | | | | | | | | | | NON-SPRING RETURN | | | | |
|-----------------------|--|-------------------|---------|---------|--------|--------|--------|----------------|---------|---------|----------------|-------------------|---------|---------|--------|--------|
| | | MSxx03A, MSxx05A* | MSxx10A | MSxx20A | MLxx75 | MLxx85 | MLxx95 | ML41x5, ML81x5 | MSxx09F | MSxx20F | MLxx61, MLxx74 | MNxx05, MNxx10 | MNxx20A | MNxx34A | MLxx84 | MLxx94 |
| ACTUATOR ACCESSORIES | | | | | | | | | | | | | | | | |
| Crankarms | | | | | | | | | | | | | | | | |
| 205685 | Crank Arm Kit | | | | | | | | | | | | | | | • |
| 205846 | Crank Arm Kit | | | | | | | | | | | | | | | • |
| 26026G | Damper Crank Arm, 1/2 in. damper shaft | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 205830A | Rotary-to-Linear Kit | | | | • | • | | | | | • | | | | | |
| 205870 | Shaft Adapter 1 in. with Crank Arm | | | | • | • | | | | | | | | | | |
| STRN-CA-01 | Non-Self-centering Crank Arm | • | | | | | | | | | | | | | | |
| STRN-CA-02 | Self-centering Crank Arm | • | | | | | | | | | | | | | | |
| Shaft Adapters | | | | | | | | | | | | | | | | |
| 205849A | Hub Insert 5/8 in. | | | | | | | | | | | | | | | • |
| 32003167-001 | Shaft Adapter (3/8 in.) | | | | | | | | | • | | | | | | |
| 32003168-001 | Short Shaft Adapter (3/4-1/2 in.) | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 32003168-002 | Short Shaft Adapter (5/8-1/2 in.) | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 32003168-003 | Short Shaft Adapter (9/16-1/2 in.) | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 32003168-004 | Shaft Adapter (1/2 – 1/2 in.) | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 32004254-003 | Self Centering Shaft Adapter | | | | | | | | | | • | • | | | | |
| 32004254-002 | Self Centering Shaft Adapter | | • | • | | | | | | | | | | | | |
| 32004254-001 | Self Centering Shaft Adapter | | | | | | | | | | • | | • | | | |
| 4074EVK | Short Shaft Kit | | | | | | | | | • | | | | | | |
| STRN-SCSA | Self-centering Shaft Adapter | • | | | | | | | | | | | | | | |
| Enclosures | | | | | | | | | | | | | | | | |
| 32003036-001 | Weather Enclosure | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 50005859-001 | NEMA 4 Enclosure | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| 7640QW | Metal Enclosure | | | | | | | | | • | | | | | | |
| Miscellaneous | | | | | | | | | | | | | | | | |
| 32000085-001 | Strain Relief Fitting (10 pack) | • | • | • | | | | | | | | • | • | • | | |
| AT120A1004 | 120 to 24 Vac Transformer (20 VA) | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| AT140A1000 | 120 to 24 Vac Transformer (40 VA) | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| STRN-STRNRLF | Strain Relief Fitting (10 pack) | • | | | | | | | | | | | | | | |

Control, Positioning, Feedback Accessories



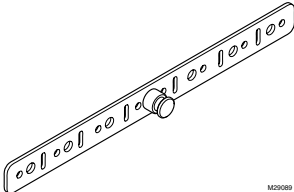
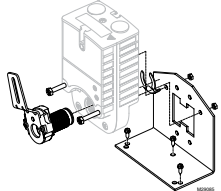
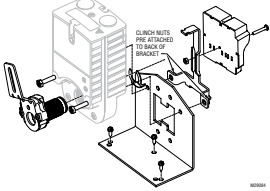
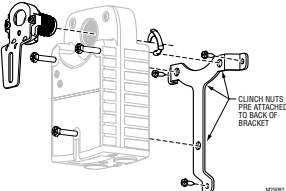
| Material Number | Description | Used With | |
|-----------------|---|--|---|
| 200976A/U | Auxiliary Feedback Potentiometer (0 to 500 ohm) Used With: ML6161, ML6174, ML7161, ML7174 | ML6161, ML6174, ML7161, ML7174 |  |
| 200976C/U | Auxiliary Feedback Potentiometer (0 to 2000 ohm) Used With: ML6161, ML6174, ML7161, ML7174 | ML6161, ML6174, ML7161, ML7174 | |
| 205860/U | Electronic Remote Minimum Position Potentiometer Used With: Proportional Actuators | Proportional Actuators |  |
| 32003532-005/U | Switch Assembly for ML4125 including Hub - 32003528-003, Base - 32003530-001, Fitting - 32004453-001, Cable Assembly - 32006750-001, UPC Label - 32004785-003, Label - 32004454-001, Housing - 32003526-002, Cover - 32003527-002 | ML4105, ML8105, ML4115, ML8115, ML4125, ML8125, ML4135, ML8135, MS4209, MS4309, MS4709, MS4809, MS8209, MS8309 |  |
| 32006306-001/U | Resistor Kit (500 ohm, converts 4-20 mA to 2-10 Vdc) | Proportional Actuators |  |
| SW2-US | Auxiliary Switch Package - Spring Return (MS) and High Torque Non Spring (MNXX20 and XX34) | Not for use with Fire and Smoke Actuators, for example MS4120F; MS and MN Series High Torque Actuators (MNXX20 and XX34) |  |

Direct Coupled Actuators - Accessories


Mounting Accessories

| Material Number | Description | Used With | |
|-----------------|--|---|---|
| 205649/U | Mounting Bracket Used With: 150 and 300 lb-in. NSR and SR Actuators | 150 and 300 lb-in. NSR and SR (except 25, 53 and 142 lb-in.) Actuators |  |
| 32007205-001/U | Direct Coupled Actuator Mounting Bracket Used With: Damper with External Actuator Mounting (i.e., 32007205-005 Kit) | Damper with External Actuator Mounting (i.e., 32007205-005 Kit) |  |
| 32007205-002/U | Damper Blade Drive Lever (Small) Used With: All Actuators and Dampers | All Actuators and Dampers |  |
| 32007205-003/U | Damper Blade Drive Lever (Large) Used With: All Actuators and Dampers | All Actuators and Dampers |  |
| 32007205-004/U | Retaining Clip, Damper External Drive Pin Used With: Damper with External Actuator Mounting (i.e., 32007205-005 Kit) | Damper with External Actuator Mounting (i.e., 32007205-005 Kit) |  |
| 32007205-005/U | Damper External Drive Pin Kit Used With: Damper with External Actuator Mounting (i.e., 32007205-005 Kit) | Damper with External Actuator Mounting (i.e., 32007205-005 Kit) |  |
| 32007205-006/U | Damper Axle Coupling Used With: Multi-Section Dampers | Multi-Section Dampers |  |
| 32007205-007/U | Jumper Bracket Used With: Multi-Section Dampers | Multi-Section Dampers |  |
| 50000407-001/U | Actuator Tandem Mounting Kit | N20 Actuators; N34 Actuators; S20 Actuators; S10 Actuators; S05 Actuators |  |

Direct Coupled Actuators - Accessories



| Material Number | Description | Used With | |
|-----------------|--|---|---|
| 50001194-001/U | Foot Mounting Kit | MS and MN Series High Torque Actuators (MNXX20 and XX34) |  |
| 50006427-001/U | Flexible Anti-Rotation Bracket | N20 Actuators; N34 Actuators; S10 Actuators; S05 Actuators; S20 Actuators |  |
| STRN-BRKT/U | Anti-rotation Bracket for S03 and S05 Series Actuators | S03 Actuators; S05 Actuators |  |
| STRN-CRK-01/U | Crank arm kit for S03 and S05 Series Actuators | S03 Actuators; S05 Actuators |  |
| STRN-ECONO-01/U | Economizer Retrofit Kit for S03 and S05 Series Actuators | S03 Actuators; S05 Actuators |  |
| STRN-WMK-01/U | Wall mount kit for S03 and S05 Series Actuators | S03 Actuators; S05 Actuators |  |

Rotational Limiters, Position Indicators


| Material Number | Description | Used With | |
|-----------------|--|--------------------------------|---|
| 4074ENJ/U | Minimum Position Kit Used With: ML6161, ML6174, ML7161, ML7174 | ML6161, ML6174, ML7161, ML7174 |  |

Direct Coupled Actuators - Accessories



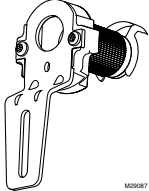
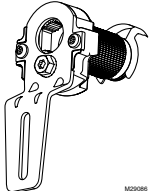
Ball Joints, Push Rod Accessories

| Material Number | Description | Used With | |
|-----------------|--|---------------------------|---|
| 27518/U | Crankarm balljoint with 1/4 - 28 UNF male threads, fits 5-16 inch diameter push rods | All Actuators and Dampers |  |
| 27520B/U | Push Rod (5/16 in. dia., 10 in. length) Used With: All Actuators and Dampers | All Actuators and Dampers |  |
| 27520C/U | Push Rod (5/16 in. dia., 12 in. length) | All Actuators and Dampers | |
| 27520E/U | Push Rod (5/16 in. dia., 18 in. length) Used With: All Actuators and Dampers | All Actuators and Dampers | |
| 27520G/U | Push Rod (5/16 in. dia., 24 in. length) | All Actuators and Dampers | |
| 27520K/U | Push Rod (5/16 in. dia., 36 in. length) | All Actuators and Dampers | |
| 27520Q/U | Push Rod (5/16 in. dia., 8 in. length) Used With: All Actuators and Dampers | All Actuators and Dampers | |



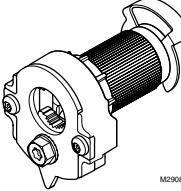
3200

| Material Number | Description | Used With | |
|-----------------|---|---------------------------|---|
| 27520L/U | Push Rod (5/16 in. dia., 48 in. length) | All Actuators and Dampers |  |




Crankarms

| Material Number | Description | Used With | |
|-----------------|--|------------------------------|---|
| 205830A/U | Rotary-to-Linear Kit Used With: 35 and 70 lb-in. NSR Actuators | 35 and 70 lb-in. NSR |  |
| 26026G/U | Damper Crank Arm, 1/2 in. damper shaft | All Actuators and Damper |  |
| 32007205-009/U | Damper Crank Arm, 1" damper shaft Used With: All Actuators and Dampers | All Actuators and Dampers | |
| STRN-CA-01/U | Non Self-centering Crank Arm for S03 and S05 Series Actuators | S03 Actuators; S05 Actuators |  |
| STRN-CA-02/U | Self-centering Crank Arm for S03 and S05 Series Actuators | S03 Actuators; S05 Actuators |  |

Shaft Adapter Accessories

| Material Number | Description | Used With | |
|-----------------|---|--|---|
| 172092060 | Self-Centering Shaft Adapter Used With N34 Actuators | N34 Actuators |  |
| 172092062 | Self-Centering Shaft Adapter Used With N20 Actuators | N20 Actuators | |
| 32004254-001/U | Self-Centering Shaft Adapter Used With N20 Actuators | N20 Actuators | |
| 32004254-002/U | Self-Centering Shaft Adapter Used With S10, S20 Actuators | S10 Actuators; S20 Actuators | |
| 32003168-004/U | Shaft Adapter (1/2 – 1/2 in.) | MSxx03A, MSxx05A, MSxx10A, MSxx20a, MLxx75, MLxx85, MLxx95, MI41x5, ML81x5, MSxx09F, MSxx20F, MLxx61, MLxx74, MNxx05, MNxx10, MNxx20A, MNxx34A, MLxx84, MLxx94 | |
| 4074ENY/U | 3/8 in. Shaft Kit Used With: ML6161, ML6174, ML7161, ML7174 | ML6161, ML6174, ML7161, ML7174 |  |
| 4074EVK/U | Short Shaft Kit Used With: ML6161, ML6174, ML7161, ML7174 | ML6161, ML6174, ML7161, ML7174 | |
| STRN-SCSA/U | Self-centering Shaft Adapter for S03 and S05 Series Actuators | S03 Actuators; S05 Actuators |  |

Enclosure Accessories


| Material Number | Description | Used With | |
|-----------------|---|--|---|
| 32003036-001/U | Weather Enclosure Used With All Actuators | All Actuators |  |
| 50005859-001/U | NEMA 4 Direct Coupled Actuator Enclosure | S03 Actuators; S05 Actuators; S10 Actuators; S20 Actuators; N34 Actuators; 150 lb-in. NSR Actuators (ML Series); N20 Actuators; ML6161, ML6174, ML7161, ML7174 |  |
| 7640QW/U | Enclosure for Conduit Connection | ML6161, ML6174, ML7161, ML7174 |  |

Direct Coupled Actuators - Accessories

Rectangular Damper Accessories

| Material Number | Description |
|-----------------|--|
| 106783A/U | Damper Crank Assembly for 1/2 inch diameter axle |
| 14000028-001/U | Nylon Bearing |
| 14000644-004/U | Drive Ear for D640 and D641 |
| 14004096-001/U | Drive Ear Right |
| 27514B/U | Damper crank arm for 3/4 in. damper shaft |

Miscellaneous Accessories

| Material Number | Description | Used With | |
|-----------------|---------------------------------|------------------------------|---|
| 32000085-001/B | Strain Relief Fitting (10 pack) | MS and MN Series Actuators |  |
| STRN-STRNRLF/U | Strain Relief Fitting (10 pack) | S03 Actuators; S05 Actuators | |

JADE™ Economizer Module with sensors and actuators



The JADE™ Economizer System is an expandable economizer control system, which includes a W7220 Economizer Module (controller) with an LCD and keypad. The W7220 can be configured for 4 different economizer strategies: referential or differential dry bulb, referential or differential enthalpy.

The W7220 Economizer Module can be used as a standalone economizer module wired directly to a commercial set back space thermostat and sensors to provide Outdoor Air dry-bulb economizer control.

The W7220 Economizer Module can be connected to optional Sylk Bus sensors for single or differential enthalpy control. The W7220 Economizer Module provides power and communications on the Sylk Bus for the sensors.

The W7220 Economizer Module automatically detects sensors by polling to determine which sensors are present. If a sensor loses communications after it has been detected, the W7220 Economizer indicates a device fail error on the display or through the AUX 1 OUT terminal programmed to SYS.

Approvals, Underwriters Laboratories Inc.: Flammability Rating UL94V-5V

Approvals, Others: Complies with California Title 24

Approvals, CE: Approved

Approvals, C-Tick: Approved

Approvals, FCC: Compliant

Voltage: 24 Vac

Frequency: 50 Hz; 60 Hz

Contact Ratings: 30 Vac – 1.5 A Run, 3.5 A Inrush

Operating Temperature Range: -40°F to -150°F (-40°C to +65°C)

Color: Gray

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Used With: Honeywell Series 72 actuators; C7232 CO2 sensor

| Material Number | Type | Output | Input | Includes | Comments |
|-----------------|---|-----------------------------|---|---|--|
| W7220A1000/U | DCV and commissioning | 2-10 Vdc to actuator | Dry Bulb Temperature (optional) and Mixed Air Sensor-C7250A, Temperature and Humidity Sensor-C7400S1000 (optional), DCV (CO2) Sensor-C7232 (optional) | Logic Module only | The system must have a Mixed Air Sensor and at least one outdoor air sensor to work properly |
| Y7220A7215/U | Dry Bulb with black motor | 2-10 Vdc to actuator | W7220A1000 Logic Module, 2-C7250A1001 OAT & MAT sensors, M7215A1008 Black Motor | Logic Module - W7220A1000, OAT sensor - C7250A1001, MAT Sensor - C7250A1001, and Black Motor - M7215A1008 | Output - 2-10 Vdc to actuator |
| Y7220S7215/U | Enthalpy with black motor | 2-10 Vdc to actuator | W7220A1000 Logic Module, C7400S1000 OAE Sensor, C7250A1001 MAT sensor, M7215A1008 Black Motor | Logic Module - W7220A1000, OAE Sensor - C7400S1000, MAT Sensor - C7250A1001, and Black Motor - M7215A1008 | Output - 2-10 Vdc to actuator |
| YL7220AJ3103/U | Dry Bulb with communicating 27 lb-in. DCA | 2-10 Vdc to actuator | W7220A1000 Logic Module, 2-C7250A1001 OAT and MAT Sensors, MS3103J1030 DCA OA Sylk | Logic Module - W7220A1000, OAT sensor - C7250A1001, MAT Sensor - C7250A1001, and DCA OA - MS3103J1030 | Sylk communicating actuator |
| YL7220AJ3105/U | Dry Bulb with communicating 44 lb-in. DCA | Sylk communicating actuator | W7220A1000 Logic Module, 2-C7250A1001 OAT and MAT Sensors, MS3105J3030 DCA OA Sylk | Logic Module - W7220A1000, OAT sensor - C7250A1001, MAT Sensor - C7250A1001, and DCA OA - MS3105J3030 | Sylk communicating actuator |
| YL7220SJ3103/U | Enthalpy with communicating 27 lb-in. DCA | 2-10 Vdc to actuator | W7220A1000 Logic Module, C7400S1000 OAE Sensor, C7250A1001 MAT Sensor, MS3103J1030 DCA OA Sylk | Logic Module - W7220A1000, OAE Sensor - C7400S1000, MAT Sensor - C7250A1001, and DCA OA - MS3103J1030 | Sylk communicating actuator |
| YL7220SJ3105/U | Enthalpy with communicating 44 lb-in. DCA | Sylk communicating actuator | W7220A1000 Logic Module, C7400S1000 OAE Sensor, C7250A1001 MAT Sensor, MS3105J3030 DCA OA Sylk | Logic Module - W7220A1000, OAE Sensor - C7400S1000, MAT Sensor - C7250A1001, and DCA OA - MS3105J3030 | Sylk communicating actuator |

Economizer Logic Modules

PC Interface Module



Module used to connect a PC to the W7220A economizer controller. Used for test or setup of multiple systems.

Application: Economizer Module

Voltage: 12-30 Vac

Frequency: 50 Hz; 60 Hz

Approximate, Dimensions: 4.98 inches high x 6.3 inches wide x 1.34 inches deep (126.4 mm high x 160 mm wide x 34 mm deep)

Operating Temperature Range: -40°F to +150°F (-40°C to +65°C)

Used With: JADE (W7220A1000)

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing
Approvals, Underwriters Laboratories Inc.: Flammability Rating UL94V-5V

Approvals, Others: Complies with California Title 24

Approvals, CE: Compliant

Approvals, C-Tick: Approved

Approvals, FCC: Compliant

| Material Number | Input | Output | Color | Description |
|-----------------|---|---------------------------------------|-------|--|
| W7220-PCMOD/U | Sylk bus communication to JADE (W7220A1000) | USB connection to a personal computer | Gray | W7220-PCMOD interface module used with JADE (W7220A1000) and Personal Computer |

W7215B Enhanced Economizer Logic Modules



Use with C7400A, or C7660 and C7150B or C7046 Sensors; Demand Control Ventilation (DCV) C7232 CO2 sensor (2-10 Vdc); and Honeywell Series 72 actuators to proportion air dampers for economizer and ventilation control.

- Input from DCV CO2 sensor provides optimum ventilation based on occupancy.
- Includes air change and shutdown.
- Combines enthalpy or dry bulb changeover control, minimum and maximum damper position potentiometer and DCV setpoint functions.
- Optional differential enthalpy control (enthalpy setpoint D with two C7400A sensors) provides greater economizer savings and maximum comfort over single enthalpy control.
- Enthalpy setpoint (A-D) on economizer module controls the combination of air temperature and humidity that is suitable for free cooling.
- LEDs indicates when economizer is in free cooling and DCV modes.
- Provides for input from an outdoor air quality sensor.

Approvals, C-Tick: Approved

Voltage: 24 Vac

Frequency: 50 Hz; 60 Hz

Contact Ratings: 30 Vac – 1.5 A Run, 3.5 A Inrush

Approximate, Dimensions: 8 11/16 in. high x 5 13/16 in. wide x 1 11/16 in. deep (221 mm high x 147 mm wide x 43 mm deep)

Operating Temperature Range: -25°F to +125°F (-32°C to +52°C)

Used With: Honeywell Series 72 actuators

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Approvals, Underwriters Laboratories Inc.: UL Listed File: E4436,

Guide: XAPX, Meets UL873 plenum requirements

Accessories:

4074EJM/U – Checkout kit for W72xx Economizer Logic Modules.

Contains: 1.2K Ohm Checkout Resistor, 620 Ohm resistor, jumper, 5.6K Ohm resistor, 536 Ohm resistor, 665 Ohm resistor, and 3480 Ohm resistor

S963B1128/U – Manual Potentiometer (135 ohm)

| Material Number | Input | Output | Use with Sensor | Comments |
|-----------------|--|----------------------|------------------------------------|---|
| W7215B1004/U | Discharge Air Temperature sensor: C7150 or C7046; Air Quality Sensor | 2-10 Vdc to actuator | C7150; C7046; C7232; C7400A; C7660 | Can accept remote minimum position damper position potentiometer and/or analog input from two carbon dioxide sensors for indoor and outdoor air.; Economizer Logic Module operates Series 72 actuators. |

Economizer Parts and Accessories

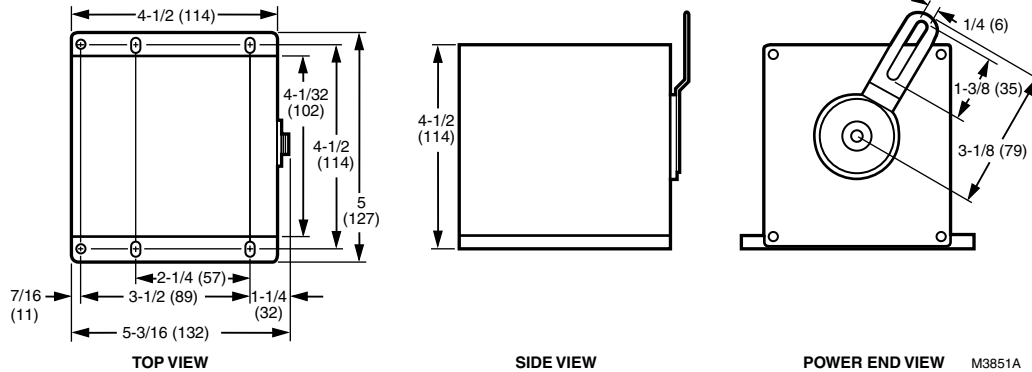
| Material Number | Description | Used With |
|-----------------|--|---|
| 138823/U | Replacement Knob for H205 | H205 |
| 198992A/U | 620 ohm Resistor Assembly | |
| 4074EJM/U | Checkout kit for W62xx, W72xx Economizer Logic Modules. Contains: 1.2K Ohm Checkout Resistor, 620 Ohm resistor, jumper, 5.6K Ohm resistor, 536 Ohm resistor, 665 Ohm resistor, and 3480 Ohm resistor | W7459; W7210; W7212; W7215 |
| 50048926-001/U | W7220 Economizer Edge Connector Bag Assembly - 2 Position - 20 Piece Pack | W7220A1000, C7400S1000, C7250A1001, C7400A2001, |
| 50048926-002/U | W7220 Economizer Edge Connectors - 6 Position - 20 Pieces per pack | W7220A1000 |
| 50053060-001/U | Duct mounting kit for 2000 series and Sylk bus enthalpy and humidity sensors | C7400A200X, C7600A200X, C7400S and C7600S sensors |

M6415; M7215; M7415; M8405; M8415 Economizer Damper Actuators



Frequency: 50 Hz; 60 Hz
Fail Safe Mode: Spring Return
Torque Rating (lb-in.): 25 lb-in.
Torque Rating (Nm): 2.8 Nm
Additional Torque Ratings (lb-in.): Breakaway – 40 lb-in.
Additional Torque Ratings (Nm): Breakaway – 4.5 Nm
External Auxiliary Switches Available: Yes
Stroke: Fixed Stroke; Angle of Rotation – 90 degrees maximum
Electrical Connections: Quick-connect terminals
Mounting: Foot-mounted
Timing, Nominal: Opening – 90 sec
Timing: Minimum – 90 sec, Run Time Maximum – 90 sec
Spring Return Timing: Nominal – 18 sec
Feedback: No

Dimensions in inches (millimeters)



Spring return, 25 lb-in. damper actuators provide SPDT floating, two or three position or modulating control of economizer systems, ventilation dampers and combustion air dampers. M6415 suitable for use with direct digital control (DDC) systems.

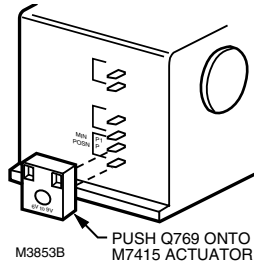
- Synchronous Motor.
- Spring returns motor shaft to normal position in the event of power failure.
- High impact, glass-fiber reinforced plastic case is rugged, lightweight and corrosion resistant.
- Uses Q298B Linkage.

Materials: UL94-5V plastic housing
Motor shafts: 1
Deadweight Load on Shaft: Power End – 15 lbs max
Weight (lb): 3 lb
Approximate, Dimensions: 4 1/2 in. high x 5 in. wide x 5 3/16 in. deep (114 mm high x 127 mm wide x 132 mm deep)
Operating Temperature Range: -25°F to +125°F (-32°C to +52°C)
Shipping and Storage Temperature Range: -30°F to +150°F (-34°C to +66°C)
Approvals, Underwriters Laboratories Inc.: Listed File: E4436, Guide: XAPX
Operating Humidity Range (% RH): 5 to 95% RH, non-condensing
Comments: Vibration – V2 level

| Material Number | Control Signal | Power Consumption | Rotation to Open | Description | Used With |
|-----------------|------------------------|--------------------------------|------------------|---|--|
| M6415A1016/U | Floating; SPDT | Driving – 8 VA, Holding – 3 VA | CCW | Spring return-foot mounted, SPDT floating, 24 Vac | Floating Controllers |
| M7215A1008/U | 2 to 10 Vdc | Driving – 8 VA, Holding – 3 VA | CCW | Spring return-foot mounted, Modulating, 24 Vac | W7212/13/14 Economizers; W7215 Economizers |
| M7415A1006/U | Thermistor, Modulating | Driving – 8 VA, Holding – 5 VA | CCW | Spring return-foot mounted, Modulating, 24 Vac | W7459 Economizers; W7460 Economizers |
| M7415B1004/U | Thermistor, Modulating | Driving – 8 VA, Holding – 5 VA | CW | Spring return-foot mounted, Modulating, 24 Vac | W7459 Economizers; W7460 Economizers |
| M8405A1006/U | Three position | Driving – 8 VA, Holding – 3 VA | CCW | Spring return-foot mounted, 3 position w/field adj. min pos., 24 Vac | W7459C |
| M8415A1004/U | Two position, SPST | Driving – 8 VA, Holding – 3 VA | CCW | 24 Vac Spring return-foot mounted, 2 position, 2 wire w/field adj. aux switch | |

Economizer Damper Actuators

Q769 Signal Adapters



Q769 Adapter is used to provide a modulating signal to the M7415 Economizer Damper Motor when used with a controller.

NOTE: Do not use with a Jade (W7220) economizer.




Electrical Connections: Quick-connect terminals

Approximate, Dimensions: 1 3/8 in. high x 1 3/8 in. wide x 11/16 in. deep (35 mm high x 35 mm wide x 17 mm deep)

Operating Temperature Range: -25°F to +125°F (-32°C to +52°C)

| Material Number | Control Signal | Description | Used With |
|-----------------|----------------|----------------------------------|-----------|
| Q769A1009/U | 6 to 9 Vdc | 6 to 9 volt Adapter | M7415 |
| Q769B1008/U | 4 to 20 mA | 4 to 20 mA Adapter | M7415 |
| Q769C1007/U | 0 to 10 Vdc | 0-2 to 10 Vdc Adjustable Adapter | M7415 |

Economizer Actuator Accessories

| Material Number | Description | Used With | |
|-----------------|---|--|---|
| 4074EGR/U | Crank arm assembly | M6415; M7215; M7415; M8405; M8415 |  |
| 4074EKV/U | 24 Vac Auxiliary switch which provides switching capability for controlling auxiliary equipment | M6415; M7215; M7415; M8405; M8415 |  |
| Q709A1005/U | A minimum pos. potentiometer designed for mounting directly on the M7405/M7415 actuators. Provides min pos. setting for dampers and has quick connects for series connection of remote min pos. potentiometer override. | M7405; M7415 Do not use with a Jade (W7220) economizer |  |

C7150 Mixed Air Sensor



Sensor: 3000 ohms @ 25C NTC

Color: Black

Mounting: Mount on a mounting bracket (not included) inside the mixed air or discharge air duct.

Operating Temperature Range: 40°F to 110°F (4°C to 43°C)

C7150 Solid State mixed air sensor is used with Honeywell economizer logic modules to proportion outdoor and return air dampers in economizer systems.

- Uses thermistor sensing element in ventilation duct systems.
- Negative temperature coefficient (NTC) causes resistance to decrease as sampled air temperature increases.
- Requires no settings or calibration.
- Mounts on duct surface with four screws (not supplied).

Approximate, Dimensions: 2 in. high x 2 1/2 in. wide x 3/4 in. deep (51 mm high x 64 mm wide x 19 mm deep)

Electrical Connections: 1/4 in. (6 mm) quick-connect terminals.

Approvals, Underwriters Laboratories Inc.: Component Recognized

Approvals, CE: Report: GV97-011

| Material Number | Application | Ambient Temperature Range | Description | Used With |
|-----------------|--|-------------------------------|---|---|
| C7150B1004/U | Temperature Mixed Air Sensor for Duct mixed or discharge air | 121°C Maximum (250°F Maximum) | Mixed Air Sensor for duct or discharge dire with a 3000 ohms @ 25C NTC sensor | W973 and M7415; W7210, W7212, W7213, W7214, W7215, W7459, W7460 |

C7250 Temperature Sensor



Sensor: 20K NTC

Color: Gray

Mounting: Mounted in any position where it is exposed to freely circulating air

Operating Humidity Range (% RH): 11 to 89% RH

Operating Temperature Range: -40°F to 150°F (-40°C to 66°C)

The C7250 Mixed Air sensor is designed for use as a 20K input to a controller for mixed air temperature in rooftop packaged air conditioning equipment.

A separate controller such as the JADE™ Economizer System (Model W7220) provides power and communications for the C7250 Mixed Air sensor.

Approximate, Dimensions: 4.25 in. high x 2.17 in. wide x .81 in. deep (108 mm high x 55 mm wide x 20.5 mm deep)

Electrical Connections: 2-pin header-pin style or 2-pin card edge removable terminal blocks

Approvals, Underwriters Laboratories Inc.: Component Recognized

| Material Number | Application | Ambient Temperature Range | Description | Used With |
|-----------------|---|------------------------------|---|-----------|
| C7250A1001/U | Electronic 20K temperature sensor for a 20K temperature sensor intended for sensing mixed or discharge air in rooftop packaged air conditioning equipment. Used with a W7220 economizer controller. | 66°C Maximum (150°F Maximum) | A 20K temperature sensor intended for sensing mixed or discharge air in rooftop packaged air conditioning equipment. Used with a W7220 economizer controller. Sold in bulk packs. | W7220 |

Economizer Sensors

C7400A Enthalpy Sensor



Sensor: 4-20 mA output

Color: Gray

Mounting: Mounted in any position where it is exposed to freely circulating air

Operating Humidity Range (% RH): 11 to 89% RH

Operating Temperature Range: -40°F to 150°F (-40°C to 66°C)

Analog enthalpy sensor for use with W7212 and W7459 economizer controllers.

- C7400 solid state elements sense enthalpy (temperature and humidity); use two sensors for differential control, maximizing energy savings.
- Use one sensor in outdoor air for single sensor control; use two sensors, one in return air and one in outdoor air, for differential control.
- C7400 mount in any position up to 200 ft (61 m) away from Economizer Logic Module.
- UL94-5V enclosure.

Approximate, Dimensions: 4.25 in. high x 2.17 in. wide x .81 in. deep (108 mm high x 55 mm wide x 20.5 mm deep)

Electrical Connections: Two 1/4 in. quick-connect terminals

Approvals, Underwriters Laboratories Inc.: Component Recognized

| Material Number | Application | Ambient Temperature Range | Description | Used With |
|-----------------|---|------------------------------|---|--|
| C7400A2001/U | Enthalpy economizing Sensor for a solid state enthalpy sensor designed to sense temperature and humidity with 5% accuracy | 66°C Maximum (150°F Maximum) | Enthalpy Sensor for supply duct or return air with a 4-20 mA output sensor. Sold in Bulk Packs. | W7210, W7212A, W7213, W7214, W7215, W7459, W7460 |

C7400S Enthalpy Sensor



Sensor: 7-21Vdc

Color: Gray

Mounting: Mounted in any position where it is exposed to freely circulating air

Operating Humidity Range (% RH): 10 to 90% RH

Operating Temperature Range: -40°F to 150°F (-40°C to 66°C)

Digital enthalpy (humidity/temperature) sensor for use with S-Bus devices and W7220 economizer controller.

- This unit mounted C7400S enthalpy sensor includes solid state temperature and humidity sensors.
- Outputs a digital communicating signal on a two-wire Sylkbus communications link, reporting the temperature and humidity separately to the controller.
- The controller determines the enthalpy (total heat), enabling economizer modes of operation when outside air enthalpy is suitable for free cooling.
- When used with an economizer, the enthalpy boundary curve is programmed via the controller. When the temperature and humidity are determined to be suitable based on the relationship to the boundary, the controller allows outside air for economizing.
- Ambient temperature operating range from -40°F to 150°F.
- Dual enthalpy sensors in outside air and return switches the controllers to economizer mode of operation anytime the outside enthalpy is less than the return air enthalpy.
- UL recognized component (Guide info XAPX).

Approximate, Dimensions: 4.25 in. high x 2.17 in. wide x .81 in. deep (108 mm high x 55 mm wide x 20.5 mm deep)

Electrical Connections: 2-pin header-pin style or 2-pin card edge removable terminal blocks

Approvals, Underwriters Laboratories Inc.: Component Recognized

| Material Number | Application | Ambient Temperature Range | Description | Used With |
|-----------------|--|------------------------------|--|-----------|
| C7400S1000/U | Provides Honeywell Sylkbus signal in relation to enthalpy - 5% accuracy sensor for a solid state enthalpy sensor designed to sense temperature and humidity with 5% accuracy. Use with W7220 economizer control, for use in outdoor air intakes of HVAC rooftop. | 66°C Maximum (150°F Maximum) | S-Bus Enthalpy Sensor for supply duct or return air with Sylkbus Communication Protocol. Sold in Bulk Packs. | W7220 |

C7600 Humidity Sensor for Economizers



Sensor: 4-20 mA output

Color: Gray

Mounting: Mounted in any position where it is exposed to freely circulating air

Operating Humidity Range (% RH): 10 to 90% RH

Operating Temperature Range: -40°F to 150°F (-40°C to 66°C)

The C7600A,C Solid State Humidity Sensors sense relative humidity in air and are used with controllers that can process a 4 to 20 mA signal.

- Sensor enclosed in rugged glass-fiber reinforced plastic case.
- Compact size and lightweight construction for easy mounting in duct or on wall.
- Cover vents allow airflow to humidity sensing element inside.
- 4 to 20 mA output to relative air humidity.
- Can be used indoors or outdoors.
- The C7600A provides 4-20 mA output inversely proportional to air relative humidity.
- The C7600C provides 4-20 mA output directly proportional to air relative humidity.

Approximate, Dimensions: 4.25 in. high x 2.17 in. wide x .81 in. deep (108 mm high x 55 mm wide x 20.5 mm deep)

Electrical Connections: Two 1/4 in. quick-connect terminals

Approvals, Underwriters Laboratories Inc.: Component Recognized

| Material Number | Application | Ambient Temperature Range | Description | Used With |
|-----------------|--|------------------------------|--|--|
| C7600A2008/U | Solid State Humidity Sensor for Solid state humidity sensor sense relative humidity in air | 66°C Maximum (150°F Maximum) | Humidity Sensor senses relative humidity in air. | W7600 or controller requiring 4-20 mA reverse acting input |
| C7600C2001/U | Solid State Humidity Sensor for Solid state humidity sensor sense relative humidity in air | 66°C Maximum (150°F Maximum) | Humidity Sensor senses relative humidity in air. Sold in Bulk Packs. | H775 or controller requiring 4-20 mA direct acting input |

C7660 Selectable Temperature Sensor



Sensor: 4 OR 20mA Output

Color: Black

Mounting: Mounted in any position where it is exposed to freely circulating air

Operating Temperature Range: -40°F to 150°F (-40°C to 66°C)

Selectable outdoor temperature sensor for use with W7212 and W7459 economizers for referential dry bulb changeover.

- Senses temperature of outdoor air and provides a signal to economizer control with OK or NOT OK to economize.
- Selectable dip switch provides 8 changeover temperature options.
- When temperature of outdoor air is below changeover temperature, the outdoor air damper is opened to reduce the cooling load in the building.
- Provides 4 OR 20 mA output signal to economizer control; At 4 mA NOT OK to economize, 20 mA OK to economize.
- Highly accurate microprocessor control.
- Sensor is enclosed in a rugged, corrosion-resistant plastic case.
- Replaces C7650 temperature sensors and the control function of temperature changeover in the economizer control.

Approximate, Dimensions: 4 5/32 in. high x 3 7/8 in. wide x 1 in. deep (81 mm high x 96 mm wide x 25 mm deep)

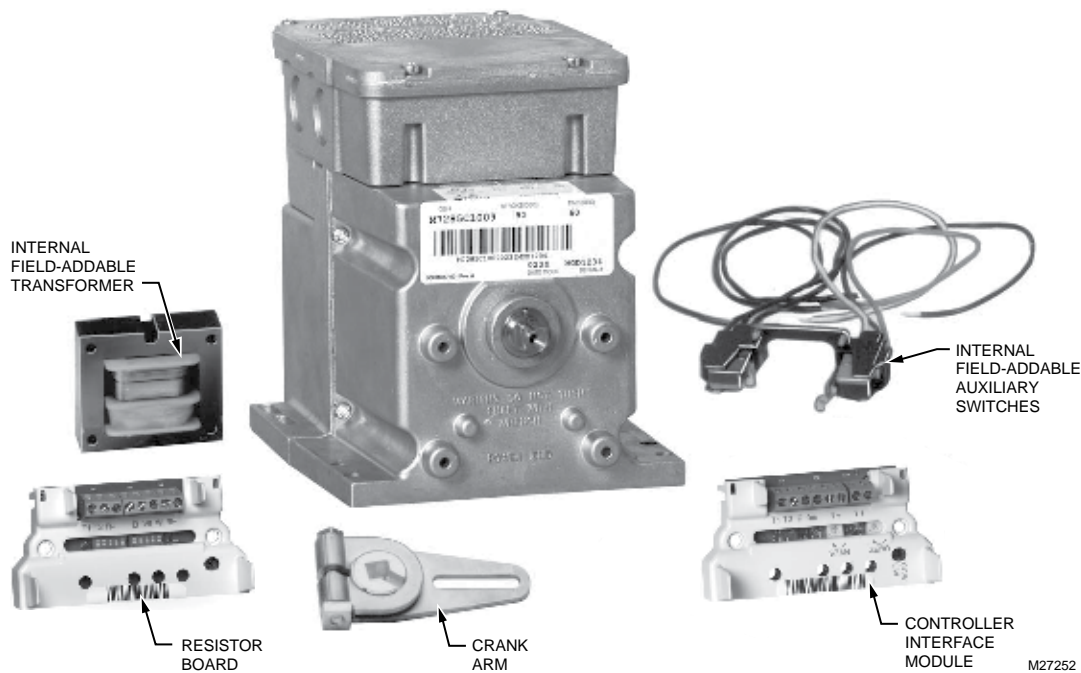
Electrical Connections: Two 1/4 in. quick-connect terminals

Approvals, Underwriters Laboratories Inc.: Flammability Rating 94-5V (cUL)

| Material Number | Application | Description | Used With |
|-----------------|---|--|---|
| C7660A1000/U | Selectable Temperature Sensor for Duct outside (supply) or return | Dry Bulb Temperature Sensor for supply duct or return air with 4 or 20 mA output signal. Use for referential temperature change over control only - do not use for differential temperature control. | W7210, W7212, W7213, W7214, W7215, W7459, W7460 |

Modutrol IV Motors

Modutrol IV™ Family of Motors “Contractor-Friendly” design for service and retrofit



Honeywell Modutrol IV motors, your reliable replacement business solution. Built for decades, with proven durability bringing exceptional performance and technology to meet demanding applications everywhere.

Features and benefits:

- 1. Dual shafts.** Slotted and tapped at both ends. Both drive and auxiliary shafts have equal torque ratings, allowing auxiliary shaft to drive full torque loads. This provides a more flexible motor. For example, a spring-return, normally closed motor will provide normally open operation simply by using the auxiliary shaft.
- 2. NEMA 3 housing.** Modutrol IV™ motor housings protect the motor from driving rain if motor is mounted in the upright position (as shown in above photo). May be mounted outdoors without a weatherproofing kit.

- 3. Brushless DC sub motor** provides a fixed torque over the entire voltage range.

- 4. Reduced power consumption.** Motor power needs can always be satisfied with a 20 VA transformer.

- 5. Internal design.** Results in improved performance and longer life.

- Microprocessor based technology eliminates the need for mechanical end stops.
- Brushless DC sub motor eliminates the need for oil.







- 6. Auxiliary Switch cams.** All models have auxiliary switch cams that permit acceptance of 220736A, B Internal Auxiliary Switch Kits.

- 7. Field Adjustable stroke.** Most models are field adjustable (i.e. 90 to 160 degrees).

TRADELINE motors and appropriate accessories can be configured to replace all previous Honeywell Modutrol motors, as well as most OEM Modutrol motors. The appropriate accessories are listed with the different models and in tables near the end of this section.

Modutrol IV™ Family of Motors

The following Modutrol IV™ motors can replace the old style Modutrol motors as shown below.

| | Mod IV Replacement | | Old Motors Replaced | |
|------------------------------------|---|--|--|---|
| Non-Spring Return | M6184 M6194 M6284 M6294 M7164 M7284 M7294 | M9164 M9174 M9184 M9194 M9484 M9494 |  | M644 M744 M941 M944 M954 M734 M934  |
| Spring Return | M4185 M6285 M7285 M7286 | M7685 M8185 M9185 |  | M445 M745 M845 M945 M955  |
| Medium Torque Spring Return | M9175 | |  | M765 M865 M965 M975  |

Modutrol IV Motors

The Honeywell Family of Modutrol IV™ Motors

| Actuator | Voltage Vac | | | Stroke | Timing | Control Input | | | Torque (lb-in.) | | | | | Spring Return | Recommended Controller |
|-----------------------------|-----------------|-----|-----|--------|---------|---------------|---------------|---------------|-----------------|----|----|-----|-----|---------------|-------------------------|
| | 24 ^a | 120 | 230 | | | On/Off | SPDT Floating | Modulating | 35 | 60 | 75 | 150 | 300 | | |
| <i>*TRADELINE models.</i> | | | | | | | | | | | | | | | |
| M4185A1001/U | | ● | | 90-160 | 30-60 | ● | | | | ● | | | | ● | T775; T4031 |
| M4185B1009/U | | ● | | 90-160 | 30-60 | ● | | | | ● | | | | ● | T775; T4031 |
| M4185B1058/U | ● | ● | ● | 90-160 | 30-60 | ● | | | | ● | | | | ● | T775; T4031 |
| M4185C1007/U | ● | ● | | 90-160 | 30-60 | ● | | | | ● | | | | ● | T775; T4031 |
| M6184A1015/U | ● | | | 90-160 | 30-60 | | ● | | | | ● | | | | T775; T675; T678; T6031 |
| M6184A1023/U | | ● | | 90-160 | 15-30 | | ● | | | | ● | | | | T775; T675; T678; T6031 |
| M6184D1001/U | ● | | | 90-160 | 15-30 | | ● | | | | ● | | | | T775; T675; T678; T6031 |
| *M6184D1035/U | ● | | | 90-160 | 30-60 | | ● | | | | | ● | | | T775; T675; T678; T6031 |
| M6184D1068/U | ● | | | 90-160 | 120-240 | | ● | | | | | ● | | | T775; T675; T678; T6031 |
| M6184F1014/U | ● | | | 90-160 | 30-60 | | ● | | | | | ● | | | T775; T675; T678; T6031 |
| *M6194B1011/U | ● | | | 90-160 | 60-120 | | ● | | | | | | ● | | T775; T675; T678; T6031 |
| *M6194D1017/U | ● | | | 90-160 | 120-240 | | ● | | | | | | ● | | T775; T675; T678; T6031 |
| M6194E1006/U | ● | | | 90-160 | 120-240 | | ● | | | | | | ● | | T775; T675; T678; T6031 |
| M6284A1055 | | ● | | 90-160 | 30-60 | | ● | | | | | ● | | | T775; T675; T678; T6031 |
| M6284A1071 | | ● | | 90-160 | 30-60 | | ● | | | | | ● | | | T775; T675; T678; T6031 |
| *M6284D1000 | ● | | | 90-160 | 30-60 | | ● | | | | | ● | | | T775; T675; T678; T6031 |
| *M6284D1026 | ● | | | 90-160 | 30-60 | | ● | | | | | ● | | | T775; T675; T678; T6031 |
| M6284F1013 | ● | | | 90-160 | 30-60 | | ● | | | | | ● | | | T775; T675; T678; T6031 |
| *M6285A1005 | ● | | | 90-160 | 30-60 | | ● | | | ● | | | ● | | T775; T675; T678; T6031 |
| M6285C1001 | ● | | | 90-160 | 30-60 | | ● | | | ● | | | ● | | T775; T675; T678; T6031 |
| *M6294D1008 | ● | | | 90-160 | 120-240 | | ● | | | | | | ● | | T775; T675; T678; T6031 |
| M7164A1017/U ^b | ● | | | 90-160 | 30-60 | | | 10.5-13.5 Vdc | ● | | | | | | T775; W7080 |
| M7164G1030/U ^b | | ● | | 90-160 | 30-60 | | | 10.5-13.5 Vdc | ● | | | | | | T775; W7080 |
| M7284A1004/U ^b | | ● | | 90-160 | 30-60 | | | 4-20 mA | | | | ● | | | T775, EXCEL 5000 |
| M7284A1012/U ^b | | ● | | 90-160 | 30-60 | | | 4-20 mA | | | | ● | | | T775, EXCEL 5000 |
| M7284A1038/U ^b | | ● | | 90-160 | 15-30 | | | 4-20 mA | | | ● | | | | T775, EXCEL 5000 |
| M7284A1079/U ^b | ● | | | 90-160 | 30-60 | | | 2-10 Vdc | | | | ● | | | T775, EXCEL 5000 |
| M7284C1000/U ^b | | ● | | 90-160 | 30-60 | | | 4-20 mA | | | | ● | | | T775, EXCEL 5000 |
| M7284C1083/U | ● | | | 90 | 30 | | ● | 4-20 mA | | | | ● | | | DDC |
| M7284C1091/U | ● | | | 160 | 60 | | ● | 4-20 mA | | | | ● | | | DDC |
| M7284Q1009/U ^b | | ● | | 90-160 | 30-60 | | | 4-20 mA | | | | ● | | | T775, EXCEL 5000 |
| M7284Q1082/U | ● | | | 90 | 30 | | ● | 4-20 mA | | | | ● | | | DDC |
| M7284Q1090/U | ● | | | 160 | 60 | | ● | 4-20 mA | | | | ● | | | DDC |
| M7285A1003/U ^b | | ● | | 90-160 | 30-60 | | | 4-20 mA | | ● | | | ● | | T775, EXCEL 5000 |
| M7285A1045/U ^b | ● | | | 90-160 | 30-60 | | | 2-10 Vdc | | ● | | | ● | | T775, EXCEL 5000 |
| M7285C1009/U ^b | | ● | | 90-160 | 30-60 | | | 4-20 mA | | ● | | | ● | | T775, EXCEL 5000 |
| M7285Q1008/U ^b | | ● | | 90-160 | 30-60 | | | 4-20 mA | | ● | | | ● | | T775, EXCEL 5000 |
| M7286G1009/U ^b | ● | | | 90-160 | 30-60 | | | 2-10 Vdc | | ● | | | ● | | T775, EXCEL 5000 |
| M7294A1010/U ^b | ● | | | 90-160 | 60-120 | | | 2-10 Vdc | | | | | ● | | T775, EXCEL 5000 |
| M7294Q1007/U ^b | | ● | | 90-160 | 60-120 | | | 4-20 mA | | | | | ● | | T775, EXCEL 5000 |
| M7685A1025/U ^{b,c} | ● | | | 90-160 | 30-60 | | | 14-17 Vdc | | ● | | | ● | | T775; W7080 |
| *M8185D1006/U | ● | | | 90-160 | 30-60 | ● | | | | ● | | | ● | | T775 |
| M9164A1005/U | | ● | | 90-160 | 30-60 | | | 135 ohm | ● | | | | | | T775; T915; T991 |

^a All 24 Vac Modutrol motors have CE approval.

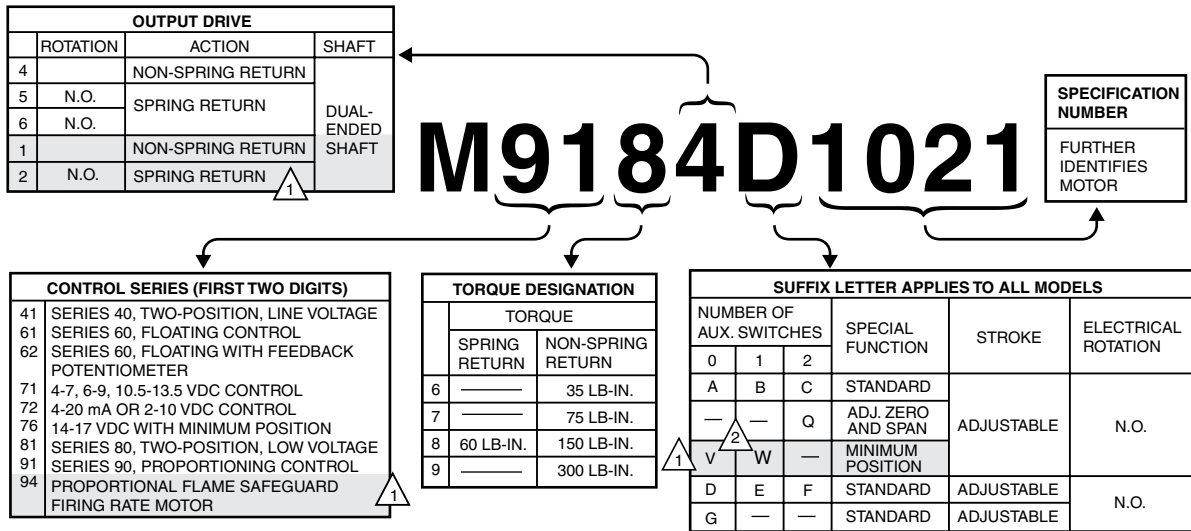
^b Available only through Honeywell Authorized Distributors.

^c Includes minimum position potentiometer.

| Actuator | Voltage Vac | | | Stroke | Timing | Control Input | | | Torque (lb-in.) | | | | | Spring Return | Recommended Controller |
|---------------------------|-----------------|-----|-----|--------|---------|---------------|---------------|------------|-----------------|----|----|-----|-----|---------------|------------------------|
| | 24 ^a | 120 | 230 | | | On/Off | SPDT Floating | Modulating | 35 | 60 | 75 | 150 | 300 | | |
| <i>*TRADELINE models.</i> | | | | | | | | | | | | | | | |
| M9164A1013/U | ● | ● | ● | 90-160 | 30-60 | | | 135 ohm | ● | | | | | | T775; T915; T991 |
| M9164A1070/U | ● | | | 90-160 | 30-60 | | | 135 ohm | ● | | | | | | T775; T915; T991 |
| M9164C1001/U | ● | | | 90-160 | 30-60 | | | 135 ohm | ● | | | | | | T775; T915; T991 |
| M9164C1068/U | | ● | | 90-160 | 30-60 | | | 135 ohm | ● | | | | | | T775; T915; T991 |
| *M9164D1009/U | ● | | | 90-160 | 30-60 | | | 135 ohm | ● | | | | | | T775; T915; T991 |
| M9174B1027/U | | ● | | 90-160 | 30-60 | | | 135 ohm | | | ● | | | | T775; T915; T991 |
| M9174C1025/U | | ● | | 90-160 | 30-60 | | | 135 ohm | | | ● | | | | T775; T915; T991 |
| M9174C1033/U | | ● | | 90-160 | 30-60 | | | 135 ohm | | | ● | | | | T775; T915; T991 |
| *M9174D1007/U | ● | | | 90-160 | 30-60 | | | 135 ohm | | | ● | | | | T775; T915; T991 |
| M9184A1019/U | ● | | | 90-160 | 30-60 | | | 135 ohm | | | | ● | | | T775; T915; T991 |
| M9184C1031/U | ● | | | 90-160 | 30-60 | | | 135 ohm | | | | ● | | | T775; T915; T991 |
| M9184D1005/U | ● | | | 90-160 | 15-30 | | | 135 ohm | | | ● | | | | T775; T915; T991 |
| *M9184D1021/U | ● | | | 90-160 | 30-60 | | | 135 ohm | | | | ● | | | T775; T915; T991 |
| M9184F1034/U | ● | | | 90-160 | 30-60 | | | 135 ohm | | | | ● | | | T775; T915; T991 |
| M9185A1018/U | ● | | | 90-160 | 30-60 | | | 135 ohm | | ● | | | ● | | T775; T915; T991 |
| M9185C1006/U | ● | | | 90-160 | 30-60 | | | 135 ohm | | ● | | | ● | | T775; T915; T991 |
| *M9185D1004/U | ● | | | 90-160 | 30-60 | | | 135 ohm | | ● | | | ● | | T775; T915; T991 |
| M9185E1019/U | ● | | | 90-160 | 30-60 | | | 135 ohm | | ● | | | ● | | T775; T915; T991 |
| *M9194D1003/U | ● | | | 90-160 | 120-240 | | | 135 ohm | | | | | ● | | T775; T915; T991 |
| M9194E1000/U | ● | | | 90-160 | 120-240 | | | 135 ohm | | | | | ● | | T775; T915; T991 |

^a All 24 Vac Modutrol motors have CE approval.
^b Available only through Honeywell Authorized Distributors.
^c Includes minimum position potentiometer.

Modutrol IV™ Motor Order Number Guide



¹ MODEL NUMBERS IN SHADED AREAS ARE AVAILABLE SPECIAL ORDER ONLY. CONTACT YOUR HONEYWELL SALES REPRESENTATIVE.

² SUFFIX LETTERS IN BOLD ARE OBSOLETE.

M13696A

Modutrol IV Motors

M4185 Line Volt; M8185 Low Volt Two-Position Modutrol IV™ Motors



Series 41 and Series 81 Modutrol IV motors are 2-position (line- and low-voltage per motor control) spring-return motors. They are used to operate dampers or valves in applications where it is necessary or desirable to have the controlled element return to the starting position in the event of power failure or interruption.

- Fixed torque throughout the entire voltage range
- Integral spring return returns motor to normal position in the event of power failure
- Integral junction box provides NEMA 3 weather protection if motor is mounted in the upright position
- Motor and circuitry operate from 24 Vac
- Quick-connect terminals are standard – screw terminal adapter is available
- Adapter bracket for matching shaft height of older motors is available
- Motors have field adjustable stroke (90 to 160 degrees)
- Motors are designed for either normally open or normally closed valves and damper
- Integral auxiliary switches are available factory mounted, or can be field added
- Motors can operate valve linkages from the power end or auxiliary end shafts for normally closed or normally open valve applications
- All models have dual shafts (slotted and tapped on both ends)

Application: Electric

Control Signal: Two position, SPST

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: Spring Return

Auxiliary Switch Ratings: AFL - 120 Vac – 7.2A; ALR - 120 Vac – 43.2A; AFL - 240 Vac – 3.6A; ALR - 240 Vac – 21.6A

External Auxiliary Switches Available: Yes

Shaft Rotation (upon control signal increase): Clockwise (as viewed from power end) (normally closed)

Electrical Connections: Quick-connect terminals

Mounting: Foot-mounted

Power Consumption: Driving – 20 VA

Timing, Nominal: 30 - 60 sec

Feedback: No

Shaft Dimensions: 0.375 in. Square (10 mm Square)

Motor shafts: 2; Dual-ended shaft

Deadweight Load on Shaft: Either End – 200 lbs.; Combined on both Shafts – 300 lbs.

Approximate, Dimensions: 6 7/16 in. high x 5 1/2 in. wide x 8 3/4 in. deep (164 mm high x 140 mm wide x 222 mm deep)

Ambient Temperature Range: -40°F to +150°F (-40°C to +60°C)

Approvals, Underwriters Laboratories Inc.: Listed: File No. E4436, Guide No. XAPX for USA and Canada

Approvals, CE: EN55011 (Emission) EN50082-2 (Immunity) 73/23/EEC (LVD)

Approvals, RoHS: 2011/65/ES

Accessories:

220736A/U – Internal Auxiliary Switch Assembly - 1 Switch

220736B/U – Internal Auxiliary Switch Assembly - 2 Switches

220738A/U – Adapter Bracket. Adjusts shaft height to match Modutrol III motors

220741A2-TP/U – Screw Terminal Adapter Kit for 2 position Modutrol IV Series 2 motors - Converts quick-connect terminals to screw terminals

221455A/U – Infinitely adjustable Motor Crank Arm

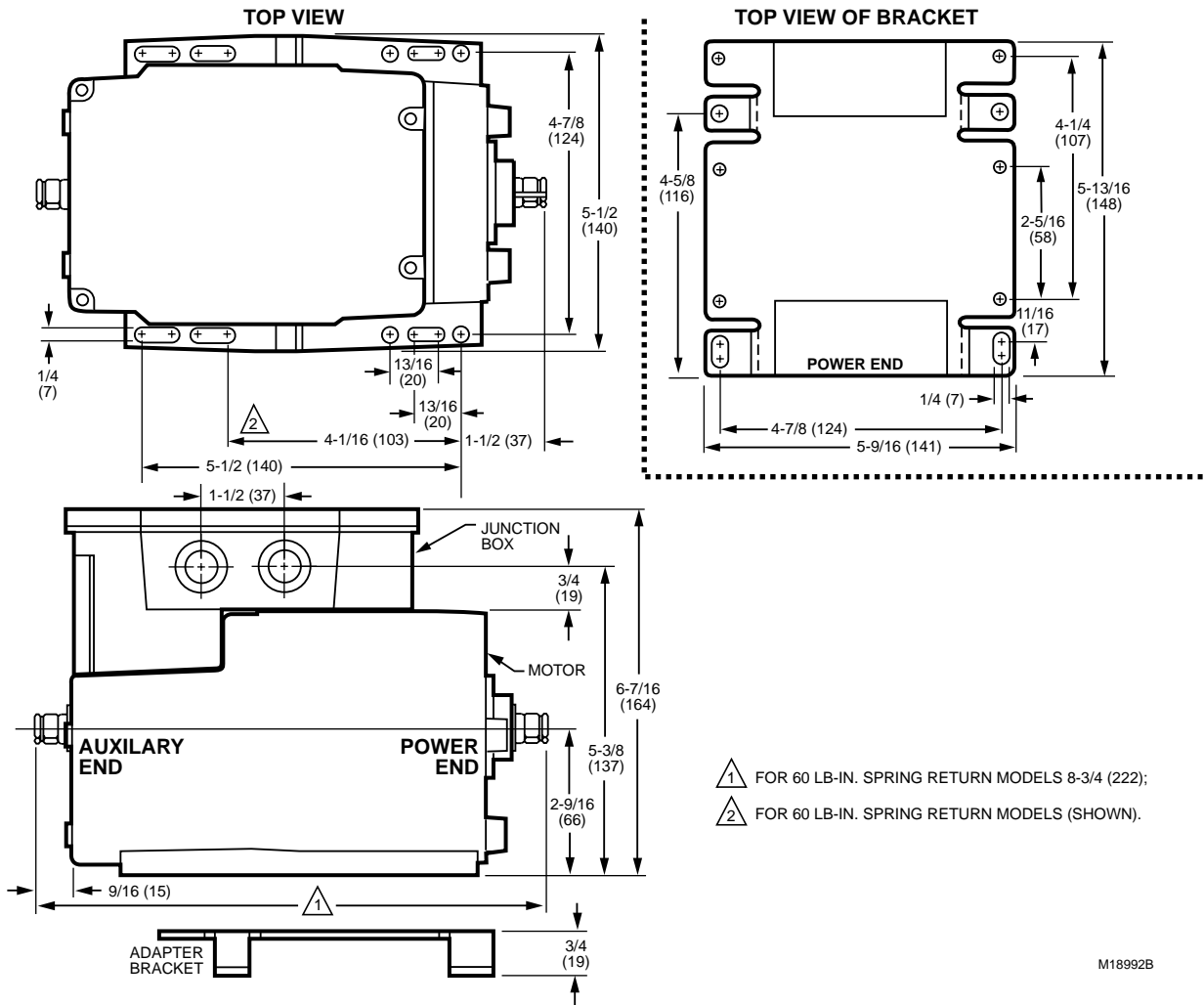
4074ERU/U – Weatherproofing kit. Protects motor from driving rain when mounted in any position. Not needed if motor is mounted upright.

50017460-001/U – 24/120/230 Vac Internal Transformers for Series 2 Motors

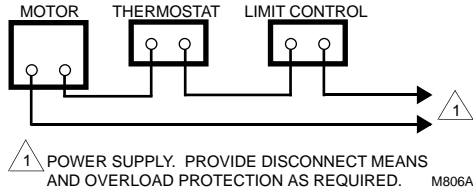
50017460-003/U – 120 Vac Internal Transformers for Series 2 Motors

| Material Number | Torque Rating (lb-in.) | Torque Rating (Nm) | Supply Voltage | Internal Auxiliary Switch | Factory Stroke Setting | Stroke | Internal Transformer | Weight | Includes | Tradeline Value |
|-----------------|------------------------|--------------------|-----------------|---------------------------|------------------------|---|----------------------|--------|-------------|-----------------|
| M4185A1001/U | 60 lb-in. | 6.8 Nm | 120V | 0 | 160 degrees | Adjustable; 90 to 160 degrees, Asymmetrical | 50004263-003 | 9.5 lb | Transformer | |
| M4185B1009/U | 60 lb-in. | 6.8 Nm | 120V | 1 | 160 degrees | Adjustable; 90 to 160 degrees, Asymmetrical | 50004263-003 | 9.5 lb | Transformer | |
| M4185B1058/U | 60 lb-in. | 6.8 Nm | 24V; 120V; 230V | 1 | 90 degrees | Adjustable; 90 to 160 degrees, Asymmetrical | 50004263-001 | 9.5 lb | Transformer | |
| M4185C1007/U | 60 lb-in. | 6.8 Nm | 120V | 2 | 90 degrees | Adjustable; 90 to 160 degrees, Asymmetrical | 50004263-003 | 9.5 lb | Transformer | |
| M4185E4006/U | 60 lb-in. | 6.8 Nm | 24V; 120V; 230V | 1 | 160 degrees | Adjustable; 90 to 160 degrees, Asymmetrical | 50004263-001 | 9.5 lb | Transformer | Tradeline |
| M4185E4014/U | 60 lb-in. | 6.8 Nm | 120V | 1 | 160 degrees | Adjustable; 90 to 160 degrees, Asymmetrical | 50004263-003 | 9.5 lb | Transformer | Tradeline |
| M8185D1006/U | 60 lb-in. | 6.8 Nm | 24V | 0 | 160 degrees | Adjustable; 90 to 160 degrees, Asymmetrical | None | 8.5 lb | | Tradeline |

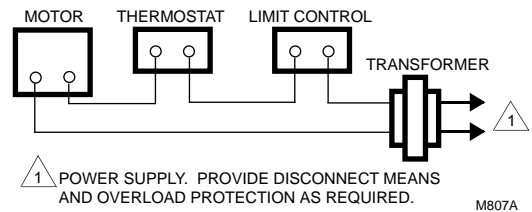
Dimensions in inches (millimeters)



Typical connections for Series 41 motors



Typical connections for Series 81 motors



Modutrol IV Motors

M6184; M6194 Floating Modutrol IV™ Motors



Series 61 Modutrol IV™ Motors non-spring return floating control motors are used with controllers that provide a switched SPDT or floating output to operate dampers or valves.

- Integral junction box provides NEMA 3 weather protection if motor is mounted in the upright position
- Motor and circuitry operate from 24 Vac
- Quick-connect terminals are standard – screw terminal adapter is available
- Adapter bracket for matching shaft height of older motors is available
- Motors have field adjustable stroke (90 to 160 degrees)
- Integral auxiliary switches are available factory mounted, or can be field added
- All models have dual shafts (slotted and tapped on both ends)
- All models have auxiliary switch cams
- Fixed torque throughout the entire voltage range
- Motors are designed for either normally open or normally closed valves and dampers

Approvals, Underwriters Laboratories Inc.: Listed: File No. E4436, Guide No. XAPX for USA and Canada

Approvals, CE: EN55011 (Emission) EN50082-2 (Immunity) 73/23/EEC (LVD)

Approvals, RoHS: 2011/65/ES

Application: Electric

Control Signal: Floating

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: Non-Spring Return

Auxiliary Switch Ratings: AFL - 120 Vac – 7.2A; ALR - 120 Vac – 43.2A; AFL - 240 Vac – 3.6A; ALR - 240 Vac – 21.6A

External Auxiliary Switches Available: Yes

Shaft Rotation (upon control signal increase): Dependent on wiring (normally closed)

Electrical Connections: Quick-connect terminals

Mounting: Foot-mounted

Power Consumption: Driving – 15 VA

Feedback: No

Shaft Dimensions: 0.375 in. Square (10 mm Square)

Motor shafts: 2; Dual-ended shaft

Deadweight Load on Shaft: Either End – 200 lbs.; Combined on both Shafts – 300 lbs.

Approximate, Dimensions: 6 7/16 in. high x 5 1/2 in. wide x 7 5/16 in. deep (164 mm high x 140 mm wide x 185 mm deep)

Ambient Temperature Range: -40°F to +150°F (-40°C to +60°C)

Accessories:

220736A/U – Internal Auxiliary Switch Assembly - 1 Switch

220736B/U – Internal Auxiliary Switch Assembly - 2 Switches

220738A/U – Adapter Bracket. Adjusts shaft height to match Modutrol III motors

220741A2-61/U – Screw Terminal Adapter Series 61 MOD IV Motor

221455A/U – Infinitely adjustable Motor Crank Arm

4074ERU/U – Weatherproofing kit. Protects motor from driving rain when mounted in any position. Not needed if motor is mounted upright.

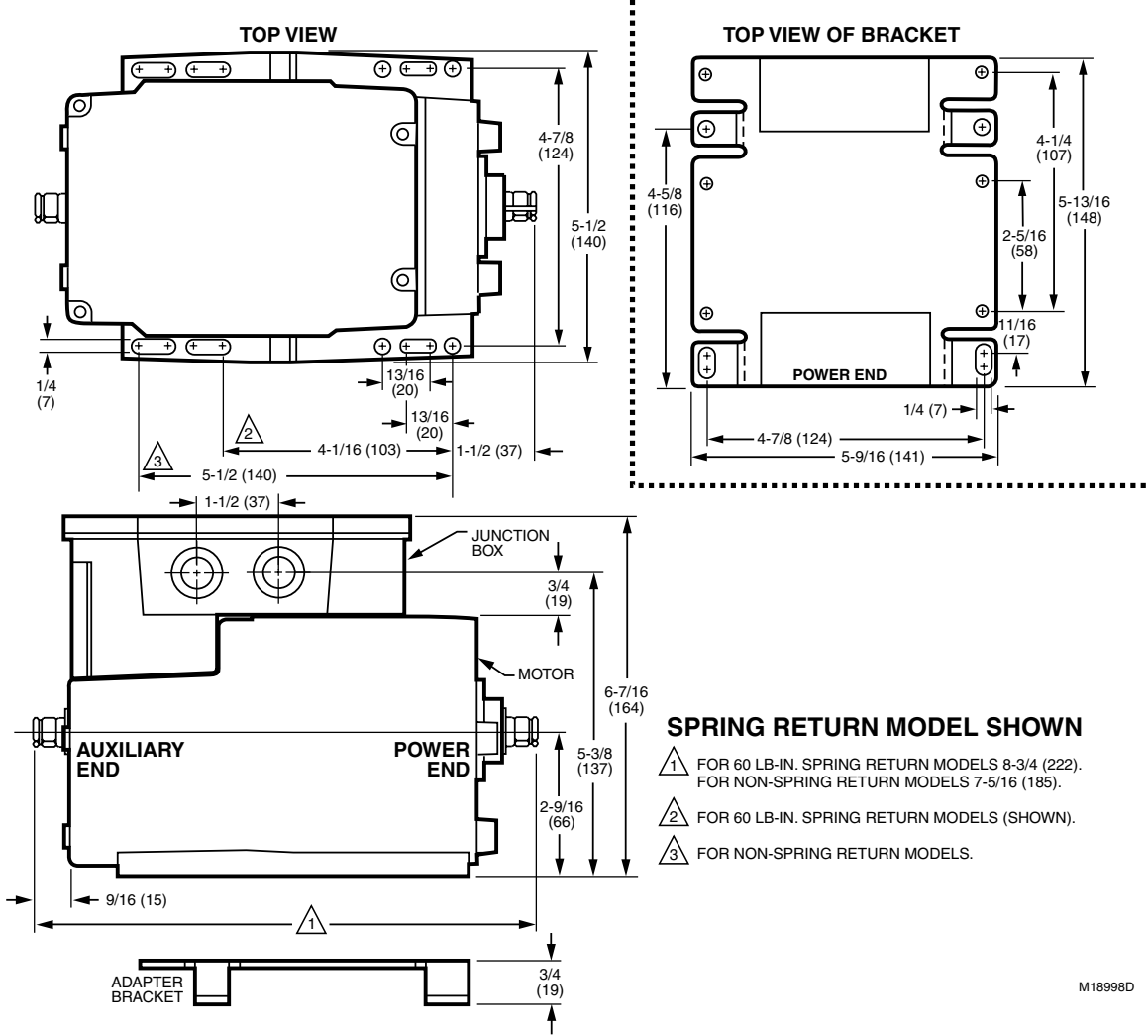
50017460-001/U – 24/120/230 Vac Internal Transformers for Series 2 Motors

50017460-003/U – 120 Vac Internal Transformers for Series 2 Motors

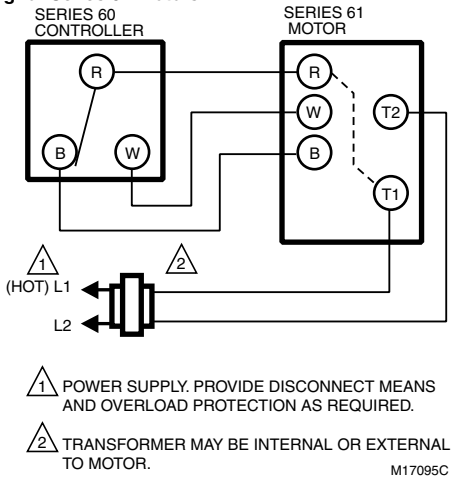
| Material Number | Torque Rating (lb-in.) | Torque Rating (Nm) | Supply Voltage | Timing, Nominal | Internal Auxiliary Switch | Factory Stroke Setting | Stroke | Internal Transformer | Weight | Includes | Comments | Tradeline Value |
|-----------------|------------------------|--------------------|----------------|-----------------|---------------------------|------------------------|---|----------------------|--------|-------------|--|-----------------|
| M6184A1015/U | 150 lb-in. | 17 Nm | 24V | 30 - 60 sec | 0 | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical | None | 6.5 lb | | | |
| M6184A1023/U | 75 lb-in. | 8.5 Nm | 120V | 15 - 30 sec | 0 | 160 degrees | Adjustable; 90 to 160 degrees, Asymmetrical | 50004263-003 | 7.5 lb | Transformer | | |
| M6184D1001/U | 75 lb-in. | 8.5 Nm | 24V | 15 - 30 sec | 0 | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical | None | 6.5 lb | | | |
| M6184D1035/U | 150 lb-in. | 17 Nm | 24V | 30 - 60 sec | 0 | 160 degrees | Adjustable; 90 to 160 degrees, Symmetrical | None | 6.5 lb | | | Tradeline |
| M6184D1068/U | 150 lb-in. | 17 Nm | 24V | 120 - 240 sec | 0 | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical | None | 6.5 lb | | Contains on-off pulsing circuitry to achieve timing. | |
| M6184F1014/U | 150 lb-in. | 17 Nm | 24V | 30 - 60 sec | 2 | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical | None | 6.5 lb | | | |
| M6194A1005/U | 300 lb-in. | 34 Nm | 120V | 120 - 240 sec | 0 | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical | 50004263-003 | 7.5 lb | Transformer | | |
| M6194B1011/U | 300 lb-in. | 34 Nm | 24V | 60 - 120 sec | 1 | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical | None | 6.5 lb | | | |
| M6194B1029/U | 300 lb-in. | 34 Nm | 120V | 120 - 240 sec | 1 | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical | 50004263-003 | 7.5 lb | Transformer | Minimum 10° fixed differential | |
| M6194D1017/U | 300 lb-in. | 34 Nm | 24V | 120 - 240 sec | 0 | 160 degrees | Adjustable; 90 to 160 degrees, Symmetrical | None | 6.5 lb | | | Tradeline |

| Material Number | Torque Rating (lb-in.) | Torque Rating (Nm) | Supply Voltage | Timing, Nominal | Internal Auxiliary Switch | Factory Stroke Setting | Stroke | Internal Transformer | Weight | Includes | Comments | Tradeline Value |
|-----------------|------------------------|--------------------|----------------|-----------------|---------------------------|------------------------|--|----------------------|--------|----------|----------|-----------------|
| M6194D4003/U | 300 lb-in. | 34 Nm | 24V | 120 - 240 sec | 0 | 160 degrees | Adjustable; 90 to 160 degrees, Symmetrical | None | 6.5 lb | | | Tradeline |
| M6194E1006/U | 300 lb-in. | 34 Nm | 24V | 120 - 240 sec | 1 | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical | None | 6.5 lb | | | |

Dimensions in inches (millimeters)



Typical wiring for Series 61 motors



Modutrol IV Motors

M6284; M6294 Floating Modutrol IV™ Motors, for Slaving Applications only



These Series 62 Modutrol IV™ Motors non-spring return floating control motors are used with controllers that provide a switched SPDT or floating output to operate dampers or valves. These motors also have an internal electrically isolated feedback potentiometer that provides indication of the motor shaft position. Some models can be used for slaving Series 90 Motors.

Application: Electric

Control Signal: Floating

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: Non-Spring Return

Auxiliary Switch Ratings: AFL - 120 Vac – 7.2A; ALR - 120 Vac – 43.2A; AFL - 240 Vac – 3.6A; ALR - 240 Vac – 21.6A

Shaft Rotation (upon control signal increase): Dependent on wiring (normally closed)

External Auxiliary Switches Available: Yes

Mounting: Foot-mounted

Power Consumption: Driving – 15 VA

Feedback: Yes

Shaft Dimensions: 0.375 in. Square (10 mm Square)

Motor Shafts: 2; Dual-ended shaft

Deadweight Load on Shaft: Either End – 200 lbs.; Combined on both Shafts – 300 lbs.

Approximate, Dimensions: 6 7/16 in. high x 5 1/2 in. wide x 7 5/16 in. deep (164 mm high x 140 mm wide x 185 mm deep)

Ambient Temperature Range: -40°F to +150°F (-40°C to +60°C)

Approvals, Underwriters Laboratories Inc.: Listed: File No. E4436, Guide No. XAPX for USA and Canada

- Integral junction box provides NEMA 3 weather protection if motor is mounted in the upright position
- Motor and circuitry operate from 24 Vac
- Quick-connect terminals are standard – screw terminal adapter is available
- Adapter bracket for matching shaft height of older motors is available
- Motors have field adjustable stroke (90 to 160 degrees)
- Integral auxiliary switches are available factory mounted, or can be field added
- All models have dual shafts (slotted and tapped on both ends)
- All models have auxiliary switch cams
- Fixed torque throughout the entire voltage range
- Motors are designed for either normally open or normally closed valves and dampers
- Include electrically isolated feedback potentiometer that provides shaft position indication
- -S models with non-linear feedback are for slaving applications only

Approvals, CE: EN55011 (Emission) EN50082-2 (Immunity) 73/23/EEC (LVD)

Approvals, RoHS: 2011/65/ES

Comments: non-linear feedback, for slaving applications only

Accessories:

220736A/U – Internal Auxiliary Switch Assembly - 1 Switch

220736B/U – Internal Auxiliary Switch Assembly - 2 Switches

220738A/U – Adapter Bracket. Adjusts shaft height to match Modutrol III motors

220741A2-62/U – Screw Terminal Adapter Kit for Series 62 Modutrol IV Series 2 motors - Converts quick-connect terminals to screw terminals

221455A/U – Infinitely adjustable Motor Crank Arm

4074ERU/U – Weatherproofing kit. Protects motor from driving rain when mounted in any position. Not needed if motor is mounted upright.

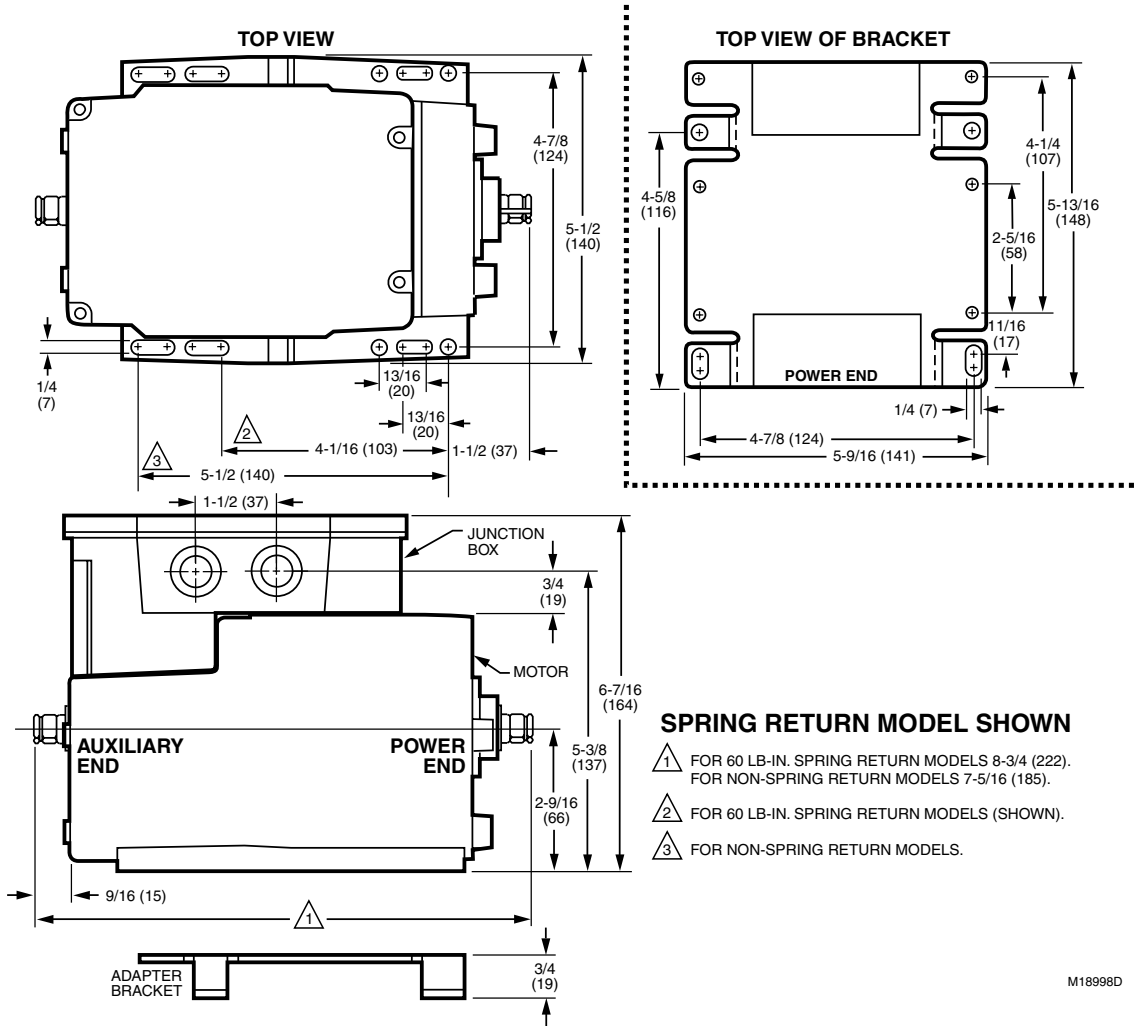
50017460-001/U – 24/120/230 Vac Internal Transformers for Series 2 Motors

50017460-003/U – 120 Vac Internal Transformers for Series 2 Motors

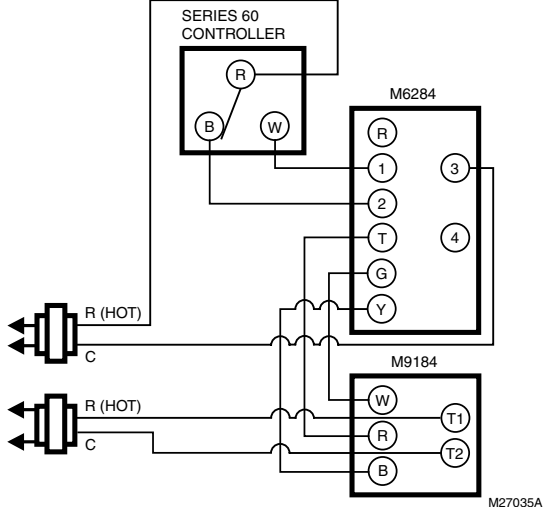
| Material Number | Torque Rating (lb-in.) | Torque Rating (Nm) | Supply Voltage | Timing, Nominal | Internal Auxiliary Switch | Electrical Connections | Internal Transformer | Weight | Includes | Tradeline Value | Factory Stroke Setting | Stroke |
|-----------------|------------------------|--------------------|-----------------|-----------------|---------------------------|-------------------------|----------------------|--------|--|-----------------|------------------------|---|
| M6284A1055-S/U | 150 lb-in. | 17 Nm | 120V | 30 - 60 sec | 0 | Quick-connect terminals | 50004263-003 | 7.5 lb | Transformer | | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical |
| M6284A1071-S/U | 150 lb-in. | 17 Nm | 120V | 30 - 60 sec | 0 | Screw terminals | 50004263-002 | 7.5 lb | Transformer | | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical |
| M6284A1089-S/U | 75 lb-in. | 8.5 Nm | 120V | 15 - 30 sec | 0 | Screw terminals | 50004263-002 | 7.5 lb | Transformer | | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical |
| M6284A1097-S/U | 150 lb-in. | 17 Nm | 24V | 30 - 60 sec | 0 | Quick-connect terminals | None | 6.5 lb | | | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical |
| M6284C1010-S/U | 150 lb-in. | 17 Nm | 24V | 30 - 60 sec | 2 | Screw terminals | None | 6.5 lb | Bag Assembly | | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical |
| M6284D1000-S/U | 150 lb-in. | 17 Nm | 24V | 30 - 60 sec | 0 | Quick-connect terminals | None | 6.5 lb | | Tradeline | 160 degrees | Adjustable; 90 to 160 degrees, Symmetrical |
| M6284D1026-S/U | 150 lb-in. | 17 Nm | 24V | 30 - 60 sec | 0 | Quick-connect terminals | None | 6.5 lb | 220741A2-62 Screw Terminal Adapter Kit | Tradeline | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical |
| M6284D4004-S/U | 150 lb-in. | 17 Nm | 24V | 30 - 60 sec | 0 | Quick-connect terminals | None | 6.5 lb | | Tradeline | 160 degrees | Adjustable; 90 to 160 degrees, Symmetrical |
| M6284F1013-S/U | 150 lb-in. | 17 Nm | 24V | 30 - 60 sec | 2 | Quick-connect terminals | None | 6.5 lb | | | 160 degrees | Adjustable; 90 to 160 degrees, Symmetrical |
| M6284F1062-S/U | 150 lb-in. | 17 Nm | 24V; 120V; 230V | 30 - 60 sec | 2 | Quick-connect terminals | 50004263-001 | 7.5 lb | Transformer | | 90 degrees | Adjustable; 90 to 160 degrees, Asymmetrical |

| Material Number | Torque Rating (lb-in.) | Torque Rating (Nm) | Supply Voltage | Timing, Nominal | Internal Auxiliary Switch | Electrical Connections | Internal Transformer | Weight | Includes | Tradeline Value | Factory Stroke Setting | Stroke |
|-----------------|------------------------|--------------------|----------------|-----------------|---------------------------|-------------------------|----------------------|--------|----------|-----------------|------------------------|--|
| M6294D1008-S/U | 300 lb-in. | 34 Nm | 24V | 120 - 240 sec | 0 | Quick-connect terminals | None | 6.5 lb | | Tradeline | 160 degrees | Adjustable; 90 to 160 degrees, Symmetrical |

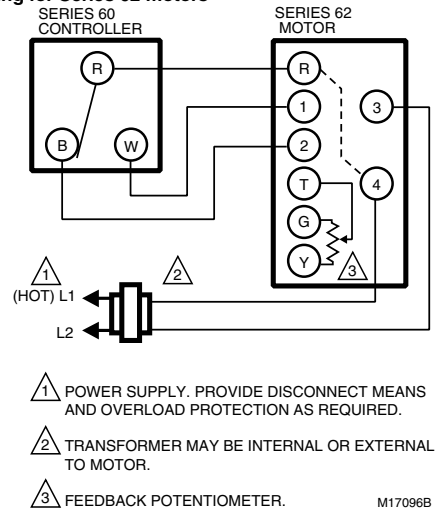
Dimensions in inches (millimeters)



Series 60 and Series 90 motors in slaving application



Typical wiring for Series 62 motors



Modutrol IV Motors

M6285 Floating Modutrol IV™ Motors, for Slaving Applications only



Series 62 Modutrol IV™ Motors are spring return floating control motors used with controllers that provide a switched SPDT or floating output to operate dampers or valves. These motors also have an internal electrically isolated feedback potentiometer that provides indication of the motor shaft position and can be used for slaving Series 90 motors or rebalancing an external control circuit.

- Integral junction box provides NEMA 3 weather protection if motor is mounted in the upright position

Application: Electric

Control Signal: Floating

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: Spring Return

Auxiliary Switch Ratings: AFL - 120 Vac – 7.2A; ALR - 120 Vac – 43.2A; AFL - 240 Vac – 3.6A; ALR - 240 Vac – 21.6A

External Auxiliary Switches Available: Yes

Shaft Rotation (upon control signal increase): Dependent on wiring (normally closed)

Electrical Connections: Quick-connect terminals

Mounting: Foot-mounted

Power Consumption: Driving – 20 VA

Timing, Nominal: 30 - 60 sec

Feedback: Yes

Shaft Dimensions: 0.375 in. Square (10 mm Square)

Stroke: Adjustable; 90 to 160 degrees, Asymmetrical

Motor shafts: 2; Dual-ended shaft

Deadweight Load on Shaft: Either End – 200 lbs.; Combined on both Shafts – 300 lbs.

Weight: 8.5 lb

Approximate, Dimensions: 6 7/16 in. high x 5 1/2 in. wide x 8 3/4 in. deep (164 mm high x 140 mm wide x 222 mm deep)

Ambient Temperature Range: -40°F to +150°F (-40°C to +60°C)

- Integral spring return returns motor to normal position in the event of power failure
- Motor and circuitry operate from 24 Vac
- Quick-connect terminals are standard – screw terminal adapter is available
- Adapter bracket for matching shaft height of older motors is available
- Motors have field adjustable stroke (90 to 160 degrees)
- Integral auxiliary switches are available factory mounted, or can be field added
- Spring return motors can operate valve linkages from power end or auxiliary end shafts for normally closed or normally open valve applications
- All models have dual shafts (slotted and tapped on both ends)
- All models have auxiliary switch cams
- Fixed torque throughout the entire voltage range
- Motors are designed for either normally open or normally closed valves and dampers
- Include electrically isolated feedback potentiometer that provides shaft position indication

Approvals, Underwriters Laboratories Inc.: Listed: File No. E4436, Guide No. XAPX for USA and Canada

Approvals, CE: EN55011 (Emission) EN50082-2 (Immunity) 73/23/EEC (LVD)

Approvals, RoHS: 2011/65/ES

Accessories:

220736A/U – Internal Auxiliary Switch Assembly - 1 Switch

220736B/U – Internal Auxiliary Switch Assembly - 2 Switches

220738A/U – Adapter Bracket. Adjusts shaft height to match Modutrol III motors

220741A2-62/U – Screw Terminal Adapter Kit for Series 62 Modutrol IV Series 2 motors - Converts quick-connect terminals to screw terminals

221455A/U – Infinitely adjustable Motor Crank Arm

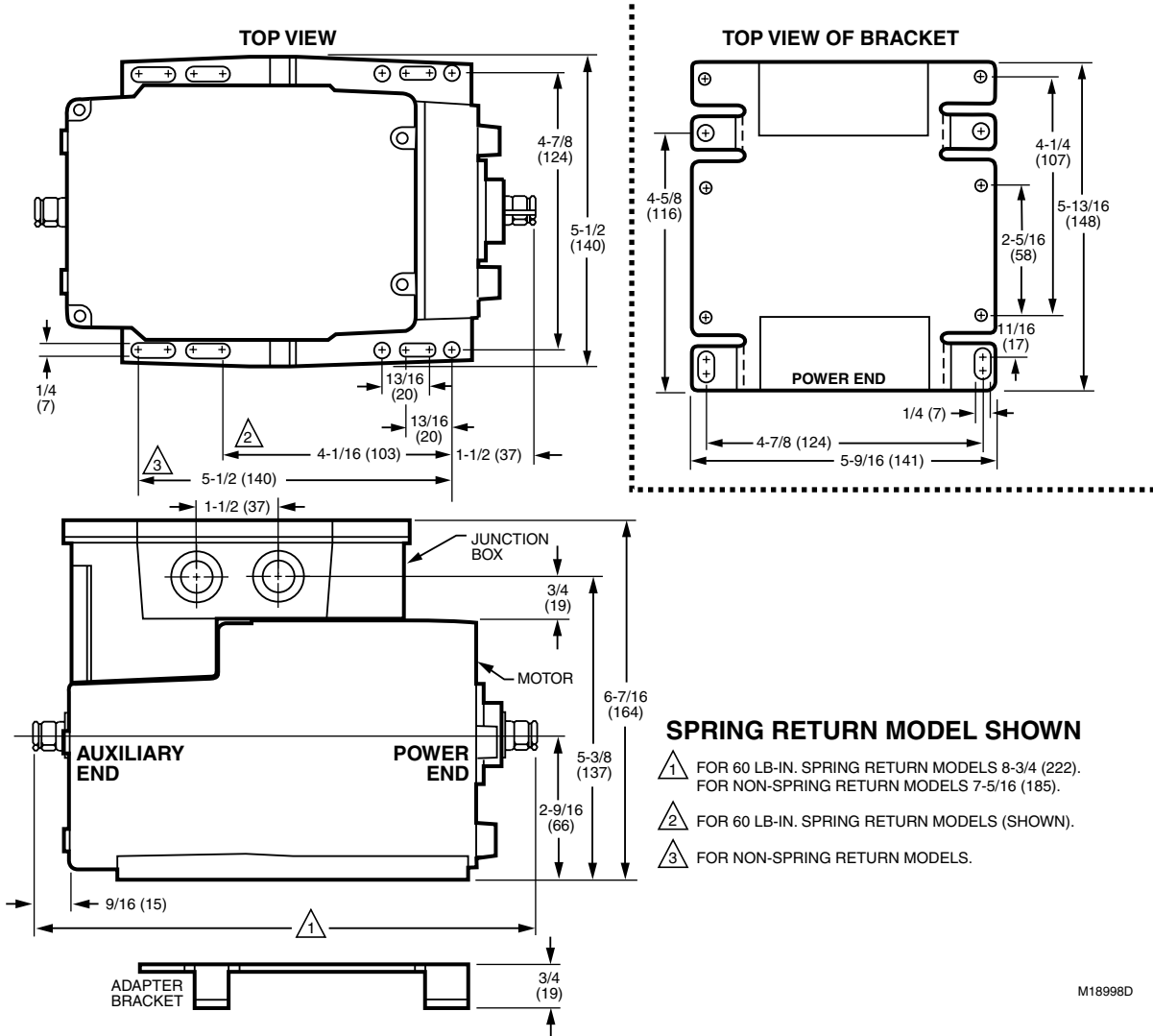
4074ERU/U – Weatherproofing kit. Protects motor from driving rain when mounted in any position. Not needed if motor is mounted upright.

50017460-001/U – 24/120/230 Vac Internal Transformers for Series 2 Motors

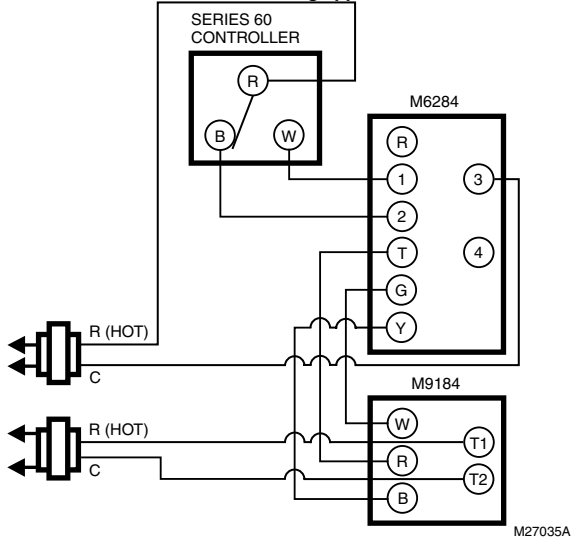
50017460-003/U – 120 Vac Internal Transformers for Series 2 Motors

| Material Number | Torque Rating (lb-in.) | Torque Rating (Nm) | Supply Voltage | Internal Auxiliary Switch | Factory Stroke Setting | Internal Transformer | Comments | Tradeline Value |
|-----------------|------------------------|--------------------|----------------|---------------------------|------------------------|----------------------|--|-----------------|
| M6285A1005-S/U | 60 lb-in. | 6.8 Nm | 24V | 0 | 160 degrees | None | non-linear feedback, for slaving applications only | Tradeline |
| M6285A4009-S/U | 60 lb-in. | 6.8 Nm | 24V | 0 | 160 degrees | None | non-linear feedback, for slaving applications only | Tradeline |
| M6285C1001-S/U | 60 lb-in. | 6.8 Nm | 24V | 2 | 160 degrees | None | non-linear feedback, for slaving applications only | |

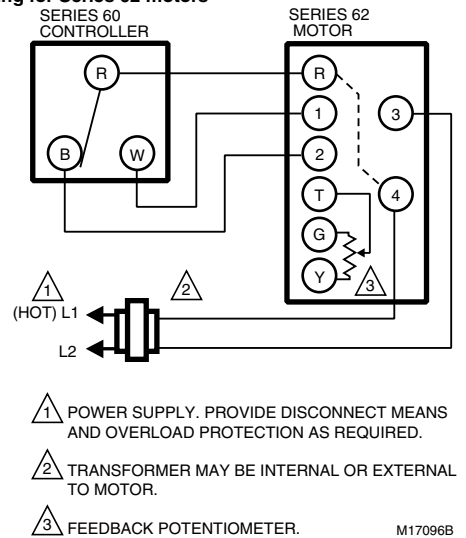
Dimensions in inches (millimeters)



Series 60 and Series 90 motors in slaving application

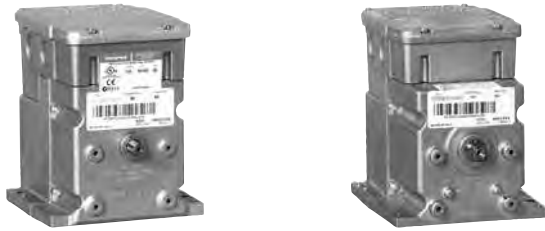


Typical wiring for Series 62 motors



Modutrol IV Motors

M6274; M6284; M6285; M6294 Modutrol IV™ Motor with Linear 10K feedback



Series 62 Modutrol IV™ Motors Spring Return and Non-Spring Return floating control motors are used with controllers that provide a switched SPDT or floating output to operate dampers or valves. These motors also have an internal electrically isolated feedback potentiometer that provides indication of the motor shaft position.

- Integral junction box provides NEMA 3 weather protection if motor is mounted in the upright position
- Motor and circuitry operate from 24 Vac
- Quick-connect terminals are standard – screw terminal adapter is available
- Adapter bracket for matching shaft height of older motors is available
- Motors have field adjustable stroke (90 to 160 degrees)
- Integral auxiliary switches are available factory mounted, or can be field added
- All models have dual shafts (slotted and tapped on both ends)
- All models have auxiliary switch cams
- Fixed torque throughout the entire voltage range
- Motors are designed for either normally open or normally closed valves and dampers
- -F models have an internal electrically isolated feedback potentiometer that provides indication of the motor shaft position

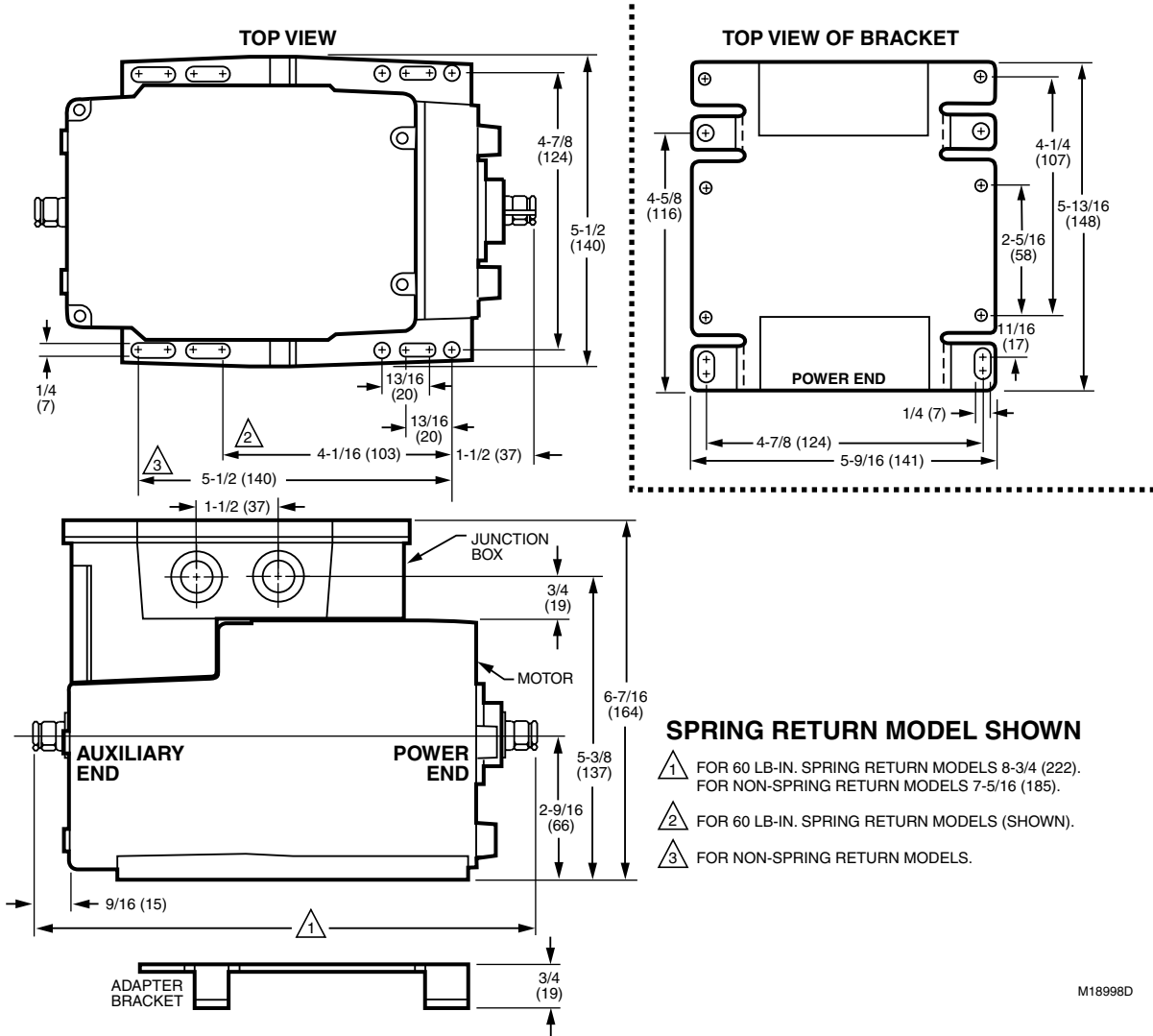
Application: Electric
Control Signal: Floating
Frequency: 50 Hz; 60 Hz
Auxiliary Switch Ratings: AFL - 120 Vac – 7.2A; ALR - 120 Vac – 43.2A; AFL - 240 Vac – 3.6A; ALR - 240 Vac – 21.6A
External Auxiliary Switches Available: Yes
Shaft Rotation (upon control signal increase): Dependent on wiring (normally closed)
Mounting: Foot-mounted
Feedback: Yes
Shaft Dimensions: 0.375 in. Square (10 mm Square)
Motor Shafts: 2; Dual-ended shaft
Deadweight Load on Shaft: Either End – 200 lbs.; Combined on both Shafts – 300 lbs.
Approximate, Dimensions: 6 7/16 in. high x 5 1/2 in. wide x 7 5/16 in. deep (164 mm high x 140 mm wide x 185 mm deep)
Ambient Temperature Range: -40°F to +150°F (-40°C to +60°C)
Approvals, Underwriters Laboratories Inc.: Listed: File No. E4436, Guide No. XAPX for USA and Canada
Approvals, CE: EN55011 (Emission) EN50082-2 (Immunity) 73/23/EEC (LVD)
Approvals, RoHS: 2011/65/ES
Comments: Linear 10K feedback

Accessories:

- 220736A/U** – Internal Auxiliary Switch Assembly - 1 Switch
- 220736B/U** – Internal Auxiliary Switch Assembly - 2 Switches
- 220738A/U** – Adapter Bracket. Adjusts shaft height to match Modutrol III motors
- 220741A2-62/U** – Screw Terminal Adapter Kit for Series 62 Modutrol IV Series 2 motors - Converts quick-connect terminals to screw terminals
- 221455A/U** – Infinitely adjustable Motor Crank Arm
- 4074ERU/U** – Weatherproofing kit. Protects motor from driving rain when mounted in any position. Not needed if motor is mounted upright.
- 50017460-001/U** – 24/120/230 Vac Internal Transformers for Series 2 Motors
- 50017460-003/U** – 120 Vac Internal Transformers for Series 2 Motors

| Material Number | Fail Safe Mode | Torque Rating (lb-in.) | Torque Rating (Nm) | Supply Voltage | Timing, Nominal | Internal Auxiliary Switch | Factory Stroke Setting | Power Consumption | Electrical Connections | Internal Transformer | Weight | Includes | Tradeline Value | Stroke |
|-----------------|-------------------|------------------------|--------------------|----------------|-------------------------------------|---------------------------|------------------------|-------------------|-------------------------|----------------------|--------|-------------|-----------------|---|
| M6274F1009-F/U | Non-Spring Return | 75 lb-in. | 8.5 Nm | 24V | 15 - 27 sec | 2 | 90 degrees | Driving – 26 VA | Screw terminals | None | 6.5 lb | | | Adjustable; 90 to 160 degrees, Symmetrical |
| M6284D1032-F/U | Non-Spring Return | 150 lb-in. | 17 Nm | 24V | 30 - 60 sec | 0 | 160 degrees | Driving – 16 VA | Quick-connect terminals | None | 6.5 lb | | Tradeline | Adjustable; 90 to 160 degrees, Symmetrical |
| M6284F1070-F/U | Non-Spring Return | 150 lb-in. | 17 Nm | 120V | 30 - 60 sec | 0 | 90 degrees | Driving – 15 VA | Quick-connect terminals | 50004263-003 | 7.5 lb | Transformer | | Adjustable; 90 to 160 degrees |
| M6284F1078-F/U | Non-Spring Return | 150 lb-in. | 17 Nm | 24V | 30 - 53 sec | 2 | 90 degrees | Driving – 17 VA | Screw terminals | None | 6.5 lb | | | Adjustable; 90 to 160 degrees, Symmetrical |
| M6285F1001-F/U | Spring Return | 60 lb-in. | 6.8 Nm | 24V | 30 - 53 sec; Spring Return — 30 sec | 2 | 160 degrees | Driving – 21 VA | Screw terminals | None | 8.5 lb | | | Adjustable; 90 to 160 degrees, Asymmetrical |
| M6294F1009-F/U | Non-Spring Return | 300 lb-in. | 34 Nm | 24V | 120 - 214 sec | 2 | 160 degrees | Driving – 17 VA | Screw terminals | None | 6.5 lb | | | Adjustable; 90 to 160 degrees, Symmetrical |
| M6294F1017-F/U | Non-Spring Return | 300 lb-in. | 34 Nm | 24V | 60 - 107 sec | 2 | 90 degrees | Driving – 17 VA | Screw terminals | None | 6.5 lb | | | Adjustable; 90 to 160 degrees, Symmetrical |

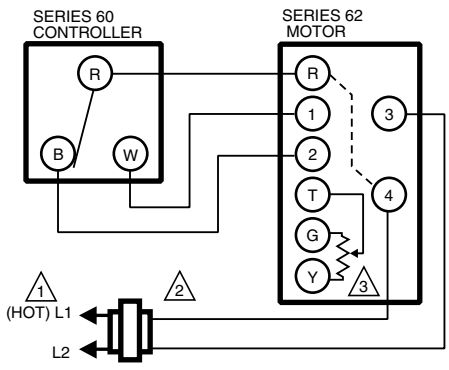
Dimensions in inches (millimeters)



SPRING RETURN MODEL SHOWN

- 1** FOR 60 LB-IN. SPRING RETURN MODELS 8-3/4 (222). FOR NON-SPRING RETURN MODELS 7-5/16 (185).
- 2** FOR 60 LB-IN. SPRING RETURN MODELS (SHOWN).
- 3** FOR NON-SPRING RETURN MODELS.

M18998D



- 1** POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2** TRANSFORMER MAY BE INTERNAL OR EXTERNAL TO MOTOR.
- 3** FEEDBACK POTENTIOMETER.

M17096B

Modutrol IV Motors

M7164 Modutrol IV™ Motors



Application: Electric
Control Signal: Modulating, 10.5-13.5 Vdc
Frequency: 50 Hz; 60 Hz
Fail Safe Mode: Non-Spring Return
Auxiliary Switch Ratings: AFL - 120 Vac – 7.2A; ALR- 120 Vac – 43.2A; AFL - 240 Vac – 3.6A; ALR- 240 Vac – 21.6A
External Auxiliary Switches Available: Yes
Shaft Rotation (upon control signal increase): Clockwise (as viewed from power end) (normally closed)
Electrical Connections: Quick-connect terminals
Mounting: Foot-mounted
Power Consumption: Driving – 10 VA
Timing, Nominal: 30 - 60 sec
Feedback: No
Shaft Dimensions: 0.375 in. Square (10 mm Square)
Motor shafts: 2; Dual-ended shaft
Deadweight Load on Shaft: Either End – 200 lbs.; Combined on both Shafts – 300 lbs.
Weight: 6.5 lb
Approximate, Dimensions: 6 7/16 in. high x 5 1/2 in. wide x 7 5/16 in. deep (164 mm high x 140 mm wide x 185 mm deep)
Ambient Temperature Range: -40°F to +150°F (-40°C to +60°C)
Includes: Transformer

Series 71 Modutrol IV™ Motors non-spring return motors are used to control dampers and valves. These motors accept a voltage signal from an electronic controller to position a damper or valve at any point between open and closed.

- Integral junction box provides NEMA 3 weather protection if motor is mounted in the upright position
- Motor and circuitry operate from 24 Vac
- Quick-connect terminals are standard – screw terminal adapter is available
- Adapter bracket for matching shaft height of older motors is available
- Motors have field adjustable stroke (90 to 160 degrees)
- Integral auxiliary switches are available factory mounted, or can be field added
- All models have dual shafts (slotted and tapped on both ends)
- All models have auxiliary switch cams
- Fixed torque throughout the entire voltage range

Approvals, Underwriters Laboratories Inc.: Listed: File No. E4436, Guide No. XAPX for USA and Canada

Approvals, CE: EN55011 (Emission) EN50082-2 (Immunity) 73/23/EEC (LVD)

Approvals, RoHS: 2011/65/ES

Accessories:

220736A/U – Internal Auxiliary Switch Assembly - 1 Switch

220736B/U – Internal Auxiliary Switch Assembly - 2 Switches

220738A/U – Adapter Bracket. Adjusts shaft height to match Modutrol III motors

220741A2-71/U – Screw Terminal Adapter Kit for Series 71 Modutrol IV Series 2 motors - Converts quick-connect terminals to screw terminals

221455A/U – Infinitely adjustable Motor Crank Arm

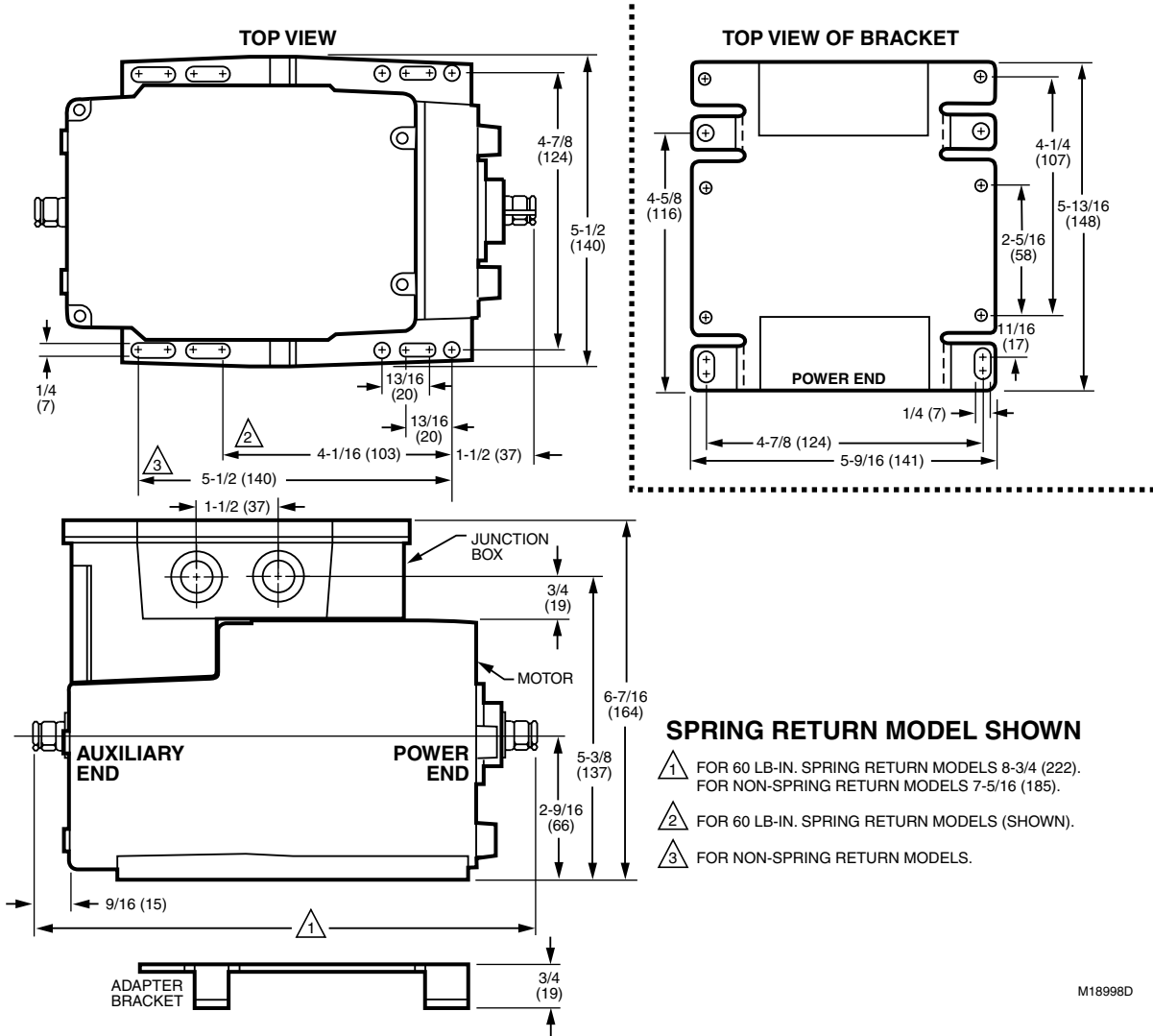
4074ERU/U – Weatherproofing kit. Protects motor from driving rain when mounted in any position. Not needed if motor is mounted upright.

50017460-001/U – 24/120/230 Vac Internal Transformers for Series 2 Motors

50017460-003/U – 120 Vac Internal Transformers for Series 2 Motors

| Material Number | Torque Rating (lb-in.) | Torque Rating (Nm) | Supply Voltage | Internal Auxiliary Switch | Factory Stroke Setting | Stroke | Internal Transformer |
|-----------------|------------------------|--------------------|-----------------|---------------------------|------------------------|---|----------------------|
| M7164A1017/U | 35 lb-in. | 4 Nm | 24V; 120V; 230V | 0 | 90 degrees | Adjustable; 90 to 160 degrees, Asymmetrical | 50004263-001 |
| M7164G1030/U | 35 lb-in. | 4 Nm | 120V | 0 | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical | 50004263-003 |

Dimensions in inches (millimeters)

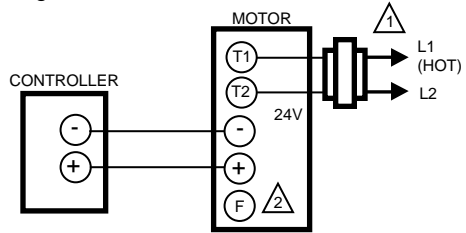


SPRING RETURN MODEL SHOWN

- 1** FOR 60 LB-IN. SPRING RETURN MODELS 8-3/4 (222).
FOR NON-SPRING RETURN MODELS 7-5/16 (185).
- 2** FOR 60 LB-IN. SPRING RETURN MODELS (SHOWN).
- 3** FOR NON-SPRING RETURN MODELS.

M18998D

Typical wiring for Series 70 motors

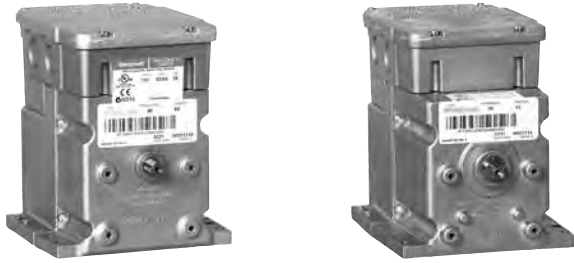


- 1** POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2** CONNECTING F TO - WILL DRIVE MOTOR TO FULLY OPEN.

M5778

Modutrol IV Motors

M7274; M7284; M7294 Modutrol IV™ Motors



The Series 72 Modutrol IV Motors spring return and non-spring return motors are used to control dampers and valves. The motors accept a current or voltage signal from an electronic controller to position a damper or valve at any point between open and closed.

- Integral spring return returns motor to normal position in the event of power failure on spring return models

Application: Electric

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: Non-Spring Return

Auxiliary Switch Ratings: AFL - 120 Vac – 7.2A; ALR - 120 Vac – 43.2A; AFL - 240 Vac – 3.6A; ALR - 240 Vac – 21.6A

External Auxiliary Switches Available: Yes

Shaft Rotation (upon control signal increase): Clockwise (as viewed from power end) (normally closed)

Mounting: Foot-mounted

Feedback: No

Shaft Dimensions: 0.375 in. Square (10 mm Square)

Motor shafts: 2; Dual-ended shaft

Deadweight Load on Shaft: Either End – 200 lbs.; Combined on both Shafts – 300 lbs.

Approximate Dimensions: 6 7/16 in. high x 5 1/2 in. wide x 7 5/16 in. deep (164 mm high x 140 mm wide x 185 mm deep)

Ambient Temperature Range: -40°F to +150°F (-40°C to +60°C)

Approvals, Underwriters Laboratories Inc.: Listed: File No. E4436, Guide No. XAPX for USA and Canada

Approvals, CE: EN55011 (Emission) EN50082-2 (Immunity) 73/23/EEC (LVD)

Approvals, RoHS: 2011/65/ES

- Integral junction box provides NEMA 3 weather protection if motor is mounted in the upright position
- Motor and circuitry operate from 24 Vac
- Quick-connect terminals are standard – screw terminal adapter is available
- Adapter bracket for matching shaft height of older motors is available
- Motors have field adjustable stroke (90 to 160 degrees)
- Integral auxiliary switches are available factory mounted, or can be field added
- Spring return motors can operate valve linkages from power end or auxiliary end shafts for normally closed or normally open valve applications
- All models have dual shafts (slotted and tapped on both ends)
- All models have auxiliary switch cams
- Fixed torque throughout the entire voltage range
- Motors are designed for either normally open or normally closed valves and dampers
- Models available with adjustable start (zero) and span
- Models available with 4 to 20 mA input signal
- Die-cast aluminum housing

Accessories:

220736A/U – Internal Auxiliary Switch Assembly - 1 Switch

220736B/U – Internal Auxiliary Switch Assembly - 2 Switches

220738A/U – Adapter Bracket. Adjusts shaft height to match Modutrol III motors

220741A2-72/U – Screw Terminal Adapter Kit for Series 72 Modutrol IV Series 2 motors - Converts quick-connect terminals to screw terminals

221455A/U – Infinitely adjustable Motor Crank Arm

4074ERU/U – Weatherproofing kit. Protects motor from driving rain when mounted in any position. Not needed if motor is mounted upright.

50017460-001/U – 24/120/230 Vac Internal Transformers for Series 2 Motors

50017460-003/U – 120 Vac Internal Transformers for Series 2 Motors

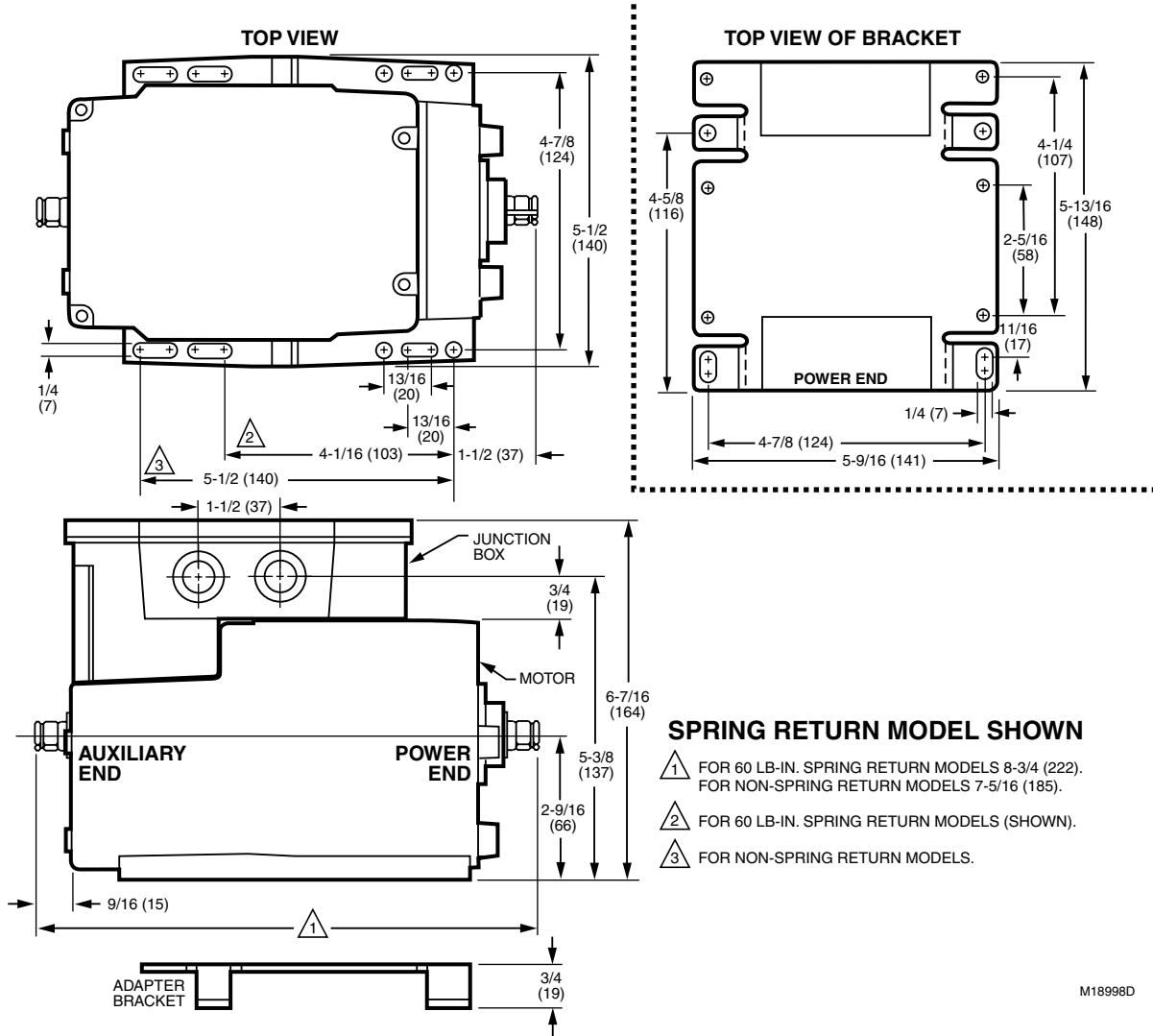
| Material Number | Torque Rating (lb-in.) | Torque Rating (Nm) | Supply Voltage | Timing, Nominal | Internal Auxiliary Switch | Factory Stroke Setting | Stroke | Control Signal | Electrical Connections | Power Consumption | Weight | Internal Transformer | Comments | Includes |
|-----------------|------------------------|--------------------|-----------------|-----------------|---------------------------|------------------------|---|----------------------|-------------------------|-------------------|--------|----------------------|---|--|
| M7274Q1009/U | 75 lb-in. | 8.5 Nm | 24V | 15 - 27 sec | 2 | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical | Modulating, 4-20 mA | Screw terminals | Driving – 29 VA | 7 lb | None | Adjustable zero and span for split range applications | |
| M7284A1004/U | 150 lb-in. | 17 Nm | 120V | 30 - 60 sec | 0 | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical | Modulating, 4-20 mA | Screw terminals | Driving – 15 VA | 7.5 lb | 50004263-002 | | Transformer and Screw Terminal Adapter |
| M7284A1012/U | 150 lb-in. | 17 Nm | 120V | 30 - 60 sec | 0 | 160 degrees | Adjustable; 90 to 160 degrees, Asymmetrical | Modulating, 4-20 mA | Screw terminals | Driving – 15 VA | 7.5 lb | 50004263-002 | | Transformer and Screw Terminal Adapter |
| M7284A1038/U | 75 lb-in. | 8.5 Nm | 120V | 15 - 30 sec | 0 | 90 degrees | Adjustable; 90 to 160 degrees, Asymmetrical | Modulating, 4-20 mA | Screw terminals | Driving – 15 VA | 7.5 lb | 50004263-002 | | Transformer and Screw Terminal Adapter |
| M7284A1079/U | 150 lb-in. | 17 Nm | 24V | 30 - 60 sec | 0 | 160 degrees | Adjustable; 90 to 160 degrees, Asymmetrical | Modulating, 2-10 Vdc | Quick-connect terminals | Driving – 15 VA | 6.5 lb | None | | |
| M7284C1000/U | 150 lb-in. | 17 Nm | 120V | 30 - 60 sec | 2 | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical | Modulating, 4-20 mA | Screw terminals | Driving – 15 VA | 7.5 lb | 50004263-002 | | Transformer and Screw Terminal Adapter |
| M7284C1083/U | 150 lb-in. | 17 Nm | 24V; 120V; 230V | 30 sec | 2 | 90 degrees | Fixed; 90 degrees, Symmetrical | Modulating, 4-20 mA | Screw terminals | Driving – 15 VA | 7.5 lb | 50004263-001 | Enhanced models, additional repositions | Transformer |
| M7284C1091/U | 150 lb-in. | 17 Nm | 24V; 120V; 230V | 60 sec | 2 | 160 degrees | Fixed; 160 degrees, Asymmetrical | Modulating, 4-20 mA | Screw terminals | Driving – 15 VA | 7.5 lb | 50004263-001 | Enhanced models, additional repositions | Transformer |

Modutrol IV Motors

| Material Number | Torque Rating (lb-in.) | Torque Rating (Nm) | Supply Voltage | Timing, Nominal | Internal Auxiliary Switch | Factory Stroke Setting | Stroke | Control Signal | Electrical Connections | Power Consumption | Weight | Internal Transformer | Comments | Includes |
|-----------------|------------------------|--------------------|-----------------|-----------------|---------------------------|------------------------|---|----------------------|-------------------------|-------------------|--------|----------------------|---|--|
| M7284Q1009/C | 150 lb-in. | 17 Nm | 120V | 30 - 60 sec | 2 | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical | Modulating, 4-20 mA | Screw terminals | Driving - 15 VA | 7.5 lb | 50004263-002 | Adjustable zero and span for split range applications | Transformer and Screw Terminal Adapter |
| M7284Q1009/U | 150 lb-in. | 17 Nm | 120V | 30 - 60 sec | 2 | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical | Modulating, 4-20 mA | Screw terminals | Driving - 15 VA | 7.5 lb | 50004263-002 | Adjustable zero and span for split range applications | Transformer and Screw Terminal Adapter |
| M7284Q1082/U | 150 lb-in. | 17 Nm | 24V; 120V; 230V | 30 sec | 2 | 90 degrees | Fixed; 90 degrees, Symmetrical | Modulating, 4-20 mA | Screw terminals | Driving - 15 VA | 7.5 lb | 50004263-006 | Enhanced models, additional repositions (160°); Adjustable zero and span for split range applications | Transformer |
| M7284Q1090/U | 150 lb-in. | 17 Nm | 24V; 120V; 230V | 60 sec | 2 | 160 degrees | Fixed; 160 degrees, Asymmetrical | Modulating, 4-20 mA | Screw terminals | Driving - 15 VA | 7.5 lb | 50004263-006 | Enhanced models, additional repositions (160°); Adjustable zero and span for split range applications | Transformer |
| M7284Q1098/U | 150 lb-in. | 17 Nm | 24V | 30 - 53 sec | 2 | 160 degrees | Adjustable; 90 to 160 degrees, Asymmetrical | Modulating, 2-10 Vdc | Screw terminals | Driving - 20 VA | 6.5 lb | None | Adjustable zero and span for split range applications; Enhanced models, additional repositions | |
| M7284Q1106/U | 150 lb-in. | 17 Nm | 24V | 30 - 60 sec | 2 | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical | Modulating, 4-20 mA | Screw terminals | Driving - 15 VA | 7.5 lb | None | Adjustable zero and span for split range applications | |
| M7294A1010/U | 300 lb-in. | 34 Nm | 24V | 60 - 120 sec | 0 | 160 degrees | Adjustable; 90 to 160 degrees, Asymmetrical | Modulating, 2-10 Vdc | Quick-connect terminals | Driving - 15 VA | 6.5 lb | None | | |
| M7294Q1007/U | 300 lb-in. | 34 Nm | 120V | 60 - 120 sec | 2 | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical | Modulating, 4-20 mA | Screw terminals | Driving - 15 VA | 7.5 lb | 50004263-002 | Adjustable zero and span for split range applications | Transformer and Screw Terminal Adapter |
| M7294Q1015/U | 300 lb-in. | 34 Nm | 24V | 60 - 107 sec | 2 | 90 degrees | Adjustable; 90 to 160 degrees, Symmetrical | Modulating, 4-20 mA | Screw terminals | Driving - 29 VA | 7.5 lb | None | Adjustable zero and span for split range applications | Screw Terminal Adapter |

Modutrol IV Motors

Dimensions in inches (millimeters)

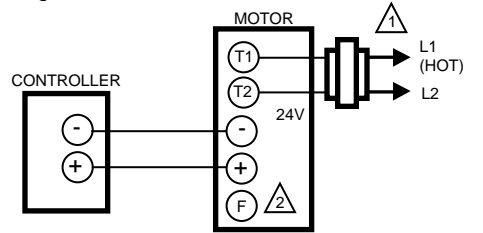


SPRING RETURN MODEL SHOWN

- △1 FOR 60 LB-IN. SPRING RETURN MODELS 8-3/4 (222).
FOR NON-SPRING RETURN MODELS 7-5/16 (185).
- △2 FOR 60 LB-IN. SPRING RETURN MODELS (SHOWN).
- △3 FOR NON-SPRING RETURN MODELS.

M18998D

Typical wiring for Series 70 motors



- △1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- △2 CONNECTING F TO - WILL DRIVE MOTOR TO FULLY OPEN.

M5778

M7285; M7286 Modutrol IV™ Motors



Series 72 Modutrol IV™ Motors are spring return and non-spring return motors (per motor type) used to control dampers and valves. The motors accept a current or voltage signal from an electronic controller to position a damper or valve at any point between open and closed.

- Integral spring return returns motor to normal position in the event of power failure on spring return models
- Integral junction box provides NEMA 3 weather protection if motor is mounted in the upright position

Application: Electric

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: Spring Return

Torque Rating (lb-in.): 60 lb-in.

Torque Rating (Nm): 6.8 Nm

Auxiliary Switch Ratings: AFL - 120 Vac – 7.2A; ALR- 120 Vac – 43.2A; AFL - 240 Vac – 3.6A; ALR- 240 Vac – 21.6A

External Auxiliary Switches Available: Yes

Stroke: Adjustable; 90 to 160 degrees, Asymmetrical

Mounting: Foot-mounted

Feedback: No

Shaft Dimensions: 0.375 in. Square (10 mm Square)

Motor Shafts: 2; Dual-ended shaft

Deadweight Load on Shaft: Either End – 200 lbs.; Combined on both Shafts – 300 lbs.

Approximate, Dimensions: 6 7/16 in. high x 5 1/2 in. wide x 8 3/4 in. deep (164 mm high x 140 mm wide x 222 mm deep)

Ambient Temperature Range: -40°F to +150°F (-40°C to +60°C)

Approvals, Underwriters Laboratories Inc.: Listed: File No. E4436, Guide No. XAPX for USA and Canada

Approvals, CE: EN55011 (Emission) EN50082-2 (Immunity) 73/23/EEC (LVD)

Approvals, RoHS: 2011/65/ES

- Motor and circuitry operate from 24 Vac
- Quick-connect terminals are standard – screw terminal adapter is available
- Adapter bracket for matching shaft height of older motors is available
- Motors have field adjustable stroke (90 to 160 degrees)
- Integral auxiliary switches are available factory mounted, or can be field added
- Spring return motors can operate valve linkages from power end or auxiliary end shafts for normally closed or normally open valve applications
- All models have dual shafts (slotted and tapped on both ends)
- All models have auxiliary switch cams
- Fixed torque throughout the entire voltage range
- Motors are designed for either normally open or normally closed valves and dampers
- Models available with adjustable start (zero) and span
- Models available with 4 to 20 mA input signal
- Models available with 2 to 10 Vdc input signal
- Die-cast aluminum housing

Accessories:

220736A/U – Internal Auxiliary Switch Assembly - 1 Switch

220736B/U – Internal Auxiliary Switch Assembly - 2 Switches

220738A/U – Adapter Bracket. Adjusts shaft height to match Modutrol III motors

221455A/U – Infinitely adjustable Motor Crank Arm

4074ERU/U – Weatherproofing kit. Protects motor from driving rain when mounted in any position. Not needed if motor is mounted upright.

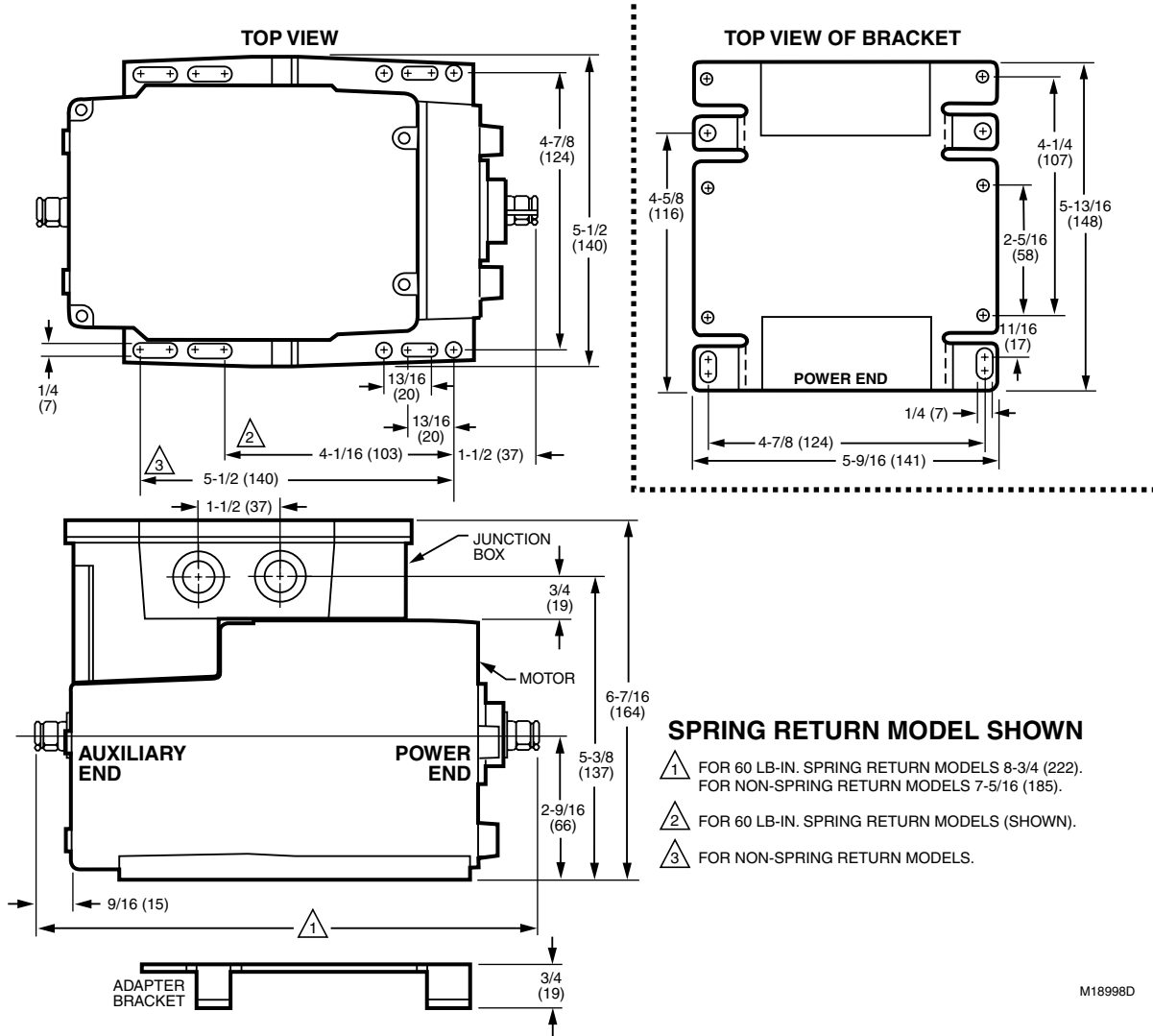
50017460-001/U – 24/120/230 Vac Internal Transformers for Series 2 Motors

50017460-003/U – 120 Vac Internal Transformers for Series 2 Motors

| Material Number | Control Signal | Power Consumption | Electrical Connections | Internal Transformer | Supply Voltage | Timing, Nominal | Internal Auxiliary Switch | Factory Stroke Setting | Weight | Shaft Rotation (upon control signal increase) | Comments | Includes |
|-----------------|----------------------|-------------------|-------------------------|----------------------|----------------|-----------------|---------------------------|------------------------|--------|--|---|--|
| M7285A1003/U | Modulating, 4-20 mA | Driving – 20 VA | Screw terminals | 50004263-002 | 120V | 30 - 60 sec | 0 | 90 degrees | 9.5 lb | Clockwise (as viewed from power end) (normally closed) | | Transformer and Screw Terminal Adapter |
| M7285A1045/U | Modulating, 2-10 Vdc | Driving – 20 VA | Quick-connect terminals | None | 24V | 30 - 60 sec | 0 | 160 degrees | 8.5 lb | Clockwise (as viewed from power end) (normally closed) | | |
| M7285C1009/U | Modulating, 4-20 mA | Driving – 20 VA | Screw terminals | 50004263-002 | 120V | 30 - 60 sec | 2 | 90 degrees | 9.5 lb | Clockwise (as viewed from power end) (normally closed) | | Transformer and Screw Terminal Adapter |
| M7285Q1008/U | Modulating, 4-20 mA | Driving – 20 VA | Screw terminals | 50004263-002 | 120V | 30 - 60 sec | 2 | 90 degrees | 9.5 lb | Clockwise (as viewed from power end) (normally closed) | Adjustable zero and span for split range applications | Transformer and Screw Terminal Adapter |
| M7285Q1024/U | Modulating, 4-20 mA | Driving – 34 VA | Screw terminals | None | 24V | 30 - 53 sec | 2 | 90 degrees | 9.5 lb | Clockwise (as viewed from power end) (normally closed) | Adjustable zero and span for split range applications | Screw Terminal Adapter |
| M7285Q1032/U | Modulating, 2-10 Vdc | Driving – 24 VA | Screw terminals | None | 24V | 30 - 53 sec | 2 | 160 degrees | 9.5 lb | Clockwise (as viewed from power end) (normally closed) | Adjustable zero and span for split range applications | Screw Terminal Adapter |
| M7286G1009/U | Modulating, 2-10 Vdc | Driving – 15 VA | Quick-connect terminals | None | 24V | 30 - 60 sec | 0 | 160 degrees | 8.5 lb | Counter-clockwise (as viewed from power end) (normally open) | | |

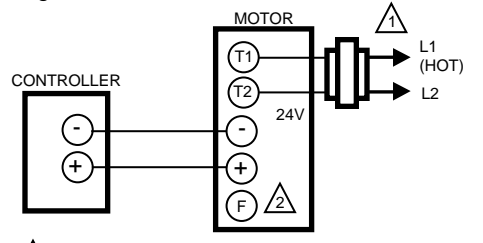
Modutrol IV Motors

Dimensions in inches (millimeters)



M18998D

Typical wiring for Series 70 motors



- △1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- △2 CONNECTING F TO - WILL DRIVE MOTOR TO FULLY OPEN.

M5778

M7685 Modutrol IV™ Motor



Application: Electric

Control Signal: Modulating, 14-17 Vdc

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: Spring Return

Auxiliary Switch Ratings: AFL - 120 Vac – 7.2A; ALR - 120 Vac – 43.2A; AFL - 240 Vac – 3.6A; ALR - 240 Vac – 21.6A

External Auxiliary Switches Available: Yes

Shaft Rotation (upon control signal increase): Clockwise (as viewed from power end) (normally closed)

Electrical Connections: Quick-connect terminals

Mounting: Foot-mounted

Power Consumption: Driving – 20 VA

Feedback: No

Shaft Dimensions: 0.375 in. Square (10 mm Square)

Motor shafts: 2; Dual-ended shaft

Deadweight Load on Shaft: Either End – 200 lbs.; Combined on both Shafts – 300 lbs.

Weight: 8.5 lb

Approximate, Dimensions: 6 7/16 in. high x 5 1/2 in. wide x 8 3/4 in. deep (164 mm high x 140 mm wide x 222 mm deep)

Ambient Temperature Range: -40°F to +150°F (-40°C to +60°C)

Approvals, Underwriters Laboratories Inc.: Listed: File No. E4436, Guide No. XAPX for USA and Canada

Approvals, CE: EN55011 (Emission) EN50082-2 (Immunity) 73/23/EEC (LVD)

Approvals, RoHS: 2011/65/ES

Includes: Minimum Position Potentiometer

Proportional, spring-return motors for use with Honeywell W7080 panel 14-17 Vdc output; with minimum position adjustment.

- Integral spring return returns motor to normal position in the event of power failure
- Integral junction box provides NEMA 3 weather protection
- Motor and circuitry operate from 24 Vac
- Quick-connect terminals are standard
- Adapter bracket for matching shaft height of older motors is available
- Motors have field adjustable stroke (90 to 160 degrees)
- Integral auxiliary switches are available factory mounted, or can be field added
- Spring return motors can operate valve linkages from power end or auxiliary end shafts for normally closed or normally open valve applications
- All models have dual shafts (slotted and tapped on both ends)
- All models have auxiliary switch cams
- Fixed torque throughout the entire voltage range

Accessories:

203709D2/U – Interface Module for Modutrol Motors

220736A/U – Internal Auxiliary Switch Assembly - 1 Switch

220736B/U – Internal Auxiliary Switch Assembly - 2 Switches

220738A/U – Adapter Bracket. Adjusts shaft height to match Modutrol III motors

221455A/U – Infinitely adjustable Motor Crank Arm

4074ERU/U – Weatherproofing kit. Protects motor from driving rain when mounted in any position. Not needed if motor is mounted upright.

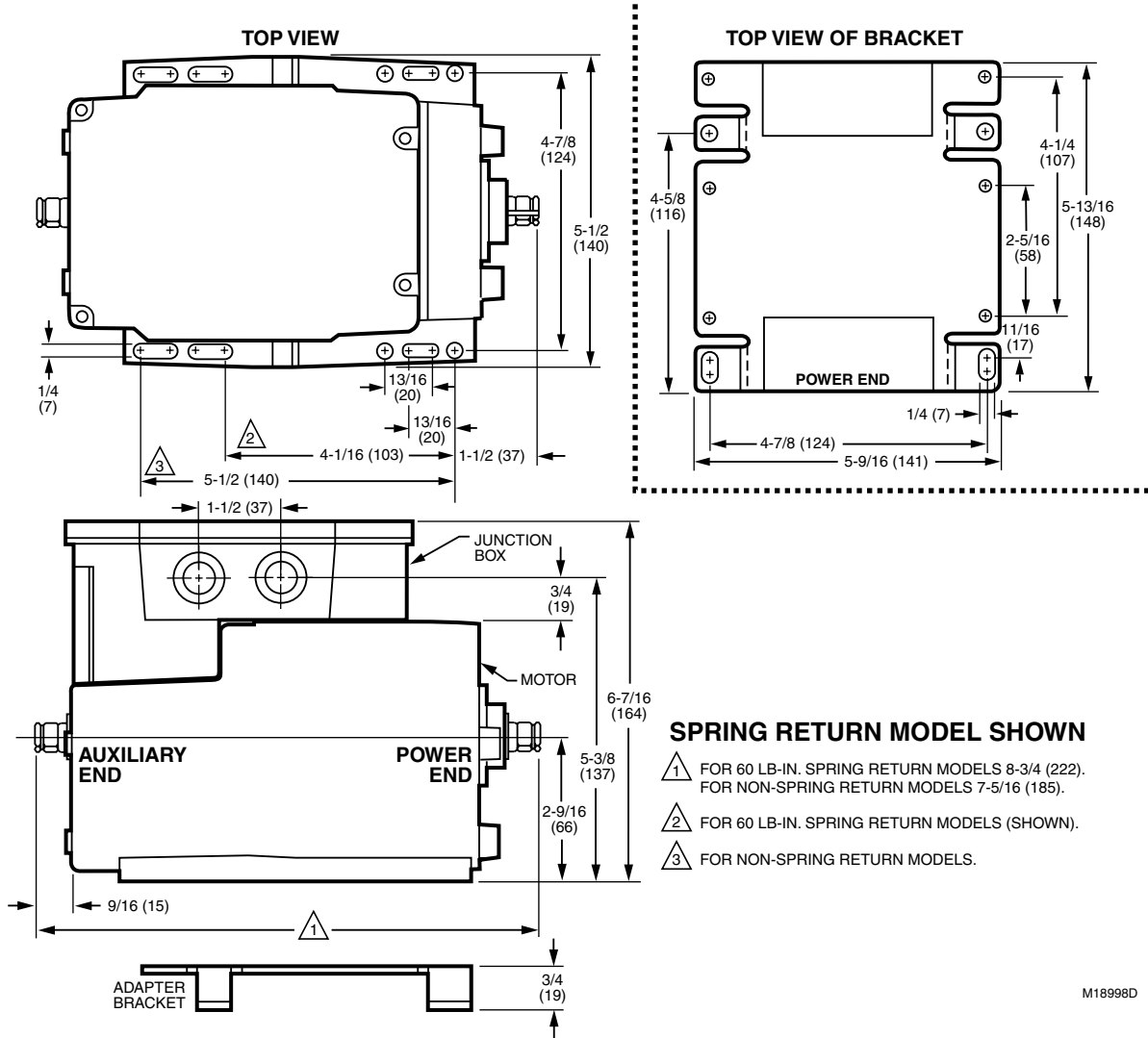
50017460-001/U – 24/120/230 Vac Internal Transformers for Series 2 Motors

50017460-003/U – 120 Vac Internal Transformers for Series 2 Motors

| Material Number | Torque Rating (lb-in.) | Torque Rating (Nm) | Supply Voltage | Timing, Nominal | Internal Auxiliary Switch | Factory Stroke Setting | Stroke | Internal Transformer | Comments |
|-----------------|------------------------|--------------------|----------------|-----------------|---------------------------|------------------------|---|----------------------|--------------------------------|
| M7685A1025/U | 60 lb-in. | 6.8 Nm | 24V | 30 - 60 sec | 0 | 90 degrees | Adjustable; 90 to 160 degrees, Asymmetrical | None | Minimum position potentiometer |

Modutrol IV Motors

Dimensions in inches (millimeters)

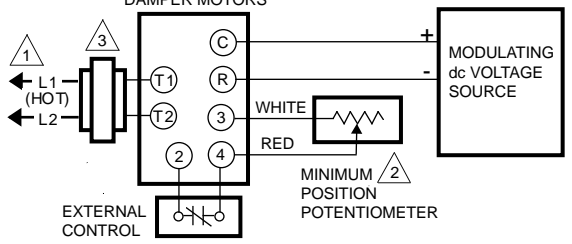


SPRING RETURN MODEL SHOWN

- 1 FOR 60 LB-IN. SPRING RETURN MODELS 8-3/4 (222). FOR NON-SPRING RETURN MODELS 7-5/16 (185).
- 2 FOR 60 LB-IN. SPRING RETURN MODELS (SHOWN).
- 3 FOR NON-SPRING RETURN MODELS.

M18998D

Typical wiring for M7685 motors DAMPER MOTORS



- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 IF MINIMUM POSITION POTENTIOMETER IS NOT USED, JUMPER TERMINALS 3 AND 4.
- 3 TRANSFORMER MAY BE INTERNAL OR EXTERNAL. M13727A

M9164; M9174; M9184; M9191; M9194 Modutrol IV™ Motors



Series 90 Modutrol™ IV Motors are non-spring return modulating proportional control motors used with controllers that provide a Series 90 output to operate dampers or valves.

- Integral junction box provides NEMA 3 weather protection if motor is mounted in the upright position
- Motor and circuitry operate from 24 Vac
- Quick-connect terminals are standard; screw terminal adapter is available
- Adapter bracket for matching shaft height of older motors is available
- Motors have field adjustable stroke (90 to 160 degrees)
- Integral auxiliary switches are available factory mounted, or can be field added
- All models have dual shafts (slotted and tapped on both ends)
- All models have auxiliary switch cams
- Fixed torque throughout the entire voltage range

Application: Electric

Control Signal: Proportional, 135 ohm

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: Non-Spring Return

Auxiliary Switch Ratings: AFL - 120 Vac – 7.2A; ALR - 120 Vac – 43.2A; AFL - 240 Vac – 3.6A; ALR - 240 Vac – 21.6A

External Auxiliary Switches Available: Yes

Mounting: Foot-mounted

Feedback: No

Shaft Dimensions: 0.375 in. Square (10 mm Square)

Motor shafts: 2; Dual-ended shaft

Deadweight Load on Shaft: Either End – 200 lbs.; Combined on both Shafts – 300 lbs.

Approximate, Dimensions: 6 7/16 in. high x 5 1/2 in. wide x 7 5/16 in. deep (164 mm high x 140 mm wide x 185 mm deep)

Ambient Temperature Range: -40°F to +150°F (-40°C to +60°C)

Approvals, Underwriters Laboratories Inc.: Listed: File No. E4436, Guide No. XAPX for USA and Canada

Approvals, CE: EN55011 (Emission) EN50082-2 (Immunity) 73/23/EEC (LVD)

Approvals, RoHS: 2011/65/ES

Accessories:

220736A/U – Internal Auxiliary Switch Assembly - 1 Switch

220736B/U – Internal Auxiliary Switch Assembly - 2 Switches

220738A/U – Adapter Bracket. Adjusts shaft height to match Modutrol III motors

220741A2-90/U – Screw Terminal Adapter Kit for Series 90 Modutrol IV Series 2 and Series 3 motors - Converts quick-connect terminals to screw terminals

221455A/U – Infinitely adjustable Motor Crank Arm

4074ERU/U – Weatherproofing kit. Protects motor from driving rain when mounted in any position. Not needed if motor is mounted upright.

50017460-001/U – 24/120/230 Vac Internal Transformers for Series 2 Motors

50017460-003/U – 120 Vac Internal Transformers for Series 2 Motors

Q7130A1006/U – Interface Module (4-7, 6-9 or 10.5-13.5 Vdc Control)

Q7230A1005/U – Interface Module (4-20 mA or 2-10 Vdc Control)

Q7330A1004/U – Interface Module (W936 or W945 Control)

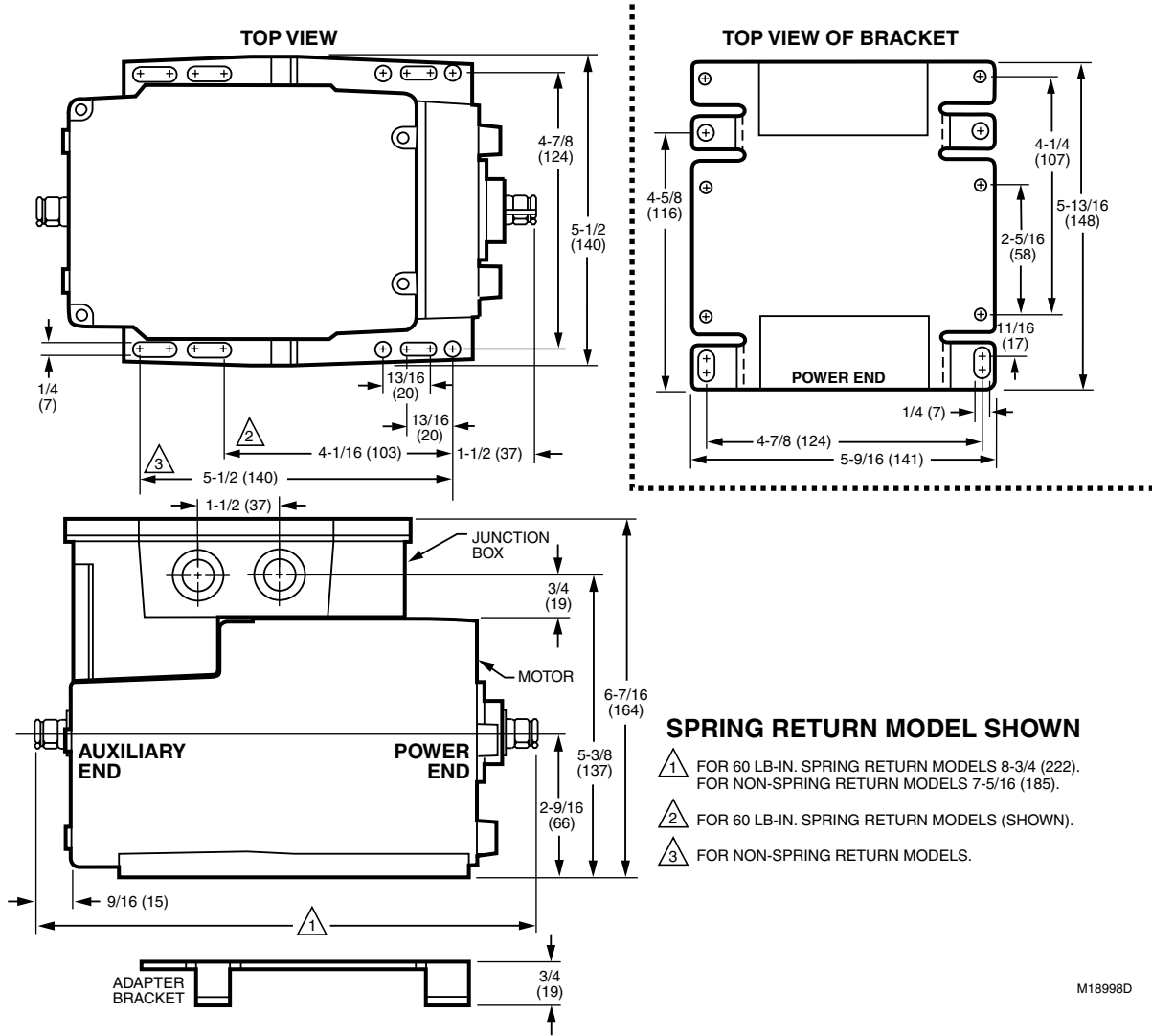
| Material Number | Torque Rating (lb-in.) | Torque Rating (Nm) | Power Consumption | Timing, Nominal | Internal Auxiliary Switch | Factory Stroke Setting | Shaft Rotation (upon control signal increase) | Electrical Connections | Internal Transformer | Weight | Includes | Supply Voltage | Tradeline Value | Stroke |
|-----------------|------------------------|--------------------|-------------------|-----------------|---------------------------|------------------------|--|-------------------------|----------------------|--------|-------------|-----------------|-----------------|---|
| M9164A1005/U | 35 lb-in. | 4 Nm | Driving – 10 VA | 30 - 60 sec | 0 | 90 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | 50004263-003 | 7.5 lb | Transformer | 120V | | Adjustable; 90 to 160 degrees, Asymmetrical |
| M9164A1013/U | 35 lb-in. | 4 Nm | Driving – 10 VA | 30 - 60 sec | 0 | 160 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | 50004263-001 | 7.5 lb | Transformer | 24V; 120V; 230V | | Adjustable; 90 to 160 degrees, Asymmetrical |
| M9164A1070/U | 35 lb-in. | 4 Nm | Driving – 10 VA | 30 - 60 sec | 0 | 160 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | None | 6.5 lb | | 24V | | Adjustable; 90 to 160 degrees, Asymmetrical |
| M9164C1001/U | 35 lb-in. | 4 Nm | Driving – 10 VA | 30 - 60 sec | 2 | 160 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | None | 6.5 lb | | 24V | | Adjustable; 90 to 160 degrees, Asymmetrical |
| M9164C1068/U | 35 lb-in. | 4 Nm | Driving – 10 VA | 30 - 60 sec | 2 | 90 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | 50004263-003 | 7.5 lb | Transformer | 120V | | Adjustable; 90 to 160 degrees, Asymmetrical |
| M9164D1009/U | 35 lb-in. | 4 Nm | Driving – 10 VA | 30 - 60 sec | 0 | 160 degrees | Counter-clockwise (as viewed from power end) (normally open) | Quick-connect terminals | None | 6.5 lb | | 24V | Tradeline | Adjustable; 90 to 160 degrees, Asymmetrical |
| M9174B1027/U | 75 lb-in. | 8.5 Nm | Driving – 12 VA | 30 - 60 sec | 1 | 90 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | 50004263-003 | 7.5 lb | Transformer | 120V | | Adjustable; 90 to 160 degrees, Asymmetrical |

Modutrol IV Motors

| Material Number | Torque Rating (lb-in.) | Torque Rating (Nm) | Power Consumption | Timing, Nominal | Internal Auxiliary Switch | Factory Stroke Setting | Shaft Rotation (upon control signal increase) | Electrical Connections | Internal Transformer | Weight | Includes | Supply Voltage | Tradeline Value | Stroke |
|-----------------|------------------------|--------------------|-------------------|-----------------|---------------------------|------------------------|--|-------------------------|----------------------|--------|-------------|----------------|-----------------|---|
| M9174C1025/U | 75 lb-in. | 8.5 Nm | Driving – 12 VA | 30 - 60 sec | 2 | 90 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | 50004263-003 | 7.5 lb | Transformer | 120V | | Adjustable; 90 to 160 degrees, Asymmetrical |
| M9174C1033/U | 75 lb-in. | 8.5 Nm | Driving – 12 VA | 30 - 60 sec | 2 | 160 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | 50004263-003 | 7.5 lb | Transformer | 120V | | Adjustable; 90 to 160 degrees, Asymmetrical |
| M9174C1041/U | 75 lb-in. | 8.5 Nm | Driving – 12 VA | 30 - 60 sec | 2 | 90 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | 50004263-003 | 7.5 lb | Transformer | 120V | | Adjustable; 90 to 160 degrees, Asymmetrical |
| M9174D1007/U | 75 lb-in. | 8.5 Nm | Driving – 12 VA | 30 - 60 sec | 0 | 160 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | None | 6.5 lb | | 24V | Tradeline | Adjustable; 90 to 160 degrees, Asymmetrical |
| M9174F1001/U | 75 lb-in. | 8.5 Nm | Driving – 17 VA | 30 - 53 sec | 2 | 160 degrees | Clockwise (as viewed from power end) (normally closed) | Screw terminals | None | 6.5 lb | | 24V | | Adjustable; 90 to 160 degrees, Asymmetrical |
| M9184A1019/U | 150 lb-in. | 17 Nm | Driving – 15 VA | 30 - 60 sec | 0 | 160 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | None | 6.5 lb | | 24V | | Adjustable; 90 to 160 degrees, Asymmetrical |
| M9184B1017/U | 150 lb-in. | 17 Nm | Driving – 15 VA | 30 - 60 sec | 1 | 90 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | None | 6.5 lb | | 24V | | Adjustable; 90 to 160 degrees, Symmetrical |
| M9184C1031/U | 150 lb-in. | 17 Nm | Driving – 15 VA | 30 - 60 sec | 2 | 90 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | None | 6.5 lb | | 24V | | Adjustable; 90 to 160 degrees, Symmetrical |
| M9184D1005/U | 75 lb-in. | 8.5 Nm | Driving – 15 VA | 15 - 30 sec | 0 | 90 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | None | 6.5 lb | | 24V | | Adjustable; 90 to 160 degrees, Symmetrical |
| M9184D1021/U | 150 lb-in. | 17 Nm | Driving – 15 VA | 30 - 60 sec | 0 | 160 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | None | 6.5 lb | | 24V | Tradeline | Adjustable; 90 to 160 degrees, Symmetrical |
| M9184D4009/U | 150 lb-in. | 17 Nm | Driving – 15 VA | 30 - 60 sec | 0 | 160 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | None | 6.5 lb | | 24V | Tradeline | Adjustable; 90 to 160 degrees, Symmetrical |
| M9184E4006/U | 150 lb-in. | 17 Nm | Driving – 15 VA | 30 - 60 sec | 1 | 160 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | None | 6.5 lb | | 24V | Tradeline | Adjustable; 90 to 160 degrees, Symmetrical |
| M9184F1034/U | 150 lb-in. | 17 Nm | Driving – 15 VA | 30 - 60 sec | 2 | 90 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | None | 6.5 lb | | 24V | | Adjustable; 90 to 160 degrees, Symmetrical |
| M9191F1001/U | 300 lb-in. | 34 Nm | Driving – 15 VA | 60 - 120 sec | 2 | 90 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | None | 6.5 lb | | 24V | | Adjustable; 90 to 160 degrees, Symmetrical |
| M9194C1005/U | 300 lb-in. | 34 Nm | Driving – 15 VA | 60 - 120 sec | 2 | 90 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | 50004263-002 | 7.5 lb | Transformer | 120V | | Adjustable; 90 to 160 degrees, Symmetrical |
| M9194D1003/U | 300 lb-in. | 34 Nm | Driving – 15 VA | 120 - 240 sec | 0 | 160 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | None | 6.5 lb | | 24V | Tradeline | Adjustable; 90 to 160 degrees, Symmetrical |

| Material Number | Torque Rating (lb-in.) | Torque Rating (Nm) | Power Consumption | Timing, Nominal | Internal Auxiliary Switch | Factory Stroke Setting | Shaft Rotation (upon control signal increase) | Electrical Connections | Internal Transformer | Weight | Includes | Supply Voltage | Tradeline Value | Stroke |
|-----------------|------------------------|--------------------|-------------------|-----------------|---------------------------|------------------------|--|-------------------------|----------------------|--------|----------|----------------|-----------------|--|
| M9194E1000/U | 300 lb-in. | 34 Nm | Driving – 15 VA | 120 - 240 sec | 1 | 90 degrees | Clockwise (as viewed from power end) (normally closed) | Quick-connect terminals | None | 6.5 lb | | 24V | | Adjustable; 90 to 160 degrees, Symmetrical |

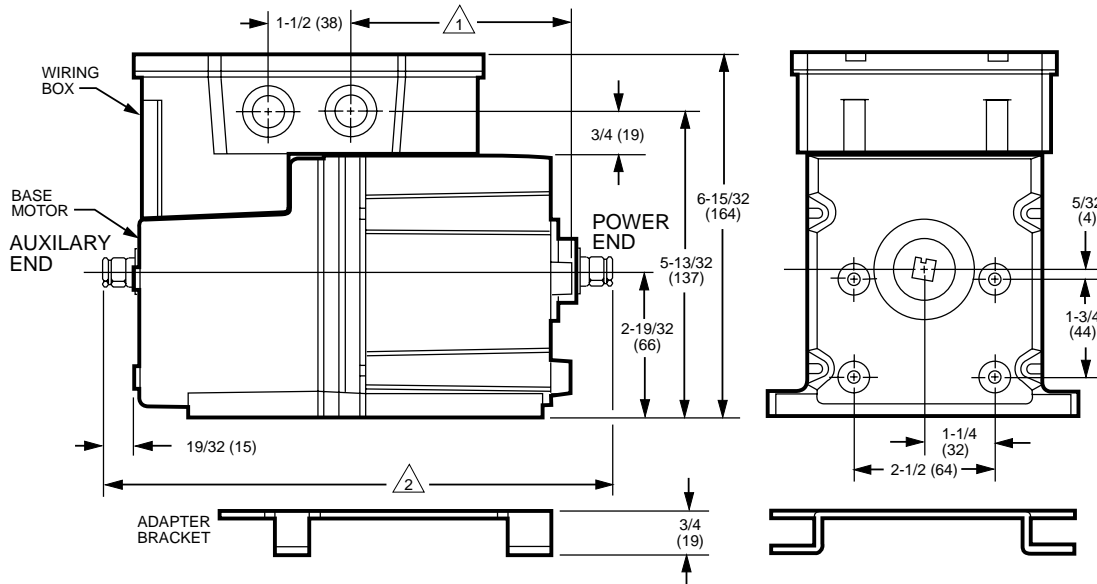
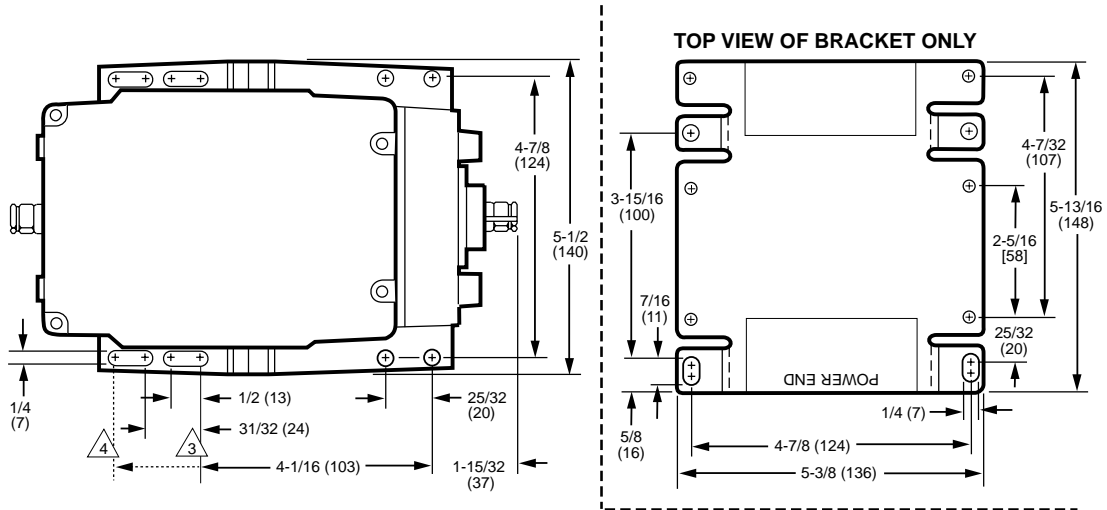
Dimensions in inches (millimeters)



M18998D

Modutrol IV Motors

Dimensions in inches (millimeters)

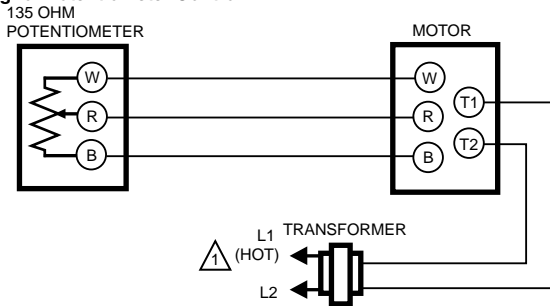


SPRING RETURN MODEL SHOWN

- ① FOR SPRING RETURN MODELS 3-29/32 (98); FOR NON-SPRING RETURN MODELS 2-13/32 (61).
- ② FOR SPRING RETURN MODELS 8-3/4 (223); FOR NON-SPRING RETURN MODELS 7-5/16 (185).
- ③ FOR SPRING RETURN MODELS.
- ④ FOR NON-SPRING RETURN MODELS.

M451E

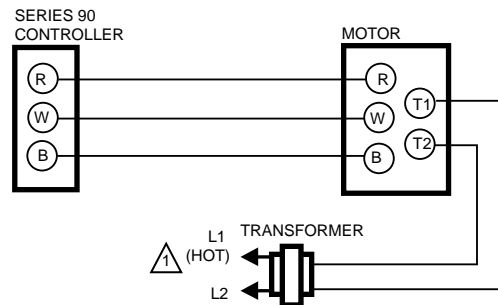
Wiring for Potentiometer Control



- ① POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- ② TRANSFORMER MAY BE INTERNAL OR EXTERNAL

M13708

Typical wiring for Series 90 motors



- ① POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- ② TRANSFORMER MAY BE INTERNAL OR EXTERNAL

M770A

M9175; M9182; M9185 Modutrol IV™ Motors



Series 90 Modutrol IV™ Motors are spring return modulating proportional control motors used with controllers that provide a Series 90 output to operate dampers or valves.

- Integral junction box provides NEMA 3 weather protection if motor is mounted in the upright position
- Integral spring return in the event of power failure
- Motor and circuitry operate from 24 Vac
- Quick-connect terminals are standard; screw terminal adapter is available
- Adapter bracket for matching shaft height of older motors is available
- Motors have field adjustable stroke (90 to 160 degrees)
- Integral auxiliary switches are available factory mounted, or can be field added
- Spring return motors can operate valve linkages from power end or normally open valve applications
- All models have dual shafts (slotted and tapped on both ends)
- All models have auxiliary switch cams
- Fixed torque throughout the entire voltage range

Application: Electric

Control Signal: Proportional, 135 ohm

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: Spring Return

Auxiliary Switch Ratings: AFL - 120 Vac – 7.2A; ALR - 120 Vac – 43.2A; AFL - 240 Vac – 3.6A; ALR - 240 Vac – 21.6A

External Auxiliary Switches Available: Yes

Shaft Rotation (upon control signal increase): Clockwise (as viewed from power end) (normally closed)

Mounting: Foot-mounted

Feedback: No

Shaft Dimensions: 0.375 in. Square (10 mm Square)

Motor shafts: 2; Dual-ended shaft

Deadweight Load on Shaft: Either End – 200 lbs.; Combined on both Shafts – 300 lbs.

Internal Transformer: None

Weight: 8.5 lb

Approximate, Dimensions: 6 7/16 in. high x 5 1/2 in. wide x 8 1/4 in. deep (164 mm high x 140 mm wide x 210 mm deep)

Ambient Temperature Range: -40°F to +150°F (-40°C to +60°C)

Approvals, Underwriters Laboratories Inc.: Listed: File No. E4436, Guide No. XAPX for USA and Canada

Approvals, CE: EN55011 (Emission) EN50082-2 (Immunity) 73/23/EEC (LVD)

Approvals, RoHS: 2011/65/ES

Supply Voltage: 24V

Accessories:

220736A/U – Internal Auxiliary Switch Assembly - 1 Switch

220736B/U – Internal Auxiliary Switch Assembly - 2 Switches

220738A/U – Adapter Bracket. Adjusts shaft height to match Modutrol III motors

220741A2-90/U – Screw Terminal Adapter Kit for Series 90 Modutrol IV Series 2 and Series 3 motors - Converts quick-connect terminals to screw terminals

221455A/U – Infinitely adjustable Motor Crank Arm

4074ERU/U – Weatherproofing kit. Protects motor from driving rain when mounted in any position. Not needed if motor is mounted upright.

50017460-001/U – 24/120/230 Vac Internal Transformers for Series 2 Motors

50017460-003/U – 120 Vac Internal Transformers for Series 2 Motors

Q7230A1005/U – Interface module, provides adjustable zero and span, voltage or current control

Q7130A1006/U – Interface Module (4-7, 6-9 or 10.5-13.5 Vdc Control)

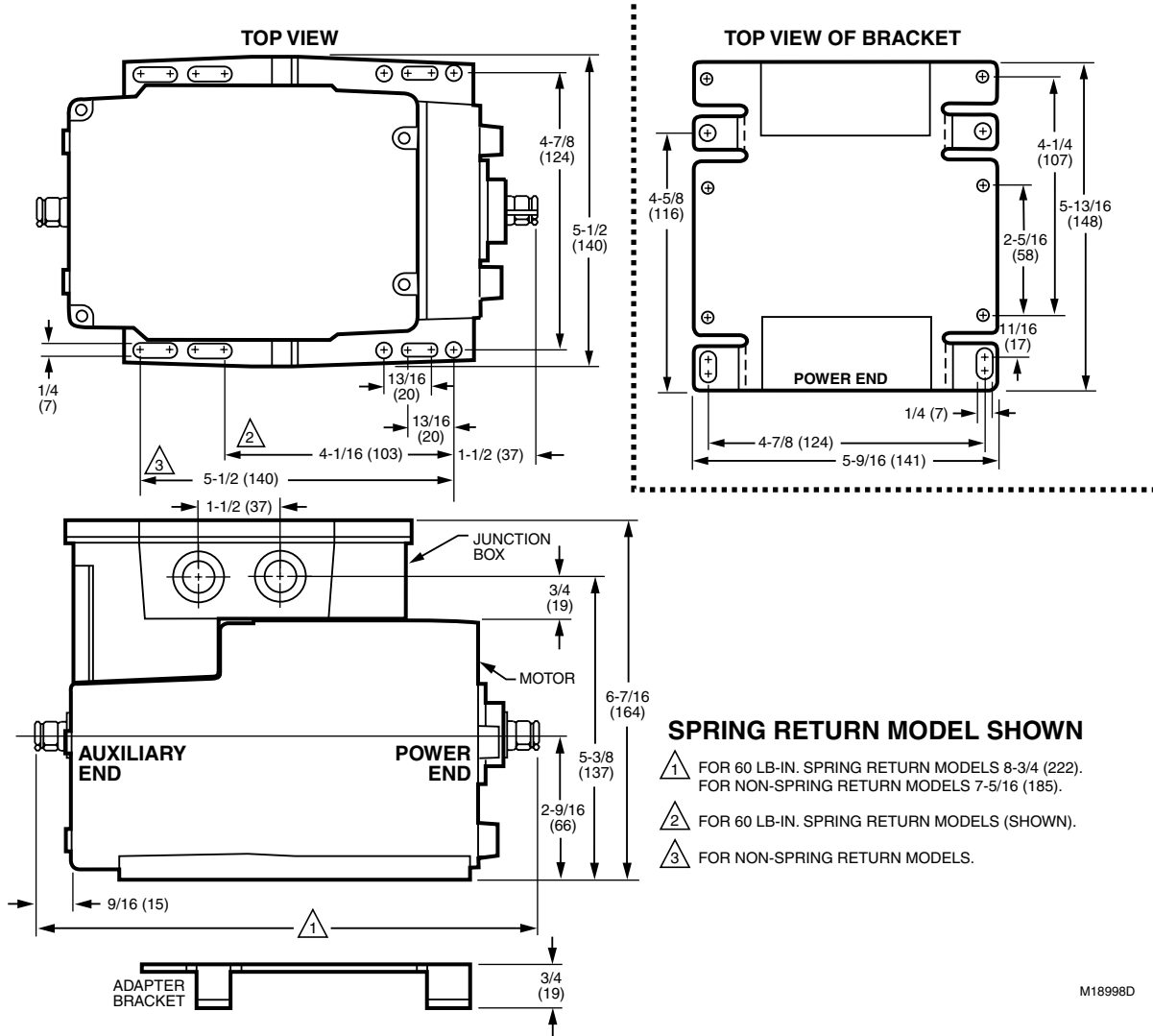
Q7230A1005/U – Interface Module (4-20 mA or 2-10 Vdc Control)

Q7330A1004/U – Interface Module (W936 or W945 Control)

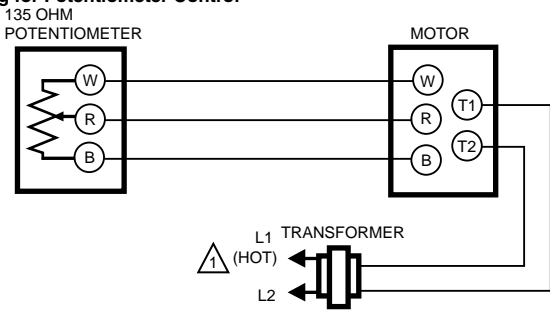
| Material Number | Torque Rating (lb-in.) | Torque Rating (Nm) | Power Consumption | Timing, Nominal | Internal Auxiliary Switch | Factory Stroke Setting | Electrical Connections | Stroke | Spring Return Timing | Includes | Tradeline Value |
|-----------------|------------------------|--------------------|-------------------|--------------------|---------------------------|------------------------|-------------------------|---|----------------------|----------|-----------------|
| M9182A1011/U | 60 lb-in. | 6.8 Nm | Driving – 20 VA | 30 - 60 sec | 0 | 160 degrees | Quick-connect terminals | Adjustable; 90 to 160 degrees, Asymmetrical | | | |
| M9182D1023/U | 60 lb-in. | 6.8 Nm | Driving – 20 VA | 60 - 120 - 240 sec | 0 | 160 degrees | Quick-connect terminals | Adjustable; 90 to 160 degrees, Asymmetrical | Nominal – 60 sec | | |
| M9185A1018/U | 60 lb-in. | 6.8 Nm | Driving – 20 VA | 30 - 60 sec | 0 | 160 degrees | Quick-connect terminals | Adjustable; 90 to 160 degrees, Asymmetrical | | | |
| M9185C1006/U | 60 lb-in. | 6.8 Nm | Driving – 20 VA | 30 - 60 sec | 2 | 160 degrees | Quick-connect terminals | Adjustable; 90 to 160 degrees, Asymmetrical | | | |
| M9185D1004/U | 60 lb-in. | 6.8 Nm | Driving – 20 VA | 30 - 60 sec | 0 | 160 degrees | Quick-connect terminals | Adjustable; 90 to 160 degrees, Asymmetrical | | | Tradeline |
| M9185D4008/U | 60 lb-in. | 6.8 Nm | Driving – 20 VA | 30 - 60 sec | 0 | 160 degrees | Quick-connect terminals | Adjustable; 90 to 160 degrees, Asymmetrical | | | Tradeline |
| M9185E1019/U | 60 lb-in. | 6.8 Nm | Driving – 20 VA | 30 - 60 sec | 1 | 90 degrees | Quick-connect terminals | Adjustable; 90 to 160 degrees, Asymmetrical | | | |

Modutrol IV Motors

Dimensions in inches (millimeters)



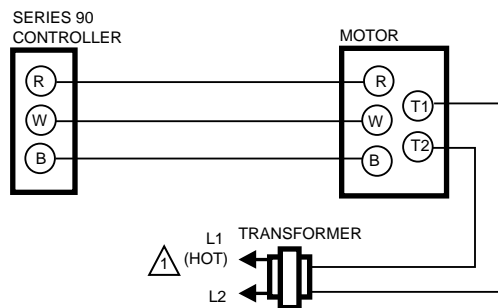
Wiring for Potentiometer Control



- ① POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- ② TRANSFORMER MAY BE INTERNAL OR EXTERNAL

M13708

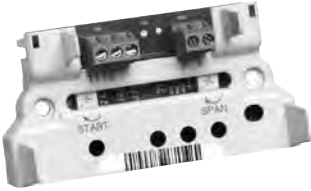
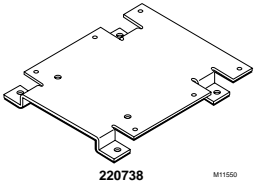



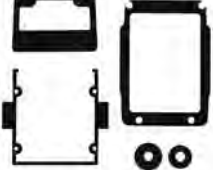
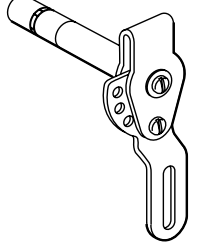
Typical wiring for Series 90 motors



- ① POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- ② TRANSFORMER MAY BE INTERNAL OR EXTERNAL

M770A

Foot Mounted Motor Accessories



| Material Number | Description | Used With | |
|-----------------|---|---|--|
| 203709D2/U | Screw Terminal Adapter for Series 70 Mod IV Motors with Adjustable Zero and Span | Series 2 and Series 3 Modutrol IV™ motors |  |
| 220738A/U | Adapter Bracket. Adjusts shaft height to match Modutrol III motors | Mod IV Actuator to match shaft height of Mod III Actuator |  220738 M1150 |
| 220741A2-61/U | Screw Terminal Adapter Kit for Series 61 Modutrol IV Series 2 motors - Converts quick-connect terminals to screw terminals | Series 61 Mod IV Motor |  |
| 220741A2-62/U | Screw Terminal Adapter Kit for Series 62 Series Modutrol IV Series 2 motors - Converts quick-connect terminals to screw terminals | Series 62 Mod IV Motor | |
| 220741A2-71/U | Screw Terminal Adapter Kit for Series 71 Modutrol IV Series 2 motors - Converts quick-connect terminals to screw terminals | Series 71 Mod IV Motor | |
| 220741A2-72/U | Screw Terminal Adapter Kit for Series 72 Modutrol IV Series 2 motors - Converts quick-connect terminals to screw terminals | Series 72 Mod IV Motor | |
| 220741A2-90/U | Screw Terminal Adapter Kit for Series 90 Modutrol IV Series 2 and Series 3 motors - Converts quick-connect terminals to screw terminals | Series 90 Mod IV Motor | |
| 220741A2-TP/U | Screw Terminal Adapter Kit for 2 position Modutrol IV Series 2 motors - Converts quick-connect terminals to screw terminals | Two Position for use with M4XXX and M8XXX Mod IV Motors | |
| 221455A/U | Infinitely adjustable Motor Crank Arm | Modutrol IV Motors |  |
| 221508A2/U | Resistor board for use with Modutrol IV motors. One board can be configured to drive up to 6 motors in parallel from a series 90 controller, drive up to 4 motors from a 4-20 mA controller or drive up to 3 motors from a W973 controller. | Series 2 and Series 3 Modutrol IV™ motors |  |
| 4074ERU/U | Weatherproofing kit. Protects motor from driving rain when mounted in any position. Not needed if motor is mounted upright. | Fits all Modutrol IV motors. |  |
| 7617DM/U | Coupling - Must be used with ES650117 explosion-proof housing | ES650117 |  7617DM M11515 |

Modutrol IV Motors

198162 Internal Transformer for Series 1 Motors

Application: Internal Transformer

Ambient Temperature Range: 0°F to 131°F (-18°C to +55°C)

| Material Number | Supply Voltage | Control Signal | Includes | Comments | |
|-----------------|--------------------------------------|---------------------|--|---|---|
| 198162AA/U | 120 or 208 or 240 Vac at 50 or 60 Hz | SPST, On/Off switch | Transformer, screws, instructions for mounting internally in Modutrol IV Series 1 motors | For Mod IV Series 2 and 3 actuators, use 50017460-001 |  |
| 198162EA/U | 120 Vac at 50 or 60 Hz | SPST, On/Off switch | Transformer, screws, instructions for mounting internally in Modutrol IV Series 1 motors | For Mod IV Series 2 and 3 actuators, use 50017460-003 |  |
| 198162GA/U | 220 Vac at 50 or 60 Hz | SPST, On/Off switch | Transformer, screws, instructions for mounting internally in Modutrol IV Series 1 motors | For Mod IV Series 2 and 3 actuators, use 50017460-001 | |
| 198162JA/U | 24 Vac (for electrical isolation) | SPST, On/Off switch | Transformer, screws, instructions for mounting internally in Modutrol IV Series 1 motors | For Mod IV Series 2 and 3 actuators, use 50017460-001 | |

220736 Internal Auxiliary Switch Kits



Application: Internal Auxiliary Switch Kits

Auxiliary Switch Ratings: AFL - 120 Vac – 7.2A; ALR - 120 Vac – 43.2A; AFL - 240 Vac – 3.6A; ALR - 240 Vac – 21.6A

Power Consumption: Driving – 20 VA

Weight: 0.3 lb

Ambient Temperature Range: 0°F to 131°F (-18°C to +55°C)

| Material Number | Electrical Connections | Control Signal | Includes | Used With |
|-----------------|---------------------------|---------------------|---|------------------------------|
| 220736A/U | 15 in (381 mm) Lead Wires | SPDT, On/Off switch | One Micro Switch V3 precision switch, which is actuated by adjustable cams inside the motor. | TRADELINE Modutrol IV Motors |
| 220736B/U | 15 in (381 mm) Lead Wires | SPDT, On/Off switch | Two Micro Switch V3 precision switches, which are actuated by adjustable cams inside the motor. | TRADELINE Modutrol IV Motors |

50017460 Internal Transformers for Series 2 and 3 Motors



Application: Internal Transformer

Frequency: 50 Hz; 60 Hz

Mounting: Internal mount to Modutrol IV Motors

Ambient Temperature Range: 0°F to 131°F (-18°C to +55°C)

| Material Number | Supply Voltage | Control Signal | Includes | Used With |
|-----------------|--------------------------|---------------------|---|---|
| 50017460-001/U | 24 Vac; 120 Vac; 230 Vac | SPST, On/Off switch | Transformer, screws, instructions for mounting internally in Modutrol IV™ Series 2 and 3 motors | Series 2 and Series 3 Modutrol IV™ motors |
| 50017460-003/U | 120 Vac | SPST, On/Off switch | Transformer, screws, instructions for mounting internally in Modutrol IV™ Series 2 and 3 motors | Series 2 and Series 3 Modutrol IV™ motors |

Q181 Auxiliary Potentiometer for Modutrol Motors



Controls from one to four Modutrol (Series 90) motors from one master motor.

- Compatible with Modutrol III and Modutrol IV motors.
- Mounts on master motor and operates controlled motors in unison or in sequence.
- Controls motors with mechanical balance relay and solid state drive circuit.
- Use with 24V motors.

Application: Electro-mechanical
Mounting: External mount to Modutrol IV Motors

Approximate, Dimensions: 3 3/16 in. high x 3 1/4 in. wide x 3 3/8 in. deep (81 mm high x 83 mm wide x 86 mm deep)
Approvals, CE: Report: GV97-011

| Material Number | Electrical Connections | Control Signal | Weight | Includes | Comments | Used With |
|-----------------|------------------------|---------------------|---------|----------|---|-----------|
| Q181A1007/U | Screw terminals | SPST, On/Off switch | 1.38 lb | Cover | For controlling one Modutrol motor | Series 90 |
| Q181A1015/U | Screw terminals | SPST, On/Off switch | 1.56 lb | Cover | For controlling two Modutrol motors | Series 90 |
| Q181A1064/U | Screw terminals | SPST, On/Off switch | 1.25 lb | | For controlling up to three Modutrol motors | Series 90 |

Q209 Manual Potentiometer for Modutrol Motors



Used to limit minimum position of a proportioning Modutrol motor.

- Mount directly in motor.
- All wiring is accomplished within motor wiring compartment.
- Color-coded leadwires.

Application: Electro-mechanical
Approvals, CE: Report: GV97-011

| Material Number | Electrical Connections | Control Signal | Mounting | Weight | Approximate, Dimensions | Includes | Used With |
|-----------------|---|---------------------|--------------------------------------|---------|---|--|----------------------------|
| Q209A1022/U | Screw terminals | SPST, On/Off switch | Internal mount to Modutrol IV Motors | 0.2 lb | 3 1/4 in. high x 3 3/8 in. wide x 3 7/8 in. deep (83 mm high x 86 mm wide x 98 mm deep) | 150 ohm Potentiometer, leadwires and bracket | M9184; M9185; M6284; M6285 |
| Q209A1030/U | Screw terminals | SPST, On/Off switch | Internal mount to Modutrol IV Motors | 0.25 lb | 3 1/4 in. high x 3 3/8 in. wide x 3 7/8 in. deep (83 mm high x 86 mm wide x 98 mm deep) | 300 ohm Potentiometer, leadwires and bracket | M9184; M9185; M6284; M6285 |
| Q209E1002/U | Quick-connect terminals with lead wires | SPST, On/Off switch | External mount to Modutrol IV Motors | 0.5 lb | 1 in. high x 4 1/2 in. wide x 6 1/4 in. deep (25 mm high x 114 mm wide x 159 mm deep) | 150 ohm Potentiometer, factory mounted on a wiring cover box | |
| Q209E1010/U | Quick-connect terminals with lead wires | SPST, On/Off switch | External mount to Modutrol IV Motors | 0.5 lb | 1 in. high x 4 1/2 in. wide x 6 1/4 in. deep (25 mm high x 114 mm wide x 159 mm deep) | 300 Ohm Potentiometer, Factory Mounted on a wiring cover box | |

Modutrol IV Motors

Q607 Auxiliary Switches for Modutrol Motors



For control of auxiliary equipment as a function of Modutrol motor shaft position.

- Compatible with Modutrol III and Modutrol IV motors. (Requires 220738A adapter bracket for use with Modutrol IV motors).
- Micro Switch precision switches, adjustable.
- Indicate motor position by use of a scale plate anchored to a common shaft, which allows Q607 to be adjusted for operational sequence before mounting.
- Adjustable plate allows universal mounting on either end of motor.
- Wrap-around cover for easy access to switch adjustments and wiring.
- Maintenance-free protection of the switches and cams.

Application: Electro-mechanical

Control Signal: SPDT, On/Off switch

Auxiliary Switch Ratings: AFL - 120 Vac – 9.8A; ALR - 120 Vac – 58.8A; AFL - 240 Vac – 4.9A; ALR - 240 Vac – 29.4A

Mounting: Cover or gear end

Approximate, Dimensions: 6 7/16 in. high x 5 3/16 in. wide x 2 1/8 in. deep (164 mm high x 132 mm wide x 54 mm deep)

Approvals, Underwriters Laboratories Inc.: Listed File: E4436, Guide: XAPX2

Approvals, CSA: Certified: File No. LR1620

| Material Number | Electrical Connections | Internal Auxiliary Switch | Weight | Tradeline Value | Includes | Comments |
|-----------------|------------------------|---------------------------|---------|-----------------|---|---|
| Q607A1050/U | Screw terminals | 1 | 2.5 lb | | Revised mounting bracket | Post 1969 Honeywell Modutrol Motors |
| Q607A1068/U | Screw terminals | 1 | 2.5 lb | | With adapter for cover end spring return motor and revised mounting bracket | |
| Q607A1076/U | Screw terminals | 1 | 2.5 lb | Tradeline | With adapter for cover end spring return motor and revised mounting bracket | Post 1969 Honeywell Modutrol Motors |
| Q607B1067/U | Screw terminals | 2 | 2.4 lb | | Revised mounting bracket | Pre/Post 1969 Honeywell Modutrol Motors |
| Q607B1075/U | Screw terminals | 2 | 2.63 lb | | With adapter for cover end spring return motor and revised mounting bracket | |
| Q607B1083/U | Screw terminals | 2 | 2.8 lb | Tradeline | With adapter for cover end spring return motor and revised mounting bracket | |
| Q607C1009/U | Terminal Board | 1 | 2.16 lb | | Special terminal panel and metric grounding screws | |
| Q607D1008/U | Terminal Board | 2 | 2.25 lb | | Special terminal panel and metric grounding screws | |

S443 Manual Potentiometer for Modutrol Motors



Used for remote manual control of proportioning (Series 90) motors and relays.

- Compatible with Modutrol III and Modutrol IV motors.
- Select automatic or manual control with DPST toggle switch.
- Suitable for Series 90, M7685; and M7285 motors controlled by 135 ohm inputs.
- Surface mounted, with conduit outlet on each side of case. Screw terminals.
- Scale marked OPEN-CLOSE.

Application: Electric

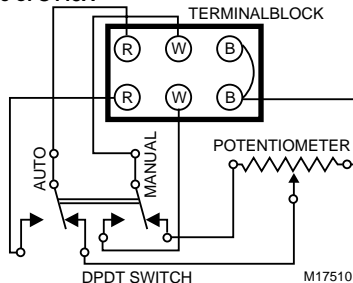
Mounting: Surfaced mounted with conduit knock-outs

Weight: 1.3 lb

Approximate, Dimensions: Including Knob 3 3/4 in. high, 3 3/8 in. wide, 3 1/4 in. deep. **Fits inside wiring junction box of Modutrol IV Motor (Including Knob 95 mm high, 86 mm wide, 83 mm deep. **Fits inside wiring junction box of Modutrol IV Motor)

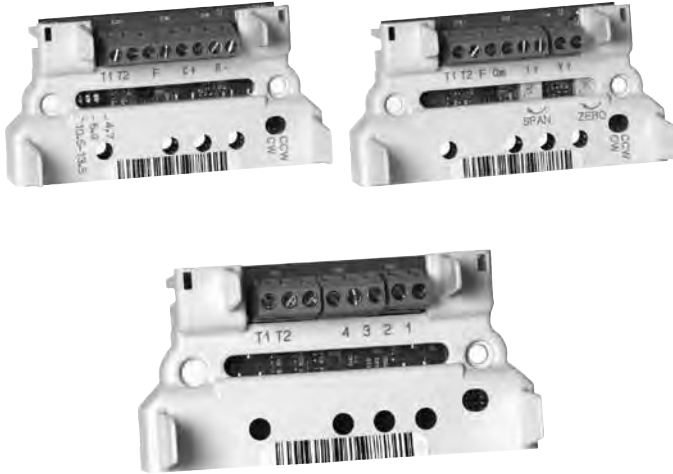
Ambient Temperature Range: -40°F to +150°F (-40°C to +60°C)

Internal schematic of S443A



| Material Number | Electrical Connections | Control Signal | Comments | Used With |
|-----------------|------------------------|---------------------|--------------------------|--|
| S443A1007/U | Screw terminals | SPST, On/Off switch | 2 position manual switch | M9164; M9484; M9184; M9185 and motors replaced by these motors |

Q7130; Q7230; and Q7330 Interface Modules for Series 90 Modutrol IV Motors



For converting Series 90 Modutrol IV motors to Series 70 (electronic) control.

- Mounts and works inside wiring box of any series 90 Modutrol IV Motor
- Protected from weather by motor's NEMA 3 wiring box
- Mates to motor's quick-connect terminals and provides screw terminals for control wiring connections
- Features solid-state circuitry with surface mount components
- Cover holds module in place, screws not required
- Includes (except Q7330A) reversing switch to allow replacement of electrically normally open or electrically normally closed motors

Application: Electric

Frequency: 50 Hz; 60 Hz

Mounting: Mounts to quick-connects inside Mod Motor

Power Consumption: Driving – 2 VA

Approximate, Dimensions: Fits inside wiring junction box of Modutrol IV Motor

Ambient Temperature Range: -40°F to +150°F (-40°C to +60°C)

| Material Number | Electrical Connections | Control Signal | Weight | Used With |
|-----------------|------------------------|--|--------|--|
| Q7130A1006/U | Terminal Board | Provides selectable voltage ranges: 4 to 7, 6 to 9, or 10.5 to 13.5 Vdc. Adapts M91XX to function as M71XX model. | 0.3 lb | Used with M91XX Modutrol IV Motor to replace M71XX Motor applications. Module controls only one motor. |
| Q7230A1005/U | Terminal Board | Provides adjustable zero & span, voltage or current control (includes 2-10 Vdc or 4-20 mA). Adapts M91XX to function as M72XX model. | 0.3 lb | Used with M91XX Modutrol IV Motor to replace M72XX Motor applications. Module controls only one motor. |
| Q7330A1004/U | Terminal Board | Provides interface to W936 Control. Adapts M91XX to function as M73XX model. | 0.3 lb | Used with M91XX Modutrol IV Motor to replace M73XX Motor applications. Module controls only one motor. |

Kit Mounted Motors

M436; M836 Damper Motors



Spring return motors for two-position back draft, outdoor air changeover, zone or minimum position damper control.

- Operate outdoor air dampers for combustion or makeup air in residential and light commercial applications.
- Operate changeover dampers for heating and cooling systems.
- Operate minimum position dampers for ventilation and similar applications.
- Include internal SPDT switch for controlling auxiliary equipment, additional motors, or to provide a burner interlock switch.
- Spring returns motor to start position on power failure.
- Drive shafts located on both sides of motor.
- Adjustable auxiliary switch for cascading motors or operating auxiliary equipment.
- Thermal breaker for overload protection during lifting stroke or if motor stalls.

Mounting: Foot-mounted, Any position where the output shaft is horizontal

Spring Return Timing: Maximum – 25 sec

Motor shafts: 2, Hexagonal shape

Weight: 4 lb 10 oz (2.1 kg)

Approximate, Dimensions: 4 1/2 in. high x 4 5/8 in. wide x 3 3/4 in. deep (114 mm high x 118 mm wide x 95 mm deep)

Operating Temperature Range: 32°F to 125°F (0°C to 52°C)

Approvals, Underwriters Laboratories Inc.: Listed File: E4436, Guide: XAPX

Operating Humidity Range (% RH): 5 to 95% RH

Control Signal: Two position, SPST

Frequency: 60 Hz

Fail Safe Mode: Spring Return

Additional Torque Ratings (lb-in.): Breakaway – 30 lb-in.

Additional Torque Ratings (Nm): Breakaway – 3.3 Nm

Internal Auxiliary Switch: 1

Auxiliary Switch Ratings: AFL - 120 Vac – 7.2A; ALR - 120 Vac – 43.2A; AFL - 240 Vac – 3.6A; ALR - 240 Vac – 21.6A

External Auxiliary Switches Available: Yes

Stroke: Angle of Rotation – 75 degrees maximum

Electrical Connections: Screw terminals

| Material Number | Torque Rating (lb-in.) | Torque Rating (Nm) | Supply Voltage | Timing, Nominal | Timing | Nominal Current Draw (amps) | Nominal Power (watts) | Includes | Used With | Tradeline Value |
|-----------------|------------------------|--------------------|----------------|---------------------------------------|------------------------------|--|---------------------------------------|------------------------|---------------------------|-----------------|
| M436A1116/U | 20 lb-in. | 2.3 Nm | 120 Vac | Opening – 30 sec | Run Time Maximum – 40 sec | Opening – 0.37 A, Holding – 0.12 A | Opening – 28 W, Holding – 8.5 W | | | Tradeline |
| M436A1124/U | 20 lb-in. | 2.3 Nm | 240 Vac | Opening – 30 sec | Run Time Maximum – 40 sec | Opening – 0.19 A, Holding – 0.06 A | Opening – 29 W, Holding – 8.5 W | Bracket 198545 | | Tradeline |
| M436A1140/U | 20 lb-in. | 2.3 Nm | 220 Vac | Opening – 30 sec, Closing – 25 sec | Run Time Maximum – 55 sec | Opening – 0.21 A, Holding – 0.062 A | Opening – 30 W, Holding – 8.5 W | Ground and cover screw | Series 40, 80 circuits | |
| M836A1034/U | 20 lb-in. | 2.3 Nm | 24 Vac | Opening – 30 sec, Closing – 25 sec | Run Time Maximum – 55 sec | Opening – 1.85 A, Holding – 0.6 A | Opening – 39 W, Holding – 8.5 W | | Series 40, 80 circuits | |
| M836A1042/U | 20 lb-in. | 2.3 Nm | 24 Vac | Opening – 30 sec | Run Time Maximum – 40 sec | Opening – 1.85 A, Holding – 0.6 A | Opening – 28 W, Holding – 8.5 W | | | Tradeline |
| M836B1025/U | 15 lb-in. | 1.7 Nm | 24 Vac | Opening – 30 sec, Closing – 25 sec | Run Time Maximum – 50 sec | Opening – 1.34 A, Holding – 0.73 A | Opening – 20.3 W, Holding – 11.2 W | | Series 40, 80 circuits | |
| M836B1033/U | 15 lb-in. | 1.7 Nm | 24 Vac | Opening – 25 sec | Run Time Maximum – 40 sec | Opening – 1.34 A, Holding – 0.73 A | Opening – 20.3 W, Holding – 11.2 W | | | Tradeline |

M835 Two-Position Zone Damper Actuator



Two-Position Zone Motor, used with two-wire, 24-volt room thermostat or other controller for two position damper control.

- Controls zone or changeover damper in heating and air conditioning systems, and control gates on feeders.
- SPST end switch makes within 20 sec of full open, breaks within 20 sec after start of closing stroke.

Control Signal: Two position, SPST
Frequency: 60 Hz
Fail Safe Mode: Spring Return
Additional Torque Ratings (lb-in.): Breakaway – 30 lb-in.
Additional Torque Ratings (Nm): Breakaway – 3.3 Nm
External Auxiliary Switches Available: No
Stroke: Angle of Rotation – 60 to 75 degrees
Electrical Connections: Lead wire in conduit box

Mounting: Foot-mounted
Motor shafts: 2, Round
Approximate, Dimensions: 5 1/2 in. high x 4 1/4 in. wide x 2 5/8 in. deep (140 mm high x 108 mm wide x 67 mm deep)
Operating Temperature Range: Cooling: 140°F, Heating: 200°F (Cooling: 60°C, Heating: 93°C)
Operating Humidity Range (% RH): 5 to 95% RH
Tradeline Value: Tradeline

| Material Number | Torque Rating (lb-in.) | Torque Rating (Nm) | Supply Voltage | Timing, Nominal | Nominal Power (watts) |
|-----------------|------------------------|--------------------|----------------|-------------------------------------|---------------------------------|
| M835A1051/U | 4 lb-in. | 0.45 Nm | 24 Vac | Opening – 80 sec, Closing – 160 sec | Opening – 27 W, Holding – 8.5 W |

M847 Two-Position Draft Damper Actuator



Two-position draft Damper actuators used with two-wire 24V room thermostats or other low voltage controllers to operate the draft damper on solid fuel furnaces or boilers and other similar light duty applications.

- Low voltage, spring-return damper actuator.
- Equipped with mounting bracket for wall, duct or direct appliance mounting to control draft damper through an actuator arm or chain linkage arrangement.
- Actuator wheel rotates in a clockwise direction (when facing the wheel) when energized.

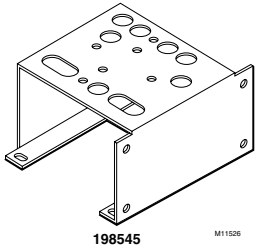
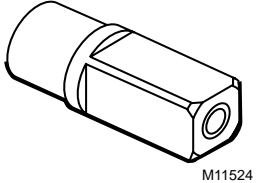

Control Signal: Two position, SPST
Frequency: 60 Hz
Fail Safe Mode: Spring Return
External Auxiliary Switches Available: No
Stroke: Angle of Rotation – 45 degrees maximum

Mounting: Foot mounted. Direct Coupled
Motor shafts: 1, Round
Operating Temperature Range: 40°F to 125°F (5°C to 50°C)
Operating Humidity Range (% RH): 5 to 95% RH

| Material Number | Torque Rating (lb-in.) | Torque Rating (Nm) | Supply Voltage | Weight | Approximate, Dimensions | Timing | Includes |
|-----------------|------------------------|--------------------|----------------|----------|---|---------------------------|----------------------|
| M847A1031/B | 1.9 lb-in. | 0.21 Nm | 24 Vac | 1.8 lb | 3 1/2 in. high x 2 5/8 in. wide x 3 5/16 in. deep (89 mm high x 119 mm wide x 75 mm deep) | Run Time Maximum – 20 sec | 38 in. linkage chain |
| M847A1031/U | 1.9 lb-in. | 0.21 Nm | 24 Vac | 1.8 lb | 3 1/2 in. high x 2 5/8 in. wide x 3 5/16 in. deep (89 mm high x 119 mm wide x 75 mm deep) | Run Time Maximum – 20 sec | 38 in. linkage chain |
| M847A1049/U | 1.9 lb-in. | 0.21 Nm | 24 Vac | 1.75 lbs | 3 1/2 in. high x 2 5/8 in. wide x 3 5/16 in. deep (89 mm high x 66 mm wide x 84 mm deep) | Run Time Maximum – 20 sec | 3.8 in. linkage arm |
| M847A1072/B | 1.9 lb-in. | 0.21 Nm | 24 Vac | 1.75 lbs | 3 1/2 in. high x 2 5/8 in. wide x 3 5/16 in. deep (89 mm high x 66 mm wide x 84 mm deep) | Run Time Maximum – 20 sec | 3.8 in. linkage arm |
| M847A1072/U | 1.9 lb-in. | 0.21 Nm | 24 Vac | 1.75 lbs | 3 1/2 in. high x 2 5/8 in. wide x 3 5/16 in. deep (89 mm high x 66 mm wide x 84 mm deep) | Run Time Maximum – 20 sec | 3.8 in. linkage arm |
| M847A1080/B | 1.9 lb-in. | 0.21 Nm | 24 Vac | 1.8 lb | 3 1/2 in. high x 2 5/8 in. wide x 3 5/16 in. deep (89 mm high x 119 mm wide x 75 mm deep) | Run Time Maximum – 20 sec | 38 in. linkage chain |
| M847A1080/U | 1.9 lb-in. | 0.21 Nm | 24 Vac | 1.8 lb | 3 1/2 in. high x 2 5/8 in. wide x 3 5/16 in. deep (89 mm high x 119 mm wide x 75 mm deep) | Run Time Maximum – 20 sec | 38 in. linkage chain |
| M847A1098/U | 1.9 lb-in. | 0.21 Nm | 24 Vac | 1.75 lbs | 3 1/2 in. high x 2 5/8 in. wide x 3 5/16 in. deep (89 mm high x 66 mm wide x 84 mm deep) | Run Time Maximum – 20 sec | 3.8 in. linkage arm |

Kit Mounted Motors

Replacement Parts and Accessories for Kit Mounted Motors

| Material Number | Description | Used With | |
|-----------------|---|-------------|---|
| 126809/0021/U | M836 Mounting Bracket | M836 | |
| 126816/0021/U | Clamp for M436 | M436 | |
| 128336/0021/U | Mounting Bracket for M436/M836, Increases motor height 0.5 inches. | M436, M836 | |
| 198545/U | Motor mounting bracket for M436/M836. | M436, M836 |  |
| 4074BRU/U | Bag Assembly Extension adapter and screws for mounting Q607 Auxiliary switch to M436A Damper Motor. | Q607; M436A |  |
| 4074ELR/U | Crank arm, heavy duty | | |
| 4074ELY/U | Crank arm, infinitely adjustable | |  |

Q100 Linkage



Contains necessary hardware to link Modutrol® motors to a V51B Butterfly Valve.

- Compatible with Modutrol III and Modutrol IV™ motors. (Requires adapter bracket)
- Adaptable for all sizes of V51B Valves.
- Strain release and stop bracket are provided with V51B.

Linkage Type: Valve

Used with Actuator: Modutrol Motor

| Material Number | Description |
|-----------------|--|
| Q100A1015/U | Linkage for 2 1/2 and 3 inch butterfly valves (Can also be used with Modutrol IV motors) |
| Q100A1023/U | Linkage for 4 inch butterfly valves (Can also be used with Modutrol IV motors) |

Q298 Damper Linkage for Economizer Motors



Connects M833, M835, M836, M7215 or M7415 motor to 1 or 2 zone dampers.

- May be used to link shafts of two dampers together.
- Includes pushrod, ball joints and bushings for 1/4 in. (6 mm) to 1/2 in. (13 mm) diameter shafts.

Linkage Type: Damper

Used with Actuator: Damper Actuator (M6415, M7215, M7405, M7415, M8415)

| Material Number | Description | Includes |
|-----------------|---|---|
| Q298B1065/U | Linkage for adapting 90 degree Modutrol motor to V51E Gas Valve. Includes Pushrod (variable lengths), 2 damper arms, and 2 ball joints. | Pushrod in variable lengths, 2 damper arms, and 2 ball joints |

Damper and Valve Linkages

Q605 Damper Linkage



Connect Modutrol® motor to standard damper or set of dampers to provide control of duct airflow.

- Adjustable to any degree of damper opening. Include ball joints, motor crank arm and damper arm for 1/2 in. (13 mm) diameter shaft.
- 27520 pushrod must be ordered separately.

Shaft Dimensions (in.): 1/2 in. (order 26025B/U hub for 3/8 in. dia. or 2174B for 7/16 in. hub dia.)

Used with Actuator: Modutrol Motor

Accessories:

27520B/U – Push Rod (5/16 in. dia., 10 in. length) Used With: All Actuators and Dampers

27520C/U – Push Rod (5/16 in. dia., 12 in. length)

27520E/U – Push Rod (5/16 in. dia., 18 in. length) Used With: All Actuators and Dampers

27520G/U – Push Rod (5/16 in. dia., 24 in. length)

27520K/U – Push Rod (5/16 in. dia., 36 in. length)

27520L/U – Push Rod (5/16 in. dia., 48 in. length)

27520Q/U – Push Rod (5/16 in. dia., 8 in. length) Used With: All Actuators and Dampers

7617ADW/U – Adjustable Modutrol IV Motor Crank Arm

7616BR/U – Modutrol III Motor Crank Arm assembly with clip

| Material Number | Linkage Type | Mounting | Includes | Tradeline Value |
|-----------------|--------------|---|---|-----------------|
| Q605A1062/U | Damper | Mount motor externally on duct for use with Modutrol III Motors | Motor bracket, damper arm, motor crankarm, and 2 ball joints | |
| Q605A1070/U | Damper | Mount motor externally on duct for use with Modutrol III Motors | Motor bracket, damper arm, motor crankarm, and 2 ball joints | Tradeline |
| Q605D1051/U | Damper | Mount motor external on duct or internal in duct for use with Modutrol III Motors | Motor bracket, 3 damper arms, motor crankarm, and 4 ball joints | Tradeline |
| Q605D1069/U | Damper | Mount motor external on duct or internal in duct for use with Modutrol III Motors | Motor bracket, 3 damper arms, motor crankarm, 4 ball joints, left hand drive ear and crankarm adapter | Super Tradeline |
| Q605E1050/U | Damper | Mount motor externally on duct without bracket for use with Modutrol III Motors | Damper arm, motor crankarm, and 2 ball joints | Tradeline |
| Q605F1000/U | Damper | Mount motor externally on duct for use with Modutrol IV Motors | Pushrod in variable lengths, 2 damper arms, and 2 ball joints | |
| Q605F1018/U | Damper | Mount motor externally on duct for use with Modutrol IV Motors | Motor bracket, damper arm, motor crankarm, and 2 ball joints | Tradeline |
| Q605G1009/U | Damper | Mount motor inside of duct for use with Modutrol IV Motors | Motor bracket, damper arm, motor crankarm, and 2 ball joints | |
| Q605H1016/U | Damper | Mount motor externally on duct; Connects one Mod IV motor to two louver dampers | Motor bracket, 3 damper arms, motor crankarm, and 4 ball joints | |
| Q605H1024/U | Damper | Mount motor external on duct or internal in duct; Connects one Mod IV motor to two louver dampers | Motor bracket, 3 damper arms, motor crankarm, 4 ball joints, left hand drive ear and crankarm adapter | Super Tradeline |
| Q605J1013/U | Valve | Mount motor externally on duct without bracket for use with Modutrol IV Motors | Damper arm, motor crankarm, and 2 ball joints | Tradeline |

Q605 Accessories

Used with Actuator: Modutrol Motor

| Material Number | Description | Includes | Used With |
|-----------------|--|---|-----------|
| 101662A/0021/U | Motor Mounting Bracket Assembly for Q605 Damper-Linkage. | | Q605 |
| 102931/0021/U | Adaptor arm for less than 90 degree rotation for the Q605 Damper-Linkage. | | Q605 |
| 7617ACL/U | Bag Assembly consists of crank arm assembly, 12 screws, 2 joints, 8 nuts, arm assembly and clip for use with M934. | Damper arm, motor crankarm, and 2 ball joints | Q605 |

Q5001 Valve Linkage for Modutrol IV™ Motors



The Q5001 Valve Linkage connects a Modutrol® Motor to a 2- or 3-way valve. It is used primarily on V5011 or V5013 steam and water valves.

- Q5001 Valve Linkage is applicable to 2-Way or 3-Way valves in modulating or two-position service.
- Linkage requires no adjustment when used with Honeywell valves and Modutrol IV™ Motors.
- Q5001 Valve Linkage replaces Q601 and Q618 Valve Linkages.
- Linkage mounts directly to the valve bonnet; motor mounts to linkage bracket.
- Easy-to-read position indicator.
- Valve stem lift height cam selectable.
- Overtravel permits tight close-off without excessive motor strain.
- Available brackets make linkages adaptable to many valve bodies.
- Models available with 80 lb, 160 lb, and 320 lb stem force.
- Reversible cams on the Q5001 allow field selection of normally open or normally closed valve operation.
- All models have anti-spin clips.

Linkage Type: Valve

Mounting: Linkage mounts directly to the valve bonnet; motor mounts on linkage bracket.

Used with Actuator: Modutrol Motor

Ambient Temperature Range: -40°F to +150°F (-40°C to +66°C)

Replacement Parts

220845/0767/U – Retainer button for use with Q5001 Valve Linkage for Modutrol IV™ Motors. Unit Pack.

| Material Number | Bonnet Size (in.) | Stroke | Stem Force Rating (lbf) | Stem Force Rating (N) | Includes | Used With | Tradeline Value |
|-----------------|-------------------|-----------|-------------------------|-----------------------|--|---|-----------------|
| Q5001A1006/U | 1 3/8 in. | 3/4 in. | 80 lbf | 356 N | 1 3/8 in. valve bracket | Modutrol IV Motors and V5011 or V5013 valves | |
| Q5001A1014/U | 1 3/8 in. | 3/4 in. | 160 lbf | 712 N | 1 3/8 in. valve bracket | Modutrol IV Motors and V5011 or V5013 valves | |
| Q5001D1000/U | 1 3/8 in. | 3/4 in. | 80 or 160 lbf | 356 N or 712 N | 1 3/8 in. valve bracket and Anti spin clip | Modutrol IV Motors and V5011 or V5013 valves | Tradeline |
| Q5001D1018/U | 1 3/8 in. | 3/4 in. | 160 or 320 lbf | 712 N or 1355 N | 1 3/8 in. valve bracket and Anti spin clip | Modutrol IV Motors and V5011 or V5013 valves up to 3 inch | Tradeline |
| Q5001D1026/U | 1 7/8 in. | 1 1/2 in. | 160 or 320 lbf | 712 N or 1355 N | 1 7/8 in. valve bracket and Anti spin clip | Modutrol IV Motors and V5011 or V5013 4, 5 or 6 inch valves | Tradeline |

Q5001 Parts

| Material Number | Stroke | Description | Used With |
|-----------------|-----------|--|-----------|
| 220845/0767/U | | Retainer button for use with Q5001 Valve Linkage for Modutrol IV™ Motors. Unit Pack. | Q5001 |
| 220848A/U | 1/2 in. | 1/2 inch cam assembly for Q5001 Valve Linkage. Bulk Pack. | Q5001 |
| 220852A/U | | Stroke Indicator Assembly for Q5001. Bulk Pack. | Q5001 |
| 220861A/U | 3/4 in. | 3/4 inch lift linkage cam assembly for Q5001. Bulk Pack. | Q5001 |
| 220863A/U | 1 in. | 1 inch lift linkage cam assembly for Q5001. Bulk Pack. | Q5001 |
| 220864A/U | 1 1/8 in. | 1-1/8 inch lift linkage cam assembly for Q5001. Bulk Pack. | Q5001 |
| 220867A/U | 1 1/2 in. | 1-1/2 inch lift linkage cam assembly for Q5001. Bulk Pack. | Q5001 |
| 220874/0767/U | | 9/16 inch anti-spin clip for Q5001. Unit Pack. | Q5001 |
| 4074ETB/U | | Envelope Assembly includes 1-1/16 Anti-spin Clip, 1-1/16 anti-spin Button, 1/4-28 x 24 Set Screw, 8-32 x 1/4 Set Screw, and Instruction Sheet. | Q5001 |

Damper and Valve Linkages

Q5020 Globe Valve Linkages



The Q5020 Globe Valve Linkages connect a Honeywell direct coupled actuator (DCA) to a steam or water globe valve. The Q5020 Linkages are compatible with two-way and three-way globe valves up to 3 inch (DN80).

- Used with two-way and three-way globe valves in modulating or two-position service.
- Used with 25, 50, and 142 lb-in. spring return and 35, 70, 150, and 300 lb-in. non-spring return DCA.
- Quick and simple installation with no disassembly required.
- Heavy-duty Steel rack and pinion construction and Aluminum Die-cast housing.
- Maintenance-free construction.
- Precision roller-bearing rack construction prevents premature valve packing wear and leakage.
- Flexible actuator mounting orientation.
- Adjustable manual override lever and valve position indicator.
- Can be mounted on specific non-Honeywell valves using a 32004629 Bonnet Adapter Kit.

Linkage Type: Valve

Mounting: Linkage mounts directly to the valve bonnet; actuator mounts on linkage

Used with Actuator: Direct Coupled Actuator

| Material Number | Bonnet Size (in.) | Shaft Dimensions (in.) | Stroke | Includes | Used With |
|-----------------|-------------------|------------------------|-----------|------------------------------|---|
| Q5020A1003/U | 1 3/8 in. | 1/2 in. | 3/4 in. | 1/2 in. diameter drive shaft | V5011N; V5013N; V5011F; V5011G |
| Q5020C1009/U | 1 3/8 in. | 1 in. | 1 1/2 in. | 1 in. diameter drive shaft | V5051 |
| Q5020D1007/U | 1 3/8 in. | 1/2 in. | 1/2 in. | 1/2 in. diameter drive shaft | T.A.C. valves; Siemens valves; Johnson valves |

Q5024 Globe Valve Linkage



Q5024 Globe Valve Linkages connect a Honeywell direct coupled actuator (DCA) to a steam or water globe valve. Q5024 linkages are compatible with 2- and 3-way globe valves.

- Used with 2-way and 3-way globe valves in modulating or two-position service.
- Quick and simple installation with no disassembly required.
- Heavy-duty steel rack and pinion construction and aluminum die-cast housing.
- Maintenance-free construction.
- Flexible actuator mounting orientation.
- Adjustable manual override lever and valve position indicator.
- Available for 1/2 in. through 6 in. globe valves made by most manufacturers.
- Used with Honeywell MS and MN Spring and Non-Spring Actuators.

Linkage Type: Valve

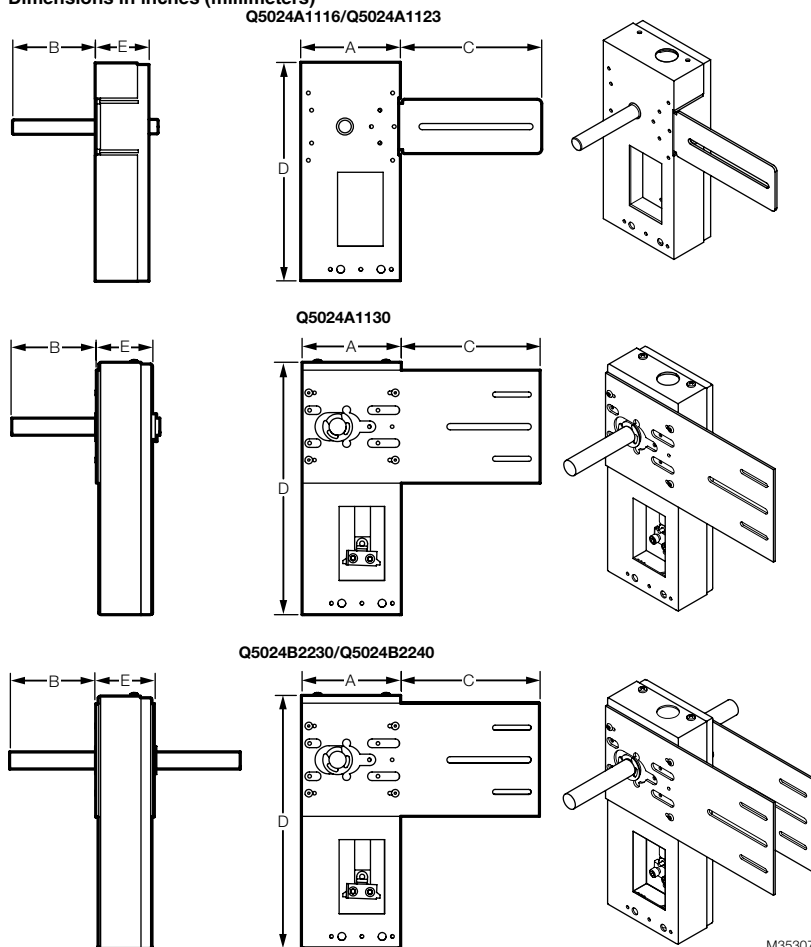
Mounting: Linkage mounts directly to the valve bonnet; actuator(s) mount on linkage

Used with Actuator: Direct Coupled Actuator

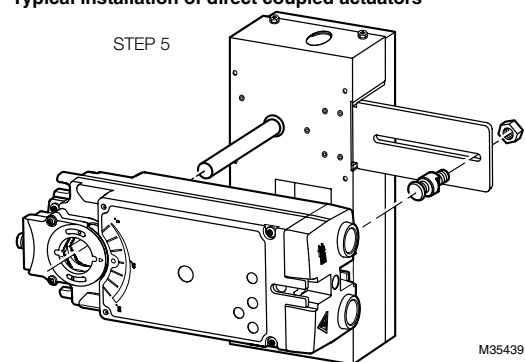
Ambient Temperature Range: -40°F to 140°F (-40°C to 60°C)

| Material Number | Shaft Dimensions (in.) | Stroke | Description | Comments | Used With |
|-----------------|------------------------|-------------|---|---|--|
| Q5024A1116/U | 0.63 in. (16 mm) | 0.63"/16 mm | Linkage for 0.63"/16 mm valve stroke | Materials: Cold Rolled Steel Housing; Steel Rack and Pinion Gears; Brass Bushing and Clip | 2-way and 3-way globe valves in modulating or two-position service |
| Q5024A1123/U | 0.63 in. (16 mm) | 0.91"/23 mm | Linkage for 0.91"/23 mm valve stroke | Materials: Cold Rolled Steel Housing; Steel Rack and Pinion Gears; Brass Bushing and Clip | 2-way and 3-way globe valves in modulating or two-position service |
| Q5024A1130/U | 0.75 in. (19 mm) | 1.18"/30 mm | Linkage for 1.18"/30 mm valve stroke | Materials: Cold Rolled Steel Housing; Steel Rack and Pinion Gears; Brass Bushing and Clip | 2-way and 3-way globe valves in modulating or two-position service |
| Q5024B2230/U | 0.75 in. (19 mm) | 1.18"/30 mm | Double linkage for 1.18"/30 mm valve stroke | Materials: Cold Rolled Steel Housing; Steel Rack and Pinion Gears; Brass Bushing and Clip | 2-way and 3-way globe valves in modulating or two-position service |
| Q5024B2240/U | 0.75 in. (19 mm) | 1.57"/40 mm | Double linkage for 1.57"/40 mm valve stroke | Materials: Cold Rolled Steel Housing; Steel Rack and Pinion Gears; Brass Bushing and Clip | 2-way and 3-way globe valves in modulating or two-position service |

Dimensions in inches (millimeters)



Typical installation of direct coupled actuators



Damper and Valve Linkages

Q5024 Globe Valve Linkage Accessories

| Material Number | Description | Used With |
|-----------------|---|---|
| BU5024-001/U | Globe valve bonnet adapter 1-1/4" diameter-16 TPI with 1/4"-28 TPI stem adapter | Siebe, Barber Colman, Invensys Globe Valves |
| BU5024-002/U | Globe valve bonnet adapter 1" diameter-16 TPI with 1/4"-24 TPI stem adapter | Siebe, Barber Colman, Invensys Globe Valves |
| BU5024-003/U | Globe valve bonnet adapter 1-1/4" diameter-16 TPI with 1/2"-20 TPI stem adapter | Siebe, Barber Colman, Invensys Globe Valves |
| BU5024-FLGKIT/U | BU3, WA1 and 3/8-24 and 1/2-20 TPI stem adapters | Siebe, Barber Colman, Invensys Globe Valves |
| BU5024-NPTKIT/U | BU1, BU2 and 1/4-28 stem adapters | Siebe, Barber Colman, Invensys Globe Valves |
| GU5024-001/U | Globe valve bonnet adapter 1-5/16" diameter-with 1/4"-28 TPI stem adapter | Siemens, Landis Powers Globe Valves |
| GU5024-002/U | Globe valve bonnet adapter 1-3/32" diameter-14 TPI with 1/4"-28 and 3/8"-24 TPI stem adapters | Siemens, Landis Powers Globe Valves |
| GU5024-003/U | Globe valve bonnet adapter 1-3/8" diameter-20 TPI with 3/8"-24 and 1/4"-28 TPI stem adapters | Siemens, Landis Powers Globe Valves |
| GU5024-KIT/U | GU1, GU2, GU3 and 1/4-28, 3/8-24 stem adapters | Siemens, Landis Powers Globe Valves |
| HU5024-001/U | Globe valve bonnet adapter 1-3/8" diameter- with 1/4"-28 TPI stem adapter | Honeywell Globe Valves |
| HU5024-002/U | Globe valve bonnet adapter 1-7/8" diameter- with 7/16"-20 TPI stem adapter | Honeywell Globe Valves |
| JU5024-001/U | Globe valve bonnet adapter 2 0mm diameter-16 mm TPI with 1/4"-28 TPI stem adapter | Johnson Controls Globe Valves |
| JU5024-002/U | Globe valve bonnet adapter 1-1/16" diameter-16 TPI with 3/8"-28 TPI stem adapter | Johnson Controls Globe Valves |
| JU5024-003/U | Globe valve bonnet adapter 28 mm diameter-1.5 mm TPI with 1/4"-28 TPI stem adapter | Johnson Controls Globe Valves |
| JU5024-004/U | Globe valve bonnet adapter 3/4" diameter-16 TPI with 3/8"-24 TPI stem adapter | Johnson Controls Globe Valves |
| JU5024-005/U | Globe valve bonnet adapter 3/4" diameter-18 TPI with 1/4"-28 TPI stem adapter | Johnson Controls Globe Valves |
| JU5024-006/U | Globe valve bonnet adapter 1.59" diameter-14 TPI with 1/2"-20 TPI and 3/8"-24 TPI stem adapters | Johnson Controls Globe Valves |
| JU5024-FLGKIT/U | JU2, JU4 and 3/8-24, 1/2-20 stem adapters | Johnson Controls Globe Valves |
| JU5024-NPTKIT/U | JU1, JU3, JU5 and 1/4-28 stem adapter | Johnson Controls Globe Valves |
| WU5024-001/U | Globe valve bonnet adapter 1-3/8" diameter-18 TPI with 3/8"-24 TPI stem adapter | Siebe, Barber Colman, Invensys Globe Valves |

Damper and Valve Linkage Accessories

Linkage Type: Damper

| Material Number | Description | Used With |
|-----------------|---|--|
| 102546/U | Ball joint assembly for damper applications. Use with 5/16 inch diameter push rod. Bulk Pack | Damper Linkages |
| 104643A/U | Adaptor assembly for driving 2 dampers from 1 crank arm. Includes Adaptor, 1/4 Lockwasher, 1/4-20 Hex Nut, and 1/4-20 x 1/2 RHIS. | Modutrol IV Motors; Kit Mounted Motors |
| 26025F/U | Crank Arm Assembly with 3/8 inch shaft. | |
| 26026B/U | Crank Arm Assembly with 1/2 inch shaft, 3 inch long. Bulk Pack. | |
| 32004629-001/U | Bonnet Adapter Kit to adapt Siemens valves (Landis/Power) Flowrite 599 1/2 inch to 3 inch globe valves with Q5020A or Q5009B. | Siemens valves |
| 32004629-002/U | Bonnet Adapter Kit to adapt Johnson VG7000 1/2 inch to 3/4 inch globe valves with Q5020D. | Q5020; Johnson valves |
| 32004629-003/U | Bonnet adapter kit to adapt Johnson VG7000 1 inch to 2 inch globe valves with Q5020A, Q5020B or Q5020D. | Q5020; Johnson valves |
| 32004629-004/U | Bonnet adapter kit to adapt Siebe VB7000 1/2 inch to 2 inch globe valves with Q5020D. | Q5020; Siebe valves |

C7232 Carbon Dioxide (CO₂) Sensors



These stand-alone Carbon Dioxide (CO₂) Sensors and Controllers are used for determining ventilation necessity with HVAC controllers and to manage the amount of fresh outdoor air supplied to maintain acceptable levels of CO₂ in the space.

- Models available with LCD that provides sensor readings and status information.
- Non-Dispersion-Infrared (NDIR) technology used to measure carbon dioxide gas.
- Sensor provides long-term calibration stability.
- C7232 provides voltage or current output based on CO₂ levels.
- SPST relay output.
- Used for CO₂ based ventilation control (Demand Control Ventilation (DCV)).
- Automatic Background Calibration (ABC) algorithm based on long-term evaluation reduces required typical zero-drift check maintenance.

Application: Carbon Dioxide Sensor
Sensor: Non-dispersive Infrared (NDIR)
Sensor Range: 0 to 2000 ppm, adjustable
Operating Temperature Range: 32°F to 122°F (0°C to 50°C)
Accuracy: 5% full scale
Voltage: 24 Vac/dc ±20%

Analog Current Output: 0/2 - 10 Vdc or 0/4 - 20 mA selectable
Contact Ratings: 1 A @ 50 Vac/24 Vdc
Frequency: 50 Hz; 60 Hz
Timing: Response -1 minute
Relay Outputs: One: Normally Open SPST

| Material Number | Display | Mounting | Approximate, Dimensions | Electrical Connections | Includes |
|-----------------|---------|------------|--|-------------------------------------|-------------------|
| C7232A1008/U | Yes | Wall mount | 5 1/16 in. high x 3 5/32 in. wide x 2 in. deep (128 mm high x 80 mm wide x 25 mm deep) | Six leadwires, 20-gauge, 8 in. long | Honeywell Logo |
| C7232A1016/U | None | Wall mount | 5 1/16 in. high x 3 5/32 in. wide x 2 in. deep (128 mm high x 80 mm wide x 25 mm deep) | Six leadwires, 20-gauge, 8 in. long | Honeywell Logo |
| C7232A1024/U | Yes | Wall mount | 5 1/16 in. high x 3 5/32 in. wide x 2 in. deep (128 mm high x 80 mm wide x 25 mm deep) | Six leadwires, 20-gauge, 8 in. long | No Honeywell Logo |
| C7232A1032/U | None | Wall mount | 5 1/16 in. high x 3 5/32 in. wide x 2 in. deep (128 mm high x 80 mm wide x 25 mm deep) | Six leadwires, 20-gauge, 8 in. long | No Honeywell Logo |
| C7232B1006/U | Yes | Duct mount | 5 5/8 in. high x 3 5/16 in. wide x 3 7/16 in. deep x plus 8 in. long sensing tube (142 mm high x 84 mm wide x 87 mm deep x plus 203 mm sensing tube) | Six leadwires, 20-gauge, 6 in. long | Honeywell Logo |
| C7232B1014/U | None | Duct mount | 5 5/8 in. high x 3 5/16 in. wide x 3 7/16 in. deep x plus 8 in. long sensing tube (142 mm high x 84 mm wide x 87 mm deep x plus 203 mm sensing tube) | Six leadwires, 20-gauge, 6 in. long | Honeywell Logo |
| C7232B1022/U | Yes | Duct mount | 5 5/8 in. high x 3 5/16 in. wide x 3 7/16 in. deep x plus 8 in. long sensing tube (142 mm high x 84 mm wide x 87 mm deep x plus 203 mm sensing tube) | Six leadwires, 20-gauge, 6 in. long | No Honeywell Logo |
| C7232B1030/U | None | Duct mount | 5 5/8 in. high x 3 5/16 in. wide x 3 7/16 in. deep x plus 8 in. long sensing tube (142 mm high x 84 mm wide x 87 mm deep x plus 203 mm sensing tube) | Six leadwires, 20-gauge, 6 in. long | No Honeywell Logo |

Carbon Dioxide (CO₂) Sensors

C7262 Carbon Dioxide (CO₂)/Temperature Sensors



Carbon Dioxide (CO₂)/Temperature Sensors

- Used for CO₂ based ventilation control.
- Integral 20K ohm NTC temperature output.
- Models available with LCD that provides CO₂ ppm level.
- Non-Dispersion-Infrared (NDIR) technology used to measure carbon dioxide gas.
- Device provides voltage or current output based on CO₂ levels.
- Models available with SPST relay output.
- Automatic Background Calibration (ABC) algorithm based on long-term evaluation reduces required typical zero-drift check maintenance.

Application: Carbon Dioxide Sensor
Sensor: Non-dispersive Infrared (NDIR)
Sensor Range: 0 to 2000 ppm, adjustable
Operating Temperature Range: 32°F to 122°F
Temperature Sensor Range: 50°F to 100°F (0°C to 50°C)
Accuracy: ±30 ppm + 3% of reading
Voltage: 24 Vac/dc ±20%

Analog Current Output: 0/2 - 10 Vdc or 0/4 - 20 mA selectable
Contact Ratings: 1 A @ 50 Vac/24 Vdc
Frequency: 50 Hz; 60 Hz
Timing: Response – 1 minute
Relay Outputs: One: Normally Open SPST

| Material Number | Display | Mounting | Approximate, Dimensions | Includes |
|-----------------|---------|------------|---|----------------|
| C7262A1008/U | Yes | Wall mount | 4 9/16 in. high x 3 in. wide x 7/8 in. deep (116 mm high x 76 mm wide x 22 mm deep) | Honeywell Logo |
| C7262A1016/U | None | Wall mount | 4 9/16 in. high x 3 in. wide x 7/8 in. deep (116 mm high x 76 mm wide x 22 mm deep) | Honeywell Logo |

C7632 Carbon Dioxide (CO₂) Sensors



CO₂ Sensors offer a fixed 0-2000 ppm and fixed 0-10 Vdc output, determine ventilation need with HVAC controllers and measure CO₂ concentration in ventilated spaces or ducts. Used in ventilation and AC systems to control the amount of outdoor air supplied.

- Non-Dispersion-Infrared (NDIR) technology used to measure carbon dioxide gas.
- Sensor provides long-term calibration stability.
- Fixed 0-2000 ppm, fixed 0-10 Vdc output.
- Used for CO₂ based ventilation control (Demand Control Ventilation (DCV)).
- Automatic Background Calibration (ABC) algorithm based on long-term evaluation reduces required typical zero-drift check maintenance.

Application: Carbon Dioxide Sensor
Sensor: Non-dispersive Infrared (NDIR)
Sensor Range: 0 to 2000 ppm, fixed
Operating Temperature Range: 32°F to 122°F (0°C to 50°C)
Accuracy: 5% full scale

Voltage: 24 Vac (±20%)
Analog Current Output: 0-10 Vdc fixed
Frequency: 50 Hz; 60 Hz
Timing: Response – 1 minute
Relay Outputs: None

| Material Number | Display | Mounting | Electrical Connections | Approximate, Dimensions | Includes |
|-----------------|---------|------------|---|--|----------------|
| C7632A1004/U | None | Wall mount | Terminal block | 4 1/8 in. high x 3 7/8 in. wide x 1 1/16 in. deep (104 mm high x 99 mm high x 27 mm deep) | Honeywell Logo |
| C7632B1002/U | None | Duct mount | 20-gauge cable with three 6 in. leadwires | 5 5/8 in. high x 3 5/16 in. wide x 3 7/16 in. deep x plus 8 in. long sensing tube (142 mm high x 84 mm wide x 87 mm deep x plus 203 mm sensing tube) | Honeywell Logo |

Early-Warning Dew-Point Switch



Dew-point sensor.

- Does not wait to detect when the dew-point has already been reached, but rather provides an early warning of the approaching dew-point
- Compact design
- Fast response
- Module is coated, thus protected against contamination
- Simple and easy mounting
- Status indication

Application: For use in monitoring the formation of condensation on chilled ceilings or to prevent condensation at critical spots of HVAC systems

Mounting: Flat and round surfaces

Operating Humidity Range (% RH): 10 to 100% RH

Power Consumption: < 10mA(AC) < 3 mA(DC)

Timing: Response – ~3 min (given a jump in the relative humidity of from 55% to 100%)

Comments: R.H. Hysteresis Switching – 5% RH

| Material Number | ON Voltage | Voltage | Switch Points | Switching Current | Output |
|-----------------|----------------|---------------------------------|---|-------------------|--|
| HSS-DPS | max. 24 Vac/dc | 60 Vdc; Supply 24 Vac/Vdc ± 20% | Contact Closed @ <90% RH; Contact Open @ >90% RH | max. 1A | Potential-Free relay with changeover contact |

Humidity Sensors

H7625; H7635; H7636; H7655; and H7656 Humidity and Temperature Transmitters



The H7625, H7635, and H7655 are highly accurate, stable humidity transducers designed for use with HVAC controllers such as the T7350 Thermostat, T775U Remote Humidity Controller, and W7760 Direct Digital Controllers.

- Ceramic Technology overcomes the limitations of other resistance based humidity sensors that use water soluble polymer coatings.
- Ceramic Technology allows sensors to recover fully from condensation, fog, and high humidity.
- Highly accurate, repeatable, stable output with negligible hysteresis.
- Temperature compensated output.
- Zero and span trimmers, and increment/decrement recalibration feature.

- All units (except H7655A1001) have selectable 4-20 mA, 0-10 Vdc, or 0-5 Vdc output.
- NIST traceable 2%, 3%, and 5% calibration, every sensor calibrated at 3 different points.
- All humidity sensors use the same enclosure as the TR20 sensor, except the H7655A, which uses the T7047-like enclosure.

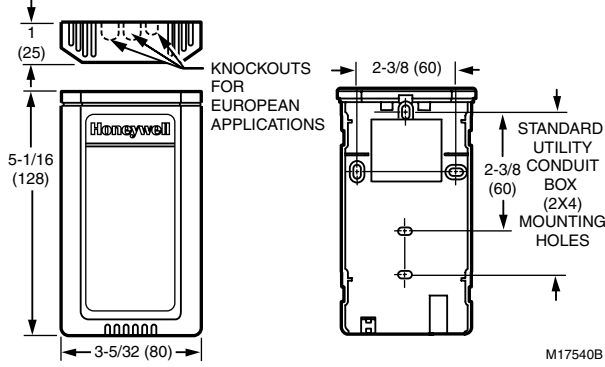
Operating Humidity Range (% RH): 0 to 95% RH non-condensing
Sensor Range: 0 to 100% RH

Shipping and Storage Temperature Range: -40°F to +160°F (-40°C to 66°C)

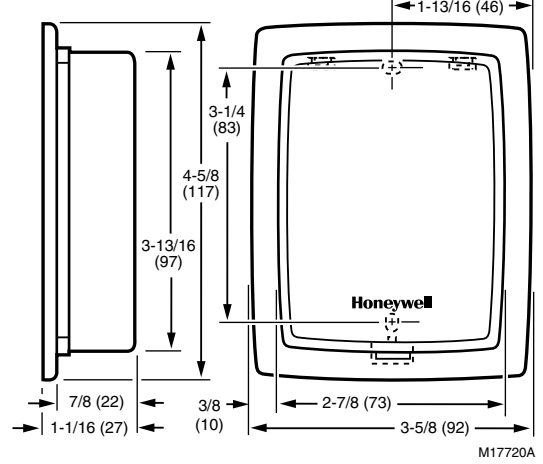
| Material Number | Application | Sensor | Voltage | Mounting | Output | Operating Temperature Range | Accuracy | Comments | Used With |
|-----------------|---|--------------|---------------------------|---------------|---|-------------------------------|--------------------|---|--------------------------------------|
| H7625A2010/U | Wall mounted Humidity and Temperature Sensor | 20K ohm NTC | 18 – 40 VDC / 18 – 28 VAC | Wall mount | Humidity – 4-20 mA, 0-5 Vdc, or 0-10 Vdc selectable; Temperature – 20K ohm NTC | 32°F to 122°F (0°C to 50°C) | ±2% from 20-95% RH | | Excel 15, Excel 10, T7350 |
| H7625B2006/U | Duct mounted Humidity and Temperature Sensor | 20K ohm NTC | 18 – 40 VDC / 18 – 28 VAC | Duct mount | Humidity – 4-20 mA, 0-5 Vdc, or 0-10 Vdc selectable; Temperature – 20K ohm NTC | -10°F to 140°F (23°C to 60°C) | ±2% from 20-95% RH | | Excel 15, Excel 10, T7350 |
| H7626B2024/U | Duct mounted Humidity and Temperature Sensor | 1097 ohm PTC | 18 – 40 VDC / 18 – 28 VAC | Duct mount | Humidity – 4-20 mA, 0-5 Vdc, or 0-10 Vdc selectable; Temperature – 1097 ohm at 77°F | -10°F to 140°F (23°C to 60°C) | ±2% from 20-95% RH | | Excel 15, Excel 10, T775 Series 2000 |
| H7635A2012/U | Wall mounted Humidity and Temperature Sensor | 20K ohm NTC | 18 – 40 VDC / 18 – 28 VAC | Wall mount | Humidity – 4-20 mA, 0-5 Vdc, or 0-10 Vdc selectable; Temperature – 20K ohm NTC | 32°F to 122°F (0°C to 50°C) | ±3% from 20-95% RH | | Excel 15, Excel 10, T7350 |
| H7635B2018/U | Duct mounted Humidity and Temperature Sensor | 20K ohm NTC | 18 – 40 VDC / 18 – 28 VAC | Duct mount | Humidity – 4-20 mA, 0-5 Vdc, or 0-10 Vdc selectable; Temperature – 20K ohm NTC | -10°F to 140°F (23°C to 60°C) | ±3% from 20-95% RH | | Excel 15, Excel 10, T7350 |
| H7635C2015/U | Outdoor mounted Humidity and Temperature Sensor | 20K ohm NTC | 18 – 40 VDC / 18 – 28 VAC | Outdoor mount | Humidity – 4-20 mA, 0-5 Vdc, or 0-10 Vdc selectable; Temperature – 20K ohm NTC | -10°F to 140°F (23°C to 60°C) | ±3% from 20-95% RH | | Excel 15, Excel 10, T7350 |
| H7636A2022/U | Wall mounted Humidity and Temperature Sensor | 1097 ohm PTC | 18 – 40 VDC / 18 – 28 VAC | Wall mount | Humidity – 4-20 mA, 0-5 Vdc, or 0-10 Vdc selectable; Temperature – 1097 ohm at 77°F | 32°F to 122°F (0°C to 50°C) | ±3% from 20-95% RH | | Excel 15, Excel 10, T775 Series 2000 |
| H7636B2026/U | Duct mounted Humidity and Temperature Sensor | 1097 ohm PTC | 18 – 40 VDC / 18 – 28 VAC | Duct mount | Humidity – 4-20 mA, 0-5 Vdc, or 0-10 Vdc selectable; Temperature – 1097 ohm at 77°F | -10°F to 140°F (23°C to 60°C) | ±3% from 20-95% RH | | Excel 15, Excel 10, T775 Series 2000 |
| H7655A1001/U | Wall mounted Humidity Sensor | solid state | 16 – 40 VDC / 16 – 30 VAC | Wall mount | Humidity – 0-10 Vdc | 32°F to 125°F (0°C to 50°C) | ±5% from 30-70% RH | Polymer capacitance humidity sensor; Uses different enclosure (same as T7047 Sensor). | XL15, XL10, T7350 |

| Material Number | Application | Sensor | Voltage | Mounting | Output | Operating Temperature Range | Accuracy | Comments | Used With |
|-----------------|--|--------------|---------------------------|------------|---|-------------------------------|--------------------|----------|--------------------------------------|
| H7655B2014/U | Duct mounted Humidity and Temperature Sensor | 20K ohm NTC | 18 – 40 VDC / 18 – 28 VAC | Duct mount | Humidity – 4-20 mA, 0-5 Vdc, or 0-10 Vdc selectable; Temperature – 20K ohm NTC | -10°F to 140°F (23°C to 60°C) | ±5% from 25-95% RH | | Excel 15, Excel 10, T7350 |
| H7656B2029/U | Duct mounted Humidity and Temperature Sensor | 1097 ohm PTC | 18 – 40 VDC / 18 – 28 VAC | Wall mount | Humidity – 4-20 mA, 0-5 Vdc, or 0-10 Vdc selectable; Temperature – 1097 ohm at 77°F | -10°F to 140°F (23°C to 60°C) | ±5% from 25-95% RH | | Excel 15, Excel 10, T775 Series 2000 |

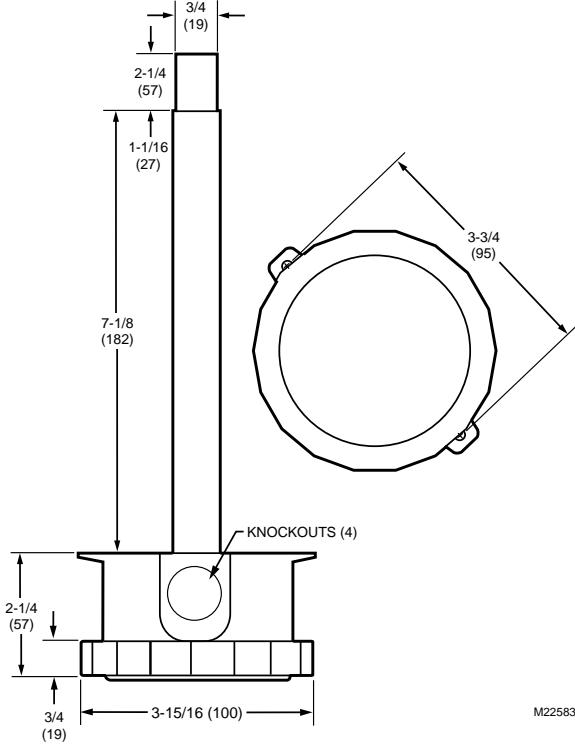
Dimensions in inches (millimeters)



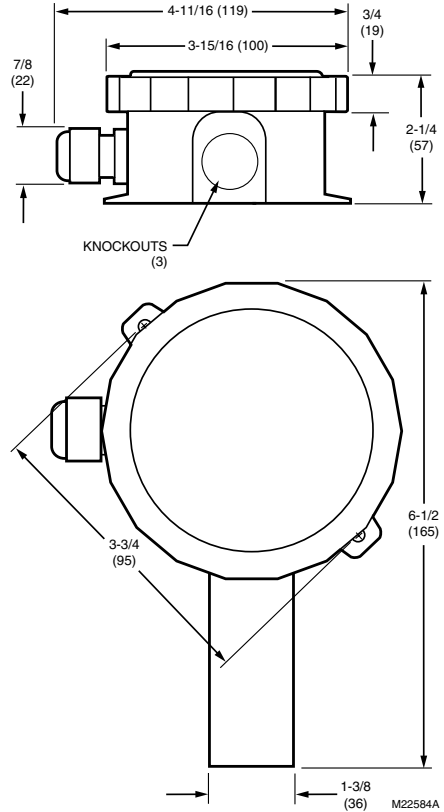
Dimensions in inches (millimeters)



Dimensions in inches (millimeters)

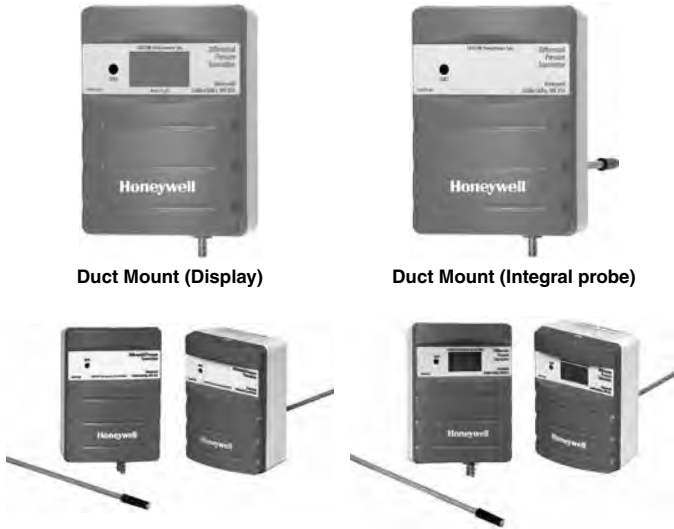


Dimensions in inches (millimeters)



Pressure Sensors

P7640 Differential Pressure Transmitters



P7640 Pressure Sensors are designed with field-selectable 4-20 mA, 0-5 Vdc, or 0-10 Vdc output. They switch selectable pressure ranges between 0-1 in. w.c./0-250 Pa or 0-10 in. w.c./0-2500 Pa depending on the model.

- The P7640A Panel Mount, P7640B Duct Mount and P7640U Universal Mount Differential Pressure Transmitters provide reliable, accurate measurement and control.
- Proper applications include measurement of extremely low pressure applications such as: building/room pressure, airflow, variable air volume, filter status, and duct pressure.
- They are ideal for clean rooms, hospitals, fume hoods, and computer rooms.
- Selectable inches w.c. or Pascal scale.
- Selectable fast or standard response time.
- Duct mount model comes with factory installed duct probe.
- The Universal model comes with attachable duct probe and can be used in either panel or duct mounting application.

Operating Temperature Range: 32°F to 140°F (0°C to 60°C)

Approximate, Dimensions: 4.5 in. high, 3.313 in. wide, 2.125 in. deep (114 mm high, 84 mm wide, 54 mm deep)

Accuracy: ±1% Full Scale

Proof pressure: 3 psi

Burst pressure: 5 psi

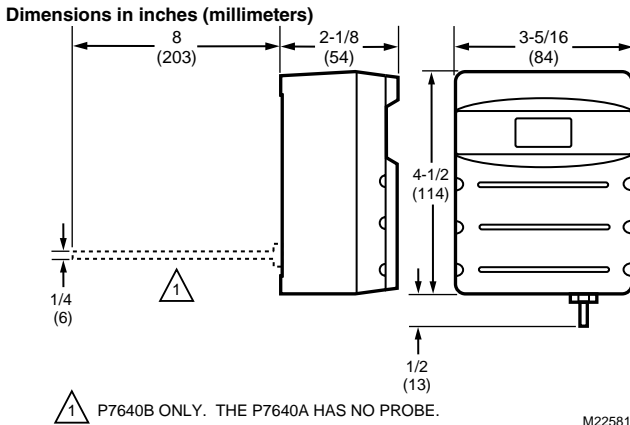
Connection Size (in.): Pneumatic: 1/4 in. Brass Hose Barb, Electrical: Unpluggable screw terminal block

Output: 4-20 mA, 0-5 Vdc or 0-10 Vdc selectable

Voltage: 12 to 30 Vdc or 24 Vac

Comments: With auto zero calibration by push button or external contact closure

Universal Mount



M22581

| Material Number | Pressure Range (in. w.c.) | Pressure Range (Pa) | Mounting | Display |
|-----------------|--|---|----------------------------------|---------|
| P7640A1000/U | 0-1.0, 0-0.5, 0-0.25, or 0-0.1 inches w.c., uni- or bi-directional | 0-25, 0-50, 0-100, 0-250 Pa uni- or bi-directional | Panel mount | Yes |
| P7640A1018/U | 0-1.0, 0-0.5, 0-0.25, or 0-0.1 inches w.c., uni- or bi-directional | 0-25, 0-50, 0-100, 0-250 Pa uni- or bi-directional | Panel mount | None |
| P7640A1026/U | 0-10, 0-5, 0-2.5, or 0-1 inches w.c., uni- or bi-directional | 0-250, 0-500, 0-1000, 0-2500 Pa uni- or bi-directional | Panel mount | Yes |
| P7640A1034/U | 0-10, 0-5, 0-2.5, or 0-1 inches w.c., uni- or bi-directional | 0-250, 0-500, 0-1000, 0-2500 Pa uni- or bi-directional | Panel mount | None |
| P7640B1008/U | 0-1.0, 0-0.5, 0-0.25, or 0-0.1 inches w.c., uni- or bi-directional | 0-25, 0-50, 0-100, 0-250 Pa uni- or bi-directional | Duct mount, integral 8 in. probe | Yes |
| P7640B1016/U | 0-1.0, 0-0.5, 0-0.25, or 0-0.1 inches w.c., uni- or bi-directional | 0-25, 0-50, 0-100, 0-250 Pa uni- or bi-directional | Duct mount, integral 8 in. probe | None |
| P7640B1024/U | 0-10, 0-5, 0-2.5, or 0-1 inches w.c., uni- or bi-directional | 0-250, 0-500, 0-1000, 0-2500 Pa uni- or bi-directional | Duct mount, integral 8 in. probe | Yes |
| P7640B1032/U | 0-10, 0-5, 0-2.5, or 0-1 inches w.c., uni- or bi-directional | 0-250, 0-500, 0-1000, 0-2500 Pa uni- or bi-directional | Duct mount, integral 8 in. probe | None |
| P7640U1040/U | 0-0.1, 0-0.25, 0-0.5, 0-1, 0-2.5, 0-5, or 0-10 inches w.c., uni- or bi-directional | 0-25, 0-50, 0-100, 0-250, 0-500, 0-1000, 0-2500 Pa uni- or bi-directional | Universal | None |
| P7640U1052/U | 0-0.1, 0-0.25, 0-0.5, 0-1, 0-2.5, 0-5, or 0-10 inches w.c., uni- or bi-directional | 0-25, 0-50, 0-100, 0-250, 0-500, 0-1000, 0-2500 Pa uni- or bi-directional | Universal | Yes |

PWT Series Wet/Wet Differential Pressure Sensors



The PWT Series wet/wet differential pressure sensors provide reliable, accurate measurement and control of many applications, including pump differential pressure, chiller/boiler differential pressure drop, and CW/HW system differential pressure.

- The PWT Pressure Sensors incorporate microprocessor profiled sensors for exceptional accuracy and reliability.
- Field-selectable 4-20 mA, 0-5 Vdc, or 0-10 Vdc output.
- Jumper-selectable slow or fast response time.
- Switch-selectable pressure ranges.
- The jumper-selectable output switch for normal (4-20 mA) or reverse (20-4 mA) operation provides application flexibility.
- Rugged, die-cast enclosure provides NEMA 4 sealing.
- Jumper-selectable port swap feature.
- All models offer both push button and digital input to zero the output.

Operating Humidity Range (% RH): 10 to 90% RH, non-condensing
Operating Temperature Range: 14°F to 131°F (-10°C to 55°C)

Approximate, Dimensions: 4 in. high x 5 5/16 in. wide x 2 13/64 in. deep (102 mm high x 147 mm wide x 57 mm deep)

Proof pressure: 2x max. F.S. range

Burst pressure: 5x max. F.S. range

Connection Size (in.): 1/8 in. NPT female, stainless steel 17-4 PH

Output: 4-20 mA, 0-5 Vdc or 0-10 Vdc selectable

Voltage: 12 to 30 Vdc or 24 Vac

Approvals, CE: CE

Accessories

PWT-BV/U – Bypass Valve Manifold for PWT Wet differential pressure sensors

| Material Number | Accuracy | Pressure Range (psi) | Display | Mounting | Description |
|-----------------|--|-------------------------------|---------|------------------|---------------------------------------|
| PWT50/U | ±1% F.S. for 0-10, 0-25, 0-50 psid; ±2% F.S. for 0-5 psid | 0-5, 0-10, 0-25, 0-50 psid | Yes | Horizontal Mount | Wet Differential Pressure Transmitter |
| PWT100/U | ±1% F.S. for 0-100, 0-50, 0-20 psid; ±2% F.S. for 0-10 psid | 0-100, 0-50, 0-20, 0-10 psid | Yes | Horizontal Mount | Wet Differential Pressure Transmitter |
| PWT250/U | ±1% F.S. for 0-250, 0-125, & 0-50 psid; ±2% F.S. for 0-25 psid | 0-25, 0-50, 0-125, 0-250 psid | Yes | Horizontal Mount | Wet Differential Pressure Transmitter |

Gauge Pressure Sensors



The MLH Series is a two-wire 4-20 mA gauge pressure sensor. This digitally compensated sensor offers an unparalleled value/performance combination, making it an ideal solution for demanding applications. Available in pressure ranges up to 1000 psi.

- Available in 50, 150, 300, 500 and 1000 psi.
- All metal wetted parts for use in wide variety of fluid applications.
- Suitable for use with freon and ammonia based cooling systems.
- No internal elastomeric seals mean no o-ring compatibility issues.
- Less than 2 ms response time provides accurate, high speed measurement.
- Select models available with 1/4-in. SAE female Schrader connection with valve depressor.

Operating Temperature Range: -40°F to +257°F (-40°C to 125°C)

Burst pressure: 10X Working Pressure Range

Materials: Housing – Black plastic, A model AS-4133 HS-PPA; In contact with media – SST 304L and Haynes 214 alloy

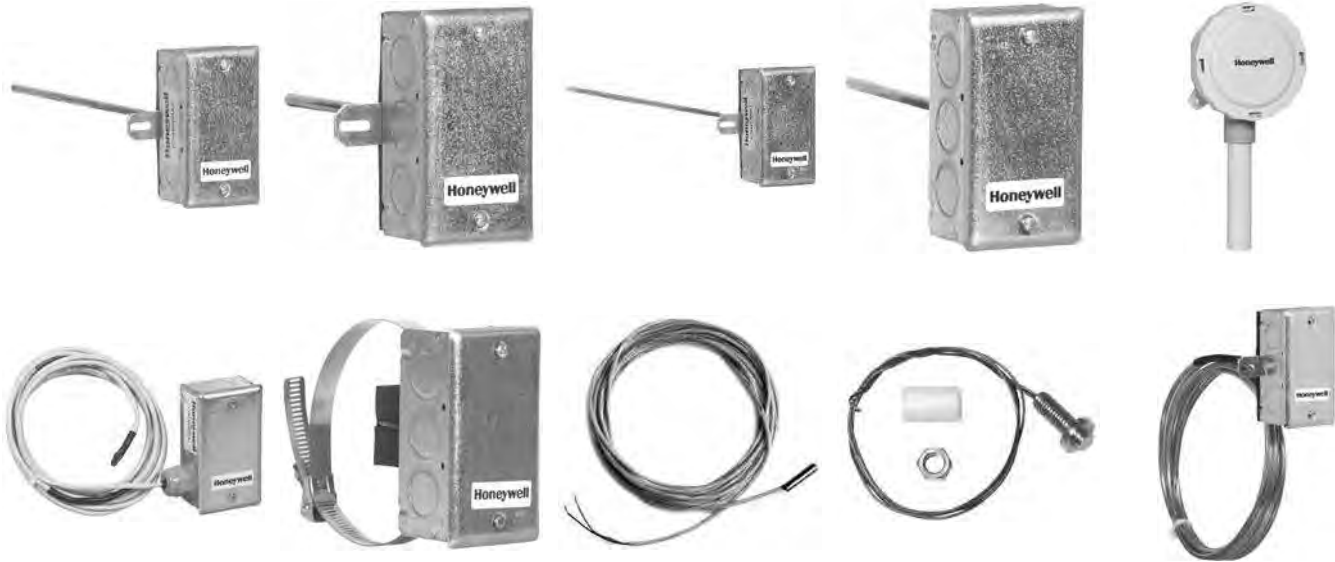
Voltage: 9.5 Vdc to 30 Vdc

Approvals, CE: CE

| Material Number | Accuracy | Pressure Range (psi) | Proof Pressure | Output | Connection Size (in.) | Electrical Connections |
|-----------------|---------------------------|----------------------|---------------------------|-----------------|--------------------------|------------------------|
| MLH050PSCDJ1235 | ±0.50% of full scale span | 50 psig | 3X Working Pressure Range | 4-20 mA, 2-wire | 1/4"-18 NPT | Cable (3 meter) |
| MLH150PSCDJ1236 | ±0.25% of full scale span | 150 psig | 3X Working Pressure Range | 4-20 mA, 2-wire | 1/4"-18 NPT | Cable (3 meter) |
| MLH300PSCDJ1237 | ±0.25% of full scale span | 300 psig | 3X Working Pressure Range | 4-20 mA, 2-wire | 1/4"-18 NPT | Cable (3 meter) |
| MLH500PSCDJ1240 | ±0.25% of full scale span | 500 psig | 3X Working Pressure Range | 4-20 mA, 2-wire | 1/4" SAE female Schrader | Cable (3 meter) |
| MLH01KPSCDJ1241 | ±0.25% of full scale span | 1000 psig | 2X Working Pressure Range | 4-20 mA, 2-wire | 1/4" SAE female Schrader | Cable (3 meter) |

Temperature Sensors

C7021 10K ohm NTC Type II Temperature Sensors



10K ohm NTC Temperature Sensor

- Solid state thermistor element provides accurate sensing of temperature changes.

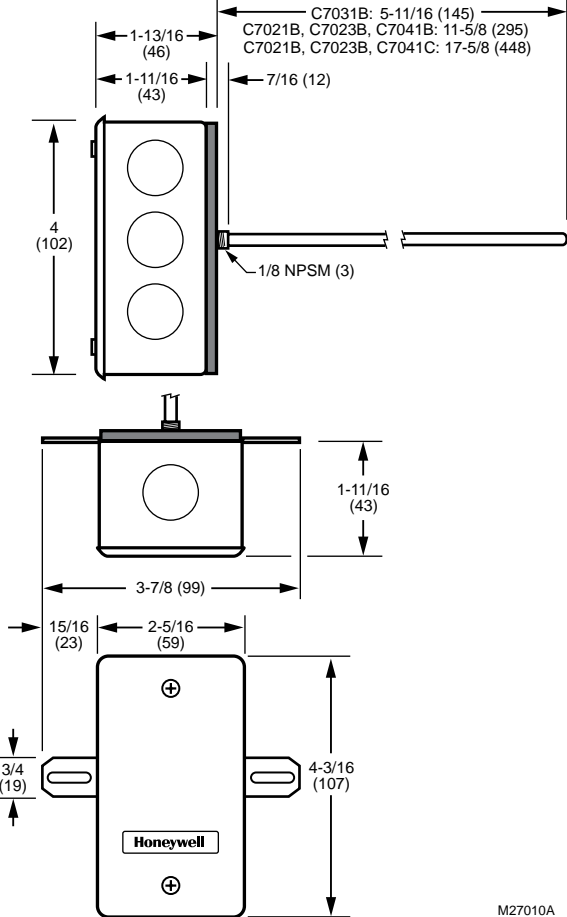
Sensor: 10 K ohm NTC @ 77°F Type II

Shipping and Storage Temperature Range: -30°F to +160°F (-34°C to +71°C)

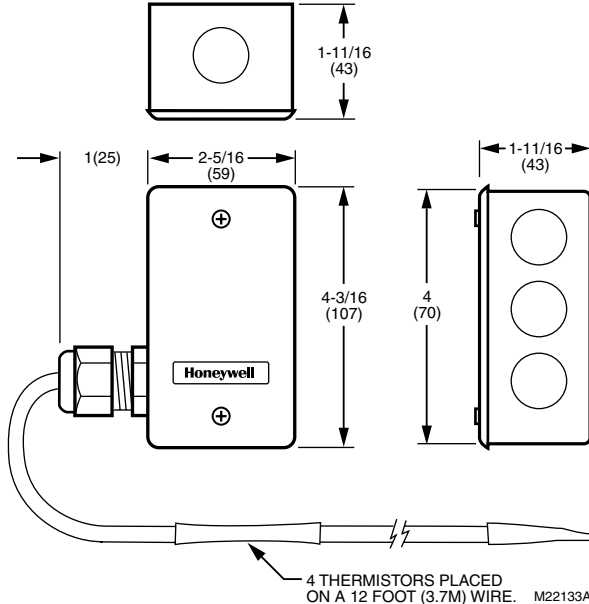
Used With: TB7600, TB7300, TB7200 Series communicating thermostats

| Material Number | Application | Operating Temperature Range | Insertion Length | Ambient Temperature Range |
|-----------------|--|-----------------------------------|------------------|-------------------------------|
| C7021B2005/U | Duct | -40°F to +250°F (-40°C to +121°C) | 6 in. (152 mm) | 250°F Maximum (121°C Maximum) |
| C7021B2013/U | Duct | -40°F to +250°F (-40°C to +121°C) | 12 in. (305 mm) | 250°F Maximum (121°C Maximum) |
| C7021C2003/U | Duct | -40°F to +250°F (-40°C to +121°C) | 18 in. (457 mm) | 250°F Maximum (121°C Maximum) |
| C7021D2001/U | Immersion sensor for hot or chilled water, purchase well 50001774-001 separately | -40°F to +250°F (-40°C to +121°C) | 5 in. (127 mm) | 250°F Maximum (121°C Maximum) |
| C7021F2009/U | Outside air temperature | -40°F to +158°F (-40°C to +70°C) | | 250°F Maximum (121°C Maximum) |
| C7021J2007/U | Duct air (averaging) | -40°F to +250°F (-40°C to +121°C) | 12 ft. (3.66 m) | 250°F Maximum (121°C Maximum) |
| C7021K2005/U | Hot or chilled water (strap on) | -40°F to +250°F (-40°C to +121°C) | | 250°F Maximum (121°C Maximum) |
| C7021N2001/U | Water or air temperature sensor (probe sensor) | -40°F to +250°F (-40°C to +121°C) | | 250°F Maximum (121°C Maximum) |
| C7021P2004/U | Temperature Sensor | -40°F to +250°F (-40°C to +121°C) | | 250°F Maximum (121°C Maximum) |
| C7021R2000/U | Duct air (averaging) | -40°F to +250°F (-40°C to +121°C) | 12 ft. (3.66 m) | 250°F Maximum (121°C Maximum) |
| C7021R2018/U | Duct air (averaging) | -40°F to +250°F (-40°C to +121°C) | 24 ft. (7.3 m) | 250°F Maximum (121°C Maximum) |

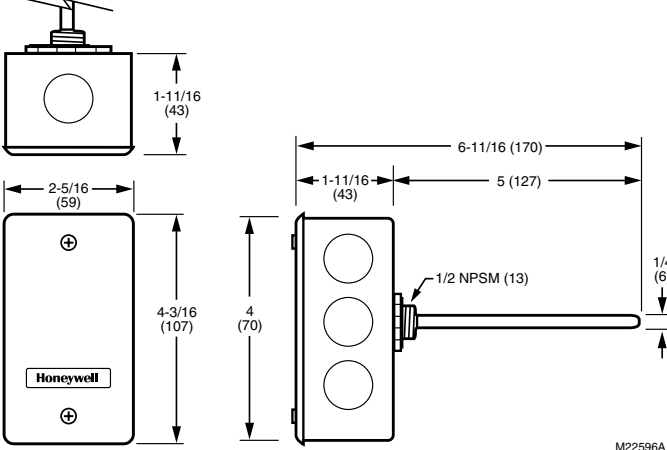
Dimensions in inches (millimeters)



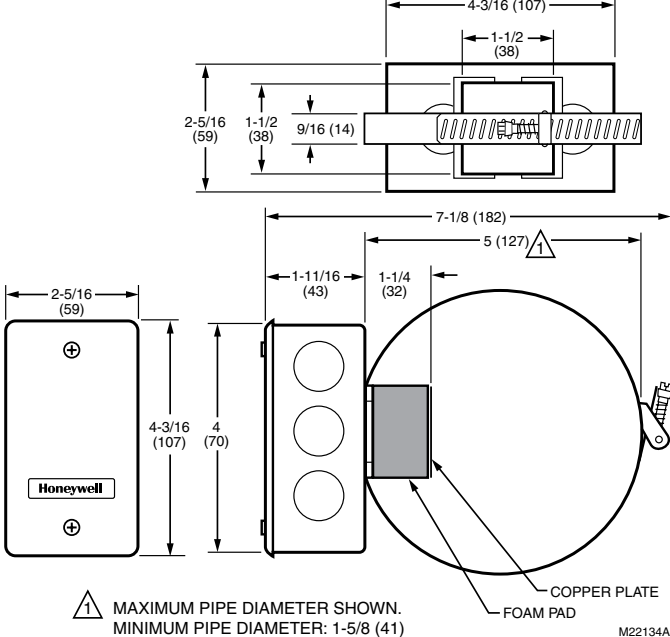
Dimensions in inches (millimeters)



Dimensions in inches (millimeters)

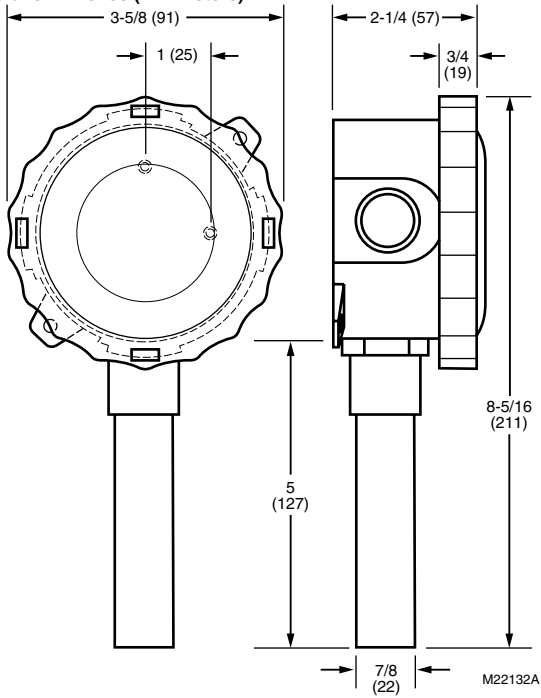


Dimensions in inches (millimeters)

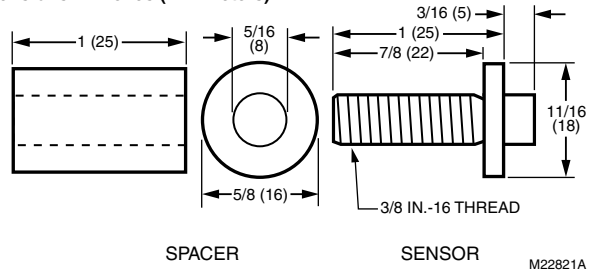


Temperature Sensors

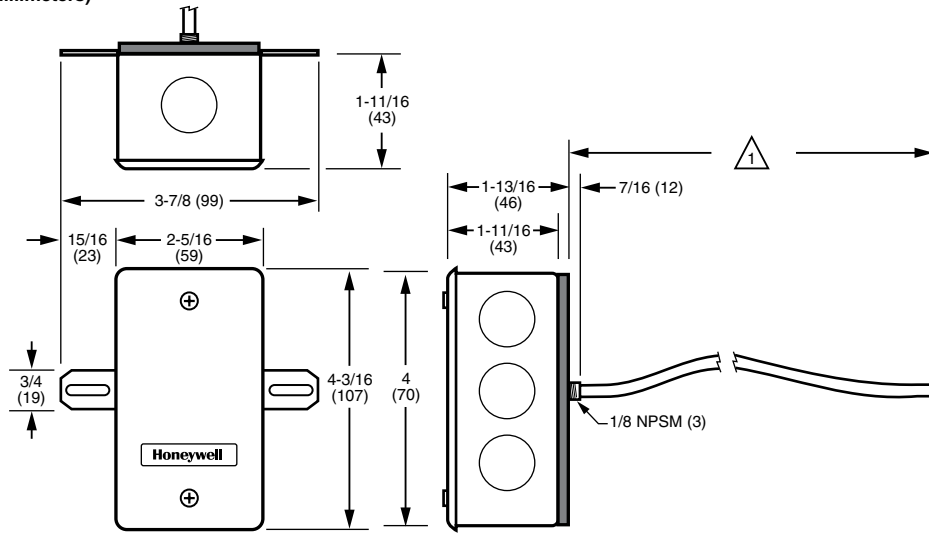
Dimensions in inches (millimeters)



Dimensions in inches (millimeters)



Dimensions in inches (millimeters)



1 DEPENDING ON THE MODEL, THE ELEMENT LENGTH IS EITHER 12 FT (366 CM) OR 24 FT (732 CM).

M22818A

C7023 10K ohm NTC Type III Temperature Sensors



The C7023 Series 2000 Electronic Temperature Sensors are designed for use with electronic controllers in domestic or commercial heating and cooling systems.

- C7023D for immersion mounting sense water temperature.
- C7023F sense outdoor air temperature and are weatherproof for outdoor use (knockouts allow for 1/2 in. conduit connection).
- C7023J, R sense average duct air temperature.
- C7023B, C sense duct air temperature.
- C7023K with strap-on mounting senses water temperature.
- C7023N probe senses water or air temperature.
- C7023P senses air temperature.
- Solid state components not affected by dust or dirt.

Sensor: 10 K ohm NTC @ 77°F Type III

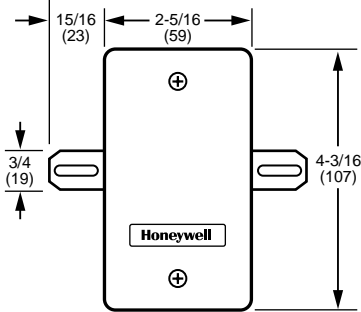
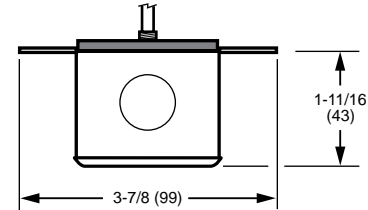
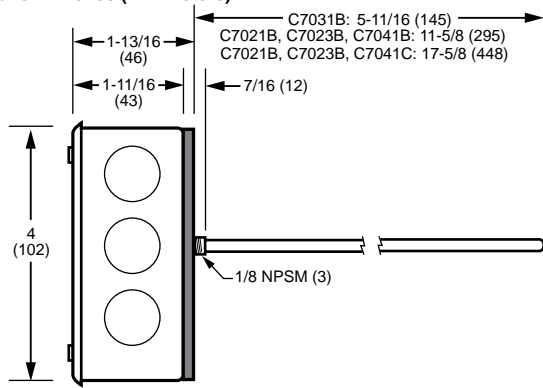
Shipping and Storage Temperature Range: -30°F to +160°F (-34°C to +71°C)

Used With: WEBs-AX I/O Modules

| Material Number | Application | Insertion Length | Operating Temperature Range | Ambient Temperature Range |
|-----------------|--|------------------|-----------------------------------|-------------------------------|
| C7023B2005/U | Duct | 6 in. (152 mm) | -40°F to +250°F (-40°C to +121°C) | 250°F Maximum (121°C Maximum) |
| C7023B2013/U | Duct | 12 in. (305 mm) | -40°F to +250°F (-40°C to +121°C) | 250°F Maximum (121°C Maximum) |
| C7023C2003/U | Duct | 18 in. (457 mm) | -40°F to +250°F (-40°C to +121°C) | 250°F Maximum (121°C Maximum) |
| C7023D2001/U | Immersion sensor for hot or chilled water, purchase well 50001774-001 separately | 5 in. (127 mm) | -40°F to +250°F (-40°C to +121°C) | 250°F Maximum (121°C Maximum) |
| C7023F2009/U | Outside air temperature | | -40°F to +158°F (-40°C to +70°C) | 250°F Maximum (121°C Maximum) |
| C7023J2007/U | Duct air (averaging) | 12 ft. (3.66 m) | -40°F to +250°F (-40°C to +121°C) | 250°F Maximum (121°C Maximum) |
| C7023K2005/U | Hot or chilled water (strap on) | | -40°F to +250°F (-40°C to +121°C) | 250°F Maximum (121°C Maximum) |
| C7023N2001/U | Water or air temperature sensor (probe sensor) | | -40°F to +250°F (-40°C to +121°C) | 250°F Maximum (121°C Maximum) |
| C7023P2004/U | Temperature Sensor | | -40°F to +250°F (-40°C to +121°C) | 250°F Maximum (121°C Maximum) |
| C7023R2000/U | Duct air (averaging) | 12 ft. (3.66 m) | -40°F to +250°F (-40°C to +121°C) | 250°F Maximum (121°C Maximum) |
| C7023R2018/U | Duct air (averaging) | 24 ft. (7.3 m) | -40°F to +250°F (-40°C to +121°C) | 250°F Maximum (121°C Maximum) |

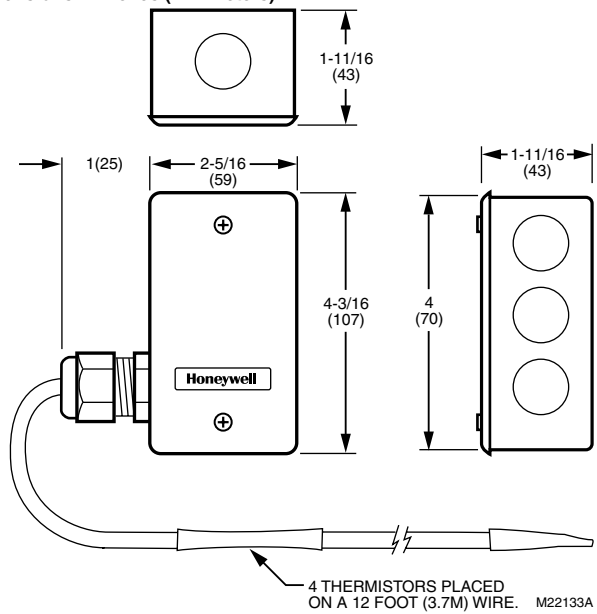
Temperature Sensors

Dimensions in inches (millimeters)

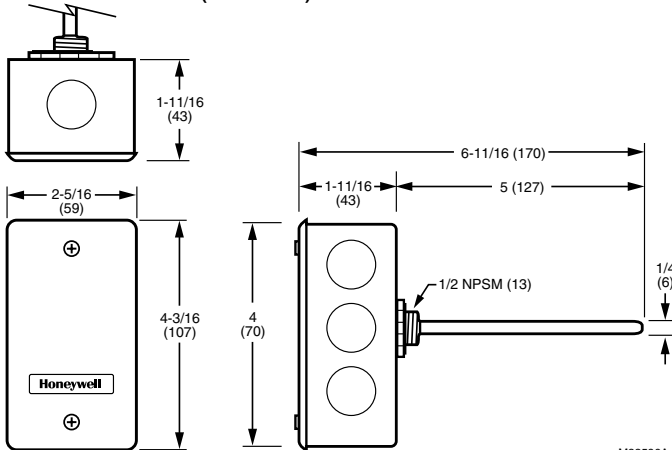


M27010A

Dimensions in inches (millimeters)

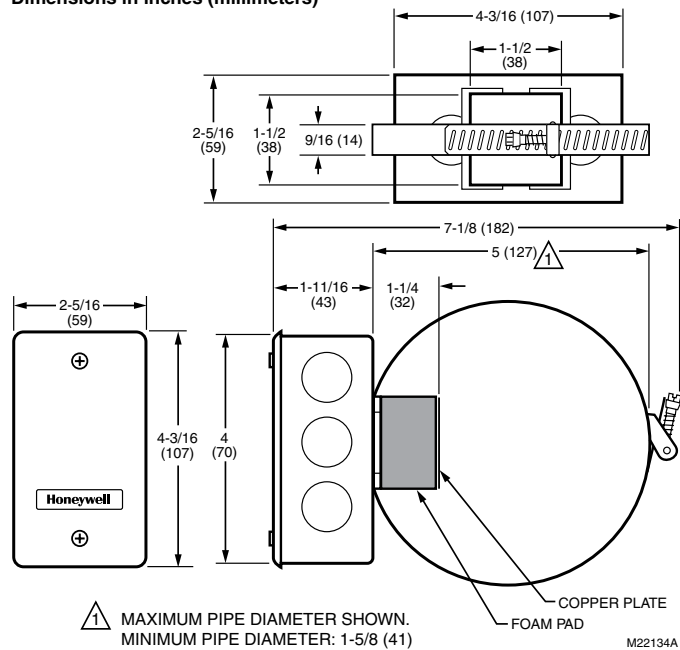


Dimensions in inches (millimeters)



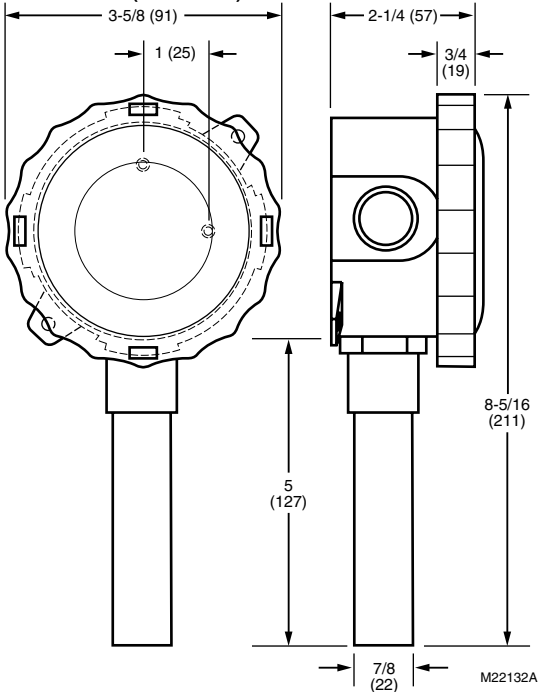
M22596A

Dimensions in inches (millimeters)

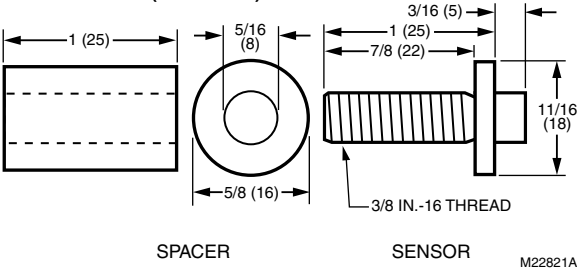


M22134A

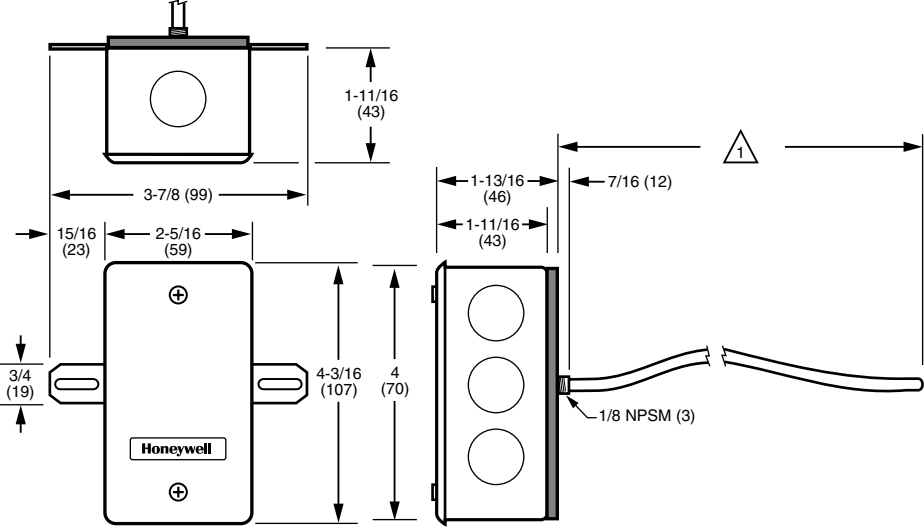
Dimensions in inches (millimeters)



Dimensions in inches (millimeters)



Dimensions in inches (millimeters)



△ 1 DEPENDING ON THE MODEL, THE ELEMENT LENGTH IS EITHER 12 FT (366 CM) OR 24 FT (732 CM).

M22818A

Temperature Sensors

C7031 Electronic Temperature Sensors



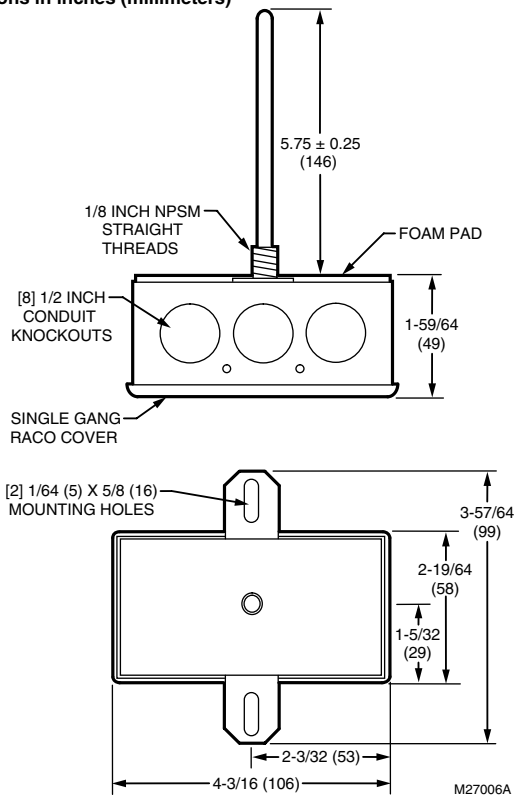
Electronic temperature sensors used with DDC Systems.

- Solid state thermistor element provides accurate sensing of temperature changes.

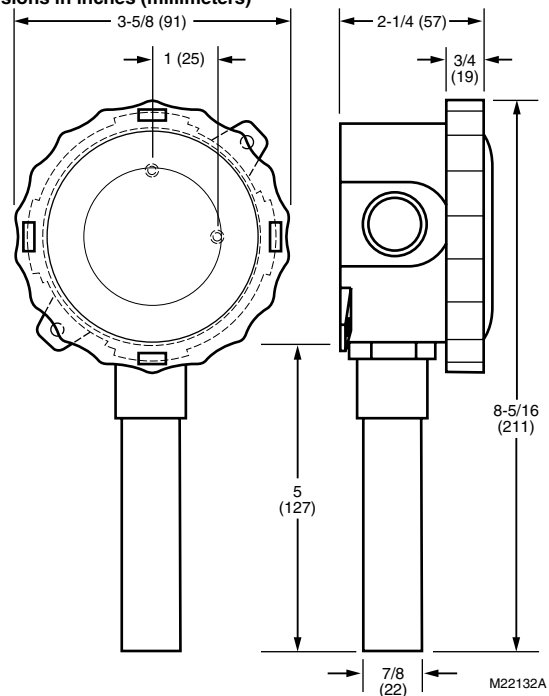
Shipping and Storage Temperature Range: -30°F to +160°F (-34°C to +71°C)

| Material Number | Application | Sensor | Insertion Length | Operating Temperature Range | Ambient Temperature Range | Includes | Used With |
|-----------------|-------------------------|------------------------------|-------------------|-----------------------------------|-------------------------------|----------|--|
| C7031B2005/U | Duct | 1097 ohm PTC @ 77°F | 6 in. (152 mm) | -40°F to +250°F (-40°C to +121°C) | 250°F Maximum (121°C Maximum) | | Excel 10, 50, 80, 100, 500, T775 Series 2000 |
| C7031D2003/U | Hot or chilled water | PT1000, 1097 ohms @ 77°F | 5 in. (127 mm) | -40°F to +350°F (-40°C to +177°C) | 250°F Maximum (121°C Maximum) | Well | Excel 500, T775 Series 2000 |
| C7031G2006/U | Outside air temperature | 1715 @ 90°F NTC | | -40°F to +120°F (-40°C to +49°C) | 120°F Maximum (49°C Maximum) | | W7100 (outdoor reset) |
| C7031G2014/U | Outside air temperature | PT3000, 3484 ohms @ 77°F | | -40°F to +120°F (-40°C to +49°C) | 120°F Maximum (49°C Maximum) | | T7350 |
| C7031J2009/U | Duct | PT1000, 1097 ohms @ 77°F PTC | 144 in. (3658 mm) | 40°F to 180°F (4°C to 82°C) | 250°F Maximum (121°C Maximum) | | Excel 500, T775 Series 2000 |

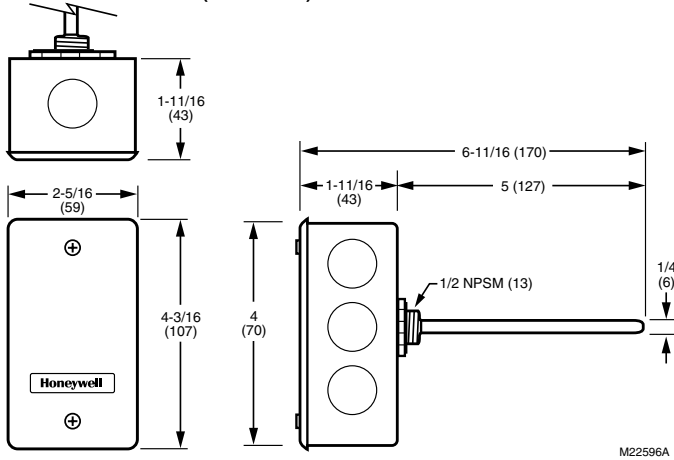
Dimensions in inches (millimeters)



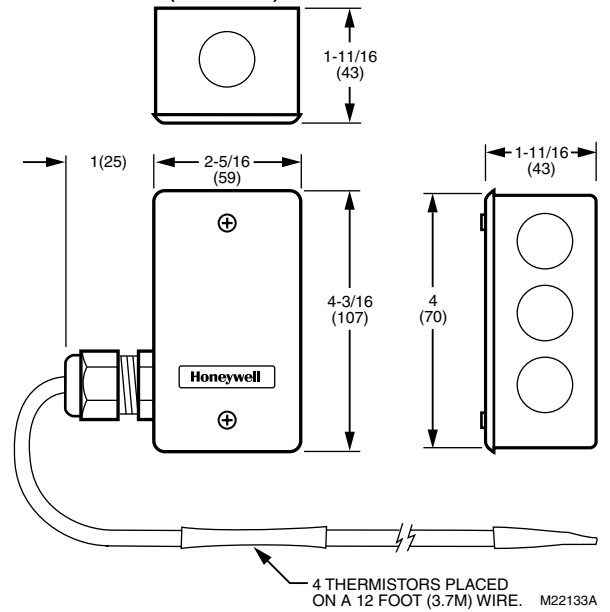
Dimensions in inches (millimeters)



Dimensions in inches (millimeters)



Dimensions in inches (millimeters)

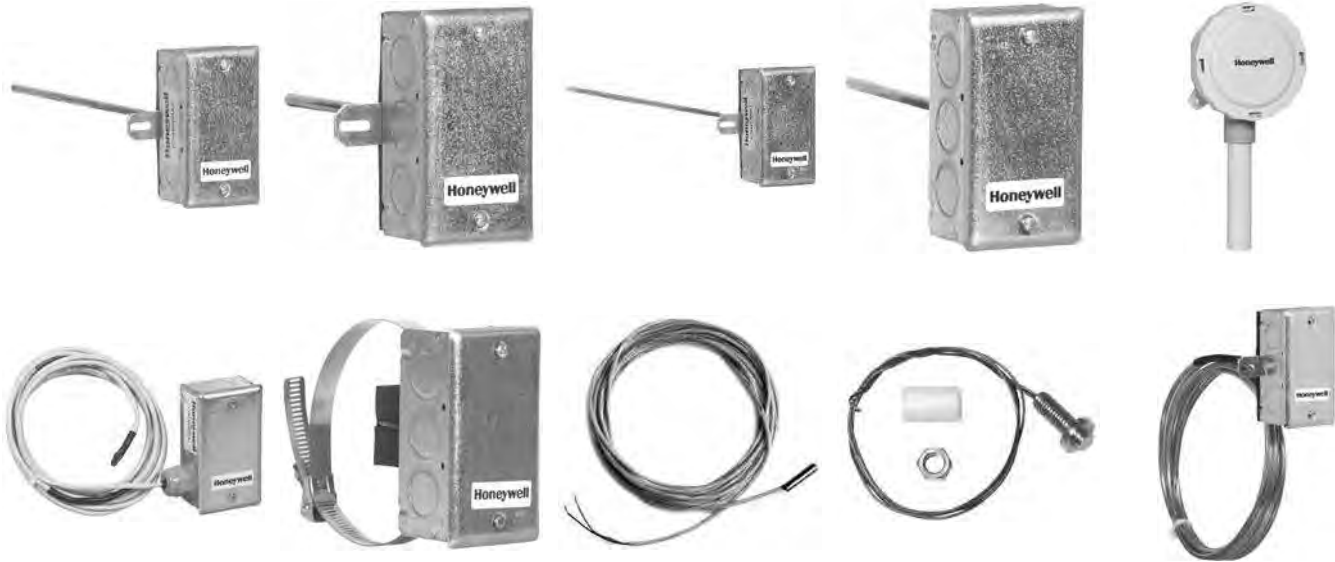


C7031 Accessories and Replacement Parts

| Material Number | Application | Description |
|-----------------|--------------------------------------|---|
| 32005960-001/U | Temperature Sensor Part or Accessory | Immersion well for C7031D1062 and C7041D1003 models only, not for use with newer C7041D2001 |
| 32006523-001/U | Temperature Sensor Part or Accessory | Temperature probe for C7031D1062 |

Temperature Sensors

C7041 20K ohm NTC Temperature Sensors



The C7041 Electronic Temperature Sensors are 20 K ohm NTC sensors designed to be used with electronic controllers in domestic or commercial heating and cooling systems.

- The C7041 series of electronic temperature sensors are designed for use with the Excel 10, Excel 15, or any controller requiring a 20 K ohm NTC non-linearized sensor input.
- Various models are available for sensing duct air temperature, averaging air temperature, water temperature, outdoor air temperature, or water pipe temperature.
- All devices consist of a temperature sensitive element and leadwires enclosed for protection from physical damage.
- Sensor element enclosures are made of various lengths and configurations for the specific applications.
- All devices have a wiring box housing to enclose the field wiring connections. C7041F outdoor sensor design, made of aluminum and stainless steel, is waterproof, and includes a sunshield.

Sensor: 20 K ohm NTC @ 77°F

Shipping and Storage Temperature Range: -30°F to +160°F (-34°C to +71°C)

Used With: Excel 10, 50, 80, 100, 500

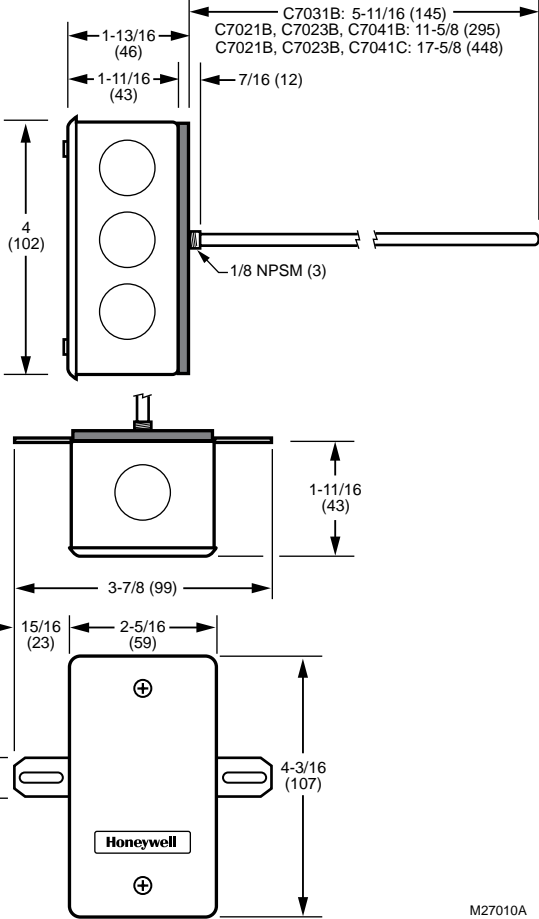
Accessories:

50001774-001/U – 5 inch Stainless Steel Immersion Well for Use with C7041D2001

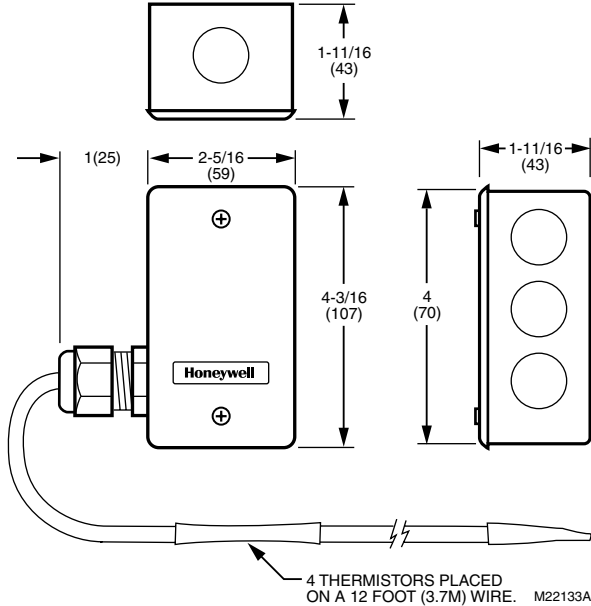
50001775-001/U – Immersion well adaptor, to adapt new C7041D2001 to fit into old brass 32005960-001 well used with old C7031D1062 and C7041D1003

| Material Number | Application | Insertion Length | Operating Temperature Range | Ambient Temperature Range |
|-----------------|--|------------------|-----------------------------------|-------------------------------|
| C7041B2005/U | Duct | 6 in. (152 mm) | -40°F to +250°F (-40°C to +121°C) | 250°F Maximum (121°C Maximum) |
| C7041B2013/U | Duct | 12 in. (305 mm) | -40°F to +250°F (-40°C to +121°C) | 250°F Maximum (121°C Maximum) |
| C7041C2003/U | Duct | 18 in. (457 mm) | -40°F to +250°F (-40°C to +121°C) | 250°F Maximum (121°C Maximum) |
| C7041D2001/U | Immersion sensor for hot or chilled water, purchase well 50001774-001 separately | 5 in. (127 mm) | -40°F to +250°F (-40°C to +121°C) | 250°F Maximum (121°C Maximum) |
| C7041F2006/U | Outside air temperature | | -40°F to +158°F (-40°C to +70°C) | 250°F Maximum (121°C Maximum) |
| C7041J2007/U | Duct air (averaging) | 12 ft. (3.66 m) | -40°F to +250°F (-40°C to +121°C) | 250°F Maximum (121°C Maximum) |
| C7041K2005/U | Hot or chilled water (strap on) | | -40°F to +250°F (-40°C to +121°C) | 250°F Maximum (121°C Maximum) |
| C7041N2020/U | Water or air temperature sensor (probe sensor) | | -40°F to +250°F (-40°C to +121°C) | 250°F Maximum (121°C Maximum) |
| C7041P2004/U | Temperature Sensor | | -40°F to +250°F (-40°C to +121°C) | 250°F Maximum (121°C Maximum) |
| C7041R2000/U | Duct air (averaging) | 12 ft. (3.66 m) | -40°F to +250°F (-40°C to +121°C) | 250°F Maximum (121°C Maximum) |
| C7041R2018/U | Duct air (averaging) | 24 ft. (7.3 m) | -40°F to +250°F (-40°C to +121°C) | 250°F Maximum (121°C Maximum) |

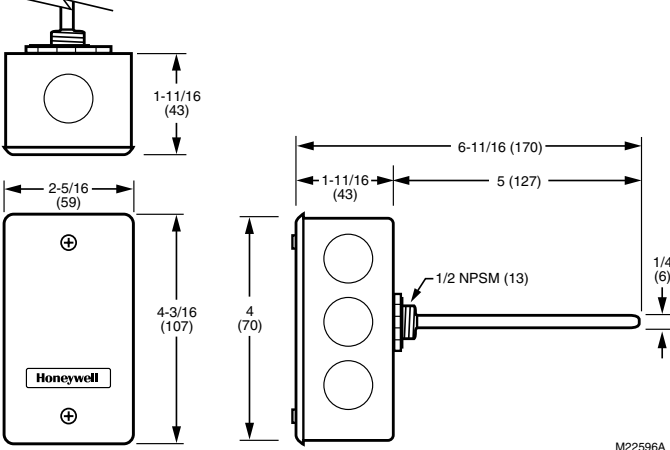
Dimensions in inches (millimeters)



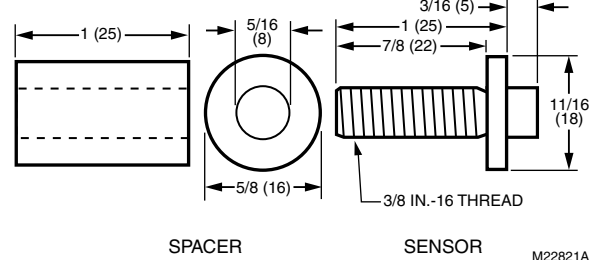
Dimensions in inches (millimeters)



Dimensions in inches (millimeters)

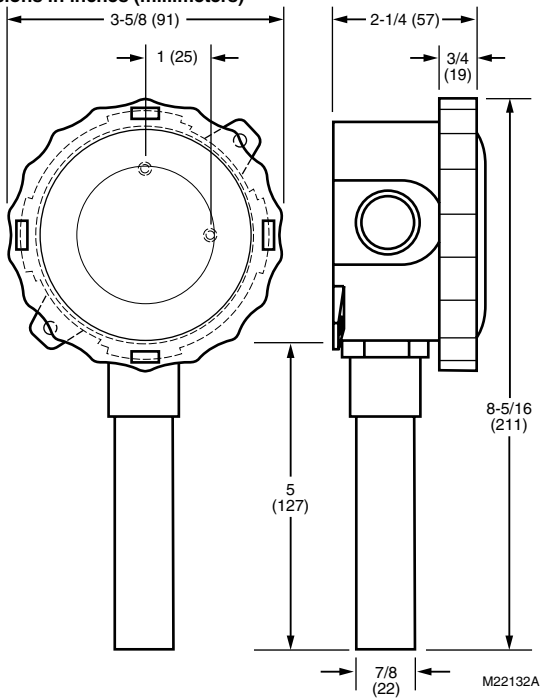


Dimensions in inches (millimeters)

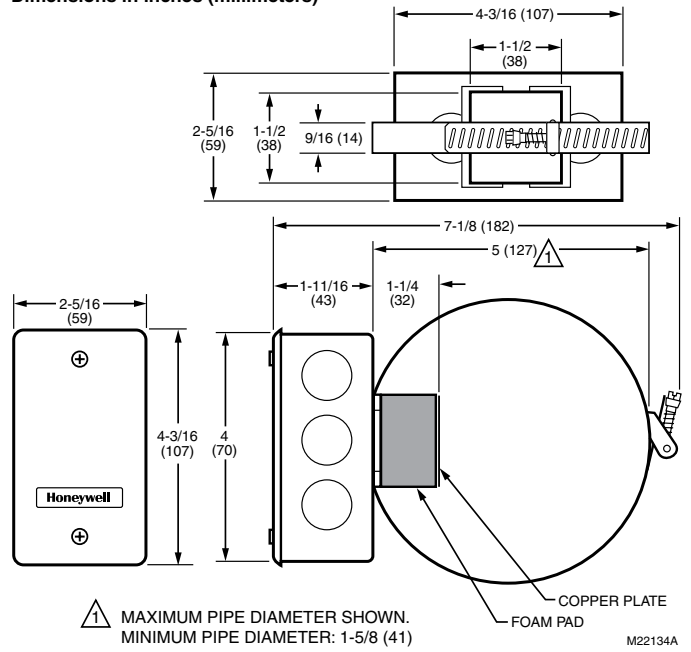


Temperature Sensors

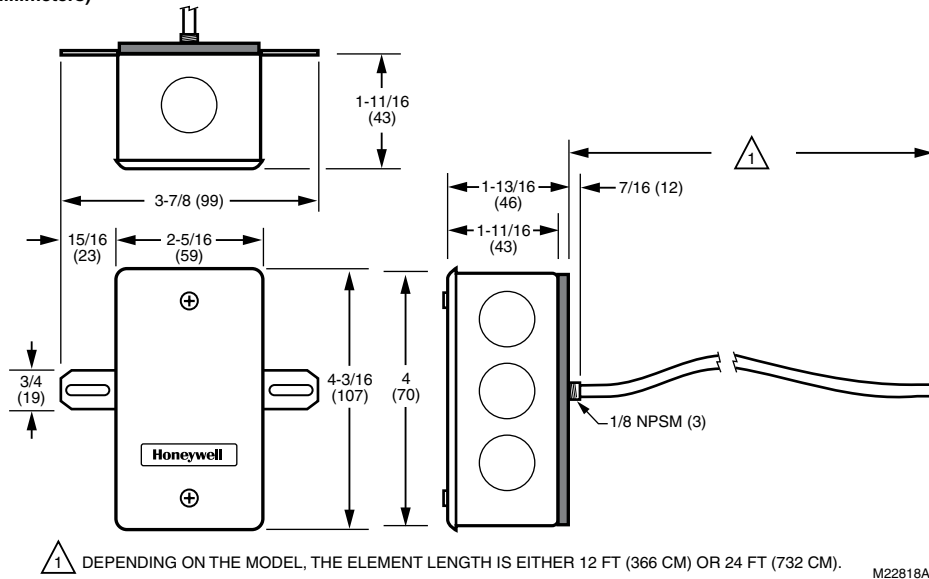
Dimensions in inches (millimeters)



Dimensions in inches (millimeters)



Dimensions in inches (millimeters)



C7041 Temperature Sensor Accessories

| Material Number | Description | Application | Used With |
|-----------------|---|--------------------------------------|---|
| 50001774-001/U | 5 inch Stainless Steel Immersion Well for Use with C7041D2001 | Temperature Sensor Part or Accessory | C7031D2003 and C7041D2001 only |
| 50001775-001/U | Immersion well adaptor, to adapt new C7041D2001 to fit into old brass 32005960-001 well used with old C7031D1062 and C7041D1003 | Temperature Sensor Part or Accessory | C7031D2000, C7041D2000 series to thread into old 32005960-001 |

C7046 Discharge Air Temperature Sensors



Air Temperature Sensors function as primary and/or secondary sensors in electronic control systems.

- No settings or calibration required.
- Solid state components not affected by dust or dirt.
- Fast reacting.
- Rugged aluminum insertion probe.
- Mounts on duct or plenum surface with integral mounting flange, or in a 2 x 4 in. junction box.

Application: Primary and/or secondary sensors in electronic control systems

Mounting: Mounts on flat duct or plenum surface with integral mounting flange or in a 2 in. x 4 in. (51 mm x 102 mm) junction box.

Operating Temperature Range: 40°F to 150°F (4°C to 66°C)

Ambient Temperature Range: 250°F Maximum (121°C Maximum)

Shipping and Storage Temperature Range: -30°F to +160°F (-34°C to +71°C)

Includes: 6 in. leadwires

Comments: Quick response time. Sensor probe diameter is 1/4 in. (6 mm). 6 in. leadwires.

| Material Number | Sensor | Insertion Length | Approximate, Dimensions | Used With |
|-----------------|-----------------------|------------------|---|---|
| C7046A1004/U | 3K ohm @ 77°F NTC | 8 in. (203 mm) | 1 in. high x 2 in. wide x 9 in. deep (25 mm high x 51 mm wide x 229 mm deep) | W973, W6210, W6215, W7210, W7215, W7459, W7460 |
| C7046A1038/U | 3K ohm @ 77°F NTC | 12 in. (305 mm) | 1 in. high x 2 in. wide x 13 in. deep (25 mm high x 51 mm wide x 330 mm deep) | W973, W6210, W6215, W7210, W7215, W7459, W7460 |
| C7046B1010/U | 22.8 K ohm NTC @ 77°F | 6 in. (152 mm) | 1 in. high x 2 in. wide x 7 in. deep (25 mm high x 51 mm wide x 178 mm deep) | W7080 |
| C7046C1000/U | 3K ohm @ 77°F NTC | 8 in. (203 mm) | 1 in. high x 2 in. wide x 9 in. deep (25 mm high x 51 mm wide x 229 mm deep) | W973 |
| C7046D1008/U | 1097 ohm @ 77°F PTC | 8 in. (203 mm) | 1 in. high x 2 in. wide x 9 in. deep (25 mm high x 51 mm wide x 229 mm deep) | Excel 600, Excel 500, Excel 100, Excel 80, and T775 Series 2000 |

C7100 Averaging Duct Temperature Sensors



Averaging Duct Temperature Sensors are used to sense temperature in discharge duct.

- Use to troubleshoot system operation.
- Platinum positive temperature coefficient sensor.
- Factory calibrated; no settings or field calibration required.

Mounting: Discharge Duct

Ambient Temperature Range: 250°F Maximum (121°C Maximum)

Shipping and Storage Temperature Range: -30°F to +150°F (-34°C to +66°C)

Approximate, Dimensions: 1 13/16 in. high x 1 13/16 in. wide x 13 1/4 in. deep (46 mm high x 46 mm wide x 336 mm deep)

Comments: Recessed 1/4 in. (6 mm) quick-connect terminals. 3/4 in. (19 mm) diameter sensor probe.

| Material Number | Application | Sensor | Insertion Length | Operating Temperature Range | Used With |
|-----------------|------------------------------------|------------------------------|------------------|------------------------------|-----------------------------|
| C7100A1015/U | Averaging Duct Temperature Sensors | PT3000, 3484 ohms @ 77°F PTC | 13 in. (330 mm) | 40°F to 220°F (4°C to 104°C) | W7100, W8900 |
| C7100B1013/U | Averaging Duct Temperature Sensors | 22.8 K ohm @ 77°F NTC | 13 in. (330 mm) | 40°F to 150°F (4°C to 64°C) | W7080 |
| C7100C1003/U | Averaging Duct Temperature Sensors | PT3000, 3484 ohms @ 77°F PTC | 13 in. (330 mm) | 40°F to 220°F (4°C to 104°C) | T775 Series 1000 |
| C7100D1001/U | Averaging Duct Temperature Sensors | PT1000, 1097 ohms @ 77°F PTC | 13 in. (330 mm) | 40°F to 220°F (4°C to 104°C) | Excel 500, T775 Series 2000 |

Temperature Sensors

C7130 Wall Mount Temperature Sensor



The C7130A, B Wall-Mount Air Temperature Sensors provide the input required by the R7380J, L, W7100, W7600, W7620, and Excel 500 Control Systems to sense air temperature in indoor spaces.

- C7130A Wall-mount Temperature Sensor:
 - Intended for use as an indoor air sensor with the R7380J, L Indicating Controller, the W7100 Discharge Controller, the W7600 Direct Digital Controller, and the W7620 Direct Digital Controller.
- C7130B Wall-mount Temperature Sensor
 - Intended for use as an indoor air sensor with the Excel 500 Controller.

Application: Intended for monitoring or controlling temperature in conjunction with an electronic control

Mounting: Wall mount

Operating Temperature Range: -40°F to +100°F (-40°C to +38°C)

Ambient Temperature Range: 150°F Maximum (66°C Maximum)

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approximate, Dimensions: 2 13/16 in. high x 4 5/8 in. wide (71.4 mm high x 118 mm wide)

| Material Number | Description | Sensor | Used With |
|-----------------|----------------------------|------------------------------|--------------------------------|
| C7130A1001/U | PT 3000 Temperature Sensor | PT3000, 3484 ohms @ 77°F PTC | R7380J, L, W7100, W7600, W7620 |
| C7130B1009/U | PT 1000 Temperature Sensor | PT1000, 1097 ohms @ 77°F PTC | Excel 500, T775 Series 2000 |

C7170 Immersion Sensor



Primary electronic temperature sensor for the R7380J, L, W7100 and W7505 load inputs for immersion, strap-on and duct mounting.

- Requires no setting or calibration.
- Sensor can be located up to 1195 ft. (340 m) from controller.
- Pigtail leads.

Application: Intended for monitoring or controlling temperature in conjunction with an electronic control

Insertion Length: 3 in. (76 mm)

Mounting: Immersion or strap-on discharge

Operating Humidity Range (% RH): 90% RH at 90°F, non-condensing

Operating Temperature Range: -40°F to +250°F (-40°C to +125°C)
Shipping and Storage Temperature Range: -40°F to +302°F (-40°C to +150°C)

Approximate, Dimensions: 3/8 in. dia. x 2 5/8 in. long (10 mm dia. x 66 mm long)

| Material Number | Description | Sensor | Comments | Used With |
|-----------------|--|------------------------------|--|--------------------------------|
| C7170A1002/U | PT 3000 Temperature Sensor with 24" leads | PT3000, 3484 ohms @ 77°F PTC | Use immersion well 121371A copper or 121371E steel.; 24 in. pigtail leads | R7380J, L, W7100, W7600, W7620 |
| C7170A1010/U | PT 3000 Temperature Sensor with 180" leads | PT3000, 3484 ohms @ 77°F PTC | Use immersion well 121371A copper or 121371E steel.; 180 in. pigtail leads | R7380J, L, W7100, W7600, W7620 |
| C7170B1000/U | PT 1000 Temperature Sensor with 24" leads | PT1000, 1097 ohms @ 77°F PTC | Use immersion well 121371A copper or 121371E steel. | Excel 500, T775 Series 2000 |

C7750 Duct Probe



Application: Primary and/or secondary sensors in electronic control systems

Mounting: Mounts on flat duct or plenum surface with integral mounting flange or in a 2 in. x 4 in. (51 mm x 102 mm) junction box.

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing
Operating Temperature Range: 45°F to 99°F (7°C to 37°C)

The C7750A temperature sensor senses discharge or return air in a duct. It consists of a temperature sensitive 20 K ohm thermistor that is connected on a circuit board to two linearizing resistors in series-parallel configuration.

- A primary and/or secondary sensor for use with electronic control systems.
- Designed with an integral linearized 20 K ohm thermistor.
- Operating range of 45 to 99°F (7.2 to 37.2°C).
- Intended for mounting on a flat duct or plenum surface or (for a plenum-rated application) in a standard utility conduit box.
- Probe length of 6-1/2 in. (165 mm) and a nominal sensor resistance of 8000 ohms at 77°F (25°C).
- Rugged aluminum insertion probe.

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approximate, Dimensions: 1 in. high x 2 in. wide x 7 in. deep (25 mm high x 51 mm wide x 177 mm deep)

Used With: XL10, W7751

| Material Number | Sensor | Insertion Length | Description |
|-----------------|---------------------|------------------|--|
| C7750A3006/U | 20 K ohm NTC linear | 6 in. (152 mm) | 20 K ohm NTC linear Temperature Sensor, used with Excel 10, Series 1000 only |

C7770A Duct Probe



Application: Primary and/or secondary sensors in electronic control systems

Mounting: Mounts on flat duct or plenum surface with integral mounting flange or in a 2 in. x 4 in. (51 mm x 102 mm) junction box.

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing
Operating Temperature Range: 45°F to 99°F (7°C to 37°C)

Direct wired temperature sensor used to sense discharge or return air temperature in a duct controlled by an Excel 10 Series 2000 Controller.

- Primary and/or secondary sensor for use with electronic control systems.
- Integral 20 K ohm non-linear NTC thermistor.
- Rugged aluminum insertion probe.

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

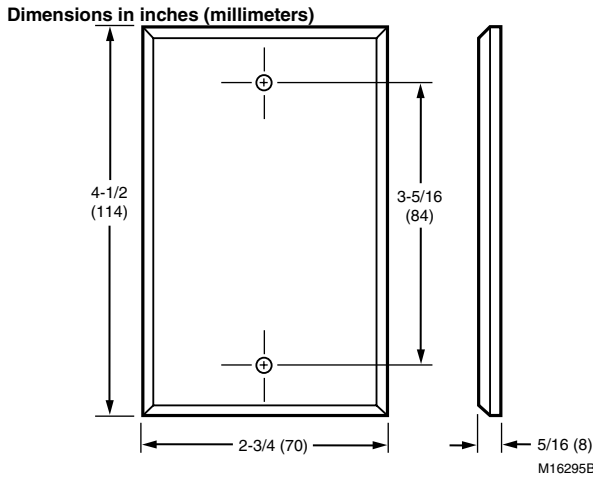
Approximate, Dimensions: 1 in. high x 2 in. wide x 7 in. deep (25 mm high x 51 mm wide x 177 mm deep)

Used With: XL10, W7751

| Material Number | Sensor | Insertion Length | Description | Comments |
|-----------------|-------------------------|------------------|--|---------------------------|
| C7770A1006/U | 20 K ohm NTC non-linear | 6 in. (152 mm) | 6 in. Duct Probe for Return Air 20 K ohm NTC non-linear Temperature Sensor | |
| C7770A1040/U | 20 K ohm NTC non-linear | 6 in. (152 mm) | 6 in. Duct Probe for Return Air 20 K ohm NTC non-linear Temperature Sensor | 6 foot plenum rated cable |

Temperature Sensors

C7772 Flush Mount Sensors



C7772 Temperature Sensors are designed for the Excel 5000 family and other Honeywell controllers. They provide a resistive output signal and are well suited for low profile wall mounted applications.

- Low profile when mounted on industry standard utility conduit box.
- Rugged, brushed stainless steel wallplate.
- Integral foam pad isolates wallplate sensor from conduit box.
- Insulated screw terminals ensure reliable field wiring connection.
- Models available with a variety of resistive temperature sensor elements.

Application: Low profile wall mounted where durability and tamper proof construction is desired

Mounting: Wall mount

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Operating Temperature Range: 45°F to 99°F (7°C to 37°C)

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approximate, Dimensions: 4 1/2 in. high x 2 3/4 in. wide (114 mm high x 70 mm wide)

| Material Number | Sensor | Description | Comments | Used With |
|-----------------|----------------------------------|--|--|---|
| C7772A1004/U | 20 K ohm NTC non-linear | 20 K ohm NTC non-linear Wall Flush Mount Temperature Sensor without logo | | Excel 5000 family |
| C7772A1012/U | 20 K ohm NTC non-linear | 20 K ohm NTC non-linear Wall Flush Mount Temperature Sensor with Honeywell logo | with Honeywell logo, looks very professional and facilitates finding sensor after installation | Excel 5000 family |
| C7772F1004/U | 10 K ohm NTC Type II non-linear | 10 K ohm NTC Type II non-linear Wall Flush Mount Temperature Sensor without logo | | TB7600, TB7300, TB7200 Series communicating thermostats |
| C7772F1012/U | 10 K ohm NTC Type II non-linear | 10 K ohm NTC Type II non-linear Wall Flush Mount Temperature Sensor with Honeywell logo | with Honeywell logo, looks very professional and facilitates finding sensor after installation | TB7600, TB7300, TB7200 Series communicating thermostats |
| C7772G1004/U | 10 K ohm NTC Type III non-linear | 10 K ohm NTC Type III non-linear Wall Flush Mount Temperature Sensor without logo | | WEBS-AX I/O Modules |
| C7772G1012/U | 10 K ohm NTC Type III non-linear | 10 K ohm NTC Type III non-linear Wall Flush Mount Temperature Sensor with Honeywell logo | with Honeywell logo, looks very professional and facilitates finding sensor after installation | WEBS-AX I/O Modules |

C7776A Duct Probe



Application: Primary and/or secondary sensors in electronic control systems

Mounting: Mounts on flat duct or plenum surface with integral mounting flange or in a 2 in. x 4 in. (51 mm x 102 mm) junction box.

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Operating Temperature Range: 45°F to 99°F (7°C to 37°C)

The C7776 Air Temperature Sensors are direct wired temperature sensors that are used to sense discharge or return air in a duct. The sensors are 10 K ohm NTC Type II sensors that are compatible with TB7600, TB7300, and TB7200 communicating thermostats.

- Primary and/or secondary sensor for use with electronic control systems
- Integral 10 K ohm NTC Type II nonlinear sensors
- Operating range of 45°F to 99°F (7°C to 37°C)
- Mounts on a flat duct or plenum surface or, for a plenum-rated application, in a standard utility conduit box
- Probe length of 6 in. (152 mm)
- Rugged 1/4 in. diameter aluminum insertion probe

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approximate, Dimensions: 1 in. high x 2 in. wide x 7 in. deep (25 mm high x 51 mm wide x 177 mm deep)

Used With: TB7600, TB7300, TB7200 Series communicating thermostats

| Material Number | Sensor | Insertion Length | Description | Comments |
|-----------------|---------------------------------|------------------|---|---------------------------|
| C7776A1006/U | 10 K ohm NTC Type II non-linear | 6 in. (152 mm) | 6 in. Duct Probe for Return Air 10 K ohm NTC Type II non-linear Temperature Sensor | |
| C7776A1040/U | 10 K ohm NTC Type II non-linear | 6 in. (152 mm) | 6 in. Duct Probe for Return Air 10 K ohm NTC Type II non-linear Temperature Sensor with 6 foot plenum rated cable | 6 foot plenum rated cable |

C7778A Duct Probe



Application: Primary and/or secondary sensors in electronic control systems

Mounting: Mounts on flat duct or plenum surface with integral mounting flange or in a 2 in. x 4 in. (51 mm x 102 mm) junction box.

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Operating Temperature Range: 45°F to 99°F (7°C to 37°C)

The C7778 Air Temperature Sensors are direct wired temperature sensors that are used to sense discharge or return air in a duct. The sensors are 10 K ohm NTC Type III sensors that are compatible with WEBs-AX I/O modules.

- Primary and/or secondary sensor for use with electronic control systems
- Integral 10 K ohm NTC Type III nonlinear sensors
- Operating range of 45°F to 99°F (7°C to 37°C)
- Mounts on a flat duct or plenum surface or, for a plenum-rated application, in a standard utility conduit box
- Probe length of 6 in. (152 mm)
- Rugged 1/4 in. diameter aluminum insertion probe

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approximate, Dimensions: 1 in. high x 2 in. wide x 7 in. deep (25 mm high x 51 mm wide x 177 mm deep)

Used With: WEBs-AX I/O Modules

| Material Number | Sensor | Insertion Length | Description | Comments |
|-----------------|----------------------------------|------------------|--|---------------------------|
| C7778A1006/U | 10 K ohm NTC Type III non-linear | 6 in. (152 mm) | 6 in. Duct Probe for Return Air 10 K ohm NTC Type III non-linear Temperature Sensor | |
| C7778A1040/U | 10 K ohm NTC Type III non-linear | 6 in. (152 mm) | 6 in. Duct Probe for Return Air 10 K ohm NTC Type III non-linear Temperature Sensor with 6 foot plenum rated cable | 6 foot plenum rated cable |

Temperature Sensors

T7022A Return Air Temperature Sensor



The T7022 Remote Temperature Sensor is a non-adjustable thermistor sensor. Its primary use is with the T7300 Programmable Commercial Thermostat (only in return air) to control heating or cooling equipment.

Application: Remote Temperature Sensors for use with T7300 thermostats
Operating Temperature Range: 60°F to 90°F (16°C to 32°C)

Approximate, Dimensions: 3/8 in. dia. x 2 3/4 in. long (10 mm dia. x 70 mm long)
Used With: T7300, T7067B, W927

| Material Number | Sensor | Insertion Length | Description |
|-----------------|------------------|-------------------|------------------------------------|
| T7022A1010/U | 1420 ohms @ 75°F | 2 3/4 in. (70 mm) | 1420 ohm Remote Temperature Sensor |

T7047 Remote Temperature Sensors for use with T7300 Thermostats

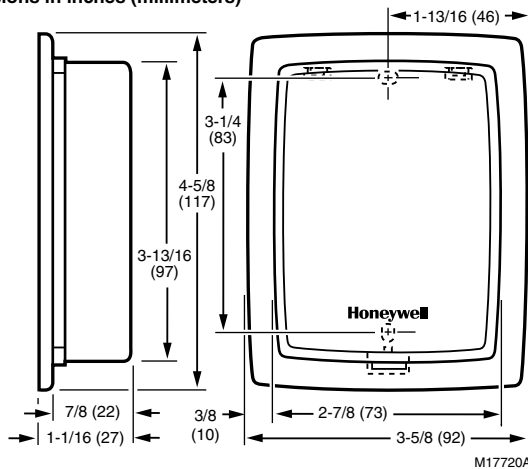


The T7047 Electronic Thermostats, Remote Space Sensors are used with T7300 thermostats and W973 controller to provide modulating space temperature control.

- T7047C is a 2-wire remote space sensor for applications requiring remote setpoint adjustment.
- T7047G is a 2-wire remote space sensor used as one half of an averaging sensor network.
- T7047C, G contain a carbon type negative temperature coefficient (NTC) thermistor sensing element.
- Locking cover.

Application: Provides modulating space temperature control
Mounting: Mounts on wall or 2 x 4 inch vertical outlet box
Operating Temperature Range: 40°F to 110°F (4°C to 43°C)
Approximate, Dimensions: 4 5/8 in. high x 3 5/8 in. wide x 1 5/16 in. deep (118 mm high x 93 mm wide x 33 mm deep)
Used With: T7300/Q7300

Dimensions in inches (millimeters)



| Material Number | Sensor | Color | Description | Comments |
|-----------------|------------------|----------------|---------------------------------------|--|
| T7047C2007/U | 1420 ohms @ 75°F | Taupe | 1420 ohm Electronic Thermostat Sensor | Series 2000 styling |
| T7047C2015/U | 1420 ohms @ 75°F | Premier White® | 1420 ohm Electronic Thermostat Sensor | Series 2000 styling |
| T7047G2008/U | 710 ohm @ 75°F | Taupe | 710 ohm Electronic Thermostat Sensor | Series 2000 styling, for averaging only. |
| T7047G2016/U | 710 ohm @ 75°F | Premier White® | 710 ohm Electronic Thermostat Sensor | Series 2000 styling, for averaging only. |

T7047 Accessories

| Material Number | Description |
|-----------------|--|
| 190389A/U | Cover assembly for T7047A, B series 1000 styling |

T7560 Digital Wall Modules



Electronic wall modules with LCD for use with XL10 controllers.

- 2 models configurable to cover all applications.
- T7560B has Humidity sensor.
- Intuitive and easy to operate.

Application: Networked Sensor

Sensor: 20 K ohm NTC

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Setpoint Temperature Range: 55°F to 85°F (12°C to 30°C)

Operating Temperature Range: 32°F to 104°F (0°C to 40°C)

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Approximate, Dimensions: 4 1/8 in. high x 3 15/16 in. wide x 13/16 in. deep (104 mm high x 99 mm wide x 30 mm deep)

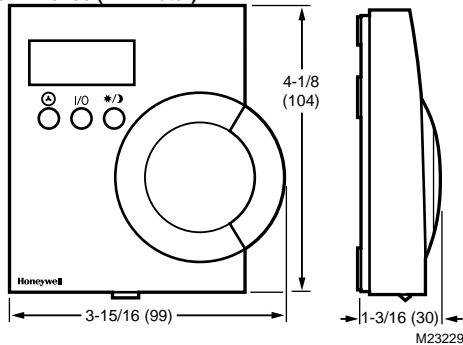
Approvals, Underwriters Laboratories Inc.: Listed: per Standard 916

Approvals, CE: Approved

Approvals, N.E.C.: Class II

Used With: Excel 10 Controllers

Dimensions in inches (millimeter)



| Material Number | Color | Description | Includes |
|-----------------|-----------------------|--|---|
| T7560A1018 | White with blue knob | 20 K ohm NTC Digital Wall Module for Excel 5000 family | Setpoint Wheel, Unoccupied/Occupied override, and LCD display for temperature, setpoint and fan status |
| T7560A1042 | White with white knob | 20 K ohm NTC Digital Wall Module for Excel 5000 family | Setpoint Wheel, Unoccupied/Occupied override, and LCD display for temperature, setpoint and fan status |
| T7560B1016 | White with blue knob | 20 K ohm NTC Digital Wall Module for Excel 5000 family, includes Humidity sensor | Humidity sensor, Setpoint Wheel, Unoccupied/Occupied override, and LCD display for temperature, setpoint, fan status and humidity |
| T7560B1032 | White with white knob | 20 K ohm NTC Digital Wall Module for Excel 5000 family, includes Humidity sensor | Humidity sensor, Setpoint Wheel, Unoccupied/Occupied override, and LCD display for temperature, setpoint, fan status and humidity |

T7650 Accessories

| Material Number | Description | Application | Network Communications | Used With |
|-----------------|--------------------|------------------|------------------------|-----------|
| T7460-LONJACK | Lon Jack for T7560 | Networked Sensor | LonWorks Bus | T7560A, B |

Temperature Sensors

T775 Series 2000 Sensors



A family of general use, simple to use, broadly featured electronic temperature and universal controllers for use in HVAC, agricultural, and industrial applications.

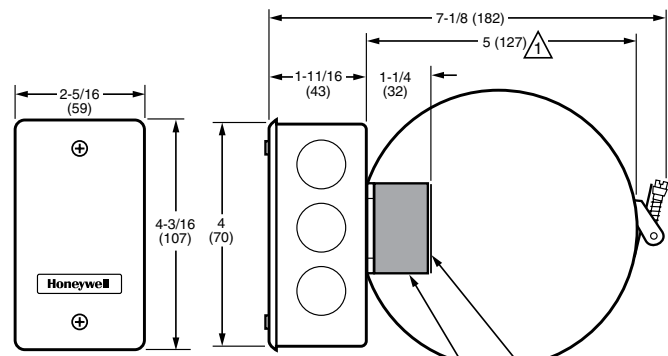
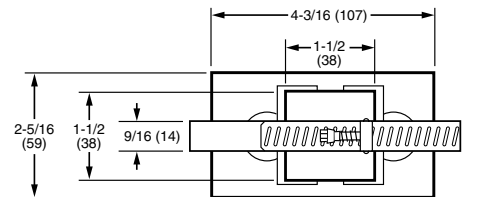
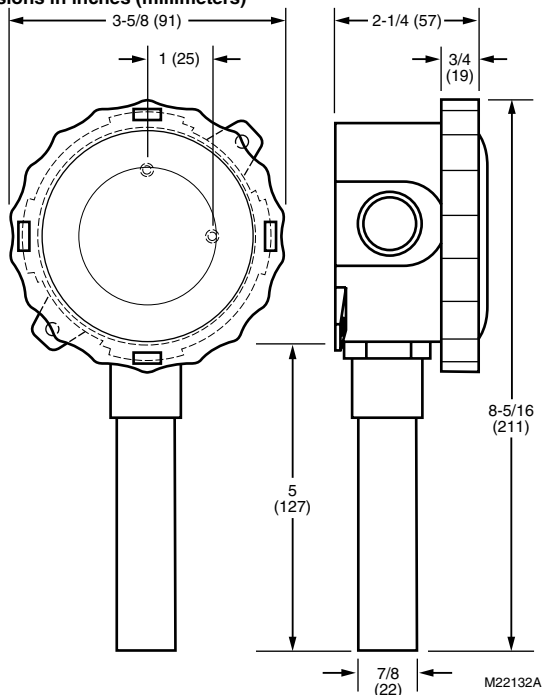
- Use the T775-SENS-OAT to measure outside air temperature.
- Some typical applications for the 50021579-001 and T775-SENSWT/WR sensors include monitoring return air, discharge air, and mixed air temperatures
- Sensors have fast response time and highly accurate
- Sensors have 1/2 in. (6.35 mm) stainless steel probe with a thermally conductive epoxy
- Sensors are 1,097 Ohms PTC at 77°F (25°C)
- The 50021579-001 is a standard temperature sensor for indoor applications
- The T775-SENS-WR is a water-resistant sensor with 5 ft leads
- The T775-SENS-WT is a water-tight sensor with 6 ft leads
- The T775-SENS-OAT is for sensing outdoor air temperature and is housed in a weatherproof case for outdoor use (knockouts allow for 1/2 in. conduit connection)
- Two-year warranty

Shipping and Storage Temperature Range: -30°F to +160°F (-34°C to +71°C)

Used With: T775 Series 2000

| Material Number | Application | Sensor | Operating Temperature Range | Comments |
|-------------------|--|------------------------------|-----------------------------------|-------------------------------------|
| 50021579-001/U | Standard temperature probe that comes with most T775S | 1097 ohms @ 77°F PTC | -40°F to 350°F (-40°C to 177°C) | 9 inch leads |
| T775-SENS-OAT/U | Outside air temperature | PT1000, 1097 ohms @ 77°F PTC | -40°F to 158°F (-40°C to 70°C) | |
| T775-SENS-STRAP/U | Hot or chilled water (strap on) | PT1000, 1097 ohms @ 77°F PTC | -40°F to +250°F (-40°C to +121°C) | |
| T775-SENS-WR/U | Monitoring return air, discharge air, and mixed air temperatures | PT1000, 1097 ohms @ 77°F PTC | -40°F to 270°F (-40°C to 132°C) | Water-resistant sensor; 5 ft. leads |
| T775-SENS-WT/U | Monitoring return air, discharge air, and mixed air temperatures | PT1000, 1097 ohms @ 77°F PTC | -40°F to 270°F (-40°C to 132°C) | Water-tight sensor; 6 ft. leads |

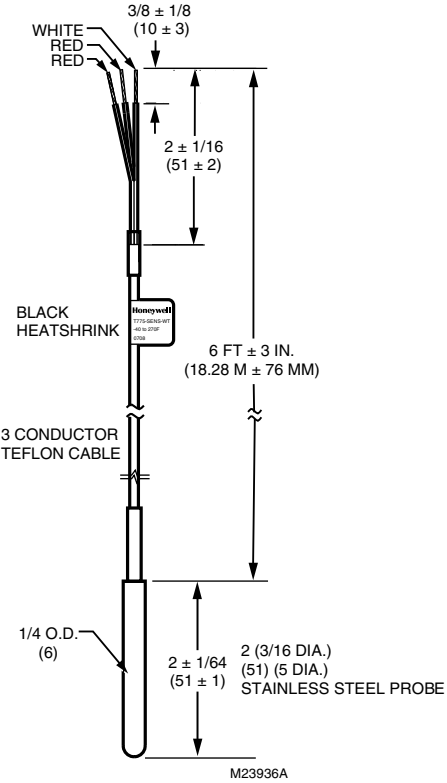
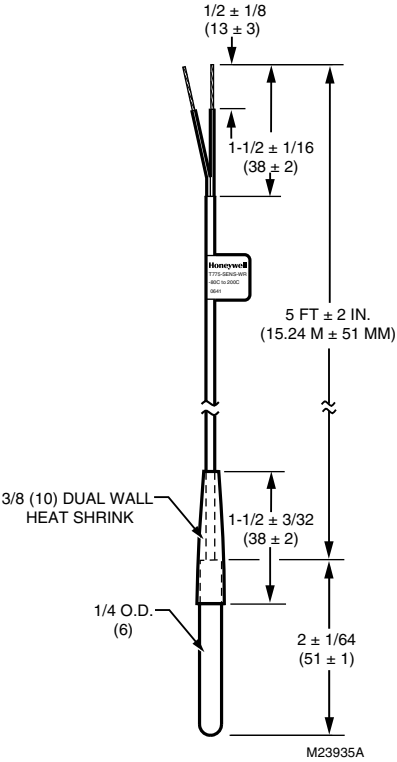
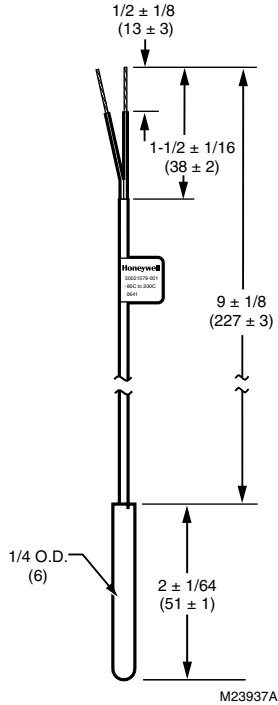
Dimensions in inches (millimeters)



△ MAXIMUM PIPE DIAMETER SHOWN.
MINIMUM PIPE DIAMETER: 1-5/8 (41)

COPPER PLATE
FOAM PAD

M22134A



Temperature Sensors

T7771 Wall Module



Temperature Sensor for use with T7350.

- Push button setpoint adjustment with LED indicators.
- Occupied/unoccupied override (bypass) with LED.
- LONWORKS® bus jack.
- Operating range 45 to 99°F (7 to 37°C).

Application: Remote Room Temperature Sensor for use with T7350 thermostat

Color: White

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Setpoint Temperature Range: offset $\pm 3^\circ\text{F}$ (offset $\pm 1.67^\circ\text{C}$)

Operating Temperature Range: 45°F to 99°F (7°C to 37°C)

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approximate, Dimensions: 5 1/16 in. high x 3 1/8 in. wide x 1 in. deep (128 mm high x 80 mm wide x 25 mm deep)

Approvals, N.E.C.: Class II

Used With: T7350

| Material Number | Sensor | Network Communications | Mounting | Comments |
|-----------------|-------------------------|------------------------|--|--|
| T7771A1005/U | 20 K ohm NTC non-linear | LonWorks Bus | Mounted on a standard 2 x 4 inch junction box or on a 60 mm diameter junction box. | Can be configured to output 10K ohms for use in multiple sensor averaging with TR21. |

TB-WALL 10K ohm NTC Type II Temperature Sensors



Honeywell 10K ohm NTC Type II remote wall sensors are for use with the TB7200, TB7300, and TB7600 Series communicating thermostats and other devices requiring a 10K ohm NTC Type II sensor. These robust sensors provide accurate and stable temperature readings using a 10K ohm NTC thermistor element. The TB-WALL sensors can also be used for temperature averaging applications. Two or three TB wall sensors can be used and are quickly configured with the on-board dip switches. Temperature averaging with the usual 4, 9, 16, 25, etc. sensors can also be done with the TB wall sensors.

Mounting: Wall mount

Operating Humidity Range (% RH): 0 to 95% RH, non-condensing

Operating Temperature Range: 32°F to 122°F (0°C to 50°C)

Shipping and Storage Temperature Range: -22°F to +122°F (-30°F to +50°F)

Approximate, Dimensions: 5 in. high x 3 3/8 in. wide x 1 5/32 in. deep (125 mm high x 86 mm wide x 29 mm deep)

Used With: TB7600, TB7300, TB7200 Series communicating thermostats

| Material Number | Application | Sensor | Description |
|-------------------|---------------------------------------|-----------------------------|---|
| TB-WALL-1014/U | Wall temperature sensor | 10 K ohm NTC @ 77°F Type II | 10K ohm NTC Type II Wall Temperature Sensor |
| TB-WALLOVR-1014/U | Wall temperature sensor with override | 10 K ohm NTC @ 77°F Type II | 10K ohm NTC Type II Wall Temperature Sensor with Override |

TR20 Series Wall Modules



Mounting: Wall or standard 2 x 4 inch junction box or on a 60 mm diameter junction box; Vertical mount

Color: White

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Setpoint Temperature Range: 55°F to 85°F (13°C to 30°C)

Operating Temperature Range: 45°F to 99°F (7°C to 37°C)

Approximate, Dimensions: 4 13/16 in. high x 3 in. wide x 7/8 in. deep with out knob; 4 13/16 in. high x 3 in. wide x 1 in. deep with knob (122 mm high x 76.5 mm wide x 22 mm deep without knob; 122 mm high x 76.5 mm wide x 26.5 mm deep with knob)

The TR21, TR22, TR23, and TR24 are a family of direct wired wall modules for use with Honeywell Excel 600, 500, 100, and 80 controllers; Excel 10 W7750, W7751A, W7752, and W7753 controllers; W7761 Controller; and Spyder Unitary Controllers.

- Models available with user selectable setpoint adjustment dials in Fahrenheit, Celsius and Relative Scales
- Models available with occupied/unoccupied override (bypass) with LED
- Models available with 3-position (auto/0/1) or 5-position (auto/0/1/2/3 speed) fan switch
- LONWORKS network jack on all models except the TR21 and TR21-A models
- Models available with on board humidity sensor, humidity output: 0-10 Vdc, 0-5 Vdc, 4-20 mA selectable

Approvals, Underwriters Laboratories Inc.: UL94-HB plastic enclosure

Approvals, CE: Approved

Approvals, FCC: FCC Part 15, Class B

Used With: Spyder, Excel 600, 500, 100, 80 and Excel 10, 15 Series Controllers; Also used with the T7350 Thermostats

| Material Number | Application | Network Communications | Sensor | Switch Positions (Fan) | Shipping and Storage Temperature Range | Comments | Includes |
|-----------------|------------------------------|------------------------|---|------------------------|--|---|--|
| TR21/U | Wall Module Networked Sensor | None | 20 K ohm NTC non-linear | | -40°F to +150°F (-40°C to +65°C) | | |
| TR21-A/U | Averaging multiple sensors | None | Unique 10 K ohm non-linear, two 20 Ks in parallel | | -40°F to +150°F (-40°C to +65°C) | Special 10K ohm for use only when averaging multiple sensors, can also be used with Thermostats | |
| TR21-A-US/U | Averaging multiple sensors | None | Unique 10 K ohm non-linear, two 20 Ks in parallel | | -40°F to +150°F (-40°C to +65°C) | Meet ARRA Requirements; Special 10K ohm for use only when averaging multiple sensors | |
| TR21-H/U | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | | -40°F to +150°F (-40°C to +65°C) | | Humidity and LON Jack |
| TR21-H-US/U | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | | -40°F to +150°F (-40°C to +65°C) | Meet ARRA Requirements | Humidity and LON Jack |
| TR21-J/U | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | | -40°F to +150°F (-40°C to +65°C) | | LON Jack |
| TR21-J-US/U | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | | -40°F to +150°F (-40°C to +65°C) | Meet ARRA Requirements | LON Jack |
| TR21-US/U | Wall Module Networked Sensor | None | 20 K ohm NTC non-linear | | -40°F to +150°F (-40°C to +65°C) | Meet ARRA Requirements | |
| TR22/U | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | | -40°F to +150°F (-40°C to +65°C) | | Selectable Setpoint dials in Fahrenheit, Celsius, and Relative (- to +) and LON Jack |
| TR22-F5/U | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | AUTO-OFF-1-2-3 | -40°F to +150°F (-40°C to +65°C) | | Selectable Setpoint dials in Fahrenheit, Celsius, and Relative (- to +), LON Jack, and 5 position fan |
| TR22-F5-US/U | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | AUTO-OFF-1-2-3 | -40°F to +150°F (-40°C to +65°C) | Meet ARRA Requirements | Selectable Setpoint dials in Fahrenheit, Celsius, and Relative (- to +), LON Jack, and 5 position fan |
| TR22-US/U | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | | -40°F to +150°F (-40°C to +65°C) | Meet ARRA Requirements | Selectable Setpoint dials in Fahrenheit, Celsius, and Relative (- to +) and LON Jack |
| TR23/U | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | | -40°F to +150°F (-40°C to +65°C) | | Selectable Setpoint dials in Fahrenheit, Celsius, and Relative (- to +), LON Jack and Override Button with LED |
| TR23-F3/U | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | AUTO-OFF-ON | -40°F to +150°F (-40°C to +65°C) | | Selectable Setpoint dials in Fahrenheit, Celsius, and Relative (- to +), LON Jack, Override Button with LED and 3 position fan |

Temperature Sensors

| Material Number | Application | Network Communications | Sensor | Switch Positions (Fan) | Shipping and Storage Temperature Range | Comments | Includes |
|-----------------|---|------------------------|-------------------------|------------------------|--|---|--|
| TR23-F3-US/U | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | AUTO-OFF-ON | -40°F to +150°F (-40°C to +65°C) | Meet ARRA Requirements | Selectable Setpoint dials in Fahrenheit, Celsius, and Relative (- to +), LON Jack, Override Button with LED and 3 position fan |
| TR23-F5/U | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | AUTO-OFF-1-2-3 | -40°F to +150°F (-40°C to +65°C) | | Selectable Setpoint dials in Fahrenheit, Celsius, and Relative (- to +), LON Jack, Override Button with LED and 5 position fan |
| TR23-F5-US/U | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | AUTO-OFF-1-2-3 | -40°F to +150°F (-40°C to +65°C) | Meet ARRA Requirements | Selectable Setpoint dials in Fahrenheit, Celsius, and Relative (- to +), LON Jack, Override Button with LED and 5 position fan |
| TR23-H/U | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | | -40°F to +150°F (-40°C to +65°C) | | Humidity, Selectable Setpoint dials in Fahrenheit, Celsius, and Relative (- to +), LON Jack and Override Button with LED. |
| TR23-H-KL/B | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | | -40°F to +150°F (-40°C to +65°C) | Setpoint knobs not included | on-board humidity sensor |
| TR23-H-US/U | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | | -40°F to +150°F (-40°C to +65°C) | Meet ARRA Requirements | Humidity, Selectable Setpoint dials in Fahrenheit, Celsius, and Relative (- to +), LON Jack and Override Button with LED. |
| TR23-KL/B | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | | -40°F to +150°F (-40°C to +65°C) | Setpoint adjustment knobs not included | |
| TR23-KL/U | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | | -40°F to +150°F (-40°C to +65°C) | Setpoint adjustment knobs not included | |
| TR23-N/U | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | | -40°F to +150°F (-40°C to +65°C) | no Honeywell logo | Selectable Setpoint dials in Fahrenheit, Celsius, and Relative (- to +), LON Jack and Override Button with LED |
| TR23-N-US/U | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | | -40°F to +150°F (-40°C to +65°C) | no Honeywell logo; Meet ARRA Requirements | Selectable Setpoint dials in Fahrenheit, Celsius, and Relative (- to +), LON Jack and Override Button with LED |
| TR23-US/U | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | | -40°F to +150°F (-40°C to +65°C) | Meet ARRA Requirements | Selectable Setpoint dials in Fahrenheit, Celsius, and Relative (- to +), LON Jack and Override Button with LED |
| TR24/U | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | | -40°F to +150°F (-40°C to +65°C) | | LON Jack and Override Button with LED |
| TR24-US/U | Wall Module Networked Sensor | LonWorks Bus | 20 K ohm NTC non-linear | | -40°F to +150°F (-40°C to +65°C) | Meet ARRA Requirements | LON Jack and Override Button with LED |
| TR29/U | Enclosure for any 1/4-in. or 3/8-in. diameter probe sensor; W9076, T775 wall mounted sensor | None | None | | -40°F to +150°F (-40°C to +65°C) | | |

Replacement Parts for the TR20 Series Wall Modules



Comments: sold in packs of 20
Used With: TR20 Series Wall Modules

| Material Number | Color | Description |
|-----------------|-------|--|
| KNOB-C/U | White | Replacement Knobs - Celsius Scale, pack of 20 |
| KNOB-F/U | White | Replacement Knobs - Fahrenheit Scale, pack of 20 |
| KNOB-O/U | White | Replacement Knobs - Relative Scale, pack of 20 |

Temperature Sensors

TR20 Series Wireless Wall Sensor Kits



The WRECVR receiver and TR21-WS, TR23-WS, TR21-WK, and TR23-WK sensors are a family of wireless wall modules and receivers. All models report space temperature; TR23 models come with setpoint adjustment and override.

- Wall module to Receiver (point to point) wireless kits can replace any standard wired sensor
- Wireless Kits (wall module and receiver) are pre-bound at the factory for quick installation
- Signal Strength LED built into the wall module
- Low battery indication
- Optional dip switches available to bind any wall module to any receiver
- Approximate 5 year battery life with AA Alkaline (included), 7.5 year with Lithium
- Locking screw discourages tampering and battery theft

Wireless Range: Open Range – 3000 feet; Typical Range – 100 feet
Output power: 16dBm

Battery Life: 7.5 years with two AA Lithium Batteries or 5 years with two AA Alkaline batteries (included)

Voltage: Receiver – 20-30 Vac/dc, 50/60Hz; 24 Vac typical

Approvals, FCC: FCC Part 15

Used With: Spyder, Excel 10 W7750, W7751, W7752, W7753, T7350, T7351, TB8575, WEBS-AX™ I/O Module

Application: Wall Module

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Setpoint Temperature Range: 55°F to 85°F (13°C to 30°C)

Shipping and Storage Temperature Range: -40°F to +150°F (-40° to + 65.5°C)

Accuracy °F (°C): ± 1°F across 53.6°F to 86°F (± 0.5°C) across 12°C to 30°C)

Radio Frequency: 2.4 GHz (IEEE Std 802.15.4-2003 compliant)

| Material Number | Mounting | Color | Description | Operating Temperature Range | Approximate, Dimensions | Approvals, Underwriters Laboratories Inc. | Comments | Includes |
|-----------------|------------|--------------|--|--|---|--|---|----------------------|
| TR21-WK/U | Wall mount | White Sensor | Wireless sensor kit, ships with both sensor and receiver (TR21-WS and WRECVR) | Sensor: 45°F to 99°F; Receiver: -40° to +150°F (Sensor: 7°C to 37°C; Receiver: -40° to + 65.5°C) | Receiver: 5 1/2 in. high x 3 13/64 in. wide x 2 13/64 in. deep; Sensor: 4 11/16 in. high x 3 in. wide x 7/8 in. deep (Sensor: 119 mm high x 77 mm wide x 22 mm deep; Receiver: 140 mm high x 81 mm wide x 56 mm deep) | Receiver: UL94-5VA; UL94 plastic enclosure | not compatible with TB7220, TB8220, TB line voltage thermostats, XL15s, W7762, W7763 | TR21-WS and WRECVR |
| TR21-WKU/U | Wall mount | | Wireless sensor kit, ships with both sensor and receiver without Honeywell logo (TR21-WSU and WRECVRU) | Sensor: 45°F to 99°F; Receiver: -40° to +150°F (Sensor: 7°C to 37°C; Receiver: -40° to + 65.5°C) | Receiver: 5 1/2 in. high x 3 13/64 in. wide x 2 13/64 in. deep; Sensor: 4 11/16 in. high x 3 in. wide x 7/8 in. deep (Sensor: 119 mm high x 77 mm wide x 22 mm deep; Receiver: 140 mm high x 81 mm wide x 56 mm deep) | Receiver: UL94-5VA; UL94 plastic enclosure | not compatible with TB7220, TB8220, TB line voltage thermostats, XL15s, W7762, W7763; no Honeywell logo | TR21-WSU and WRECVRU |
| TR23-WK/U | | | Wireless sensor kit, ships with both sensor and receiver | Receiver: -40° to +150°F; Sensor: 45°F to 99°F (Receiver: -40° to + 65.5°C; Sensor: 7°C to 37°C) | Sensor: 4 11/16 in. high x 3 in. wide x 1 5/8 in. deep; Receiver: 5 1/2 in. high x 3 13/64 in. wide x 2 13/64 in. deep (Receiver: 140 mm high x 81 mm wide x 56 mm deep; Sensor: 119 mm high x 77 mm wide x 29 mm deep) | UL94 plastic enclosure | not compatible with TB7220, TB8220, TB line voltage thermostats, XL15s, W7762, W7763 | TR23-WS and WRECVR |
| TR23-WKU/U | | | Wireless sensor kit, ships with both sensor and receiver | Receiver: -40° to +150°F; Sensor: 45°F to 99°F (Receiver: -40° to + 65.5°C; Sensor: 7°C to 37°C) | Sensor: 4 11/16 in. high x 3 in. wide x 1 5/8 in. deep; Receiver: 5 1/2 in. high x 3 13/64 in. wide x 2 13/64 in. deep (Receiver: 140 mm high x 81 mm wide x 56 mm deep; Sensor: 119 mm high x 77 mm wide x 29 mm deep) | UL94 plastic enclosure; Receiver: UL94-5VA | no Honeywell logo; not compatible with TB7220, TB8220, TB line voltage thermostats, XL15s, W7762, W7763 | TR23-WSU and RECVRU |

TR20 Series Wireless Wall Sensors



Application: Wall Module

Color: White

Mounting: Wall mount

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Setpoint Temperature Range: 55°F to 85°F (13°C to 30°C)

Operating Temperature Range: 45°F to 99°F (7°C to 37°C)

Shipping and Storage Temperature Range: -40°F to +150°F (-40° to + 65.5°C)

Accuracy °F (°C): ± 1°F across 53.6°F to 86°F (± 0.5°C) across 12°C to 30°C)

TR21-WS and TR23-WS sensors are a family of wireless wall modules. All models report space temperature; TR23 models come with setpoint adjustment and override.

- Wall module to Receiver (point to point) wireless kits can replace any standard wired sensor
- Wireless Kits (wall module and receiver) are pre-bound at the factory for quick installation
- Signal Strength LED built into the wall module
- Low battery indication
- Optional dip switches available to bind any wall module to any receiver
- Approximate 5 year battery life with AA Alkaline (included), 7.5 year with Lithium
- Locking screw discourages tampering and battery theft

Radio Frequency: 2.4 GHz (IEEE Std 802.15.4-2003 compliant)

Wireless Range: Open Range – 3000 feet; Typical Range – 100 feet

Battery Life: 7.5 years with two AA Lithium Batteries or 5 years with two AA Alkaline batteries (included)

Approvals, Underwriters Laboratories Inc.: UL94 plastic enclosure

Approvals, FCC: FCC Part 15

Comments: not compatible with TB7220, TB8220, TB line voltage thermostats, XL15s, W7762, W7763

Used With: Spyder, Excel 10 W7750, W7751, W7752, W7753, T7350, T7351, TB8575, WEBS-AX™ I/O Module

| Material Number | Description | Approximate, Dimensions | Network Communications | Output Power | Comments | Includes |
|-----------------|---|--|------------------------|--------------|---|--|
| TR21-WS/U | TR21 wireless temperature sensor | 4 11/16 in. high x 3 in. wide x 7/8 in. deep (119 mm high x 77 mm wide x 22 mm deep) | | | not compatible with TB7220, TB8220, TB line voltage thermostats, XL15s, W7762, W7763 | |
| TR21-WSU/U | TR21 Wireless Temp Sensor without Honeywell logo | 4 11/16 in. high x 3 in. wide x 7/8 in. deep (119 mm high x 77 mm wide x 29 mm deep) | | | no Honeywell logo; not compatible with TB7220, TB8220, TB line voltage thermostats, XL15s, W7762, W7763 | |
| TR23-WS/U | TR23 Wireless temperature sensor with Setpoint (F/C/Relative) and override button | 4 11/16 in. high x 3 in. wide x 1 5/8 in. deep (119 mm high x 77 mm wide x 29 mm deep) | None | 16dBm | not compatible with TB7220, TB8220, TB line voltage thermostats, XL15s, W7762, W7763 | Selectable Setpoint dials in Fahrenheit, Celsius, and Relative (- to +), and Override Button |
| TR23-WSU/U | TR23 Wireless temperature sensor, with Setpoint (F/C/Relative) and override button, no Honeywell logo | 4 11/16 in. high x 3 in. wide x 1 5/8 in. deep (119 mm high x 77 mm wide x 29 mm deep) | None | 16dBm | not compatible with TB7220, TB8220, TB line voltage thermostats, XL15s, W7762, W7763; no Honeywell logo | Selectable Setpoint dials in Fahrenheit, Celsius, and Relative (- to +), and Override Button |

Temperature Sensors

TR20 Series Wireless Wall Modules



The WRECVR receiver and TR21-WS, TR23-WS, TR21-WK, and TR23-WK sensors are a family of wireless wall modules and receivers.

- Wall module to Receiver (point to point) wireless kits can replace any standard wired sensor
- Wireless Kits (wall module and receiver) are pre-bound at the factory for quick installation
- Signal Strength LED built into the wall module
- Low battery indication
- Optional dip switches available to bind any wall module to any receiver

Application: Wireless Receiver

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Operating Temperature Range: -40° to +150°F (-40° to + 65.5°C)

Shipping and Storage Temperature Range: -40°F to +150°F (-40° to + 65.5°C)

Approximate, Dimensions: 5 1/2 in. high x 3 13/64 in. wide x 2 13/64 in. deep (140 mm high x 81 mm wide x 56 mm deep)

Radio Frequency: 2.4 GHz (IEEE Std 802.15.4-2003 compliant)

Wireless Range: Open Range – 3000 feet; Typical Range – 100 feet

Output power: 16dBm

Voltage: Receiver – 20-30 Vac/dc, 50/60 Hz; 24 Vac typical

Approvals, Underwriters Laboratories Inc.: UL94-5VA

Approvals, FCC: FCC Part 15

Accessories:

TR21-WS/U – TR21 wireless temperature sensor

TR23-WS/U – TR23 Wireless temperature sensor with Setpoint (F/C/Relative) and override button

| Material Number | Description | Comments | Used With |
|-----------------|---|-------------------|--------------------|
| WRECVR/U | Receiver used with wireless temperature sensors | | TR21-WS, TR23-WS |
| WRECVRU/U | Receiver used with wireless temperature sensors | no Honeywell logo | TR21-WSU, TR23-WSU |

Zio[®] LCD Wall Modules



Color: White

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Operating Temperature Range: 30°F to 110°F (-1°C to 43°C)

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to 65.5°C)

Switch Positions (Fan): Configurable

Approximate, Dimensions: 3 5/16 in. wide x 4 5/8 in. high x 15/16 in. deep (84 mm wide x 117 mm high x 24 mm deep)

TR70 and TR70-H are 2-wire, non-polarity sensitive, Sylk™ bus communicating wall modules for Spyder™ programmable controllers. All have a space-temperature sensor, network bus jack, and an LCD with three soft keys and two Up/Down adjustment keys.

- Ability to control user access to controller parameters.
- Parameter access can be customized by using the Tridium Niagara Workbench tool.
- Programmable for: Home screen options, tenant access, contractor access, access to controller parameters, setpoint, override, fan, and other parameters.
- Supplied with eight pre-programmed configurations (e.g. VAV with balancing) in the wall module configuration tool.
- Ability to access and adjust most parameters in the programmable controller (except Scheduling).
- Ability to balance the VAV system from the wall module.
- Home screen can display one to three of any of the following parameters: Temperature Setpoint, Room Temperature, Room Humidity, Outdoor Humidity, Outdoor Temperature, and Time, or one of virtually any parameter in the controller.
- Network bus jack.
- Simple 2-wire terminal connection to the programmable controller and an optional 2-wire terminal connection for the network. All connections are polarity insensitive.
- Retention of user configuration, including setpoints after a power outage.

Network Communications: Two-wire Sylk and Network Jack

Accuracy °F (°C): ±0.36°F at 77°F (±0.2°C at 25°C)

Approvals, Underwriters Laboratories Inc.: UL94-HB plastic enclosure

Approvals, CE: Approved

Approvals, FCC: FCC Part 15

Used With: Spyder Sylk Enhanced

| Material Number | Application | Setpoint Temperature Range | Accuracy | Password Protection | Scheduling | Mounting | Comments |
|-----------------|---|---|---------------------------|---------------------|------------|----------------|-------------------------------------|
| TR71/U | Wall Module Temperature Sensor | Default range is 55°F to 85°F; configurable for other ranges (Default range is 10°C to 35°C; configurable for other ranges) | | Yes | No | Vertical Mount | Configurable with Niagara Workbench |
| TR71-H/U | Wall Module Temperature and Humidity Sensor | Default range is 55°F to 85°F; configurable for other ranges (Default range is 10°C to 35°C; configurable for other ranges) | ±5% RH from 20% to 80% RH | Yes | No | Vertical Mount | Configurable with Niagara Workbench |

Temperature Sensors

Zio® Lite Wall Modules



The TR40 and TR42 are 2-wire, non-polarity sensitive, Sylk bus communicating wall modules, which communicate with Spyder® and some ComfortPoint™ programmable controllers.

- Two wire, polarity insensitive Sylk provides both power and communication to the device.
- Models available with display (TR42) or without display (TR40).
- Models available with or without built in humidity or CO₂ sensors.
- TR42 models have configurable options using the Niagara tool for fan speeds and override.
- TR42 models have the ability for tenant to change between °F and °C
- TR42 models have the ability to provide tenant either a relative warmer cooler setpoint adjustment or absolute temperature setpoint adjustment

Color: White

Mounting: Vertical Mount

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Operating Temperature Range: 32°F to 110°F (0°C to 43°C)

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65.5°C)

Switch Positions (Fan): Configurable

Approximate, Dimensions: 3-1/4 in. wide x 4-3/4 in. high x 7/8 in. deep

Network Communications: Two-wire Sylk

Accuracy °F (°C): ±0.36°F at 77°F (±0.2°C at 25°C)

Approvals, Underwriters Laboratories Inc.: UL94-V0 plastic enclosure

Approvals, CE: Approved

Approvals, FCC: FCC Part 15

Used With: Spyder Controllers

Password Protection: Yes

| Material Number | Application | Setpoint Temperature Range | Accuracy | Comments |
|-----------------|---|---|----------|-------------------------------------|
| TR40 | Temperature, Sensor Wall Module | Default range is 55°F to 85°F; configurable for other ranges (Default range is 10°C to 35°C; configurable for other ranges) | | Configurable with Niagara Workbench |
| TR40-CO2 | Temperature, CO ₂ Sensor Wall Module | Default range is 55°F to 85°F; configurable for other ranges (Default range is 10°C to 35°C; configurable for other ranges) | | Configurable with Niagara Workbench |
| TR40-H | Temperature, Humidity, Sensor Wall Module | Default range is 55°F to 85°F; configurable for other ranges (Default range is 10°C to 35°C; configurable for other ranges) | ±3% RH | Configurable with Niagara Workbench |
| TR40-H-CO2 | Temperature, Humidity, CO ₂ Sensor Wall Module | Default range is 55°F to 85°F; configurable for other ranges (Default range is 10°C to 35°C; configurable for other ranges) | ±3% RH | Configurable with Niagara Workbench |
| TR42 | Temperature, Sensor Wall Module | Default range is 55°F to 85°F; configurable for other ranges (Default range is 10°C to 35°C; configurable for other ranges) | | Configurable with Niagara Workbench |
| TR42-CO2 | Temperature, CO ₂ Sensor Wall Module | Default range is 55°F to 85°F; configurable for other ranges (Default range is 10°C to 35°C; configurable for other ranges) | | Configurable with Niagara Workbench |
| TR42-H | Temperature, Humidity, Sensor Wall Module | Default range is 55°F to 85°F; configurable for other ranges (Default range is 10°C to 35°C; configurable for other ranges) | ±3% RH | Configurable with Niagara Workbench |
| TR42-H-CO2 | Temperature, Humidity, CO ₂ Sensor Wall Module | Default range is 55°F to 85°F; configurable for other ranges (Default range is 10°C to 35°C; configurable for other ranges) | ±3% RH | Configurable with Niagara Workbench |

Zio® Plus LCD Wall Modules



Color: White
Mounting: Vertical Mount
Operating Humidity Range (% RH): 5 to 95% RH, non-condensing
Operating Temperature Range: 30°F to 110°F (-1°C to 43°C)
Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to 65.5°C)
Switch Positions (Fan): Configurable
Approximate, Dimensions: 3 5/16 in. wide x 4 5/8 in. high x 15/16 in. deep (84 mm wide x 117 mm high x 24 mm deep)
Network Communications: Two-wire Sylk and Network Jack

TR70 and TR70-H are 2-wire, non-polarity sensitive, Sylk™ bus communicating wall modules for Spyder™ programmable controllers. All have a space-temperature sensor, network bus jack, and an LCD with three soft keys and two Up/Down adjustment keys.

- Ability to control user access to controller parameters.
- Parameter access can be customized by using the Tridium Niagara Workbench tool.
- Programmable for: Home screen options, tenant access, contractor access, access to controller parameters, setpoint, override, fan, and other parameters.
- Supplied with eight pre-programmed configurations (e.g. VAV with balancing) in the wall module configuration tool.
- Ability to access and adjust most parameters in the programmable controller (except Scheduling).
- Ability to balance the VAV system from the wall module.
- Home screen can display one to three of any of the following parameters: Temperature Setpoint, Room Temperature, Room Humidity, Outdoor Humidity, Outdoor Temperature, and Time, or one of virtually any parameter in the controller.
- Network bus jack.
- Simple 2-wire terminal connection to the programmable controller and an optional 2-wire terminal connection for the network. All connections are polarity insensitive.
- Retention of user configuration, including setpoints after a power outage.

Accuracy °F (°C): ±0.36°F at 77°F (±0.2°C at 25°C)
Approvals, Underwriters Laboratories Inc.: UL94-HB plastic enclosure

Approvals, CE: Approved
Approvals, FCC: FCC Part 15
Comments: Configurable with Niagara Workbench
Used With: Spyder Sylk Enhanced
Parameter Memory (Bites): 5K
Password Protection: Yes
Scheduling: Yes

| Material Number | Application | Setpoint Temperature Range | Accuracy | Description |
|-----------------|---|---|---------------------------|---|
| TR75/U | Wall Module Temperature Sensor | Default range is 55°F to 85°F; configurable for other ranges (Default range is 10°C to 35°C; configurable for other ranges) | ±5% RH from 20% to 80% RH | Zio Plus LCD Wall Module (Temperature) |
| TR75-H/U | Wall Module Temperature and Humidity Sensor | Default range is 55°F to 85°F; configurable for other ranges (Default range is 10°C to 35°C; configurable for other ranges) | | Zio Plus LCD Wall Module (Temperature & Humidity) |

Submeters

Class 100 (H10) One or Two Phase kWh Meter



The Class 100 kWh meters are fully electronic, low-cost meters for monitoring electrical usage in multi-family, commercial and industrial applications. Monitor anything from a single lighting circuit to an entire building. Ideal for both new and retrofitted facilities. Can be used for tenant monitoring and billing.

- Direct-read 2-line alpha-numeric LCD display without multiplier displays accumulative kWh and “real-time” kW load.

- Available in MMU (Multiple Meter Unit) enclosures containing up to 24 meters in one compact enclosure.
- Revenue-grade accuracy.
- Patented 0-2 volt output split-core current sensors promote enhanced safety and accurate remote mounting of current sensors up to 2,000 feet from meter without power interruption.
- Parallel up to three (3) sets of current sensors for cumulative reading.
- Current sensor installation diagnostics.
- Fixed pulse output.
- Non-volatile Memory.
- Maintains reading in the event of power failure.
- Meter can be used in the following configurations:
 - 1-Phase, 2-Wire
 - 2-Phase, 3-Wire
- Available in Industrial grade JIC steel enclosure (J) or NEMA 4X poly carbonate enclosure (R).
- UL/cUL Listed.
- Revenue Grade Accuracy. Meets or exceeds ANSI C12.20 national accuracy standards. (from 1% to 100% of rated load.)
- All meters must be ordered via fax at 800-356-0149, or e-mailed to “ACSUSTradeOrdersandQuotesOnly@honeywell.com”

Class 100 Selection Guide

| Series | Class | Voltage | Current | Enclosure Type | Current Sensors |
|--------|-------|---------|---------|-----------------------|--------------------------------|
| H | 10 | - 2120 | 25- | J JIC Steel Enclosure | KIT Split-core Current Sensors |
| | | - 3208 | 50- | R NEMA 4X Enclosure | SCS Solid-core Current Sensors |
| | | - 2277 | 100 | M MMU Style Meter | |
| | | | 200 | | |

Example: H10-212025-JKIT = Class 100 Single Phase 120V 25A Steel Enclosure with 1 Current Sensor
 Example: H10-3208100JKIT = Class 100 Single Phase 208V 100A Steel Enclosure with 2 Current Sensors
 Please see the MMU Ordering tab for an example showing how to order an MMU panel.

Class 200 (H20) Three Phase kWh Demand Meter



The Class 200 kWh meters are fully electronic, low cost meters for monitoring electrical usage in multifamily, commercial and industrial applications.

- Direct-read 2-line alpha-numeric LCD display without multiplier displays cumulative kWh & “real-time” kW load.
- Demand option displays kW/Demand and kW Peak date and time (15 minute interval standard, 30 and 60 minute intervals available.)
- Patented 0-2 volt output split-core current sensors promote enhanced safety and accurate remote mounting of current sensors up to 2000 feet from meter without power interruption.
- On board installation diagnostics & verification system.
- Parallel up to three (3) sets of current sensors for cumulative reading.
- Meter can be used on the following configurations:
3-Phase, 4-Wire
3-Phase, 3-Wire
2-Phase, 3-Wire
- Fixed-value pulse output.
- Available in both industrial grade JIC steel enclosure and NEMA 4X polycarbonate enclosure.
- Non-volatile Memory.
- UL/CUL Listed.
- Revenue Grade Accuracy. Meets or exceeds ANSI C12.20 national accuracy standards. (from 1% to 100% of rated load.)
- All meters must be ordered via fax at 800-356-0149, or e-mailed to “ACSUSTradeOrdersandQuotesOnly@honeywell.com”

Class 200 and Green Meter Selection Guide

| Series | Class | Voltage | Current | Enclosure Type | Options/Current Sensors | Current Sensors | No Sensors |
|--------|-------|---------|---------|-----------------------|------------------------------------|---------------------------------|---------------------------------|
| H | 20 | - 120 | 25HV | J JIC Steel Enclosure | -G- Green Class Meter | KIT Split-core Current Sensors | -NS No Current Sensors Included |
| | | - 208 | 100- | R NEMA 4X Enclosure | KIT No Options, Split Core Sensors | SCS Solid-core Current Sensors | |
| | | - 480 | 200- | M MMU Style Meter | SCS Solid-core Current Sensors | -NS No Current Sensors Included | |
| | | - 600 | 400- | | -D- Demand | | |
| | | | 800- | | | | |
| | | 1600 | | | | | |
| | | 3200 | | | | | |

Example: H20-208100-RKIT = Class 200 Three Phase 208/240V 100A NEMA 4X Enclosure with 3 Current Sensors.
 Example: H20-2081600R-D-KIT = Class 200 Three Phase 208/240V 1600A NEMA 4X Enclosure, Demand Option, with Three Current Sensors
 Please see the MMU Ordering information for an example showing how to order an MMU panel.

Submeters

Class 320 Communicating Smart Meter



The Class 320 meter is a 3-element meter with communications. The device is used to monitor electric power usage of individual loads after the utility meter and store kW and kVAR data for automatic meter reading.

- Advanced 4-line display showing:
 - kWh
 - kW demand (with peak date & time)
 - Power factor per phase
 - Real-time load in kW
 - Amps per Phase
 - Volts per phase.
- On-board set-up option for:
 - Meter date/time
 - ID codes for communication option
- 0-2 volt output split-core current sensors allow for enhanced safety and accurate remote mounting of sensors up to 500 feet from meter without power interruption.

- Meter is designed for use on both 3-phase, 3-wire (Delta) and 3-phase, 4-wire (Wye) circuits.
- Onboard installation diagnostics and verification system: current sensor installation diagnostics indicator, phase error indicator and phase angle diagnostics on display.
- RS-485 Protocol options:
 - Modbus RTU
 - BACnet MS/TP
 - EZ-7
- Available in MMU (Multiple Meter Unit) enclosures containing up to 24 meters in one compact enclosure.
- When the "M" (MMU) enclosure type is chosen, the MMU should be ordered separately.
- Compatible with E-Mon Energy software via EZ7 protocol or automatic meter reading, energy billing and profiling.
- Built-in RS-485 communication capability supports the following connection configuration combinations not to exceed 52 devices per channel): - Up to 52 Din-Mon D2 & D5, Class 320, 340 or 500 meters and/or IDR interval data recorders. Cabling can be either daisy-chain or star configuration, 3-conductor, 18-22 AWG, up to 4,000 cable feet total per network string.
- Records kWh and kVARh delivered, kWh and kVARh received in first four channels. Data stored in 15-min. for up to 72 days or 5-minute intervals for up to 24 days. Maintains data in a first-in, first-out format.
- Enclosure: Type 4X polycarbonate enclosure for outdoor/ indoor installation and type 1 heavy duty JIC steel enclosure for indoor installation.
- UL/CUL Listed. Revenue Grade Accuracy. Meets or exceeds ANSI C12.20 national accuracy standards. (from 1% to 100% of rated load).
- Non-volatile memory to maintain reading during power outages.
- All meters must be ordered via fax at 800-356-0149, or e-mailed to "ACSUSTradeOrdersandQuotesOnly@honeywell.com"

Class 320 Meter Selection Guide

| Series | Class | Voltage | Current | Enclosure Type | Protocol | Options/Current Sensors | No Current Sensors |
|--------|-------|---------|---------|-----------------------|------------------|---|---------------------------------|
| H | 32 | - 120 | 25HV | J JIC Steel Enclosure | RTU Modbus RTU | KIT Split-core Current Sensors | -NS No Current Sensors Included |
| | | - 208 | 100- | R NEMA 4X Enclosure | EZ7 EZ-7 | -SP Single Phase or Two Phase (Two Element) | |
| | | - 400 | 200- | M MMU Style Meter | BAC BACnet MS/TP | SCS Solid-core Current Sensors | |
| | | - 480 | 400- | | | | |
| | | - 600 | 800- | | | | |
| | | | 1600 | | | | |
| | 3200 | | | | | | |

Example: H32-480400-JRTUKIT = Class 32 Three-Phase 480V 400A Steel Enclosure, Modbus RTU, Three Current Sensors
 Example: H32-480400-JRTUKIT-NS = Class 32 Three-Phase 480V 400A Steel Enclosure, Modbus RTU, Zero Current Sensors
 Example: H32-4801600MEZ7KIT = Class 32 Three-Phase, 480V 1600A MMU Enclosure, RS-485 EZ-7, Three current Sensors
 Please see the MMU Ordering information for an example showing how to order an MMU panel.

MMU (Multiple Meter Unit) Cabinet Ordering Information



MMU (Multiple Meter Unit) Cabinet Ordering Information

Set the grouping under delivery tab to “1” for all the MMU items, cabinet, meters, and blanks.

Add slot number on VC screen for meters. Add text all for MMU-blank

NOTE: MMUs should be ordered as shown in the example on the below, with meters and blanks directly following the HMMU part, so that the factory knows exactly what is needed in each MMU panel.

MMU units are available for H10, H20, and H32 meters and HIDRs.

Please specify the meter configuration in the MMU using the form 62-0460, and fax this in with the order. When ordering meters less than the capacity of the MMU, please fill up the difference with the ‘MMU-BLANK’ spaces. For example, if you buy 6 meters for HMMU-8, you need 2 MMU-Blank spaces (8-6=2).

- Available in configurations containing up to 8, 16, or 24 meters.
- MMU cabinets are available for H10*, H20, and H32 meters and HIDRs.
- Compact installation of multiple meters allows for easy and centralized reading.
- IDRs (Interval Data Recorders) can be factory installed inside the MMU enclosures along with the meters allowing for easy interface to the E-Mon Energy software system. (IDRs are mounted on the back wall of the enclosure.)
- Three-phase MMU cabinets come with pre-wired voltage feeds. If IDR(s) are installed inside MMU cabinets, the connections from the meters to the IDR are also pre-wired at the factory.
- MMU cabinets may contain meters of different voltage configurations. (i.e. 208V & 480V meters inside a single MMU enclosure.)
- All meters must be ordered via fax at 800-356-0149, or e-mailed to “ACSUSTradeOrdersandQuotesOnly@honeywell.com”

MMU (Multi Meter Unit) Parts

| Part number | Description |
|-------------|--|
| HMMU-8 | MMU-8 CABINET/ENCLOSURE for 8 meters |
| HMMU-16 | MMU-16 CABINET/ENCLOSURE for 16 meters |
| HMMU-24 | MMU-24 CABINET/ENCLOSURE for 24 meters |
| MMU-BLANK | MULTIPLE METER UNIT BLANK SPACE |

MMU order example:

| | Part | Qty |
|--------|--------------------|-----|
| line 1 | HMMU-8 | 1 |
| line 2 | H32-4801600MEZ7KIT | 1 |
| line 3 | H32-4801600MEZ7KIT | 1 |
| line 4 | H32-4801600MEZ7KIT | 1 |
| line 5 | H32-480400-MEZ7KIT | 1 |
| line 6 | H32-480400-MEZ7KIT | 1 |
| line 7 | H32-480400-MEZ7KIT | 1 |
| line 8 | MMU-BLANK | 1 |
| line 9 | MMU-BLANK | 1 |

Meters and blanks must add up to # of slots in MMU, in this case 8
Each meter and Each blank must be on their own line

| Material Number | Description | Approximate, Dimensions | Display |
|-----------------|--|--|---------------------------------------|
| HMMU-8 | MMU-8 CABINET/ENCLOSURE for 8 meters | 24 in. H x 12 in. W x 7 in. D (610 mm H x 305 mm W x 178 mm D) | Meter Configuration: 2 across, 4 down |
| HMMU-16 | MMU-16 CABINET/ENCLOSURE for 16 meters | 24 in. H x 20 in. W x 7 in. D (610 mm H x 508 mm W x 178 mm D) | Meter Configuration: 4 across, 4 down |
| HMMU-24 | MMU-24 CABINET/ENCLOSURE for 24 meters | 30 in. H x 24 in. W x 7 in. D (762 mm H x 610 mm W x 178 mm D) | Meter Configuration: 5 across, 5 down |
| MMU-BLANK | Blank for multiple meter cabinet | 7 1/4 in. H x 7 in. W x 3 1/4 in. D (184.1 mm H x 178 mm W x 82.55 mm D) | |

Submeters

Class 340 (H34) Dual Protocol Smart Meter



- Standard features Include advanced 4-line large display showing:
 - kWh
 - kW demand (with peak date & time)
 - Power factor per phase
 - Real-time load in kW
 - Amps per Phase
 - Volts per phase
 - On-board set-up option for:
 - IP address
 - Meter date/time
 - Load Control Settings
 - ID codes for EZ7, Modbus and BACnet
- Optional expanded feature package provides additional features:
 - Load control option for load control/shedding
 - Two external meter inputs (water, gas, BTU, etc.) (stored in channels 5 & 6)
 - Two Pulse outputs (one kWh and one kVARh)
- 0-2 volt output split-core current sensors allow for enhanced safety and accurate remote mounting of sensors up to 500 feet from meter without power interruption. (Optional solid-core sensors available.)
- On-board installation diagnostics and verification system.
- Built-in RS-485 communications capability supports the following connection configurations (or combinations not to exceed 52 devices per channel):

- Up to 52 Din-Mon D2 & D5, Class 320, 340 or 500 meters and/or IDR interval data recorders
- Cabling is daisy-chain configuration, 3-conductor, 18-22 AWG, up to 4,000 cable feet total per channel.
- Communications
 - Built-in communication
 - RS-485
 - Ethernet
 - Pulse output
 - Optional telephone modem
- Protocols
 - Modbus RTU
 - Modbus TCP/IP
 - BACnet MS/TP*
 - BACnet IP*
 - LonWorks FT-10 (Twisted Pair)*
 - EZ7
 - EZ7 Ethernet
- Records kWh & kVARh delivered, kWh & kVARh received in first four channels. Data stored in 15-min. intervals for up to 72 days or 5-minute intervals for up to 24 days. Maintains interval data storage in a first-in, first-out format.
- Compatible with E-Mon Energy software via EZ7 protocol for automatic meter reading, billing & profiling of interval energy data.
- Meter is designed for use on both 3-phase, 3-wire (delta) and 3-phase, 4-wire (wye) circuits. Optional single-phase, 3-wire configuration available.
- Outdoor NEMA 4X polycarbonate enclosure (standard) with padlocking hasp & mounting flanges for indoor/outdoor installation (stand alone) with one 1 1/16" KO on bottom of enclosure.
- Optional industrial grade JIC steel enclosure w/padlocking hasp & mounting flanges for indoor installation with three 1 1/16" KO (3/4" conduit) on bottom of enclosure.
- UL/CUL listed. Certified by Independent Test Lab to meet or exceed ANSI C12.20 national accuracy standards. (from 1% to 100% of rated load)
- Meter meets or exceeds MID accuracy standards.
- BACnet protocol is BTL certified. LonWorks protocol is LonMark certified.

* Interval data not available via BACnet or LonWorks.

Warranted for a period of five (5) years following the date of manufacture when installed in accordance with manufacturer's instructions by qualified personnel.

Class 340 Meter Selection Guide

| Series | Class | | Voltage | Current | Enclosure Type | Protocol | Options/Current Sensors | Current Sensors |
|--------|-------|---|---------|---------|-----------------------|-----------------------------------|---|---------------------------------|
| H | 34 | - | 120 | 25HV | J JIC Steel Enclosure | 01 EZ-7, EZ-7 ETHERNET | KIT No Options, Split Core Sensors | KIT Split-core Current Sensors |
| | | - | 208 | 100- | R NEMA 4X Enclosure | 02 MODBUS RTU, EZ-7 ETHERNET | SCS No Options, Solid Core Sensors | SCS Solid Core Sensors |
| | | - | 400 | 200- | | 03 BACNET MS/TP, EZ-7 ETHERNET | -X- Expanded Feature Pack | -NS No Current Sensors Included |
| | | - | 480 | 400- | | 04 EZ-7, MODBUS TCP/IP | -SP Single Phase Or Two Phase (Two Element) | |
| | | - | 600 | 800- | | 05 EZ-7, BACNET IP | XSP Expanded Feature Pack, Single Phase | |
| | | | | 1600 | | 06 MODBUS RTU, MODBUS TCP/IP | | |
| | | | | 3200 | | 07 LONWORKS TP, EZ-7 ETHERNET | | |
| | | | | | | 08 LONWORKS TP, MODBUS TCP/ IP | | |
| | | | | | | 09 EZ-7, EZ-7 ETHERNET WITH MODEM | | |
| | | | | | | 10 EZ-7, MODBUS TCP/IP WITH MODEM | | |
| | | | | | | 11 EZ-7, BACNET IP WITH MODEM | | |

Example: H34-480400-J05KIT = Class 340 Three-Phase 480V 400A Steel Enclosure, BACnet IP and RS-485 EZ-7 with Three Current Sensors
 Example: H34-480400-J01-X-KIT = Class 340 480V 400A Steel Enclosure, Ethernet EZ-7 and RS-485 EZ-7, Expanded Feature Pack, with Three Current Sensors
 Example: H34-480400-J01-X-KIT-NS = Class 340 480V 400A Steel Enclosure, Ethernet EZ-7 and RS-485 EZ-7, Expanded Feature Pack with Zero Current Sensors

Class 500 Dual Protocol Smart Meter



The Class 500 Meter is a 3-element meter with dual protocol communications. The device is used to monitor electric power usage of individual loads after the utility meter and store kW and kVAR data for automatic meter reading. Installation must only be performed by qualified personnel and in accordance with these instructions and all applicable local and national electrical codes.

- Advanced 4-line display showing:
 - kWh
 - kW demand (with peak date & time)
 - Power factor per phase
 - Real-time load in kW
 - Amps per Phase
 - Volts per phase.
- On-board set-up option for:
 - IP address
 - Meter date/time
 - ID codes for EZ7
 - Modbus and BACnet.
- 0-2 volt output split-core current sensors allow for enhanced safety and accurate remote mounting of sensors up to 500 feet from meter without power interruption.
- Onboard installation diagnostics and verification system: current sensor installation diagnostics indicator, phase error indicator and phase angle diagnostics on display.
- Optional 5th & 6th channel available for two external meter inputs (gas, water, BTU, etc.) on Modbus, BACnet, and LonWorks (only one channel is available with EZ-7 protocol). Both channels provide interval data logging that can be read via E-Mon Energy software.
- Communication options/protocols:
 - Built in RS-485: BACnet MS/TP, Modbus RTU, Lon Twisted Pair, EZ-7
 - Built in Ethernet: BACnet IP, Modbus TCP/IP, EZ-7 Ethernet.

- Compatible with E-Mon Energy software via EZ7 protocol for automatic meter reading, energy billing and profiling (applicable communication options: 02, 03, 05, and 07).
- Phase loss alarm (N.O. Contact).
- Built-in RS-485 communication capability supports the following connection configurations (or combinations not to exceed 52 devices per channel): - Up to 52 Class 500 meters and/or IDR interval data recorders. Cabling can be either daisy-chain or star configuration through RJ-11 modular jack (4-conductor) or terminal block (3-conductor), 18-26 AWG, up to 4,000 cable feet total.
- For EZ-7 meters, records kWh and kVARh delivered, kWh and kVARh received in first four channels. Data stored in 15-min. for up to 72 days or 5-minute intervals for up to 24 days. Maintains data in a first-in, first-out format.
- Meter operates as slave device when used with Modbus or LONworks options. Meter works as a master device on BACnet MS/TP.
- Enclosure: Type 4X polycarbonate enclosure for outdoor/ indoor installation and type 1 heavy duty JIC steel enclosure for indoor installation.
- UL/CUL Listed. Certified by independent test lab to meet or exceed ANSI C12.20 national accuracy standards. (from 1% to 100% of rated load).
- Non-volatile memory to maintain reading during power outages.
- Meter data points
 - Energy delivered
 - Reactive Energy delivered
 - Energy Received
 - Real Power
 - Reactive Power
 - Apparent power
 - Power factor
 - Current total
 - Current average
 - Voltage line
 - Frequency
 - Phase angle
 - Real power for each phase
 - Reactive power for each phase
 - Apparent power for each phase
 - Power factor for each phase
 - Current for each phase
 - Voltage for each phase
 - Phase angle for each phase
 - External input 1 (optional)
 - External input 2 (optional)
- All meters must be ordered via fax at 800-356-0149, or e-mailed to "ACSUSTradeOrdersandQuotesOnly@honeywell.com"

Class 500 Meter Selection Guide

| Series | Class | Voltage | Current | Enclosure Type | Protocol | Options/Current Sensors | Current Sensors |
|--------|-------|---------|---------|-----------------------|--|---|---------------------------------|
| H | 50 | - 120 | 25HV | J JIC Steel Enclosure | 01 EZ-7, EZ-7 ETHERNET (Green Net Meters only) | KIT No Options, Split Core Sensors | KIT Split-core Current Sensors |
| | | - 208 | 100- | R NEMA 4X Enclosure | 02 MODBUS RTU, EZ-7 ETHERNET | SCS No Options, Solid Core Sensors | SCS Solid Core Sensors |
| | | - 400 | 200- | | 03 BACNET MS/TP, EZ-7 ETHERNET | -N- Green Class Net Meter | -NS No Current Sensors Included |
| | | - 480 | 400- | | 04 EZ-7, MODBUS TCP/IP | -SP Single Phase Or Two Phase (Two Element) | |
| | | - 600 | 800- | | 05 EZ-7, BACNET IP | NSP Green Net, Single Phase | |
| | | | 1600 | | 06 MODBUS RTU, MODBUS TCP/IP | | |
| | | | 3200 | | 07 LONWORKS TP, EZ-7 ETHERNET | | |
| | | | | | 08 LONWORKS TP, MODBUS TCP/ IP | | |
| | | | | | 09 EZ-7, EZ-7 ETHERNET WITH MODEM | | |
| | | | | | 10 EZ-7, MODBUS TCP/IP WITH MODEM | | |
| | | | | | 11 EZ-7, BACNET IP WITH MODEM | | |

Example: H50-480400-J05KIT = Class 500 Three-Phase 480V 400A Steel Enclosure, BACnet IP and RS-485 EZ-7 with Three Current Sensors
 Example: H50-480400-J01-N-KIT = Class 500 Three-Phase Green Net, 480V 400A Steel Enclosure, Ethernet EZ-7 and RS-485 EZ-7, with Three Current Sensors
 Example: H50-480400-J01-N-KIT-NS = Class 500 Three-Phase Green Net, 480V 400A Steel Enclosure, Ethernet EZ-7 and RS-485 EZ-7, with Zero Current Sensors

Submeters

Interval Data Recorder



The Interval Data Recorder (IDR) is an energy data collection device.

- Advanced 4-line display showing:
 - kWh
 - Real-time load
- On-board set-up option for:
 - IP address
 - Date/time
 - ID codes for EZ7, Modbus and BACnet
- Standard IDR (RJ Jacks) reads & records up to 8 or 16 H-Series class 100/200 meters (pulse input). (3rd party meters don't work with RJ jacks.)

- IDR-ST (screw terminal) model can accept contact closure type pulse inputs from other types of meters (water, gas, BTU, steam, etc.). The ST option is available only on HIDR-8 models.
- Built-in RS-485 communications capability supports the following connection configurations (or combinations not to exceed 52 devices per channel):
 - Up to 52 Din-Mon D2 & D5, Class 320, 340 or 500 meters and/or IDR interval data recorders
 - Cabling can be either daisy-chain or star configuration, 3-conductor, 18-22 AWG, up to 4,000 cable feet total per channel.
- Built-in communications
 - RS-485
 - Ethernet
 - Optional telephone modem
- Protocols
 - Modbus RTU
 - Modbus TCP/IP
 - BACnet MS/TP
 - BACnet IP
 - EZ7
- Data stored for 55 days at 5-min. intervals and 165 days at 15-min. intervals. (When connected to E-mon Energy software, data can be retrieved for 72 days at 15-min. intervals and 24 days at 5-min. intervals).
- Reads usage and reads demand in 15, 30 or 60-minute kW periods.
- 120V power supply required and included with all IDR's.
- Maintains data in case of power outage.
- Industrial-grade JIC steel enclosure with padlocking hasp and mounting flanges and three 1 1/16 knockouts (3/4" conduit) on bottom of enclosure (stand-alone IDR's only).
- All meters must be ordered via fax at 800-356-0149, or e-mailed to "ACSUSTradeOrdersandQuotesOnly@honeywell.com"

Interval Data Recorder Selection Guide

| Class | # of Meters | Enclosure Type | Protocol | Connection |
|-------|-------------|-----------------------|-----------------------------------|---|
| HIDR- | 8- | J JIC Steel Enclosure | 01 EZ-7, EZ-7 ETHERNET | ST Screw Terminal Connections (only available for HIDR-8 models) |
| | | | 02 Modbus RTU, EZ-7 ETHERNET | |
| | 16 | M MMU Style Meter | 03 BACNET MS/TP, EZ-7 ETHERNET | RJ RJ Connections |
| | | | 04 EZ-7, Modbus TCP/IP | |
| | | | 05 EZ-7, BACNET IP | |
| | | | 06 Modbus RTU, Modbus TCP/IP | |
| | | | 09 EZ-7, EZ-7 Ethernet With Modem | |
| | | | 10 EZ-7, Modbus TCP/IP with modem | |
| | | | 11 EZ-7, BACNET IP with modem | |

Example: HIDR-8-J05ST = IDR for 8 meters, Steel enclosure, EZ-7 RS-485 and EZ-7 Ethernet with Screw Terminal connection option
 Example: HIDR-16J02RJ = IDR for 16 meters, Steel enclosure, Modbus RTU and EZ-7 Ethernet with RJ connection option
 Please see the MMU Ordering information for an example showing how to order an MMU panel.

Din-Mon (HD2 or HD5) Submeters



Din-Mon™ D2 and D5 configurations are now available. Typical applications include energy-efficiency monitoring of HVAC equipment and other building electrical systems, single-phase transformers and more. There are two basic configurations:

Din-Mon D2

- RS-485 Communication
 - BACnet MS/TP (BTL Testing Certified)
 - Modbus RTU
 - E-Mon Energy EZ7

Din-Mon D5

- Dual-protocol functionality
 - RS-485/Ethernet or RS-485/LonWorks
 - MODBUS TCP/IP
 - BACNET IP
 - LonWorks TP/FT-10

Measuring just 5.5" (139.7mm) H x 4.3" (109.2mm) W x 2.3" (58.4mm) D, the compact Din-Mon is ideally suited for internal mounting in building automation systems, switchgear, control panels, server racks, renewable energy systems and other space-constrained energy monitoring applications. Din-Mon is also wall mount capable.

38 points of data including kWh & kW (with peak date and time), Power factor per phase, real-time load in kW, Amps per phase and Volts per phase.

Meter is designed for use on both 3-phase, 3-wire (delta) and 3-phase, 4-wire (wye) circuits. Optional 1- and 2-element configurations are available.

Two customer configurable pulse outputs: - Watt-hour and VAR-hour pulse outputs - Watt-hour and phase loss (N.O. Contact)

Din-Mon™ Current Sensors

- Split-core current sensors: 0.333V standard, 100mA optional; solid-core 0.333V and 100mA, optional.
- The standard meter kit for either configuration comes with 0.333V split-core current sensors, but 0-100mA output current sensors and solid-core sensors are optionally available.
- Fully Encapsulated
- Split Core Sensors available in the following amperages: 100A, 200A, 400A, and 800A.
- Solid Core Sensors available in the following amperages: 100A and 200A.
- Note: These current sensors cannot be used with any other Honeywell Submeter products.

Warranted for a period of five (5) years following the date of manufacture when installed in accordance with manufacturer's instructions by qualified personnel.

Class D2 Meter Selection Guide

| Series | Class | | Voltage | Current | Enclosure Type | Protocol | Current Sensor Type | Configuration-Phases | Current Sensor Output | Current Sensor Qty |
|--------|-------|---|---------|---------|----------------------|------------------|-----------------------|----------------------|-----------------------|---------------------------------|
| H | D2 | - | 208 | 100- | S Standard Enclosure | RTU Modbus RTU | SPL Split-core Sensor | 1- Single Phase | V3 0.333V Output | KIT1 1 Current Sensor Included |
| | | - | 400 | 200- | | EZ7 EZ-7 | SCS Solid-core Sensor | 2- Two Phases | C1 100MA Output | KIT2 2 Current Sensors Included |
| | | - | 480 | 400- | | BAC BACNET MS/TP | | 3- Three Phases | | KIT3 3 Current Sensors Included |
| | | - | 600 | 800- | | | | | | -NS No Current Sensors Included |

Example: HD2-208200-SRTUSPL3-V3KIT3 = Class D2 208V 200A Standard Enclosure, Modbus RTU, Three Phase, Three Voltage Output Current Sensors
 Example: HD2-480800-SEZ7SPL1-C1KIT1 = Class D2 480V 800A Standard Enclosure, EZ7, Single Phase, One Current Output Current Sensor

Class D5 Meter Selection Guide

| Series | Class | | Voltage | Current | Enclosure Type | Protocol | Current Sensor Type | Configuration-Phases | Current Sensor Output | Current Sensor Qty |
|--------|-------|---|---------|---------|------------------------------|--------------------------------|-----------------------|----------------------|-----------------------|---------------------------------|
| H | D5 | - | 208 | 100- | S Standard Enclosure | 01 EZ-7, EZ-7 Ethernet | SPL Split-core Sensor | 1- Single Phase | V3 0.333V Output | KIT1 1 Current Sensor Included |
| | | - | 400 | 200- | | 02 Modbus RTU, EZ-7 Ethernet | SCS Solid-core Sensor | 2- Two Phases | C1 100MA Output | KIT2 2 Current Sensors Included |
| | | - | 480 | 400- | | 03 BACNET MS/TP, EZ-7 Ethernet | | 3- Three Phases | | KIT3 3 Current Sensors Included |
| | | - | 600 | 800- | | 04 EZ-7, Modbus TCP/IP | | | | -NS No Current Sensors Included |
| | | | | | | 05 EZ-7, BACNET IP | | | | |
| | | | | | 06 Modbus RTU, Modbus TCP/IP | | | | | |
| | | | | | 12 EZ-7, Lonworks TP/FT-10 | | | | | |


Example: HD5-208200-S01SPL3-V3KIT3 = Class D5 208V 200A Standard Enclosure, EZ7 / EZ7, Three Phase, Three Voltage Output Current Sensors
 Example: HD5-480800-S06SPL1-C1KIT1 = Class D5 480V 800A Standard Enclosure, Modbus / Modbus, Single Phase, One Current Output Current Sensor

Submeters

Energy Software

| Material Number | Description | Application |
|-----------------|---|--|
| SUB-ENERGY50 | 1-50 Meters Emon Energy Software and Start-Up | 1-50 meters with E-Mon Energy software and start-up |
| SUB-ENERGY100 | E-Mon Energy software operates with computers running Windows 2000, XP, Vista or 7. | 51-100 meters with E-mon Energy Software and start-up |
| SUB-ENERGY250 | E-Mon Energy software operates with computers running Windows 2000, XP, Vista or 7. | 101-250 meters with E-mon Energy software and start-up |

Meter Options, Enclosures and Accessories

| Material Number | Description | Application | |
|-----------------|--|--|---|
| SUB-EKME | Connects AMR system to host computer via Ethernet for reading meters with E-Mon Energy software (Converts RS-485 to 10Mbps Ethernet for connection to an Ethernet network) | EKM-E - ETHERNET KEY/MODEM | |
| SUB-EKMT | Converts RS-485 to RS-232 for input into computer serial port | EKM-T - TELEPHONE KEY/MODEM | |
| SUB-EZ7 | EZ-7 Driver | EZ-7 Driver | |
| SUB-P3 | Operating range of 1.5 to 36 volts AC or DC, Real time demand reading | Pulse Output for Interface to energy management system or building management system |  |
| SUB-RS232K | Connects AMR system to host computer for reading meters with E-Mon Energy software (Supports up to 52 IDR units) | Additional RS-232 Communication Key | |
| SUB-USBK | Converts RS-485 to USB for input into computer USB port for reading meters with E-Mon Energy software. | USB Communication Key | |

Split Core Sensors



Split-core current sensors are supplied with Honeywell Class 100, 200, 320, 340 and 500 meters.

- Current sensors can be installed up to 2000 feet away from meter. Leads supplied are 3' in length and can be extended up to 2000 feet using low voltage #14-22 AWG wire. (stranded/twisted not required) See local electrical codes for proper sizing.
- When paralleling current sensors, the meter reading must be multiplied by the number of sets of current sensors in parallel (a maximum of 3 sets of sensors can be installed in parallel).

| Material Number | Description | Application | Approximate, Dimensions | Current Sensor Rating (A) |
|-----------------|--|--|---|---------------------------|
| SUB-CS25 | Current sensors can be installed up to 2000 feet away from meter | Set of 3 25A Split-core Current sensor | Interior Dim: 7/8" x 1 1/2" / Exterior Dim: 3 1/8" H x 3 3/4" W x 1 3/8" D (Interior Dim: 22.2 mm x 38 mm / Exterior Dim: 79.4 mm H x 95.25 mm W x 34.93 mm D) | 25A |
| SUB-CS50 | Current sensors can be installed up to 2000 feet away from meter | Set of 3 50A Split-Core Current sensor | Interior Dim: 7/8" x 1 1/2" / Exterior Dim: 3 1/8" H x 3 3/4" W x 1 3/8" D (Interior Dim: 22.2 mm x 38 mm / Exterior Dim: 79.4 mm H x 95.25 mm W x 34.93 mm D) | 50A |
| SUB-CS100 | Current sensors can be installed up to 2000 feet away from meter | Set of 3 100A Split-core Current sensor | Interior Dim: 7/8" x 1 1/2" / Exterior Dim: 3 1/8" H x 3 3/4" W x 1 3/8" D (Interior Dim: 22.2 mm x 38 mm / Exterior Dim: 79.4 mm H x 95.25 mm W x 34.93 mm D) | 100A |
| SUB-CS200 | Current sensors can be installed up to 2000 feet away from meter | Set of 3 200A Split-core Current sensor | Interior Dim: 7/8" x 1 1/2" / Exterior Dim: 3 1/8" H x 3 3/4" W x 1 3/8" D (Interior Dim: 22.2 mm x 38 mm / Exterior Dim: 79.4 mm H x 95.25 mm W x 34.93 mm D) | 200A |
| SUB-CS400 | Current sensors can be installed up to 2000 feet away from meter | Set of 3 400A Split-Core Current sensor | Interior Dim: 1 1/2" x 2 3/4" / Exterior Dim: 4 3/8" H x 3 3/4" W x 1 3/8" D (Interior Dim: 38 mm x 14.3 mm / Exterior Dim: 111 mm x 95.25 mm x 34.93 mm D) | 400A |
| SUB-CS800 | Current sensors can be installed up to 2000 feet away from meter | Set of 3 800A Split-core Current sensor | Interior Dim: 3 1/4" x 4 1/2" / Exterior Dim: 5 3/4" H x 5 3/8" W x 1 3/8" D (Interior Dim: 101.6 mm x 114.3 mm / Exterior Dim: 146 mm x 136.5 mm x 34.93 mm D) | 800A |
| SUB-CS1600 | Current sensors can be installed up to 2000 feet away from meter | Set of 3 1600A Split-Core Current sensor | Interior Dim: 3 1/4" x 4 1/2" / Exterior Dim: 5 3/4" H x 5 3/8" W x 1 3/8" D (Interior Dim: 82.55 mm x 114.3 mm / Exterior Dim: 146 mm x 136.5 mm x 34.93 mm D) | 1600A |
| SUB-CS3200 | Current sensors can be installed up to 2000 feet away from meter | Set of 3 3200A Split-Core Current sensor | Interior Dim: 5 7/16" x 7 7/8" / Exterior Dim: 9 1/4" H x 7 7/8" W x 1 3/8" D (Interior Dim: 138.1 mm x 200 mm / Exterior Dim: 234.95 x 200 mm x 34.93 mm D) | 3200A |

Currents Sensors

Solid and Split Core Current Transmitters



Depending on the model, current is converted into a linear and proportional output signal of 0-5 Vdc, 0-10 Vdc or 4-20 mA and monitored by a building management controller. Use these current sensors in load trending (current monitoring) applications.

- Solid or split core loop-powered current transmitters for 4-20 mA models
- Solid or split core 0-5 or 0-10 Vdc models
- Fast response time
- Integral DIN rail mounting flange
- Easy wiring, polarity sensitive output
- Accepts up to a 350 MCM (17.3 mm) cable
- Operates up to 250 continuous amps
- True RMS versions are available
- RoHS and WEEE Complaint
- Limited 5 Year Warranty

Weight: Split Core-0.24 lb; Solid Core-0.22 lb (Split Core-0.11 kg; Solid Core-0.10)

Approvals, CE: Approved

Approvals, Underwriters Laboratories Inc.: Approved

Approvals, Environmental Compliance: RoHS-Directive 2002/95/EC, WEEE-Directive 2002/96/EC

DIN Rail Size: 1-3/8 in. (35 mm)

Type: Adjustable

Enclosure Rating/Color: UL94-5V/Burgundy

Supply Current: 36 mA max

Jumper Settings: Low; Middle; High

Isolation Voltage: 2200 Vac

Aperture Size: 3/4 in. (19 mm). Accepts up to 350 MCM (17.3 mm) cables.

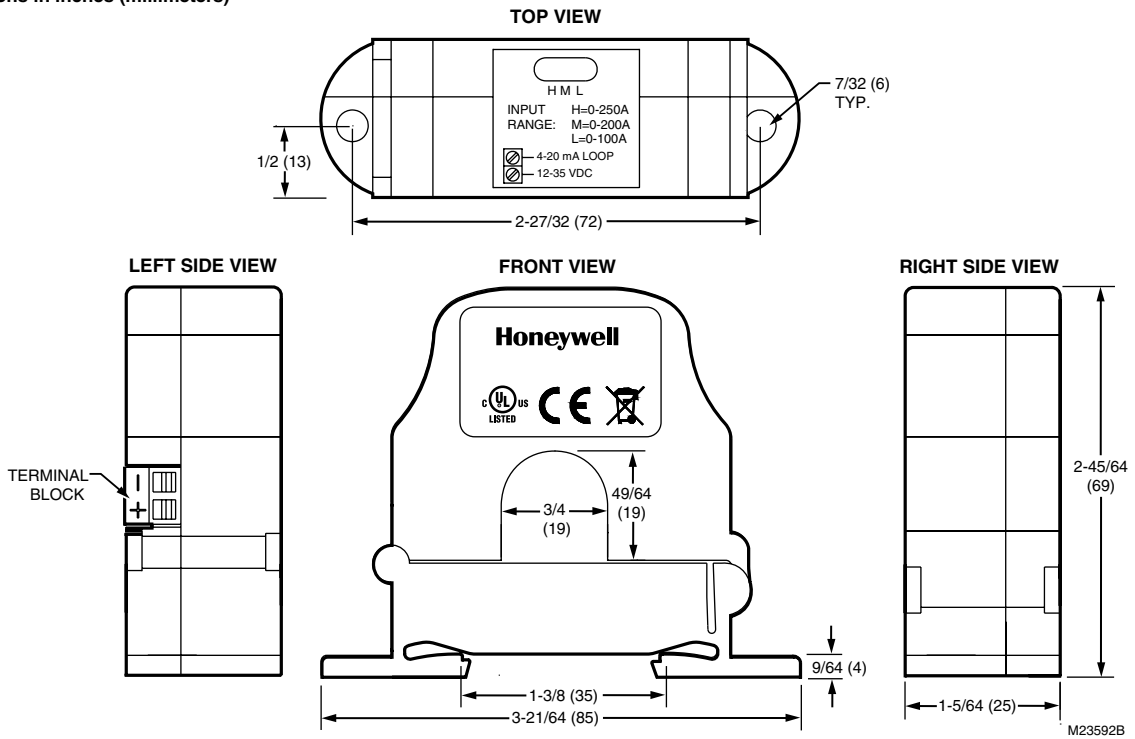
Operating Humidity Range (% RH): 0 to 95% RH, non-condensing

Operating Temperature Range: 5°F to 104°F (-15°C to 40°C)

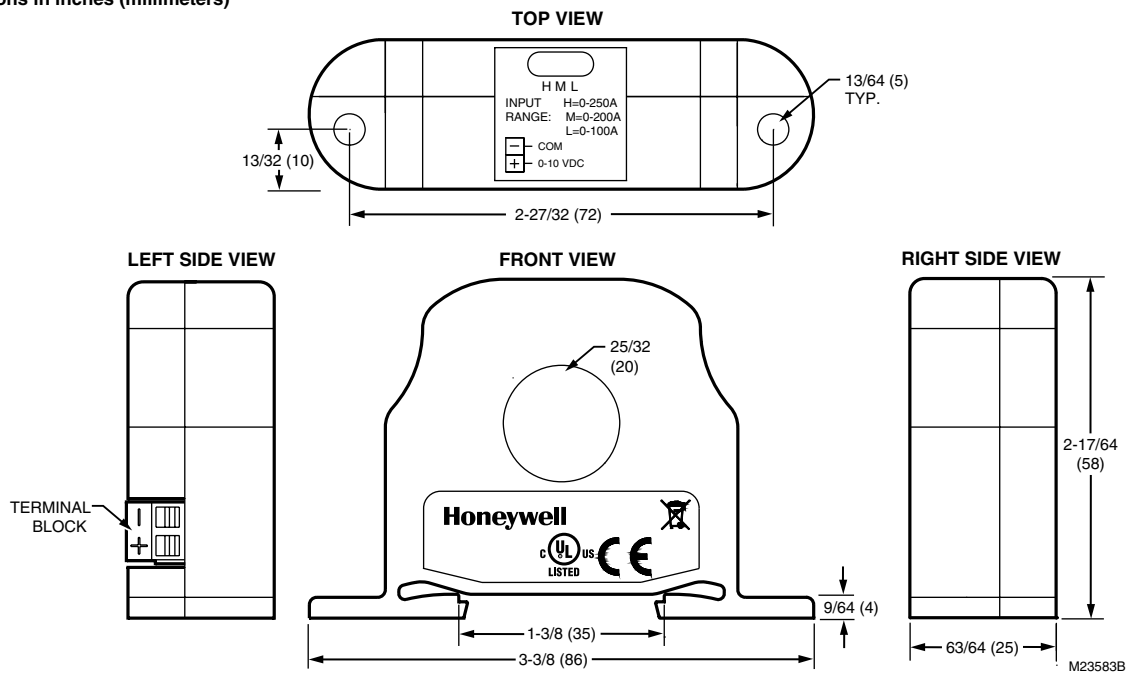
Approximate, Dimensions: Split Core-2 45/64 in. high x 3 21/64 in. wide x 1 5/64 in. deep; Solid Core-2 17/64 in. high x 3 3/8 in. wide x 63/64 in. deep (Split Core-69 mm high x 85 mm wide x 25 mm deep; Solid Core-58 mm high x 86 mm wide x 25 mm deep)

| Material Number | Application | Core Type | Supply Voltage | Output Switch Rating | Maximum Load Resistance | Response Time | Accuracy | Current Ratings | Maximum Current | Frequency |
|--------------------|---|-----------|----------------------------------|--------------------------|-------------------------------------|---------------|--------------------------------|--|---|-------------------|
| CTP-20-050-VFD-001 | Retrofit or existing installations requiring load trending (current monitoring) | Split | 12 to 30 Vdc | 4-20 mA Average True RMS | 650 Ohms @ 24 Vdc (Vs-10)/0.02-40.2 | <200 mS | ±0.5% | 0-10 Amps; 0-20 Amps; 0-50 Amps | continuous – 60 Amps 100 Am\ps; 160 Amps: for 6 seconds – 80 Amps 200 Amps 300 Amps | 30 Hz to 1 kHz |
| CTP-20-200-AVG-001 | Retrofit or existing installations requiring load trending (current monitoring) | Split | 12 to 30 Vdc | 4-20 mA Average | 700 Ohms @ 24 Vdc (Vs-9)/0.02-40.2 | <75 mS | ±0.5% | 0-100 Amps; 0-150 Amps; 0-200 Amps | continuous – 135 Amps 180 Amps 250 Amps: for 6 seconds – 200 Amps 300 Amps 400 Amps | 30 Hz to 1 kHz |
| CTS-05-050-VDC-001 | New installations requiring load trending (current monitoring) | Solid | Induced from monitored conductor | 0 to 5 Vdc | | <100 mS | ±1.0% (2 to 100% FSO) | 0-10 Amps; 0-20 Amps; 0-50 Amps | continuous – 100 Amps 150 Amps 200 Amps: for 6 seconds – 125 Amps 225 Amps 300 Amps | 50 Hz to 60 Hz |
| CTS-10-250-VDC-001 | New installations requiring load trending (current monitoring) | Solid | Induced from monitored conductor | 0 to 10 Vdc | | <100 mS | ±1.0% (5 to 100% FSO) | 0-100 Amps; 0-200 Amps; 0-250 Amps | continuous – 160 Amps 320 Amps 400 Amps: for 6 seconds – 200 Amps 400 Amps 500 Amps | 50 Hz to 60 Hz |
| CTS-20-250-AVG-001 | New installations requiring load trending (current monitoring) | Solid | 12 to 30 Vdc | 4-20 mA Average | 700 Ohms @ 24 Vdc (Vs-9)/0.02-40.2 | <75 mS | ±0.5% | 0-100 Amps; 0-200 Amps; 0-250 Amps | continuous – 200 Amps 360 Amps 400 Amps: for 6 seconds – 250 Amps 450 Amps 500 Amps | 30 Hz to 1 kHz |
| CTS-20-250-VFD-001 | New installations requiring load trending (current monitoring) | Solid | 12 to 30 Vdc | 4-20 mA Average True RMS | 650 Ohms @ 24 Vdc (Vs-10)/0.02-40.2 | <200 mS | ±0.5% | 0-100 Amps; 0-200 Amps; 0-250 Amps | continuous – 160 Amps 320 Amps 400 Amps: for 6 seconds – 200 Amps 400 Amps 500 Amps | 30 Hz to 1 kHz |

CTP Dimensions in inches (millimeters)



CTS Dimensions in inches (millimeters)



Current Sensors

Solid and Split Core Current Switches



Application: Monitoring fans, pumps, motors, compressors, or other electrical equipment

Supply Voltage: Induced from monitored conductor

Frequency: 40 Hz to 1 kHz

Isolation Voltage: 2200 Vac

Aperture Size: 3/4 in. (19 mm). Accepts up to 350 MCM (17.3 mm) cables.

Operating Humidity Range (% RH): 0 to 95% RH, non-condensing

Operating Temperature Range: 5°F to 104°F (-15°C to 40°C)

Approximate, Dimensions: Split Core-2 45/64 in. high x 3 21/64 in. wide x 1 5/64 in. deep; Solid Core-2 17/64 in. high x 3 3/8 in. wide x 63/64 in. deep (Split Core-69 mm high x 85 mm wide x 25 mm deep; Solid Core-58 mm high x 86 mm wide x 25 mm deep)

The split core current switches are ideal for retrofit or existing installations, since it is not necessary to power down or disconnect any wires during installation. The sensors have solid-state output with adjustable or fixed trip point (setpoint).

- Solid or split core switches with fixed or adjustable trip points
- Very low operating trip points
- LED status indication
- Integral DIN rail mounting flange
- Accepts up to a 350 MCM (17.3 mm) cable
- Operates up to 250 continuous amps
- RoHS and WEEE Compliant
- Limited 5 year warranty.

Weight: Split Core-0.23 lb; Solid Core-0.21 lb (Split Core-0.10 kg; Solid Core-0.09 kg)

Approvals, CE: Approved

Approvals, Underwriters Laboratories Inc.: Approved

Approvals, Environmental Compliance: RoHS-Directive 2002/95/EC, WEEE-Directive 2002/96/EC

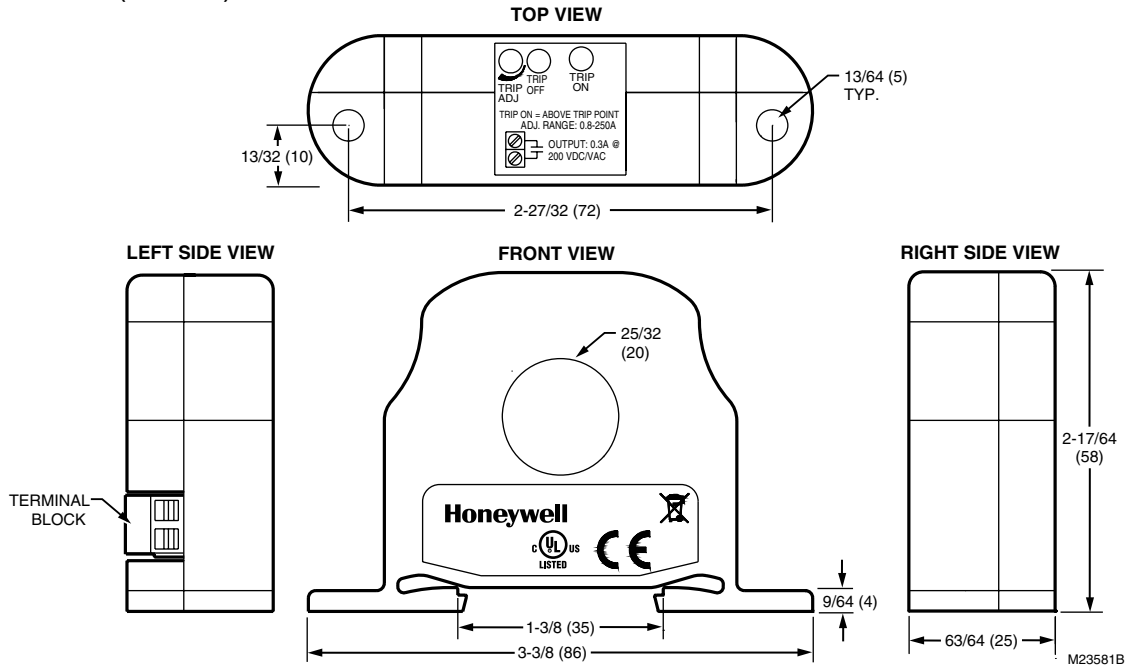
Max Sensing Current Voltage: 600 Vac

DIN Rail Size: 1-3/8 in. (35 mm)

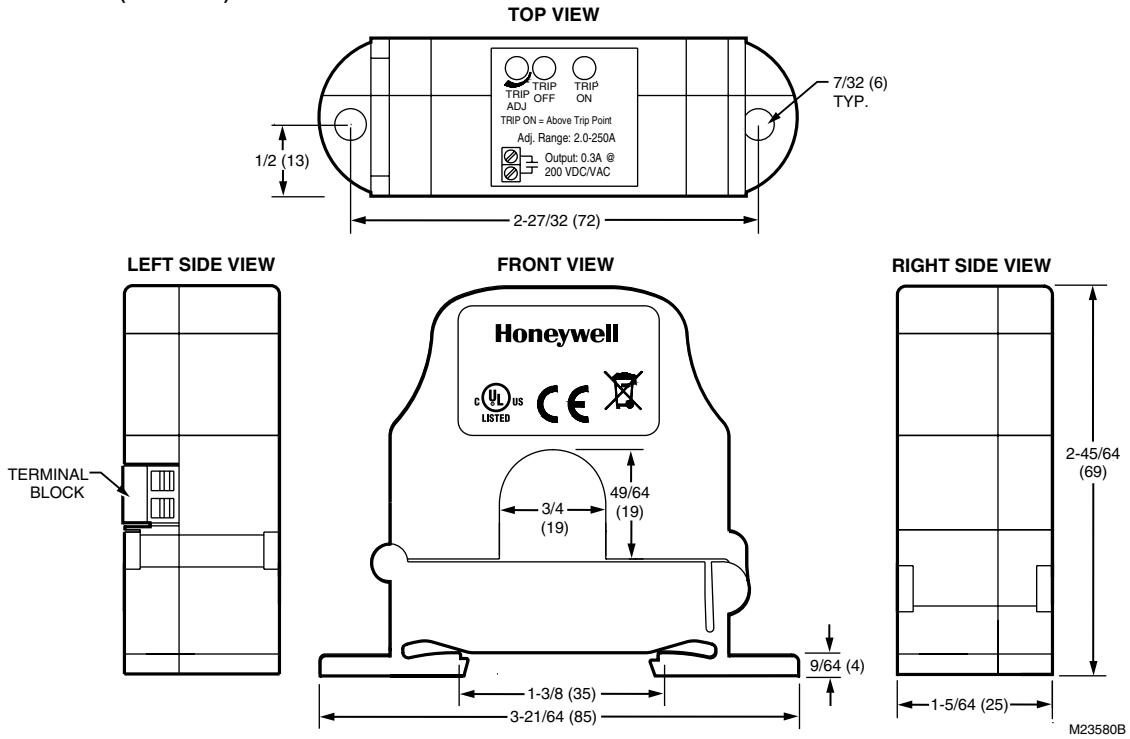
Enclosure Rating/Color: UL94-5V/Burgundy

| Material Number | Core Type | Maximum Current | Normal Position | Output Switch Rating | Trip Point | LEDs | Operating Range |
|------------------|-----------|--|-----------------|-------------------------|--------------|--|-----------------|
| CSP-C-A200-001/U | Split | continuous – 250 Amps: for 6 seconds – 500 Amps: for 1 second – 1,000 Amps | N.C. | 0.15 Amps @ 300 Vac/Vdc | 2.5-250 Amps | Green – Below the trip point; Red – Above the trip point | 0-250A |
| CSP-O-A200-001/U | Split | continuous – 200 Amps: for 6 seconds – 400 Amps: for 1 second – 800 Amps | N.O. | 0.30 Amps @ 200 Vac/Vdc | 2.0-200 Amps | Green – Below the trip point; Red – Above the trip point | 0-250A |
| CSP-O-A300-001/U | Split | continuous – 200 Amps: for 6 seconds – 400 Amps: for 1 second – 800 Amps | N.O. | 0.30 Amps @ 200 Vac/Vdc | 3.0-200 Amps | Green – Below the trip point; Red – Above the trip point | 0-250A |
| CSP-O-F10-001/U | Split | continuous – 200 Amps: for 6 seconds – 400 Amps: for 1 second – 800 Amps | N.O. | 0.30 Amps @ 200 Vac/Vdc | 1.50 Amps | Red – Above the trip point | 0-200A |
| CSP-O-F15-001/U | Split | continuous – 200 Amps: for 6 seconds – 400 Amps: for 1 second – 800 Amps | N.O. | 0.30 Amps @ 200 Vac/Vdc | 2.50 Amps | Red – Above the trip point | 0-200A |
| CSS-C-F1-001/U | Solid | continuous – 250 Amps: for 6 seconds – 500 Amps: for 1 second – 1,000 Amps | N.C. | 0.15 Amps @ 300 Vac/Vdc | 0.50 Amps | Red – Above the trip point | 0-250A |
| CSS-C-F5-001/U | Solid | continuous – 250 Amps: for 6 seconds – 500 Amps: for 1 second – 1,000 Amps | N.C. | 0.15 Amps @ 300 Vac/Vdc | 1.00 Amps | Red – Above the trip point | 0-250A |
| CSS-O-A200-001/U | Solid | continuous – 250 Amps: for 6 seconds – 500 Amps: for 1 second – 1,000 Amps | N.O. | 0.30 Amps @ 200 Vac/Vdc | 0.5-250 Amps | Green – Below the trip point; Red – Above the trip point | 0-200A |
| CSS-O-A300-001/U | Solid | continuous – 250 Amps: for 6 seconds – 500 Amps: for 1 second – 1,000 Amps | N.O. | 0.30 Amps @ 200 Vac/Vdc | 1.0-250 Amps | Green – Below the trip point; Red – Above the trip point | 0-200A |
| CSS-O-F1-001/U | Solid | continuous – 250 Amps: for 6 seconds – 500 Amps: for 1 second – 1,000 Amps | N.O. | 0.30 Amps @ 200 Vac/Vdc | 0.20 Amps | Red – Above the trip point | 0-250A |
| CSS-O-F5-001/U | Solid | continuous – 250 Amps: for 6 seconds – 500 Amps: for 1 second – 1,000 Amps | N.O. | 0.30 Amps @ 200 Vac/Vdc | 0.50 Amps | Red – Above the trip point | 0-250A |

CSP Dimensions in inches (millimeters)



CSS Dimensions in inches (millimeters)



Current Sensors

Solid and Split Core Mini Current Switches



Application: Monitoring fans, pumps, motors, compressors, or other electrical equipment

Maximum Current: continuous – 158 Amps; for 6 seconds – 240 Amps; for 1 second – 600 Amps

Frequency: 50 Hz; 60 Hz

Normal Position: N. O.

Isolation Voltage: 2200 Vac

Operating Humidity Range (% RH): 0 to 95% RH, non-condensing

Operating Temperature Range: -22°F to 140°F (-30°C to 60°C)

The split core current switches are ideal for retrofit or existing installations, since it is not necessary to power down or disconnect any wires during installation. The sensors have solid-state output with adjustable or fixed trip point (setpoint).

- Solid or split core switches with fixed or adjustable trip points
- Very low operating trip points
- LED status indication
- Integral DIN rail mounting flange
- Accepts up to a 350 MCM (17.3 mm) cable
- Operates up to 250 continuous amps
- RoHS and WEEE Compliant
- Limited 5 year warranty.

Approximate, Dimensions: Split Core-1.991 in. high x 2.5 in. wide x 0.942 in. deep; Solid Core-2.356 in. high x 2.645 in. wide x 0.94 in. deep (Split Core-51 mm high x 63 mm wide x 24 mm deep; Solid Core-60 mm high x 67 mm wide x 24 mm deep)

Aperture Size: Split Core-0.55" dia., up to 1 AWG cables; Solid Core-0.53" dia., up to 1 AWG cables

Approvals, CE: Approved

Approvals, Underwriters Laboratories Inc.: Approved

Approvals, Environmental Compliance: ROHS-Directive 2011/95/EC

Max Sensing Current Voltage: 600 Vac

Enclosure Rating/Color: UL94-V0/Burgundy

| Material Number | Core Type | Output Switch Rating | Trip Point | LEDs | Type |
|-----------------|-----------|------------------------------|---------------|--|------------|
| MCSP-A/U | Split | 1A Continuous @ 36 VAC/VDC | 0.70-150 Amps | Green – Below the trip point Red – Above the trip point | Adjustable |
| MCSP-F/U | Split | 0.5A Continuous @ 36 VAC/VDC | 0.55 A | | Fixed |
| MCSS-A/U | Solid | 1A Continuous @ 36 VAC/VDC | 0.32-150 Amps | Green – Below the trip point Red – Above the trip point | Adjustable |
| MCSS-F/U | Solid | 0.5A Continuous @ 36 VAC/VDC | 0.20 A | | Fixed |

CR Series Command Relays



Application: Monitoring fans, pumps, motors, compressors, or other electrical equipment

LEDs: On/Off

Operating Humidity Range (% RH): 0 to 95% RH, non-condensing

Operating Temperature Range: 5°F to 104°F (-15°C to 40°C)

Approximate, Dimensions: 1.632 in. high x 3.29 in. wide x 1.32 in. deep (41.45 mm high x 83.56 mm wide x 33.53 mm deep)

The CR (Command Relay) Series brings control (start/stop) functionality to your load trending and fan/pump/motor status monitoring applications. Each unit has a Form 1C-SPDT relay which means you have both an N/O and an N/C contact in the same unit. (See Table 1 for output ratings.)

The 35 mm Din-Rail Mounting Flange will allow you to use the CR Series with any Honeywell analog current sensor or switch. This will reduce your inventory by not having to stock as many different items. The stacking feature will also allow you to reduce the required panel space, since up to two CR Series Command Relays may be stacked together during installation.

- 35 mm Din-Rail Mounting Flange
- SPDT Form 1C Relay contacts
- Pilot duty rated
- LED status indication
- Stackable for streamlined installation
- Can be used with any Honeywell analog current sensor or switch

Weight: 0.125 lb (0.057 kg)

Approvals, CE: Approved

Approvals, Underwriters Laboratories Inc.: Approved

Approvals, Environmental Compliance: ROHS-Directive 2011/95/EC

DIN Rail Size: 1-3/8 in. (35 mm)

Enclosure Rating/Color: UL94-5VB/Burgundy

| Material Number | Description | Supply Voltage | Output Switch Rating | Current Ratings |
|-----------------|---|---|---|-----------------|
| CR-115AC-8A/U | 8 Amp SPDT Relay, 80-132 VAC Coil Voltage | 80 to 132 VAC | 8A @ 250 Vac, 8A @ 30 Vdc | 8A |
| CR-12DC-12A/U | 12 Amp SPDT Relay, 10-15.6 VDC Coil Voltage | 10 to 15.6 VDC | 12A @ 250 Vac, 12A @ 30 Vdc | 12A |
| CR-230AC-8A/U | 8 Amp SPDT Relay, 165-264 VAC Coil Voltage | 165 to 264 VAC | 8A @ 250 Vac, 8A @ 30 Vdc | 8A |
| CR-24AC-10A/U | 10 Amp SPDT Relay, 16-26.4 VAC Coil Voltage | 16 to 26.4 VAC | 10A @ 250 Vac, 10A @ 24 Vdc | 10A |
| CR-DC-12A/U | 12 Amp SPDT Relay, 20-31.2 VDC Coil Voltage | 12 Amp SPDT Relay, 20-31.2 VDC Coil Voltage | 12A @ 250 Vac, 12A @ 30 Vdc | 12A |
| CR-DC-5A/U | 5 Amp SPDT Relay, 23-31.2 VDC Coil Voltage | 23 to 31.2 VDC | 5A(NO) / 2A(NC) @ 250 Vac, 5A(NO) / 3A(NC) @ 120 Vac | 5A |

T4039 Fan Coil Thermostat



Display: None

Mounting: 4 in. square outlet box or 2-ganged outlet box

Setting Temperature Range: 55°F to 95°F, marked COOL-WARM (13°C to 35°C, marked COOL-WARM)

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Supply Voltage: 120 to 277 Vac

Frequency: 50 Hz; 60 Hz

Electrical Ratings: Fan Switch: 120 Vac: 5.5 AFL, 33.0 ALR; 240 Vac: 2.75 AFL, 16.5 ALR; 277 Vac: 2.4 AFL, 14.4 ALR; Thermostat (Valve load): 120 Vac: 0.32 AFL, 1.0 A ALR; 240 Vac: 0.16 AFL, 0.50 ALR; 277 Vac: 0.14 AFL, 0.43 ALR

Approximate, Dimensions: 4 5/8 in. high x 4 15/16 in. wide x 1 5/16 in. deep (118 mm high x 125 mm wide x 33 mm deep)

Includes: Allen wrench for cover and mounting screws

Approvals, CSA: Certified

Approvals, Underwriters Laboratories Inc.: File No. E34436, Vol 2, dated 3-19-73; Guide No. XAPX

Control line voltage valves of a fan coil unit in cooling, manual or automatic changeover heating-cooling systems.

- Directly operate one or two valves.
- Positive deadband separates heating and cooling circuits in automatic models.
- Includes allen wrench for cover and mounting screws.

Accessories:

TG511A1000/U – Medium Universal Thermostat Guard with clear cover and base, and opaque wall plate

TG511D1004/U – Medium Universal Thermostat Guard with Beige painted steel cover, opaque ring base and wall plate

TG512A1009/U – Large Universal Thermostat Guard with clear cover and base, and opaque wall plate

TG512D1003/U – Large Universal Thermostat Guard with Beige painted steel cover, opaque ring base and wall plate

| Material Number | Application | Switch Positions (System) | Switch Positions (Fan) | Differential Temperature Range | Changeover | Color |
|-----------------|---|--|------------------------|---|--|----------------|
| T4039B1008/U | Fan coil, cooling only | ON-OFF | HI-MED-LO | Approximately 2°F at midscale (Approximately 1°C at midscale) | | Tan |
| T4039J1026/U | 4 pipe fan coil, automatic heat-cool changeover | OFF-HI-LO, Off breaks cooling and fan circuits | | The differential from make of one contact to make of the opposite contact is 7°F maximum with a positive deadspot. (The differential from make of one contact to make of the opposite contact is 4°C maximum with a positive deadspot.) | Remote changeover switch is required to separate circuits in manual changeover heating-cooling models. | Tan |
| T4039M1004/U | 4 pipe fan coil, automatic heat-cool changeover | ON-OFF | HI-MED-LO | The differential from make of one contact to make of the opposite contact is 7°F maximum with a positive deadspot. (The differential from make of one contact to make of the opposite contact is 4°C maximum with a positive deadspot.) | Automatic | Tan |
| T4039M1103/U | 4 pipe fan coil, automatic heat-cool changeover | ON-OFF | HI-MED-LO | The differential from make of one contact to make of the opposite contact is 7°F maximum with a positive deadspot. (The differential from make of one contact to make of the opposite contact is 4°C maximum with a positive deadspot.) | Automatic | Premier White® |
| T4039S1016/U | 4 pipe fan coil, manual heat-cool changeover | HEAT-OFF-COOL | HI-MED-LO | The differential from make of one contact to make of the opposite contact is 7°F maximum with a positive deadspot. (The differential from make of one contact to make of the opposite contact is 4°C maximum with a positive deadspot.) | Manual | Tan |
| T4039S1040/U | 4 pipe fan coil, manual heat-cool changeover | HEAT-OFF-COOL | HI-MED-LO | The differential from make of one contact to make of the opposite contact is 7°F maximum with a positive deadspot. (The differential from make of one contact to make of the opposite contact is 4°C maximum with a positive deadspot.) | Manual | Tan |

Fan Coil Thermostats

T6069 Fan Coil Thermostat



Mounting: Mounts on 2 in. x 4 in. (50 mm x 75 mm) single or double-ganged vertically-oriented outlet box.

Supply Voltage: 120 to 277 Vac

Frequency: 50 Hz; 60 Hz

Electrical Ratings: 8.0 AFL / 48 ALR / 13A resistive @ 120 Vac; 4.4 AFL / 26.4 ALR / 7.5A resistive @ 208 Vac; 4.0 AFL / 24 ALR / 6.5A resistive @ 240 Vac; 3.3 AFL / 19.8 ALR 5.5A resistive @ 277 Vac

Approximate, Dimensions: 4 5/8 in. high x 4 1/2 in. wide x 1 7/8 in. deep. + 5/8 in. projection into junction box (117 mm high x 114 mm wide x 47 mm deep + 15 mm projection into junction box)

T6069 thermostats control line voltage valves and/or blower motors on fan coil units in manual changeover heating/cooling systems. The thermostats feature a single System and Fan speed switch.

- Thermostat, system and fan control switches combined in one deluxe-styled unit.
- Available in classic gold or contemporary white styling. Language-free graphic symbols.
- Manual three-speed fan control on most models.
- Suitable for single or double gang electrical boxes.
- Operates one or two valves.
- Has cycled or constant fan control.

Approvals, CSA: File No. LR1322

Approvals, Underwriters Laboratories Inc.: File No. E4436, Guide No. XAPX

Accessories:

TG511A1000/U – Medium Universal Thermostat Guard with clear cover and base, and opaque wall plate

TG511D1004/U – Medium Universal Thermostat Guard with Beige painted steel cover, opaque ring base and wall plate

| Material Number | Application | Display | Setting Temperature Range | Switch Positions (System) | Switch Positions (Fan) | Differential Temperature Range | Changeover | Color |
|-----------------|---|----------------------|---------------------------|---------------------------|------------------------|--------------------------------|--|----------------|
| T6069A4002/U | 2 pipe fan coil, manual heat-cool changeover, constant or cycled fan | No thermometer | (7°C to 28°C) | HEAT-OFF-COOL | HI-MED-LO | (1°C) | Manual | Tan |
| T6069A4010/U | 2 pipe fan coil, manual heat-cool changeover, constant or cycled fan | No thermometer | 44°F to 86°F | HEAT-OFF-COOL | HI-MED-LO | 2°F | Manual | Tan |
| T6069B4000/U | 4 pipe fan coil, manual heat-cool changeover, constant fan | No thermometer | (7°C to 28°C) | HEAT-OFF-COOL | HI-MED-LO | (1°C) | Manual | Premier White® |
| T6069B4018/U | 4 pipe fan coil, manual heat-cool changeover, constant fan | No thermometer | 44°F to 86°F | HEAT-OFF-COOL | HI-MED-LO | 2°F | Manual | Tan |
| T6069C4016/U | 4 pipe fan coil, manual heat-cool changeover, cycled fan | No thermometer | 44°F to 86°F | HEAT-OFF-COOL | HI-MED-LO | 2°F | Manual | Tan |
| T6069D4014/U | 2 pipe fan coil, automatic heat-cool changeover, constant or cycled fan | Thermometer Included | 44°F to 86°F | ON-AUTO-OFF | HI-MED-LO | 2°F | Seasonal Auto with External Aquastat® Controller | Tan |

T6169 Fan Coil Thermostat



Mounting: Mounts on 2 in. x 4 in. (50 mm x 75 mm) single or double-ganged vertically-oriented outlet box.

Supply Voltage: 120 to 277 Vac

Frequency: 50 Hz; 60 Hz

Electrical Ratings: 8.0 AFL / 48 ALR / 13A resistive @ 120 Vac; 4.4 AFL / 26.4 ALR / 7.5A resistive @ 208 Vac; 4.0 AFL / 24 ALR / 6.5A resistive @ 240 Vac; 3.3 AFL / 19.8 ALR 5.5A resistive @ 277 Vac

Approximate, Dimensions: 4 5/8 in. high x 4 1/2 in. wide x 1 7/8 in. deep. + 5/8 in. projection into junction box (117 mm high x 114 mm wide x 47 mm deep + 15 mm projection into junction box)

The T6169 thermostats control line voltage valves and/or blower motors on fan coil units in manual or automatic changeover, cooling, heating or cooling/heating systems. The thermostats feature a single fan and/or system manual switches.

- Combines thermostat, single system and/or fan control switch in one deluxe-styled unit.
- Three speed manual FAN control on some models.
- Fan can be wired for continuous (ON) or cycled (AUTO) operation.
- System switch OFF position breaks heating/cooling and fan circuits.
- Color-coded leadwire connections.
- Available in classic gold or Premier White® styling.
- Language-free graphic symbols.
- Suitable for single or double gang electrical boxes.

Approvals, CSA: CSA Certified, File No. LR1322

Approvals, Underwriters Laboratories Inc.: Listed File No. E4436, Guide No. XAPX

Accessories:

TG511A1000/U – Medium Universal Thermostat Guard with clear cover and base, and opaque wall plate

TG511D1004/U – Medium Universal Thermostat Guard with Beige painted steel cover, opaque ring base and wall plate

| Material Number | Application | Setting Temperature Range | Switch Positions (System) | Switch Positions (Fan) | Differential Temperature Range | Display | Changeover | Color |
|-----------------|---|---------------------------|---------------------------|------------------------|--------------------------------|----------------------|--|----------------|
| T6169A4001/U | 2 pipe fan coil, automatic heat-cool changeover, constant or cycled fan | (7°C to 28°C) | | HI-OFF-MED-LO | (1°C) | Thermometer Included | Seasonal Auto with External Aquastat® Controller | Premier White® |
| T6169A4019/U | 2 pipe fan coil, automatic heat-cool changeover, constant or cycled fan | 44°F to 86°F | | HI-OFF-MED-LO | 2°F | No thermometer | Seasonal Auto with External Aquastat® Controller | Tan |
| T6169B4017/U | 4 pipe fan coil, manual heat-cool changeover, no fan switching | 44°F to 86°F | HEAT-OFF-COOL | | 2°F | Thermometer Included | Manual | Tan |
| T6169C4015/U | 2 pipe fan coil, manual or automatic heat-cool changeover | 44°F to 86°F | Auto-Off | | 2°F | Thermometer Included | Automatic or Manual | Tan |

Fan Coil Thermostats

SuitePRO-TB6575; TB8575 Digital Fan-Coil Thermostat



TB6575A, TB6575B, and TB8575A are a family of Digital Fan-Coil thermostats, that provide line/low voltage on/off control for various fan-coil units in residential and commercial applications. Great for use in hotels, condos, and school classrooms.

- Simple, intuitive user interface and ease of installation.
- Attractive modern styling ideal for hotels and condos.
- Digital display of ambient temperature, setpoint, mode icons when cooling or heating relays operate, when energy savings mode is active, and fan status.
- Four buttons allow manual control of system operation, fan speed, and temperature setpoint adjustment.
- VersaSpeed™ Fan Ramp Algorithm automatically adjusts Low, Medium, High fan speed.
- Optional freeze protection feature that turns on heat, if necessary.
- Activity sensing algorithm sets back thermostat to economy mode.
- Auto fan rest option sets back fan to auto mode.
- Energy savings mode – external energy savings input from dry contact such as time switch, occupancy sensor, or hotel cardkey overrides comfort setpoint with selectable setback heating or cooling setpoints.
- Energy savings input configurable as a normally open or normally closed dry contact.
- Proportional plus integral (P+I) control algorithm for precision temperature regulation.
- Selectable °C or °F.
- Adjustable deadband, in auto changeover mode, for heat and cool control.
- Adjustable maximum heating and minimum cooling setpoint limits.

- Installer setup mode allows changes of operating parameters.
- EEPROM permanently retains user settings, including setpoints, during power loss (no batteries required).
- Capability to display temperature sensor failure for easier troubleshooting.
- Optional remote temperature sensor and remote pipe sensor.

Display: LCD

Mounting: Horizontal mounting on 2 x 4 in. (50 mm x 75 mm) single gang electrical box. Vertical mounting 2 x 4 in. or 4 x 4 in. junction box with optional wall plate (50033847-001).

Color: Premier White®

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Frequency: 50 Hz; 60 Hz

Approximate, Dimensions: 3 13/16 in. high x 5 13/16 in. wide x 1 1/8 in. deep (97 mm high x 148 mm wide x 29 mm deep)

Approvals, CSA: Certified

Approvals, FCC: FCC Part 15, Class B

Approvals, Underwriters Laboratories Inc.: Meets the same requirements as UL-873

Accessories:

50033847-001/U – Adapter plate for mounting TB6575/TB8575 series fan coil thermostats to vertical, single or double-gang junction box

C7041B2005/U – 20 K ohm NTC Temperature Sensor with 6 in. insertion

C7041B2013/U – 20 K ohm NTC Temperature Sensor with 12 in. insertion

C7041C2003/U – 20 K ohm NTC Temperature Sensor with 18 in. insertion

C7041P2004/U – 20 K ohm NTC Stainless Steel Button Sensor, 11/16 in. dia.

C7770A1006/U – 6 in. Duct Probe for Return Air 20 K ohm NTC non-linear Temperature Sensor

C7772A1004/U – 20 K ohm NTC non-linear Wall Flush Mount Temperature Sensor without logo

C7772A1012/U – 20 K ohm NTC non-linear Wall Flush Mount Temperature Sensor with Honeywell logo

TR21/U – 20 K ohm NTC non-linear Temperature Wall Module


TR21-A/U – 10 K ohm NTC non-linear Temperature Wall Module (for averaging only)

| Material Number | Application | Setting Temperature Range | Switch Positions (System) | Switch Positions (Fan) | Supply Voltage | Electrical Ratings | Changeover | Comments | Description |
|-----------------|--|-----------------------------|---------------------------|------------------------|---------------------------------|--|-------------|----------|--|
| TB6575A1000/U | 2 or 4 pipe fan coil, Heat/Cool manual/auto changeover, 3-speed fan, 120 - 240 Vac | 50°F to 90°F (10°C to 30°C) | OFF-HEAT-COOL-AUTO | HI-MED-LOW-AUTO-OFF | 120 Vac ± 10%; 240 Vac ± 10% | 120 Vac, Fan Rating: 6.0 A, Relay Rating: 1.0 A; 240 Vac, Fan Rating: 3.0 A, Relay Rating: 1.0 A | Manual/Auto | | 3-Speed Fan Coil Thermostat; 2 or 4 pipe Manual/Auto Heat/Cool changeover, 3 speed fan, Supply voltage: 120/240 Vac 50/60 Hz |
| TB6575A1016/U | 2 or 4 pipe fan coil, Heat/Cool manual/auto changeover, 3-speed fan, 120 - 240 Vac | 50°F to 90°F (10°C to 30°C) | OFF-HEAT-COOL-AUTO | HI-MED-LOW-AUTO-OFF | 120 Vac ± 10%; 240 Vac ± 10% | 120 Vac, Fan Rating: 6.0 A, Relay Rating: 1.0 A; 240 Vac, Fan Rating: 3.0 A, Relay Rating: 1.0 A | Manual/Auto | No logo | 3-Speed Fan Coil Thermostat; 2 or 4 pipe Manual/Auto Heat/Cool changeover, 3 speed fan, Supply voltage: 120/240 Vac 50/60 Hz |
| TB6575B1000/U | 2 pipe fan coil, Heat/Cool manual/auto changeover, 3-speed fan, 120 - 240 Vac | 50°F to 90°F (10°C to 30°C) | OFF-HEAT-COOL-AUTO | HI-MED-LOW-AUTO-OFF | 120 Vac ± 10%; 240 Vac ± 10% | 120 Vac, Fan Rating: 6.0 A, Relay Rating: 1.0 A; 240 Vac, Fan Rating: 3.0 A, Relay Rating: 1.0 A | Manual/Auto | | 3-Speed Fan Coil Thermostat; 2 pipe Manual/Auto Heat/Cool changeover, 3 speed fan, Supply voltage: 120/240 Vac 50/60 Hz |

Fan Coil Thermostats

| Material Number | Application | Setting Temperature Range | Switch Positions (System) | Switch Positions (Fan) | Supply Voltage | Electrical Ratings | Changeover | Comments | Description |
|-----------------|--|-----------------------------|---------------------------|------------------------|--|--|-------------|----------|--|
| TB6575C1000/U | 2 or 4 pipe fan coil, Heat/Cool manual/auto changeover, 3-speed fan, 120 - 240 Vac | 50°F to 90°F (10°C to 30°C) | OFF-HEAT-COOL-AUTO | HI-MED-LOW-AUTO-OFF | 120 Vac ±10%; 240 Vac -15% to +10%; 277 Vac ±10% | 277 Vac, Fan Rating: 2.4A, Heat/Cool Relay Rating : 1.0A | Manual/Auto | | 3-Speed Fan Coil Thermostat; 2 or 4 pipe Manual/Auto Heat/Cool changeover, 3 speed fan, Supply voltage: 120/240 Vac 50/60 Hz |
| TB8575A1000/U | 2 or 4 pipe fan coil, Heat/Cool manual/auto changeover, 3-speed fan, 24 Vac | 50°F to 90°F (10°C to 30°C) | OFF-HEAT-COOL-AUTO | HI-MED-LOW-AUTO-OFF | 20 to 30 Vac | 24 Vac, Fan Rating: 1.0 A, Relay Rating: 1.0 A | Manual/Auto | | 3-Speed Fan Coil Thermostat; 2 or 4 pipe Manual/Auto Heat or Cool changeover, 3 speed fan, Supply voltage: 24 Vac 50/60 Hz |
| TB8575A1016/U | 2 or 4 pipe fan coil, Heat/Cool manual/auto changeover, 3-speed fan, 24 Vac | 50°F to 90°F (10°C to 30°C) | OFF-HEAT-COOL-AUTO | HI-MED-LOW-AUTO-OFF | 20 to 30 Vac | 24 Vac, Fan Rating: 1.0 A, Relay Rating: 1.0 A | Manual/Auto | No logo | 3-Speed Fan Coil Thermostat; 2 or 4 pipe Manual/Auto Heat or Cool changeover, 3 speed fan, Supply voltage: 24 Vac 50/60 Hz |

Fan Coil Thermostat Accessories and Replacement Parts

| Material Number | Description | Used With | |
|-----------------|--|----------------|--|
| 50033847-001/U | Adapter plate for mounting TB6575/TB8575 series fan coil thermostats to vertical, single or double-gang junction box | SuitePRO | |
| 535-34AB08-203 | 20 K ohm Pipe sensor | TB6575, TB8575 |  |

Wireless Occupancy Solution

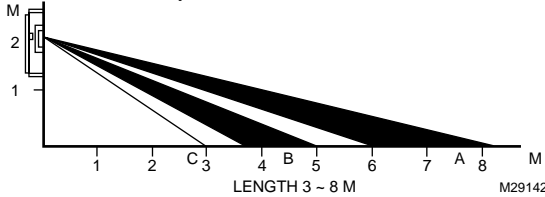
Wireless Occupancy Solution



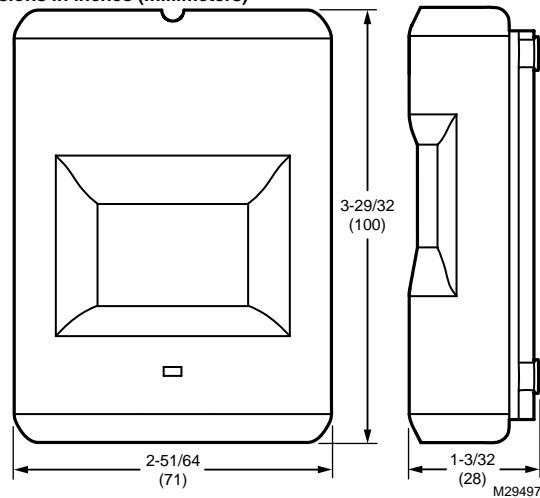
The WSK-24 controls HVAC equipment using an occupancy sensor and door switch, and is packaged with 24V dry contact receiver, a wireless PIR occupancy sensor with mounting kit, a wireless door sensor with mounting kit, and a wiring harness.

- Wireless system provides quick and easy installation
- Pre-configured door sensor and occupancy sensor
- Guest comfort is maintained by never turning off HVAC equipment when someone is in the room – even if they are sleeping
- Fuse protection
- Long battery life
- Low battery indication
- Receiver memory retained after power loss
- Optional sliding door/window sensor can be easily added

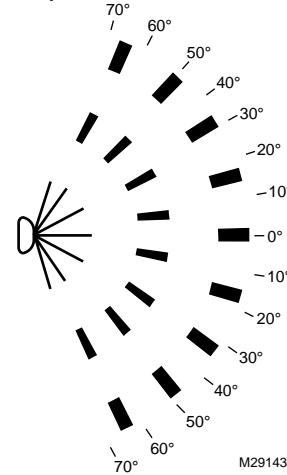
Side view of PIR detection pattern



Dimensions in inches (millimeters)



Top view of PIR detection pattern



Sensor: PIR

Operating Temperature Range: Receiver: -5°F to 140°F; Door Sensor: -4°F to 140°F; PIR Sensor: -4°F to 104°F (Receiver: -21°C to 60°C; Door Sensor: -20°C to 60°C; PIR Sensor: -20°C to 40°C)

Approximate, Dimensions: Door Sensor: 2-19/64 in. high x 1-13/32 in. wide x 1-13/64 in. deep; Receiver: 3-13/32 in. high x 3-19/32 in. wide x 1-13/64 in. deep; PIR Sensor: 3-29/32 in. high x 2-51/64 in. wide x 1-3/32 in. deep (PIR Sensor: 100 mm high x 71 mm wide x 28 mm deep; Receiver: 86 mm high x 91 mm wide x 31 mm deep; Door Sensor: 58 mm high x 36 mm wide x 15 mm deep)

Wireless Range: Open Range – With antenna exposed: 200 ft, With antenna coiled inside receiver: 50 ft; Typical Range – With antenna exposed: 100 ft, With antenna coiled inside receiver: 40 ft

Approvals, FCC: FCC Part 15, Class B

Comments: PIR Detection Pattern--Length: 3 to 8 meters when mounted 2 meters above the floor; Angle: 140 degrees

Used With: TB6575, TB8575; TB7100; T7350/T7351 (requires R8222 switching relay)

Supply Voltage: Receiver: 24 Vac/Vdc at 50/60 Hz; Standby power consumption 15 mA; Channel 1 relay output, N.O.; Door Sensor: Two CR2032 lithium batteries; PIR Sensor: Three AAA E92 1.5V alkaline batteries

| Material Number | Description | Application | Operating Frequency | Battery Life |
|-----------------|-----------------------------|--|---|--|
| WSK-24/U | Wireless Occupancy Solution | Wireless Occupancy Sensor for HVAC equipment | Receiver: 433.92 MHz; Door Sensor: 433.92 MHz | Door Sensor: Two years (under normal usage); PIR Sensor: One year (under normal usage) |

Wireless Occupancy Solution Accessories

Used With: WSK-24

| Material Number | Wireless Range | Operating Frequency | Battery Life |
|-----------------|---|---------------------|---|
| 50037735-001 | Open Range – With antenna exposed: 200 ft, With antenna coiled inside receiver: 50 ft; Typical Range – With antenna exposed: 100 ft, With antenna coiled inside receiver: 40 ft | 433.92 MHz | Door Sensor: Two years (under normal usage) |

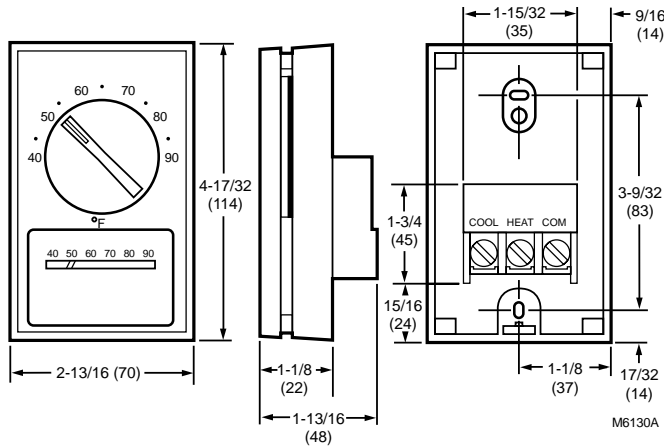
T451; T651 Light and Medium Duty Line Voltage Thermostat



Light and Medium Duty Line Voltage Thermostats control line voltage valves, motors, contractors, electric heat, elements, duct furnaces, and fan coil units in heating/cooling systems.

- Automatic cooling and heating anticipation.
- Mount on standard vertical or horizontal outlet box.

Dimensions in inches (millimeters)



Color: Champagne gold faceplate with beige cover

Supply Voltage: 120 to 227 Vac

Frequency: 50 Hz; 60 Hz

Electrical Connections: Flylead

Electrical Ratings: 22 A @ 120 - 240 Vac Resistive; 19 A @ 277 Vac Resistive.; 9.8 FLA / 58.8 ALR @ 120 Vac; 5.6 FLA / 33.6 ALR @ 208 Vac; 4.9 FLA / 29.4 ALR @ 240 Vac; 4.2 FLA / 25.2 ALR @ 277 Vac

Approximate, Dimensions: 4 1/2 in. high x 2 15/16 in. wide x 1 1/2 in. deep (switches and wiring terminals protrude into outlet box 3/4 in.) (115 mm high x 75 mm wide x 39 mm deep (switches and wiring terminals protrude into outlet box 19 mm))

Sensor Element: Vapor filled dual diaphragm

Approvals, CSA: CSA Certified, File No. LR1322

Approvals, Underwriters Laboratories, Inc.: Listed; File No. E4436, Guide No. XAPX

Accessories:

TG511A1000/U – Medium Universal Thermostat Guard with clear cover and base, and opaque wall plate

TG511D1004/U – Medium Universal Thermostat Guard with Beige painted steel cover, opaque ring base and wall plate

| Material Number | Application | Setting Temperature Range | Switch Positions (System) | Differential Temperature Range | Switching Action | Comments | Includes | Tradeline Value |
|-----------------|---------------------|---------------------------|---------------------------|--------------------------------|---|---------------|---|-----------------|
| T451A3005/U | Heating | 44°F to 86°F | | 2°F | SPST - breaks on temperature rise | | Vertical scaleplate with thermometer, range stops and locking cover screws, wall plate, high accuracy Dual Diaphragm sensor. | |
| T451B3004/U | Heating | 50°F to 86°F | | 2°F | SPST - breaks on temperature rise; with positive off | | Vertical scaleplate with thermometer and high accuracy Dual Diaphragm sensor. | |
| T651A3018/U | Heating and cooling | 44°F to 86°F | heating and cooling | 2°F | SPDT - breaks heating and makes cooling on temperature rise | | Vertical scaleplate with thermometer, horizontal scaleplate with no thermometer, range stops and locking screws, wall plate, and high accuracy Dual Diaphragm sensor. | Super Tradeline |
| T651A3026/U | Heating and cooling | (7°C to 28°C) | heating and cooling | (1°C) | SPDT - breaks heating and makes cooling on temperature rise | Celsius Scale | Vertical scaleplate with thermometer, range stops and locking screws, wall plate, high accuracy Dual Diaphragm sensor. | |

Line Volt Thermostats

T4051 Heavy Duty Thermostat



Application: Heating
Color: Plastic cover, tan
Differential Temperature Range: 1°F (0.6°C)
Supply Voltage: 120 Vac; 240 Vac
Frequency: 50 Hz; 60 Hz
Electrical Connections: Screw terminals
Electrical Ratings: 16 A @ 120 Vac Full Load; 8 A @ 240 Vac Full Load; 96 A @ 120 Vac LR; 48 A @ 240 Vac LR

Heavy Duty Line Voltage Thermostats are used to control fan coils, fans, motor starters, valves, contactors, and circulator motors in heating and/or cooling systems.

- Provide good line voltage comfort control.
- Use with Q651A,B subbases for system and fan switching.
- Removable setpoint knob locks setpoint and prevents tampering.
- With locking cover.

Approximate, Dimensions: 5 in. high x 3 1/2 in. wide x 1 5/8 in. deep (127 mm high x 79 mm wide x 41 mm deep)

Switching Action: SPDT

Approvals, CSA: Certified: File No. LR95329-1

Approvals, Underwriters Laboratories Inc.: Listed: File No. E4436, Guide No. XAPX

| Material Number | Setting Temperature Range | Description |
|-----------------|---------------------------|------------------------------------|
| T4051A1003/U | 50°F to 80°F | Heavy Duty Line Voltage Thermostat |

T6051; T6052 Heavy Duty Line Voltage Thermostats



Heavy Duty Line Voltage Thermostats are used to control fan coils, fans, motor starters, valves, contactors, and circulator motors in heating and/or cooling systems.

- Provide good line voltage comfort control.
- T6051A models use with Q651A, B subbases for system and fan switching.
- Removable setpoint knob locks setpoint and prevents tampering.
- With locking cover.

Mounting: T6051-Vertical mounting; T6052-Vertical or horizontal mounting

Color: Plastic cover, tan

Supply Voltage: 120 Vac; 240 Vac

Frequency: 50 Hz; 60 Hz

Electrical Connections: Screw terminals

Electrical Ratings: T6051-120 Vac: 16 AFL, 96 ALR; 240 Vac: 8 AFL, 48 ALR; Resistive 22A @ 120 Vac, 19 A @ 277 Vac; Pilot Duty 125 VA; T6052-Stage 1: 120 Vac: 16 AFL, 96 ALR; 240 Vac: 8 AFL, 48 ALR; Stage 2: 120 Vac: 8 AFL, 48 ALR; 240 Vac: 4 AFL, 24 ALR

Sensor Element: Vapor filled dual diaphragm

Switching Action: T6051-SPDT; T6052-2 SPDT switches

Approvals, CSA: CSA Certified: File no. LR1620; T6051B1006/U only CSA Certified: File No. LR30676-L

Approvals, Underwriters Laboratories Inc.: Listed: File No. E4436, Guide No. XAPX; T6051B1006/U only-Listed: File No. E12842, Guide No. XBDV; Explosion Proof Enclosure, Class I, Groups C & D, and Class 2 Groups E, F, and G

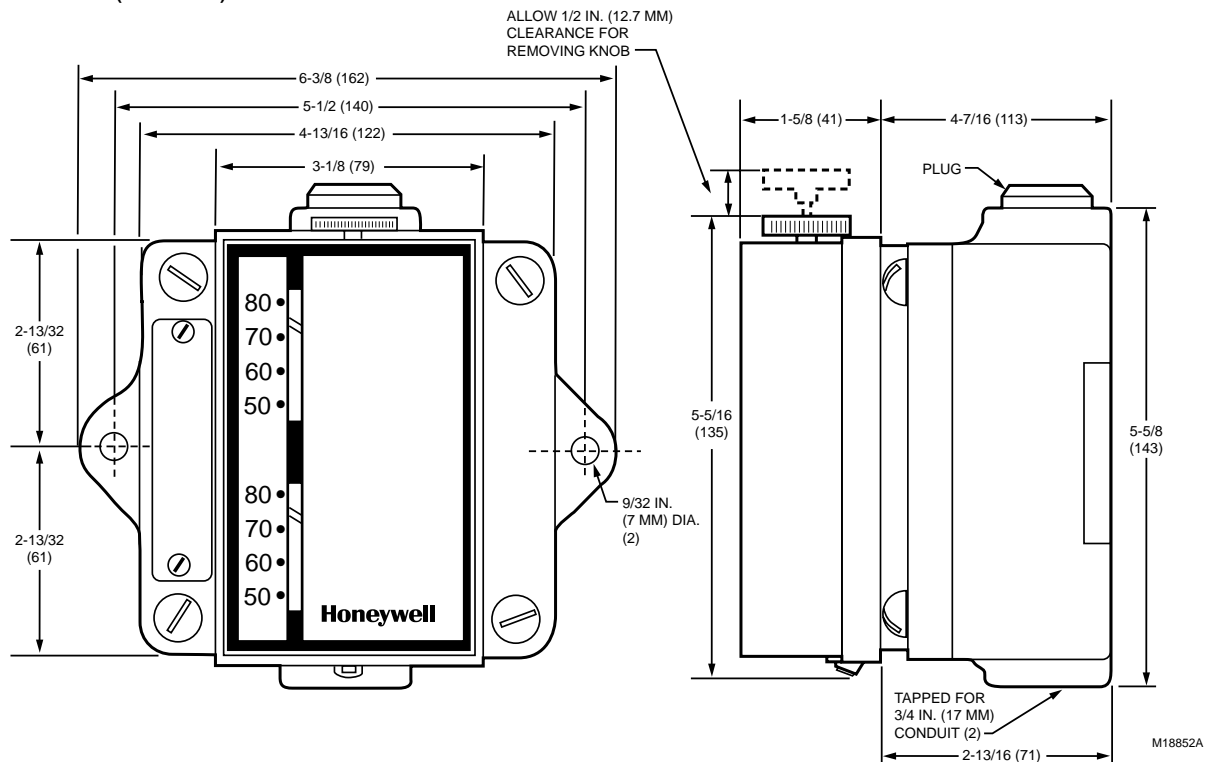
Accessories:

TG511A1000/U – Medium Universal Thermostat Guard with clear cover and base, and opaque wall plate

TG511D1004/U – Medium Universal Thermostat Guard with Beige painted steel cover, opaque ring base and wall plate

| Material Number | Application | Setting Temperature Range | Switch Positions (System) | Differential Temperature Range | Comments | Used With | Tradeline Value |
|-----------------|--|----------------------------|------------------------------------|--|-----------------|--|-----------------|
| T6051A1016/U | Heating and cooling | 46°F to 84°F | | 1°F | | Q651A, B subbases for system and fan switching | |
| T6051A1057/U | Heating and cooling | (8°C to 29°C) | | (0.6°C) | | Q651A, B subbases for system and fan switching | Tradeline |
| T6051B1006/U | Heating and cooling | 46°F to 84°F | | 1°F | Explosion-proof | | |
| T6052A1007/U | Two stage heating or two stage cooling | 46°F to 84°F (8°C to 29°C) | 2-stage heating or 2-stage cooling | 1°F (0.6°C) | | | |
| T6052A1015/U | Two stage heating or two stage cooling | 46°F to 84°F | 2-stage heating or 2-stage cooling | Stage 1 Heat, Stage 2 Cool: 2.5°F; Stage 2 Heat, Stage 1 Cool: 3.2°F | | | Tradeline |
| T6052A1023/U | Two stage heating or two stage cooling | (8°C to 29°C) | 2-stage heating or 2-stage cooling | (Stage 1 Heat, Stage 2 Cool: 1.4°C; Stage 2 Heat, Stage 1 Cool: 1.8°C) | | | |
| T6052B1013/U | Heating and cooling, auto changeover | 46°F to 84°F | 1-stage heating-cooling | Stage 1 Heat: 2.5°F; Stage 2 Cool: 3.2°F | | | Tradeline |

Dimensions in inches (millimeters)



Line Volt Thermostats

Line Volt Thermostats Cross Reference

T451, T651, Q473 Cross Reference

| Thermostat Replaced | | | | | | Replacement | | | |
|--------------------------|-------------------------------------|-------------|-----------|-------------|---|-----------------------|-----------|-------------|--|
| Competitor | Honeywell | | Scale | Thermometer | Comments | Product Number | Scale | Thermometer | Comments |
| | Older | Series 2000 | | | | | | | |
| | | T4059A1005 | 10 - 30°C | yes | Includes range stop and cover screws | None | | | |
| | T451A1132 T451A1157 T451A1298 | T451A2007 | 40 - 90°F | yes | Includes range stop and cover screws | T451A3005 | 44 - 86°F | yes | Includes range stop and cover screws |
| | T451A1173 | T451A2015 | 40 - 90°F | | with positive off | T451B3004 | 50 - 86°F | | with positive off |
| | T451A1256 | T451A2023 | | | Trane logo on cover; Includes range stop and cover screws | None | | | |
| | | T451A2049 | 40 - 70°F | | with positive off | T451B3004 | 50 - 86°F | | with positive off |
| | T651A1202 | T651A2010 | 40 - 90°F | | | T651A3000 | 44 - 86°F | | |
| White Rogers 1A10-651 | T651A1269 T651A1236 | T651A2028 | 40 - 90°F | yes | SUPER TRADELINE horizontal; no thermometer scaleplate; includes range stop, cover screws, wallplate, horizontal blank scaleplate, and vertical blank scaleplate | T651A3018 | 44 - 86°F | yes | Super TRADELINE horizontal no thermometer scaleplate. Includes range stop, cover screws, and wallplate |
| | | T651A2036 | 40 - 90°F | yes | TRADELINE horizontal no thermometer scaleplate | T651A3018 | 44 - 86°F | yes | Super TRADELINE horizontal no thermometer scaleplate. Includes range stop, cover screws, and wallplate |
| | | T651A2044 | 5 - 30°C | | | T651A3026 | 7 - 28°C | yes | TRADELINE Includes range stop, cover screws, and wallplate |
| | | T651A2051 | 5 - 30°C | yes | TRADELINE Includes range stop, cover screws, wallplate, and vertical blank scaleplate | T651A3026 | 7 - 28°C | yes | TRADELINE range stop, cover screws, and wallplate |
| Jonson T26 | | T651A2077 | 40 - 90°F | yes | horizontal no thermometer scaleplate. Includes range stop, cover screws, wallplate, horizontal blank scaleplate, and vertical blank scaleplate | T651A3018 | 44 - 86°F | yes | SUPER TRADELINE horizontal no thermometer scaleplate. Includes range stop, cover screws and wallplate |
| | | T651A2085 | 40 - 90°F | yes | Universal horizontal scaleplate with Universal logo. Includes range stop, cover screws, and wallplate | T651A3018 | 44 - 86°F | yes | SUPER TRADELINE horizontal no thermometer scaleplate. Includes range stop, cover screws and wallplate |
| | | T6059A1000 | 10 - 30°C | yes | Includes range stop and cover screws | T651A3026 | 7 - 28°C | yes | TRADELINE Includes range stop, cover screws and wallplate |
| White Rogers S29-21 | Q473A1040 | Q473A2006 | | | Switch Function - HEAT-OFF-COOL | No direct Replacement | | | Subbase not sold separately; order T6169B4017 instead |
| | | Q473A2022 | | | Trane; Switch Function - HEAT-OFF-COOL | No direct Replacement | | | Subbase not sold separately; order T6169B4017 with Honeywell logo instead |
| | Q473B21015 | Q473B2005 | | | Switch Function - OFF-AUTO | No direct Replacement | | | Subbase not sold separately; order T6169C4015 instead |
| | | Q473B2013 | | | Trane; Switch Function - OFF-AUTO | No direct Replacement | | | Subbase not sold separately; order T6169C4015 with Honeywell logo instead |

T694 - T6069 Product Cross Reference

| Product Number | Scale | Thermometer | System switch | Fan switch | Comments | Functional Replacement | |
|----------------|-----------|-------------|----------------------|------------|---|------------------------|--|
| | | | | | | New Product number | Difference from original Product |
| T694A2002 | 40 - 90°F | | ON-OFF | HI-MED-LO | | T6169A4019/U | Scale range 44-86°F |
| T694A2044 | 40 - 90°F | | ON-OFF | HI-MED-LO | no logo | T6169A4019/U | Scale range 44-86°F; with Honeywell logo |
| T694B2001 | 40 - 90°F | | ON-OFF; HEAT-COOL | HI-MED-LO | | T6069A4010/U | Scale range 44-86°F |
| T694D2009 | 40 - 90°F | | ON-OFF; HEAT-COOL | HI-MED-LO | Off opens fan and cooling circuits | T6069B4018/U | Scale range 44-86°F |
| T694F2007 | 40 - 90°F | | ON-OFF; HEAT-COOL | HI-MED-LO | Off opens all circuits | T6069B4018/U | Scale range 44-86°F |
| T694M2009 | 40 - 90°F | | HEAT-OFF-COOL | ON-AUTO | with Amp connector; includes cover screws and range stops | none | |
| T694M2017 | 40 - 90°F | yes | HEAT-OFF-COOL | ON-AUTO | with Amp connector; includes cover screws and range stops | none | |

T651 Cross Reference New to Old

| New Models | Product Numbers Replaced |
|--------------|--------------------------|
| T451A3005/U | T451A2007 |
| T451B3004/U | T451A2015 |
| | T451A2049 |
| T651A3026/U | T651A2002 |
| | T651A2044 |
| | T651A2051 |
| | T6059A1000 |
| T651A3000/U | T651A2010 |
| T651A3018/U | T651A2028 |
| | T651A2036 |
| | T651A2077 |
| T6069A4002/U | T6069A3004 |
| | T6069A3004B |
| | T6069A3012 |
| | T6069A3012B |
| | T694B2001 |
| T6069B4000/U | T6069B3002 |
| | T6069B3002B |
| | T6069B3010 |
| | T6069B3010B |
| | T6069B3036 |
| | T694D2009 |
| | T694F2007 |

| New Models | Product Numbers Replaced |
|--------------|--------------------------|
| T6069B4026B | T6069B3028B |
| T6069C4008/U | T6069C3000 |
| | T6069C3018 |
| T6069D4006/U | T6069D3008 |
| | T6069D3016 |
| T6169A4001/U | T6169A3003 |
| | T6169A3003B |
| | T6169A3011 |
| | T6169A3011B |
| | T6169A3029 |
| | T6169A3029B |
| | T6169A3037 |
| T6169A4019/U | T6169A3037B |
| | T6169A3045B |
| | T694A2002 |
| | T694A2044 |
| T6169B4017/U | T651A + Q473A2006 |
| T6169C4015/U | T651 + Q473B2005 |

Line Volt Thermostats

Q651 Switching Subbase



Provide manual system switching for T6051 Thermostats.

- Provide positive OFF switching of the system.
- Mount vertically or horizontally on standard outlet box.
- Include pressure sensitive labels to identify switching positions.

Supply Voltage: 120 Vac; 240 Vac

Frequency: 60 Hz

Electrical Ratings: 16 A @ 120 Vac Full Load; 8 A @ 240 Vac Full Load; 96 A @ 120 Vac LR; 48 A @ 240 Vac LR

Approximate, Dimensions: 5 13/16 in. high x 3 3/16 in. wide x 1 1/16 in. deep (148 mm high x 81 mm wide x 18 mm deep)

Approvals, CSA: Certified

Approvals, Underwriters Laboratories Inc.: Listed: File No. E4436, Guide No. XAPX

Accessories:

TG511A1000/U – Medium Universal Thermostat Guard with clear cover and base, and opaque wall plate

TG511D1004/U – Medium Universal Thermostat Guard with Beige painted steel cover, opaque ring base and wall plate

| Material Number | Application | Switch Positions (System) | Switch Positions (Fan) | Switching Action | Includes | Used With |
|-----------------|--------------------|---------------------------|------------------------|--|--|---|
| Q651A1009/U | Subbase for T6051A | See switch labels | See switch labels | Provide positive OFF switching of the system | Pressure sensitive labels to identify switching positions; Switch labels: HEAT-OFF-COOL, HEAT-OFF-FAN, AUTO-OFF-ON | Thermostat: T6051A, Thermostat Guard: TG511 and TG512 |
| Q651B1008/U | Subbase for T6051A | See switch labels | See switch labels | Provide positive OFF switching of the system | Switch labels: AUTO-OFF-FAN; Pressure sensitive labels to identify switching positions | Thermostat: T6051A, Thermostat Guard: TG511 and TG512 |

Line Volt Thermostat Replacement Parts and Accessories

| Material Number | Description | Used With |
|-----------------|--|-------------------|
| 135499/U | Setpoint Knob for T6051 and T6052 | T6051, T6052 |
| 272804A/U | Range Stop and Locking Screws Assembly | T410, T498, T4398 |

T921 Proportional Thermostats



Proportional Thermostats provide low voltage, 3-wire control for valve motors, damper motors, and balancing relays in heating or cooling system applications.

- Bellows element adjusts potentiometer slider to regulate motor operation.
- Removable setting knob prevents unauthorized tampering with setpoint.

Application: Low voltage, 3-wire control for valve and damper motors and balancing relays

Throttling Range: 2.5°F (1.4°C)

Approximate, Dimensions: 5 11/16 in. high x 3 3/8 in. wide x 2 1/4 in. deep (144 mm high x 86 mm wide x 57 mm deep)

Output Signal: 135 Ohm potentiometer

| Material Number | Mounting | Setting Temperature Range | Includes | Tradeline Value | Comments |
|-----------------|------------------------|---------------------------|---|-----------------|--|
| T921A1183/U | Vertical | (13°C to 29°C) | Celsius model | | |
| T921A1191/U | Vertical or Horizontal | 56°F to 84°F | Slotted sides and an add-on faceplate to allow thermostat to be mounted horizontally. | Tradeline | |
| T921G1005/U | Vertical | 56°F to 84°F | | | Switch at high end of throttling range |

Proportional Thermostat Parts and Accessories

| Material Number | Description | Used With |
|-----------------|--|-----------|
| 130224/U | Plastic Adjustment Knob for T921 | T921 |
| 50014156-002/U | Remote room sensor for the ZonePRO® | ZonePRO |
| 50014157-001/U | Duct temperature sensor for the ZonePRO® | ZonePRO |

ZonePRO® Modulating/Floating Control Thermostats



The ZonePRO® thermostats are for low-voltage pressure-dependent variable air volume (VAV) applications. The four ZonePRO models can also be used for hydronic perimeter heating/cooling and bypass box with/without reheat.

- Provides modulating (2 to 10 Vdc analog) control (TB7980)
- Provides floating control (TB6980)
- Provides 2 additional outputs (TB6980B and TB7980B)
- Provides max. and min. setpoints for heating and cooling
- Provides a night setback (NSB) terminal for energy savings

Application: Low-voltage pressure dependent variable air volume (VAV) applications

Mounting: Vertical

Supply Voltage: 24 Vac

Frequency: 60 Hz

Approximate, Dimensions: 2 5/8 in. wide x 4 9/16 in. high x 1 in. deep (69 mm wide x 118 mm high x 27 mm deep)

| Material Number | Setting Temperature Range | Output Signal | Output Signal Burden | Additional Outputs | Includes |
|-----------------|-----------------------------|---------------------------------|----------------------|-------------------------|----------------------|
| TB6980A1007/U | 50°F to 95°F (10°C to 35°C) | Floating | 0.5A max @ 24 Vac | | |
| TB6980B1006/U | 50°F to 95°F (10°C to 35°C) | Floating | 0.5A max @ 24 Vac | 1 TRIAC; 1 Analog/TRIAC | 2 additional outputs |
| TB7980A1006/U | 50°F to 95°F (10°C to 35°C) | Modulating 0-10 Vdc or 2-10 Vdc | 0-10V, 10k min | | |
| TB7980B1005/U | 50°F to 95°F (10°C to 35°C) | Modulating 0-10 Vdc or 2-10 Vdc | 0.5A max @ 24 Vac | 1 TRIAC; 1 Analog/TRIAC | 2 additional outputs |

Programmable Commercial Thermostats

Wi-Fi 9000 Color Touchscreen



Honeywell's Wi-Fi 9000 allows remote access to the thermostat through a computer, tablet, or smartphone with Honeywell's Total Connect Comfort Service.

- Tri-lingual - English, French and Spanish display options.
- Get Connected – Connect to home's existing Wi-Fi network
- Remote Control – Convenience, comfort and control from anywhere through web, tablet or smartphone access
- Apps available for tablet and smartphones
- Automatic software updates through Wi-Fi
- Selectable to 7 Day or Non-Programmable
- Program thermostat locally or over the web or app
- Customize the screen color to match any décor

Applications: Up to 3 Heat/2 Cool Heat Pumps; Up to 2 Heat/2 Cool Conventional Systems

Display: Color Touchscreen

Display Size: 8.06 sq in.

Mounting: Horizontal

Color: Premier White®

Changeover: Auto or Manual

Stages: Up to 3 Heat/2 Cool Heat Pump; Up to 2 Heat/2 Cool Conventional

Scheduling: On-line scheduling or Locally at thermostat

Switch Positions (System): HEAT-OFF-COOL-AUTO-EM.HEAT

Switch Positions (Fan): AUTO-ON-CIRC-FOLLOW SCHEDULE

Setting Temperature Range: Heat: 40°F to 90°F; Cool: 50°F to 99°F (Heat: 4.5°C to 32°C; Cool: 10°C to 37°C)

Operating Temperature Range: 32°F to 120°F (0°C to 48.9°C)

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Power Method: Hardwired

Supply Voltage: 18 to 30 Vac

Frequency: 50 Hz; 60 Hz

Electrical Ratings: 18 to 30 Vac

Dimensions: 3 1/2 in. High, 4 1/2 in. Wide, 7/8 in. Deep (88 mm. High, 115 mm. Wide, 22 mm. Deep)

Used With: THP9045 Wire Saver

Comments: Tri-Lingual Display (selectable for English, French or Spanish)

Accessories:

THP9045A1023/U – WireSaver

| Material Number | Programmability | Terminal Designations |
|-----------------|--|---|
| TH9320WF5003/U | 7-Day Multiple Day Programming or Non-Programmable | R, RC, C, W (O/B), W2 (AUX/E), Y, Y2, G, L, K |

Wi-Fi VisionPRO® 8000



Your customers want comfort, convenience and connectivity.

With the Wi-Fi VisionPRO, you can offer them all three. Using an existing Wi-Fi network plus Honeywell's free Total Connect Comfort services, the Wi-Fi VisionPRO allows homeowners to remotely control their comfort settings and manage their energy costs – with ease.

- Intuitive programming for easier setup
- Remote comfort control via computer, tablet or smartphone
- Universal application across more system types
- Equipment check/change reminders
- Programmable for annual energy savings

Applications: Up to 3 Heat/2 Cool heat pump or up to 2 Heat/2 Cool conventional

Display Size: 10 sq in.

Color: Arctic White

Changeover: Auto or Manual

Stages: Up to 3 Heat / 2 Cool Heat Pump or Up to 2 Heat / 2 Cool Conventional

Switch Positions (System): HEAT-OFF-COOL-AUTO-EM.HEAT

Switch Positions (Fan): AUTO-ON-CIRC-FOLLOW SCHEDULE

Setting Temperature Range: Heat: 40°F to 90°F; Cool 50°F to 99°F (Heat: 4.5°C to 32.0°C; Cool: 10°C to 37.0°C)

Operating Temperature Range: 32°F to 120°F (0°C to 48.9°C)

Humidification Setting Range: Cooling: 40 to 80% RH. Heating: 10 to 60% RH.

Dehumidification Setting Range: 40 to 80% RH.

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Power Method: Hardwired

Supply Voltage: 18 to 30 Vac or 750 mV

Frequency: 50 Hz; 60 Hz

Electrical Connections: Screw terminals

Electrical Ratings: 18 to 30 Vac or 750 mV

Dimensions: 4 5/8 in. High, 4 15/16 in. Wide, 1 1/8 in. Deep (118 mm. High, 126 mm. Wide, 29 mm. Deep)

Includes: Wi-Fi VisionPRO® 8000 thermostat

Accessories:

THP9045A1023/U – WireSaver

| Material Number | Programmability | Terminal Designations |
|-----------------|--|---|
| TH8321WF1001/U | 7-Day Multiple Day Programming or Non-Programmable | R, RC, C, W-O/B, W2-AUX/E, Y, Y2, G, A-L/A, K, U1 U1, S1 S1 |

Prestige® 2-Wire IAQ Thermostat



THX9421R5021WW/U

The Prestige® IAQ thermostat is a 2 wire high definition color touch screen thermostat, 7 day programmable and selectable for residential or light commercial use. Controls up to 4-stages of heat and 2-stages of cool in a heat pump system and up to 3-stages of heat and 2-stages of cool in a conventional system.

- Control heating, cooling and IAQ equipment with only 2 wires at the thermostat. Heating, cooling and IAQ equipment wires to the Equipment Interface Module.
- Smart Schedule - programs in seconds for any lifestyle
- Patented interview based programming and installer setup.
- RedLINK™ wireless communication.
- Increase profit per job by including RedLINK™ accessories that provide comfort and convenience. RedLINK™ accessories include the RedLINK™ Internet Gateway, Portable Comfort Control (PCC), Wireless Outdoor Sensor, Wireless Indoor Sensor, Wireless Entry/Exit Remote, Wireless Vent and Filter Boost Remote, TrueSTEAM™ humidifier with Wireless Adapter and TrueZONE® zoning panel with Wireless Adapter.
- Selectable for residential and light commercial applications. Meets commercial code and is title 24 compliant.
- Light commercial - commercial language (occupied and unoccupied), schedule holidays and custom events, remote setback, economizer and time of day.
- Delta T Alerts and Diagnostics informs customers when their system is not performing as expected with instructions to contact the dealer. Provides a sense of security and greater comfort while generating repeat business.
- All Prestige® IAQ kits come standard with a return and discharge air temperature sensor to measure Delta T.
- Alerts and User Interactions Log - Keeps a searchable history of alerts and setting changes to the thermostat to determine if there is a system malfunction or if the issue was caused by user error. Saves time in troubleshooting and points the technician in the right direction.
- Performance Logs - Keeps a history of heating and cooling performance. The performance log includes Minimum and Maximum Delta T, Minimum and Maximum Discharge Temperature, Minimum and Maximum Return Temperature, Minimum and Maximum Indoor Temperature/Humidity, Minimum and Maximum Outdoor Temperature/Humidity and Run Time. Quickly determine if the system is performing as expected and reduces service time on the job.

- Customizable Service Reminders allow dealers to remind their customers when it's time to call for service, when their warranty is expiring and to provide customized alerts.
- USB port for transferring Installer Setup, Customizable Reminders, Custom Events and Holidays to multiple thermostats.
- USB port for adding the dealer's full color business logo on the screen.
- 3 assignable outputs to control humidification, dehumidification, ventilation and a stage of heating or cooling.
- 4 assignable inputs on the Equipment Interface Module can be used with wired outdoor, indoor or discharge sensors, occupancy sensor for remote setback and dry contact devices to trip pre-packaged or custom alerts such as a full drain pan or water leak.
- Extend wireless range of the Equipment Interface Module by connecting a THM4000R1000 Wireless Adapter to the ABCD terminals.
- Tri-lingual - English, French and Spanish display options.
- Precise temperature control (+/- 1°F) for reliable and consistent temperature.
- Multiple staging options to provide comfort or energy savings.

Applications: Up to 4 Heat/2 Cool Heat Pumps; Up to 3 Heat/2 Cool Conventional Systems

Display Size: 8.06 sq in.

Terminal Designations: R, °C then RedLINK to Equipment Interface Module

Changeover: Auto or Manual

Stages: Up to 4 Heat/2 Cool Heat Pumps; Up to 3 Heat/2 Cool Conventional Systems, See Equipment Interface Module

Programmability: 7-Day Multiple Day Programming or Non-Programmable

Switch Positions (System): HEAT-OFF-COOL-AUTO-EM.HEAT

Switch Positions (Fan): AUTO-ON-CIRC-FOLLOW SCHEDULE

Setting Temperature Range: Heat: 40°F to 90°F; Cool 50°F to 99°F (Heat: 4.5°C to 32.0°C; Cool: 10°C to 37.0°C)

Operating Temperature Range: 32°F to 120°F (0°C to 48.9°C)

Humidification Setting Range: Cooling: 40 to 80% RH. Heating: 10 to 60% RH.

Dehumidification Setting Range: 40 to 80% RH.

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Power Method: Hardwired

Supply Voltage: 18 to 30 Vac

Frequency: 50 Hz; 60 Hz

Electrical Connections: Screw terminals

Electrical Ratings: 18 to 30 Vac

Dimensions: 3 1/2 in. High, 4 1/2 in. Wide, 7/8 in. Deep (88 mm. High, 115 mm. Wide, 22 mm. Deep)

External Sensors Available: N/A

Comments: Tri-Lingual Display (selectable for English, French or Spanish)



Wireless Technology

Accessories:

THP2400A1027B/U – Black Coverplate assembly for use with the Prestige® 2-Wire IAQ Thermostat

YTHM5421R1010/U – Prestige® 2-Wire IAQ Equipment Interface Module Kit with 2 Duct Sensors

THM5421R1021/U – Prestige® 2-Wire IAQ Equipment Interface Module

THM6000R1002/U – RedLINK Internet Gateway

THM4000R1000/U – Wireless Adapter for use with RedLINK™ enabled thermostats and TrueZONE™ system

REM5000R1001/U – Portable Comfort Control

REM1000R1003/U – RedLINK Wireless Entry/Exit Remote

HVC20A1000/U – Wireless Vent and Filter Boost Remote

C7089R1013/U – Senses outdoor temperature and humidity

C7189R1004/U – Wireless Indoor Air Sensor. RedLINK™ enabled. Senses indoor temperature and humidity

| Material Number | Color | Includes | Used With |
|-------------------|---------------------------|--|--|
| THX9421R5021WW/U | Front: White, Side: White | | THM5421R1021 Equipment Interface Module and RedLINK™ accessories |
| YTHX9421R5085WW/U | Front: White, Side: White | THX9421R5021WW Prestige® 2-Wire IAQ Thermostat, THM5421R1021 Equipment Interface Module and 2 Duct Sensors | RedLINK™ accessories |
| YTHX9421R5101WW/U | Front: White, Side: White | THX9421R5021WW Prestige® 2-Wire IAQ Thermostat, THM5421R1021 Equipment Interface Module, C7089R1013 Wireless Outdoor Sensor and 2 Duct Sensors | RedLINK™ accessories |
| YTHX9421R5127WW/U | Front: White, Side: White | THX9421R5021WW Prestige® 2-Wire IAQ Thermostat, THM5421R1021 Equipment Interface Module, THM6000R1002 RedLINK™ Internet Gateway and 2 Duct Sensors | RedLINK™ accessories |

Programmable Commercial Thermostats

VisionPRO® 8000 with RedLINK™ technology



VisionPRO® 8000 with RedLINK™ technology is a touchscreen thermostat, 7 day programmable and selectable for residential or light commercial use. Controls up to 3-stages of heat and 2-stages of cool in a heat pump system and up to 2-stages of heat and 2-stages of cool in a conventional system.

- Thermostat works standalone or with the THM5421R1021 Equipment Interface Module or with the TrueZONE Wireless Adapter.
- Smart Schedule - programs in seconds for any lifestyle.
- Patented interview based programming and installer setup.
- RedLINK™ wireless communication.
- Increase profit per job by including RedLINK™ accessories that provide comfort and convenience. RedLINK™ accessories include the RedLINK™ Internet Gateway, Portable Comfort Control (PCC), Wireless Outdoor Sensor, Wireless Indoor Sensor, Wireless Entry/Exit Remote, Wireless Vent and Filter Boost Remote, TrueSTEAM™ humidifier with Wireless Adapter and TrueZONE® zoning panel with Wireless Adapter.
- Selectable for residential and light commercial applications. Meets commercial code and is title 24 compliant.
- Light commercial - commercial language (occupied and unoccupied), schedule holidays and custom events, remote setback, economizer and time of day. Remote Setback requires the THM5421R1021 Equipment Interface Module.

Applications: Up to 1 Heat/1 Cool heat pump or up to 1 Heat/1 Cool conventional

Display Size: 10 sq in.

Color: Arctic White

Changeover: Auto or Manual

Stages: Up to 4 Heat / 2 Cool Heat Pump or Up to 3 Heat / 2 Cool Conventional when used with the Equipment Interface Module.

Programmability: 7-Day Multiple Day Programming or Non-Programmable

Switch Positions (System): HEAT-OFF-COOL-AUTO

Switch Positions (Fan): AUTO-ON-CIRC-FOLLOW SCHEDULE

Setting Temperature Range: Heat: 40°F to 90°F; Cool 50°F to 99°F (Heat: 4.5°C to 32.0°C; Cool: 10°C to 37.0°C)

Operating Temperature Range: 32°F to 120°F (0°C to 48.9°C)

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Power Method: Battery or Hardwired (must be battery powered when used on a millivolt system)

Supply Voltage: 18 to 30 Vac

Frequency: 50 Hz; 60 Hz

Electrical Connections: Screw terminals

Electrical Ratings: 18 to 30 Vac or 750 mV

Dimensions: 4 5/8 in. High, 4 15/16 in. Wide, 1 1/8 in. Deep (118 mm. High, 126 mm. Wide, 29 mm. Deep)

Used With: Works standalone or with optional THM5421R1021 Equipment Interface Module and RedLINK™ accessories

- Plain language setup, no manual needed.
- Alerts and User Interactions Log - Keeps a searchable history of alerts and setting changes to the thermostat to determine if there is a system malfunction or if the issue was caused by a user error. Saves time in troubleshooting and points the technician in the right direction. The Alert and User Interaction Logs are viewable on a computer after you download them from the thermostat to a microSD card.
- Customizable Service Reminders allow dealers to remind their customers when it's time to call for service, when their warranty is expiring and to provide customized alerts.
- MicroSD port for copying the Installer Setup, Customizable Reminders, Custom Events and Holidays to multiple thermostats.
- MicroSD port for adding the dealer's contact information on the screen.
- 1 assignable output on the TH8321 model to control humidification, dehumidification, ventilation or a stage of heating/cooling.
- 3 assignable outputs on the Equipment Interface Module to control humidification, dehumidification, ventilation or a stage of heating/cooling. The TH8110 and TH8320 models require the use of a Wireless Indoor Sensor to control humidification and dehumidification.
- 1 assignable input can be used with a wired outdoor, indoor or discharge sensor.
- 4 assignable inputs on the Equipment Interface Module can be used with wired outdoor, indoor or discharge sensors, occupancy sensor for remote setback and dry contact devices to trip pre-packaged or custom alerts such as a full drain pan or water leak.
- Extend wireless range of the Equipment Interface Module by connecting a THM4000R1000 Wireless Adapter to the ABCD terminals.
- Dual powered - battery or hardwired (C wire).
- Precise temperature control (+/- 1°F) for reliable and consistent temperature.
- Multiple staging options to provide comfort or energy savings.



Accessories:

YTHM5421R1010/U – Prestige® 2-Wire IAQ Equipment Interface Module Kit with 2 Duct Sensors

THM5421R1021/U – Prestige® 2-Wire IAQ Equipment Interface Module

THM6000R1002/U – RedLINK Internet Gateway

THM4000R1000/U – Wireless Adapter for use with RedLINK™ enabled thermostats and TrueZONE™ system

REM1000R1003/U – RedLINK Wireless Entry/Exit Remote

HVC20A1000/U – Wireless Vent and Filter Boost Remote

C7089R1013/U – Senses outdoor temperature and humidity

C7189R1004/U – Wireless Indoor Air Sensor. RedLINK™ enabled.

Senses indoor temperature and humidity

THP2400A1019/U – Coverplate assembly for use with the RedLINK™ VisionPRO®

REM5000R1001/U – Portable Comfort Control

| Material Number | Terminal Designations | Stages (when used standalone) | Humidification Setting Range | Dehumidification Setting Range | Includes |
|-----------------|---|---|--|--------------------------------|---|
| TH8110R1008/U | R, RC, C, W-O/B, Y, G, K, S1 S1 | Up to 1 Heat / 1 Cool Heat Pump or Up to 1 Heat / 1 Cool Conventional | | | VisionPRO® 8000 thermostat |
| TH8320R1003/U | R, RC, C, W-O/B, W2-AUX/E, Y, Y2, G, A-L/A, K, S1 S1 | Up to 3 Heat / 2 Cool Heat Pump or Up to 2 Heat / 2 Cool Conventional | | | VisionPRO® 8000 thermostat |
| TH8321R1001/U | R, RC, C, W-O/B, W2-AUX/E, Y, Y2, G, A-L/A, K, U1 U1, S1 S1 | Up to 3 Heat / 2 Cool Heat Pump or Up to 2 Heat / 2 Cool Conventional | Cooling: 40 to 80% RH. Heating: 10 to 60% RH. | 40 to 80% RH. | VisionPRO® 8000 thermostat |
| YTH8321R1002/U | R, RC, C, W-O/B, W2-AUX/E, Y, Y2, G, A-L/A, K, U1 U1, S1 S1 | Up to 3 Heat / 2 Cool Heat Pump or Up to 2 Heat / 2 Cool Conventional | Cooling: 40 to 80% RH. Heating: 10 to 60% RH. | 40 to 80% RH. | TH8321R1001 VisionPRO® 8000 thermostat and THM6000R1002 RedLINK™ Internet Gateway |

THM5421 Prestige® 2-Wire IAQ Comfort System Equipment Interface Module



THM5421 Equipment Interface Module for Prestige® IAQ and VisionPRO® 8000 with RedLINK™. Equipment Interface Module controls up to 4-stages of heat and 2-stages of cool in a heat pump system and up to 3-stages of heat and 2-stages of cool in a conventional system. Three sets of Universal IAQ contacts to control humidification, dehumidification, and ventilation. Four sensor inputs for wired sensors or dry contact devices.

Applications: Gas, oil, electric, heat pump, forced warm air, hot water, steam or gravity

Mounting: Vertical

Color: Gray

Operating Temperature Range: -40°F to 165°F (-40°C to 73.9°C)

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Power Method: Hardwired

Supply Voltage: 18 to 30 Vac

Frequency: 50 Hz; 60 Hz

Electrical Connections: Screw terminals

Electrical Ratings: 18 to 30 Vac

Dimensions: 9 5/16 in. High, 4 13/16 in. Wide, 1 5/8 in. Deep (237.4 mm High, 122.5 mm Wide, 40.6 mm Deep)

Cool Current: 1.0 A running

Heat Current: 1.0 A running

Fan Current: 0.5A running



| Material Number | Terminal Designations | Stages | Includes | Used With |
|-----------------|--|---|--|---|
| THM5421R1021/U | R, RC, RH, C, W-O/B, W2-AUX1, W3-AUX2, Y, Y2, G, A-L/A, U1, U1, U2, U2, U3, U3, S1, S1, S2, S2, S3, S3, S4, S4, A, B, C, D | Up to 4 Heat / 2 Cool Heat Pump or Up to 3 Heat / 2 Cool Conventional | THM5421R1021 Equipment Interface Module | All THX9421R5021 Prestige® 2-Wire IAQ Thermostats and all versions of Prestige® IAQ Thermostats with RedLINK™ technology. |
| YTHM5421R1010/U | R, RC, RH, C, W-O/B, W2-AUX1, W3-AUX2, Y, Y2, G, A-L/A, U1, U1, U2, U2, U3, U3, S1, S1, S2, S2, S3, S3, S4, S4, A, B, C, D | Up to 4 Heat / 2 Cool Heat Pump or Up to 3 Heat / 2 Cool Conventional | THM5421R1021 Equipment Interface Module and 2 Duct Sensors | All THX9421R5021 Prestige® 2-Wire IAQ Thermostats and all versions of Prestige® IAQ Thermostats with RedLINK™ technology. |

7-Day Touchscreen Programmable Thermostat



Display Size: 10 sq in.

Terminal Designations: R, RC, W-O/B, Y, G, C, W2-Aux, Y2/E, L, S1, S2

Mounting: Horizontal

Color: Premier White®

Changeover: Auto/Manual Selectable

Stages: Up to 2 Heat/2 Cool Conventional; Up to 2 Heat/1 Cool Heat Pump

Programmability: 7 Day Multiple Day Programming or Non-Programmable

Switch Positions (System): HEAT-OFF-COOL-AUTO-EM.HEAT

Switch Positions (Fan): AUTO-ON-CIRC

Differential Temperature: ± 1°F (±0.5°C)

Thermostat

- 7-day program schedules maximize comfort and economy.
- Armchair programming: Just pull thermostat from the wall to set schedules.
- Energy-saving settings for maximum cost savings.
- One-touch temp control overrides program schedule at any time.
- Precise comfort control keeps temperature within 1°F of the level you set.
- Change/check reminders let you know when to service or replace filters, batteries and other critical components.
- Large touchscreen display with backlight is easy to read – even in the dark.
- Select models accommodate optional outdoor or indoor remote sensors.

Operating Humidity Range (% RH): 5 to 90% RH, non-condensing

Power Method: Battery or Hardwired

Frequency: 50 Hz; 60 Hz

Electrical Ratings: 20 to 30 Vac or 750 mV

Dimensions: 3-3/4 in. high x 6 in. wide x 1-3/8 in. deep (99 mm high x 152 mm wide x 35 mm deep)

Sensor Element: Thermistor

Cool Current: 1.0 A running

Heat Current: 1.0 A running

Fan Current: 0.6A running

Comments: Selectable: Programmable or Non-Programmable; The L terminal is an input or output.

| Material Number | Applications | Setting Temperature Range |
|-----------------|--|--|
| TH7220U1035/U | Heat/Cool or Heat Pump with Auxiliary Heat | Heat: 40°F to 90°F; Cool: 50°F to 99°F (Heat: 4.5°C to 32°C; Cool: 10°C to 37°C) |

Programmable Commercial Thermostats

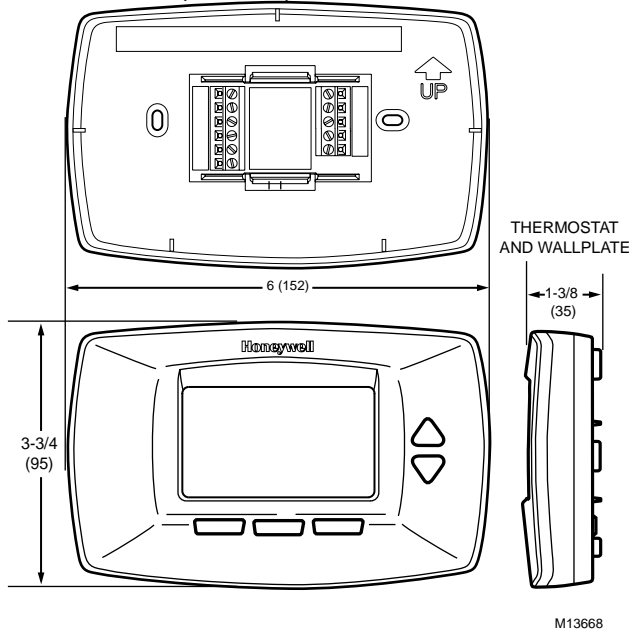
CommercialPRO® 7000



The TB7220 COMMERCIALPRO® 7000 Programmable Thermostat is an effortless, seven-day programmable thermostat that provides universal system compatibility, precise comfort control and is easy-to-program.

- Large, clear display with backlight shows the current and set temperature and time – even in the dark (constant Backlight requires Common terminal).
- Menu-driven programming make setup effortless.
- Beautiful ergonomic design is smart and sophisticated to match your customers' lifestyle.
- Real-time clock keeps time during power failures and automatically updates to daylight savings.
- Saving Changes notification lets you know when the schedule changes have been saved.
- Change reminders let you know when to replace the batteries.
- Holiday Override options allow you to override the program schedule, as desired.
- Speedy same – schedule programming – no need to copy multiple days.
- Armchair programming allows you to remove the thermostat from the wall for programming.

Dimensions in inches (millimeters)



Application: Packaged RTU; Conventional systems; Heat Pump Systems; 24 Vac heating and cooling systems

Color: Premier White®

Power Method: 24 Vac or Battery

Approximate, Dimensions: 6 in. wide x 3 3/4 in. high x 1 3/8 in. deep (152 mm wide x 96 mm high x 35 mm deep)

Network Communications: None

Comments: Includes A terminal to enable an economizer or control a lighting panel when used as a time of day relay; Selectable programmable or non-programmable.

Accessories:

50002883-001/U – Cover Plate Assembly

C7041B2005/U – 20 K ohm NTC Temperature Sensor with 6 in. insertion

C7041B2013/U – 20 K ohm NTC Temperature Sensor with 12 in. insertion

C7041C2003/U – 20 K ohm NTC Temperature Sensor with 18 in. insertion

C7041P2004/U – 20 K ohm NTC Stainless Steel Button Sensor, 11/16 in. dia.

C7089U1006/U – Remote Outdoor Sensor

C7189U1005/U – Remote Indoor Sensor

C7770A1006/U – 6 in. Duct Probe for Return Air 20 K ohm NTC non-linear Temperature Sensor

C7772A1004/U – 20 K ohm NTC non-linear Wall Flush Mount Temperature Sensor without logo

C7772A1012/U – 20 K ohm NTC non-linear Wall Flush Mount Temperature Sensor with Honeywell logo

TR21/U – 20 K ohm NTC non-linear Temperature Wall Module

TR21-A/U – 10 K ohm NTC non-linear Temperature Wall Module for Averaging only

TR21-A-US/U – 10 K ohm NTC non-linear Temperature Wall Module, made in USA

TR21-J-US/U – 20 K ohm NTC non-linear Temperature Wall Module w/ Lon Jack, made in USA

TR21-US/U – 20 K ohm NTC non-linear Temperature Wall Module, made in USA

| Material Number | Switch Positions (System) | Switch Positions (Fan) | Terminals Designations | Stages | Setting Temperature Range |
|-----------------|----------------------------|------------------------|---|---|--|
| TB7220U1012/U | HEAT-OFF-COOL-AUTO-EM.HEAT | AUTO-ON | R, Rc, W (O/B), W2 (W1), Y, Y2, A, G, C, S1, S2 | Up to 3 Heat/2 Cool Heat Pump; Up to 2 Heat/2 Cool Conventional | Heat: 40°F to 90°F; Cool: 50°F to 99°F (Heat: 4.5°C to 32°C; Cool: 10°C to 37°C) |

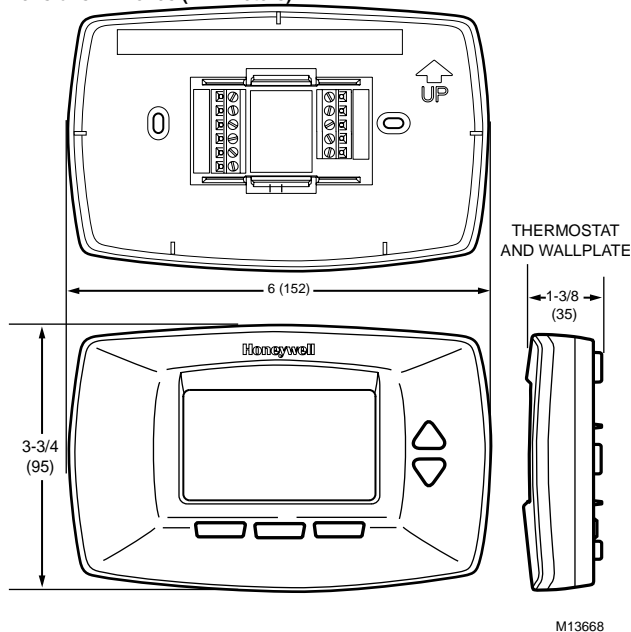
Multipro™ 7000



The MultiPRO™ Multispeed and Multipurpose Thermostat is an effortless, seven-day programmable/non-programmable thermostat that provides universal system compatibility, precise comfort and ease of programming.

- Large, clear display with backlight shows the current and set temperature and time – even in the dark (constant Backlight requires Common Terminal).
- Menu-driven programming make setup effortless.
- Beautiful ergonomic design is smart and sophisticated to match your customers' lifestyle.
- Real-time clock keeps time during power failures and automatically updates to daylight savings.
- Saving Changes notification lets you know when the schedule changes have been saved.
- Change reminders let you know when to replace the batteries.
- Holiday Override options allow you to override the program schedule, as desired.
- Speedy same – schedule programming – no need to copy multiple days.
- Armchair programming allows you to remove the thermostat from the wall for programming.
- Programmable or non-programmable modes.
- Remote setback input for occupancy sensors or timeclocks.
- VersaSpeed™ fan ramping algorithm and fan reset algorithm (fan coil and PTAC applications).
- Up to 3 fan speeds for fan coil and 2 fan speeds for PTAC applications.
- Remote Indoor air sensing option (20K ohm or 10K ohm).

Dimensions in inches (millimeters)



Application: Conventional, Heat Pump, Fan Coil, and PTAC Systems

Color: Premier White®

Power Method: 24 Vac or Battery

Network Communications: None

Comments: Selectable programmable or non-programmable; Includes 3 speed fan control and configurable sensor input for indoor temperature, occupancy sensor, or changeover.

Accessories:

- 50002883-001/U** – Cover Plate Assembly
- C7041B2005/U** – 20 K ohm NTC Temperature Sensor with 6 in. insertion
- C7041B2013/U** – 20 K ohm NTC Temperature Sensor with 12 in. insertion
- C7041C2003/U** – 20 K ohm NTC Temperature Sensor with 18 in. insertion
- C7041P2004/U** – 20 K ohm NTC Stainless Steel Button Sensor, 11/16 in. dia.
- C7089U1006/U** – Remote Outdoor Sensor
- C7189U1005/U** – Remote Indoor Sensor
- C7770A1006/U** – 6 in. Duct Probe for Return Air 20 K ohm NTC non-linear Temperature Sensor
- C7772A1004/U** – 20 K ohm NTC non-linear Wall Flush Mount Temperature Sensor without logo
- C7772A1012/U** – 20 K ohm NTC non-linear Wall Flush Mount Temperature Sensor with Honeywell logo
- TR21/U** – 20 K ohm NTC non-linear Temperature Wall Module
- TR21-A/U** – 10 K ohm NTC non-linear Temperature Wall Module for Averaging only
- TR21-A-US/U** – 10 K ohm NTC non-linear Temperature Wall Module, made in USA
- TR21-J-US/U** – 20 K ohm NTC non-linear Temperature Wall Module w/ Lon Jack, made in USA
- TR21-US/U** – 20 K ohm NTC non-linear Temperature Wall Module, made in USA
- TR21-WK/U** – Wireless Temperature Sensor/Receiver Kit, selectable setpoint, Override
- TR21-WKU/U** – Wireless Temperature Sensor/Receiver Kit, selectable setpoint, Override, no HW logo
- TR21-WS/U** – Wireless Temperature Sensor Only, For replacement (Requires a wireless receiver)
- TR21-WSU/U** – Wireless Temperature Sensor Only, For replacement (Requires a wireless receiver), no HW logo
- WSK-24/U** – Wireless Occupancy Sensor Kit with logo

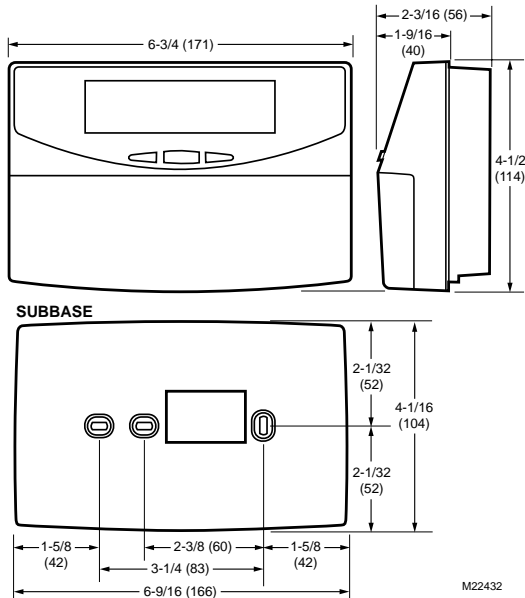
| Material Number | Switch Positions (System) | Switch Positions (Fan) | Terminals Designations | Stages | Setting Temperature Range |
|-----------------|----------------------------|---|---|---|--|
| TB7100A1000/U | HEAT-OFF-COOL-AUTO-EM.HEAT | AUTO-ON; Fan Coil: HI-MED-LO-AUTO; PTAC: HI-LO-AUTO | R, Rc, W1, O/B, Y, G, G2, G3, C, S1, S2 | 1 Heat/ 1Cool Conventional; Up to 2 Heat/ 1 Cool Heat Pump; 2 or 4 pipe Fan Coil; Up to 2 Heat/ 1 Cool PTAC | Heat: 40°F to 90°F; Cool: 50°F to 99°F (Heat: 4.5°C to 32°C; Cool: 10°C to 37°C) |

Programmable Commercial Thermostats

T7350 Programmable Commercial Thermostats



Dimensions in inches (millimeters)



M22432

The T7350 Commercial Programmable Thermostat controls 24 Vac commercial single zone heating, ventilating and air conditioning (HVAC) equipment. The thermostat includes the keypad and display for 7-day programming and equipment control connections.

- 365-day programming.
- Two Occupied and two Not Occupied periods per day.
- Thermostat Interface Module (TIM) connections to thermostat from PDA for advanced configuration, programming, keypad lockout, etc.
- Individual heat and cool setpoints available for Occupied and Not Occupied periods.
- P+I+D control minimizes temperature fluctuations.
- Recovery ramping control automatically optimizes equipment start times based on building load.
- Universal Versaguard™ Thermostat guards available.
- Convenient overrides allow temporary setpoint changes.
- Keypad multi-level lockout available with all models.
- Remote sensor capability - EXCEPT T7350A model - for temperature (including outdoor air and discharge air) and humidity sensors.
- Auxiliary contact interfaces with a Honeywell Economizer System (for total rooftop control integration) or as a dehumidification output.

Color: Trident White

Switch Positions (System): HEAT-OFF-COOL-AUTO-EM.HEAT

Switch Positions (Fan): AUTO-ON

Supply Voltage: 20 to 30 Vac; 24 Vac

Frequency: 50 Hz; 60 Hz

Network Communications: None

Accessories:

- C7041B2005/U** – 20 K ohm NTC Temperature Sensor with 6 in. insertion
- C7041B2013/U** – 20 K ohm NTC Temperature Sensor with 12 in. insertion
- C7041R2000/U** – 20 K ohm NTC Type III Averaging Temperature Sensor, 12ft
- C7089A1002/U** – Remote Outdoor Sensor
- H7625A2010/U** – Wall Humidity Sensor, ±2% RH, Output 4-20 mA or 0-5/10 Vdc, with 20 K ohm temp
- H7625B2006/U** – Duct Humidity Sensor, ±2% RH, Output 4-20 mA or 0-5/10 Vdc, with 20 K ohm temp
- H7635A2012/U** – Wall Humidity Sensor, ± 3% RH, Output 4-20 mA or 0-5/10 Vdc, with 20 K ohm temp
- H7655A1001/U** – Wall Humidity Sensor, 5% RH, 0-10 Vdc fixed output
- H7655B2014/U** – Duct Humidity Sensor, 5% RH, Selectable 4-20 mA or 0-5/10 Vdc, with 20 K ohm temp
- T7771A1005/U** – 20 K ohm NTC non-linear Temperature Wall Module
- TR21/U** – 20 K ohm NTC non-linear Temperature Wall Module
- TR21-A/U** – 10 K ohm NTC non-linear Temperature Wall Module for Averaging only
- TR21-A-US/U** – 10 K ohm NTC non-linear Temperature Wall Module, made in USA
- TR21-H/U** – 20 K ohm NTC non-linear Temperature/Humidity Wall Module w/Lon Jack
- TR21-H-US/U** – 20 K ohm NTC non-linear Temperature/Humidity Wall Module w/Lon Jack, made in USA
- TR21-J-US/U** – 20 K ohm NTC non-linear Temperature Wall Module w/Lon Jack, made in USA
- TR21-US/U** – 20 K ohm NTC non-linear Temperature Wall Module, made in USA
- TR21-WK/U** – Wireless Temperature Sensor/Receiver Kit, selectable setpoint, Override

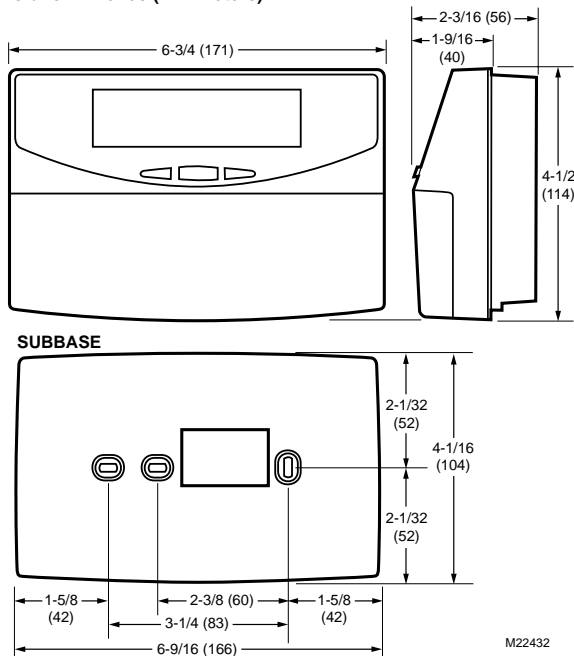
- TR21-WKU/U** – Wireless Temperature Sensor/Receiver Kit, selectable setpoint, Override, no HW logo
- TR21-WS/U** – Wireless Temperature Sensor Only, For replacement (Requires a wireless receiver)
- TR21-WSU/U** – Wireless Temperature Sensor Only, For replacement (Requires a wireless receiver) no HW logo
- TR22/U** – 20 K ohm NTC non-linear Temperature Wall Module w/selectable setpoint, Lon Jack
- TR22-US/U** – 20 K ohm NTC Temperature Wall Module w/selectable setpoint, Lon Jack, made in USA
- TR23/U** – 20 K ohm NTC Temperature Wall Module w/selectable setpoint, Lon Jack, Override
- TR23-H/U** – 20 K ohm NTC Temperature/Humidity Wall Module w/selectable setpoint, Lon Jack, Override
- TR23-H-US/U** – 20 K Temperature/Humidity Wall Module w/selectable setpoint/Lon Jack/Override/made in USA
- TR23-N/U** – 20 K Temperature Wall Module w/selectable setpoint/Lon Jack/Override/No HW logo/made in USA
- TR23-N-US/U** – 20 K Temperature Wall Module w/selectable setpoint/Lon Jack/Override/No HW logo/made in USA
- TR23-US/U** – 20 K Temperature Wall Module w/selectable setpoint/Lon Jack/Override/made in USA
- TR23-WK/U** – Wireless Temperature Sensor/Receiver Kit, selectable setpoint, Occupied Override
- TR23-WKU/U** – Wireless Temperature Sensor/Receiver Kit, selectable setpoint, Override, no HW logo
- TR23-WS/U** – Wireless Sensor only w/Setpoint Adjust/override. For replacement
- TR23-WSU/U** – Wireless Sensor only w/Setpoint Adjust/override, For replacement, No HW logo
- TR24/U** – 20 K ohm NTC non-linear Temperature Wall Module w/Lon Jack, Override
- TR24-US/U** – 20 K ohm non-linear Temperature Wall Module w/Lon Jack, Override, made in USA
- WSK-24/U** – Wireless Occupancy Sensor Kit with logo

| Material Number | Application | Stages | Comments |
|-----------------|------------------------------------|--------------------------|--|
| T7350A1004/U | Conventional and Heat Pump systems | 1 Heat / 1 Cool | |
| T7350B1002/U | Conventional and Heat Pump systems | 2 Heat / 2 Cool | Remote Temp, Outdoor, Discharge Air |
| T7350D1008/U | Conventional and Heat Pump systems | 3 Heat / 3 Cool | Remote Temp, Outdoor, Discharge Air, Humidity, Occupancy |
| T7350M1008/U | Modulating Systems | 2 Mod (4-20 mA)/ 2 Relay | Remote Temp, Outdoor, Discharge Air, Humidity, Occupancy |

T7351F Programmable Commercial Thermostats



Dimensions in inches (millimeters)



The T7351 Commercial Programmable Thermostat controls 24 Vac commercial single zone heating, ventilating and air conditioning (HVAC) equipment. The thermostat includes the keypad and display for 365-day programming and equipment control connections.

- Typically used in buildings (including: restaurants, shopping malls, office buildings and banks) under 55,000 square feet.
- For single zone rooftop units, split systems, heat pumps or hot/chilled water systems.
- 365-day programming.
- Two Occupied and two Not Occupied periods per day.
- Individual heat and cool setpoints available for Occupied and Not Occupied periods.
- P+I+D control minimizes temperature fluctuations.
- Recovery ramp control automatically optimizes equipment start times based on building load.
- Convenient overrides allow temporary setpoint changes.
- Keypad multi-level lockout available with all models.
- Remote sensor capability for temperature (including outdoor air and discharge air) and humidity sensors.
- Auxiliary subbase contact typically interface with a Honeywell Economizer System (for total rooftop control integration) or act as dehumidification output.
- Universal Versaguard Thermostat guards available.

Color: Trident White

Switch Positions (System): HEAT-OFF-COOL-AUTO-EM.HEAT

Switch Positions (Fan): AUTO-ON

Supply Voltage: 20 to 30 Vac; 24 Vac

Frequency: 50 Hz; 60 Hz

Accessories:



- C7041B2005/U** – 20 K ohm NTC Temperature Sensor with 6 in. insertion
- C7041B2013/U** – 20 K ohm NTC Temperature Sensor with 12 in. insertion
- C7041R2000/U** – 20 K ohm NTC Type III Averaging Temperature Sensor, 12ft
- C7089A1002/U** – Remote Outdoor Sensor
- H7625A2010/U** – Wall Humidity Sensor, ±2% RH, Output 4-20 mA or 0-5/10 Vdc, with 20 K ohm temp
- H7625B2006/U** – Duct Humidity Sensor, ±2% RH, Output 4-20 mA or 0-5/10 Vdc, with 20 K ohm temp
- H7635A2012/U** – Wall Humidity Sensor, ± 3% RH, Output 4-20 mA or 0-5/10 Vdc, with 20 K ohm temp
- H7655A1001/U** – Wall Humidity Sensor, 5% RH, 0-10 Vdc fixed output
- H7655B2014/U** – Duct Humidity Sensor, 5% RH, Selectable 4-20 mA or 0-5/10 Vdc, with 20 K ohm temp
- T7771A1005/U** – 20 K ohm NTC non-linear Temperature Wall Module
- TR21/U** – 20 K ohm NTC non-linear Temperature Wall Module
- TR21-A/U** – 10 K ohm NTC non-linear Temperature Wall Module for Averaging only
- TR21-A-US/U** – 10 K ohm NTC non-linear Temperature Wall Module, made in USA
- TR21-H/U** – 20 K ohm NTC non-linear Temperature/Humidity Wall Module w/Lon Jack
- TR21-H-US/U** – 20 K ohm NTC non-linear Temperature/Humidity Wall Module w/Lon Jack, made in USA
- TR21-J-US/U** – 20 K ohm NTC non-linear Temperature Wall Module w/Lon Jack, made in USA
- TR21-US/U** – 20 K ohm NTC non-linear Temperature Wall Module, made in USA
- TR21-WK/U** – Wireless Temperature Sensor/Receiver Kit, selectable setpoint, Override

- TR21-WKU/U** – Wireless Temperature Sensor/Receiver Kit, selectable setpoint, Override, no HW logo
- TR21-WSU** – Wireless Temperature Sensor Only, For replacement (Requires a wireless receiver)
- TR21-WSU/U** – Wireless Temperature Sensor Only, For replacement (Requires a wireless receiver) no HW logo
- TR22/U** – 20 K ohm NTC non-linear Temperature Wall Module w/selectable setpoint, Lon Jack
- TR22-US/U** – 20 K ohm NTC Temperature Wall Module w/selectable setpoint, Lon Jack, made in USA
- TR23/U** – 20 K ohm NTC Temperature Wall Module w/selectable setpoint, Lon Jack, Override
- TR23-H/U** – 20 K ohm NTC Temperature/Humidity Wall Module w/selectable setpoint, Lon Jack, Override
- TR23-H-US/U** – 20 K Temperature/Humidity Wall Module w/selectable setpoint/Lon Jack/Override/made in USA
- TR23-N/U** – 20 K Temperature Wall Module w/selectable setpoint/Lon Jack/Override/No HW logo/made in USA
- TR23-N-US/U** – 20 K Temperature Wall Module w/selectable setpoint/Lon Jack/Override/No HW logo/made in USA
- TR23-US/U** – 20 K Temperature Wall Module w/selectable setpoint/Lon Jack/Override/made in USA
- TR23-WK/U** – Wireless Temperature Sensor/Receiver Kit, selectable setpoint, Occupied Override
- TR23-WKU/U** – Wireless Temperature Sensor/Receiver Kit, selectable setpoint, Override, no HW logo
- TR23-WSU** – Wireless Sensor only w/Setpoint Adjust/override. For replacement
- TR23-WSU/U** – Wireless Sensor only w/Setpoint Adjust/override. For replacement, No HW logo
- TR24/U** – 20 K ohm NTC non-linear Temperature Wall Module w/Lon Jack, Override
- TR24-US/U** – 20 K ohm non-linear Temperature Wall Module w/Lon Jack, Override, made in USA
- WSK-24/U** – Wireless Occupancy Sensor Kit with logo

| Material Number | Application | Stages | Comments |
|-----------------|------------------------------------|-----------------|--|
| T7351F2010/U | Conventional and Heat Pump systems | 3 Heat / 3 Cool | Remote Temp, Outdoor, Discharge Air, Humidity, Occupancy |

Programmable Commercial Thermostats

Commercial Thermostat Accessories

| Material Number | Description | Used With | |
|-----------------|--|--|---|
| 209651A/U | Wallplate to cover marks left by other thermostats | T7350 |  |
| USB-TIM/U | USB Thermostat Interface Module cable | T7350 thermostats and TStatSpec software |  |

T7350 Communicating Programmable Commercial Thermostats



T7350H Communicating Thermostats control 24 Vac commercial single-zone multistage conventional, heat pump and modulating HVAC equipment. T7350H allows remote access and the sharing of system parameters with other devices in a LONWORKS® network.

- 365-day programming.
- Two Occupied and two Not Occupied periods per day.
- Thermostat Interface Module (TIM) connections to thermostat from PDA for advanced configuration, programming, keypad lockout, etc.
- Individual heat and cool setpoints available for Occupied and Not Occupied periods.
- P+I+D control minimizes temperature fluctuations.
- Recovery ramping control automatically optimizes equipment start times based on building load.
- Universal Versaguard™ Thermostat guards available.
- Convenient overrides allow temporary setpoint changes.
- Keypad multi-level lockout available with all models.
- Remote sensor capability for temperature (including outdoor air and discharge air) and humidity sensors.
- Auxiliary contact interfaces with a Honeywell Economizer System (for total rooftop control integration) or as a dehumidification output LONWORKS® network communication.

Color: Trident White

Accessories:

- C7041B2005/U** – 20 K ohm NTC Temperature Sensor with 6 in. insertion
- C7041R2000/U** – 20 K ohm NTC Type III Averaging Temperature Sensor, 12ft
- H7625A2010/U** – Wall Humidity Sensor, ±2% RH, Output 4-20 mA or 0-5/10 Vdc, with 20 K ohm temp
- H7625B2006/U** – Duct Humidity Sensor, ±2% RH, Output 4-20 mA or 0-5/10 Vdc, with 20 K ohm temp
- H7635A2012/U** – Wall Humidity Sensor, ± 3% RH, Output 4-20 mA or 0-5/10 Vdc, with 20 K ohm temp
- H7635C1002/U** – Outdoor Humidity Sensor, ± 3% RH, Output 4-20 mA or 0-5/10 Vdc
- H7655A1001/U** – Wall Humidity Sensor, 5% RH, 0-10 Vdc fixed output
- H7655B2014/U** – Duct Humidity Sensor, 5% RH, Selectable 4-20 mA or 0-5/10 Vdc, with 20 K ohm temp
- T7771A1005/U** – 20 K ohm NTC non-linear Temperature Wall Module
- TR21/U** – 20 K ohm NTC non-linear Temperature Wall Module
- TR21-A/U** – 10 K ohm NTC non-linear Temperature Wall Module for Averaging only

- TR21-A-US/U** – 10 K ohm NTC non-linear Temperature Wall Module, made in USA
- TR21-H/U** – 20 K ohm NTC non-linear Temperature/Humidity Wall Module w/Lon Jack
- TR21-H-US/U** – 20 K ohm NTC non-linear Temperature/Humidity Wall Module w/Lon Jack, made in USA
- TR21-J-US/U** – 20 K ohm NTC non-linear Temperature Wall Module w/ Lon Jack, made in USA
- TR21-US/U** – 20 K ohm NTC non-linear Temperature Wall Module, made in USA
- TR22/U** – 20 K ohm NTC non-linear Temperature Wall Module w/ selectable setpoint, Lon Jack
- TR23/U** – 20 K ohm NTC Temperature Wall Module w/selectable setpoint, Lon Jack, Override
- TR23-H/U** – 20 K ohm NTC Temperature/Humidity Wall Module w/ selectable setpoint, Lon Jack, Override
- TR23-H-US/U** – 20 K Temperature/Humidity Wall Module w/selectable setpoint/Lon Jack/Override/made in USA
- TR24/U** – 20 K ohm NTC non-linear Temperature Wall Module w/Lon Jack, Override
- TR24-US/U** – 20 K ohm non-linear Temperature Wall Module w/Lon Jack, Override, made in USA

| Material Number | Application | Switch Positions (System) | Switch Positions (Fan) | Stages | Comments | Includes |
|-----------------|------------------------------------|----------------------------|------------------------|-------------------------|---|------------------------------------|
| T7350H1009/U | Conventional and Heat Pump systems | HEAT-OFF-COOL-AUTO-EM.HEAT | AUTO-ON | 3 Heat / 3 Cool | Remote Temp, Outdoor, Discharge Air, Humidity | |
| T7350H1017/U | Modulating Systems | HEAT-OFF-COOL-AUTO-EM.HEAT | AUTO-ON | 2 Mod (4-20mA)/ 2 Relay | Remote Temp, Outdoor, Discharge Air, Humidity and Occupancy | |
| Y7355H1009/U | Conventional and Heat Pump systems | HEAT-OFF-COOL-AUTO-EM.HEAT | AUTO-ON | 3 Heat / 3 Cool | Remote Temp, Outdoor, Discharge Air, Humidity, Occupancy | T7350H1009, C7041B2005, T7771A1005 |

Communicating Thermostats

TB7200 Communicating Zoning Thermostat



The TB7200 Series PI thermostat is available in BACnet® MS/TP and ZigBee® wireless protocols and integrates into a WEBS-AX building automation system. Used with hydronic reheat valve control and pressure dependent VAV with or without local reheat.

- Available in BACnet MS/TP and ZigBee wireless protocols
- Fully integrated advanced occupancy functionality with a PIR cover provides energy savings opportunity on select models; all other models are PIR ready and can have an optional occupancy sensor cover added at any time
- Pre-configured sequences of operation means one model meets more application needs
- Password protection to minimize parameter tampering
- Four levels of keypad lockout to limit access to change user parameters
- Available in 24 Vac on/off, floating or 0-10 Vdc analog control to meet advanced applications requirements
- Three configurable inputs for monitoring and advanced functions
- SPST auxiliary output that can be used for lighting or reheat
- All wiring connections are made to removable terminal blocks simplifying installation.

Application: Zoning Modulating with Reheat

Display: LCD

Mounting: Vertical

Color: White

Changeover: Manual/Auto

Setting Temperature Range: Heating: 40°F to 90°F; Cooling: 54°F to 100°F (Heating: 4.5°C to 32°C; Cooling: 12.0°C to 37.5°C)

Switching Positions (System): OFF-HEAT-COOL-AUTO

Switching Positions (Fan): HI-MED-LOW-AUTO-OFF

Operating Temperature Range: 32°F to 122°F (0°C to 50°C)

Operating Humidity Range (% RH): 0 to 95% RH, non-condensing

Throttling Range: 3°F to 10°F (1.7°C to 5.6°C)

Supply Voltage: 24 Vac with range from 19 to 30 Vac

Frequency: 50 Hz; 60 Hz

Approximate, Dimensions: 4 15/16 in. high x 3 3/8 in. wide x 1 1/8 in. deep (125 mm high x 86 mm wide x 29 mm deep)

Includes: Remote Temperature Sensor Input, 2 Digital Inputs; 1 Universal Input; 1 Aux Output

Used With: Compatible with WEBS-AX

| Material Number | Network Communications | Output Signal | Output Signal Burden | Output | Occupancy Sensor |
|-----------------|------------------------|--------------------|--|-----------------------------|---|
| TB7200C5014B/U | BACnet MS/TP | Floating or On/Off | 30 Vac, 1A max, 3A in-rush | 2 Floating or On/Off +1 Aux | Upgradeable with PIR occupancy sensor cover TB-PIR-ZN |
| TB7200C5014W/U | ZigBee Wireless Mesh | Floating or On/Off | 30 Vac, 1A max, 3A in-rush | 2 Floating or On/Off +1 Aux | Upgradeable with PIR occupancy sensor cover TB-PIR-ZN |
| TB7200C5514B/U | BACnet MS/TP | Floating or On/Off | 30 Vac, 1A max, 3A in-rush | 2 Floating or On/Off +1 Aux | Onboard PIR occupancy sensor cover |
| TB7200C5514W/U | ZigBee Wireless Mesh | Floating or On/Off | 30 Vac, 1A max, 3A in-rush | 2 Floating or On/Off +1 Aux | Onboard PIR occupancy sensor cover |
| TB7200F5014B/U | BACnet MS/TP | 0 - 10 Vdc | 0 - 10 Vdc into 2k Ohm resistance min. | 2 0 - 10 Vdc +1 Aux | Upgradeable with PIR occupancy sensor cover TB-PIR-ZN |
| TB7200F5014W/U | ZigBee Wireless Mesh | 0 - 10 Vdc | 0 - 10 Vdc into 2k Ohm resistance min. | 2 0 - 10 Vdc +1 Aux | Upgradeable with PIR occupancy sensor cover TB-PIR-ZN |
| TB7200F5514B/U | BACnet MS/TP | 0 - 10 Vdc | 0 - 10 Vdc into 2k Ohm resistance min. | 2 0 - 10 Vdc +1 Aux | Onboard PIR occupancy sensor cover |
| TB7200F5514W/U | ZigBee Wireless Mesh | 0 - 10 Vdc | 0 - 10 Vdc into 2k Ohm resistance min. | 2 0 - 10 Vdc +1 Aux | Onboard PIR occupancy sensor cover |

TB7300 Series Communicating Digital Fan Coil Thermostats



BACnet & ZigBee Wireless Mesh Communicating Thermostats

- Available in BACnet MS/TP protocol
- Backlit LCD display with dedicated function menu keys for simple operation
- Fully integrated advanced occupancy functionality with a PIR cover provides energy savings opportunity on select models; all other models are PIR ready and can have an optional occupancy sensor cover added
- Configurable sequences of operation
- Configurable fan button allows thermostat to meet more applications with a single model
- Password protection to minimize parameter tampering
- Six levels of keypad lockout to limit access to change user parameters
- 3-speed fan control
- Auto Fan speed mode increases occupant comfort in cooling mode by reducing humidity and reduces fan noise
- Available for 24 Vac on/off, floating or analog control meets advanced applications requirements
- Three inputs for monitoring and other advanced functions
- SPST auxiliary output that can be used for lighting or auxiliary reheat
- All wiring connections are made to removable terminal blocks simplifying installation.

Display: LCD

Mounting: Vertical

Color: White

Changeover: Manual/Auto

Setting Temperature Range: Heating: 40°F to 90°F; Cooling: 54°F to 100°F (Heating: 4.5°C to 32°C; Cooling: 12.0°C to 37.5°C)

Switching Positions (System): OFF-HEAT-COOL-AUTO

Switching Positions (Fan): HI-MED-LOW-AUTO-OFF

Operating Temperature Range: 32°F to 122°F (0°C to 50°C)

Operating Humidity Range (% RH): 0 to 95% RH, non-condensing

Supply Voltage: 24 Vac with range from 19 to 30 Vac

Frequency: 50 Hz; 60 Hz

Electrical Ratings: Fan relay output: 30 Vac, 1A max, 3A in-rush; and

Valve triac output: 30 Vac, 1A max, 3A in-rush

Approximate, Dimensions: 4 15/16 in. high x 3 3/8 in. wide x

1 1/8 in. deep (125 mm high x 86 mm wide x 29 mm deep)

Includes: Remote Temperature Sensor Input, 2 Digital Inputs; 1

Universal Input; 1 Aux Output

Approvals, CSA: Certified

Approvals, FCC: FCC Part 15, Subpart B, Class A

Approvals, Underwriters Laboratories Inc.: UL-873

Used With: Compatible with WEBS-AX

| Material Number | Application | Electrical Ratings | Network Communications | Output | Occupancy Sensor |
|-----------------|---|---|------------------------|-------------------|--|
| TB7300A5014B/U | 2 or 4 Pipe On/Off Fan Coil, 24 Vac, Commercial | Fan relay output: 30 Vac, 1A max, 3A in-rush; and Valve triac output: 30 Vac, 1A max, 3A in-rush | BACnet MS/TP | 2 Digital +1 Aux | Upgradeable with PIR occupancy sensor cover TB-PIR-FCU-C |
| TB7300A5514B/U | 2 or 4 Pipe On/Off Fan Coil, 24 Vac, Commercial | Fan relay output: 30 Vac, 1A max, 3A in-rush; and Valve triac output: 30 Vac, 1A max, 3A in-rush | BACnet MS/TP | 2 Digital +1 Aux | Onboard PIR occupancy sensor cover |
| TB7300C5014B/U | 2 or 4 Pipe On/Off or Floating Fan Coil, 24 Vac, Commercial | Fan relay output: 30 Vac, 1A max, 3A in-rush; and Valve triac output: 30 Vac, 1A max, 3A in-rush | BACnet MS/TP | 2 Floating +1 Aux | Upgradeable with PIR occupancy sensor cover TB-PIR-RTU |
| TB7300C5514B/U | 2 or 4 Pipe On/Off or Floating Fan Coil, 24 Vac, Commercial | Fan relay output: 30 Vac, 1A max, 3A in-rush; and Valve triac output: 30 Vac, 1A max, 3A in-rush | BACnet MS/TP | 2 Floating +1 Aux | Onboard PIR occupancy sensor cover |
| TB7300F5014B/U | 2 or 4 Pipe Analog Fan Coil, 24 Vac, Commercial | Fan relay output: 30 Vac, 1A max, 3A in-rush; Valve analog output: 0 to 10 Vdc into 2KW resistance min. | BACnet MS/TP | 2 Analog +1 Aux | Upgradeable with PIR occupancy sensor cover TB-PIR-FCU-C |
| TB7300F5514B/U | 2 or 4 Pipe Analog Fan Coil, 24 Vac, Commercial | Fan relay output: 30 Vac, 1A max, 3A in-rush; Valve analog output: 0 to 10 Vdc into 2KW resistance min. | BACnet MS/TP | 2 Analog +1 Aux | Onboard PIR occupancy sensor cover |
| TB7305A5014B/U | 2 or 4 Pipe On/Off Fan Coil, 24 Vac, Lodging | Fan relay output: 30 Vac, 1A max, 3A in-rush; and Valve triac output: 30 Vac, 1A max, 3A in-rush | BACnet MS/TP | 2 Digital +1 Aux | Upgradeable with PIR occupancy sensor cover TB-PIR-FCU-L |
| TB7305A5514B/U | 2 or 4 Pipe On/Off Fan Coil, 24 Vac, Lodging | Fan relay output: 30 Vac, 1A max, 3A in-rush; and Valve triac output: 30 Vac, 1A max, 3A in-rush | BACnet MS/TP | 2 Digital +1 Aux | Onboard PIR occupancy sensor cover |
| TB7305C5014B/U | 2 or 4 Pipe On/Off or Floating Fan Coil, 24 Vac, Lodging | Fan relay output: 30 Vac, 1A max, 3A in-rush; and Valve triac output: 30 Vac, 1A max, 3A in-rush | BACnet MS/TP | 2 Floating +1 Aux | Upgradeable with PIR occupancy sensor cover TB-PIR-RTU |
| TB7305C5514B/U | 2 or 4 Pipe On/Off or Floating Fan Coil, 24 Vac, Lodging | Fan relay output: 30 Vac, 1A max, 3A in-rush; and Valve triac output: 30 Vac, 1A max, 3A in-rush | BACnet MS/TP | 2 Digital +1 Aux | Onboard PIR occupancy sensor cover |
| TB7305F5014B/U | 2 or 4 Pipe Analog Fan Coil, 24 Vac, Lodging | Fan relay output: 30 Vac, 1A max, 3A in-rush; Valve analog output: 0 to 10 Vdc into 2KW resistance min. | BACnet MS/TP | 2 Analog +1 Aux | Upgradeable with PIR occupancy sensor cover TB-PIR-FCU-L |
| TB7305F5514B/U | 2 or 4 Pipe Analog Fan Coil, 24 Vac, Lodging, PIR | Fan relay output: 30 Vac, 1A max, 3A in-rush; Valve analog output: 0 to 10 Vdc into 2KW resistance min. | BACnet MS/TP | 2 Analog +1 Aux | Onboard PIR occupancy sensor cover |

Communicating Thermostats

TB7600 Communicating Commercial Thermostats



The TB7600 Series PI thermostat is available in BACnet® MS/TP and ZigBee® and integrates into a WEBS-AX automation. It features a menu-driven, back-lit LCD display, up to three sensor inputs, an auxiliary output, and one or two digital inputs.

- Available in BACnet MS/TP and ZigBee wireless protocols
- Built in default profile set-up for easier start up and commissioning
- Fully integrated advanced occupancy functionality with a PIR accessory cover on some models
- Programmable smart fan operation

Display: LCD

Mounting: Vertical

Color: White

Switch Positions (System): Conventional Systems - HEAT-OFF-COOL-AUTO; Heat Pump Systems - HEAT-OFF-COOL-AUTO-EM. HEAT

Switch Positions (Fan): ON-SMART-AUTO

Setting Temperature Range: Heating: 40°F to 90°F; Cooling: 54°F to 100°F (Heating: 4.5°C to 32°C; Cooling: 12.0°C to 37.5°C)

- Password protection to minimize parameter tampering
- Three levels of keypad lockout
- Gas/oil or electric system compatibility for all type of applications
- SPST auxiliary output can be used for lighting and/or economizer override
- 0 to 10 Vdc economizer output for more retrofit opportunities
- Automatic frost protection to prevents costly freeze damage
- Anti short cycle and minimum on/off run time protection to reduce wear and maximizes life span of mechanical equipment
- One or two programmable digital inputs for added flexibility can be use to monitor filter status, activate a remote temporary occupancy switch, and/or used as a general purpose service indicator
- Heat Pump models support single and two stages heat pump with one auxiliary heat stage, selectable single or dual stage compressor stages, and comfort/economy mode maximizes heat pump use before turning on auxiliary heating, compressor/auxiliary interlock adds flexibility by locking out heat pump operation during auxiliary heating to prevent high pressure trip when the coil is downstream of the auxiliary heat source
- 7 day programmable models, 2 or 4 events for use in non-networked applications.

Operating Temperature Range: 32°F to 122°F (0°C to 50°C)

Operating Humidity Range (% RH): 0 to 95% RH, non-condensing

Supply Voltage: 24 Vac with range from 19 to 30 Vac

Frequency: 50 Hz; 60 Hz

Approximate, Dimensions: 4 15/16 in. high x 3 3/8 in. wide x 1 1/8 in. deep (125 mm high x 86 mm wide x 29 mm deep)

Approvals, CSA: Certified

Approvals, Underwriters Laboratories Inc.: UL-873

Used With: Compatible with WEBS-AX




| Material Number | Stages | Network Communications | Occupancy Sensor | Scheduling | Application | Approvals, FCC | Includes |
|-----------------|-----------------|------------------------|--|------------|----------------------|---------------------------------|---|
| TB7600A5014B/U | 1 Heat / 1 Cool | BACnet MS/TP | Upgradeable with PIR occupancy sensor cover TB-PIR-RTU | | Conventional systems | FCC Part 15, Subpart B, Class A | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7600A5014W/U | 1 Heat / 1 Cool | ZigBee Wireless | Upgradeable with PIR occupancy sensor cover TB-PIR-RTU | | Conventional systems | FCC Part 15, Subpart C | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7600A5514B/U | 1 Heat / 1 Cool | BACnet MS/TP | Onboard PIR occupancy sensor cover | | Conventional systems | FCC Part 15, Subpart B, Class A | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7600A5514W/U | 1 Heat / 1 Cool | ZigBee Wireless | Onboard PIR occupancy sensor cover | | Conventional systems | FCC Part 15, Subpart C | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7600B5014B/U | 2 Heat / 2 Cool | BACnet MS/TP | Upgradeable with PIR occupancy sensor cover TB-PIR-RTU | | Conventional systems | FCC Part 15, Subpart B, Class A | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7600B5014W/U | 2 Heat / 2 Cool | ZigBee Wireless | Upgradeable with PIR occupancy sensor cover TB-PIR-RTU | | Conventional systems | FCC Part 15, Subpart C | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7600B5514B/U | 2 Heat / 2 Cool | BACnet MS/TP | Onboard PIR occupancy sensor cover | | Conventional systems | FCC Part 15, Subpart B, Class A | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7600B5514W/U | 2 Heat / 2 Cool | ZigBee Wireless | Onboard PIR occupancy sensor cover | | Conventional systems | FCC Part 15, Subpart C | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7600H5014B/U | 3 Heat / 2 Cool | BACnet MS/TP | Upgradeable with PIR occupancy sensor cover TB-PIR-RTU | | Heat Pump Systems | FCC Part 15, Subpart B, Class A | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7600H5014W/U | 3 Heat / 2 Cool | ZigBee Wireless | Upgradeable with PIR occupancy sensor cover TB-PIR-RTU | | Heat Pump Systems | FCC Part 15, Subpart C | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7600H5514B/U | 3 Heat / 2 Cool | BACnet MS/TP | Onboard PIR occupancy sensor cover | | Heat Pump Systems | FCC Part 15, Subpart B, Class A | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7600H5514W/U | 3 Heat / 2 Cool | ZigBee Wireless | Onboard PIR occupancy sensor cover | | Heat Pump Systems | FCC Part 15, Subpart C | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7605B5014B/U | 2 Heat / 2 Cool | BACnet MS/TP | Upgradeable with PIR occupancy sensor cover TB-PIR-RTU | | Conventional systems | FCC Part 15, Subpart B, Class A | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |

Communicating Thermostats


| Material Number | Stages | Network Communications | Occupancy Sensor | Scheduling | Application | Approvals, FCC | Includes |
|-----------------|-----------------|------------------------|--|--------------------|----------------------|---------------------------------|---|
| TB7605B5014W/U | 2 Heat / 2 Cool | ZigBee Wireless | Upgradeable with PIR occupancy sensor cover TB-PIR-RTU | | Conventional systems | FCC Part 15, Subpart C | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7605B5514B/U | 2 Heat / 2 Cool | BACnet MS/TP | Onboard PIR occupancy sensor cover | | Conventional systems | FCC Part 15, Subpart B, Class A | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7605B5514W/U | 2 Heat / 2 Cool | ZigBee Wireless | Onboard PIR occupancy sensor cover | | Conventional systems | FCC Part 15, Subpart C | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7652A5014B/U | 1 Heat / 1 Cool | BACnet MS/TP | Upgradeable with PIR occupancy sensor cover TB-PIR-RTU | 7-day programmable | Conventional systems | FCC Part 15, Subpart B, Class A | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7652A5014W/U | 1 Heat / 1 Cool | ZigBee Wireless | Upgradeable with PIR occupancy sensor cover TB-PIR-RTU | 7-day programmable | Conventional systems | FCC Part 15, Subpart C | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7652A5514B/U | 1 Heat / 1 Cool | BACnet MS/TP | Onboard PIR occupancy sensor cover | 7-day programmable | Conventional systems | FCC Part 15, Subpart B, Class A | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7652A5514W/U | 1 Heat / 1 Cool | ZigBee Wireless | Onboard PIR occupancy sensor cover | 7-day programmable | Conventional systems | FCC Part 15, Subpart C | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7652B5014B/U | 2 Heat / 2 Cool | BACnet MS/TP | Upgradeable with PIR occupancy sensor cover TB-PIR-RTU | 7-day programmable | Conventional systems | FCC Part 15, Subpart B, Class A | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7652B5014W/U | 2 Heat / 2 Cool | ZigBee Wireless | Upgradeable with PIR occupancy sensor cover TB-PIR-RTU | 7-day programmable | Conventional systems | FCC Part 15, Subpart C | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7652B5514B/U | 2 Heat / 2 Cool | BACnet MS/TP | Onboard PIR occupancy sensor cover | 7-day programmable | Conventional systems | FCC Part 15, Subpart B, Class A | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7652B5514W/U | 2 Heat / 2 Cool | ZigBee Wireless | Onboard PIR occupancy sensor cover | 7-day programmable | Conventional systems | FCC Part 15, Subpart C | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7652H5014B/U | 3 Heat / 2 Cool | BACnet MS/TP | Upgradeable with PIR occupancy sensor cover TB-PIR-RTU | 7-day programmable | Heat Pump Systems | FCC Part 15, Subpart B, Class A | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7652H5014W/U | 3 Heat / 2 Cool | ZigBee Wireless | Upgradeable with PIR occupancy sensor cover TB-PIR-RTU | 7-day programmable | Heat Pump Systems | FCC Part 15, Subpart C | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7652H5514B/U | 3 Heat / 2 Cool | BACnet MS/TP | Onboard PIR occupancy sensor cover | 7-day programmable | Heat Pump Systems | FCC Part 15, Subpart B, Class A | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7652H5514W/U | 3 Heat / 2 Cool | ZigBee Wireless | Onboard PIR occupancy sensor cover | 7-day programmable | Heat Pump Systems | FCC Part 15, Subpart C | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7656B5014B/U | 2 Heat / 2 Cool | BACnet MS/TP | Upgradeable with PIR occupancy sensor cover TB-PIR-RTU | 7-day programmable | Conventional systems | FCC Part 15, Subpart B, Class A | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7656B5014W/U | 2 Heat / 2 Cool | ZigBee Wireless | Upgradeable with PIR occupancy sensor cover TB-PIR-RTU | 7-day programmable | Conventional systems | FCC Part 15, Subpart C | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7656B5514B/U | 2 Heat / 2 Cool | BACnet MS/TP | Onboard PIR occupancy sensor cover | 7-day programmable | Conventional systems | FCC Part 15, Subpart B, Class A | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |
| TB7656B5514W/U | 2 Heat / 2 Cool | ZigBee Wireless | Onboard PIR occupancy sensor cover | 7-day programmable | Conventional systems | FCC Part 15, Subpart C | Remote Temperature Sensor, Outdoor Air Sensor & Mixed Air Sensor Inputs; 2 Digital Inputs; 1 Aux Output |

Communicating Thermostats


Commercial Communicating Thermostats Accessories

| Material Number | Description | |
|-------------------|--|---|
| TB-RA-1014/U | WEBS-AX ZigBee Wireless Communication Card Remote Antenna |  |
| TB-RP5000W/U | ZigBee Wireless Repeater for TB7200 and TB7600 Series Wireless Communicating Thermostat Networks |  |
| TB-VWG-APP-1014/U | WEBS-AX ZigBee Wireless Communication Card for TB7200 and TB7600 Series Wireless Communicating Thermostat Networks |  |


TB7200 Communicating Zoning Thermostat Accessories

| Material Number | Description | |
|-----------------|---|---|
| TB-PIR-ZN/U | TB7200 Communicating Zoning Thermostat PIR Occupancy Sensor Cover |  |

TB7300 Series Communicating Digital Fan Coil Thermostat Accessories

| Material Number | Description | |
|-----------------|---|---|
| TB-PIR-FCU-C/U | TB7300 Fan Coil Thermostat PIR Occupancy Sensor Cover for Commercial Models |  |
| TB-PIR-FCU-L/U | TB7300 Fan Coil Thermostat PIR Occupancy Sensor Cover for Lodging Models | |

TB7600 Communicating RTU/Heat Pump Thermostat Accessories

| Material Number | Description | Used With | |
|-----------------|---|--|---|
| TB-PIR-RTU/U | TB7600 Series RTU/Heat Pump Thermostat PIR Occupancy Sensor Cover | TB7600 Series RTU/Heat Pump Thermostats |  |
| TBST-5014W/U | ZigBee Wireless Survey Tool kit for TB7200 and TB7600 Series Wireless Communicating Thermostat Networks | TB7200, TB7600 Series Wireless Communicating Thermostats | |

Pressure Independent Control Valves

VRN Threaded Pressure Independent Control Valves

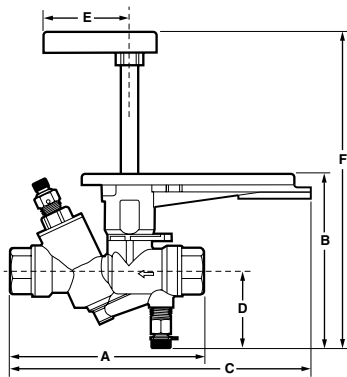


The VRN series pressure independent control valves maintain the desired flow rate of hot water or chilled water in closed loop hydronic systems, with $\pm 5\%$ accuracy, irrespective of pressure drop fluctuations (within the published pressure drop range). The built-in differential pressure regulator makes this possible, eliminating control system “hunting,” even at low coil flow. The regulator virtually eliminates the risk of cavitation in the valve, and decimates the effects of piping geometry, from components such as reducers and elbows, to negligible levels.

Pressure independent control valves are sized to match design coil flow, while eliminating the need for balancing valves to balance the system. They allow coils in terminal unit reheat and chillers alike to be operated at maximum efficiency at most load conditions.

- Available in sizes from 1/2 in. to 3 in. with female NPT connections
- Regulated flow rates available from 1 to 95 gpm, with multiple flow rates per valve size
- Differential pressure regulator for constant pressure drop across valve seat
- Positive pressure, rolling diaphragm regulator design for long service life
- Patented ball seals require low operating torque
- Nickel-chrome plated brass, or stainless steel trim
- Factory installed actuators with and without fail-safe
- Upstream Test Port included
- Three actuator mounting orientations possible for installation space considerations

Dimensions in inches (millimeters)



| VALVE SIZE (IN.) | DIMENSIONS IN INCHES (MM) | | | | | | |
|------------------|---------------------------|---------------|----------------|-------------|------------|-----------------------------|-----------------------------|
| | A | B | C | D | E | F _z ^a | F _s ^a |
| 1/2 | 5-11/16 (145) | 4-5/16 (109) | 8-19/32 (218) | 1 (26) | 2-1/2 (64) | 8-13/32 (213) | 7-3/16 (182) |
| 3/4 | | | 8-45/64 (221) | | | | |
| 1 | 5-29/32 (150) | 4-19/32 (117) | 10-57/64 (277) | 1-5/8 (41) | | 9-13/32 (239) | 8-3/16 (207) |
| 1-1/4 | 8-3/32 (213) | | 10-19/32 (269) | | | | |
| 1-1/2 | 8-3/16 (208) | | 10-1/2 (267) | | | | |
| | 10 (254) | 5-3/16 (132) | 12-3/32 (307) | 2-3/32 (53) | | 10-13/32 (264) | 9-3/16 (232) |
| 2 | 9-29/32 (251) | | 12 (305) | | | | |
| 2-1/2 | 10-9/32 (263) | | 12-3/16 (310) | | | | |
| 3 | 10-13/16 (274) | | 12-13/32 (314) | | | | |

^a LONG SHAFT SUPPLIED WITH “ZELIX” (Z) DIRECT COUPLED ACTUATORS; SHORT SHAFT SUPPLIED WITH “SALT” (S) NON-SPRING RETURN DCAS. M31310A

Valve Type: Pressure Independent Control Valve

Body Pattern: 2-way, straight-through

Flow Characteristic: Equal Percentage with flow control insert

Connection Type: Female-NPT

Controlled Medium: Chilled or hot water with up to 50% Glycol; not for use with steam or fuels

Valve Action: Quarter-turn rotary

Maximum Safe Operating Pressure: 360 psi (2500 kPa)

Maximum Safe Operating Temperature: 248°F (120°C)

Maximum Close-off Pressure: 100 psid (690 kPa)

Fluid Temperature Range: -22°F to +250°F (-30°C to +121°C)

Ambient Temperature Range: 14°F to 131°F (-10°C to 55°C)

Accuracy: ($\pm 5\%$ over specified pressure range)

Stem Travel: 90 deg. rotation

Materials

(Body): Forged Brass ASTM B584

(Stem): See table

(Seat): Teflon seals / EPDM O-rings

(Regulator): Stainless Steel

(Plug/Ball/Disc): See table

(Packing): Teflon seals / EPDM O-rings

(Diaphragm): Hydrogenated Acrylonitrile Butadiene Rubber

Pressure Independent Control Valves

| Valve Specification | | | | Valve Trim | Plated Brass | Stainless Steel | Plated Brass | Stainless Steel |
|---------------------|----------|-----------------------------|---------------|---------------|-------------------------|-----------------|---------------|-----------------|
| Valve Size (inches) | Max. gpm | Differential Pressure, psid | | | Valve Body Model Number | | | |
| | | Min | Max | Close-off | | | | |
| 1/2" | 1 | 3 | 35 | 100 | VRN2A001.00PA | VRN2A001.00SA | VRN2A001.00PX | VRN2A001.00SX |
| | 2 | | | | VRN2A002.00PA | VRN2A002.00SA | VRN2A002.00PX | VRN2A002.00SX |
| | 3 | | | | VRN2A003.00PA | VRN2A003.00SA | VRN2A003.00PX | VRN2A003.00SX |
| | 4 | | | | VRN2A004.00PA | VRN2A004.00SA | VRN2A004.00PX | VRN2A004.00SX |
| | 5 | | | | VRN2A005.00PA | VRN2A005.00SA | VRN2A005.00PX | VRN2A005.00SX |
| | 6 | | | | VRN2A006.00PA | VRN2A006.00SA | VRN2A006.00PX | VRN2A006.00SX |
| | 7 | | | | VRN2A007.00PA | VRN2A007.00SA | VRN2A007.00PX | VRN2A007.00SX |
| 3/4" | 1 | 3 | 35 | 100 | VRN2B001.00PA | VRN2B001.00SA | VRN2B001.00PX | VRN2B001.00SX |
| | 2 | | | | VRN2B002.00PA | VRN2B002.00SA | VRN2B002.00PX | VRN2B002.00SX |
| | 3 | | | | VRN2B003.00PA | VRN2B003.00SA | VRN2B003.00PX | VRN2B003.00SX |
| | 4 | | | | VRN2B004.00PA | VRN2B004.00SA | VRN2B004.00PX | VRN2B004.00SX |
| | 5 | | | | VRN2B005.00PA | VRN2B005.00SA | VRN2B005.00PX | VRN2B005.00SX |
| | 6 | | | | VRN2B006.00PA | VRN2B006.00SA | VRN2B006.00PX | VRN2B006.00SX |
| | 7 | | | | VRN2B007.00PA | VRN2B007.00SA | VRN2B007.00PX | VRN2B007.00SX |
| | 8 | 6 | VRN2B008.00PA | VRN2B008.00SA | VRN2B008.00PX | VRN2B008.00SX | | |
| | 9 | | VRN2B009.00PA | VRN2B009.00SA | VRN2B009.00PX | VRN2B009.00SX | | |
| | 10 | | VRN2B010.00PA | VRN2B010.00SA | VRN2B010.00PX | VRN2B010.00SX | | |
| 1" | 1 | 3 | 35 | 100 | VRN2C001.00PA | VRN2C001.00SA | VRN2C001.00PX | VRN2C001.00SX |
| | 2 | | | | VRN2C002.00PA | VRN2C002.00SA | VRN2C002.00PX | VRN2C002.00SX |
| | 3 | | | | VRN2C003.00PA | VRN2C003.00SA | VRN2C003.00PX | VRN2C003.00SX |
| | 4 | | | | VRN2C004.00PA | VRN2C004.00SA | VRN2C004.00PX | VRN2C004.00SX |
| | 5 | | | | VRN2C005.00PA | VRN2C005.00SA | VRN2C005.00PX | VRN2C005.00SX |
| | 6 | | | | VRN2C006.00PA | VRN2C006.00SA | VRN2C006.00PX | VRN2C006.00SX |
| | 7 | | | | VRN2C007.00PA | VRN2C007.00SA | VRN2C007.00PX | VRN2C007.00SX |
| | 8 | 6 | VRN2C008.00PA | VRN2C008.00SA | VRN2C008.00PX | VRN2C008.00SX | | |
| | 9 | | VRN2C009.00PA | VRN2C009.00SA | VRN2C009.00PX | VRN2C009.00SX | | |
| | 10 | 3 | 50 | VRN2C010.00PA | VRN2C010.00SA | VRN2C010.00PX | VRN2C010.00SX | |
| | 15 | | | VRN2C015.00PA | VRN2C015.00SA | VRN2C015.00PX | VRN2C015.00SX | |
| | 20 | | | VRN2C020.00PA | VRN2C020.00SA | VRN2C020.00PX | VRN2C020.00SX | |
| 1-1/4" | 10 | 3 | 50 | 100 | VRN2D010.00PA | VRN2D010.00SA | VRN2D010.00PX | VRN2D010.00SX |
| | 15 | | | | VRN2D015.00PA | VRN2D015.00SA | VRN2D015.00PX | VRN2D015.00SX |
| | 20 | 4 | | | VRN2D020.00PA | VRN2D020.00SA | VRN2D020.00PX | VRN2D020.00SX |
| | 25 | | | | VRN2D025.00PA | VRN2D025.00SA | VRN2D025.00PX | VRN2D025.00SX |
| | 30 | 5 | | | VRN2D030.00PA | VRN2D030.00SA | VRN2D030.00PX | VRN2D030.00SX |
| | 35 | | | | VRN2D035.00PA | VRN2D035.00SA | VRN2D035.00PX | VRN2D035.00SX |

| Actuator Features | | | | | |
|-------------------|----------------|---------|-----------|-----------------|-----------------------|
| MVN | | | | | Standard Profile |
| Actuator Type | Control Signal | Timing | Voltage | Enclosure | Actuator Model Number |
| Fail-in-Place | Floating | 90 sec. | 24 VAC | NEMA 2 IP 54 | +MVN613A0000 |
| | Fast SPDT | 30 sec. | 24 VAC/DC | | +MVN643A0000 |
| | Modulating | 90 sec. | 24 VAC/DC | | +MVN713A0000 |
| Accessories | 1 meter cable | | | | +C1 |

Pressure Independent Control Valves

| Valve Specification | | | | Valve Trim | Plated Brass | Stainless Steel |
|---------------------|---------------|-----------------------------|---------------|---------------|-------------------------|-----------------|
| Valve Size (inches) | Max. gpm | Differential Pressure, psid | | Close-off | Valve Body Model Number | |
| | | Min | Max | | | |
| 1-1/2" | 10 | 3 | 50 | 100 | VRN2E010.00PX | VRN2E010.00SX |
| | 15 | | | | VRN2E015.00PX | VRN2E015.00SX |
| | 20 | | | | VRN2E020.00PX | VRN2E020.00SX |
| | 25 | 4 | 58 | | VRN2E025.00PX | VRN2E025.00SX |
| | 30 | | | | VRN2E030.00PX | VRN2E030.00SX |
| | 35 | 5 | 58 | | VRN2E035.00PX | VRN2E035.00SX |
| | 40 | | | | VRN2E040.00PX | VRN2E040.00SX |
| | 45 | | | | VRN2E045.00PX | VRN2E045.00SX |
| | 50 | 6 | VRN2E050.00PX | | VRN2E050.00SX | |
| 2" | 25 | 4 | 58 | 100 | VRN2F025.00PX | VRN2F025.00SX |
| | 30 | | | | VRN2F030.00PX | VRN2F030.00SX |
| | 35 | | | | VRN2F035.00PX | VRN2F035.00SX |
| | 40 | 6 | 58 | | VRN2F040.00PX | VRN2F040.00SX |
| | 45 | | | | VRN2F045.00PX | VRN2F045.00SX |
| | 50 | 7 | 58 | | VRN2F050.00PX | VRN2F050.00SX |
| | 55 | | | | VRN2F055.00PX | VRN2F055.00SX |
| | 60 | | | | VRN2F060.00PX | VRN2F060.00SX |
| | 65 | 10 | 58 | | VRN2F065.00PX | VRN2F065.00SX |
| | 70 | | | | VRN2F070.00PX | VRN2F070.00SX |
| | 75 | | | | VRN2F075.00PX | VRN2F075.00SX |
| | 80 | | | | VRN2G025.00PX | VRN2G025.00SX |
| | 2-1/2" | 30 | 6 | | 58 | 100 |
| 35 | | VRN2G035.00PX | | VRN2G035.00SX | | |
| 40 | | VRN2G040.00PX | | VRN2G040.00SX | | |
| 45 | | 7 | 58 | VRN2G045.00PX | VRN2G045.00SX | |
| 50 | | | | VRN2G050.00PX | VRN2G050.00SX | |
| 55 | | 10 | 58 | VRN2G055.00PX | VRN2G055.00SX | |
| 60 | | | | VRN2G060.00PX | VRN2G060.00SX | |
| 65 | | | | VRN2G065.00PX | VRN2G065.00SX | |
| 70 | | 12 | 58 | VRN2G070.00PX | VRN2G070.00SX | |
| 75 | | | | VRN2G075.00PX | VRN2G075.00SX | |
| 80 | | | | VRN2G080.00PX | VRN2G080.00SX | |
| 85 | | | | VRN2G085.00PX | VRN2G085.00SX | |
| 95 | | 12 | VRN2G095.00PX | VRN2G095.00SX | | |
| 3" | 25 | 4 | 58 | 100 | VRN2H025.00PX | VRN2H025.00SX |
| | 30 | | | | VRN2H030.00PX | VRN2H030.00SX |
| | 35 | | | | VRN2H035.00PX | VRN2H035.00SX |
| | 40 | 6 | 58 | | VRN2H040.00PX | VRN2H040.00SX |
| | 45 | | | | VRN2H045.00PX | VRN2H045.00SX |
| | 50 | 7 | 58 | | VRN2H050.00PX | VRN2H050.00SX |
| | 55 | | | | VRN2H055.00PX | VRN2H055.00SX |
| | 60 | | | | VRN2H060.00PX | VRN2H060.00SX |
| | 65 | 10 | 58 | | VRN2H065.00PX | VRN2H065.00SX |
| | 70 | | | | VRN2H070.00PX | VRN2H070.00SX |
| | 75 | | | | VRN2H075.00PX | VRN2H075.00SX |
| | 80 | | | | VRN2H080.00PX | VRN2H080.00SX |
| | 85 | 12 | 58 | | VRN2H085.00PX | VRN2H085.00SX |
| 95 | VRN2H095.00PX | | | VRN2H095.00SX | | |

| Actuator Features | | | | | |
|---|--|---------|-----------|-----------|--------------|
| Direct Coupled Actuators | | | | | |
| Actuator Type | Control Signal | Timing | Voltage | Enclosure | Model Number |
| Fail-in-Place | Floating | 95 sec. | 24 VAC/DC | NEMA 2 | +MN6105A1011 |
| Fail-in-Place | Modulating, Floating | 95 sec. | | | +MN7505A2001 |
| Fail Safe | Modulating, Floating | 95 sec. | | | +MS7505A2030 |
| Fail Safe | 1 meter cable | 95 sec. | | | +MS8105A1030 |
| Fail Safe Position (MS actuators only - open, closed, A-AB, B-AB) | FSO - Fail Safe Open FSC - Fail Safe Closed | | | | FSO or FSC |
| Accessories | | | | | +3R |

Replacement Stem Assemblies for VRN Valves




| Pipe Size | | Valve Code | Max GPM Flow Rating | Replacement Stem Assembly * |
|-----------|----|------------|--|-----------------------------|
| In. | DN | | | |
| 1/2 | 15 | VRN2A | 1, 2, 3, 4, 5, 6, 7 | 5112-19, 5112-22 (SS) |
| 3/4 | 20 | VRN2B | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 | |
| 1 | 25 | VRN2C | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15 20 | |
| 1-1/4 | 32 | VRN2D | 10, 15, 20, 25, 30, 35 | 5112-20, 5112-23 (SS) |
| 1-1/2 | 40 | VRN2E | 10, 15, 20, 25, 30, 35 40, 45, 50 | |
| 2 | 50 | VRN2F | 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75 | 5112-21, 5112-24 (SS) |
| 2-1/2 | 65 | VRN2G | 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 95 | |
| 3 | 80 | VRN2H | 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 95 | |

* Replacement stems available in brass or stainless steel — use accordingly to valve part number.

Replacement Regulators for VRN Valves

| Pipe Size | | Valve Code | Max GPM Flow Rating | Replacement Regulator | Max GPM Flow Rating | Replacement Regulator |
|-----------|----|------------|--|-----------------------|----------------------|-----------------------|
| In. | DN | | | | | |
| 1/2 | 15 | VRN2A | 1, 2, 3 | 8615-100 | 4, 5, 6, 7 | 8615-101 |
| 3/4 | 20 | VRN2B | 1, 2, 3 | | 4, 5, 6, 7, 8, 9, 10 | |
| 1 | 25 | VRN2C | 1, 2, 3 10, 15, 20 | 8615-102 | 4, 5, 6, 7, 8, 9 | |
| 1-1/4 | 32 | VRN2D | 10, 15, 20, 25, 30, 35 | | | |
| 1-1/2 | 40 | VRN2E | 10, 15, 20, 25, 30 35, 40, 45, 50 | 8615-031 | | |
| 2 | 50 | VRN2F | 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75 | | | |
| 2-1/2 | 65 | VRN2G | 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 95 | | | |
| 3 | 80 | VRN2H | 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 95 | | | |

MVN Actuator Accessories and Replacement Parts

| Material Number | Description | Used With | |
|-----------------|---|--|---|
| MVNAAA/U | Replacement Valve Adaptor | MVN613A0000, MVN643A0000, MVN713A0000 |  |
| MVNAAL/U | Replacement Valve Adaptor, Low Profile | MVN613L0000, MVN643L0000, MVN713L0000 |  |
| MVNAC6131/U | Replacement Cable with Terminals for Floating Actuators | MVN613A0000, MVN613L0000, MVN643A0000, MVN643L0000 |  |
| MVNAC7131/U | Replacement Cable with Terminals for Modulating Actuators | MVN713A0000, MVN713L0000 | |
| MVNAT3/B | Replacement Screw type Terminal Block, Pluggable | MVN613A0000, MVN613L0000, MVN643A0000, MVN643L0000, MVN713A0000, MVN713L0000 | |

Pressure Independent Control Valves

VRW2 Flanged Pressure Independent Control Valves



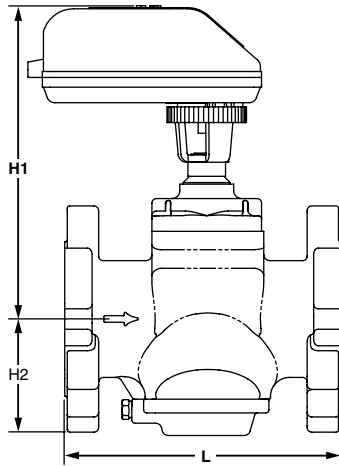
The VRW2 two-way pressure independent control valves maintain constant flow of hot and chilled water in closed-loop heating, ventilating, and air conditioning (HVAC) systems regardless of head pressure fluctuations above minimum specified pressure drop. These valves come complete with proportional, stay-in-place or electronic fail-safe actuators.

The built-in differential pressure regulator makes fluid flow through the valve independent of changes in supply pressure, eliminating “hunting” by the control system, even at low coil flow. The pressure regulator virtually eliminates cavitation in the valve, and decouples the control valve from the effects of piping components such as reducers and elbows.

Pressure independent control valves are sized to match design coil flow regardless of coil size. VRW2 valves eliminate the need to balance the system for proper flow, and allow chillers to be operated at design temperature differential for maximum efficiency at every load condition. When used in a system with variable speed pump drives, 3-way valves and coil bypass lines are not required.

- Multi-sized bodies from 2 1/2 to 6 inch pipes with wafer flanged connections
- Combination ANSI/ASME Class 150/300 pressure rating
- Controls hot or chilled water with up to 50% glycol
- Regulated flow rates available from 39 to 469 gpm
- Stainless steel pressure regulator maintains constant pressure drop across valve seat
- Positive pressure, rolling diaphragm regulator design provides flow control accuracy of $\pm 5\%$ over specified pressure range
- Equal percentage flow characteristic using multi turn, non-rising, characterized plug
- High close-off rating
- 50 discrete, selectable flow rates available per valve size
- Stainless steel trim
- Six-turn actuator with floating or modulating inputs available with stay-in-place or electronic fail-safe action
- Fail-safe actuators field-configurable for normally open or normally closed power failure return position
- Two Test Ports for venting or pressure gauge attachment

Dimensions in inches (millimeters)



| MODEL (SIZE) | L IN. (MM) | H1 IN. (MM) | H2 IN. (MM) |
|----------------------|--------------|--------------|-------------|
| VRW2J... (2-1/2 & 3) | 8 3/4 (224) | 9 3/4 (246) | 3 3/4 (95) |
| VRW2K... (3 & 4) | 12 5/8 (320) | 11 3/8 (290) | 5 1/4 (135) |
| VRW2L... (5 & 6) | 16 5/8 (422) | 13 1/4 (338) | 7 1/8 (180) |

M34706

Valve Type: Wafer flanged dynamic pressure-regulated control valve

Body Pattern: 2-way, straight-through

Flow Characteristic: Equal Percentage

Connection Type: Wafer flange

Controlled Medium: Chilled or hot water with up to 50% Glycol; not for use with steam or fuels

Valve Action: Multi-turn linear

Leakage Rating: 0.2% max

Maximum Safe Operating Pressure: 580 psig (4000 kPa)

Maximum Safe Operating Temperature: 248°F (120°C)

Maximum Close-off Pressure: 101 psid (700 kPa)

Fluid Temperature Range: -4°F to 248°F (-20°C to 120°C)

Ambient Temperature Range: 14°F to 131°F (-10°C to 55°C)

Accuracy: ($\pm 5\%$ over specified pressure range)

Stem Travel: 1 to 6 Rotations in 51 equal, field-selectable increments

ANSI/ ASME Class: 150/300

Comments: 2 - 10V position feedback signal

Materials

(Body): Ductile Iron, ASTM A536-65T, Class 60-45-18

(Stem): Stainless Steel

(Seat): 316 Stainless steel

(Regulator): 316 Stainless steel

(Plug/Ball/Disc): 316 Stainless steel

(Packing): EPDM and Nitrile O-rings

(Diaphragm): EPDM

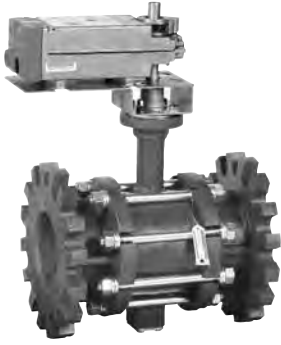
Pressure Independent Control Valves

| Valve, Regulated | Pipe Fitting | Body Pattern | Valve Size | Flow Rating | Pressure Rating | Valve Trim | Actuator Secondary Spec | Actuator Control Form | Description |
|------------------|--|-------------------------------|------------|--|-------------------|---------------------------------------|-------------------------|-------------------------------|--|
| VR | Dynamic pressure regulated control valve | | | | | | | | |
| | W | Combination-size wafer flange | | | | | | | |
| | | 2 | 2-way | | | | | | |
| | | | J | Valve size, 2-1/2 and 3 in. (DN65 and DN80) | | | | | |
| | | | K | Valve size, 3 and 4 in. (DN80 and DN100) | | | | | |
| | | | L | Valve size, 5 and 6 in. (DN125 and DN150) | | | | | |
| | | | V | Adjustable, low minimum differential pressure | | | | | |
| | | | W | Adjustable, high minimum differential pressure | | | | | |
| | | | | 4 | ANSI/ASME 150/300 | | | | |
| | | | | | S | Stainless steel trim, dual Test Ports | | | |
| | | | | | | M | Multi-turn valve | | |
| | | | | | | | B | Modulating actuator | |
| | | | | | | | D | Modulating fail-safe actuator | |
| VR | W | 2 | K | V | 4 | S | M | B | = 2-way, 3 & 4 in. wafer flanged dynamic pressure-regulated valve, SS trim, 55~147 gpm, modulating electronic fail safe. |

^a Wafer-style flanges for each model fit between 2 pipe flange sizes, of either ANSI/ASME Class 150 or Class 300. Valve is suspended from the rods joining the flanges attached to the pipes.

Control Ball Valves

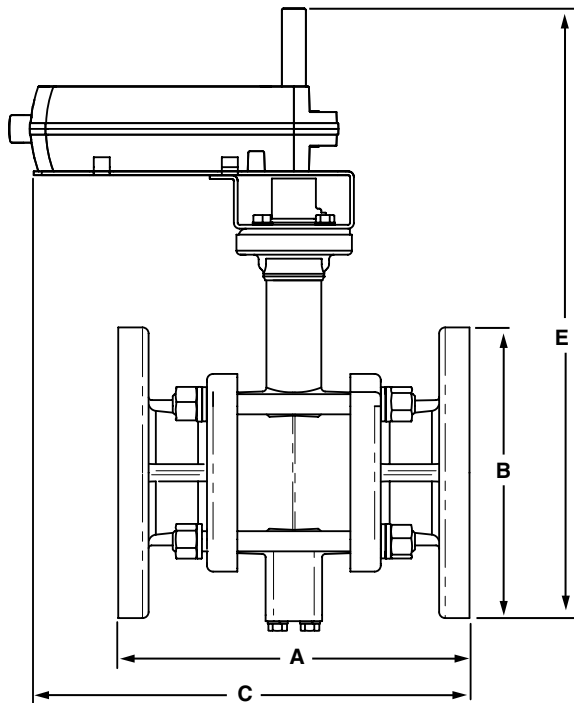
VBF2 Two-way Flanged Control Ball Valve



The VBF2 Two-Way Ball Valve Assemblies, with and without actuators, control hot and chilled water with glycol solutions up to 50% in closed loop heating, ventilating, and air conditioning (HVAC) systems to provide two-position or modulating functions. These valve assemblies can be ordered with or without factory-mounted non-spring return or spring return direct-coupled actuators (DCA).

- Sizes from 4 to 6 inch with ANSI Class 125 flanged connections
- Equal percentage or linear flow characteristics
- Choice of four, factory-installed actuation control schemes: 24 Vac Floating/2-position, 24 Vac Modulating (0)2-10 Vdc, 24 Vac 2-position spring return, and 24 Vac (0)2-10 Vdc/Floating spring return
- Field configurable for normally open or normally closed fail-safe position
- Removable manual operating handle to control valve during installation or in an event of power failure
- ANSI Class IV leakage specification (0.01% of C_v)
- Optional NEMA 3R (IP54) rated enclosure for outdoor applications
- Option of four actuator mounting positions on the valve
- Wide range of C_v choices from 91 to 650
- Valve ball and stem 316 stainless steel

Dimensions in inches (millimeters)



Valve Type: Control Ball Valve

Body Pattern: Two-way

Connection Type: Flanged

Flow Characteristic: Equal percentage

Controlled Medium: Chilled or hot water with up to 50% Glycol; not for use with steam or fuels.

Leakage Rating: ANSI Class IV (0.01% of C_v maximum)

Maximum Safe Operating Pressure: 240 psi (1655 kPa)

Maximum Differential Pressure Ratings (Close-off): 70 psi (483 kPa)

Fluid Temperature Range: -22°F to +250°F (-30°C to +121°C)

Materials

(Body): Cast Iron

(Stem): 316 Stainless Steel

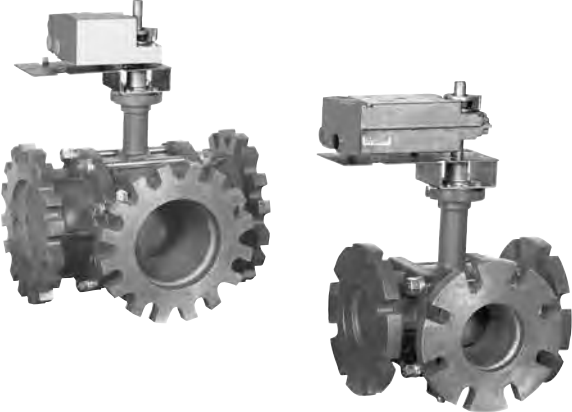
(Seat): Teflon®

(Plug/Ball/Disc): 316 stainless steel

| Size (in.) | Model Number | A in. (mm) | B in. (mm) | C in. (mm) | D (depth) in. (mm) (not shown) | E in. (mm) | Wt. lb (kg) |
|------------|--------------|--------------|------------|--------------|--------------------------------|--------------|-------------|
| 4 | VBF2J | 11 (278) | 9 (229) | 13-1/4 (337) | 9 (229) | 18-3/4 (476) | 65 (31) |
| 5 | VBF2K | 12-3/8 (352) | 10 (254) | 14-1/4 (362) | 10 (254) | 19 (483) | 75 (34) |
| 6 | VBF2L | 13-7/8 (352) | 11 (278) | 15-1/8 (384) | 11 (278) | 19-7/8 (505) | 90 (41) |

M113732

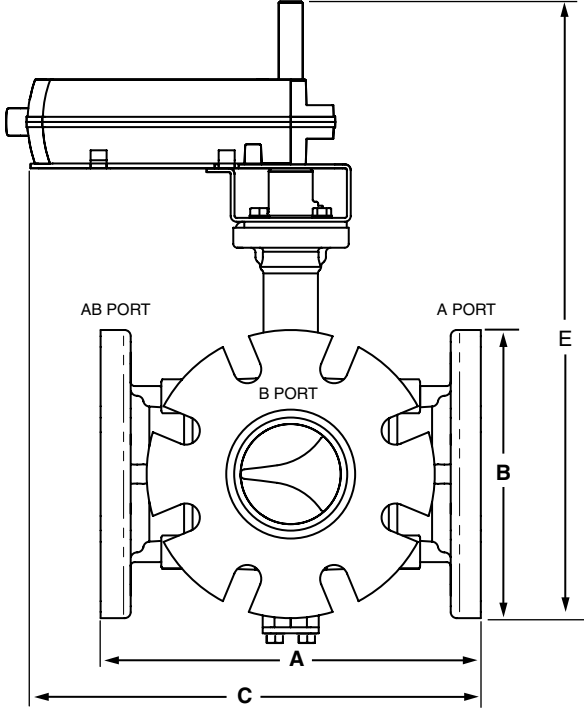
VBF3 Three-way Flanged Control Ball Valve



The VBF3 Three-Way Ball Valve Assemblies, with and without actuators, control hot and chilled water with glycol solutions up to 50% in closed loop heating, ventilating, and air conditioning (HVAC) systems to provide two-position or modulating functions. These valve assemblies can be ordered with or without factory-mounted non-spring return or spring return direct-coupled actuators (DCA).

- Sizes from 4 to 6 inch with ANSI Class 125 flanged connections
- Equal percentage or linear flow characteristics
- Choice of four, factory-installed actuation control schemes: Floating, Modulating (2-10 V), Spring Return 24V 2-Position, Spring Return Modulating/Floating
- Field configurable for normally open or normally closed fail-safe position
- Removable manual operating handle to control valve during installation or in an event of power failure
- ANSI Class IV A-port seat leakage (0.01% of C_v)
- Optional NEMA 3R (IP54) rated enclosure for outdoor applications
- Option of four actuator mounting positions on the valve
- Wide range of C_v choices from 91 to 650
- Valve ball and stem 316 stainless steel
- Non-isolating mixing or diverting control

Dimensions in inches (millimeters)



Valve Type: Control Ball Valve
Body Pattern: Three-way
Connection Type: Flanged
Flow Characteristic: Linear (B-AB); Equal Percentage (A-AB)
Controlled Medium: Chilled or hot water with up to 50% Glycol; not for use with steam or fuels
Leakage Rating: Mixing or diverting control and ANSI Class IV leakage (.01% of C_v) for all sizes except 4" with 324 C_v, 5" with 400 C_v, 6" with 650 C_v. These are for mixing only and have Class IV leakage A to AB, and Class III leakage (.1% of C_v) B to AB.
Maximum Safe Operating Pressure: 240 psi (1655 kPa)
Maximum Differential Pressure Ratings (Close-off): 70 psi (483 kPa)
Fluid Temperature Range: -22°F to +250°F (-30°C to +121°C)
Materials
(Body): Cast Iron
(Stem): 316 Stainless Steel
(Seat): Teflon®
(Plug/Ball/Disc): 316 stainless steel

| Size (in.) | Model Number | A in. (mm) | B in. (mm) | C in. (mm) | D (depth) (not shown) in. (mm) | E in. (mm) | Wt. lb (kg) |
|------------|--------------|--------------|------------|--------------|--------------------------------|--------------|-------------|
| 4 | VBF3J | 11-7/8 (278) | 9 (229) | 14-1/8 (337) | 10-3/8 (229) | 18-1/2 (470) | 75 (34) |
| 5 | VBF3K | 13-7/8 (352) | 10 (254) | 15-1/8 (362) | 12 (254) | 19-3/8 (483) | 90 (41) |
| 6 | VBF3L | 15-7/8 (403) | 11 (278) | 16-1/8 (410) | 13-3/8 (521) | 20-1/2 (521) | 105 (48) |

M13733A

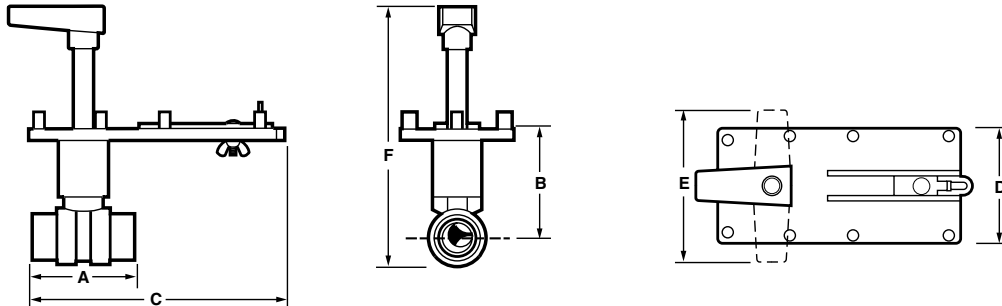
VBN2 Two-way Threaded Control Ball Valve



- Sizes from 1/2 to 3 in. with internal (female) NPT connections.
- Equal percentage flow characteristic.
- Choice of factory-installed actuation: floating, modulating (2-10 V), spring return or non-spring return 2-Position, Spring Return Modulating/Floating.
- Field configurable for normally open or normally closed fail-safe position.
- Removable manual operating handle to control valve during installation or in an event of power failure.
- Actuator can be mounted on the valve in any of four orientations.
- Field-serviceable stem assembly.
- Wide range of C_v choices from 0.33 to 266.
- Nickel-chrome plated brass or 316 stainless steel ball and stem.
- Valve installs in a globe valve "T" pattern, no extra elbows or piping required.
- Mixing or Diverting control for 3-way valves.

The VBN2 2-Way Control Ball Valves control hot and chilled water with glycol solutions up to 50% in heating, ventilating, and air conditioning (HVAC) systems to provide two-position or modulating functions. These control ball valves can be ordered alone or with spring return or non-spring return actuators.

Dimensions in inches (millimeters)



| Pipe Size | | | C _v Designators | Dimensions in inches (mm) | | | | | | Weight | | | | |
|-----------|------|----------|----------------------------|---------------------------|--------------|---------------|---------------|---------|----------------|--------|-------|--------------|-------|-------|
| In. | (DN) | Code | | A | B | C | D | E | F | lb | (kg) | | | |
| 1/2 | (15) | VBN2A... | B, D, E, F, G, H, K* | 2-3/8 (60) | 2-3/4 (69) | 6-5/8 (169) | 3 (76) | 4 (102) | 8-1/8 (206) | 1.0 | (0.5) | | | |
| | | | J | 2-5/8 (67) | 2-7/8 (72) | 6-1/2 (166) | | | 8-5/16 (211) | | | | | |
| 3/4 | (20) | VBN2B... | B, D, E, G, H, J, L* | 2-3/4 (69) | 2-7/8 (72) | 6-7/16 (163) | | | 8-1/8 (206) | | | | | |
| | | | K, M* | | | 6-1/2 (166) | | | | | | 8-5/16 (211) | | |
| 1 | (25) | VBN2C... | J | 2-3/4 (70) | 3-1/16 (77) | 7-1/16 (180) | | | 8-11/16 (220) | | | 1.4 | (0.6) | |
| | | | H, L, P* | 3-1/16 (77) | | 6-3/4 (171) | | | | | | 2.4 | | (1.1) |
| | | | M, N* | 4-5/16 (109) | | 7-3/8 (188) | | | | | | 8-7/8 (225) | | |
| 1-1/4 | (32) | VBN2D... | H, J, K, L, N* | 3 (76) | 3-1/8 (79) | 6-11/16 (170) | | | 9-1/16 (231) | | | 2.4 | (1.1) | |
| | | | M, S* | 3-5/8 (92) | 3-1/4 (82) | 7 (178) | | | | | | | | |
| 1-1/2 | (40) | VBN2E... | L, M, R* | 3-7/16 (87) | 3-3/4 (95) | 6-15/16 (176) | | | 8-7/8 (225) | | | 3.2 | (1.5) | |
| | | | N, 1* | 4-1/16 (103) | | 7-1/16 (179) | | | | | | | | |
| 2 | (50) | VBN2F... | N, T* | 4 (101) | 4-1/16 (103) | 7-3/16 (183) | 10-1/2 (266) | 5.0 | (2.3) | | | | | |
| | | | P, R, S, 1, 2* | 4-15/16 (125) | | 7-7/16 (188) | | | | | | | | |
| 2-1/2 | (65) | VBN2G... | N, P, R, S, U, 1* | 5-5/16 (135) | 7-9/16 (192) | 7-9/16 (192) | 5.5 | (2.5) | | | | | | |
| 3 | (80) | VBN2H... | N, P, R, T, U* | 5-3/4 (146) | | | 7-11/16 (196) | | 10-11/16 (272) | 5.9 | (2.7) | | | |

* Indicates full port valve: no flow characterizing insert.

M34740

Control Ball Valves

Example of complete order-able part number: VBN2A000.38SA+MVN643A0000+C1 Control Ball Valve, Female NPT Thread, 2-way, 1/2", C, 0.38, Stainless Steel, Standard Profile with MVN643A0000 Actuator, Fail-in-place and 1 meter. Standard profile provides clearance between valve and actuator for insulation. Low profile enables installation of valve and actuator in tight spaces.

| Valve Specification | | Valve Profile | Standard Profile | | Low Profile | |
|---------------------|---------------------------------------|----------------|-------------------------|-----------------|---------------|-----------------|
| Valve Size (inches) | Close-off Differential Pressure (psi) | Valve Trim | Plated Brass | Stainless Steel | Plated Brass | Stainless Steel |
| | | C _v | Valve Body Model Number | | | |
| 1/2" | 130 | 0.38 | VBN2A000.38PA | VBN2A000.38SA | VBN2A000.38PL | VBN2A000.38SL |
| | | 0.68 | VBN2A000.68PA | VBN2A000.68SA | VBN2A000.68PL | VBN2A000.68SL |
| | | 1.3 | VBN2A001.30PA | VBN2A001.30SA | VBN2A001.30PL | VBN2A001.30SL |
| | | 2 | VBN2A002.00PA | VBN2A002.00SA | VBN2A002.00PL | VBN2A002.00SL |
| | | 2.6 | VBN2A002.60PA | VBN2A002.60SA | VBN2A002.60PL | VBN2A002.60SL |
| | | 4.7 | VBN2A004.70PA | VBN2A004.70SA | VBN2A004.70PL | VBN2A004.70SL |
| | | 8 | VBN2A008.00PA | VBN2A008.00SA | VBN2A008.00PL | VBN2A008.00SL |
| | | 11.7 | VBN2A011.70PA | VBN2A011.70SA | VBN2A011.70PL | VBN2A011.70SL |
| 3/4" | 130 | 0.31 | VBN2B000.31PA | VBN2B000.31SA | VBN2B000.31PL | VBN2B000.31SL |
| | | 0.63 | VBN2B000.63PA | VBN2B000.63SA | VBN2B000.63PL | VBN2B000.63SL |
| | | 1.2 | VBN2B001.20PA | VBN2B001.20SA | VBN2B001.20PL | VBN2B001.20SL |
| | | 2.5 | VBN2B002.50PA | VBN2B002.50SA | VBN2B002.50PL | VBN2B002.50SL |
| | | 4.3 | VBN2B004.30PA | VBN2B004.30SA | VBN2B004.30PL | VBN2B004.30SL |
| | | 7.4 | VBN2B007.40PA | VBN2B007.40SA | VBN2B007.40PL | VBN2B007.40SL |
| | | 10.1 | VBN2B010.10PA | VBN2B010.10SA | VBN2B010.10PL | VBN2B010.10SL |
| | | 14.7 | VBN2B014.70PA | VBN2B014.70SA | VBN2B014.70PL | VBN2B014.70SL |
| | | 29 | VBN2B029.00PA | VBN2B029.00SA | VBN2B029.00PL | VBN2B029.00SL |
| | | 1" | 100 | 4.4 | VBN2C004.40PA | VBN2C004.40SA |
| 9 | VBN2C009.00PA | | | VBN2C009.00SA | VBN2C009.00PL | VBN2C009.00SL |
| 15.3 | VBN2C015.30PA | | | VBN2C015.30SA | VBN2C015.30PL | VBN2C015.30SL |
| 26 | VBN2C026.00PA | | | VBN2C026.00SA | VBN2C026.00PL | VBN2C026.00SL |
| 44 | VBN2C044.00PA | | | VBN2C044.00SA | VBN2C044.00PL | VBN2C044.00SL |
| 54 | VBN2C054.00PA | | | VBN2C054.00SA | VBN2C054.00PL | VBN2C054.00SL |
| 1-1/4" | 100 | 4.4 | VBN2D004.40PA | VBN2D004.40SA | VBN2D004.40PL | VBN2D004.40SL |
| | | 8.3 | VBN2D008.30PA | VBN2D008.30SA | VBN2D008.30PL | VBN2D008.30SL |
| | | 14.9 | VBN2D014.90PA | VBN2D014.90SA | VBN2D014.90PL | VBN2D014.90SL |
| | | 25 | VBN2D025.00PA | VBN2D025.00SA | VBN2D025.00PL | VBN2D025.00SL |
| | | 37 | VBN2D037.00PA | VBN2D037.00SA | VBN2D037.00PL | VBN2D037.00SL |
| | | 41 | VBN2D041.00PA | VBN2D041.00SA | VBN2D041.00PL | VBN2D041.00SL |
| | | 102 | VBN2D102.00PA | VBN2D102.00SA | VBN2D102.00PL | VBN2D102.00SL |

| Actuator Features | | | | | | |
|-------------------|----------------|---------|-----------|-----------------|-----------------------|--------------|
| MVN | | | | | Standard Profile | Low Profile |
| Actuator Type | Control Signal | Timing | Voltage | Enclosure | Actuator Model Number | |
| Fail-in-Place | Floating | 90 sec. | 24 VAC | NEMA 2 IP 54 | +MVN613A0000 | +MVN613L0000 |
| | Fast SPDT | 30 sec. | 24 VAC/DC | | +MVN643A0000 | +MVN643L0000 |
| | Modulating | 90 sec. | 24 VAC/DC | | +MVN713A0000 | +MVN713L0000 |
| Accessories | 1 meter cable | | | | +C1 | |

Control Ball Valves

Example of complete order-able part number: VBN2E030.00SX+MN7505A2001 Control Ball Valve, Female NPT Thread, 2-way, 1-1/2", C, 30, Black Bracket, Stainless Steel with MN7505A2001 Actuator, Fail-in-place.

| Valve Specification | | Valve Profile | Black Bracket | |
|---------------------|---------------------------------------|---------------|-------------------------|-----------------|
| Valve Size (inches) | Close-off Differential Pressure (psi) | Valve Trim | Plated Brass | Stainless Steel |
| | | C, | Valve Body Model Number | |
| 1/2" | 130 | 0.38 | VBN2A000.38PX | VBN2A000.38SX |
| | | 0.68 | VBN2A000.68PX | VBN2A000.68SX |
| | | 1.3 | VBN2A001.30PX | VBN2A001.30SX |
| | | 2 | VBN2A002.00PX | VBN2A002.00SX |
| | | 2.6 | VBN2A002.60PX | VBN2A002.60SX |
| | | 4.7 | VBN2A004.70PX | VBN2A004.70SX |
| | | 8 | VBN2A008.00PX | VBN2A008.00SX |
| | | 11.7 | VBN2A011.70PX | VBN2A011.70SX |
| 3/4" | 130 | 0.31 | VBN2B000.31PX | VBN2B000.31SX |
| | | 0.63 | VBN2B000.63PX | VBN2B000.63SX |
| | | 1.2 | VBN2B001.20PX | VBN2B001.20SX |
| | | 2.5 | VBN2B002.50PX | VBN2B002.50SX |
| | | 4.3 | VBN2B004.30PX | VBN2B004.30SX |
| | | 7.4 | VBN2B007.40PX | VBN2B007.40SX |
| | | 10.1 | VBN2B010.10PX | VBN2B010.10SX |
| | | 14.7 | VBN2B014.70PX | VBN2B014.70SX |
| | | 29 | VBN2B029.00PX | VBN2B029.00SX |
| | | 1" | 100 | 4.4 |
| 9 | VBN2C009.00PX | | | VBN2C009.00SX |
| 15.3 | VBN2C015.30PX | | | VBN2C015.30SX |
| 26 | VBN2C026.00PX | | | VBN2C026.00SX |
| 44 | VBN2C044.00PX | | | VBN2C044.00SX |
| 54 | VBN2C054.00PX | | | VBN2C054.00SX |
| 1-1/4" | 100 | 4.4 | VBN2D004.40PX | VBN2D004.40SX |
| | | 8.3 | VBN2D008.30PX | VBN2D008.30SX |
| | | 14.9 | VBN2D014.90PX | VBN2D014.90SX |
| | | 25 | VBN2D025.00PX | VBN2D025.00SX |
| | | 37 | VBN2D037.00PX | VBN2D037.00SX |
| | | 41 | VBN2D041.00PX | VBN2D041.00SX |
| | | 102 | VBN2D102.00PX | VBN2D102.00SX |
| | | 1-1/2" | 100 | 23 |
| 30 | VBN2E030.00PX | | | VBN2E030.00SX |
| 41 | VBN2E041.00PX | | | VBN2E041.00SX |
| 74 | VBN2E074.00PX | | | VBN2E074.00SX |
| 172 | VBN2E172.00PX | | | VBN2E172.00SX |
| 2" | 100 | 42 | VBN2F042.00PX | VBN2F042.00SX |
| | | 57 | VBN2F057.00PX | VBN2F057.00SX |
| | | 71 | VBN2F071.00PX | VBN2F071.00SX |
| | | 100 | VBN2F100.00PX | VBN2F100.00SX |
| | | 108 | VBN2F108.00PX | VBN2F108.00SX |
| | | 210 | VBN2F210.00PX | VBN2F210.00SX |
| | | 266 | VBN2F266.00PX | VBN2F266.00SX |
| | | 2-1/2" | 100 | 45 |
| 55 | VBN2G055.00PX | | | VBN2G055.00SX |
| 72 | VBN2G072.00PX | | | VBN2G072.00SX |
| 101 | VBN2G101.00PX | | | VBN2G101.00SX |
| 162 | VBN2G162.00PX | | | VBN2G162.00SX |
| 202 | VBN2G202.00PX | | | VBN2G202.00SX |
| 3" | 100 | 49 | VBN2H049.00PX | VBN2H049.00SX |
| | | 63 | VBN2H063.00PX | VBN2H063.00SX |
| | | 82 | VBN2H082.00PX | VBN2H082.00SX |
| | | 124 | VBN2H124.00PX | VBN2H124.00SX |
| | | 145 | VBN2H145.00PX | VBN2H145.00SX |

| Actuator Features | | | | | |
|---|--|---------|-----------|-----------|--------------|
| Direct Coupled Actuators | | | | | |
| Actuator Type | Control Signal | Timing | Voltage | Enclosure | Model Number |
| Fail-in-Place | Floating | 95 sec. | 24 VAC/DC | NEMA 2 | +MN6105A1011 |
| Fail-in-Place | Modulating, Floating | 95 sec. | | | +MN7505A2001 |
| Fail Safe | Modulating, Floating | 95 sec. | | | +MS7505A2030 |
| Fail Safe | 2-Position | 95 sec. | | | +MS8105A1030 |
| Fail Safe Position (MS actuators only - open, closed, A-AB, B-AB) | FSC - Fail Safe Open FSO - Fail Safe Closed | | | | FSC or FSO |
| Accessories | | | | | +3R |

Commercial Components

Control Ball Valves

VBN3 Three-way Threaded Control Ball Valve



The VBN3 Three-Way Control Ball Valves control hot and chilled water with glycol solutions up to 50% in heating, ventilating, and air conditioning (HVAC) systems to provide two-position or modulating functions.

These valve assemblies can be ordered with or without factory-mounted non-spring return or spring return direct-coupled actuators (DCA).

- Sizes from 1/2 to 2-1/2 inches with internal (female) NPT connections
- Equal percentage or linear flow characteristics
- Reduced B-port C_v for constant loop flow
- Choice of four, factory-installed actuation control schemes: Floating, Modulating (2-10 V), Spring Return 2-Position, Spring Return Modulating/Floating
- Field configurable for normally open or normally closed fail-safe position
- Removable manual operating handle to control valve during installation or in an event of power failure
- ANSI Class IV seat leakage specification (0.01% of C_v)
- Optional NEMA 3R (IP54) rated enclosure for outdoor applications
- Actuator can be mounted on the valve in any of four positions
- Wide C_v choices from 0.33 to 109
- Valve installs in a globe valve “T” pattern, no extra elbows or piping required
- Field-serviceable stem assembly
- Nickel-chrome plated brass ball and stem
- Mixing or Diverting control

Valve Type: Control Ball Valve

Body Pattern: Three-way

Flow Characteristic: Linear (B-AB); Equal Percentage (A-AB)

Connection Type: Female NPT

Controlled Medium: Chilled or hot water with up to 50% Glycol; not for use with steam or fuels

Leakage Rating: ANSI Class IV (0.01% of C_v maximum)

Maximum Safe Operating Pressure: 360 psi (2482 kPa)

Maximum Differential Pressure Ratings (Close-off): 50 psi (345 kPa)

Fluid Temperature Range: -22°F to +250°F (-30°C to +121°C)

Materials

(Body): Brass

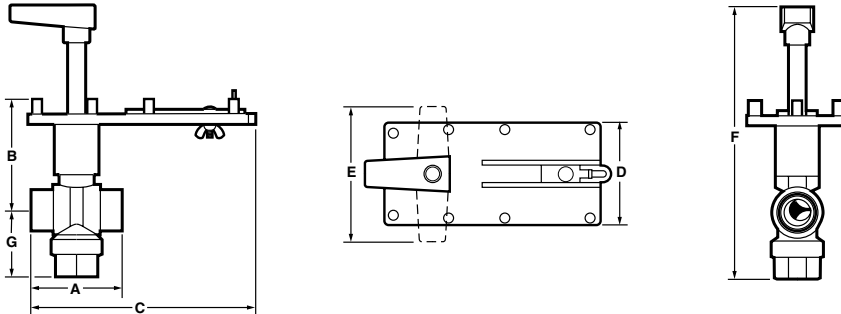
(Stem): Brass

(Seat): Teflon® seals with EPDM O-rings

(Plug/Ball/Disc): Nickel-plated brass ball

(Flow Control Insert): Noryl®

Dimensions in inches (millimeters)



| Pipe Size | | | C _v Designators | Dimensions in Inches (mm) | | | | | | | Weight | |
|-----------|------|----------|----------------------------|---------------------------|---------------|---------------|--------|---------|----------------|--------------|--------|-------|
| In. | (DN) | Code | | A | B | C | D | E | F | G | lb | (kg) |
| 1/2 | (15) | VBN3A... | B, D, E, F, H, J | 3-1/2 (89) | 3-5/16 (84) | 7 (178) | 3 (76) | 4 (102) | 9-3/8 (239) | 2 (51) | 2.4 | (1.1) |
| 3/4 | (20) | VBN3B... | C, D, E, F, G, K* | 2-13/16 (71) | | 6-1/2 (165) | | | 8-13/16 (224) | 2.0 | (0.9) | |
| 1 | (25) | VBN3C... | C, D, E, F, G | 3-13/16 (97) | | 7-5/16 (185) | | | 9-1/2 (241) | 2-1/16 (52) | 2.8 | (1.3) |
| | | | J, L | 3 (76) | 3-13/16 (97) | 6-13/16 (173) | | | 9-13/16 (249) | 2-7/16 (62) | 2.6 | (1.2) |
| | | | H, K, M | 4-5/16 (114) | 4 (102) | 7-13/16 (198) | | | 10-13/16 (274) | 3-1/8 (80) | 3.3 | (1.5) |
| 1-1/4 | (32) | VBN3D... | H, J, L* | 3 (76) | 3-13/16 (97) | 6-13/16 (173) | | | 9-13/16 (249) | 2-13/16 (72) | 2.5 | (1.1) |
| | | | K, M, N* | 3-5/8 (91) | 4 (102) | 7-5/16 (185) | | | 10-5/16 (262) | 2-7/16 (61) | 2.8 | (1.3) |
| 1-1/2 | (40) | VBN3E... | H, J, K, M* | 4-5/16 (114) | | 7-13/16 (198) | | | 10-13/16 (274) | 2-3/4 (69) | 3.3 | (1.5) |
| | | | L, P | 4 (102) | 4-5/16 (114) | 7-5/16 (185) | | | 11 (279) | 3-3/16 (81) | | |
| 2 | (50) | VBN3F... | L, N, P | | | | | | | 3-1/8 (79) | | |
| | | | R, T | 5 (127) | 5-13/16 (147) | 7-13/16 (195) | | | 12-5/16 (312) | 3-7/8 (98) | 3.8 | (1.7) |
| 2-1/2 | (65) | VBN3G... | P, R, S* | | | | | | | 4-1/8 (104) | | |

* Indicates full A-port: no flow characterizing insert.

Control Ball Valves

Example of complete order-able part number: VBN3A000.33PA+MVN613A0000+C1 Control Ball Valve, Female NPT Thread, 3-way, 1-1/2", C_v 0.33, Plated Brass, with MVN613A0000 Actuator, Fail-in-place and 1 meter. Standard profile provides clearance between valve and actuator for insulation. Low profile enables installation of valve and actuator in tight spaces.

| Valve Specification | | Valve Profile | Standard Profile | Low Profile |
|---------------------|---------------------------------------|----------------|-------------------------|---------------|
| Valve Size (inches) | Close-off Differential Pressure (psi) | Valve Trim | Plated Brass | |
| | | C _v | Valve Body Model Number | |
| 1/2" | 50 | 0.33 | VBN3A000.33PA | VBN3A000.33PL |
| | | 0.59 | VBN3A000.59PA | VBN3A000.59PL |
| | | 1 | VBN3A001.00PA | VBN3A001.00PL |
| | | 2.4 | VBN3A002.40PA | VBN3A002.40PL |
| | | 4.3 | VBN3A004.30PA | VBN3A004.30PL |
| | | 8 | VBN3A008.00PA | VBN3A008.00PL |
| 3/4" | 50 | 0.4 | VBN3B000.40PA | VBN3B000.40PL |
| | | 0.66 | VBN3B000.66PA | VBN3B000.66PL |
| | | 1.3 | VBN3B001.30PA | VBN3B001.30PL |
| | | 2.4 | VBN3B002.40PA | VBN3B002.40PL |
| | | 3.8 | VBN3B003.80PA | VBN3B003.80PL |
| | | 7 | VBN3B007.00PA | VBN3B007.00PL |
| 1" | 50 | 0.4 | VBN3C000.40PA | VBN3C000.40PL |
| | | 0.65 | VBN3C000.65PA | VBN3C000.65PL |
| | | 1.3 | VBN3C001.30PA | VBN3C001.30PL |
| | | 2.3 | VBN3C002.30PA | VBN3C002.30PL |
| | | 3.5 | VBN3C003.50PA | VBN3C003.50PL |
| | | 4.5 | VBN3C004.50PA | VBN3C004.50PL |
| | | 8.6 | VBN3C008.60PA | VBN3C008.60PL |
| | | 14.9 | VBN3C014.90PA | VBN3C014.90PL |
| | | 22 | VBN3C022.00PA | VBN3C022.00PL |
| 1-1/4" | 40 | 4.1 | VBN3D004.10PA | VBN3D004.10PL |
| | | 8.7 | VBN3D008.70PA | VBN3D008.70PL |
| | | 12.7 | VBN3D012.70PA | VBN3D012.70PL |
| | | 19.4 | VBN3D019.40PA | VBN3D019.40PL |
| | | 27 | VBN3D027.00PA | VBN3D027.00PL |
| | | 34 | VBN3D034.00PA | VBN3D034.00PL |

| Actuator Features | | | | | | |
|-------------------|----------------|---------|-----------|-----------------|-----------------------|--------------|
| MVN | | | | | Standard Profile | Low Profile |
| Actuator Type | Control Signal | Timing | Voltage | Enclosure | Actuator Model Number | |
| Fail-in-Place | Floating | 90 sec. | 24 VAC | NEMA 2 IP 54 | +MVN613A0000 | +MVN613L0000 |
| | Fast SPDT | 30 sec. | 24 VAC/DC | | +MVN643A0000 | +MVN643L0000 |
| | Modulating | 90 sec. | 24 VAC/DC | | +MVN713A0000 | +MVN713L0000 |
| Accessories | 1 meter cable | | | | +C1 | |

Control Ball Valves

Example of complete order-able part number: VBN3E032.00PX+MN7505A2001 Control Ball Valve, Female NPT Thread, 3-way, 1-1/2", C_v 32, Black Bracket, Plated Brass with MN7505A2001 Actuator, Fail-in-place.

| Valve Specification | | Valve Profile | | Black Bracket |
|---------------------|---------------------------------------|----------------|-------------------------|---------------|
| Valve Size (inches) | Close-off Differential Pressure (psi) | Valve Trim | Plated Brass | |
| | | C _v | Valve Body Model Number | |
| 1/2" | 50 | 0.33 | VBN3A000.33PX | |
| | | 0.59 | VBN3A000.59PX | |
| | | 1 | VBN3A001.00PX | |
| | | 2.4 | VBN3A002.40PX | |
| | | 4.3 | VBN3A004.30PX | |
| | | 8 | VBN3A008.00PX | |
| 3/4" | 50 | 0.4 | VBN3B000.40PX | |
| | | 0.66 | VBN3B000.66PX | |
| | | 1.3 | VBN3B001.30PX | |
| | | 2.4 | VBN3B002.40PX | |
| | | 3.8 | VBN3B003.80PX | |
| | | 7 | VBN3B007.00PX | |
| 1" | 50 | 11 | VBN3B011.00PX | |
| | | 0.4 | VBN3C000.40PX | |
| | | 0.65 | VBN3C000.65PX | |
| | | 1.3 | VBN3C001.30PX | |
| | | 2.3 | VBN3C002.30PX | |
| | | 3.5 | VBN3C003.50PX | |
| 1-1/4" | 40 | 4.5 | VBN3C004.50PX | |
| | | 8.6 | VBN3C008.60PX | |
| | | 14.9 | VBN3C014.90PX | |
| | | 22 | VBN3C022.00PX | |
| | | 31 | VBN3C031.00PX | |
| | | 4.1 | VBN3D004.10PX | |
| 1-1/2" | 40 | 8.7 | VBN3D008.70PX | |
| | | 12.7 | VBN3D012.70PX | |
| | | 19.4 | VBN3D019.40PX | |
| | | 27 | VBN3D027.00PX | |
| | | 34 | VBN3D034.00PX | |
| | | 4 | VBN3E004.00PX | |
| 2" | 100 | 8.3 | VBN3E008.30PX | |
| | | 13.4 | VBN3E013.40PX | |
| | | 24 | VBN3E024.00PX | |
| | | 32 | VBN3E032.00PX | |
| | | 61 | VBN3E061.00PX | |
| | | 24 | VBN3F024.00PX | |
| 2-1/2" | 100 | 38 | VBN3F038.00PX | |
| | | 57 | VBN3F057.00PX | |
| | | 83 | VBN3F083.00PX | |
| | | 109 | VBN3F109.00PX | |
| | | 38 | VBN3G038.00PX | |
| | | 74 | VBN3G074.00PX | |
| | | 100 | VBN3G100.00PX | |

| Actuator Features | | | | | |
|---|--|---------|-----------|-----------|--------------|
| Direct Coupled Actuators | | | | | |
| Actuator Type | Control Signal | Timing | Voltage | Enclosure | Model Number |
| Fail-in-Place | Floating | 95 sec. | 24 VAC/DC | NEMA 2 | +MNG105A1011 |
| Fail-in-Place | Modulating, Floating | 95 sec. | | | +MN7505A2001 |
| Fail Safe | Modulating, Floating | 95 sec. | | | +MS7505A2030 |
| Fail Safe | 2-Position | 95 sec. | | | +MS8105A1030 |
| Fail Safe Position (MS actuators only - open, closed, A-AB, B-AB) | FSO - Fail Safe Open FSC - Fail Safe Closed | | | | FSO or FSC |
| Accessories | | | | | +3R |




Replacement parts for VBF2 and VBF3 valves

| Material Number | Description | Used With |
|---|---|---------------------------------------|
| Ball Valve replacement bottom stem | | |
| 7981-701/U | Replacement bottom stem for VBF2 AND VBF3 ball valves | VBF2 and VBF3 Ball Valves |
| Ball Valve replacement flange O-Ring | | |
| 7978-65/U | Replacement flange O-Ring for VBF2 4 in. ball valves | 4 in. VBF2 Ball Valves |
| 7978-66/U | Replacement flange O-Ring for VBF2 5 in. and VBF3 4 in. ball valves | 5 in. VBF2 and 4 in. VBF3 Ball Valves |
| 7978-67/U | Replacement flange O-Ring for VBF3 5 in. ball valves | 5 in. VBF3 Ball Valves |
| 7978-68/U | Replacement flange O-Ring for VBF2 6 in. ball valves | 6 in. VBF2 Ball Valves |
| 7978-69/U | Replacement flange O-Ring for VBF3 6 in. ball valves | 6 in. VBF3 Ball Valves |
| Ball Valve replacement seal | | |
| 7981-910/U | Replacement seal for VBF2 4 in. ball valves | 4 in. VBF2 Ball Valves |
| 7981-911/U | Replacement seal for VBF2 5 in. and VBF3 4 in. ball valves | 5 in. VBF2 and 4 in. VBF3 Ball Valves |
| 7981-912/U | Replacement seal for VBF2 6 in. and VBF3 5 in. ball valves | 6 in. VBF2 and 5 in. VBF3 Ball Valves |
| 7981-913/U | Replacement seal for VBF3 6 in. ball valves | 6 in. VBF3 Ball Valves |
| Ball Valve replacement seal O-Ring | | |
| 7981-914/U | O-Ring Replacement seal for VBF2 4 in. ball valves | 4 in. VBF2 Ball Valves |
| 7981-915/U | Replacement seal O-Ring for VBF2 5 in. and VBF3 4 in. ball valves | 5 in. VBF2 and 4 in. VBF3 Ball Valves |
| 7981-916/U | Replacement seal O-Ring for VBF2 6 in. and VBF3 5 in. ball valves | 6 in. VBF2 and 5 in. VBF3 Ball Valves |
| 7981-917/U | Replacement seal O-Ring for VBF3 6 in. ball valves | 6 in. VBF3 Ball Valves |

Replacement parts for VBN valves

| Material Number | Description | Used With |
|---|---|------------------|
| NEMA 3R Enclosure kit | | |
| 5112-3R | NEMA 3R Enclosure kit for VBN valves | VBN valves |
| Replacement stem assembly for VBN valves | | |
| 5112-11/U | Direct coupled actuator mounting Kit for VBN2, VBN3 | VBN2A-H, VBN3A-G |

MVN Actuator Accessories and Replacement Parts

| Material Number | Description | Used With | |
|-----------------|---|--|---|
| MVNAAA/U | Replacement Valve Adaptor | MVN613A0000, MVN643A0000, MVN713A0000 |  |
| MVNAAL/U | Replacement Valve Adaptor, Low Profile | MVN613L0000, MVN643L0000, MVN713L0000 |  |
| MVNAC6131/U | Replacement Cable with Terminals for Floating Actuators | MVN613A0000, MVN613L0000, MVN643A0000, MVN643L0000 |  |
| MVNAC7131/U | Replacement Cable with Terminals for Modulating Actuators | MVN713A0000, MVN713L0000 | |
| MVNAT3/B | Replacement Screw type Terminal Block, Pluggable | MVN613A0000, MVN613L0000, MVN643A0000, MVN643L0000, MVN713A0000, MVN713L0000 | |

Control Ball Valves

Replacement Stem Assemblies for VBN Valves

| Pipe Size | | VBN 2-way | | VBN 3-way | | Replacement Stem Assembly * |
|-----------|----|------------|---|------------|---|-----------------------------|
| In. | DN | Valve Code | Cv Offerings (VBN2) | Valve Code | Cv Offerings (VBN3) | |
| 1/2 | 15 | VBN2A | 0.38, 0.68, 1.30, 2.00, 2.60, 4.70, 11.70 | VBN3A | 0.33, 0.59, 1.00, 2.40, 4.30, 8.00 | 5112-19, 5112-22 (SS) |
| | | | 8.00 | | | |
| 3/4 | 20 | VBN2B | 0.31, 0.63, 1.20, 2.50, 4.30, 7.40, 14.70 | VBN3B | 0.40, 0.66, 1.30, 2.40, 3.80, 7.00, 11.00 | |
| | | | 10.10, 29.00 | | | |
| 1 | 25 | VBN2C | 9.00 | VBN3C | 0.40, 0.65, 1.30, 2.30, 3.50 | 5112-20, 5112-23 (SS) |
| | | | 4.40, 15.30, 54.00 | | 8.60, 22.00 | |
| | | | 26.00, 44.00 | | 4.50, 14.90, 31.00 | |
| | | | | | | |
| 1-1/4 | 32 | VBN2D | 4.40, 8.30, 14.90, 25.00, 41.00 | VBN3D | 4.10, 8.70, 19.40 | 5112-21, 5112-24 (SS) |
| | | | 37.00, 102.00 | | 12.70, 27.00, 34.00 | |
| 1-1/2 | 40 | VBN2E | 23.00, 30.00, 74.00 | VBN3E | 4.00, 8.30, 13.40, 32.00 | |
| | | | 41.00, 172.00 | | 24.00, 61.00 | |
| 2 | 50 | VBN2F | 42.00, 108.00 | VBN3F | 24.00, 38.00, 57.00 | 5112-21, 5112-24 (SS) |
| | | | 57.00, 71.00, 100.00, 210.00, 266.00 | | 83.00, 109.00 | |
| 2-1/2 | 65 | VBN2G | 45.00, 55.00, 72.00, 101.00, 162.00, 202.00 | VBN3G | 38.00, 74.00, 100.00 | |
| | | | | | | |
| 3 | 80 | VBN2H | 49.00, 63.00, 82.00, 124.00, 145.00 | | | |

* Replacement stems available in brass or stainless steel – use accordingly to valve part number.

VFF1 Two-way Normally-Open Butterfly Control Valves



Resilient seat in two-way valves, provide control for HVAC system applications including chilled water, hot water, cooling tower water, and thermal storage systems.

Body Pattern: 2 way (S/R NO)
Valve Action: Normally Open
Connection Type: Lugged
Controlled Medium: Chilled or hot water with up to 50% Glycol; not for use with steam or fuels.
Actuator Control Type: Pneumatic
Flow Characteristic: Modified Equal Percent
Mounting: ANSI Flanged
Static Pressure Rating (max): 250 psi (1724 kPa)
Actuator Ambient Temperature Ratings: -20°F to 150°F (-29°C to 66°C)
Temperature Range: -40°F to 250°F (-40°C to 121°C)
Number of Flange Bolts
 For 2 in., 2-1/2 in., 3 in. valves: 4
 For 4 in., 5 in., 6 in., 8 in. valves: 8
 For 10 in., 12 in., 14 in. valves: 12
 For 16 in., 18 in. valves: 16
 For 20 in. valves: 20
Flange Bolt Thread
 For 2 in., 2-1/2 in., 3 in., 4 in. valves: 5/8 in. -11 pitch
 For 5 in., 6 in., 8 in. valves: 3/4 in. -10 pitch
 For 10 in., 12 in. valves: 7/8 in. -9 pitch
 For 14 in., 16 in., 18 in., 20 in. valves: 1-1/8 in. -7 pitch
Materials
(Body): Polyester-coated cast iron ASTM A126 Class B
(Stem): 416 Stainless Steel
(Seat): Peroxide-cured EPDM resilient seat
(Plug/Ball/Disc): Nylon 11-coated ductile iron (optional: aluminum, bronze, and stainless steel)

VFF2 Two-way Butterfly Control Valves



Resilient seat two-way valves provide control for HVAC system applications including chilled water, hot water, cooling tower water, and thermal storage systems.

Body Pattern: 2 way (NC, NC/NO; NSR)
Valve Action: Normally Closed, convertible to Normally Open with Spring Return DCA
Connection Type: Lugged
Controlled Medium: Chilled or hot water with up to 50% Glycol; not for use with steam or fuels.
Flow Characteristic: Modified Equal Percent
Mounting: ANSI Flanged
Static Pressure Rating (max): 250 psi (1724 kPa)
Actuator Ambient Temperature Ratings: -5°F to 140°F (-20°C to 60°C)
Temperature Range: -40°F to 250°F (-40°C to 121°C)
Number of Flange Bolts
 For 2 in., 2-1/2 in., 3 in. valves: 4
 For 4 in., 5 in., 6 in., 8 in. valves: 8
 For 10 in., 12 in., 14 in. valves: 12
 For 16 in., 18 in. valves: 16
 For 20 in. valves: 20
Flange Bolt Thread
 For 2 in., 2-1/2 in., 3 in., 4 in. valves: 5/8 in. -11 pitch
 For 5 in., 6 in., 8 in. valves: 3/4 in. -10 pitch
 For 10 in., 12 in. valves: 7/8 in. -9 pitch
 For 14 in., 16 in., 18 in., 20 in. valves: 1-1/8 in. -7 pitch
Materials
(Body): Polyester-coated cast iron ASTM A126 Class B
(Stem): 416 Stainless Steel
(Seat): Peroxide-cured EPDM resilient seat
(Plug/Ball/Disc): Nylon 11-coated ductile iron (optional: aluminum, bronze, and stainless steel)
Approvals
CE: Compliant
Underwriters Laboratories, Inc: C/US UL873, Plenum Rated

NOTE: Valves with Manual Operators use over-cut disks to achieve 250 psid close-off, and cannot be automated due to their high torque.

Butterfly Control Valves

VFF3 Three-way (A-B-AB) Butterfly Control Valves



Resilient seat three-way valves provide control for HVAC system applications including chilled water, hot water, cooling tower water, and thermal storage systems.

Body Pattern: 3 way (A-B-AB porting)
Valve Action: Normally Closed
Connection Type: Lugged
Controlled Medium: Chilled or hot water with up to 50% Glycol; not for use with steam or fuels.
Flow Characteristic: Modified Equal Percent
Mounting: ANSI Flanged
Static Pressure Rating (max): 250 psi (1724 kPa)
Actuator Ambient Temperature Ratings: -5°F to 140°F (-20°C to 60°C)
Temperature Range: -40°F to 250°F (-40°C to 121°C)
Number of Flange Bolts
 For 2 in., 2-1/2 in., 3 in. valves: 4
 For 4 in., 5 in., 6 in., 8 in. valves: 8
 For 10 in., 12 in., 14 in. valves: 12
 For 16 in., 18 in. valves: 16
 For 20 in. valves: 20
Flange Bolt Thread
 For 2 in., 2-1/2 in., 3 in., 4 in. valves: 5/8 in. -11 pitch
 For 5 in., 6 in., 8 in. valves: 3/4 in. -10 pitch
 For 10 in., 12 in. valves: 7/8 in. -9 pitch
 For 14 in., 16 in., 18 in., 20 in. valves: 1-1/8 in. -7 pitch
Materials
(Body): Polyester-coated cast iron ASTM A126 Class B
(Stem): 416 Stainless Steel
(Seat): Peroxide-cured EPDM resilient seat
(Plug/Ball/Disc): Nylon 11-coated ductile iron (optional: aluminum, bronze, and stainless steel)
Approvals
CE: Compliant
Underwriters Laboratories, Inc: C/US UL873, Plenum Rated

VFF6 Three-way (A-AB-B) Butterfly Control Valves



Resilient seat three-way valves provide control for HVAC system applications including chilled water, hot water, cooling tower water, and thermal storage systems.

Body Pattern: 3 way (A-AB-B porting)
Valve Action: Normally Closed
Connection Type: Lugged
Controlled Medium: Chilled or hot water with up to 50% Glycol; not for use with steam or fuels.
Flow Characteristic: Modified Equal Percent
Mounting: ANSI Flanged
Static Pressure Rating (max): 250 psi (1724 kPa)
Actuator Ambient Temperature Ratings: -5°F to 140°F (-20°C to 60°C)
Temperature Range: -40°F to 250°F (-40°C to 121°C)
Number of Flange Bolts
 For 2 in., 2-1/2 in., 3 in. valves: 4
 For 4 in., 5 in., 6 in., 8 in. valves: 8
 For 10 in., 12 in., 14 in. valves: 12
 For 16 in., 18 in. valves: 16
 For 20 in. valves: 20
Flange Bolt Thread
 For 2 in., 2-1/2 in., 3 in., 4 in. valves: 5/8 in. -11 pitch
 For 5 in., 6 in., 8 in. valves: 3/4 in. -10 pitch
 For 10 in., 12 in. valves: 7/8 in. -9 pitch
 For 14 in., 16 in., 18 in., 20 in. valves: 1-1/8 in. -7 pitch
Materials
(Body): Polyester-coated cast iron ASTM A126 Class B
(Stem): 416 Stainless Steel
(Seat): Peroxide-cured EPDM resilient seat
(Plug/Ball/Disc): Nylon 11-coated ductile iron (optional: aluminum, bronze, and stainless steel)
Approvals
CE: Compliant
Underwriters Laboratories, Inc: C/US UL873, Plenum Rated

Butterfly Valve Assembly Accessories

| Product Number | Description | Used With |
|----------------|---|---|
| VFF50-0400/M | Position status monitor for VFF butterfly valves with high pressure pneumatic actuators | VFF...XR/XS; VFF...ER/ES; VFF...CR/CS; High pressure pneumatic actuator without pneumatic or electro-pneumatic positioner |

Butterfly Control Valves

| Butterfly Valves | Fitting | Body Pattern | Size | Disk size (close-off) | Pressure Rating | Valve trim | Actuator secondary Specification | Actuator primary Specification | Description | Actuator Type | | |
|--|---|--|---|-----------------------|-----------------|------------|----------------------------------|--------------------------------|-------------|---------------|----------|-----------|
| VF | Butterfly Valve, resilient seat | | | | | | | | | | | |
| | F | Flanged fitting | | | | | | | | | | |
| | | 1 | 2-way (spring return normally open) | | | | | | | | | |
| | | 2 | 2-way (non-spring return: Spring return normally closed or field-convertible) | | | | | | | | | |
| | | 3 | 3-way A-B-AB (mixing/diverting) | | | | | | | | | |
| | | 6 | 3-way A-AB-B (diverting/mixing) | | | | | | | | | |
| | | F | 2 inch (DN50) | | | | | | | | | |
| | | G | 2-1/2 inch (DN65) | | | | | | | | | |
| | | H | 3 inch (DN80) | | | | | | | | | |
| | | J | 4 inch (DN100) | | | | | | | | | |
| | | K | 5 inch (DN125) | | | | | | | | | |
| | | L | 6 inch (DN150) | | | | | | | | | |
| | | M | 8 inch (DN200) | | | | | | | | | |
| | | N | 10 inch (DN250) | | | | | | | | | |
| | | P | 12 inch (DN300) | | | | | | | | | |
| | | R | 14 inch (DN350) | | | | | | | | | |
| | S | 16 inch (DN400) | | | | | | | | | | |
| | T | 18 inch (DN450) | | | | | | | | | | |
| | U | 20 inch (DN500) | | | | | | | | | | |
| | V | Undercut disk (lower actuator torque; 50 psid close-off) | | | | | | | | | | |
| | W | Full diameter disk (high close-off) | | | | | | | | | | |
| | | 1 | ANSI 150 psig body pressure rating | | | | | | | | | |
| | | 2 | ANSI 250 psig body pressure rating | | | | | | | | | |
| | Y | Nylon-coated disk, EPDM seat | | | | | | | | | | |
| | | 2 | NEMA 2 actuator housing (Honeywell DCA) | | | | | | | | | Electric |
| | | 6 | NEMA 6 actuator housing with manual operator and heater | | | | | | | | | |
| | | X | NEMA 4X actuator housing with manual operator and heater | | | | | | | | | |
| | | 8 | Spring Range 8-13 psi for 20 psi pneumatic actuator | | | | | | | | | Pneumatic |
| | | C | 24 Vac solenoid for 80 psi pneumatic actuator | | | | | | | | | |
| | | D | Electro-pneumatic positioner for 80 psi actuator | | | | | | | | | |
| | | E | 120 Vac solenoid for 80 psi pneumatic actuator | | | | | | | | | |
| | | P | Pneumatic positioner for modulating applications | | | | | | | | | |
| | | X | Standard, two-position control only | | | | | | | | | Manual |
| L | | Lever operator for dead end service | | | | | | | | | | |
| G | | Geared operator for dead end service | | | | | | | | | | |
| A | | Floating actuator | | | | | | | | | Electric | |
| | | Modulating actuator | | | | | | | | | | |
| | | Two-position 24 Vac spring return actuator | | | | | | | | | | |
| | Modulating spring return actuator | | | | | | | | | | | |
| | Two-position 120 Vac spring return actuator | | | | | | | | | | | |
| | Pneumatic actuator, spring return 20 psi | | | | | | | | | | | |
| | Pneumatic actuator, push-pull 80 psi | | | | | | | | | | | |
| Pneumatic actuator, spring return 80 psi | | | | | | | | | | | | |
| X | Valve body only, for dead end service | | | | | | | | | Man | | |

VF F 2 J V 1 Y 2 D 2-way, 4 inch flanged resilient-seat butterfly valve, undercut disk (50 psid close-off) modulating/floating control, spring return normally closed.

** VFF50-0400 position status monitor for VFF butterfly valves with high pressure pneumatic actuators is available to be ordered separately or will be assembled to the valve if ordered at the same time. It is compatible with any high pressure pneumatic actuators without pneumatic or electro-pneumatic positioner (e.g. VFF...XR/XS, VFF...CR/CS, or VFF...ER/ES).

Flanged Globe Valves

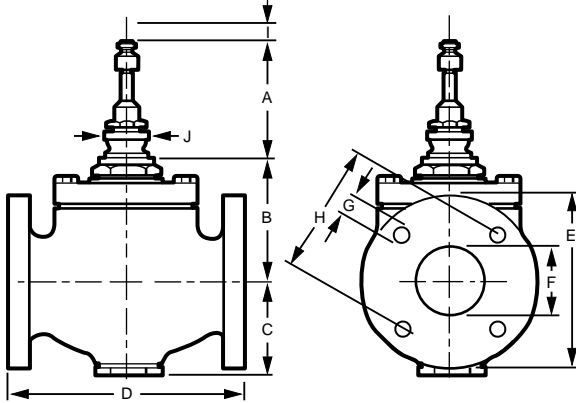
V5011A, B Two-Way Flanged Globe Valves



Used for proportional control of hot or chilled water and glycol solutions (to 50 percent concentration) and for two-position control of low pressure steam in closed loop HVAC systems.

- Sizes range from 2-1/2 to 6 inches.
- Stainless steel stem with serviceable Teflon packing.
- Valves utilize direct mounting valve actuators; Q5020 and Q5024 linkages with Direct Coupled Actuators; or Pneumatic Valve Actuators to operate the valve.
- Equal Percentage flow characteristic.

Dimensions in inches (millimeters)



| MODEL | VALVE SIZE | A ^a | B | C | D | E | F | G | H | I (TRAVEL) | J (DIAMETER) |
|--------|------------|----------------|---------------|--------------|-------------|-------------|------------|----------|-------------|------------|--------------|
| V5011A | 2-1/2 (64) | 3-1/2 (89) | 4-13/16 (122) | 4 (102) | 9-1/2 (241) | 7 (178) | 2-1/2 (64) | 3/4 (19) | 5-1/2 (140) | 3/4 (19) | 1-3/8 (35) |
| | 3 (76) | 3-1/2 (89) | 3-1/2 (89) | 4-5/8 (117) | 11 (279) | 7-1/2 (191) | 3 (76) | 3/4 (19) | 6 (152) | 3/4 (19) | 1-3/8 (35) |
| | 4 (102) | 5-1/4 (133) | 5-1/4 (133) | 5-3/16 (132) | 13 (330) | 9 (229) | 4 (102) | 3/4 (19) | 7-1/2 (191) | 1-1/2 (38) | 1-7/8 (48) |
| V5011B | 4 (102) | 6-3/4 (171) | 6-3/4 (171) | 8-1/16 (205) | 13 (330) | 9 (229) | 4 (102) | 3/4 (19) | 7-1/2 (191) | 1-1/2 (38) | 1-7/8 (48) |

M27256

Valve Type: Globe Valve

Body Pattern: Two-way

Connection Type: Flanged

Controlled Fluid: Chilled or hot water with up to 50% Glycol or Low pressure steam. Not for use with fuels.

Flow Characteristic: Equal Percentage

Actuation: Must be purchased separately

Ambient Temperature Range: 40°F to 250°F (4°C to 121°C)

Maximum Differential Pressure Ratings (Close-off) (psi): For Quiet Water Service – 20 psid

Maximum Differential Pressure Ratings (Close-off) (kPa): For Quiet Water Service – 138 kPa

Maximum Safe Operating Pressure (psi): 150 psi at 240°F water; 15 psi steam

Maximum Safe Operating Pressure (kPa): 1034 kPa at 115°C water; 100 kPa steam

Static Pressure Rating (psi): Meets ANSI 125 Standard

Static Pressure Rating (kPa): Meets ANSI 125 Standard

ANSI/ASME Rating: 125

Materials (Body): Cast Iron

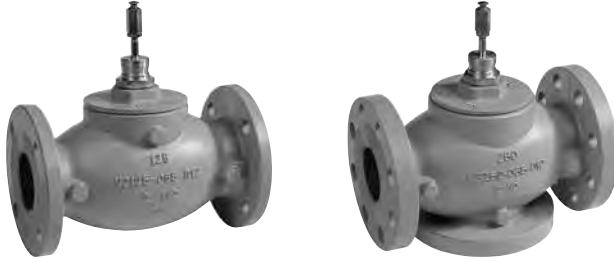
Materials (Seat): Bronze

Materials (Stem): 316 Stainless Steel

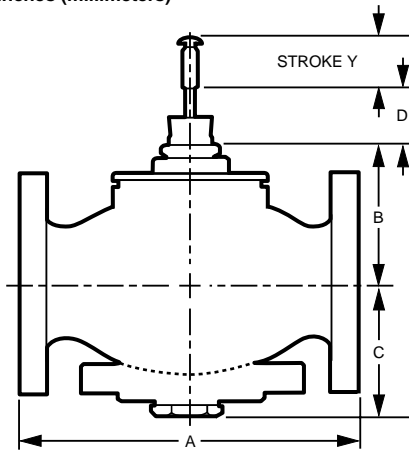
Materials (Packing): Teflon Cone

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Stem Travel | Bonnet Size | Valve Action | Used With |
|-----------------|------------------|----------------|---------------|---------------|-------------------|---------------------|--------------------|---|
| V5011A1734/U | 2 1/2 in. | DN65 | 63 Cv | 54 kvs | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | Stem down to close | Q5001/Modutrol IV Motor; MP953; ML6420, 21A, 25; ML7420/ML7421A/ML7425; ML6984/ML7984; Q5020; Q5024 |
| V5011A1767/U | 3 in. | DN80 | 100 Cv | 85 kvs | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | Stem down to close | ML6984/ML7984; ML7420/ML7421A/ML7425; ML6420, 21A, 25; Q5001/Modutrol IV Motor; MP953; Q5020; Q5024 |
| V5011A1858/U | 4 in. | DN100 | 160 Cv | 137 kvs | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Stem down to close | Q5001/Modutrol IV Motor; MP953; ML7421B; ML6421B; Q5024 |
| V5011A1882/U | 5 in. | DN125 | 250 Cv | 214 kvs | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Stem down to close | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |
| V5011A1916/U | 6 in. | DN150 | 360 Cv | 308 kvs | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Stem down to close | ML6421B; Q5001/Modutrol IV Motor; MP953; ML7421B; Q5024 |
| V5011B1013/U | 4 in. | DN100 | 160 Cv | 137 kvs | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Stem up to close | ML7421B; Q5001/Modutrol IV Motor; MP953; ML6421B; Q5024 |
| V5011B1047/U | 5 in. | DN125 | 250 Cv | 214 kvs | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Stem up to close | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |
| V5011B1070/U | 6 in. | DN150 | 360 Cv | 308 kvs | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Stem up to close | ML6421B; Q5001/Modutrol IV Motor; MP953; ML7421B; Q5024 |

VG2 Two-way Flanged Globe Valves



Dimensions in inches (millimeters)



DOTTED LINE REPRESENTS ANSI 125 VALVE BONNET.

Flanged globe valves for two-position or modulating control in heating, ventilating and air conditioning (HVAC) systems. Can be operated by ML6984/7984, ML6420/6425, ML6421/7421 Actuators, MP953 Pneumatic Actuators, Modutrol Motors with Q5001 valve linkage, or MN/MS direct coupled actuators (DCA).

- ANSI Class 125 and Class 250 cast iron bodies with flanged end connections
- Equal percentage and linear flow characteristics
- Face-to-face flange dimensions per ANSI/ISA S75.03 standard
- Sizes from 2-1/2 to 6 in.
- Stainless steel trim standard for long life span
- ANSI Class III or IV seat leakage
- Steam inlet pressure up to 100 psig and 353°F maximum temperature
- Self-adjusting packing
- Accurate positioning with equal percentage and linear flow characteristics to ensure precise temperature control
- Universal bonnet for direct-coupled electric and pneumatic actuators for easy mounting, or linkage coupled Modutrol™ Motors and MN/MS Series direct coupled actuators.
- Not suitable for combustible gasses.

Valve Type: Globe Valve

Body Pattern: Two-way

Valve Action: Stem down to close

Connection Type: Flanged

Controlled Fluid: Chilled or hot water with up to 50% Glycol or Steam. Not for use with fuels.

Actuation: Must be purchased separately

Static Pressure Rating: VG21-Meets ANSI 125 Standard;

VG22-Meets ANSI 250 Standard

ANSI/ASME Rating: VG21-125; VG22-250

Fluid Temperature Range: 20°F to 250°F, steam 353°F (-7°C to +120°C, steam 180°C)

Materials (Body): Cast Iron ASTM A126 Class B

Materials (Seat): Stainless Steel

Materials (Stem): Stainless Steel

Materials (Plug / Ball / Disc): Stainless Steel

Materials (Packing): Spring-loaded PTFE cone rings

Materials (Cartridge): Stainless Steel

Leakage: 0.05% of Cv

Comments: Direct acting

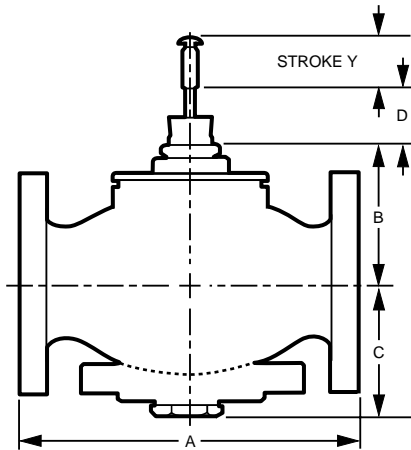
| MODEL NUMBER | DIMENSIONS, IN. (MM) | | | | |
|---|----------------------|--------------|--------------|-------------|------------|
| | A | B | C | E | Y |
| 2-WAY VALVES, ANSI CLASS 125. STEM DOWN TO CLOSE. EQUAL PERCENTAGE OR LINEAR FLOW CHARACTERISTIC | | | | | |
| VG21_S25 | 10-7/8 (276) | 4-3/8 (112) | 7 (178) | 3-1/2 (89) | 13/16 (20) |
| VG21_S30 | 11-3/4 (298) | 6-3/8 (161) | 7-1/2 (191) | | |
| VG21_S40 | 13-7/8 (352) | 5-7/8 (150) | 9 (229) | 5-1/4 (133) | 1-1/2 (38) |
| VG21_S50 | 15-3/4 (400) | 6-3/16 (157) | 10 (254) | | |
| VG21_S60 | 17-3/4 (451) | 6-3/16 (157) | 11 (279) | | |
| 2-WAY VALVES, ANSI CLASS 250. STEM DOWN TO CLOSE. EQUAL PERCENTAGE FLOW CHARACTERISTIC | | | | | |
| VG22ES25 | 11-1/2 (292) | 4-3/8 (112) | 7-1/2 (191) | 3-1/2 (89) | 13/16 (20) |
| VG22ES30 | 12-1/2 (318) | 6-3/8 (161) | 8-1/4 (210) | | |
| VG22ES40 | 14-1/2 (368) | 5-7/8 (150) | 10 (254) | 5-1/4 (133) | 1-1/2 (38) |
| VG22ES50 | 16-5/8 (422) | 6-3/16 (157) | 11 (279) | | |
| VG22ES60 | 18-5/8 (473) | 6-3/16 (157) | 12-1/2 (318) | | |
| 2-WAY VALVES, PRESSURE-BALANCED, ANSI CLASS 125. STEM DOWN TO CLOSE. EQUAL PERCENTAGE OR LINEAR FLOW CHARACTERISTIC | | | | | |
| VG21_P25 | 10-7/8 (276) | 4-3/16 (107) | 7 (178) | 3-1/2 (89) | 13/16 (20) |
| VG21_P30 | 11-3/4 (298) | 5-7/8 (150) | 7-1/2 (191) | | |
| VG21_P40 | 13-7/8 (352) | 5-7/8 (150) | 9 (229) | 5-1/4 (133) | 1-1/2 (38) |
| VG21_P50 | 15-3/4 (400) | 6-1/8 (156) | 10 (254) | | |
| VG21_P60 | 17-3/4 (451) | 6-1/8 (156) | 11 (279) | | |

M27603

Flanged Globe Valves

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Maximum Differential Pressure Ratings (Close-off) (psi) | Maximum Differential Pressure Ratings (Close-off) (kPa) | Flow Characteristic | Stem Travel | Bonnet Size | Used With |
|-----------------|------------------|----------------|---------------|---------------|---------------------------------------|---------------------------------------|---|---|---------------------|-------------------|---------------------|--|
| VGF21ES25 | 2 1/2 in. | DN65 | 70 Cv | 60 Kv | 175 psig | 1206 kPa | 69 psi | 475 kPa | Equal Percentage | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | ML6420/21A/25; ML7420/21A/25; Q5020/DCA; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF21ES30 | 3 in. | DN80 | 115 Cv | 99 Kv | 175 psig | 1206 kPa | 34 psi | 234 kPa | Equal Percentage | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | ML6420/21A/25; ML7420/21A/25; Q5020/DCA; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF21ES40 | 4 in. | DN100 | 150 Cv | 129 Kv | 175 psig | 1206 kPa | 34 psi | 234 kPa | Equal Percentage | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF21ES50 | 5 in. | DN125 | 285 Cv | 245 Kv | 175 psig | 1206 kPa | 13 psi | 90 kPa | Equal Percentage | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF21ES60 | 6 in. | DN150 | 365 Cv | 314 Kv | 175 psig | 1206 kPa | 13 psi | 90 kPa | Equal Percentage | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF21LS25 | 2 1/2 in. | DN65 | 70 Cv | 60 Kv | 175 psig | 1206 kPa | 69 psi | 475 kPa | Linear | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | ML6420/21A/25; ML7420/21A/25; Q5020/DCA; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF21LS30 | 3 in. | DN80 | 125 Cv | 108 Kv | 175 psig | 1206 kPa | 34 psi | 234 kPa | Linear | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | ML6420/21A/25; ML7420/21A/25; Q5020/DCA; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF21LS40 | 4 in. | DN100 | 155 Cv | 133 Kv | 175 psig | 1206 kPa | 34 psi | 234 kPa | Linear | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF21LS50 | 5 in. | DN125 | 320 Cv | 275 Kv | 175 psig | 1206 kPa | 13 psi | 90 kPa | Linear | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF21LS60 | 6 in. | DN150 | 370 Cv | 318 Kv | 175 psig | 1206 kPa | 13 psi | 90 kPa | Linear | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF22ES25 | 2 1/2 in. | DN65 | 70 Cv | 60 Kv | 400 psig | 2758 kPa | 69 psi | 475 kPa | Equal Percentage | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | ML6420/21A/25; ML7420/21A/25; Q5020/DCA; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF22ES30 | 3 in. | DN80 | 120 Cv | 103 Kv | 400 psig | 2758 kPa | 34 psi | 234 kPa | Equal Percentage | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | ML6420/21A/25; ML7420/21A/25; Q5020/DCA; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF22ES40 | 4 in. | DN100 | 150 Cv | 129 Kv | 400 psig | 2758 kPa | 34 psi | 234 kPa | Equal Percentage | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF22ES50 | 5 in. | DN125 | 320 Cv | 275 Kv | 400 psig | 2758 kPa | 13 psi | 90 kPa | Equal Percentage | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF22ES60 | 6 in. | DN150 | 370 Cv | 318 Kv | 400 psig | 2758 kPa | 13 psi | 90 kPa | Equal Percentage | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |

VGF2 Two-way Pressure Balanced Flanged Globe Valves



DOTTED LINE REPRESENTS ANSI 125 VALVE BONNET.

Pressure balanced, flanged globe valves for two-position or modulating control of steam, hot water, or chilled water-glycol solutions up to 50 percent concentration, in closed loop heating, ventilating and air conditioning (HVAC) systems.

- ANSI Class 125 cast iron bodies with flanged end connections
- Equal percentage and linear flow characteristics
- Face-to-face flange dimensions per ANSI/ISA S75.03 standard
- Sizes from 2-1/2 to 6 in.
- Stainless steel trim standard for long life span
- Differential pressure of 175 psi, ANSI Class IV leakage
- Steam inlet pressure up to 125 psig and 353°F maximum temperature
- Self-adjusting packing
- Accurate positioning with equal percentage and linear flow characteristics to ensure precise temperature control
- Universal bonnet for direct-coupled electric and pneumatic actuators for easy mounting, or linkage coupled Modutrol™ Motors and MN/MS Series direct coupled actuators
- Not suitable for combustible gasses

Valve Type: Globe Valve

Body Pattern: Two-way

Valve Action: Stem down to close

Connection Type: Flanged

Controlled Fluid: Chilled or hot water with up to 50% Glycol or Steam. Not for use with fuels.

Actuation: Must be purchased separately

Static Pressure Rating: Meets ANSI 125 Standard

ANSI/ASME Rating: 125

Fluid Temperature Range: 20°F to 250°F, steam 353°F (-7°C to +120°C, steam 180°C)

Maximum Safe Operating Pressure (psi): 175 psig

Maximum Safe Operating Pressure (kPa): 1206 kPa

Maximum Differential Pressure Ratings (Close-off) (psi): 175 psi

Maximum Differential Pressure Ratings (Close-off) (kPa): 1206 kPa

Materials (Body): Cast Iron ASTM A126 Class B

Materials (Seat): Stainless Steel

Materials (Stem): Stainless Steel

Materials (Plug / Ball / Disc): Stainless Steel

Materials (Packing): Spring-loaded PTFE cone rings

Materials (Cartridge): Stainless Steel

Leakage: 0.01% of Cv

Comments: Direct acting; Pressure-balanced. Minimum actuator force is 135# (600N)

| MODEL NUMBER | DIMENSIONS, IN. (MM) | | | | |
|---|----------------------|--------------|--------------|-------------|------------|
| | A | B | C | E | Y |
| 2-WAY VALVES, ANSI CLASS 125. STEM DOWN TO CLOSE. EQUAL PERCENTAGE OR LINEAR FLOW CHARACTERISTIC | | | | | |
| VGF21_S25 | 10-7/8 (276) | 4-3/8 (112) | 7 (178) | 3-1/2 (89) | 13/16 (20) |
| VGF21_S30 | 11-3/4 (298) | 6-3/8 (161) | 7-1/2 (191) | | |
| VGF21_S40 | 13-7/8 (352) | 5-7/8 (150) | 9 (229) | 5-1/4 (133) | 1-1/2 (38) |
| VGF21_S50 | 15-3/4 (400) | 6-3/16 (157) | 10 (254) | | |
| VGF21_S60 | 17-3/4 (451) | 6-3/16 (157) | 11 (279) | | |
| 2-WAY VALVES, ANSI CLASS 250. STEM DOWN TO CLOSE. EQUAL PERCENTAGE FLOW CHARACTERISTIC | | | | | |
| VGF22ES25 | 11-1/2 (292) | 4-3/8 (112) | 7-1/2 (191) | 3-1/2 (89) | 13/16 (20) |
| VGF22ES30 | 12-1/2 (318) | 6-3/8 (161) | 8-1/4 (210) | | |
| VGF22ES40 | 14-1/2 (368) | 5-7/8 (150) | 10 (254) | 5-1/4 (133) | 1-1/2 (38) |
| VGF22ES50 | 16-5/8 (422) | 6-3/16 (157) | 11 (279) | | |
| VGF22ES60 | 18-5/8 (473) | 6-3/16 (157) | 12-1/2 (318) | | |
| 2-WAY VALVES, PRESSURE-BALANCED, ANSI CLASS 125. STEM DOWN TO CLOSE. EQUAL PERCENTAGE OR LINEAR FLOW CHARACTERISTIC | | | | | |
| VGF21_P25 | 10-7/8 (276) | 4-3/16 (107) | 7 (178) | 3-1/2 (89) | 13/16 (20) |
| VGF21_P30 | 11-3/4 (298) | 5-7/8 (150) | 7-1/2 (191) | | |
| VGF21_P40 | 13-7/8 (352) | 5-7/8 (150) | 9 (229) | 5-1/4 (133) | 1-1/2 (38) |
| VGF21_P50 | 15-3/4 (400) | 6-1/8 (156) | 10 (254) | | |
| VGF21_P60 | 17-3/4 (451) | 6-1/8 (156) | 11 (279) | | |

M27603

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Flow Characteristic | Stem Travel | Bonnet Size | Comments | Used With |
|-----------------|------------------|----------------|---------------|---------------|---------------------|-----------------|-------------------|---|---|
| VGF21EP25 | 2 1/2 in. | DN65 | 70 Cv | 60 Kv | Equal Percentage | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | Direct acting; Pressure-balanced. Minimum actuator force is 135# (600N) | ML642X/ML742X; ML6984/ML7984; MP953 (7-1/8 to 13"); Q5024 |
| VGF21EP30 | 3 in. | DN80 | 115 Cv | 99 Kv | Equal Percentage | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | Direct acting; Pressure-balanced. Minimum actuator force is 135# (600N) | ML642X/ML742X; ML6984/ML7984; MP953 (7-1/8 to 13"); Q5024 |

Flanged Globe Valves

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Flow Characteristic | Stem Travel | Bonnet Size | Comments | Used With |
|-----------------|------------------|----------------|---------------|---------------|---------------------|----------------------|------------------------|--|---|
| VGF21EP40 | 4 in. | DN100 | 150 Cv | 129 Kv | Equal Percentage | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Direct acting; Pressure-balanced. Minimum actuator force is 400# (1800N) | ML6421B/ML7421B, MP953 (13"); Q5024 |
| VGF21EP50 | 5 in. | DN125 | 285 Cv | 245 Kv | Equal Percentage | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Direct acting; Pressure-balanced. Minimum actuator force is 400# (1800N) | ML6421B/ML7421B, MP953 (13"); Q5024 |
| VGF21EP60 | 6 in. | DN150 | 365 Cv | 314 Kv | Equal Percentage | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Direct acting; Pressure-balanced. Minimum actuator force is 400# (1800N) | ML6421B/ML7421B, MP953 (13"); Q5024 |
| VGF21LP25 | 2 1/2 in. | DN65 | 72 Cv | 62 Kv | Linear | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | Direct acting; Pressure-balanced. Minimum actuator force is 135# (600N) | ML642X/ML742X; ML6984/ML7984; MP953 (7-1/8 to 13"); Q5024 |
| VGF21LP30 | 3 in. | DN80 | 120 Cv | 103 Kv | Linear | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | Direct acting; Pressure-balanced. Minimum actuator force is 135# (600N) | ML642X/ML742X; ML6984/ML7984; MP953 (7-1/8 to 13"); Q5024 |
| VGF21LP40 | 4 in. | DN100 | 150 Cv | 129 Kv | Linear | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Direct acting; Pressure-balanced. Minimum actuator force is 400# (1800N) | ML6421B/ML7421B, MP953 (13"); Q5024 |
| VGF21LP50 | 5 in. | DN125 | 320 Cv | 275 Kv | Linear | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Direct acting; Pressure-balanced. Minimum actuator force is 400# (1800N) | ML6421B/ML7421B, MP953 (13"); Q5024 |
| VGF21LP60 | 6 in. | DN150 | 370 Cv | 318 Kv | Linear | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Direct acting; Pressure-balanced. Minimum actuator force is 400# (1800N) | ML6421B/ML7421B, MP953 (13"); Q5024 |

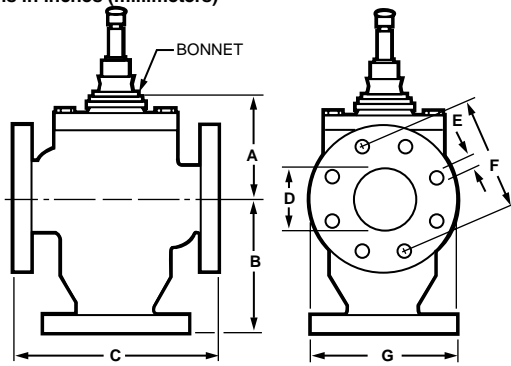
V5013B, C Three-Way Flanged Globe Valves



V5013B is a mixing three-way valve. V5013C is a diverting three-way valve. These valves provide proportional or two-position control of hot/chilled water in closed loop heating/cooling systems – offered in sizes 2 1/2 in. through 6 in.

- Not suitable for combustible gases.
- Valves utilize direct mounting valve actuators, Q5020 linkages with Direct Coupled Actuators, or Pneumatic Valve Actuators to operate the valve.
- Constant total flow through full plug travel.
- Stainless steel stem prevents corrosion.
- Class IV (0.01% of Cv) Leakage Rating.

Dimensions in inches (millimeters)



V5013B,C DIMENSIONS

| | VALVE SIZE IN INCHES (MM) | | | | |
|---|---------------------------|-------------|---------------|-------------|----------------|
| | 2-1/2 (DN65) | 3 (DN80) | 4 (DN100) | 5 (DN125) | 6 (DN150) |
| A | 4-1/2 (114) | 5-1/4 (133) | 5-7/8 (149) | 6-1/4 (159) | 7-1/4 (184) |
| B | 6-7/16 (164) | 6-5/8 (168) | 8-11/16 (221) | 9-5/8 (244) | 10-11/16 (271) |
| C | 9-1/2 (241) | 11 (279) | 13 (330) | 15 (381) | 16-1/2 (419) |
| D | 2-1/2 (64) | 3 (76) | 4 (102) | 5 (127) | 6 (152) |
| E | 3/4 (19) | 3/4 (19) | 3/4 (19) | 7/8 (22) | 7/8 (22) |
| F | 5-1/2 (140) | 6 (152) | 7-1/2 (191) | 8-1/2 (216) | 9-1/2 (241) |
| G | 7 (178) | 7-1/2 (191) | 9 (229) | 10 (254) | 11 (279) |

M16833

Valve Type: Globe Valve

Body Pattern: Three-way

Connection Type: Flanged

Controlled Fluid: Chilled or hot water with up to 50% Glycol. Not for use with steam or fuels.

Flow Characteristic: Linear (constant total)

Actuation: Must be purchased separately

Ambient Temperature Range: 40°F to 250°F (4°C to 121°C)

Maximum Differential Pressure Ratings (Close-off) (psi): For Quiet Water Service – 20 psid

Maximum Differential Pressure Ratings (Close-off) (kPa): For Quiet Water Service – 138 kPa

Maximum Safe Operating Pressure (psi): 150 psi at 240°F water

Maximum Safe Operating Pressure (kPa): 1034 kPa at 115°C water

Static Pressure Rating: Meets ANSI 125 Standard

ANSI/ASME Rating: 125

Materials (Body): Cast Iron

Materials (Seat): Bronze

Materials (Stem): Stainless Steel

Materials (Packing): Teflon Cone

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Stem Travel | Bonnet Size | Valve Action | Comments | Used With |
|-----------------|------------------|----------------|---------------|---------------|-------------------|---------------------|--------------------------------|-----------|--|
| V5013B1003/U | 2 1/2 in. | DN65 | 63 Cv | 54 Kv | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | Stem up increases B to AB flow | Mixing | ML6984/ML7984; Q5001/Modutrol IV Motor; ML7420/ML7421A/ML7425; ML6420, 21A, 25; Q5020; Q5024 |
| V5013B1011/U | 3 in. | DN80 | 100 Cv | 85 Kv | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | Stem up increases B to AB flow | Mixing | ML6984/ML7984; Q5001/Modutrol IV Motor; ML6420, 21A, 25; ML7420/ML7421A/ML7425; Q5020; Q5024 |
| V5013B1029/U | 4 in. | DN100 | 160 Cv | 137 Kv | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Stem up increases B to AB flow | Mixing | ML7421B; ML6421B; Q5001/Modutrol IV Motor; Q5024 |
| V5013B1037/U | 5 in. | DN125 | 250 Cv | 214 Kv | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Stem up increases B to AB flow | Mixing | ML6421B; ML7421B; Q5001/Modutrol IV Motor; Q5024 |
| V5013B1045/U | 6 in. | DN150 | 360 Cv | 308 Kv | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Stem up increases B to AB flow | Mixing | ML7421B; ML6421B; Q5001/Modutrol IV Motor; Q5024 |
| V5013C1001/U | 2 1/2 in. | DN65 | 63 Cv | 54 Kv | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | Stem up increases AB to A flow | Diverting | ML6984/ML7984; Q5001/Modutrol IV Motor; ML7420/ML7421A/ML7425; ML6420, 21A, 25; Q5020; Q5024 |
| V5013C1019/U | 3 in. | DN80 | 100 Cv | 85 Kv | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | Stem up increases AB to A flow | Diverting | ML6984/ML7984; Q5001/Modutrol IV Motor; ML6420, 21A, 25; ML7420/ML7421A/ML7425; Q5020; Q5024 |
| V5013C1027/U | 4 in. | DN100 | 160 Cv | 137 Kv | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Stem up increases AB to A flow | Diverting | ML6421B; ML7421B; Q5001/Modutrol IV Motor; Q5024 |
| V5013C1035/U | 5 in. | DN125 | 250 Cv | 214 Kv | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Stem up increases AB to A flow | Diverting | ML7421B; ML6421B; Q5001/Modutrol IV Motor; Q5024 |
| V5013C1043/U | 6 in. | DN150 | 360 Cv | 308 Kv | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Stem up increases AB to A flow | Diverting | ML6421B; ML7421B; Q5001/Modutrol IV Motor; Q5024 |

Flanged Globe Valves

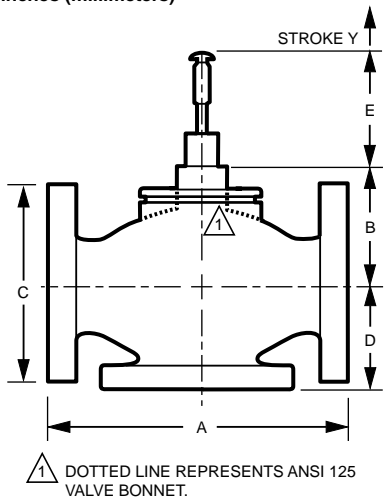
VG3 Three-way Flanged Globe Valves



Flanged globe valves for two-position or modulating control in heating, ventilating and air conditioning (HVAC) systems. Can be operated by ML6984/7984, ML6420/6425, ML6421/7421 Actuators, MP953 Pneumatic Actuators, Modutrol Motors with Q5001 valve linkage, or MN/MS direct coupled actuators (DCA).

- ANSI Class 125 and Class 250 cast iron bodies with flanged end connections.
- Face-to-face flange dimensions per ANSI/ISA S75.03 standard.
- Sizes from 2-1/2 to 6 inches.
- Stainless steel trim standard for long life span.
- Self-adjusting packing.
- Accurate positioning with equal percentage and linear flow characteristics to ensure precise temperature control.
- Universal bonnet for direct-coupled electric and pneumatic actuators for easy mounting, or linkage coupled Modutrol™ Motors and MN/MS Series direct coupled actuators.
- Constant total flow throughout full plug travel (3-way diverting models).
- Not suitable for combustible gasses.

Dimensions in inches (millimeters)



Valve Type: Globe Valve
Body Pattern: Three-way
Connection Type: Flanged
Controlled Fluid: Chilled or hot water with up to 50% Glycol. Not for use with steam or fuels.
Flow Characteristic: Mixing Valves-Equal Percentage (A-AB); Diverting Valves-Linear (constant total)
Actuation: Must be purchased separately
Fluid Temperature Range: 20°F to 250°F (-7°C to +120°C)
Static Pressure Rating: VGF31-Meets ANSI 125 Standard; VGF32-Meets ANSI 250 Standard
ANSI/ASME Rating: VGF31-125; VGF32-250
Materials (Body): Cast Iron ASTM A126 Class B
Materials (Seat): Stainless Steel
Materials (Stem): Stainless Steel
Materials (Plug / Ball / Disc): Stainless Steel
Materials (Packing): Spring-loaded PTFE cone rings
Materials (Cartridge): Stainless Steel
Leakage: Mixing-Port A seat leakage: 0.5%; Port B seat leakage 1.0%; For Supply mixing control; use diverting valve for boiler/chiller bypass; Diverting-Port A seat leakage: 0.05%; Port B seat leakage 0.1%

| MODEL NUMBER | DIMENSIONS, IN. (MM) | | | | | |
|---|----------------------|---------------|--------------|-------------|---------------|------------|
| | A | B | C | D | E | Y |
| 3-WAY MIXING VALVES, ANSI CLASS 125. STEM UP TO CLOSE A-AB | | | | | | |
| VGF31EM25 | 10-7/8 (276) | 3 (76) | 7 (178) | 3-3/4 (95) | 4-3/16 (107) | 13/16 (20) |
| VGF31EM30 | 11-3/4 (298) | 4-3/16 (107) | 7-1/2 (191) | 4-3/8 (111) | | |
| VGF31EM40 | 13-7/8 (352) | 5-8/16 (140) | 9 (229) | 5-1/8 (130) | 6-11/16 (170) | 1-1/2 (38) |
| VGF31EM50 | 15-3/4 (400) | 5-3/8 (137) | 10 (254) | 5-3/4 (146) | | |
| VGF31EM60 | 17-3/4 (451) | 5-11/16 (145) | 11 (279) | 6-5/8 (168) | | |
| 3-WAY MIXING VALVES, ANSI CLASS 250. STEM UP TO CLOSE A-AB | | | | | | |
| VGF32EM25 | 11-1/2 (292) | 4-3/8 (112) | 7-1/2 (191) | 3-3/4 (95) | 4-3/16 (107) | 13/16 (20) |
| VGF32EM30 | 12-1/2 (318) | 6-3/8 (161) | 8-1/4 (210) | 4-3/8 (111) | | |
| VGF32EM40 | 14-1/2 (368) | 5-7/8 (150) | 10 (254) | 5-1/8 (130) | 6-11/16 (170) | 1-1/2 (38) |
| VGF32EM50 | 16-5/8 (422) | 6-3/16 (157) | 11 (279) | 5-3/4 (146) | | |
| VGF32EM60 | 18-5/8 (473) | 6-3/16 (157) | 12-1/2 (318) | 6-5/8 (168) | | |
| 3-WAY DIVERTING VALVES, ANSI CLASS 125. STEM DOWN TO CLOSE AB-A | | | | | | |
| VGF31LD25 | 10-7/8 (276) | 3 (76) | 7 (178) | 3-3/4 (95) | 4-3/16 (107) | 13/16 (20) |
| VGF31LD30 | 11-3/4 (298) | 4-3/16 (107) | 7-1/2 (191) | 4-3/8 (111) | | |
| VGF31LD40 | 13-7/8 (352) | 5-8/16 (140) | 9 (229) | 5-1/8 (130) | 6-11/16 (170) | 1-1/2 (38) |
| VGF31LD50 | 15-3/4 (400) | 5-3/8 (137) | 10 (254) | 5-3/4 (146) | | |
| VGF31LD60 | 17-3/4 (451) | 5-11/16 (145) | 11 (279) | 6-5/8 (168) | | |
| 3-WAY DIVERTING VALVES, ANSI CLASS 250. STEM DOWN TO CLOSE AB-A | | | | | | |
| VGF32LD25 | 11-1/2 (292) | 4-3/8 (112) | 7-1/2 (191) | 3-3/4 (95) | 4-3/16 (107) | 13/16 (20) |
| VGF32LD30 | 12-1/2 (318) | 6-3/8 (161) | 8-1/4 (210) | 4-3/8 (111) | | |
| VGF32LD40 | 14-1/2 (368) | 5-7/8 (150) | 10 (254) | 5-1/8 (130) | 6-11/16 (170) | 1-1/2 (38) |
| VGF32LD50 | 16-5/8 (422) | 6-3/16 (157) | 11 (279) | 5-3/4 (146) | | |
| VGF32LD60 | 18-5/8 (473) | 6-3/16 (157) | 12-1/2 (318) | 6-5/8 (168) | | |

M27604

Flanged Globe Valves

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Maximum Differential Pressure Ratings (Close-off) (psi) | Maximum Differential Pressure Ratings (Close-off) (kPa) | Stem Travel | Bonnet Size | Valve Action | Used With |
|-----------------|------------------|----------------|---------------|---------------|---------------------------------------|---------------------------------------|---|---|-------------------|---------------------|------------------------------------|---|
| VGF31EM25 | 2 1/2 in. | DN65 | 70 Cv | 60 Kv | 175 psig at 130°F (66°C) | 1206 kPa at 66°C (130°F) | 87 psi | 599 kPa | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | Mixing, step up to close A-AB | ML6984/ML7984; ML6420/21A/25; ML7420/21A/25; Q5020/DCA; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF31EM30 | 3 in. | DN80 | 115 Cv | 99 Kv | 175 psig at 130°F (66°C) | 1206 kPa at 66°C (130°F) | 58 psi | 400 kPa | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | Mixing, step up to close A-AB | ML6984/ML7984; ML6420/21A/25; ML7420/21A/25; Q5020/DCA; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF31EM40 | 4 in. | DN100 | 170 Cv | 146 Kv | 175 psig at 130°F (66°C) | 1206 kPa at 66°C (130°F) | 34 psi | 234 kPa | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Mixing, step up to close A-AB | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF31EM50 | 5 in. | DN125 | 320 Cv | 275 Kv | 175 psig at 130°F (66°C) | 1206 kPa at 66°C (130°F) | 13 psi | 90 kPa | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Mixing, step up to close A-AB | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF31EM60 | 6 in. | DN150 | 370 Cv | 318 Kv | 175 psig at 130°F (66°C) | 1206 kPa at 66°C (130°F) | 13 psi | 90 kPa | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Mixing, step up to close A-AB | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF31LD25 | 2 1/2 in. | DN65 | 70 Cv | 60 Kv | 175 psig at 130°F (66°C) | 1206 kPa at 66°C (130°F) | 69 psi | 475 kPa | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | Diverting, stem down to close AB-A | ML6984/ML7984; ML6420/21A/25; ML7420/21A/25; Q5020/DCA; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF31LD30 | 3 in. | DN80 | 120 Cv | 103 Kv | 175 psig at 130°F (66°C) | 1206 kPa at 66°C (130°F) | 34 psi | 234 kPa | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | Diverting, stem down to close AB-A | ML6984/ML7984; ML6420/21A/25; ML7420/21A/25; Q5020/DCA; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF31LD40 | 4 in. | DN100 | 160 Cv | 138 Kv | 175 psig at 130°F (66°C) | 1206 kPa at 66°C (130°F) | 34 psi | 234 kPa | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Diverting, stem down to close AB-A | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF31LD50 | 5 in. | DN125 | 285 Cv | 245 Kv | 175 psig at 130°F (66°C) | 1206 kPa at 66°C (130°F) | 13 psi | 90 kPa | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Diverting, stem down to close AB-A | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF31LD60 | 6 in. | DN150 | 380 Cv | 327 Kv | 175 psig at 130°F (66°C) | 1206 kPa at 66°C (130°F) | 13 psi | 90 kPa | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Diverting, stem down to close AB-A | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF32EM25 | 2 1/2 in. | DN65 | 70 Cv | 60 Kv | 400 psig | 2758 kPa | 87 psi | 599 kPa | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | Mixing, step up to close A-AB | ML6984/ML7984; ML6420/21A/25; ML7420/21A/25; Q5020/DCA; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF32EM30 | 3 in. | DN80 | 115 Cv | 99 Kv | 400 psig | 2758 kPa | 58 psi | 400 kPa | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | Mixing, step up to close A-AB | ML6984/ML7984; ML6420/21A/25; ML7420/21A/25; Q5020/DCA; Q5001/Modutrol IV Motor; MP953; Q5024 |

Flanged Globe Valves

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Maximum Differential Pressure Ratings (Close-off) (psi) | Maximum Differential Pressure Ratings (Close-off) (kPa) | Stem Travel | Bonnet Size | Valve Action | Used With |
|-----------------|------------------|----------------|---------------|---------------|---------------------------------------|---------------------------------------|---|---|-------------------|---------------------|------------------------------------|---|
| VGF32EM40 | 4 in. | DN100 | 170 Cv | 146 Kv | 400 psig | 2758 kPa | 34 psi | 234 kPa | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Mixing, step up to close A-AB | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF32EM50 | 5 in. | DN125 | 320 Cv | 275 Kv | 400 psig | 2758 kPa | 13 psi | 90 kPa | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Mixing, step up to close A-AB | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF32EM60 | 6 in. | DN150 | 370 Cv | 318 Kv | 400 psig | 2758 kPa | 13 psi | 90 kPa | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Mixing, step up to close A-AB | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF32LD25 | 2 1/2 in. | DN65 | 70 Cv | 60 Kv | 400 psig | 2758 kPa | 69 psi | 475 kPa | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | Diverting, stem down to close AB-A | ML6984/ML7984; ML6420/21A/25; ML7420/21A/25; Q5020/DCA; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF32LD30 | 3 in. | DN80 | 120 Cv | 103 Kv | 400 psig | 2758 kPa | 34 psi | 234 kPa | 3/4 in. (20 mm) | 1-3/8 in. (35 mm) | Diverting, stem down to close AB-A | ML6984/ML7984; ML6420/21A/25; ML7420/21A/25; Q5020/DCA; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF32LD40 | 4 in. | DN100 | 160 Cv | 138 Kv | 400 psig | 2758 kPa | 34 psi | 234 kPa | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Diverting, stem down to close AB-A | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF32LD50 | 5 in. | DN125 | 285 Cv | 245 Kv | 400 psig | 2758 kPa | 13 psi | 90 kPa | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Diverting, stem down to close AB-A | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |
| VGF32LD60 | 6 in. | DN150 | 380 Cv | 327 Kv | 400 psig | 2758 kPa | 13 psi | 90 kPa | 1 1/2 in. (38 mm) | 1-7/8 in. (47.6 mm) | Diverting, stem down to close AB-A | ML6421B; ML7421B; Q5001/Modutrol IV Motor; MP953; Q5024 |

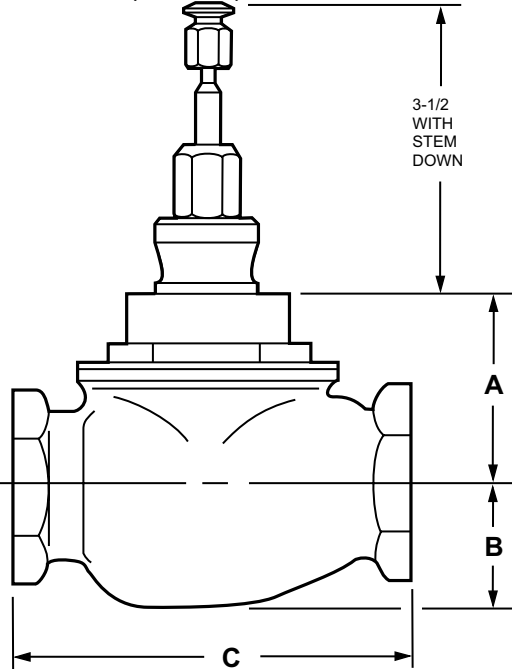
V5011F, G Two-Way Threaded Globe Valves



Used for two-position or modulating control of steam and water and glycol solutions (to 50 percent concentration) in heating or cooling systems.

- Sizes range from 2-1/2 to 3 inches.
- Direct acting.
- High pressure steam models with stainless steel trim.
- Spring-loaded, self-adjusting packing.
- Stainless steel stem prevents corrosion.
- Valve designs provide equal percentage characteristics of flow for close control of water, and linear characteristic of flow for close control of steam or chilled water.
- Valves utilize direct mounting, electric or pneumatic linear valve actuators; Q5001 linkage with Modutrol Motor; or Q5020 linkages with Direct Coupled Actuators to operate the valve.

Dimensions in inches (millimeters)



V5011F,G

| BODY STYLE | PIPE SIZE (in.) | DIMENSIONS | | | | | |
|--|-----------------|------------|----|-------|----|-------|-----|
| | | A | | B | | C | |
| | | in | mm | in | mm | in | mm |
| V5011F,G THREADED DIRECT BODY | 1/2 | 2 | 51 | 1-3/4 | 45 | 3-3/8 | 86 |
| | 3/4 | 1-3/4 | 45 | 1-3/4 | 45 | 3-3/8 | 86 |
| | 1 | 1-7/8 | 48 | 1-3/4 | 45 | 4-1/4 | 108 |
| | 1-1/4 | 2 | 51 | 1-5/8 | 42 | 4-7/8 | 124 |
| | 1-1/2 | 2-7/8 | 73 | 1-5/8 | 42 | 5-5/8 | 143 |
| | 2 | 3-1/8 | 80 | 2 | 51 | 5-5/8 | 143 |
| | 2-1/2 | 2-3/4 | 70 | 2-3/8 | 61 | 7-1/2 | 191 |
| | 3 | 3-1/8 | 80 | 2-5/8 | 67 | 8-7/8 | 226 |

M2804A

Valve Type: Globe Valve

Body Pattern: Two-way, Straight-through

Valve Action: Stem down to close

Connection Type: Female NPT

Actuation: Must be purchased separately

Fluid Temperature Range: 40°F to 337°F (4°C to 169°C)

Maximum Differential Pressure Ratings (Close-off) (psi): For Quiet Water Service – 20 psid

Maximum Differential Pressure Ratings (Close-off) (kPa): For Quiet Water Service – 138 kPa

Static Pressure Rating: Meets ANSI 150 Standard

ANSI/ASME Rating: 150

Stem Travel: 3/4 in. (20 mm)

Bonnet Size: 1-3/8 in. (35 mm)

Materials (Body): Red Brass

Materials (Seat): V5011F-Brass; V5011G-Stainless Steel

Materials (Stem): Stainless Steel

Materials (Plug / Bal / Disc): V5011F-Brass plug with Teflon® disc;

V5011G-Stainless Steel plug with carbon-loaded Teflon® disc

Materials (Packing): V5011F-Teflon and Nitrile; V5011G-Teflon Cone

Leakage: 0.5% of Cv

Approvals, CRN Number: 0C0861.96R1

Used With: Q5001/Modutrol IV Motor; MP953; Q5020/DCA; ML6984/ML7984; ML6420, 21A, 25; ML7420/ML7421A/ML7425; Q5024

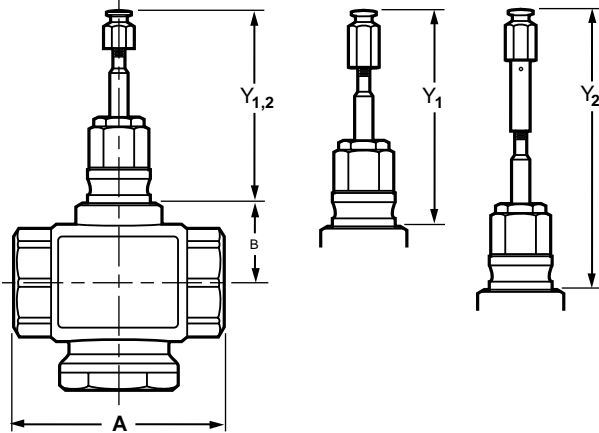
| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Controlled Fluid | Flow Characteristic |
|-----------------|------------------|----------------|---------------|---------------|--|--|--|---------------------|
| V5011F1105/U | 2 1/2 in. | DN65 | 63 Cv | 54 Kv | 250 psi at 100°F water; 217 psi at 250°F water; 15 psi steam | 1724 kPa at 38°C water; 1496 kPa at 121°F water; 100 kPa steam | Chilled or hot water with up to 50% Glycol. Not for use with steam or fuels. | Equal Percentage |
| V5011F1113/U | 3 in. | DN80 | 100 Cv | 85 Kv | 250 psi at 100°F water; 217 psi at 250°F water; 15 psi steam | 1724 kPa at 38°C water; 1496 kPa at 121°F water; 100 kPa steam | Chilled or hot water with up to 50% Glycol. Not for use with steam or fuels. | Equal Percentage |
| V5011G1111/U | 2 1/2 in. | DN65 | 63 Cv | 54 Kv | 240 psi at 150°F water; 100 psi at 337°F steam | 240 psi at 66°C water; 690 kPa at 69°C steam | Chilled or hot water with up to 50% Glycol or Steam. Not for use with fuels. | Linear |
| V5011G1129/U | 3 in. | DN80 | 100 Cv | 85 Kv | 240 psi at 150°F water; 100 psi at 337°F steam | 240 psi at 66°C water; 690 kPa at 69°C steam | Chilled or hot water with up to 50% Glycol or Steam. Not for use with fuels. | Linear |

Threaded Globe Valves

V5011N Two-way Globe Valves



Dimensions in inches (millimeters)



| VALVE SIZE (IN) | A in. (mm) | B in. (mm) |
|-----------------|--------------|--------------|
| 1/2 | 3-1/4 (83) | 1-9/16 (40) |
| 3/4 | | |
| 1 | 4-1/16 (103) | 1-13/16 (47) |
| 1-1/4 | 4-3/16 (106) | |
| 1-1/2 | 4-3/4 (120) | |
| 2 | 5-1/4 (134) | |

| VALVE | Y ₁ in. (mm) | Y ₂ ^a in. (mm) |
|--------------------------------|-------------------------|--------------------------------------|
| V5011N1XXX OR V5011N2XXX | 3-1/2 (89) | 5-1/4 (133) |
| V5011N3XXX | 4-3/16 (107) | 5-15/16 (151) |
| | STEM FULLY DOWN | |
| | STEM FULLY UP | |

^aY₂ WITH STEM EXTENSION FOR MP953C,E (8 IN. ONLY)

M17378A

NPT globe valves for two-position or modulating control of steam or water with glycol solutions up to 50% in heating, ventilating and air conditioning (HVAC) systems. Used in applications requiring tight shut off.

- Sizes range from 1/2 to 2 inches.
- Direct and reverse acting.
- High pressure steam models with stainless steel trim.
- Spring-loaded, self-adjusting packing.
- Stainless steel stem prevents corrosion.
- Valve designs provide equal percentage characteristics of flow for close control of water, and linear characteristic of flow for close control of steam or chilled water.
- Valves utilize direct mounting, electric or pneumatic linear valve actuators; Q5001 linkage with Modutrol Motor; or Q5020 linkages with direct coupled rotary actuators to operate the valve.

Valve Type: Globe Valve

Body Pattern: Two-way

Valve Action: 1000 and 2000 series-Stem down to close; 3000 series-Stem up to close

Connection Type: Female NPT

Controlled Fluid: 1000 and 3000 series-Chilled or hot water with up to 50% Glycol; 2000 series-Chilled or hot water with up to 50% Glycol; Steam; Not for use with fuels or combustible gases

Flow Characteristics: 1000 and 3000 series-Equal Percentage; 2000 series-Linear

Actuation: Must be purchased separately

Ambient Temperature: 1000 and 3000 series-36°F to 248°F water; 2000 series-36°F to 248°F water; 340°F steam (1000 and 3000 series-2°C to 120°C water; 2000 series-2°C to 120°C water; 171°C steam)

Maximum Differential Pressure Ratings (Close-off) (psi): 240 psi; For Quiet Water Service – 20 psid

Maximum Differential Pressure Ratings (Close-off) (kPa): 1655 kPa; For Quiet Water Service – 138 kPa

Static Pressure Rating: Meets ANSI 150 Standard

ANSI/ASME Rating: 150

Stem Travel: 3/4 in. (20 mm)

Bonnet Size: 1-3/8 in. (35 mm)

Materials (Body): Red Brass

Materials (Stem): Stainless Steel

Materials (Plug / Ball / Disc): 1000 and 3000 series-Brass; 2000 series-Stainless Steel

Materials (Packing): Teflon

Materials (Cartridge): 1000 and 3000 series-Brass; 2000 series-Stainless Steel

Leakage: Seat: 0.05% of Cv

Approvals, CRN Number: 0C0861.96R1

Used With: Q5001/Modutrol IV Motor; MP953; Q5020/DCA; ML6984/ML7984; ML6420, 21A, 25; ML7420/ML7421A/ML7425; Q5024

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Materials (Seat) |
|-----------------|------------------|----------------|---------------|---------------|---------------------------------------|---------------------------------------|------------------|
| V5011N1008/U | 1/2 in. | DN15 | 0.73 Cv | 0.63 Kv | 217 psi at 248°F | 1500 kPa at 120°C | Stainless Steel |
| V5011N1016/U | 1/2 in. | DN15 | 1.2 Cv | 1.0 Kv | 217 psi at 248°F | 1500 kPa at 120°C | Stainless Steel |
| V5011N1024/U | 1/2 in. | DN15 | 1.85 Cv | 1.6 Kv | 217 psi at 248°F | 1500 kPa at 120°C | Stainless Steel |
| V5011N1032/U | 1/2 in. | DN15 | 2.9 Cv | 2.5 Kv | 217 psi at 248°F | 1500 kPa at 120°C | Stainless Steel |
| V5011N1040/U | 1/2 in. | DN15 | 4.7 Cv | 4.0 Kv | 217 psi at 248°F | 1500 kPa at 120°C | Stainless Steel |
| V5011N1057/U | 3/4 in. | DN20 | 7.3 Cv | 6.3 Kv | 217 psi at 248°F | 1500 kPa at 120°C | Stainless Steel |
| V5011N1065/U | 1 in. | DN25 | 11.7 Cv | 10 Kv | 217 psi at 248°F | 1500 kPa at 120°C | Stainless Steel |
| V5011N1073/U | 1 1/4 in. | DN32 | 18.7 Cv | 16 Kv | 217 psi at 248°F | 1500 kPa at 120°C | Stainless Steel |
| V5011N1081/U | 1 1/2 in. | DN40 | 29 Cv | 25 Kv | 217 psi at 248°F | 1500 kPa at 120°C | Stainless Steel |
| V5011N1099/U | 2 in. | DN50 | 46.8 Cv | 40 Kv | 217 psi at 248°F | 1500 kPa at 120°C | Stainless Steel |
| V5011N2006/U | 1/2 in. | DN15 | 0.73 Cv | 0.63 Kv | 100 psi at 337°F steam | 690 kPa at 169°C steam | Stainless Steel |
| V5011N2014/U | 1/2 in. | DN15 | 1.2 Cv | 1.0 Kv | 100 psi at 337°F steam | 690 kPa at 169°C steam | Stainless Steel |
| V5011N2022/U | 1/2 in. | DN15 | 1.85 Cv | 1.6 Kv | 100 psi at 337°F steam | 690 kPa at 169°C steam | Stainless Steel |
| V5011N2030/U | 1/2 in. | DN15 | 2.9 Cv | 2.5 Kv | 100 psi at 337°F steam | 690 kPa at 169°C steam | Stainless Steel |
| V5011N2048/U | 1/2 in. | DN15 | 4.7 Cv | 4.0 Kv | 100 psi at 337°F steam | 690 kPa at 169°C steam | Stainless Steel |
| V5011N2055/U | 3/4 in. | DN20 | 7.3 Cv | 6.3 Kv | 100 psi at 337°F steam | 690 kPa at 169°C steam | Stainless Steel |
| V5011N2063/U | 1 in. | DN25 | 11.7 Cv | 10 Kv | 100 psi at 337°F steam | 690 kPa at 169°C steam | Stainless Steel |
| V5011N2071/U | 1 1/4 in. | DN32 | 18.7 Cv | 16 Kv | 100 psi at 337°F steam | 690 kPa at 169°C steam | Stainless Steel |

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Materials (Seat) |
|-----------------|------------------|----------------|---------------|---------------|---------------------------------------|---------------------------------------|------------------|
| V5011N2089/U | 1 1/2 in. | DN40 | 29 Cv | 25 Kv | 100 psi at 337°F steam | 690 kPa at 169°C steam | Stainless Steel |
| V5011N2097/U | 2 in. | DN50 | 46.8 Cv | 40 Kv | 100 psi at 337°F steam | 690 kPa at 169°C steam | Stainless Steel |
| V5011N3004/U | 1/2 in. | DN15 | 2.9 Cv | 2.5 Kv | 217 psi at 248°F | 1500 kPa at 120°C | Stainless Steel |
| V5011N3012/U | 1/2 in. | DN15 | 4.7 Cv | 4.0 Kv | 217 psi at 248°F | 1500 kPa at 120°C | Stainless Steel |
| V5011N3020/U | 3/4 in. | DN20 | 7.3 Cv | 6.3 Kv | 217 psi at 248°F | 1500 kPa at 120°C | Integral Brass |
| V5011N3038/U | 1 in. | DN25 | 11.7 Cv | 10 Kv | 217 psi at 248°F | 1500 kPa at 120°C | Integral Brass |
| V5011N3046/U | 1 1/4 in. | DN32 | 18.7 Cv | 16 Kv | 217 psi at 248°F | 1500 kPa at 120°C | Integral Brass |

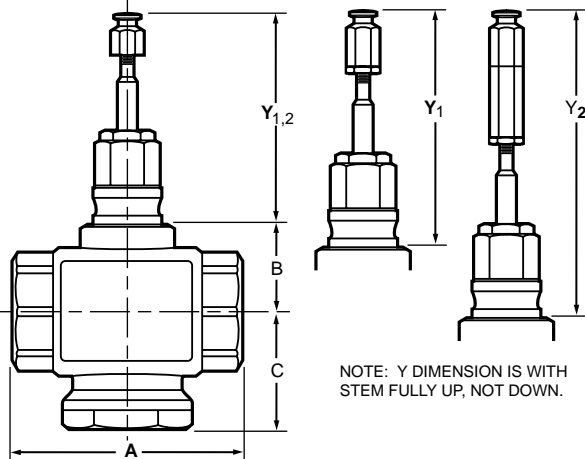
V5013N Three-Way Threaded Globe Valves



The V5013N is a three-way threaded globe valve that controls hot water, cold water, and glycol solutions (up to 50 percent concentration), in heating or cooling HVAC applications. The valves direct flow from one or two inlets to a common outlet.

- Red brass body with NPT-threaded connections.
- Stainless steel stem and brass plug.
- Low seat leakage rating, < 0.05%.
- Spring-loaded, self adjusting packing.
- 50:1 rangeability per VDI/VDE 2173.
- Constant total flow throughout full stem travel.
- Accurate positioning to ensure state-of-the-art temperature control.
- Sizes range from 1/2 inch to 2 inches.
- Valves utilize direct mounting, electric or pneumatic valve actuators; Q5001 linkage with Modutrol Motor; or Q5020 linkages with Direct Coupled Actuators to operate the valve.
- Repack and rebuild kits available for field servicing.
- Not suitable for combustible gases.

Dimensions in inches (millimeters)



NOTE: Y DIMENSION IS WITH STEM FULLY UP, NOT DOWN.

| VALVE SIZE | A | B | C | STEM UP | |
|--------------|--------------|--------------|-------------|----------------|-----------------------------|
| | | | | Y ₁ | Y ₂ ^a |
| 1/2 (DN15) | 3-1/4 (83) | 1-9/16 (40) | 2-9/16 (65) | 4-3/16 (106) | 5-15/16 (151) |
| 3/4 (DN20) | 3-1/4 (83) | 1-9/16 (40) | 2-9/16 (65) | | |
| 1 (DN25) | 4-1/16 (103) | 1-9/16 (40) | 2-5/8 (67) | | |
| 1-1/4 (DN32) | 4-3/16 (106) | 1-9/16 (40) | 2-7/8 (73) | | |
| 1-1/2 (DN40) | 4-3/4 (121) | 1-13/16 (46) | 3 (76) | | |
| 2 (DN50) | 5-1/4 (134) | 1-13/16 (46) | 3-5/16 (84) | | |

^a Y₂ WITH STEM EXTENSION FOR MP953C,E (8 IN. ONLY)

M12901A

Valve Type: Globe Valve

Body Pattern: Three-way mixing, A-B-AB porting

Valve Action: Mixing

Connection Type: Female NPT

Controlled Fluid: Chilled or hot water with up to 50% Glycol. Not for use with fuels.

Flow Characteristic: Equal Percentage (A-AB); Linear (B-AB)

Actuation: Must be purchased separately

Ambient Temperature Range: 36°F to 248°F water (2°C to 120°C water)

Maximum Differential Pressure Ratings (Close-off) (psi): 240 psi;
For Quiet Water Service – 20 psid

Maximum Differential Pressure Ratings (Close-off) (kPa): 1655 kPa;
For Quiet Water Service – 138 kPa

Maximum Safe Operating Pressure (psi): 217 psi at 248°F

Maximum Safe Operating Pressure (kPa): 1500 kPa at 120°C

Static Pressure Rating: Meets ANSI 150 Standard

ANSI/ASME Rating: 150

Stem Travel: 3/4 in. (20 mm)

Bonnet Size: 1 3/8 in. (35 mm)

Materials (Body): Red Brass

Materials (Stem): Stainless Steel

Materials (Plug / Ball / Disc): Brass

Materials (Packing): Teflon/EPDM

Leakage: 0.05% of Cv



Approvals, CRN Number: 0C0861.96R1

Used With: Q5001/Modutrol IV Motor; Q5020/DCA; ML6984/ML7984; ML6420, 21A, 25; ML7420/ML7421A/ML7425; Q5024

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Materials (Seat) |
|-----------------|------------------|----------------|---------------|---------------|--|
| V5013N1030/U | 1/2 in. | DN15 | 2.9 Cv | 2.5 Kv | Replaceable stainless steel (upper), replaceable brass (lower) |
| V5013N1048/U | 1/2 in. | DN15 | 4.7 Cv | 4.0 Kv | Replaceable stainless steel (upper), replaceable brass (lower) |
| V5013N1055/U | 3/4 in. | DN20 | 7.3 Cv | 6.3 Kv | Integral brass (upper), replaceable brass (lower) |
| V5013N1063/U | 1 in. | DN25 | 11.7 Cv | 10 Kv | Integral brass (upper), replaceable brass (lower) |
| V5013N1071/U | 1 1/4 in. | DN32 | 18.7 Cv | 16 Kv | Integral brass (upper), replaceable brass (lower) |
| V5013N1089/U | 1 1/2 in. | DN40 | 29 Cv | 25 Kv | Integral brass (upper), replaceable brass (lower) |
| V5013N1097/U | 2 in. | DN50 | 46.8 Cv | 40 Kv | Integral brass (upper), replaceable brass (lower) |

Globe Valve Accessories and Replacement Parts

Globe Valve Accessories

| Material Number | Description | Used With | |
|-----------------|---|--|---|
| 14002734-001/U | Packing Grease Plastilube #2 2CC Tube | | |
| 14002734-002/U | Lubricant, packing, AMOCO H-100 | | |
| 14004552-001/U | Packing Nut for V5011F, G | V5011F, G | |
| 14004623-001/U | Stem button for V5011F/G | V5011F, G |  |
| 205699A/U | Stem/Bonnet Adapter for 2 1/2 in. and 3 in. V33xx and V34xx Flanged Valves. | 2 1/2 inch and 3 inch V33xx and V34xx Flanged Valves |  |
| 209116/U | Stem Button for 4 inch to 6 inch V5011, V3350, and VGF valves | V3350; V5011, VGF | |
| 209117/U | Stem Button for 2 1/2 inch to 3 inch V5011, V3350, and VGF valves | V5011; V3350, VGF | |
| 310498/U | Packing Spring, V5011A, C, J | V5011A, C, J | |
| 310506/U | Packing Follower | | |
| 310509/U | Packing Gland, V5011 1/2 in. to 1 1/4 in. | V5011 | |
| 310536/U | Valve Seat, V5011A, C, F, G, Cv 2.5 | V5011A, C, F, G | |
| 310537/U | Valve Seat, V5011A, C, F, G, Cv 4 | V5011A, C, F, G | |
| 310538/U | Valve Seat, V5011A, C, F, G, Cv 6.3 | V5011A, C, F, G | |
| 310623/U | Packing, Teflon Cone, V5011, Steam | V5011 | |
| 310890/U | Valve Seat, V5011A, C, F, G, Cv 6.3 | V5011A, C, F, G | |
| 311057/U | Packing Grease Plastilube #2 1 3/4 oz Tube | | |
| 311077/U | Valve Seat, V5011A, C, F, G, Cv 10 | V5011A, C, F, G | |
| 311078/U | Valve Seat, V5011A, C, F, G, Cv | V5011A, C, F, G | |
| 311095A/U | Stem and Disc holder, V5011A, C, F, Cv | V5011A | |
| 311291 | Seat, V5011A, C, F, G, 2 in., Cv 25 | V5011A, C, F, G | |
| 311619A/U | Stem Assembly, V5011 A, C, F, G, 3/4 in. travel, 1 1/2 in. to 3 in. NPT | V5011A | |
| 311731/U | Seat, V5011A, C, F, G, 2 1/2 in., Cv 63 | V5011A, C, F, G | |
| 311734/U | Seat, V5011A, C, F, G, 3 in., Cv 100 | V5011A, C, F, G | |
| 311745/U | Disc Holder | | |
| 311860/U | Plug, V5011A, F, 2 1/2 in., Cv 63 | V5011A | |
| 311861/U | Plug, V5011A, F, 3 in., Cv 100 | V5011A | |
| 312497 | Packing Nut, V5013A, 4 in. to 6 in. | V5013A | |
| 312498/U | Packing, V5013A, 4 in. to 6 in. | V5013A | |
| 313104/U | Disc, V5011, 1 in. NPT | V5011 | |
| 313338/U | Valve Stem, 1/2 in. to 1 1/4 in. NPT for V5013 | V5013 | |
| 314539/U | Plug, V5011C, G, 3 in. NPT, Cv 100 | V5011C | |
| 32003941-001/U | Seat Removal Tool | V5011N; V5013N 1/2 in. through 1-1/4 in. sizes | |
| 32003941-002/U | Seat Removal Tool | V5011N; V5013N for 1-1/2 in. through 2 in. sizes | |

Globe Valve Replacement Parts

| Material Number | Description | Used With |
|-----------------|--|------------------------|
| 0901116A/U | Stem button for V5011N and V5013N valves | |
| 14004625-001/U | Replacement Disc, V5011A, F, Cv 0.4 to 4.0 | V5011A, F |
| 14004625-003/U | Replacement Disc, V5011A, F, Cv 16 | V5011A, F |
| 14004625-004/U | Replacement Disc, V5011A, F, Cv 25 | V5011A, F |
| 14004625-005/U | Replacement Disc, V5011A, F, Cv 40 | V5011A, F |
| 14004625-006/U | Replacement Disc, V5011A, F, Cv 63 | V5011A, F |
| 14004625-007/U | Replacement Disc, V5011A, F, Cv 100 | V5011A, F |
| 14004625-012/U | Replacement Disc, V5011C, G, Cv 6.3 to 10 | V5011C, G |
| 14004625-013/U | Replacement Disc, V5011C, G, Cv 16 | V5011C, G |
| 14004625-014/U | Replacement Disc, V5011C, G, Cv 25 | V5011C, G |
| 14004625-015/U | Replacement Disc, V5011C, G, Cv 40 | V5011C, G |
| 14004625-016/U | Replacement Disc, V5011C, G, Cv 63 | V5011C, G |
| 14004625-017/U | Replacement Disc, V5011C, G, Cv 100 | V5011C, G |
| 311432/U | White Packing 3/8 inch I.D. | V5011G1111; V5011G1129 |
| 311746/U | Disc holder for 3 in. valves | V5011F1113; V5011G1129 |

VGF Packing Kits

| Material Number | Description | Used With |
|-----------------|---|------------------------------------|
| R43176754002 | Packing kit for 2 1/2" and 3" ANSI 125 VGF valves | VGF21, VGF31 up to 3" |
| R43176755004 | Packing kit for 2 1/2" and 3" ANSI 250 and pressure-balanced VGF valves | VGF21EP/LP; VGF22; VGF32; up to 3" |
| R43176755005 | Packing kit for 4" to 6" VGF valves | VGF2; VGF3; 4 to 6" |

Globe Valve Accessories and Replacement Parts

Globe Valve Rebuild Kit

| Material Number | Description | Used With |
|-----------------|---|-------------------------------|
| 0901748A/U | Rebuild kit for V5011N1024 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5011N |
| 0901749A/U | Rebuild kit for V5011N1032 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5011N |
| 0901750A/U | Rebuild kit for V5011N1040 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5011N |
| 0901751A/U | Rebuild kit for V5011N1057 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5011N |
| 0901752A/U | Rebuild kit for V5011N1065 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5011N |
| 0901753A/U | Rebuild kit for V5011N1073 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5011N |
| 0901754A/U | Rebuild kit for V5011N1081 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5011N |
| 0901755A/U | Rebuild kit for V5011N1099 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5011N |
| 0901759A/U | Rebuild kit for V5011N3004 and V5013N1030 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5011N |
| 0901760A/U | Rebuild kit for V5011N3012 and V5013N1048 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5011N |
| 0901761A/U | Rebuild kit for V5011N3020 and V5013N1055 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5011N |
| 0901762A/U | Rebuild kit for V5011N3038 and V5013N1063 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5011N |
| 0901763A/U | Rebuild kit for V5011N3046 and V5013N1071 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5011N |
| 0901764A/U | Rebuild kit for V5013N1089 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5013N |
| 0901765A/U | Rebuild kit for V5013N1097 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5013N |
| 0901786A/U | Repack Kit for V5011N and V5013N 1/2 inch to 1-1/4 inch valves | V5011N |
| 0901787A/U | Rebuild kit for V5011N and V5013N 1 1/2 to 2 inch valves | V5011N and V5013N |
| 0903424A/U | Rebuild kit for V5011N2022 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5011N |
| 0903425A/U | Rebuild kit for V5011N2030 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5011N |
| 0903426A/U | Rebuild kit for V5011N2048 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5011N |
| 0903427A/U | Rebuild kit for V5011N2055 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5011N |
| 0903428A/U | Rebuild kit for V5011N2063 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5011N |
| 0903429A/U | Rebuild kit for V5011N2071 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5011N |
| 0903430A/U | Rebuild kit for V5011N2089 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5011N |
| 0903431A/U | Rebuild kit for V5011N2097 including stem button, repack kit, packing cartridge, seat ring and plug assembly | V5011N |
| 14002694-006/U | Valve Repack/Rebuild Kit, V5011A, F: 1/2 in., 3/4 in., 1 in., 4 Cv or less | V5011A, F |
| 14002694-008/U | Valve Repack/Rebuild Kit, V5011C, G: 1/2 in., 3/4 in., 1 in., 4 Cv or less | V5011C, G |
| 14002695-006/U | Valve Repack/Rebuild Kit, V5011A, F: 1/2 in., 3/4 in., 1 in., 6.3 Cv or 10 Cv | V5011A, F |
| 14002695-008/U | Valve Repack/Rebuild Kit, V5011C, G: 1/2 in., 3/4 in., 1 in., 6.3 Cv or 10 Cv | V5011C, G |
| 14003109-006/U | Valve Repack/Rebuild Kit, V5011A, F: 1 1/4 in. | V5011A, F |
| 14003109-008/U | Valve Repack/Rebuild Kit, V5011C: 1 1/4 in. | V5011C |
| 14003110-006/U | Valve Repack/Rebuild Kit, V5011A, F: 1 1/2 in., 2 in., 2 1/2 in. | V5011A, F |
| 14003110-008/U | Valve Repack/Rebuild Kit, V5011C for 1 1/2 in. | V5011C |
| 14003111-006/U | Valve Repack/Rebuild Kit, V5011A, F: 2 in., 2 1/2 in., 3 in. | V5011A, F |
| 14003111-008/U | Valve Repack/Rebuild Kit, V5011C, G: 2 in., 2 1/2 in., 3 in. | V5011C, G |
| 14003294-002/U | Valve Repack Kit, Steam or water application | V5013A, B, C |
| 14003294-004/U | Valve Service Parts, V5011A, C, F, G, V5013A, F with 1/4 in. stem for water service | V5011A, C, F, G; V5013A, F |
| 14003295-002/U | Valve Repack Kit, V5011A, C, F, G, V5013A, F with 3/8 in. stem for steam service | V5011A, C, F, G; V5013A, F |
| 14003296-002/U | V5011A, B, V5013B, C with 1/2 in. stem for water or steam service | V5011A, B; V5013B, C |

V5051A Single-Seated Cage Valves

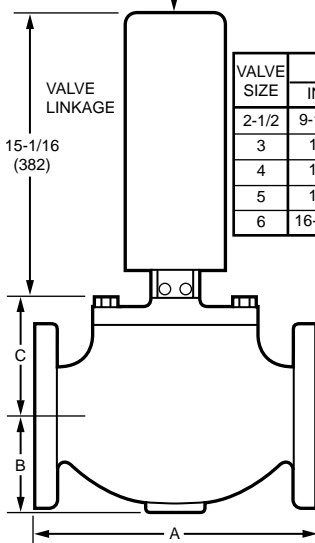


Single-Seated Cage Valves control steam, air, liquids, or non-combustible gases in two-position, proportional, or floating control systems where tight shutoff is not required.

- Pressure balanced cage type construction.
- Low operating force allows fail safe operation with spring return actuator.
- Combines 1 3/8" bonnet with 1 1/2" stroke.
- Sizes range from 2-1/2 to 6 in. (DN65 to DN150).
- Spring-loaded Teflon V-ring packing.
- Requires Q5020C valve linkage with one rotary, direct coupled actuator, or Q5001D with Modutrol Motor.

Dimensions in inches (millimeters)

CLEARANCE TO REMOVE ACTUATOR FROM VALVE
4 (102) MINIMUM



| VALVE SIZE | A | | B | | C | |
|------------|--------|-----|---------|-----|-------|-----|
| | IN. | MM | IN. | MM | IN. | MM |
| 2-1/2 | 9-1/2 | 241 | 3-1/2 | 89 | 4-5/8 | 117 |
| 3 | 11 | 297 | 3-15/16 | 100 | 4-7/8 | 124 |
| 4 | 13 | 330 | 4-1/2 | 114 | 5-5/8 | 143 |
| 5 | 15 | 381 | 5-1/2 | 140 | 7-3/8 | 187 |
| 6 | 16-1/2 | 419 | 6-3/8 | 162 | 7-3/8 | 187 |

Valve Type: Cage Valves

Body Pattern: Two-way, Straight-through

Valve Action: Stem down to close

Connection Type: Flanged

Controlled Fluid: Chilled or hot water with up to 50% Glycol or Steam.
Not for use with fuels.

Flow Characteristic: Modified Linear

Actuation: Must be purchased separately

Ambient Temperature Range: 35°F to 300°F (2°C to 150°C)

Maximum Differential Pressure Ratings (Close-off) (psi): 150 psi

Maximum Differential Pressure Ratings (Close-off) (kPa): 1034 kPa

Static Pressure Rating: Meets ANSI 125 Standard

ANSI/ASME Rating: 125

Stem Travel: 1 1/2 in. (38 mm)

Bonnet Size: 1 3/8 in. (35 mm)

Materials (Body): Cast Iron

Materials (Seat): Resilient

Materials (Stem): Stainless Steel

Materials (Packing): Teflon

Leakage: 0.01% of Cv, 0.03% of Cv @ 5 & 6 in.

Comments: Q5001D1000 requires 1-1/2 in. 220867A Cam.

M27552

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Materials (Plug / Ball / Disc) | Used With |
|-----------------|------------------|----------------|---------------|---------------|---------------------------------------|---------------------------------------|--------------------------------|---|
| V5051A1024/U | 4 in. | DN100 | 178 Cv | 125 Kv | 140 psi water; 55 psi steam | 965 kPa water; 379 kPa steam | Bronze | Q5001D/Modutrol IV Motor, or Q5020C/DCA |
| V5051A3004/U | 2 1/2 in. | DN65 | 75 Cv | 64.5 Kv | 150 psi water at 100°F; 55 psi steam | 1034 kPa water at 38°C; 379 kPa steam | Stainless Steel | Q5001D/Modutrol IV Motor, or Q5020C/DCA |
| V5051A3012/U | 3 in. | DN80 | 116 Cv | 88 Kv | 150 psi water at 100°F; 55 psi steam | 1034 kPa water at 38°C; 379 kPa steam | Stainless Steel | Q5001D/Modutrol IV Motor, or Q5020C/DCA |
| V5051A3020/U | 4 in. | DN100 | 178 Cv | 125 Kv | 150 psi water at 100°F; 55 psi steam | 1034 kPa water at 38°C; 379 kPa steam | Stainless Steel | Q5001D/Modutrol IV Motor, or Q5020C/DCA |
| V5051A3038/U | 5 in. | DN125 | 318 Cv | 224 Kv | 150 psi water at 100°F; 55 psi steam | 1034 kPa water at 38°C; 379 kPa steam | Stainless Steel | Q5001D/Modutrol IV Motor, or Q5020C/DCA |
| V5051A3046/U | 6 in. | DN150 | 390 Cv | 224 Kv | 150 psi water at 100°F; 55 psi steam | 1034 kPa water at 38°C; 379 kPa steam | Stainless Steel | Q5001D/Modutrol IV Motor, or Q5020C/DCA |

Cartridge Globe Valves

V5852; V5862 Two-way Cartridge Globe Valves



Two-way cartridge globe valves for control of hot and chilled water in VAV terminals, fan coil units, small re-heaters and re-coolers in temperature controllers. Use with M6410 and M7410 Actuators. 1/2" & 3/4" size fit with the M6435, M7435, and the MP958 Actuators.

- Long stroke allows wider range of control.
- Soft valve seat provides low leakage rate.
- Inserts for 1/2 in. and 3/4 in. valves are changeable without draining valve when used with an insert replacement tool.
- Brass body and Stainless Steel stem.
- Threaded plastic cover/manual handle allows manual operation.
- Easily installed in areas where space is limited.

Valve Type: Cartridge Globe Valve

Body Pattern: Two-way

Valve Action: V5852A and V5862 Series 2000-Stem down to close; V5862A Series 3000-Stem up to close

Connection Type: V5852A-Sweat (Female); V5862A-Female NPT

Controlled Fluid: Chilled or hot water with up to 50% Glycol. Not for use with steam or fuels.

Flow Characteristic: V5852A and V5862 Series 2000-Equal Percentage; V5862A Series 3000-Linear

Actuation: Must be purchased separately

Ambient Temperature Range: 36°F to 230°F (2°C to 110°C)

Maximum Safe Operating Pressure (psi): 235 psi

Maximum Safe Operating Pressure (kPa): 1620 kPa

Stem Travel: 1/4 in. (6.4 mm)

Materials (Body): Brass

Materials (Seat): Brass

Materials (Stem): Stainless Steel

Materials (Plug / Ball / Disc): Brass

Materials (Cartridge): Brass

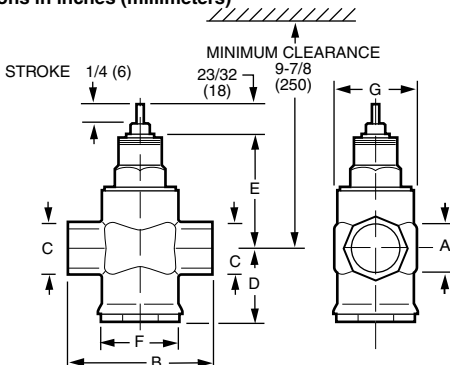
Leakage: V5852A and V5862A 2000 Series-ANSI Class IV (0.01% of Cv maximum); V5862A 3000 Series-ANSI Class III (less than 0.02% of Cv)

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Maximum Differential Pressure Ratings (Close-off) (psi) | Maximum Differential Pressure Ratings (Close-off) (kPa) | Used With |
|-----------------|------------------|----------------|---------------|---------------|---|---|---|
| V5852A2007 | 1/2 in. | DN15 | 0.19 Cv | 0.16 Kv | 232 psi | 1600 kPa | M6410A1029; M7410F1000; M6435A1004; M7435F1001; MP958 |
| V5852A2015 | 1/2 in. | DN15 | 0.29 Cv | 0.25 Kv | 232 psi | 1600 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |
| V5852A2023 | 1/2 in. | DN15 | 0.47 Cv | 0.41 Kv | 232 psi | 1600 kPa | M6410A1029; M7410F1000; M6435A1004; M7435F1001; MP958 |
| V5852A2031 | 1/2 in. | DN15 | 0.7 Cv | 0.6 Kv | 232 psi | 1600 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |
| V5852A2049 | 1/2 in. | DN15 | 1.2 Cv | 1.0 Kv | 174 psi | 1200 kPa | M6410A1029; M7410F1000; M6435A1004; M7435F1001; MP958 |
| V5852A2056 | 1/2 in. | DN15 | 1.9 Cv | 1.6 Kv | 174 psi | 1200 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |
| V5852A2064 | 3/4 in. | DN20 | 2.9 Cv | 2.5 Kv | 58 psi | 400 kPa | M6410A1029; M7410F1000; M6435A1004; M7435F1001; MP958 |
| V5852A2072 | 3/4 in. | DN20 | 4.9 Cv | 4.2 Kv | 58 psi | 400 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |
| V5862A2005 | 1/2 in. | DN15 | 0.19 Cv | 0.16 Kv | 232 psi | 1600 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |
| V5862A2013 | 1/2 in. | DN15 | 0.29 Cv | 0.25 Kv | 232 psi | 1600 kPa | M6410A1029; M7410F1000; M6435A1004; M7435F1001; MP958 |
| V5862A2021 | 1/2 in. | DN15 | 0.47 Cv | 0.41 Kv | 232 psi | 1600 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |
| V5862A2039 | 1/2 in. | DN15 | 0.74 Cv | 0.64 Kv | 232 psi | 1600 kPa | M6410A1029; M7410F1000; M6435A1004; M7435F1001; MP958 |
| V5862A2047 | 1/2 in. | DN15 | 1.2 Cv | 1.0 Kv | 174 psi | 1200 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |
| V5862A2054 | 1/2 in. | DN15 | 1.9 Cv | 1.6 Kv | 174 psi | 1200 kPa | M6410A1029; M7410F1000; M6435A1004; M7435F1001; MP958 |
| V5862A2062 | 3/4 in. | DN20 | 2.9 Cv | 2.5 Kv | 58 psi | 400 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |
| V5862A2070 | 3/4 in. | DN20 | 4.9 Cv | 4.2 Kv | 58 psi | 400 kPa | M6410A1029; M7410F1000; M6435A1004; M7435F1001; MP958 |
| V5862A3003 | 1 in. | DN25 | 5.5 Cv | 4.8 Kv | 232 psi | 1600 kPa | M6410A3017; M7410F3006; M6435A3000; M7435F3007 |

Cartridge Globe Valves

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Maximum Differential Pressure Ratings (Close-off) (psi) | Maximum Differential Pressure Ratings (Close-off) (kPa) | Used With |
|-----------------|------------------|----------------|---------------|---------------|---|---|--|
| V5862A3011 | 1 in. | DN25 | 7.8 Cv | 6.7 Kv | 232 psi | 1600 kPa | M6410A3017; M7410F3006; M6435A3000; M7435F3007 |
| V5862A3029 | 1 in. | DN25 | 11.0 Cv | 9.5 Kv | 232 psi | 1600 kPa | M6410A3017; M7410F3006; M6435A3000; M7435F3007 |
| V5862A3037 | 1 1/4 in. | DN32 | 18 Cv | 15.6 Kv | 174 psi | 1200 kPa | M6410A3017; M7410F3006; M6435A3000; M7435F3007 |
| V5862A3045 | 1 1/2 in. | DN40 | 25 Cv | 21.6 Kv | 145 psi | 1000 kPa | M6410A3017; M7410F3006; M6435A3000; M7435F3007 |

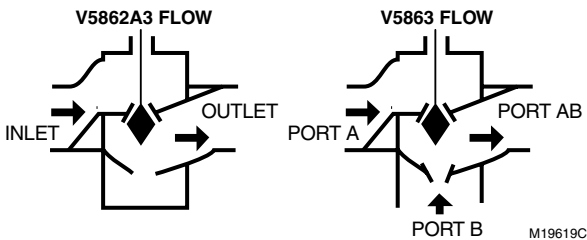
Dimensions in inches (millimeters)



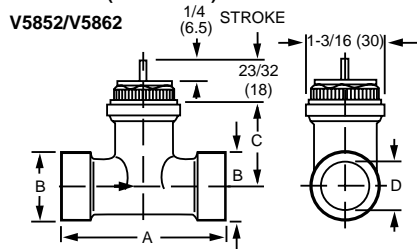
| VALVE SIZE A (mm) | B | C | D | E | F | G |
|----------------------|---------------|-------------|-------------|------------|-------------|--------------|
| 1 (25) | 4-1/8 (105) | 1-5/8 (41) | 2-1/16 (53) | 3-5/8 (92) | 2 (50) | 2-5/16 (58) |
| 1-1/4 (32) | 4-15/16 (125) | 2 (50) | 2-7/16 (62) | 3-5/8 (92) | 2-3/16 (55) | 2-5/16 (58) |
| 1-1/2 (38) | 5-1/8 (130) | 2-3/16 (55) | 2-9/16 (65) | 3-7/8 (98) | 2-9/16 (65) | 2-11/16 (69) |

FLOW DIAGRAM

FOR 1, 1-1/4 AND 1-1/2 INCH VALVES



Dimensions in inches (millimeters)



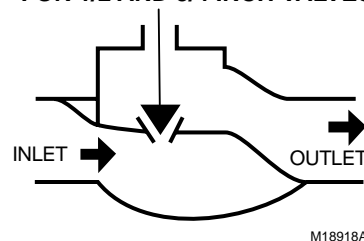
| VALVE SIZE | A | B | C | D (NPT) | D (SWEAT) |
|------------|------------|----------|-------------|----------|-----------|
| 1/2 (DN15) | 3 (77) | 3/4 (19) | 1-5/16 (34) | 1/2 (13) | 5/8 (16) |
| 3/4 (DN20) | 3-1/2 (88) | 1 (25) | 1-1/4 (32) | 3/4 (19) | 7/8 (22) |

NOTE: SOLDER ENDS CONFORM TO ANSI B16-18.

M18917

For 1/2 in. and 3/4 in. Valves

FLOW DIAGRAM FOR 1/2 AND 3/4 INCH VALVES



M18918A

Cartridge Globe Valves

V5853; V5863 Three-way Cartridge Globe Valves



Three-way cartridge globe valves for control of hot and chilled water in VAV terminals, fan coil units, small re-heaters and re-coolers in temperature controllers.

- Long stroke allows wider range of control.
- Soft valve seat provides low leakage rate.
- Inserts for 1/2 in. and 3/4 in. valves are changeable without draining valve when used with an insert replacement tool.
- Brass body and stainless steel stem.
- Threaded plastic cover/manual handle allows manual operation.
- Easily installed in areas where space is limited.

Valve Type: Cartridge Globe Valve

Body Pattern: Three-way

Valve Action: V5853A and V5863 1000 and 2000 series-Stem up to close; V5863A 3000 Series-Stem up to close port A to AB

Connection Type: V5853A-Sweat (Female); V5863A-Female NPT

Controlled Fluid: Chilled or hot water with up to 50% Glycol. Not for use with steam or fuels.

Flow Characteristic: V5853A and V5863 1000 and 2000 series-Equal Percentage; V5863A 3000 Series-Linear

Actuation: Must be purchased separately

Ambient Temperature Range: 36°F to 230°F (2°C to 110°C)

Maximum Safe Operating Pressure (psi): 235 psi

Maximum Safe Operating Pressure (kPa): 1620 kPa

Stem Travel: 1/4 in. (6.4 mm)

Materials (Body): Brass

Materials (Seat): Brass

Materials (Stem): Stainless Steel

Materials (Plug / Ball / Disc): Brass

Materials (Cartridge): Brass

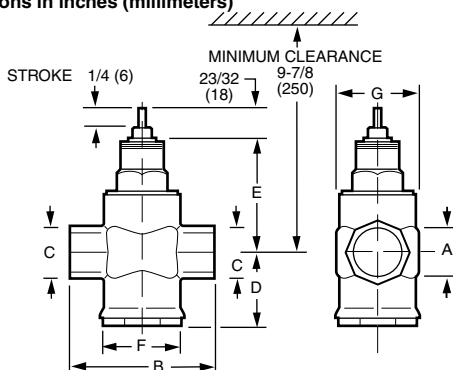
Leakage: V5853A and V5863 1000 and 2000 series-ANSI Class IV (0.01% of Cv maximum); V5863A 3000 Series-ANSI Class III (less than 0.02% of Cv)

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Maximum Differential Pressure Ratings (Close-off) (psi) | Maximum Differential Pressure Ratings (Close-off) (kPa) | Used With |
|-----------------|------------------|----------------|---------------|---------------|---|---|---|
| V5853A1008 | 3/4 in. | DN20 | 2.9 Cv | 2.5 Kv | 34 psi | 234 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001 |
| V5853A1016 | 3/4 in. | DN20 | 4.9 Cv | 4.2 Kv | 34 psi | 234 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001 |
| V5853A2006 | 1/2 in. | DN15 | 0.29 Cv | 0.25 Kv | 116 psi | 800 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |
| V5853A2014 | 1/2 in. | DN15 | 0.47 Cv | 0.41 Kv | 116 psi | 800 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |
| V5853A2022 | 1/2 in. | DN15 | 0.74 Cv | 0.64 Kv | 36 psi | 248 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |
| V5853A2030 | 1/2 in. | DN15 | 1.2 Cv | 1.0 Kv | 36 psi | 248 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |
| V5853A2048 | 1/2 in. | DN15 | 1.9 Cv | 1.6 Kv | 34 psi | 234 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |
| V5853A2055 | 3/4 in. | DN20 | 2.9 Cv | 2.5 Kv | 7.25 psi | 50 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |
| V5853A2063 | 3/4 in. | DN20 | 4.9 Cv | 4.2 Kv | 7.25 psi | 50 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |
| V5863A1006 | 3/4 in. | DN20 | 2.9 Cv | 2.5 Kv | 34 psi | 234 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001 |
| V5863A1014 | 3/4 in. | DN20 | 4.9 Cv | 4.2 Kv | 34 psi | 234 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001 |
| V5863A2004 | 1/2 in. | DN15 | 0.29 Cv | 0.25 Kv | 116 psi | 800 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |
| V5863A2012 | 1/2 in. | DN15 | 0.47 Cv | 0.41 Kv | 116 psi | 800 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |
| V5863A2020 | 1/2 in. | DN15 | 0.74 Cv | 0.64 Kv | 36 psi | 248 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |
| V5863A2038 | 1/2 in. | DN15 | 1.2 Cv | 1.0 Kv | 36 psi | 248 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |
| V5863A2046 | 1/2 in. | DN15 | 1.9 Cv | 1.6 Kv | 34 psi | 234 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |
| V5863A2053 | 3/4 in. | DN20 | 2.9 Cv | 2.5 Kv | 7.25 psi | 50 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |
| V5863A2061 | 3/4 in. | DN20 | 4.9 Cv | 4.2 Kv | 7.25 psi | 50 kPa | M6410A1029; M6435A1004; M7410F1000; M7435F1001; MP958 |

Cartridge Globe Valves

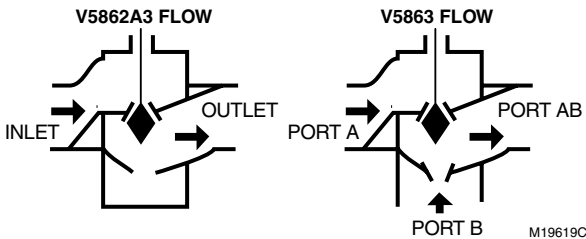
| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Maximum Differential Pressure Ratings (Close-off) (psi) | Maximum Differential Pressure Ratings (Close-off) (kPa) | Used With |
|-----------------|------------------|----------------|---------------|---------------|---|---|--|
| V5863A3002 | 1 in. | DN25 | 5.5 Cv | 4.8 Kv | 232 psi | 1600 kPa | M6410A3017; M7410F3006; M6435A3000; M7435F3007 |
| V5863A3010 | 1 in. | DN25 | 7.8 Cv | 6.7 Kv | 232 psi | 1600 kPa | M6410A3017; M7410F3006; M6435A3000; M7435F3007 |
| V5863A3028 | 1 in. | DN25 | 11.0 Cv | 9.5 Kv | 232 psi | 1600 kPa | M6410A3017; M7410F3006; M6435A3000; M7435F3007 |
| V5863A3036 | 1 1/4 in. | DN32 | 18 Cv | 15.6 Kv | 174 psi | 1200 kPa | M6410A3017; M7410F3006; M6435A3000; M7435F3007 |
| V5863A3044 | 1 1/2 in. | DN40 | 25 Cv | 21.6 Kv | 145 psi | 1000 kPa | M6410A3017; M7410F3006; M6435A3000; M7435F3007 |

Dimensions in inches (millimeters)



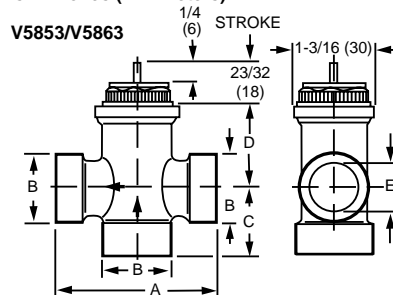
| VALVE SIZE A (mm) | B | C | D | E | F | G |
|-------------------|---------------|-------------|-------------|------------|-------------|--------------|
| 1 (25) | 4-1/8 (105) | 1-5/8 (41) | 2-1/16 (53) | 3-5/8 (92) | 2 (50) | 2-5/16 (58) |
| 1-1/4 (32) | 4-15/16 (125) | 2 (50) | 2-7/16 (62) | 3-5/8 (92) | 2-3/16 (55) | 2-5/16 (58) |
| 1-1/2 (38) | 5-1/8 (130) | 2-3/16 (55) | 2-9/16 (65) | 3-7/8 (98) | 2-9/16 (65) | 2-11/16 (69) |

FLOW DIAGRAM FOR 1, 1-1/4 AND 1-1/2 INCH VALVES



M19619C

Dimensions in inches (millimeters)



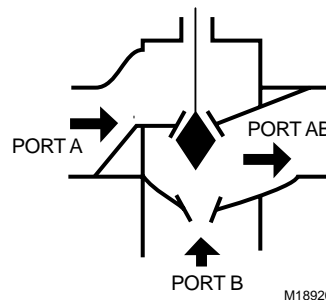
| VALVE SIZE | A | B | C | D | E (NPT) | E (SWEAT) |
|------------|------------|----------|-------------|-------------|----------|-----------|
| 1/2 (DN15) | 3 (77) | 3/4 (19) | 1-5/16 (34) | 1-5/16 (34) | 1/2 (13) | 5/8 (16) |
| 3/4 (DN20) | 3-1/2 (88) | 1 (25) | 1-1/2 (38) | 1-1/4 (32) | 3/4 (19) | 7/8 (22) |

NOTE: SOLDER ENDS CONFORM TO ANSI B16-18.

M18919

For 1/2 in. and 3/4 in. Valves

FLOW DIAGRAM FOR 1/2 AND 3/4 INCH VALVES



M18920A

Cartridge Globe Valve Accessories

| Material Number | Description | Used With |
|-----------------|---|----------------------------|
| WV108B | Brush Tool for Valve Cleaning 1/2" and 3/4" V5852/V5853/V5862/V5863 | V5862; V5853; V5852; V5863 |
| WV108M | Insert Replacement Tool for 1/2" and 3/4" V5852/V5853/V5862/V5863 | V5853; V5862; V5852; V5863 |

Cartridge Cage Valves

Cartridge Globe Valve Replacement Parts

| Material Number | Description | Used With |
|-----------------|--|--|
| 0902807 | Replacement Insert for 1/2" V5852/V5862, 1.9 Cv | V5852A2056; V5862A2054 |
| 0902808 | Replacement Insert for 1/2" V5852/V5862, 1.2 Cv | V5852A2049; V5862A2047 |
| 0902809 | Replacement Insert for 1/2" V5852/V5862, 0.74 Cv | V5852A2031; V5862A2039 |
| 0902810 | Replacement Insert for 1/2" V5852/V5862, 0.47 Cv | V5852A2023; V5862A2021 |
| 0902811 | Replacement Insert for 1/2" V5852/V5862, 0.29 Cv | V5852A2015; V5862A2013 |
| 0902812 | Replacement Insert for 1/2" V5852/V5862, 0.19 Cv | V5852A2007; V5862A2005 |
| 0902814 | Replacement Insert for 3/4" V5852/V5862, 2.9 Cv | V5852A2064; V5862A2062 |
| 0902815 | Replacement Insert for 3/4" V5852/V5862, 4.9 Cv | V5852A2072; V5862A2070 |
| 0902822 | Replacement Insert for 1/2" V5853/V5863, 0.47 Cv | V5853A2014; V5863A2012 |
| 0902823 | Replacement Insert for 1/2" V5853/V5863, 0.74 Cv | V5853A2022; V5863A2020 |
| 0902824 | Replacement Insert for 1/2" V5853/V5863, 1.2 Cv | V5853A2030; V5863A2038 |
| 0902825 | Replacement Insert for 1/2" V5853/V5863, 1.9 Cv | V5853A2048; V5863A2046 |
| 0902827 | Replacement Insert for 3/4" V5853/V5863, 4.9 Cv | V5853A1016; V5853A2063; V5863A1014; V5863A2061; V5853A2063; V5963A2061 |
| 0903827 | Replacement Packing for 1 in. V5862/63 | V5862A3037; V5863A3036 |
| 0903828 | Replacement Packing for 1-1/4" V5862/63 | V5862A3037; V5863A3036 |
| 0903829 | Replacement Packing for 1-1/2" V5862/63 | V5862A3045; V5863A3044 |

VCZA; VCZB Two-way Cartridge Cage Valves



Sweat Connection



NPT Connection



Inverted Flare Connection

Two-way cartridge cage valves control hot or chilled water with glycol solutions up to 60% in heating, ventilating and air conditioning (HVAC) systems. Used in hydronic applications in a normal indoor environment. Designed for zone control of heating/cooling systems.

- Quick open, linear, and equal percentage flow characteristics available
- Bi-directional installation
- 3000-series valves for floating and modulating non-fail safe applications
- 1000-series valves for two-position control
- High close-off rating independent of Cv
- Available with a variety of North American and international pipe fittings
- No tools required for actuator installation or removal
- Actuator removal does not require draining system
- Service is by replacement of cartridge, not valve body
- Cartridge replacement rebuilds valve to factory-new condition

Valve Type: Cartridge Cage Valve

Body Pattern: Two-way, Straight-through

Valve Action: Stem up to close A port

Controlled Fluid: Chilled or hot water with up to 60% Glycol

Actuation: Must be purchased separately

Ambient Temperature Range: 32°F to 150°F (0°C to 65°C)

Fluid Temperature Range: 34°F to 203°F (1°C to 95°C)

Maximum Differential Pressure Ratings (Close-off) (psi): 60 psi

Maximum Differential Pressure Ratings (Close-off) (kPa): 414 kPa (4 bar)

Maximum Safe Operating Pressure (psi): 300 psi

Maximum Safe Operating Pressure (kPa): 2068 kPa (20 Bar)

Stem Travel: 0.4 in. (10 mm)

Materials (Body): Bronze

Materials (Seat): EPDM O-ring seals on Noryl piston

Materials (Stem): Stainless Steel

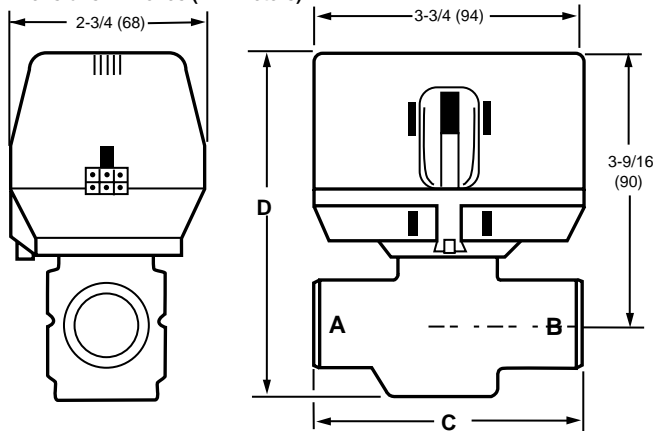
Materials (Packing): EPDM rubber

Materials (Cartridge): Ryton™, Noryl™ engineering plastic

Approvals, CSA: CSA Certified

Includes: Cartridge installation wrench

Dimensions in inches (millimeters)



| PIPE FITTING SIZES | C | | D | |
|---------------------|---------|-----|--------|-----|
| | IN. | MM | IN. | MM |
| 3/8" FLARE | 3-7/8 | 98 | 4-3/8 | 111 |
| 1/2" SWEAT | 3-1/2 | 89 | | |
| 1/2" FLARE | 3-7/8 | 98 | | |
| 1/2" INVERTED FLARE | | | | |
| 1/2" NPT (int.) | | | | |
| 3/4" NPT (int.) | 3-11/16 | 94 | 4-7/16 | 113 |
| 3/4" SWEAT | | | | |
| 1" NPT (int.) | | | | |
| 1" SWEAT | | | | |
| 1-1/4" SWEAT | 4-5/16 | 110 | 4-5/8 | 118 |
| 1-1/4" NPT (int.) | | | | |

NO ADAPTERS

M16839

Accessories:

40007029-002/U – Wrench for cartridge (included with sweat valves and all replacement cartridges)

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Flow Characteristic | Connection Type | Timing | Used With | Comments |
|-----------------|------------------|----------------|---------------|---------------|---------------------|-----------------|--|--|--|
| VCZAA1100/U | 1/2 in. | DN15 | 3.5 Cv | 3.03 Kv | Linear | Sweat | When used with VC series Actuator – On/Off models with 6 seconds | VC actuators, On-Off Type | Can be controlled by either a low or a line voltage SPDT or SPST or floating controller; Characterized cartridge |
| VCZAA3100/U | 1/2 in. | DN15 | 3.5 Cv | 3.03 Kv | Linear | Sweat | When used with VC series Actuator – 2 minutes | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | For use with Non-fail Safe Floating and Modulating (Proportional) actuators; Characterized cartridge |

Cartridge Cage Valves

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Flow Characteristic | Connection Type | Timing | Used With | Comments |
|-----------------|------------------|----------------|---------------|---------------|------------------------|-----------------|--|--|--|
| VCZAA3400/U | 1/2 in. | DN15 | 2.3 Cv | 1.98 Kv | Modified Equal Percent | Sweat | When used with VC series Actuator – 2 minutes | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | For use with Non-fail Safe Floating and Modulating (Proportional) actuators; Characterized cartridge |
| VCZAA3500/U | 1/2 in. | DN15 | 0.7 Cv | 0.6 Kv | Modified Equal Percent | Sweat | When used with VC series Actuator – 2 minutes | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | For use with Non-fail Safe Floating and Modulating (Proportional) actuators; Characterized cartridge |
| VCZAA3800/U | 1/2 in. | DN15 | 1.9 Cv | 1.64 Kv | Modified Equal Percent | Sweat | When used with VC series Actuator – 2 minutes | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | For use with Non-fail Safe Floating and Modulating (Proportional) actuators; Characterized cartridge |
| VCZAE1100/U | 1/2 in. | DN15 | 3.2 Cv | 2.74 Kv | Linear | Inverted Flare | When used with VC series Actuator – On/Off models with 6 seconds | VC actuators, On-Off Type | Can be controlled by either a low or a line voltage SPDT or SPST or floating controller; Characterized cartridge |
| VCZAL1100/U | 3/4 in. | DN20 | 4.7 Cv | 4.0 Kv | Linear | Female NPT | When used with VC series Actuator – On/Off models with 6 seconds | VC actuators, On-Off Type | Can be controlled by either a low or a line voltage SPDT or SPST or floating controller; Characterized cartridge |
| VCZAL3400/U | 3/4 in. | DN20 | 3.9 Cv | 3.4 Kv | Modified Equal Percent | Female NPT | When used with VC series Actuator – 2 minutes | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | For use with Non-fail Safe Floating and Modulating (Proportional) actuators; Characterized cartridge |
| VCZAL3800/U | 3/4 in. | DN20 | 3.1 Cv | 2.6 Kv | Modified Equal Percent | Female NPT | When used with VC series Actuator – 2 minutes | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | For use with Non-fail Safe Floating and Modulating (Proportional) actuators; Characterized cartridge |
| VCZAM1100/U | 3/4 in. | DN20 | 4.6 Cv | 3.9 Kv | Linear | Sweat | When used with VC series Actuator – On/Off models with 6 seconds | VC actuators, On-Off Type | Can be controlled by either a low or a line voltage SPDT or SPST or floating controller; Characterized cartridge |
| VCZAM3400/U | 3/4 in. | DN20 | 3.9 Cv | 3.4 Kv | Modified Equal Percent | Sweat | When used with VC series Actuator – 2 minutes | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | For use with Non-fail Safe Floating and Modulating (Proportional) actuators; Characterized cartridge |
| VCZAM3800/U | 3/4 in. | DN20 | 3.1 Cv | 2.6 Kv | Modified Equal Percent | Sweat | When used with VC series Actuator – 2 minutes | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | For use with Non-fail Safe Floating and Modulating (Proportional) actuators; Characterized cartridge |
| VCZAR1100/U | 1 in. | DN25 | 6.6 Cv | 5.7 Kv | Linear | Female NPT | When used with VC series Actuator – On/Off models with 6 seconds | VC actuators, On-Off Type | Can be controlled by either a low or a line voltage SPDT or SPST or floating controller; Characterized cartridge |
| VCZAR3100/U | 1 in. | DN20 | 6.6 Cv | 5.7 Kv | Linear | Female NPT | When used with VC series Actuator – 2 minutes | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | For use with Non-fail Safe Floating and Modulating (Proportional) actuators; Characterized cartridge |
| VCZAS1100/U | 1 in. | DN25 | 6.6 Cv | 5.7 Kv | Linear | Sweat | When used with VC series Actuator – On/Off models with 6 seconds | VC actuators, On-Off Type | Can be controlled by either a low or a line voltage SPDT or SPST or floating controller; Characterized cartridge |
| VCZAS3100/U | 1 in. | DN20 | 6.6 Cv | 5.7 Kv | Linear | Sweat | When used with VC series Actuator – 2 minutes | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | For use with Non-fail Safe Floating and Modulating (Proportional) actuators; Characterized cartridge |
| VCZAS3400/U | 1 in. | DN20 | 4.2 Cv | 3.6 Kv | Modified Equal Percent | Sweat | When used with VC series Actuator – 2 minutes | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | For use with Non-fail Safe Floating and Modulating (Proportional) actuators; Characterized cartridge |
| VCZBB1100/U | 1/2 in. | DN15 | 3.5 Cv | 3.03 Kv | Linear | Female NPT | When used with VC series Actuator – On/Off models with 6 seconds | VC actuators, On-Off Type | Can be controlled by either a low or a line voltage SPDT or SPST or floating controller; Characterized cartridge |
| VCZBB3100/U | 1/2 in. | DN15 | 3.5 Cv | 3.03 Kv | Linear | Female NPT | When used with VC series Actuator – 2 minutes | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | For use with Non-fail Safe Floating and Modulating (Proportional) actuators; Characterized cartridge |

Cartridge Cage Valves

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Flow Characteristic | Connection Type | Timing | Used With | Comments |
|-----------------|------------------|----------------|---------------|---------------|------------------------|-----------------|--|--|--|
| VCZBB3400/U | 1/2 in. | DN15 | 2.3 Cv | 1.98 Kv | Modified Equal Percent | Female NPT | When used with VC series Actuator – 2 minutes | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | For use with Non-fail Safe Floating and Modulating (Proportional) actuators; Characterized cartridge |
| VCZBB3500/U | 1/2 in. | DN15 | 0.7 Cv | 0.6 Kv | Modified Equal Percent | Female NPT | When used with VC series Actuator – 2 minutes | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | For use with Non-fail Safe Floating and Modulating (Proportional) actuators; Characterized cartridge |
| VCZBB3600/U | 1/2 in. | DN15 | 1.3 Cv | 1.1 Kv | Modified Equal Percent | Female NPT | When used with VC series Actuator – 2 minutes | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | For use with Non-fail Safe Floating and Modulating (Proportional) actuators; Characterized cartridge |
| VCZBB3800/U | 1/2 in. | DN15 | 1.9 Cv | 1.64 Kv | Modified Equal Percent | Female NPT | When used with VC series Actuator – 2 minutes | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | For use with Non-fail Safe Floating and Modulating (Proportional) actuators; Characterized cartridge |
| VCZBD1100/U | 1 1/4 in. | DN32 | 7.0 Cv | 6.5 Kv | Linear | Female NPT | When used with VC series Actuator – On/Off models with 6 seconds | VC actuators, On-Off Type | Can be controlled by either a low or a line voltage SPDT or SPST or floating controller; Characterized cartridge |
| VCZBD3100/U | 1 1/4 in. | DN32 | 7.0 Cv | 6.5 Kv | Linear | Female NPT | When used with VC series Actuator – 2 minutes | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | For use with Non-fail Safe Floating and Modulating (Proportional) actuators; Characterized cartridge |
| VCZBE1100/U | 1 1/4 in. | DN32 | 7.0 Cv | 6.5 Kv | Linear | Sweat | When used with VC series Actuator – On/Off models with 6 seconds | VC actuators, On-Off Type | Can be controlled by either a low or a line voltage SPDT or SPST or floating controller; Characterized cartridge |
| VCZBE3100/U | 1 1/4 in. | DN32 | 7.0 Cv | 6.5 Kv | Linear | Sweat | When used with VC series Actuator – 2 minutes | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | For use with Non-fail Safe Floating and Modulating (Proportional) actuators; Characterized cartridge |

Cartridge Cage Valves

VCZM; VCZN Three-way Cartridge Cage Valves



Sweat Connection



Flare Connection



Threaded Connection

Three-way cartridge cage valves control hot or chilled water with glycol solutions up to 60% in heating, ventilating and air conditioning (HVAC) systems. Used in hydronic applications in a normal indoor environment. Designed for zone control of heating/cooling systems.

- Quick open and linear flow characteristics available
- Mixing or diverting application
- A-AB-B body pattern
- 7000-series valves for floating and modulating non-fail safe applications
- 6000-series valves for two-position control
- High close-off rating independent of Cv
- Available with a variety of North American and international pipe fittings
- No tools required for actuator installation or removal
- Actuator removal does not require draining system
- Service is by replacement of cartridge, not valve body
- Cartridge replacement rebuilds valve to factory-new condition

Valve Type: Cartridge Cage Valve

Body Pattern: Three-way A-AB-B

Valve Action: Stem up to close A port

Controlled Fluid: Chilled or hot water with up to 60% Glycol

Actuation: Must be purchased separately

Ambient Temperature Range: 32°F to 150°F (0°C to 65°C)

Fluid Temperature Range: 34°F to 203°F (1°C to 95°C)

Maximum Differential Pressure Ratings (Close-off) (psi): 60 psi

Maximum Differential Pressure Ratings (Close-off) (kPa): 414 kPa (4 bar)

Maximum Safe Operating Pressure (psi): 300 psi

Maximum Safe Operating Pressure (kPa): 2068 kPa (20 Bar)

Stem Travel: 0.4 in. (10 mm)

Materials (Body): Bronze

Materials (Seat): EPDM O-ring seals on Noryl piston

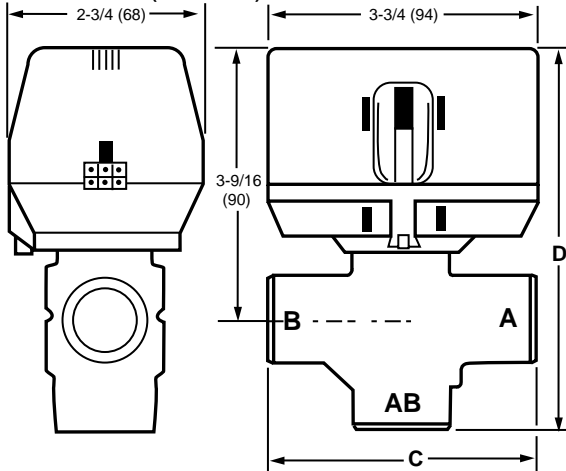
Materials (Stem): Stainless Steel

Materials (Packing): EPDM rubber

Materials (Cartridge): Ryton™, Noryl™ engineering plastic

Approvals, CSA: CSA Certified

Dimensions in inches (millimeters)



| PIPE FITTING SIZES | C | | D | |
|----------------------------------|---------|-----|---------|-----|
| | IN. | MM | IN. | MM |
| 3/8" FLARE ¹ | 3-7/8 | 98 | 5-11/32 | 136 |
| 1/2" SWEAT | 3-1/2 | 89 | 5-1/8 | 130 |
| 1/2" FLARE ¹ | 3-7/8 | 98 | 5-11/32 | 136 |
| 1/2" INVERTED FLARE ¹ | | | | |
| 1/2" NPT (int.) | | | | |
| 3/4" NPT (int.) | 3-11/16 | 94 | 5-1/8 | 130 |
| 3/4" SWEAT | | | 5-3/16 | 132 |
| 1" NPT (int.) | | | | 136 |
| 1" SWEAT | | | 5-11/32 | |
| 1-1/4" SWEAT | 4-5/16 | 110 | 5-5/8 | 142 |
| 1-1/4" NPT (int.) | | | | |

¹ NO ADAPTERS

M16840

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Flow Characteristic | Connection Type | Timing | Includes | Used With | Comments |
|-----------------|------------------|----------------|---------------|---------------|---------------------|-----------------|--|-------------------------|---------------------------------------|--|
| VCZMA6100/U | 1/2 in. | DN15 | 3.7 Cv | 3.2 Kv | Linear | Sweat | When used with VC series Actuator – On/Off models with 6 seconds | Cartridge changing tool | VC actuators, 2-position, On-Off Type | Can be controlled by either a low or a line voltage SPDT or SPST or floating controller; Characterized cartridge |

Cartridge Cage Valves

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Flow Characteristic | Connection Type | Timing | Includes | Used With | Comments |
|-----------------|------------------|----------------|---------------|---------------|------------------------|-----------------|--|-------------------------|--|--|
| VCZMA7100/U | 1/2 in. | DN15 | 3.7 Cv | 3.2 Kv | Linear | Sweat | When used with VC series Actuator – 2 minutes | Cartridge changing tool | VC6830/ VC6831/ VC6834; VC6930/ VC6931/ VC6934; VC7930/ VC7931/VC7934 | Use with Non-fail Safe floating and modulating (Proportional) actuators; Characterized cartridge |
| VCZMA7800/U | 1/2 in. | DN15 | 1.5 Cv | 1.3 Kv | Modified Equal Percent | Sweat | When used with VC series Actuator – 2 minutes | Cartridge changing tool | VC6830/ VC6831/ VC6834; VC6930/ VC6931/ VC6934; VC7930/ VC7931/VC7934 | Use with Non-fail Safe floating and modulating (Proportional) actuators; Characterized cartridge |
| VCZMD6100/U | 1/2 in. | DN15 | 3.2 Cv | 2.74 Kv | Linear | Inverted Flare | When used with VC series Actuator – On/Off models with 6 seconds | | VC actuators, 2-position, On-Off Type | Can be controlled by either a low or a line voltage SPDT or SPST or floating controller; Characterized cartridge |
| VCZMK6100/U | 3/4 in. | DN20 | 6.6 Cv | 5.7 Kv | Linear | Female NPT | When used with VC series Actuator – On/Off models with 6 seconds | | VC actuators, 2-position, On-Off Type | Can be controlled by either a low or a line voltage SPDT or SPST or floating controller; Characterized cartridge |
| VCZMK7400/U | 3/4 in. | DN20 | 4.2 Cv | 3.6 Kv | Modified Equal Percent | Female NPT | When used with VC series Actuator – 2 minutes | | VC6830/ VC6831/ VC6834; VC6930/ VC6931/ VC6934; VC7930/ VC7931/VC7934 | Use with Non-fail Safe floating and modulating (Proportional) actuators; Characterized cartridge |
| VCZML6100/U | 3/4 in. | DN20 | 6.6 Cv | 5.7 Kv | Linear | Sweat | When used with VC series Actuator – On/Off models with 6 seconds | Cartridge changing tool | VC actuators, 2-position, On-Off Type | Can be controlled by either a low or a line voltage SPDT or SPST or floating controller; Characterized cartridge |
| VCZML7100/U | 3/4 in. | DN20 | 6.6 Cv | 5.7 Kv | Linear | Sweat | When used with VC series Actuator – 2 minutes | Cartridge changing tool | VC6830/ VC6831/ VC6834; VC6930/ VC6931/ VC6934; VC7930/ VC7931/VC7934 | Use with Non-fail Safe floating and modulating (Proportional) actuators; Characterized cartridge |
| VCZML7400/U | 3/4 in. | DN20 | 4.2 Cv | 3.6 Kv | Modified Equal Percent | Sweat | When used with VC series Actuator – 2 minutes | Cartridge changing tool | VC6830/ VC6831/ VC6834; VC6930/ VC6931/ VC6934; VC7930/ VC7931/VC7934 | Use with Non-fail Safe floating and modulating (Proportional) actuators; Characterized cartridge |
| VCZML7800/U | 3/4 in. | DN20 | 3.2 Cv | 2.7 Kv | Modified Equal Percent | Sweat | When used with VC series Actuator – 2 minutes | Cartridge changing tool | VC6830/ VC6831/ VC6834; VC6930/ VC6931/ VC6934; VC7930/ VC7931/VC7934 | Use with Non-fail Safe floating and modulating (Proportional) actuators; Characterized cartridge |
| VCZMR6100/U | 1 in. | DN25 | 8.3 Cv | 7.1 Kv | Linear | Female NPT | When used with VC series Actuator – On/Off models with 6 seconds | | VC actuators, 2-position, On-Off Type | Can be controlled by either a low or a line voltage SPDT or SPST or floating controller; Characterized cartridge |
| VCZMS6100/U | 1 in. | DN25 | 8.3 Cv | 7.1 Kv | Linear | Sweat | When used with VC series Actuator – On/Off models with 6 seconds | Cartridge changing tool | VC actuators, 2-position, On-Off Type | Can be controlled by either a low or a line voltage SPDT or SPST or floating controller; Characterized cartridge |

Cartridge Cage Valves

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Flow Characteristic | Connection Type | Timing | Includes | Used With | Comments |
|-----------------|------------------|----------------|---------------|---------------|------------------------|-----------------|--|-------------------------|--|--|
| VCZMS7100/U | 1 in. | DN25 | 8.3 Cv | 7.1 Kv | Linear | Sweat | When used with VC series Actuator – 2 minutes | Cartridge changing tool | VC6830/ VC6831/ VC6834; VC6930/ VC6931/ VC6934; VC7930/ VC7931/VC7934 | Use with Non-fail Safe floating and modulating (Proportional) actuators; Characterized cartridge |
| VCZNB6100/U | 1/2 in. | DN15 | 3.7 Cv | 3.2 Kv | Linear | Female NPT | When used with VC series Actuator – On/Off models with 6 seconds | | VC actuators, 2-position, On-Off Type | Can be controlled by either a low or a line voltage SPDT or SPST or floating controller; Characterized cartridge |
| VCZNB7100/U | 1/2 in. | DN15 | 3.7 Cv | 3.2 Kv | Linear | Female NPT | When used with VC series Actuator – 2 minutes | | VC6830/ VC6831/ VC6834; VC6930/ VC6931/ VC6934; VC7930/ VC7931/VC7934 | Use with Non-fail Safe floating and modulating (Proportional) actuators; Characterized cartridge |
| VCZNB7400/U | 1/2 in. | DN15 | 2.7 Cv | 2.3 Kv | Modified Equal Percent | Female NPT | When used with VC series Actuator – 2 minutes | | VC6830/ VC6831/ VC6834; VC6930/ VC6931/ VC6934; VC7930/ VC7931/VC7934 | Use with Non-fail Safe floating and modulating (Proportional) actuators; Characterized cartridge |
| VCZNB7600/U | 1/2 in. | DN15 | 1.5 Cv | 1.3 Kv | Modified Equal Percent | Female NPT | When used with VC series Actuator – 2 minutes | | VC6830/ VC6831/ VC6834; VC6930/ VC6931/ VC6934; VC7930/ VC7931/VC7934 | Use with Non-fail Safe floating and modulating (Proportional) actuators; Characterized cartridge |
| VCZNB7800/U | 1 in. | DN25 | 1.5 Cv | 1.3 Kv | Modified Equal Percent | Female NPT | When used with VC series Actuator – 2 minutes | | VC6830/ VC6831/ VC6834; VC6930/ VC6931/ VC6934; VC7930/ VC7931/VC7934 | Use with Non-fail Safe floating and modulating (Proportional) actuators; Characterized cartridge |
| VCZND6100/U | 1 1/4 in. | DN32 | 9.0 Cv | 7.7 Kv | Linear | Female NPT | When used with VC series Actuator – On/Off models with 6 seconds | | VC actuators, 2-position, On-Off Type | Can be controlled by either a low or a line voltage SPDT or SPST or floating controller; Characterized cartridge |
| VCZND7100/U | 1 1/4 in. | DN32 | 9.0 Cv | 7.7 Kv | Linear | Female NPT | When used with VC series Actuator – 2 minutes | | VC6830/ VC6831/ VC6834; VC6930/ VC6931/ VC6934; VC7930/ VC7931/VC7934 | Use with Non-fail Safe floating and modulating (Proportional) actuators; Characterized cartridge |
| VCZNE6100/U | 1 1/4 in. | DN32 | 9.0 Cv | 7.7 Kv | Linear | Sweat | When used with VC series Actuator – On/Off models with 6 seconds | Cartridge changing tool | VC actuators, 2-position, On-Off Type | Can be controlled by either a low or a line voltage SPDT or SPST or floating controller; Characterized cartridge |

VC Series Valve and Fail-Safe Actuator Assemblies (Two-way Valves)



The Fail-Safe VC6936 Floating and VC7936 Modulating Control valves provide proportional control of hot or chilled water in commercial heating and cooling applications, such as unit ventilators. On a power failure, this patented actuator design drives the valve to the fail safe position, either fully open or closed according to the installer's wiring connections.

These actuators use a microprocessor-controlled, low voltage stepper motor with a super capacitor-based power supply capable of storing enough power to drive the valve to it when 24V power is removed from the actuator.

A VC hydronic valve consists of a valve body, a replaceable characterized cartridge assembly and a Honeywell VC6900 or VC7900-series actuator, providing proportional flow control. Three-way bodies may be used in either diverting or mixing applications. VC valves use cam-operated cartridge travel to resist water hammer. Limit switches prevent motor overrun. For best control, outdoor temperature compensation of supply water temperature is recommended.

Valve Type: Cartridge Cage Valve
Body Pattern: Two-way, Straight-through
Valve Action: Stem up to close A port
Controlled Fluid: Chilled or hot water with up to 60% Glycol
Actuation: VC6936-Floating (24V SP3T) fail-safe; VC7936-Modulating/
 Floating/PWM fail-safe
Ambient Temperature Range: 32°F to 150°F (0°C to 65°C)
Fluid Temperature Range: 34°F to 203°F (1°C to 95°C)
Maximum Differential Pressure Ratings (Close-off) (psi): 60 psi
Maximum Differential Pressure Ratings (Close-off) (kPa): 414 kPa
 (4 bar)
Maximum Safe Operating Pressure (psi): 300 psi
Maximum Safe Operating Pressure (kPa): 2068 kPa (20 Bar)
Stem Travel: 0.4 in. (10 mm)
Materials (Body): Bronze
Materials (Seat): EPDM O-ring seals on Noryl piston
Materials (Stem): Stainless Steel
Materials (Packing): EPDM rubber
Materials (Cartridge): Rytan™, Noryl™ engineering plastic
Approvals, CSA: CSA Certified
Comments: Use with non-fail safe floating and modulating actuators;
 Characterized cartridge

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Flow Characteristic | Connection Type | Timing | Includes |
|-----------------|------------------|----------------|---------------|---------------|------------------------|-----------------|--|-------------------------|
| VC6936AA1400/U | 1/2 in. | DN15 | 2.3 Cv | 1.98 Kv | Modified Equal Percent | Sweat | 2 minutes | Cartridge changing tool |
| VC6936AA1500/U | 1/2 in. | DN15 | 0.7 Cv | 0.6 Kv | Modified Equal Percent | Sweat | 2 minutes | Cartridge changing tool |
| VC6936AA1600/U | 1/2 in. | DN15 | 1.3 Cv | 1.1 Kv | Modified Equal Percent | Sweat | 2 minutes | Cartridge changing tool |
| VC6936AM1400/U | 3/4 in. | DN20 | 3.9 Cv | 3.4 Kv | Modified Equal Percent | Sweat | 2 minutes | Cartridge changing tool |
| VC6936AM1800/U | 3/4 in. | DN20 | 3.1 Cv | 2.6 Kv | Modified Equal Percent | Sweat | 2 minutes | Cartridge changing tool |
| VC6936AR1100/U | 1 in. | DN20 | 6.6 Cv | 5.7 Kv | Linear | Female NPT | 2 minutes | |
| VC6936AR1400/U | 1 in. | DN20 | 4.2 Cv | 3.6 Kv | Modified Equal Percent | Female NPT | 2 minutes | |
| VC6936AS1400/U | 1 in. | DN20 | 4.2 Cv | 3.6 Kv | Modified Equal Percent | Sweat | 2 minutes | Cartridge changing tool |
| VC6936BB1100/U | 1/2 in. | DN15 | 3.5 Cv | 3.1 Kv | Linear | Female NPT | 2 minutes | |
| VC6936BB1400/U | 1/2 in. | DN15 | 2.3 Cv | 1.98 Kv | Modified Equal Percent | Female NPT | 2 minutes | |
| VC7936AA1100/U | 1/2 in. | DN15 | 3.5 Cv | 3.1 Kv | Linear | Sweat | Installer-selectable 60 or 120 seconds | Cartridge changing tool |
| VC7936AA1500/U | 1/2 in. | DN15 | 0.7 Cv | 0.6 Kv | Modified Equal Percent | Sweat | Installer-selectable 60 or 120 seconds | Cartridge changing tool |
| VC7936AA1600/U | 1/2 in. | DN15 | 1.3 Cv | 1.1 Kv | Modified Equal Percent | Sweat | Installer-selectable 60 or 120 seconds | Cartridge changing tool |
| VC7936AA1800/U | 1/2 in. | DN15 | 1.9 Cv | 1.6 Kv | Modified Equal Percent | Sweat | Installer-selectable 60 or 120 seconds | Cartridge changing tool |
| VC7936AM1100/U | 3/4 in. | DN20 | 4.7 Cv | 4.1 Kv | Linear | Sweat | Installer-selectable 60 or 120 seconds | Cartridge changing tool |
| VC7936AM1800/U | 3/4 in. | DN20 | 3.1 Cv | 2.6 Kv | Modified Equal Percent | Sweat | Installer-selectable 60 or 120 seconds | Cartridge changing tool |
| VC7936BB1400/U | 1/2 in. | DN15 | 2.3 Cv | 1.98 Kv | Modified Equal Percent | Female NPT | Installer-selectable 60 or 120 seconds | |
| VC7936BB1500/U | 1/2 in. | DN15 | 0.7 Cv | 0.6 Kv | Modified Equal Percent | Female NPT | Installer-selectable 60 or 120 seconds | |
| VC7936BB1600/U | 1/2 in. | DN15 | 1.3 Cv | 1.1 Kv | Modified Equal Percent | Female NPT | Installer-selectable 60 or 120 seconds | |
| VC7936BD1100/U | 1 1/4 in. | DN32 | 7 Cv | 6.0 Kv | Linear | Female NPT | Installer-selectable 60 or 120 seconds | |

Cartridge Cage Valves

VC Series Valve and Fail-Safe Actuator Assemblies (Three-way Valves)



The Fail-Safe VC6936 Floating and VC7936 Modulating Control valves provide proportional control of hot or chilled water in commercial heating and cooling applications, such as unit ventilators. On a power failure, this patented actuator design drives the valve to the fail safe position, either fully open or closed according to the installer's wiring connections.

These actuators use a microprocessor-controlled, low voltage stepper motor with a super capacitor-based power supply capable of storing enough power to drive the valve to it when 24V power is removed from the actuator.

A VC hydronic valve consists of a valve body, a replaceable characterized cartridge assembly and a Honeywell VC6900 or VC7900-series actuator, providing proportional flow control. Three-way bodies may be used in either diverting or mixing applications. VC valves use cam-operated cartridge travel to resist water hammer. Limit switches prevent motor overrun. For best control, outdoor temperature compensation of supply water temperature is recommended.



Valve Type: Cartridge Cage Valve
Body Pattern: Three-way A-AB-B
Valve Action: Stem up to close A port
Controlled Fluid: Chilled or hot water with up to 60% Glycol
Actuation: VC6936-Floating (24V SP3T) fail-safe; VC7936-Modulating/
 Floating/PWM fail-safe
Ambient Temperature Range: 32°F to 150°F (0°C to 65°C)
Fluid Temperature Range: 34°F to 203°F (1°C to 95°C)
Maximum Differential Pressure Ratings (Close-off) (psi): 60 psi
Maximum Differential Pressure Ratings (Close-off) (kPa): 414 kPa
 (4 bar)
Maximum Safe Operating Pressure (psi): 300 psi
Maximum Safe Operating Pressure (kPa): 2068 kPa (20 Bar)
Stem Travel: 0.4 in. (10 mm)
Materials (Body): Bronze
Materials (Seat): EPDM O-ring seals on Noryl piston
Materials (Stem): Stainless Steel
Materials (Packing): EPDM rubber
Materials (Cartridge): Ryton™, Noryl™ engineering plastic
Approvals, CSA: CSA Certified

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Flow Characteristic | Connection Type | Timing | Comments | Includes |
|-----------------|------------------|----------------|---------------|---------------|------------------------|-----------------|--|--|-------------------------|
| VC6936MA6100/U | 1/2 in. | DN15 | 3.7 Cv | 3.2 Kv | Linear | Sweat | 2 minutes | Use with non-fail safe floating and modulating actuators; Characterized cartridge | Cartridge changing tool |
| VC6936MA6500/U | 1/2 in. | DN15 | 0.7 Cv | 0.6 Kv | Modified Equal Percent | Sweat | 2 minutes | Use with non-fail safe floating and modulating actuators; Characterized cartridge | Cartridge changing tool |
| VC6936MA6600/U | 1/2 in. | DN15 | 1.5 Cv | 1.3 Kv | Modified Equal Percent | Sweat | 2 minutes | Use with non-fail safe floating and modulating actuators; Characterized cartridge | Cartridge changing tool |
| VC6936MK6800/U | 3/4 in. | DN20 | 3.2 Cv | 2.7 Kv | Modified Equal Percent | Female NPT | 2 minutes | Use with non-fail safe floating and modulating actuators; Characterized cartridge | |
| VC6936ML6100/U | 3/4 in. | DN20 | 6.6 Cv | 5.7 Kv | Linear | Sweat | 2 minutes | Use with non-fail safe floating and modulating actuators; Characterized cartridge | Cartridge changing tool |
| VC6936ML6400/U | 3/4 in. | DN20 | 4.2 Cv | 3.6 Kv | Modified Equal Percent | Sweat | 2 minutes | Use with non-fail safe floating and modulating actuators; Characterized cartridge | Cartridge changing tool |
| VC6936ML6800/U | 3/4 in. | DN20 | 3.2 Cv | 2.7 Kv | Modified Equal Percent | Sweat | 2 minutes | Use with non-fail safe floating and modulating actuators; Characterized cartridge | Cartridge changing tool |
| VC6936MS6100/U | 1 in. | DN25 | 8.3 Cv | 7.2 Kv | Linear | Sweat | 2 minutes | Can be controlled by either a low or a line voltage SPDT or SPST or floating controller; Characterized cartridge | Cartridge changing tool |
| VC6936NB6100/U | 1/2 in. | DN15 | 3.7 Cv | 3.2 Kv | Linear | Female NPT | 2 minutes | Use with non-fail safe floating and modulating actuators; Characterized cartridge | |
| VC6936NB6400/U | 1/2 in. | DN15 | 2.7 Cv | 2.3 Kv | Modified Equal Percent | Female NPT | 2 minutes | Use with non-fail safe floating and modulating actuators; Characterized cartridge | |
| VC6936NB6500/U | 1/2 in. | DN15 | 0.7 Cv | 0.6 Kv | Modified Equal Percent | Female NPT | 2 minutes | Use with non-fail safe floating and modulating actuators; Characterized cartridge | |
| VC6936NB6600/U | 1/2 in. | DN15 | 1.5 Cv | 1.3 Kv | Modified Equal Percent | Female NPT | 2 minutes | Use with non-fail safe floating and modulating actuators; Characterized cartridge | |
| VC6936NE6100/U | 1 1/4 in. | DN32 | 9 Cv | 7.8 Kv | Linear | Sweat | 2 minutes | Use with non-fail safe floating and modulating actuators; Characterized cartridge | Cartridge changing tool |
| VC7936ML6400/U | 3/4 in. | DN20 | 4.2 Cv | 3.6 Kv | Modified Equal Percent | Sweat | Installer-selectable 60 or 120 seconds | Use with non-fail safe floating and modulating actuators; Characterized cartridge | Cartridge changing tool |
| VC7936ML6800/U | 3/4 in. | DN20 | 3.2 Cv | 2.7 Kv | Modified Equal Percent | Sweat | Installer-selectable 60 or 120 seconds | Use with non-fail safe floating and modulating actuators; Characterized cartridge | Cartridge changing tool |
| VC7936MS6100/U | 1 in. | DN25 | 8.3 Cv | 7.2 Kv | Linear | Sweat | Installer-selectable 60 or 120 seconds | Can be controlled by either a low or a line voltage SPDT or SPST or floating controller; Characterized cartridge | Cartridge changing tool |
| VC7936NE6100/U | 1 1/4 in. | DN32 | 9 Cv | 7.8 Kv | Linear | Sweat | Installer-selectable 60 or 120 seconds | Use with non-fail safe floating and modulating actuators; Characterized cartridge | Cartridge changing tool |

Cartridge Cage Valve Accessories

| Material Number | Description |
|-----------------|--|
| 40007029-002/U | Wrench for cartridge (included with sweat valves and all replacement cartridges) |

VCZZ Valve Replacement Cartridges

| Material Number | Description | |
|-----------------|--|--|
| VCZZ1000/U | Replacement cartridge, silver spring, for VC series 2-way valves, with quick open flow for use w/ 2-position or fail safe proportional actuators. Includes cartridge wrench. |  |
| VCZZ1100/U | Replacement cartridge, silver spring, for VC series 2-way valves, with Linear flow for use w/ 2-position or fail safe proportional actuators. Includes cartridge wrench. | |
| VCZZ1400/U | Replacement cartridge, silver spring, for VC series 2-way valves, with Equal Percentage flow for use with fail safe proportional actuators. Includes cartridge wrench. | |
| VCZZ1500/U | Replacement cartridge, silver spring, for VC series 2-way valves, with Equal Percentage Extra Low flow for use with fail safe proportional actuators. Includes cartridge wrench. | |
| VCZZ1600/U | Replacement cartridge, silver spring, for VC series 2-way valves, with Equal Percentage Low flow for use with fail safe proportional actuators. Includes cartridge wrench. | |
| VCZZ3100/U | Replacement cartridge, red spring, for VC series with Linear flow for proportional control (non-fail safe). Includes cartridge wrench. | |
| VCZZ3400/U | Replacement cartridge, red spring, for VC series with Equal Percentage flow for proportional control (non-fail safe). Includes cartridge wrench. | |
| VCZZ3500/U | Replacement cartridge, red spring, for VC series with Equal Percentage Extra Low flow for proportional control (non-fail safe). Includes cartridge wrench. | |
| VCZZ3600/U | Replacement cartridge, red spring, for VC series with Equal Percentage Low flow for proportional control (non-fail safe). Includes cartridge wrench. | |
| VCZZ3800/U | Replacement cartridge, red spring, for VC series with Equal Percentage flow for proportional control (non-fail safe). Includes cartridge wrench. | |
| VCZZ6000/U | Replacement cartridge, silver spring, for VC series 3-way valves, with quick open flow, for use w/ 2-position actuators. Includes cartridge wrench. |  |
| VCZZ6100/U | Replacement cartridge, silver spring, for VC series 3-way valves, with Linear flow, for use w/2-position or fail safe proportional actuators. Includes cartridge wrench. | |
| VCZZ6400/U | Replacement cartridge, silver spring, for VC series 3-way valves, with Equal Percentage flow, for use w/fail safe proportional actuators. Includes cartridge wrench. | |
| VCZZ6600/U | Replacement cartridge, silver spring, for VC series 3-way valves, with Equal Percentage Low flow, for use w/ fail safe proportional actuators. Includes cartridge wrench. | |
| VCZZ7100/U | Replacement cartridge, red spring, for VC series with Linear flow for proportional control (non-fail safe). Includes cartridge wrench. | |
| VCZZ7400/U | Replacement cartridge, red spring, for VC series with Equal Percentage flow for proportional control (non-fail safe). Includes cartridge wrench. | |
| VCZZ7500/U | Replacement cartridge, red spring, for VC series with Equal Percentage Extra Low flow for proportional control (non-fail safe). Includes cartridge wrench. | |
| VCZZ7600/U | Replacement cartridge, red spring, for VC series with Equal Percentage Low flow for proportional control (non-fail safe). Includes cartridge wrench. | |
| VCZZ7800/U | Replacement cartridge, red spring, for VC series with Equal Percentage flow for proportional control (non-fail safe). Includes cartridge wrench. | |

Fan Coil Valves

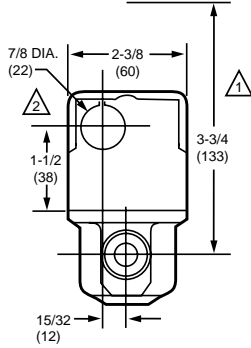
VU52; VU53 Two-way Fan Coil Valves



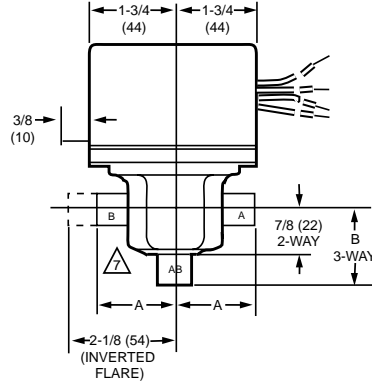
- Compact construction for easy installation.
- Fits under the cover of most baseboard convectors with actuator fitted to valve body.
- VU52 and VU53 provide 2-way, straight-through control of water.
- Available in normally closed (VU53) or normally open (VU52) configurations.
- 300 psi (2,000 kPa, PN20) operating pressure rating.
- Patented ball seal provides long service life, soft close off.
- Triple O-ring seal provides three lines of defense against corrosion and water leakage around drive shaft.
- Quick opening flow curve.
- Available with NPT end connections for iron or steel piping.

Two-way fan coil zone valves are used to control hot or chilled water in commercial HVAC equipment such as fan coil units, terminal reheat coils and convectors. Not for use in systems containing dissolved oxygen.

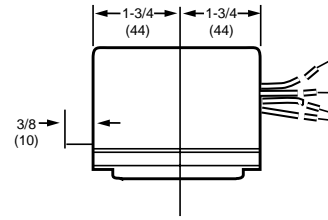
Dimensions in inches (millimeters)



VU53 VALVE WITH VU448 ACTUATOR



VU53 AND VU54 VALVE WITH ACTUATOR



VU5 ACTUATOR

- ▲ HEIGHT NEEDED TO REMOVE ACTUATOR OR COVER
- ▲ OPENING FOR 1/2 IN. CONDUIT ON OPPOSITE SITE OF MANUAL LEVER FOR ALL MODELS.

| VALVE BODY SIZE | A | B |
|-----------------|--------------|--------------|
| 1/2 IN. SWEAT | 1-5/6 (33) | 1-5/6 (33) |
| 3/4 IN. SWEAT | 1-3/8 (35) | 1-11/16 (43) |
| 1 IN. SWEAT | 1-11/16 (43) | 1-11/16 (43) |
| 1/2 IN. NPT | 1-3/8 (35) | 1-5/16 (33) |
| 3/4 IN. NPT | 1-11/16 (43) | 1-7/16 (37) |
| 1 IN. NPT | 1-11/16 (43) | 1-7/16 (37) |

M18261A

Valve Type: Fan Coil Valve

Body Pattern: Two-way, Straight-through

Valve Action: VU52-Normally Open; VU53-Normally Closed

Controlled Fluid: Chilled or hot water with up to 60% Glycol

Flow Characteristic: Quick Opening

Actuation: Must be purchased separately

Ambient Temperature Range: 34°F to 125°F at 200°F Fluid (1 to 52°C @ 94°C Fluid)

Maximum Safe Operating Pressure (psi): 300 psig

Maximum Safe Operating Pressure (kPa): 2068 kPa

Materials (Body): Brass

Materials (Seat): Brass

Materials (Stem): Brass

Materials (Plug / Ball / Disc): Buna-N rubber

Materials (Packing): EPDM rubber

Approvals, CSA: CSA C/US

Used With: For VU52 use VU444 or VU844 Actuator; For VU53 use VU443 or VU843 Actuator

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Connection Type | Maximum Differential Pressure Ratings (Close-off) (psi) | Maximum Differential Pressure Ratings (Close-off) (kPa) |
|-----------------|------------------|----------------|---------------|---------------|-----------------|---|---|
| VU52N1019/U | 1/2 in. | DN15 | 3.5 Cv | 3.0 Kv | Female NPT | 20 psi | 138 kPa |
| VU52N1027/U | 1/2 in. | DN15 | 1.0 Cv | 0.9 Kv | Female NPT | 50 psi | 345 kPa |
| VU52N1035/U | 1/2 in. | DN15 | 2.4 Cv | 2.1 Kv | Female NPT | 30 psi | 207 kPa |
| VU52S2002/U | 1/2 in. | DN15 | 1.0 Cv | 0.9 Kv | Sweat | 50 psi | 345 kPa |
| VU52S2010/U | 1/2 in. | DN15 | 2.4 Cv | 2.1 Kv | Sweat | 30 psi | 207 kPa |
| VU52S2028/U | 1/2 in. | DN15 | 3.5 Cv | 3.0 Kv | Sweat | 20 psi | 138 kPa |
| VU52S2036/U | 3/4 in. | DN20 | 3.5 Cv | 3.0 Kv | Sweat | 20 psi | 138 kPa |
| VU52S2044/U | 3/4 in. | DN20 | 5.0 Cv | 4.3 Kv | Sweat | 15 psi | 103 kPa |
| VU53N1009/U | 1/2 in. | DN15 | 3.5 Cv | 3.0 Kv | Female NPT | 20 psi | 138 kPa |
| VU53N1017/U | 3/4 in. | DN20 | 8.0 Cv | 7.0 Kv | Female NPT | 10 psi | 69 kPa |
| VU53N1026/U | 1 in. | DN25 | 8.0 Cv | 7.0 Kv | Female NPT | 10 psi | 69 kPa |
| VU53N1033/U | 3/4 in. | DN20 | 3.5 Cv | 3.0 Kv | Female NPT | 20 psi | 138 kPa |
| VU53N1041/U | 1/2 in. | DN15 | 1.0 Cv | 0.9 Kv | Female NPT | 50 psi | 345 kPa |
| VU53N1058/U | 1/2 in. | DN15 | 2.4 Cv | 2.1 Kv | Female NPT | 30 psi | 207 kPa |
| VU53N1066/U | 3/4 in. | DN20 | 5.0 Cv | 4.3 Kv | Female NPT | 15 psi | 103 kPa |
| VU53S2018/U | 1/2 in. | DN15 | 1.0 Cv | 0.9 Kv | Sweat | 50 psi | 345 kPa |
| VU53S2026/U | 1/2 in. | DN15 | 2.4 Cv | 2.1 Kv | Sweat | 30 psi | 207 kPa |
| VU53S2034/U | 1/2 in. | DN15 | 3.5 Cv | 3.0 Kv | Sweat | 20 psi | 138 kPa |
| VU53S2042/U | 3/4 in. | DN20 | 3.5 Cv | 3.0 Kv | Sweat | 20 psi | 138 kPa |
| VU53S2059/U | 3/4 in. | DN20 | 8.0 Cv | 7.0 Kv | Sweat | 10 psi | 69 kPa |
| VU53S2075/U | 3/4 in. | DN20 | 5.0 Cv | 4.3 Kv | Sweat | 15 psi | 103 kPa |

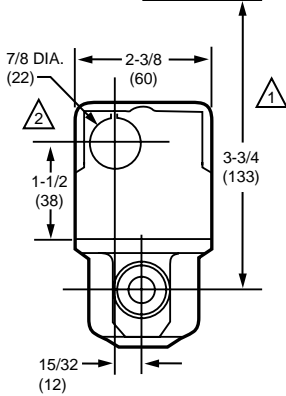
VU54 Three-way Fan Coil Valves



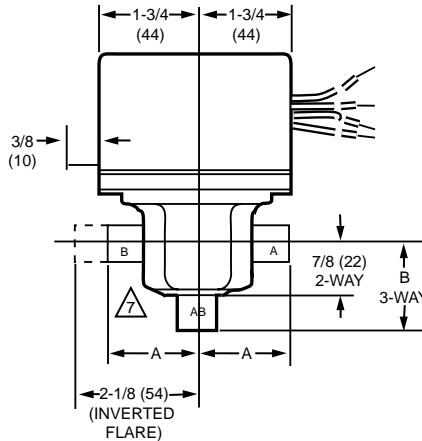
Three-way fan coil zone valves are used to control hot or chilled water in commercial HVAC equipment such as fan coil units, terminal reheat coils and convectors.

- Compact construction for easy installation.
- Fits under the cover of most baseboard convectors with actuator fitted to valve body.
- VU54 provides three-way diverting control of water.
- 300 psi (2,000 kPa, PN20) operating pressure rating.
- Patented ball seal provides long service life, soft close off.
- Triple O-ring seal provides three lines of defense against corrosion and water leakage around drive shaft.
- Quick opening flow curve.
- Choice of NPT end connections for iron or steel piping.

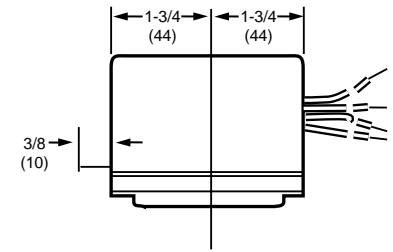
Dimensions in inches (millimeters)



VU53 VALVE WITH VU448 ACTUATOR



VU53 AND VU54 VALVE WITH ACTUATOR



VU5 ACTUATOR

- 1 HEIGHT NEEDED TO REMOVE ACTUATOR OR COVER
- 2 OPENING FOR 1/2 IN. CONDUIT ON OPPOSITE SITE OF MANUAL LEVER FOR ALL MODELS.

| VALVE BODY SIZE | A | B |
|-----------------|--------------|--------------|
| 1/2 IN. SWEAT | 1-5/6 (33) | 1-5/6 (33) |
| 3/4 IN. SWEAT | 1-3/8 (35) | 1-11/16 (43) |
| 1 IN. SWEAT | 1-11/16 (43) | 1-11/16 (43) |
| 1/2 IN. NPT | 1-3/8 (35) | 1-5/16 (33) |
| 3/4 IN. NPT | 1-11/16 (43) | 1-7/16 (37) |
| 1 IN. NPT | 1-11/16 (43) | 1-7/16 (37) |

M18261A

Valve Type: Fan Coil Valve
Body Pattern: Three-way A-AB-B
Valve Action: Diverting
Connection Type: VU54N-Female NPT; VU54S-Sweat
Controlled Fluid: Chilled or hot water with up to 60% Glycol
Flow Characteristic: Quick Opening
Actuation: Must be purchased separately
Ambient Temperature Range: 34°F to 125°F at 200°F Fluid (1 to 52°C @ 94°C Fluid)

Maximum Safe Operating Pressure (psi): 300 psig
Maximum Safe Operating Pressure (kPa): 2068 kPa
Materials (Body): Brass
Materials (Seat): Brass
Materials (Stem): Brass
Materials (Plug / Ball / Disc): Buna-N rubber
Materials (Packing): EPDM rubber
Approvals, CSA: CSA C/US
Used With: VU444 or VU844 Actuator

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Maximum Differential Pressure Ratings (Close-off) (psi) | Maximum Differential Pressure Ratings (Close-off) (kPa) |
|-----------------|------------------|----------------|---------------|---------------|---|---|
| VU54N1007/U | 1/2 in. | DN15 | 4.0 Cv | 3.4 Kv | 20 psi | 138 kPa |
| VU54N1015/U | 3/4 in. | DN20 | 7.0 Cv | 6.5 Kv | 10 psi | 69 kPa |
| VU54N1023/U | 1 in. | DN25 | 7.0 Cv | 6.5 Kv | 10 psi | 69 kPa |
| VU54N1031/U | 3/4 in. | DN20 | 4.0 Cv | 3.4 Kv | 20 psi | 138 kPa |
| VU54N1049/U | 3/4 in. | DN20 | 5.0 Cv | 4.3 Kv | 15 psi | 103 kPa |
| VU54S2008/U | 1/2 in. | DN15 | 4.0 Cv | 3.4 Kv | 20 psi | 138 kPa |
| VU54S2016/U | 3/4 in. | DN20 | 7.0 Cv | 6.5 Kv | 10 psi | 69 kPa |
| VU54S2024/U | 1 in. | DN25 | 7.0 Cv | 6.5 Kv | 10 psi | 69 kPa |
| VU54S2057/U | 3/4 in. | DN20 | 5.0 Cv | 4.3 Kv | 15 psi | 103 kPa |

Control Ball Valves

VBF5011 Two-way Flanged Control Ball Valve



The VBF5011 Two-Way Control Ball Valve controls hot and chilled water with glycol solutions up to 50% in heating, ventilating and air conditioning (HVAC) systems. These valves can be used with Honeywell electronic actuators.

- Sizes from 2-1/2 in. to 6 in. with ANSI Class 125 flanged connections.
- Equal percentage or linear flow characteristics.
- Can be used with Honeywell electronic actuators.
- Field configurable for normally open or normally closed fail-safe position.
- 2-1/2 and 3 in. valves have removable manual operating handle to control valve during installation or in an event of power failure.
- ANSI Class IV leakage specification (0.01% of Cv).
- Option of four actuator mounting positions on the valve for 4, 5 and 6 in. valves.
- Wide range of CV choices from 63 to 360.
- Valve ball and stem 316 stainless steel for all valves except 3 in. valve.

Valve Type: Control Ball Valve

Body Pattern: Two-way

Connection Type: Flanged

Controlled Fluid: Chilled or hot water with up to 50% Glycol.

Flow Characteristic: Equal Percentage

Actuation: No pre-assembled actuator

Fluid Temperature Range: -22°F to +250°F (-30°C to +121°C)

Materials (Seat): Teflon™

Leakage: ANSI Class IV (0.01% of Cv maximum)

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Materials (Body) | Materials (Stem) | Materials (Plug / Ball / Disc) |
|-----------------|------------------|----------------|---------------|---------------|---------------------------------------|---------------------------------------|------------------|---------------------|--------------------------------|
| VBF5011A1734/U | 2 1/2 in. | DN65 | 63 Cv | 54 Kv | 360 psi | 2482 kPa | Brass | Stainless Steel | Stainless Steel |
| VBF5011A1767/U | 3 in. | DN80 | 100 Cv | 86 Kv | 360 psi | 2482 kPa | Brass | Stainless Steel | Stainless Steel |
| VBF5011A1858/U | 4 in. | DN100 | 160 Cv | 138 Kv | 240 psi | 1655 kPa | Cast Iron | 316 Stainless Steel | 316 Stainless Steel |
| VBF5011A1882/U | 5 in. | DN125 | 250 Cv | 215 Kv | 240 psi | 1655 kPa | Cast Iron | 316 Stainless Steel | 316 Stainless Steel |
| VBF5011A1916/U | 6 in. | DN150 | 360 Cv | 310 Kv | 240 psi | 1655 kPa | Cast Iron | 316 Stainless Steel | 316 Stainless Steel |

VBF5013 Three-way Flanged Control Ball Valve



The Honeywell VBF5013 Three-Way Control Ball Valve controls hot and chilled water with glycol solutions up to 50% in heating, ventilating and air conditioning (HVAC) systems. These valves can be used with Honeywell electronic actuators.

- Sizes from 2-1/2 in. to 6 in. with ANSI Class 125 flanged connections.
- Mixing or diverting control.
- Equal percentage or linear flow characteristics.
- Same flow pattern configuration as Globe valve.
- Can be used with Honeywell electronic actuators.
- Field configurable for normally open or normally closed fail-safe position.
- 2-1/2 and 3 in. valves have removable manual operating handle to control valve during installation or in an event of power failure.
- ANSI Class IV leakage specification (0.01% of Cv). A to AB; ANSI Class IV leakage. B to AB; ANSI Class III leakage.
- Option of four actuator mounting positions on the valve for 4, 5 and 6 in. valves.
- Wide range of Cv choices from 63 to 360.
- Valve ball and stem 316 stainless steel for all valves except 3 in. valve.

Valve Type: Control Ball Valve

Body Pattern: Three-way

Connection Type: Flanged

Controlled Fluid: Chilled or hot water with up to 50% Glycol.

Flow Characteristic: Equal Percentage (A-AB); Linear (B-AB)

Actuation: No pre-assembled actuator

Fluid Temperature Range: -22°F to +250°F (-30°C to +121°C)

Materials (Seat): Teflon™

Leakage: ANSI Class IV (A to AB), ANSI Class III (B to AB)

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (Cv) | Capacity (Kv) | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Materials (Body) | Materials (Stem) | Materials (Plug / Ball / Disc) |
|-----------------|------------------|----------------|---------------|---------------|---------------------------------------|---------------------------------------|------------------|---------------------|--------------------------------|
| VBF5013B1003/U | 2 1/2 in. | DN65 | 63 Cv | 54 Kv | 360 psi | 2482 kPa | Brass | Brass | Brass |
| VBF5013B1011/U | 3 in. | DN80 | 100 Cv | 86 Kv | 360 psi | 2482 kPa | Cast Iron | 316 Stainless Steel | 316 Stainless Steel |
| VBF5013B1029/U | 4 in. | DN100 | 160 Cv | 138 Kv | 240 psi | 1655 kPa | Cast Iron | 316 Stainless Steel | 316 Stainless Steel |
| VBF5013B1037/U | 5 in. | DN125 | 250 Cv | 215 Kv | 240 psi | 1655 kPa | Cast Iron | 316 Stainless Steel | 316 Stainless Steel |
| VBF5013B1045/U | 6 in. | DN150 | 360 Cv | 310 Kv | 240 psi | 1655 kPa | Cast Iron | 316 Stainless Steel | 316 Stainless Steel |

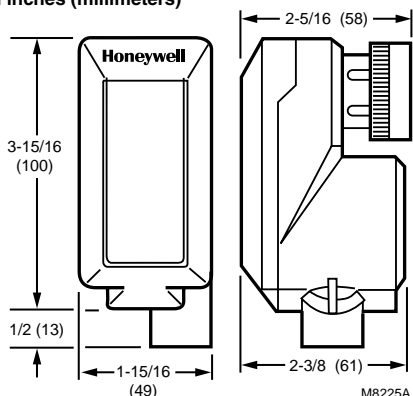
M6410; M7410 Cartridge Globe Valve Actuator



Cartridge Globe Valve Actuators are small electric actuators for individual room control that provide floating or modulating control of V5852, V5862 two-way or V5853, V5863 three-way valves.

- Suitable for Excel/IRC system or other controllers providing specified signals.
- Magnetic coupling for torque limitation independent of voltage supply and self-adjustment of the close-off port.
- No mounting tools required.
- Small size allows installation in limited space of fan coil units, induction units, and small reheaters or recoolers.
- Visual position indication (red pin).

Dimensions in inches (millimeters)



Application: HVAC

Actuator Type: Valve

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: Stays in place

Internal Auxiliary Switch: 0

Switches: No

Stroke: 1/4 in. (6 mm)

Electrical Connections: Plenum-rated cable

Cable: Threaded conduit connector

Mounting: Threads onto V58XX valve bonnet

Timing, Nominal: Driving @ 60 Hz (sec) – 125 sec

Environmental, Electrical, or Ingress Protection Rating: IP42, Class I Insulation (24 Vac)

Feedback: No

Materials: Low Maintenance Plastic Housing

Manual operation: None (use valve dust cap)

Approximate, Dimensions: 2 3/8 in. high x 1 15/16 in. wide x 3 15/16 in. deep (61 mm high x 49 mm wide x 100 mm deep)

Ambient Temperature Range: 32°F to 122°F (0°C to 50°C)

Shipping and Storage Temperature Range: -40°F to +158°F (-40°C to +70°C)

Approvals, Underwriters Laboratories Inc.: Flammability Rating UL94V-5V

Operating Humidity Range (% RH): 5 to 95% RH

Includes: 1/2 in. conduit hub

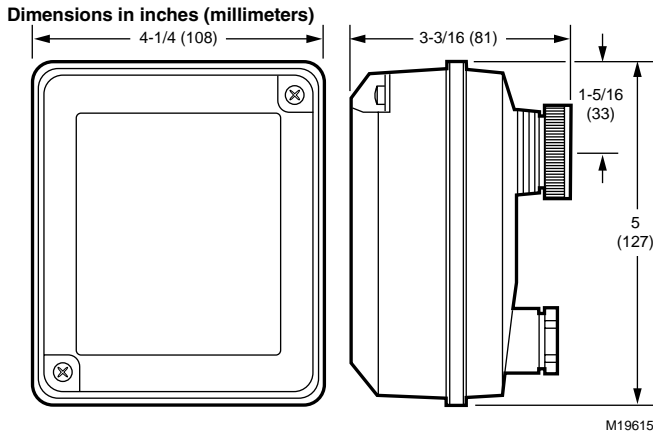
Fluid Temperature: 266°F Maximum (130°C Maximum)

Supply Voltage: 24 Vac +10%, -30%

| Material Number | Control Signal | Power Consumption | Input Impedance | Torque Rating (lb-in.) | Torque Rating (Nm) | Weight | Comments | Used With |
|-----------------|------------------------------|-------------------|-----------------|------------------------|--------------------|---------------------|------------------------------------|--|
| M6410A1029 | SPDT; Two position; Floating | Driving – 0.7 VA | | 40.5 lb-in. | 180 Nm | 0.3125 lb (0.15 kg) | | 1/2 inch and 3/4 inch V58XX Globe Valves |
| M6410A3017 | SPDT; Two position; Floating | Driving – 0.7 VA | | 67.5 lb-in. | 300 Nm | 0.3125 lb (0.15 kg) | High force for metal-seated valves | 1 inch to 1-1/2 inch V58XX Globe Valves |
| M7410F1000 | 0 to 10 Vdc; 2 to 10 Vdc | Driving – 1.4 VA | 100K ohm | 40.5 lb-in. | 180 Nm | 0.35 lb (0.16 kg) | Direct/Reverse Acting Switch | 1/2 inch and 3/4 inch V58XX Globe Valves |
| M7410F3006 | 0 to 10 Vdc; 2 to 10 Vdc | Driving – 1.4 VA | 100K ohm | 67.5 lb-in. | 300 Nm | 0.35 lb (0.16 kg) | Direct/Reverse Acting Switch | 1/2 inch and 3/4 inch V58XX Globe Valves |

Cartridge Globe Valve Actuators

M6435; M7435 Cartridge Globe Valve Actuator



Cartridge Globe Valve Spring Return Actuators are small electric actuators for individual room control that provide floating or modulating control of V5852, V5862 two-way or V5853, V5863 three-way valves.

- Stem actuator retracts up on power failure. Fail safe mode depends on valve seat rest position.
- Suitable for Excel/IRC system or other controllers providing specified signals.
- Magnetic coupling for torque limitation independent of voltage supply and self-adjustment of the close-off port.
- No mounting tools required.
- Compact size allows installation in limited space of fan coil units, induction units, and small reheaters or recoolers.
- Visual position indication (red disk).

Application: HVAC

Actuator Type: Valve

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: (Normally open for 1/2 in. and 3/4 in. V5852 and V5862. Normally closed for all other V58XX valves.); Spring Return, operator retracts up

Internal Auxiliary Switch: 0

Switches: No

Stroke: 1/4 in. (6 mm)

Electrical Connections: Screw terminals

Cable: Threaded conduit connector

Mounting: Threads onto V58XX valve bonnet

Timing, Nominal: Driving @ 60 Hz – 50 sec

Spring Return Timing: Nominal – 10 sec

Environmental, Electrical, or Ingress Protection Rating: IP54, Class I Insulation (24 Vac)

Feedback: No

Materials: Low Maintenance Plastic Housing

Manual operation: None (use valve dust cap)

Spring Return Direction: Stem up

Weight: 1.1 lb (0.5 kg)

Approximate, Dimensions: 3 3/16 in. high x 4 1/4 in. wide x 5 in. deep (81 mm high x 108 mm wide x 126 mm deep)

Ambient Temperature Range: 32°F to 122°F (0°C to 50°C)

Shipping and Storage Temperature Range: -40°F to +158°F (-40°C to +70°C)

Approvals, Underwriters Laboratories Inc.: Flammability Rating UL94V-5V

Operating Humidity Range (% RH): 5 to 95% RH

Includes: 1/2 in. conduit hub

Fluid Temperature: 266°F Maximum (130°C Maximum)

Supply Voltage: 24 Vac +20%, -15%

| Material Number | Control Signal | Power Consumption | Input Impedance | Torque Rating (lb-in.) | Torque Rating (Nm) | Spring Return Torque/Force (lb-in., lbf) | Spring Return Torque/Force (Nm, N) | Comments | Used With |
|-----------------|------------------------------|-------------------|-----------------|------------------------|--------------------|--|------------------------------------|--|--|
| M6435A1004 | SPDT; Two position; Floating | Driving – 10 VA | | 40.5 lb-in. | 180 Nm | 40.5 lbf | 180 N | | 1/2 inch and 3/4 inch V58XX Globe Valves |
| M6435A3000 | SPDT; Two position; Floating | Driving – 10 VA | | 90 lb-in. | 400 Nm | 90 lbf | 400 N | High force for metal-seated valves | 1 inch to 1-1/2 inch V58XX Globe Valves |
| M7435F1001 | 0 to 10 Vdc; 2 to 10 Vdc | Driving – 5 VA | 100K ohm | 40.5 lb-in. | 180 Nm | 40.5 lbf | 180 N | Direct/Reverse Acting Switch | 1/2 inch and 3/4 inch V58XX Globe Valves |
| M7435F3007 | 0 to 10 Vdc; 2 to 10 Vdc | Driving – 5 VA | 100K ohm | 90 lb-in. | 400 Nm | 90 lbf | 400 N | Direct/Reverse Acting Switch; High force for metal-seated valves | 1 inch to 1-1/2 inch V58XX Globe Valves |

VC Series Two-position Actuators



Control central heating and/or cooling systems, fan coil systems, radiators and convectors. Depending on the model selected, the actuator can be controlled by either a low or line voltage SPST or SPDT controller such as a room thermostat.

- Use with two-way or three-way valves.
- Minimal actuator power consumption.
- Quick-connect or one meter cable electrical connections available.
- Quick and easy replacement of moving parts.
- Actuator head installation does not require draining the system.
- On/Off models with six second nominal timing
- Use two-position actuators with 1000 Series 2 way and 6000 Series 3-way VC valve bodies only.
- All VC Series actuator-valve combinations provide 60 psi close-off.

Application: HVAC

Actuator Type: Valve

Frequency: VC2, VC8 Series-60 Hz; VC4 Series-50 Hz, 60 Hz

Fail Safe Mode: Stays in place

Stroke: 0.4 in. (10 mm)

Mounting: Direct Coupled

Power Consumption: Driving – 6 VA

Timing, Nominal: Driving @ 60 Hz – 6 sec

Spring Return: 5 sec

Environmental, Electrical, or Ingress Protection Rating: Double Insulated, IP40

Materials: Plastic housing

Maximum Differential Pressure Ratings (Close-off) (psi): 60 psid

Maximum Differential Pressure Ratings (Close-off) (kPa): 400 kPa

Shaft Adapter Type: Self-alignment

Manual operation: Lever

Approximate, Dimensions: 2.8 in. high x 3.7 in. wide x 2.7 in. deep (70 mm high x 94 mm wide x 68 mm deep)

Ambient Temperature Range: 32°F to 150°F (0°C to 65°C)

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approvals, Underwriters Laboratories Inc.: UL Recognized, File# MH11826

Approvals, CSA: CSA Certified: LR1322-367

Approvals, CE: 89/336/ECC, 73/23/EEC

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing
Used With: VC Series Valves, 1000 Series 2-way and 6000 Series 3-way

Fluid Temperature: 203°F (95°C)

| Material Number | Control Signal | Internal Auxiliary Switch | Switches | Switch Ratings | Electrical Connections | Cable | Electrical Connections Size | Supply Voltage | Comments | Includes |
|-----------------|--------------------|---------------------------|----------|---|------------------------|-------------------------------------|-----------------------------|----------------|---|--|
| VC2114ZZ11/U | Two position, SPDT | 0 | | | Plenum-rated cable | Molded strain relief, conduit clamp | 5 ft. (1.5 m) | 24 Vac | | Flexible conduit adapter |
| VC2714ZZ11/U | Two position, SPDT | 1 | SPDT | 2.2A (5 to 110 Vac)/1.0A (110 to 277 Vac) Inductive; Min. DC switching capability: 5 mA @ 24 Vac. | Plenum-rated cable | Molded strain relief, conduit clamp | 5 ft. (1.5 m) | 24 Vac | | 3/8 in. flex conduit adapter |
| VC4012ZZ00/U | Two position, SPST | 0 | | | Cable | | | 240V | | Valve body |
| VC4013ZZ00/U | Two position, SPST | 0 | | | Cable | Molded strain relief | 39 in. (1 m) | 240V | | Valve body |
| VC4013ZZ11/U | Two position, SPST | 0 | | | Cable | Molded strain relief | 39 in. (1 m) | 200V to 240V | | |
| VC4611ZZ11/U | Two position, SPST | 1 | SPDT | 2.2A (5 to 110 Vac)/1.0A (110 to 277 Vac) Inductive; Min. DC switching capability: 5 mA @ 24 Vac. | Cable | Molded strain relief | 39 in. (1 m) | 120V | | |
| VC8111ZZ11/U | Two position, SPST | 0 | | | Cable | Molded strain relief | 39 in. (1 m) | 24 Vac | | |
| VC8114ZZ11/U | Two position, SPST | 0 | | | Plenum-rated cable | Molded strain relief, conduit clamp | 5 ft. (1.5 m) | 24 Vac | | Flexible conduit adapter |
| VC8710ZZ03/U | Two position, SPST | 1 | SPDT | 2.2A (5 to 110 Vac)/1.0A (110 to 277 Vac) Inductive; Min. DC switching capability: 5 mA @ 24 Vac. | Plenum-rated cable | | | 24 Vac | Added 3K ohm 1/2W resistor to PCB for working with Honeywell power stealing thermostat | 3/8 in. flex conduit adapter; Valve body |
| VC8711ZZ11/U | Two position, SPST | 1 | SPDT | 2.2A (5 to 110 Vac)/1.0A (110 to 277 Vac) Inductive; Min. DC switching capability: 5 mA @ 24 Vac. | Cable | Molded strain relief | 39 in. (1 m) | 24 Vac | | |
| VC8714ZZ11/U | Two position, SPST | 1 | SPDT | 2.2A (5 to 110 Vac)/1.0A (110 to 277 Vac) Inductive; Min. DC switching capability: 5 mA @ 24 Vac. | Plenum-rated cable | Molded strain relief, conduit clamp | 5 ft. (1.5 m) | 24 Vac | | Flexible conduit adapter |
| VC8715ZZ11/U | Two position, SPST | 1 | SPST | 2.2A (5 to 110 Vac) Inductive; Min. DC switching capability: 5 mA @ 24V | Cable | Molded strain relief | 39 in. (1 m) | 24 Vac | With additional current draw (3W standby) for compatibility with Honeywell power stealing thermostats | |

Cartridge Cage Valve Actuators

VC Series Proportional Actuators



Application: HVAC
Actuator Type: Valve
Frequency: 50 Hz; 60 Hz
Fail Safe Mode: Stays in place
Stroke: 0.4 in. (10 mm)
Mounting: Direct Coupled
Power Consumption: Driving – 6 VA
Timing, Nominal: Driving @ 60 Hz (sec) – 120 sec
Environmental, Electrical, or Ingress Protection Rating: Double Insulated, IP40
Materials: Plastic housing
Maximum Differential Pressure Ratings (Close-off) (psi): 60 psid
Maximum Differential Pressure Ratings (Close-off) (kPa): 400 kPa
Shaft Adapter Type: Self-alignment

Control central heating and cooling, fan coil systems, radiators and convectors. Depending on the model, the actuator can be controlled by a low voltage SPST or SPDT switch, pulse-width modulated 24 Vac signal, or floating input, modulating controller.

- Use with two-way or three-way valves.
- Double insulated actuator.
- Five foot plenum-rated cable.
- Quick and easy replacement of moving parts.
- Actuator head installation does not require draining the system.
- Selectable/switchable electronic fail safe normally open or normally closed.
- Available with valve bodies with 1000-series 2-way and 6000-series 3-way cartridges for new construction.
- All VC Series actuator-valve combinations provide 60 psi close-off.

Manual operation: Lever

Weight: 0.84 lb (0.38 kg)

Approximate, Dimensions: 2.8 in. high x 3.7 in. wide x 2.7 in. deep (70 mm high x 94 mm wide x 68 mm deep)

Ambient Temperature Range: 32°F to 150°F (0°C to 65°C)

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approvals, CSA: CSA Certified: LR1322-367

Approvals, CE: 89/336/ECC, 73/23/EEC

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing
Used With: 3000 Series 2-way and 7000 Series VC valve bodies only

Fluid Temperature: 203°F (95°C)

Supply Voltage: 24 Vac

| Material Number | Control Signal | Internal Auxiliary Switch | Switches | Switch Ratings | Electrical Connections | Cable | Electrical Connections Size | Approvals, Underwriters Laboratories Inc. | Includes |
|-----------------|-----------------------------------|---------------------------|----------|---|------------------------|-------------------------------------|-----------------------------|---|--------------------------|
| VC6834ZZ11/U | SP3T (tri-state) Floating; 24 Vac | 1 | SPDT | 2.2A (5 to 110 Vac)/1.0A (110 to 277 Vac) Inductive; Min. DC switching capability: 5 mA @ 24 Vac. | Plenum-rated cable | Molded strain relief, conduit clamp | 5 ft. (1.5 m) | Listed 94-5V | Flexible conduit adapter |
| VC6931ZZ11/U | SP3T (tri-state) Floating; 24 Vac | 0 | | | Cable | Molded strain relief | 39 in. (1 m) | UL Recognized, File# MH11826 | Flexible conduit adapter |
| VC6934ZZ11/U | SP3T (tri-state) Floating; 24 Vac | 0 | | | Plenum-rated cable | Molded strain relief, conduit clamp | 5 ft. (1.5 m) | Listed 94-5V | Flexible conduit adapter |
| VC7931ZZ11/U | (0) 2-10 Vdc | 0 | | | Cable | Molded strain relief | 39 in. (1 m) | UL Recognized, File# MH11826 | |
| VC7934ZZ11/U | (0) 2-10 Vdc | 0 | | | Plenum-rated cable | Molded strain relief, conduit clamp | 5 ft. (1.5 m) | Listed 94-5V | Flexible conduit adapter |

VC Series Fail Safe Proportional Actuators



Application: HVAC
Actuator Type: Valve
Frequency: 50 Hz; 60 Hz
Fail Safe Mode: N.O. or N.C., switchable electronic
Internal Auxiliary Switch: 0
Stroke: 0.4 in. (10 mm)
Electrical Connections: Plenum-rated cable
Cable: Molded strain relief, conduit clamp
Mounting: Direct Coupled
Power Consumption: Driving – 12 Watts, 18 VA inrush
Environmental, Electrical, or Ingress Protection Rating: Double Insulated, IP40
Spring Return Timing: Nominal – 12 sec
Materials: Plastic housing
Maximum Differential Pressure Ratings (Close-off) (psi): 60 psid
Maximum Differential Pressure Ratings (Close-off) (kPa): 400 kPa
Shaft Adapter Type: Self-alignment

Control central heating and/or cooling systems, fan coil systems, radiators and convectors. Depending on the model selected, it can be controlled by either a low or line voltage SPST or SPDT or floating or modulating controller.

- Use with two-way or three-way valves.
- Minimal actuator power consumption.
- Double insulated actuator.
- Five foot plenum-rated cable electrical connections available.
- Quick and easy replacement of moving parts.
- Actuator head installation does not require draining the system.
- Selectable/switchable electronic fail safe normally open or normally closed.
- Includes valve bodies with 1000-series 2-way and 3000-series 3-way cartridges.
- All VC Series actuator-valve combinations provide 60 psi close-off.

Manual operation: Lever

Approximate, Dimensions: 2.8 in. high x 3.7 in. wide x 2.7 in. deep (70 mm high x 94 mm wide x 68 mm deep)

Ambient Temperature Range: 32°F to 150°F (0°C to 65°C)

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approvals, Underwriters Laboratories Inc.: Listed 94-5V

Approvals, CSA: CSA Certified: LR1322-367

Approvals, CE: 89/336/ECC, 73/23/EEC

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Includes: Flexible conduit adapter

Used With: VC Series Valves, 1000 Series 2-way and 6000 Series 3-way with proportional cartridges

Fluid Temperature: 203°F (95°C)

Electrical Connections Size: 5 ft. (1.5 m)

Supply Voltage: 24 Vac

| Material Number | Control Signal | Timing, Nominal | Weight | Comments |
|------------------|--|---------------------------------|-------------------|---|
| VC6936ZZ11-530/U | SP3T (tri-state) Floating; 24 Vac SPDT | Driving @ 60 Hz – 120 sec | 0.84 lb (0.38 kg) | Power failure reposition installer-selectable for NC/NO. Use with series 60 controller (TB6980 or XL10). Replaces VC6936ZZ11-524/526/527. |
| VC7936ZZ11-529/U | 24V Pulse Width Modulation; On/Off; 24 Vac Floating; 2 to 10 Vdc | Driving @ 60 Hz – 60 to 120 sec | | Power failure reposition installer-selectable for NC/NO. Use with series 60/70/80 controller (TB6980, XL15, or XL10). Replaces VC7936ZZ11-523 |

Fan Coil Actuators

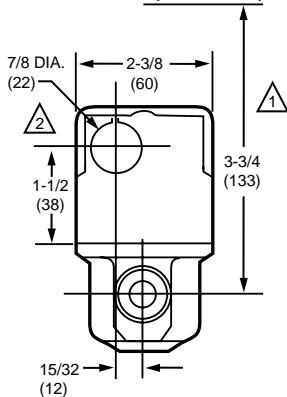
VU443, VU444; VU843; VU844 Fan Coil Actuators



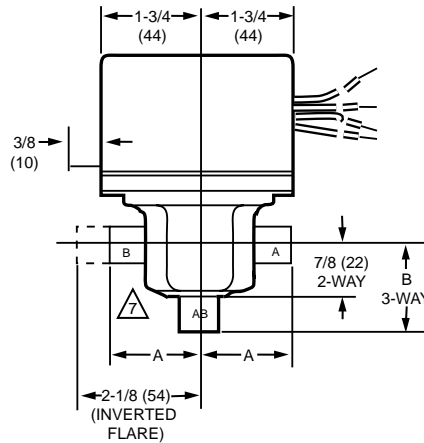
Humidity resistant fan coil valve actuators are used in conjunction with VU52, VU53 and VU54 valves for controlling the flow of hot or chilled water in commercial HVAC equipment such as fan coil units, terminal reheat coils and convectors.

- Compact construction for easy installation.
- Fits under the cover of most baseboard convectors with actuator fitted to valve body.
- One-button, quick release. Secure 3-point, metal latch to valve body.
- Spring return operation.
- Stainless steel case and aluminum cover. Rust-proof nickel-plated motors available.
- Line or low voltage, rust-resistant motors.
- Manual opener for installation and valve operation on power failure.
- Valve returns to automatic position when power is restored.
- Actuator may be reinstalled or serviced without draining the system or disassembling the valve.
- Slotted conduit hole for faster wiring.

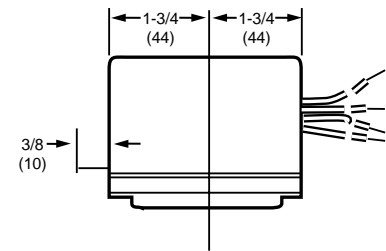
Dimensions in inches (millimeters)



VU53 VALVE WITH VU448 ACTUATOR



VU53 AND VU54 VALVE WITH ACTUATOR



VU5 ACTUATOR

- △1 HEIGHT NEEDED TO REMOVE ACTUATOR OR COVER
- △2 OPENING FOR 1/2 IN. CONDUIT ON OPPOSITE SITE OF MANUAL LEVER FOR ALL MODELS.

| VALVE BODY SIZE | A | B |
|-----------------|--------------|--------------|
| 1/2 IN. SWEAT | 1-5/6 (33) | 1-5/6 (33) |
| 3/4 IN. SWEAT | 1-3/8 (35) | 1-11/16 (43) |
| 1 IN. SWEAT | 1-11/16 (43) | 1-11/16 (43) |
| 1/2 IN. NPT | 1-3/8 (35) | 1-5/16 (33) |
| 3/4 IN. NPT | 1-11/16 (43) | 1-7/16 (37) |
| 1 IN. NPT | 1-11/16 (43) | 1-7/16 (37) |

M18261A

Application: For controlling the flow of hot or chilled water in commercial HVAC equipment such as fan coil units, terminal reheat coils and convectors

Actuator Type: Valve

Control Signal: Two position; SPST

Fail Safe Mode: Spring Return

Electrical Connections: Leads

Power Consumption: Driving – 6 Watts

Timing, Nominal: Driving @ 60 Hz (sec) – 15 sec maximum

Maximum Differential Pressure Ratings (Close-off) (psi): Depends on Cv rating of valve

Manual operation: Lever

Approximate, Dimensions: 2 3/8 in. high, 3 1/2 in. wide, 2 3/8 in. wide (62 mm high, 88 mm wide, 60 mm deep)

Ambient Temperature Range: 34°F to 125°F ambient at 200°F Fluid (1°C to 52°C ambient at 93°C Fluid)

Approvals, CSA: Certified C/US File No. LR1322

Fluid Temperature: 200°F (94°C)

| Material Number | Frequency | Internal Auxiliary Switch | Stroke | Spring Return Timing | Materials | Supply Voltage | Electrical Connections Size | Comments | Used With |
|-----------------|--------------|---------------------------|---------|----------------------|--------------------------------|----------------|-----------------------------|----------|---|
| VU443A1008/U | 60 Hz | 0 | 22 deg. | Nominal – 4 sec | Stainless Case, Aluminum Cover | 120V | 6 in. (0.15 m) | | 2-way NC VU valve body (VU53) |
| VU443A1024/U | 60 Hz | 0 | 22 deg. | Nominal – 4 sec | Stainless Case, Aluminum Cover | 208V | 18 in. (0.5 m) | | 2-way NC VU valve body (VU53) |
| VU443A1057/U | 60 Hz | 0 | 22 deg. | Nominal – 4 sec | Stainless Case, Aluminum Cover | 277V | 18 in. (0.5 m) | | 2-way NC VU valve body (VU53) |
| VU443A1115/U | 50 Hz; 60 Hz | 0 | 22 deg. | Nominal – 4 sec | Stainless Case, Aluminum Cover | 230V | 6 in. (0.15 m) | | 2-way NC VU valve body (VU53) |
| VU444A1007/U | 60 Hz | 0 | 45 deg. | Nominal – 6 sec | Stainless Case, Aluminum Cover | 120V | 6 in. (0.15 m) | | 2-way NO (VU52) or 3-way VU valve body (VU54) |
| VU444A1098/U | 60 Hz | 0 | 45 deg. | Nominal – 6 sec | Stainless Case, Aluminum Cover | 277V | 18 in. (0.5 m) | | 2-way NO (VU52) or 3-way VU valve body (VU54) |

Fan Coil Actuators

| Material Number | Frequency | Internal Auxiliary Switch | Stroke | Spring Return Timing | Materials | Supply Voltage | Electrical Connections Size | Comments | Used With |
|-----------------|-----------------|---------------------------|---------|----------------------|---|----------------|-----------------------------|---|---|
| VU444A1106/U | 50 Hz; 60 Hz | 0 | 45 deg. | Nominal – 6 sec | Stainless Case, Aluminum Cover | 230V | 6 in. (0.15 m) | | 2-way NO (VU52) or 3-way VU valve body (VU54) |
| VU444A1155/U | 60 Hz | 0 | 45 deg. | Nominal – 6 sec | Stainless Case, Aluminum cover, Ni-plated motor | 120V | 6 in. (0.15 m) | Nickel plated motor for added humidity resistance | 2-way NO (VU52) or 3-way VU valve body (VU54) |
| VU843A1004/U | 50 Hz; 60 Hz | 0 | 22 deg. | Nominal – 4 sec | Stainless Case, Aluminum Cover | 24V | 6 in. (0.15 m) | | 2-way NC VU valve body (VU53) VU443, VU444; VU843; VU844 Fan Coil Actuators |
| VU843A1087/U | 50 Hz; 60 Hz | 0 | 22 deg. | Nominal – 4 sec | Stainless Case, Aluminum cover, Ni-plated motor | 24V | 6 in. (0.15 m) | Nickel plated motor for added humidity resistance | 2-way NC VU valve body (VU53) |
| VU844A1003/U | 50 Hz; 60 Hz | 0 | 45 deg. | Nominal – 6 sec | Stainless Case, Aluminum Cover | 24V | 6 in. (0.15 m) | | 2-way NO (VU52) or 3-way VU valve body (VU54) |
| VU844A1060/U | 50 Hz; 60 Hz | 0 | 45 deg. | Nominal – 6 sec | Stainless Case, Aluminum cover, Ni-plated motor | 24V | 6 in. (0.15 m) | Nickel plated motor for added humidity resistance | 2-way NO (VU52) or 3-way VU valve body (VU54) |

Direct Coupled Valve Actuators

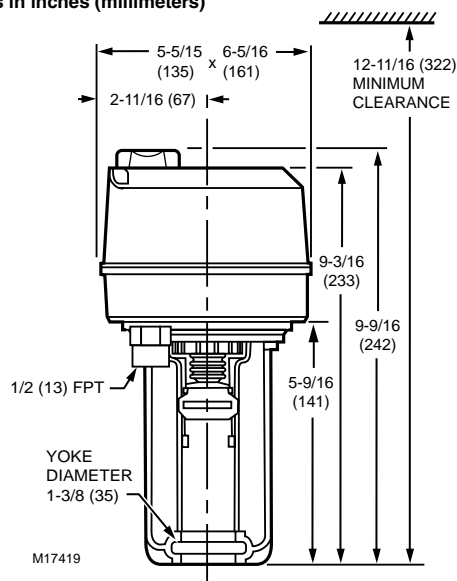
ML6420; ML7420 Non-Spring Return Direct Coupled Globe Valve Actuators



The Non-Spring Return Electric Linear Valve Actuators have floating or modulating control. These actuators operate standard Honeywell valves in heating, ventilating, and air conditioning (HVAC) applications.

- Easy and quick installation on valves with 1 3/8 in. bonnet and 3/4 in. stroke
- No separate linkage required
- Conduit connector standard
- No adjustments required on linkage
- Accurate valve positioning
- Low power consumption
- High close-off ratings
- Force limiting end switches
- Manual operator
- Synchronous motor
- Maintenance free
- ML7420 has an internal selector plug that can be used to reverse the direction of action

Dimensions in inches (millimeters)



Application: HVAC

Actuator Type: Valve

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: Stays in place

Torque Rating (lb-in.): 135 lb-in.

Torque Rating (Nm): 600 Nm

Internal Auxiliary Switch: 0

Switches: Yes

Stroke: 3/4 in. (20 mm)

Electrical Connections: Screw terminals

Cable: Conduit connector and one knockout on actuator case

Mounting: Directly on V5011/V5013 Globe Valves and VGF Flanged Globe Valves (3/4" or 20 mm stroke)

Weight: 2.9 lb (1.3 kg)

Environmental, Electrical, or Ingress Protection Rating: Class I Insulation (24 Vac), IP54

Materials: ABS-FR Plastic, aluminum yoke

Manual operation: Knob

Approximate, Dimensions: 9 9/16 in. high x 5 5/16 in. wide x 6 5/16 in. deep (242 mm high x 135 mm wide x 161 mm deep)

Ambient Temperature Range: 14°F to 122°F (-10°C to +50°C)

Shipping and Storage Temperature Range: -40°F to +158°F (-40°C to +70°C)

Approvals, Underwriters Laboratories Inc.: Flammability Rating UL94V-5V

Approvals, CSA: Certified

Approvals, CE: Listed

Operating Humidity Range (% RH): 5 to 95% RH

Fluid Temperature: 300°F Maximum (150°C Maximum)

Supply Voltage: 24 Vac ±15%

Accessories:

312495/U – Large stem button provides anti-spin for CREVAL actuators with globe valves up to 3 in.

43196000-001 – High Temperature Kit for actuators with 3/4 inch (20 mm) stroke, stem button attachment

| Material Number | Control Signal | Feedback | Timing, Nominal | Power Consumption | Input Impedance | Includes |
|-----------------|------------------------------|----------|--------------------------|-------------------|-----------------|---|
| ML6420A3049 | SPDT; Two position; Floating | | Driving @ 60 Hz – 60 sec | Driving – 6 VA | | 1/2 in. conduit hub; 1/2 in. flexible conduit adapter |
| ML6420A3056 | SPDT; Two position; Floating | | Driving @ 60 Hz – 30 sec | Driving – 6 VA | | 1/2 in. conduit hub; 1/2 in. flexible conduit adapter |
| ML7420A3055 | 0 to 10 Vdc; 2 to 10 Vdc | 2-10 Vdc | Driving @ 60 Hz – 60 sec | Driving – 7 VA | 1K ohm | 1/2 in. flexible conduit adapter; 1/2 in. conduit hub |
| ML7420A3063 | 0 to 10 Vdc; 2 to 10 Vdc | 2-10 Vdc | Driving @ 60 Hz – 30 sec | Driving – 7 VA | 1K ohm | 1/2 in. conduit hub; 1/2 in. flexible conduit adapter |

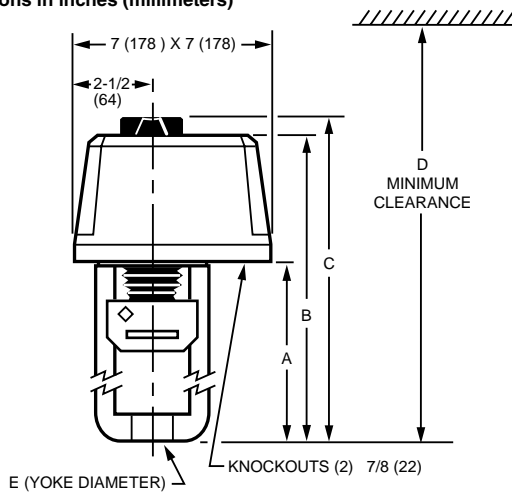
ML6421; ML7421 Non-Spring Return Direct Coupled Globe Valve Actuators



Direct Coupled Globe Valve Actuators provide floating or modulating control of chilled water, hot water, or steam, and mount directly on VGF series, V5011, and V5013 valves. These Non-Spring Return High Force Actuators will operate 1-1/2 to 6 inch valves.

- Easy and quick installation on valves with 1 3/8 in. bonnet and 3/4 in. stroke, or with 1 7/8 in. bonnet and 1 1/2 in. stroke
- High force for VGF Pressure-balanced valves
- No separate linkage required
- Conduit connector standard
- No adjustments required on linkage
- Accurate valve positioning
- Low power consumption
- High close-off ratings
- Force limiting end switches
- Manual operator
- Synchronous motor
- Maintenance free

Dimensions in inches (millimeters)



| | ML6421A, ML7421A | ML6421B, ML7421B |
|---|------------------|------------------|
| A | 5-5/8 (142) | 8 (204) |
| B | 9-3/8 (239) | 11-7/8 (301) |
| C | 10-3/8 (264) | 12-3/4 (326) |
| D | 14-1/4 (360) | 16-7/8 (430) |
| E | 1-3/8 (35) | 1-7/8 (48) |

M16827

Application: HVAC

Actuator Type: Valve

Frequency: 50 Hz; 60 Hz

Fail Safe Mode: Stays in place

Torque Rating (lb-in.): 405 lb-in.

Torque Rating (Nm): 1800 Nm

Internal Auxiliary Switch: 0

Switches: Yes

Electrical Connections: Screw terminals

Cable: Two knockout holes for 1/2 in. conduit standard on actuator case

Mounting: Directly on V5011/V5013 Globe Valves and VGF Flanged Globe Valves

Weight: 5.1 lb (2.3 kg)

Environmental, Electrical, or Ingress Protection Rating: Class I Insulation (24 Vac), IP54

Materials: ABS Plastic

Manual operation: Knob

Ambient Temperature Range: 14°F to 122°F (-10°C to +50°C)

Shipping and Storage Temperature Range: -40°F to +158°F (-40°C to +70°C)

Approvals, Underwriters Laboratories Inc.: Flammability Rating UL94V-5V

Approvals, CSA: Certified

Approvals, CE: Recognized

Operating Humidity Range (% RH): 5 to 95% RH

Fluid Temperature: 300°F Maximum (150°C Maximum)

Accessories:

312495/U – Large stem button provides anti-spin for CREVAL actuators with globe valves up to 3 in.

43191679-101 – Single Auxiliary Potentiometer for ML6421A, ML7421A

43191679-102 – 220 ohm Auxiliary Potentiometer for ML6421B

43191680-102 – Dual Aux. Switch for ML6421, ML7421

43196000-001 – High Temperature Kit for actuators with 3/4 inch (20 mm) stroke, stem button attachment

43196000-038 – High Temperature Kit for actuators with 1-1/2 inch (38 mm) stroke, stem button attachment

| Material Number | Control Signal | Feedback | Stroke | Timing, Nominal | Power Consumption | Supply Voltage | Includes |
|-----------------|------------------------------|----------|-------------------|---------------------------|-------------------|-------------------|---|
| ML6421A1017 | SPDT; Two position; Floating | | 3/4 in. (20 mm) | Driving @ 60 Hz – 95 sec | Driving – 11 VA | 24 Vac +10%, -30% | 1/2 in. conduit hub; 1/2 in. flexible conduit adapter |
| ML6421B1040 | SPDT; Two position; Floating | | 1 1/2 in. (38 mm) | Driving @ 60 Hz – 175 sec | Driving – 11 VA | 24 Vac +10%, -15% | 1/2 in. conduit hub; 1/2 in. flexible conduit adapter |
| ML7421A1032 | 0 to 10 Vdc; 2 to 10 Vdc | 2-10 Vdc | 3/4 in. (20 mm) | Driving @ 60 Hz – 95 sec | Driving – 12 VA | 24 Vac +10%, -15% | 1/2 in. flexible conduit adapter; 1/2 in. conduit hub |
| ML7421B1023 | 0 to 10 Vdc; 2 to 10 Vdc | 2-10 Vdc | 1 1/2 in. (38 mm) | Driving @ 60 Hz – 175 sec | Driving – 12 VA | 24 Vac +10%, -15% | 1/2 in. flexible conduit adapter; 1/2 in. conduit hub |

Direct Coupled Valve Actuators

ML6425; ML7425 Spring Return Direct Coupled Globe Valve Actuators



Direct Coupled Globe Valve Actuators provide floating and modulating control of chilled water, hot water, and steam, and mount directly on VGF series, V5011, and V5013 globe valves. These Spring Return Actuators will operate 1/2 to 3 inch valves.

- Easy and quick installation on valves with 1 3/8 in. bonnet and 3/4 in. stroke
- No separate linkage required
- Conduit connector standard
- No adjustments required on linkage
- Accurate valve positioning
- Low power consumption
- High close-off ratings
- Force limiting end switches
- Internal manual operator
- Synchronous motor
- Maintenance free

Application: HVAC

Actuator Type: Valve

Frequency: 50 Hz; 60 Hz

Torque Rating (lb-in.): 135 lb-in.

Torque Rating (Nm): 600 Nm

Spring Return Torque/Force (lb-in., lbf): 135 lb-in.

Spring Return Torque/Force (Nm, N): 600 Nm

Internal Auxiliary Switch: 0

Switches: Yes

Stroke: 3/4 in. (20 mm)

Electrical Connections: Screw terminals

Cable: Conduit connector and one knockout on actuator case

Mounting: Directly on V5011/V5013 Globe Valves and VGF Flanged Globe Valves (3/4" or 20 mm stroke)

Timing, Nominal: Driving @ 60 Hz – 90 sec

Spring Return Timing: Nominal – 12 sec

Environmental, Electrical, or Ingress Protection Rating: Class I Insulation (24 Vac), IP54

Materials: ABS-FR Plastic, aluminum yoke

Manual operation: Manual override winding

Weight: 5.1 lb (2.3 kg)

Approximate, Dimensions: 11 1/4 in. high x 5 5/16 in. wide x 6 5/16 in. deep (284 mm high x 135 mm wide x 161 mm deep)

Ambient Temperature Range: 14°F to 122°F (-10°C to +50°C)

Shipping and Storage Temperature Range: -40°F to +158°F (-40°C to +70°C)

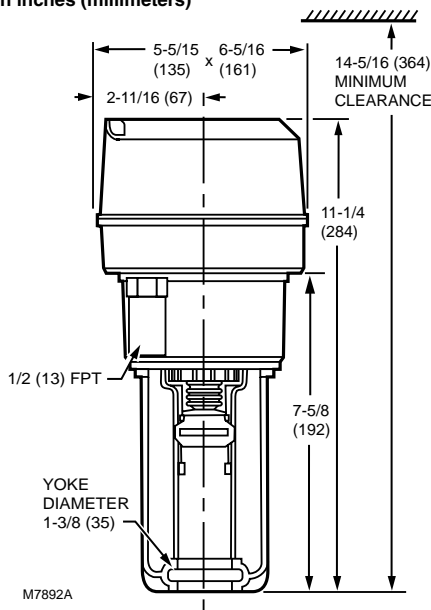
Approvals, Underwriters Laboratories Inc.: Flammability Rating UL94V-5V

Approvals, CE: Recognized

Operating Humidity Range (% RH): 5 to 95% RH

Fluid Temperature: 300°F Maximum (150°C Maximum)

Dimensions in inches (millimeters)



Accessories:

312495/U – Large stem button provides anti-spin for CREVAL actuators with globe valves up to 3 in.

43191679-111 – Potentiometer, 10k ohm, for ML6425 only

43191679-112 – Potentiometer, 220 ohm - for ML6425 only

43191680-105 – Dual Aux. Switch for ML6425 only

43196000-001 – High Temperature Kit for actuators with 3/4 inch (20 mm) stroke, stem button attachment

| Material Number | Control Signal | Feedback | Power Consumption | Supply Voltage | Spring Return Direction | Fail Safe Mode | Includes |
|-----------------|------------------------------|----------|-------------------|----------------|----------------------------|----------------------------|---|
| ML6425A3022 | Two position; Floating; SPDT | | Driving – 11 VA | 24 Vac | Stem down on power failure | Stem down on power failure | 1/2 in. conduit hub; 1/2 in. flexible conduit adapter |
| ML6425B3013 | Two position; Floating; SPDT | | Driving – 11 VA | 24 Vac | Stem up on power failure | Stem up on power failure | 1/2 in. flexible conduit adapter; 1/2 in. conduit hub |
| ML7425A3013 | 0 to 10 Vdc; 2 to 10 Vdc | 2-10 Vdc | Driving – 12 VA | 24 Vac ±15% | Stem down on power failure | Stem down on power failure | 1/2 in. conduit hub; 1/2 in. flexible conduit adapter |
| ML7425B3012 | 0 to 10 Vdc; 2 to 10 Vdc | 2-10 Vdc | Driving – 12 VA | 24 Vac ±15% | Stem up on power failure | Stem up on power failure | 1/2 in. flexible conduit adapter; 1/2 in. conduit hub |

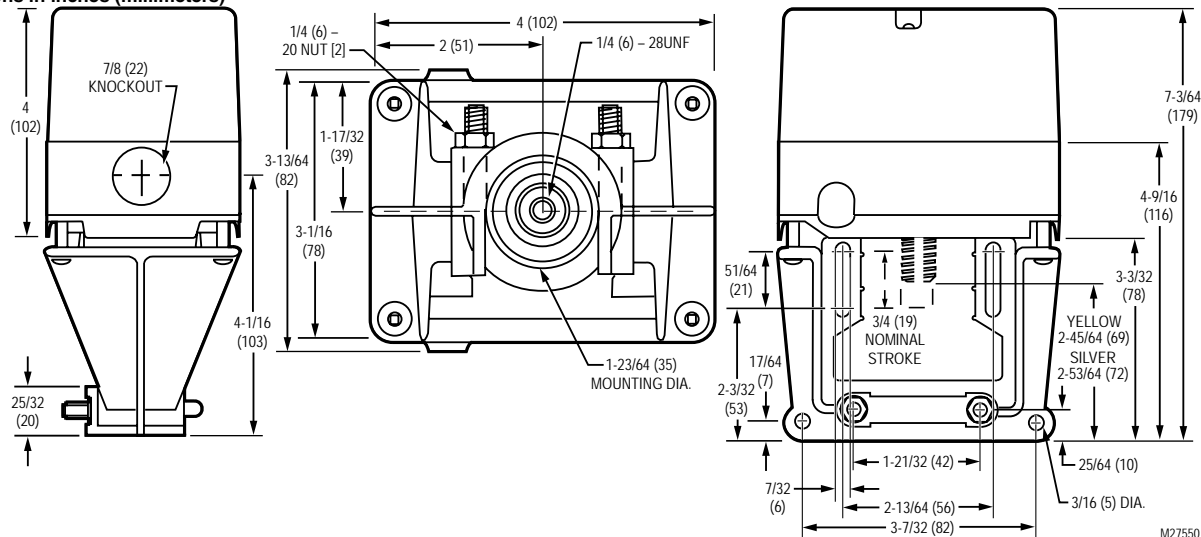
ML6984 Direct Coupled Linear Valve Actuators



Self-contained, self-adjusting, motorized linkage that mounts directly onto V5011 two-way or V5013 three-way valves and provides up to 1" (25 mm) of linear stem travel.

- Allows the use of one common transformer power supply for multiple actuators and controllers
- Self-contained, motorized valve linkage
- Linkage self-adjusts to valve stroke of 1/2 to 1 in. (12 to 25 mm)
- Multi-pose mounting
- Strong valve seat closing force 160 lb-in. (710 Nm)
- Compact size for easy installation in confined area.
- One device for either 24 Vac or 28 Vdc power supply application
- Electronic current sensing provides internal protection and positive full closing force
- Field-addable position feedback/auxiliary switch module available (5-wire control wiring only)
- ML6984 models are compatible with 3-wire control systems

Dimensions in inches (millimeters)



Application: HVAC
Actuator Type: Valve
Frequency: 50 Hz; 60 Hz
Fail Safe Mode: Stays in place
Torque Rating (lb-in.): 160 lb-in.
Torque Rating (Nm): 710 Nm
Internal Auxiliary Switch: 0
Switches: SPDT w/ 272630D
External Auxiliary Switches Available: 272630D
Stroke: 1/2 to 1 in. (13 to 25 mm)
Electrical Connections: Screw terminals
Cable: 7/8 in. hole for 1/2 in. conduit
Mounting: Screws onto 1/4-28 UNF threaded valve stem
Environmental, Electrical, or Ingress Protection Rating: NEMA 3R, NEMA 3R, IP54 (mounted in vertical position)
Feedback: Position feedback available w/ 272630D; 2-10 Vdc
Materials: UV-stabilized plastic cover, aluminum base & yoke
Manual operation: None

Weight: 2.2 lb (1 kg)
Approximate, Dimensions: 6 13/16 in. high x 4 in. wide x 3 3/16 in. deep (173 mm high x 102 mm wide x 82 mm deep)
Ambient Temperature Range: 32°F to 130°F (0°C to 50°C)
Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to + 65°C)
Operating Humidity Range (% RH): 15 to 95% RH at 104°F (40°C)
Includes: Screw terminals
Comments: 3 or 5-wire operation; (3-wire required for XL10 controllers)
Fluid Temperature: 300°F Maximum (150°C Maximum)
Supply Voltage: 28 Vdc; 24 Vac

Accessories:
272629A/U – Adapter Kit for mounting ML6984/ML7984 to V5045 and VGF non-pressure balanced 2-way valves
272630D/U – 2-10V position feedback w/aux. sw.

| Material Number | Control Signal | Timing, Nominal | Switch Ratings | Power Consumption | Used With |
|-----------------|------------------------------|--|----------------|---------------------------------|--|
| ML6984A4000/U | SPDT; Two position; Floating | Driving @ 60 Hz – 63 at 3/4 in. stroke | 24 Vac | Driving – 6 VA, Holding – 12 VA | V5011/13, VGF21, and VGF22 up to 3 in.; V5045 w/ 272629A |

Direct Coupled Valve Actuators

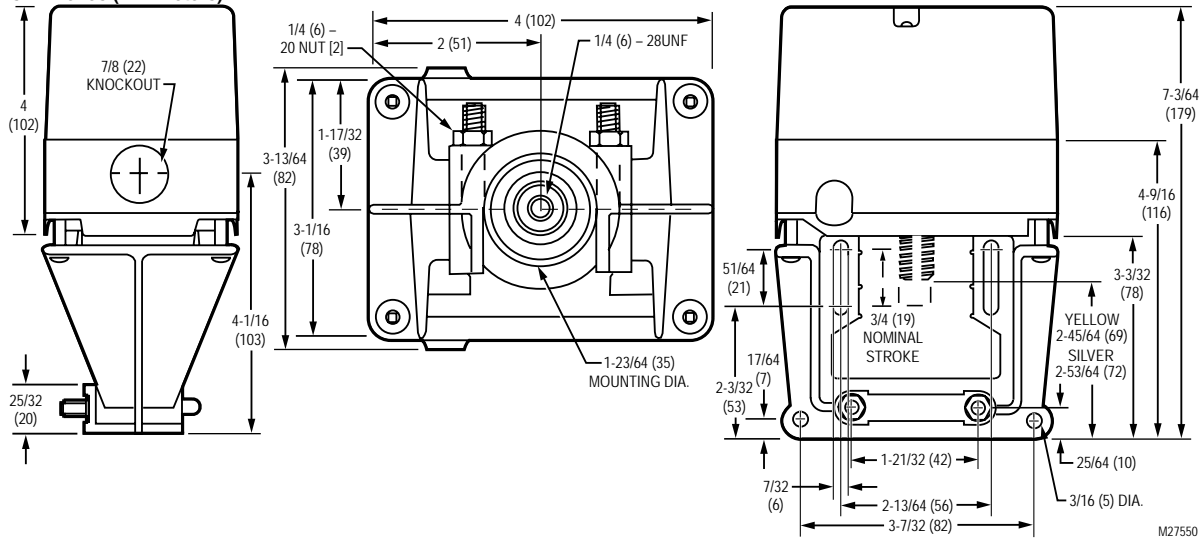
ML7984 Direct Coupled Linear Valve Actuators



Self-contained, self-adjusting, motorized linkage that mounts directly onto V5011 two-way or V5013 three-way valves and provides up to 1" (25 mm) of linear stem travel.

- Allows the use of one common transformer power supply for multiple actuators and controllers
- Self-contained, motorized valve linkage
- Linkage self-adjusts to valve stroke of 1/2 to 1 in. (12 to 25 mm)
- Multi-pose mounting
- Strong valve seat closing force 160 lb-in. (710 Nm)
- Compact size for easy installation in confined area.
- One device for either 24 Vac or 28 Vdc power supply application
- Electronic current sensing provides internal protection and positive full closing force
- Field-addable position feedback/auxiliary switch module available (5-wire control wiring only)
- ML6984 models are compatible with 3-wire control systems

Dimensions in inches (millimeters)




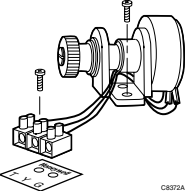
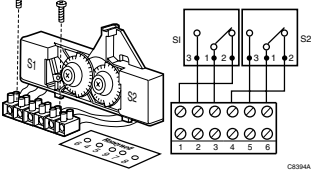

Application: HVAC
Actuator Type: Valve
Frequency: 50 Hz; 60 Hz
Fail Safe Mode: Stays in place
Torque Rating (lb-in.): 160 lb-in.
Torque Rating (Nm): 710 Nm
Internal Auxiliary Switch: 0
Switches: SPDT w/ 272630D
External Auxiliary Switches Available: 272630D
Stroke: 1/2 to 1 in. (13 to 25 mm)
Electrical Connections: Screw terminals
Cable: 7/8 in. hole for 1/2 in. conduit
Mounting: Screws onto 1/4-28 UNF threaded valve stem
Environmental, Electrical, or Ingress Protection Rating: NEMA 3R, IP54 (mounted in vertical position), NEMA 3R
Feedback: Position feedback available w/ 272630D; 2-10 Vdc
Materials: UV-stabilized plastic cover, aluminum base & yoke

Manual operation: None
Weight: 2.2 lb (1 kg)
Approximate Dimensions: 6 13/16 in. high x 4 in. wide x 3 3/16 in. deep (173 mm high x 102 mm wide x 82 mm deep)
Ambient Temperature Range: 32°F to 130°F (0°C to 55°C)
Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)
Operating Humidity Range (% RH): 15 to 95% RH at 104°F (40°C)
Includes: Screw terminals
Comments: Direct/Reverse Acting Switch
Supply Voltage: 28 Vdc; 24 Vac

Accessories:
272629A/U – Adapter Kit for mounting ML6984/ML7984 to V5045 and VGF non-pressure balanced 2-way valves
272630D/U – 2-10V position feedback w/aux. sw.

| Material Number | Control Signal | Timing, Nominal | Switch Ratings | Power Consumption | Input Impedance | Used With |
|-----------------|--|--|----------------|---------------------------------|---------------------------------------|--|
| ML7984A4009/U | 2 to 10 Vdc; SuperMod; 135 ohm potentiometer; 4 to 20 mA | Driving @ 60 Hz – 63 at 3/4 in. stroke | 24 Vac | Driving – 6 VA, Holding – 12 VA | Voltage - 20 K ohm, Current - 237 ohm | V5011/13, VGF21, and VGF22 up to 3 in.; V5045 w/ 272629A |

Valve Actuator Accessories

| Material Number | Description | Used With | |
|-----------------|--|---|---|
| 127834A/U | SWITCH (MADE) | | |
| 272629A/U | Adapter Kit for mounting ML6984/ML7984 to V5045 and VGF non-pressure balanced 2-way valves | ML6984 or ML7984, V5045; VGF21ES; VGF21LS, VGF22ES; VGF22LS | |
| 272630D/U | 2-10V position feedback w/aux. sw. | ML6984/ML7984 Series 4000 and higher (ML6984 in 5-wire mode only) |  |
| 312495/U | Large stem button provides anti-spin for CREVAL actuators with globe valves up to 3 in. | Not required with ML6984/M7984 Actuators or linkage; Not compatible with Q5020 linkage; ML6420, ML6421, ML6425, ML7420, ML7421, or ML7425 | |
| 40003793-005/U | U-bolt bag assembly for ML6984 & ML7984. | ML6984 or ML7984 | |
| 43191679-101 | Single Auxiliary Potentiometer for ML6421A, ML7421A | ML6421A |  |
| 43191679-102 | 220 ohm Auxiliary Potentiometer for ML6421B | ML6421B | |
| 43191679-111 | Potentiometer, 10k ohm, for ML6425 only | ML6425 only | |
| 43191679-112 | Potentiometer, 220 ohm - for ML6425 only | ML6425 only | |
| 43191680-102 | Dual Aux. Switch for ML6421, ML7421 | ML6421, ML7421 |  |
| 43191680-105 | Dual Aux. Switch for ML6425 only | for ML6425 only | |
| 43196000-001 | High Temperature Kit for actuators with 3/4 inch (20 mm) stroke, stem button attachment | Used With ML6420, ML6421A, ML6425, ML7420, ML7421A, or ML7425; ML6984; ML7984; Not compatible with Q5022A |  |
| 43196000-038 | High Temperature Kit for actuators with 1-1/2 inch (38 mm) stroke, stem button attachment | Used with ML6421B, ML7421B; Not Compatible with Q5022B | |

Variable Frequency Drives

SmartVFD COMPACT



You already know the energy savings variable frequency drives (VFDs) deliver. With the Honeywell SmartVFD COMPACT, you select the capabilities you need. Our compact line lets you customize the drive features to the application, eliminating waste. The COMPACT provide the perfect balance, with essential features like a standard PI Controller and the ability to program without the need for line voltage. It is a true micro drive and is among the smallest, most streamlined VFDs on the market, which saves space in your equipment cabinet. Along with the compact size for installation ease, the intuitive user interface makes commissioning a breeze.

- Easy commissioning
 - Intuitive user interface
 - PID controller included
 - Program without the need for a main power supply
- Easy installation
 - The most streamlined VFDs on the market
 - DIN rail or screw mounting
 - Side-by-side mounting
- Easy communication
 - Up to seven programming control inputs
 - Up to three programmable control outputs
 - Several field bus options available

Drive Family: SmartVFD COMPACT

Acceleration time: 0.1 - 3000 sec

Deceleration time: .1 - 3000 sec

Analog Current Input: 0 (4) - 20 mA, 250 ohm differential

Analog Voltage Input: 0 - 10 Vdc, 200K ohm

Analog Current Output: 0 (4) - 20 mA, max 500 ohm

Digital Output: Open collector, max. load 48V/50mA

Continuous Output Current: overload 1.5 x High overload current (1min/10min); overload 1.1 x Low overload current (1min/10min)

Relay Output: Max. switching load: 250Vac/2A or 250Vdc/0,4A

Reference Output Voltage: Maximum Load 10mA

Auxiliary Voltage: ± 20%, max. load 50 mA

Starting Torque: Depends on the Motor

Peak Current: 2 x I_N, 2 secs in every 20 sec period

Frequency (Hz): 0 Hz to 320 Hz

Operating Temperature: 14°F to 122°F (-10°C to 50°C)

Type of Enclosure: Open Chassis

Type of RFI Filter: EMC Filter

Configuration: Drive alone



| HVFDCD | VFD Compact Drive | | | | | | Product Family |
|---------------|-------------------|----------------------------|----------------------------------|----------|----------|-------------------|---------------------------|
| | 1 | Single Phase (1-in, 3-out) | | | | | Phases |
| | 3 | Triple Phase (3-in, 3-out) | | | | | |
| | A | A | 110V | | | | Nominal Voltage |
| | | B | 208V to 230V | | | | |
| | | C | 480V | | | | |
| | | D | 600V | | | | |
| | 0007 | 0007 | 0.75 HP | | | | Nominal Horsepower |
| | | 0010 | 1 HP | | | | |
| | | 0100 | 10 HP | | | | |
| | F | F | Full IO (6 DI, 1AI, 3 DO, 1, AO) | | | | Control I/O |
| 0 | | Open Chassis (IP20) | | | | Enclosures | |
| 0 | 0 | No Filter | | | | EMC Filter | |
| | 1 | Filter Included | | | | | |
| HVFDCD | 3 | C | 0000 | F | 0 | 0 | Example |

SmartVFD COMPACT

| Material Number | Voltage | Horsepower | EMC Filter | Frame Type | Current Ratings | Software | Approximate, Dimensions in. (mm) | Weight |
|-------------------|---------------|------------|------------|------------|-----------------|----------|-----------------------------------|------------------|
| HVFDCD1A0003F00/U | 115V/230V 1/3 | .25 HP | No | 2 | 1.7A | Full | 7.7 x 3.5 x 4 (195 x 90 x 102) | 1.5 lb (0.68 kg) |
| HVFDCD1A0005F00/U | 115V/230V 1/3 | .5 HP | No | 2 | 2.4A | Full | 7.7 x 3.5 x 4 (195 x 90 x 102) | 1.5 lb (0.68 kg) |
| HVFDCD1A0010F00/U | 115V/230V 1/3 | 1 HP | No | 2 | 3.7A | Full | 7.7 x 3.5 x 4 (195 x 90 x 102) | 1.5 lb (0.68 kg) |
| HVFDCD1A0015F00/U | 115V/230V 1/3 | 1.5 HP | No | 3 | 4.8A | Full | 9.9 x 3.9 x 4.3 (251 x 100 x 109) | 2.2 lb (1 kg) |
| HVFDCD1B0003F01/U | 230V 1/3 | .25 HP | Yes | 1 | 1.7A | Full | 6.2 x 2.6 x 3.9 (157 x 66 x 98) | 1.2 lb (0.54 kg) |
| HVFDCD1B0005F01/U | 230V 1/3 | 0.5 HP | Yes | 1 | 2.4A | Full | 6.2 x 2.6 x 3.9 (157 x 66 x 98) | 1.2 lb (0.54 kg) |
| HVFDCD1B0007F01/U | 230V 1/3 | 0.75 HP | Yes | 1 | 2.8A | Full | 6.2 x 2.6 x 3.9 (157 x 66 x 98) | 1.2 lb (0.54 kg) |
| HVFDCD1B0010F01/U | 230V 1/3 | 1 HP | Yes | 1 | 3.7A | Full | 6.2 x 2.6 x 3.9 (157 x 66 x 98) | 1.2 lb (0.54 kg) |
| HVFDCD1B0015F01/U | 230V 1/3 | 1.5 HP | Yes | 2 | 4.8A | Full | 7.7 x 3.5 x 4 (195 x 90 x 102) | 1.5 lb (0.68 kg) |
| HVFDCD1B0020F01/U | 230V 1/3 | 2 HP | Yes | 2 | 7.0A | Full | 7.7 x 3.5 x 4 (195 x 90 x 102) | 1.5 lb (0.68 kg) |
| HVFDCD1B0030F01/U | 230V 1/3 | 3 HP | Yes | 3 | 11.0A | Full | 9.9 x 3.9 x 4.3 (251 x 100 x 109) | 2.2 lb (1 kg) |
| HVFDCD3B0003F00/U | 230V 3/3 | .25 HP | No | 1 | 1.7A | Full | 6.2 x 2.6 x 3.9 (157 x 66 x 98) | 1.2 lb (0.54 kg) |
| HVFDCD3B0005F00/U | 230V 3/3 | .5 HP | No | 1 | 2.4A | Full | 6.2 x 2.6 x 3.9 (157 x 66 x 98) | 1.2 lb (0.54 kg) |
| HVFDCD3B0010F00/U | 230V 3/3 | 1 HP | No | 2 | 3.7A | Full | 7.7 x 3.5 x 4 (195 x 90 x 102) | 1.5 lb (0.68 kg) |
| HVFDCD3B0020F00/U | 230V 3/3 | 2 HP | No | 2 | 7A | Full | 7.7 x 3.5 x 4 (195 x 90 x 102) | 1.5 lb (0.68 kg) |
| HVFDCD3B0030F00/U | 230V 3/3 | 3 HP | No | 3 | 11A | Full | 9.9 x 3.9 x 4.3 (251 x 100 x 109) | 2.2 lb (1 kg) |
| HVFDCD3C0005F00/U | 460V 3/3 | 0.5 HP | No | 1 | 1.3A | Full | 6.2 x 2.6 x 3.9 (157 x 66 x 98) | 1.2 lb (0.54 kg) |
| HVFDCD3C0005F01/U | 460V 3/3 | 0.5 HP | Yes | 1 | 1.3A | Full | 6.2 x 2.6 x 3.9 (157 x 66 x 98) | 1.2 lb (0.54 kg) |
| HVFDCD3C0007F00/U | 460V 3/3 | 0.75 HP | No | 1 | 1.9A | Full | 6.2 x 2.6 x 3.9 (157 x 66 x 98) | 1.2 lb (0.54 kg) |
| HVFDCD3C0007F01/U | 460V 3/3 | 0.75 HP | Yes | 1 | 1.9A | Full | 6.2 x 2.6 x 3.9 (157 x 66 x 98) | 1.2 lb (0.54 kg) |
| HVFDCD3C0010F00/U | 460V 3/3 | 1 HP | No | 1 | 2.4A | Full | 6.2 x 2.6 x 3.9 (157 x 66 x 98) | 1.2 lb (0.54 kg) |
| HVFDCD3C0010F01/U | 460V 3/3 | 1 HP | Yes | 1 | 2.4A | Full | 6.2 x 2.6 x 3.9 (157 x 66 x 98) | 1.2 lb (0.54 kg) |
| HVFDCD3C0015F00/U | 460V 3/3 | 1.5 HP | No | 1 | 3.3A | Full | 6.2 x 2.6 x 3.9 (157 x 66 x 98) | 1.2 lb (0.54 kg) |
| HVFDCD3C0015F01/U | 460V 3/3 | 1.5 HP | Yes | 1 | 3.3A | Full | 6.2 x 2.6 x 3.9 (157 x 66 x 98) | 1.2 lb (0.54 kg) |
| HVFDCD3C0020F00/U | 460V 3/3 | 2 HP | No | 2 | 4.3A | Full | 7.7 x 3.5 x 4 (195 x 90 x 102) | 1.5 lb (0.68 kg) |
| HVFDCD3C0020F01/U | 460V 3/3 | 2 HP | Yes | 2 | 4.3A | Full | 7.7 x 3.5 x 4 (195 x 90 x 102) | 1.5 lb (0.68 kg) |
| HVFDCD3C0030F00/U | 460V 3/3 | 3 HP | No | 2 | 5.6A | Full | 7.7 x 3.5 x 4 (195 x 90 x 102) | 1.5 lb (0.68 kg) |
| HVFDCD3C0030F01/U | 460V 3/3 | 3 HP | Yes | 2 | 5.6A | Full | 7.7 x 3.5 x 4 (195 x 90 x 102) | 1.5 lb (0.68 kg) |
| HVFDCD3C0040F00/U | 460V 3/3 | 4 HP | No | 3 | 7.6A | Full | 9.9 x 3.9 x 4.3 (251 x 100 x 109) | 2.2 lb (1 kg) |
| HVFDCD3C0040F01/U | 460V 3/3 | 4 HP | Yes | 3 | 7.6A | Full | 9.9 x 3.9 x 4.3 (251 x 100 x 109) | 2.2 lb (1 kg) |
| HVFDCD3C0050F00/U | 460V 3/3 | 5 HP | No | 3 | 9.0A | Full | 9.9 x 3.9 x 4.3 (251 x 100 x 109) | 2.2 lb (1 kg) |
| HVFDCD3C0050F01/U | 460V 3/3 | 5 HP | Yes | 3 | 9.0A | Full | 9.9 x 3.9 x 4.3 (251 x 100 x 109) | 2.2 lb (1 kg) |
| HVFDCD3C0075F00/U | 460V 3/3 | 7.5 HP | No | 3 | 12.0A | Full | 9.9 x 3.9 x 4.3 (251 x 100 x 109) | 2.2 lb (1 kg) |
| HVFDCD3C0075F01/U | 460V 3/3 | 7.5 HP | Yes | 3 | 12.0A | Full | 9.9 x 3.9 x 4.3 (251 x 100 x 109) | 2.2 lb (1 kg) |
| HVFDCD3D0010F00/U | 600V 3/3 | 1 HP | No | 3 | 2A | Full | 9.9 x 3.9 x 4.3 (251 x 100 x 109) | 2.2 lb (1 kg) |
| HVFDCD3D0020F00/U | 600V 3/3 | 2 HP | No | 3 | 3.6A | Full | 9.9 x 3.9 x 4.3 (251 x 100 x 109) | 2.2 lb (1 kg) |
| HVFDCD3D0030F00/U | 600V 3/3 | 3 HP | No | 3 | 5A | Full | 9.9 x 3.9 x 4.3 (251 x 100 x 109) | 2.2 lb (1 kg) |
| HVFDCD3D0050F00/U | 600V 3/3 | 5 HP | No | 3 | 7.6A | Full | 9.9 x 3.9 x 4.3 (251 x 100 x 109) | 2.2 lb (1 kg) |
| HVFDCD3D0075F00/U | 600V 3/3 | 7.5 HP | No | 3 | 10.4A | Full | 9.9 x 3.9 x 4.3 (251 x 100 x 109) | 2.2 lb (1 kg) |

Variable Frequency Drives

SmartVFD COMPACT Accessories

| Material Number | Description | Used With | |
|------------------|--|------------------|---|
| HVFDCABLE/U | SmartVFD HVAC and COMPACT USB Commissioning Cable | SmartVFD COMPACT |  |
| HVFDCDMCA/U | COMPACT VFD Commissioning device | SmartVFD COMPACT |  |
| HVFDCDMCAKIT/U | COMPACT VFD COMMISSIONING KIT (contains HVFDCABLE and HVFDCDMCA) | SmartVFD COMPACT | |
| HVFDCDNEMA1FR1/U | COMPACT VFD NEMA 1 KIT | SmartVFD COMPACT | |
| HVFDCDNEMA1FR2/U | COMPACT VFD NEMA 1 KIT | SmartVFD COMPACT | |
| HVFDCDNEMA1FR3/U | COMPACT VFD NEMA 1 KIT | SmartVFD COMPACT | |
| HVFCDTRAINER/U | COMPACT VFD TRAINING DEMONSTRATION KIT | SmartVFD COMPACT | |

SmartVFD HVAC



The Honeywell SmartVFD HVAC and BYPASS are designed specifically for commercial buildings to deliver the energy savings that building owners and facility managers need. The SmartVFD HVAC makes installation and commissioning easy for you and energy savings easy for your customers.

- Start-up Wizards—All you have to do is tell the VFD whether you have a pump or a fan, enter nominal motor information, and you are up and running
- Graphic Interface—The easy-to-use keypad and interface deliver menu-driven programming and monitoring for fast, uniform commissioning. It's also easy for the building owner or manager to learn and use, helping to reduce service calls. Plus, a manual is built into the keypad for easy access when needed
- Built-in Communications—With BACnet®, N2 and Modbus built in, your customers will enjoy a lower total installed cost and reliable communications with the building management system
- PC Software Wizards—Commissioning, programming and troubleshooting are all a snap thanks to these guided Startup and PID wizards
- Built-in PLC—Another reason why SmartVFD HVAC is a great value for your customer, the built-in PLC eliminates the need for an expensive external controller
- DC Choke for harmonic protection
- Standard RFI Filter—Ensures that EMC/RFI requirements are met
- Bypass Options—Meets specifications and system critical applications with a comprehensive bypass offering
- Real-Time Clock—Battery included
- Fire Mode for safe operation
- Motor Switch Ride-Through—easy, fault-free maintenance

Drive Family: SmartVFD HVAC

Acceleration time: 0.1 - 3000 sec

Deceleration time: .1 - 3000 sec

Analog Current Input: 0 (4) - 20 mA, 250 ohm differential

Analog Voltage Input: 0 - 10 Vdc, 200K ohm

Analog Current Output: 0 (4) - 20 mA, max 500 ohm

Digital Output: Open collector, max. load 48V/50mA

Continuous Output Current: overload 1.5 x High overload current (1min/10min); overload 1.1 x Low overload current (1min/10min)

Relay Output: Max. switching load: 250Vac/2A or 250Vdc/0,4A

Reference Output Voltage: Maximum Load 10mA

Auxiliary Voltage: ± 20%, max. load 50 mA

Starting Torque: Drive Input Disconnect: 510 x IN, 2 secs in every 20 sec period

Frequency (Hz): 0 Hz to 320 Hz

Operating Temperature: 14°F to 104°F (-10°C to 40°C), drives can be de-rated to operate up to 122°F (50°C)

Type of Enclosure: NEMA 1

Type of RFI Filter: EMC Filter

Configuration: Drive alone

Auto Bypass: No

Drive Input Disconnect: No

| HVFDSD | VFD Compact Drive | | | | | | Product Family |
|--------|------------------------------|---------------------------|--------------------------------------|----------------|----------------------------------|----------|--------------------|
| HVFDSD | SmartVFD BYPASS or DISC Only | | | | | | |
| | 3 | Three Phase (3-in, 3-out) | | | | | Input Phases |
| | | A | 208/230V Drive Alone, 208 Vac Bypass | | | | Nominal Voltage |
| | | B | 230 Vac Bypass | | | | |
| | | C | 480 Vac | | | | |
| | | D | 600 Vac | | | | |
| | | | 0007 | 0.75 HP | | | Nominal Horsepower |
| | | | 0010 | 1 HP | | | |
| | | | 0100 | 10 HP | | | |
| | | | T | Text Keypad | | | Interface |
| | | | G | Graphic Keypad | | | |
| | | | | 1 | NEMA 1 | | Enclosures |
| | | | | 2 | NEMA 12 | | |
| | | | | 3 | NEMA 3R | | |
| | | | | 0 | Drive Only | | Contactors |
| | | | | 1 | Disconnect Only | | |
| | | | | 2 | Two Contactor Bypass | | |
| | | | | 3 | Three Contactor Bypass | | |
| | | | | 0 | Drive Only or no Special Options | | Options |
| | | | | 1 | Auto-Bypass | | |
| HVFDSD | 3 | C | 0100 | G | 1 | 0 | 0 Example |

Variable Frequency Drives

SmartVFD HVAC

| Material Number | Voltage | Horsepower | Frame Type | Enclosure | Current Ratings | Approximate, Dimensions in. (mm) | Weight lb (kg) |
|--------------------|------------------|------------|------------|-----------|-----------------|--|-----------------------|
| HVFDSD3A0007G100/U | 208 Vac; 230 Vac | 0.75 HP | 4 | NEMA 1 | 3.7A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | 13.2 (5.98) |
| HVFDSD3A0007G200/U | 208 Vac; 230 Vac | 0.75 HP | 4 | NEMA 12 | 3.7A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | 13.2 (5.98) |
| HVFDSD3A0007G300/U | 208 Vac; 230 Vac | 0.75 HP | 4 | NEMA 3R | 3.7A | Contact Customer Care | Contact Customer Care |
| HVFDSD3A0010G100/U | 208 Vac; 230 Vac | 1 HP | 4 | NEMA 1 | 4.8A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | 13.2 (5.98) |
| HVFDSD3A0010G200/U | 208 Vac; 230 Vac | 1 HP | 4 | NEMA 12 | 4.8A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | 13.2 (5.98) |
| HVFDSD3A0010G300/U | 208 Vac; 230 Vac | 1 HP | 4 | NEMA 3R | 4.8A | Contact Customer Care | Contact Customer Care |
| HVFDSD3A0015G100/U | 208 Vac; 230 Vac | 1.5 HP | 4 | NEMA 1 | 6.6A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | 13.2 (5.98) |
| HVFDSD3A0015G200/U | 208 Vac; 230 Vac | 1.5 HP | 4 | NEMA 12 | 6.6A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | 13.2 (5.98) |
| HVFDSD3A0015G300/U | 208 Vac; 230 Vac | 1.5 HP | 4 | NEMA 3R | 6.6A | Contact Customer Care | Contact Customer Care |
| HVFDSD3A0020G100/U | 208 Vac; 230 Vac | 2 HP | 4 | NEMA 1 | 8A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | 13.2 (5.98) |
| HVFDSD3A0020G200/U | 208 Vac; 230 Vac | 2 HP | 4 | NEMA 12 | 8A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | 13.2 (5.98) |
| HVFDSD3A0020G300/U | 208 Vac; 230 Vac | 2 HP | 4 | NEMA 3R | 8A | Contact Customer Care | Contact Customer Care |
| HVFDSD3A0030G100/U | 208 Vac; 230 Vac | 3 HP | 4 | NEMA 1 | 11A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | 13.2 (5.98) |
| HVFDSD3A0030G200/U | 208 Vac; 230 Vac | 3 HP | 4 | NEMA 12 | 11A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | 13.2 (5.98) |
| HVFDSD3A0030G300/U | 208 Vac; 230 Vac | 3 HP | 4 | NEMA 3R | 11A | Contact Customer Care | Contact Customer Care |
| HVFDSD3A0050G100/U | 208 Vac; 230 Vac | 5 HP | 5 | NEMA 1 | 18A | 5.7 x 16.5 x 8.4 (144.78 x 419.1 x 213.36) | 22 (9.97) |
| HVFDSD3A0050G200/U | 208 Vac; 230 Vac | 5 HP | 5 | NEMA 12 | 18A | 5.7 x 16.5 x 8.4 (144.78 x 419.1 x 213.36) | 22 (9.97) |
| HVFDSD3A0050G300/U | 208 Vac; 230 Vac | 5 HP | 5 | NEMA 3R | 18A | Contact Customer Care | Contact Customer Care |
| HVFDSD3A0075G100/U | 208 Vac; 230 Vac | 7.5 HP | 5 | NEMA 1 | 24A | 5.7 x 16.5 x 8.4 (144.78 x 419.1 x 213.36) | 22 (9.97) |
| HVFDSD3A0075G200/U | 208 Vac; 230 Vac | 7.5 HP | 5 | NEMA 12 | 24A | 5.7 x 16.5 x 8.4 (144.78 x 419.1 x 213.36) | 22 (9.97) |
| HVFDSD3A0075G300/U | 208 Vac; 230 Vac | 7.5 HP | 5 | NEMA 3R | 24A | Contact Customer Care | Contact Customer Care |
| HVFDSD3A0100G100/U | 208 Vac; 230 Vac | 10 HP | 5 | NEMA 1 | 31A | 5.7 x 16.5 x 8.4 (144.78 x 419.1 x 213.36) | 22 (9.97) |
| HVFDSD3A0100G200/U | 208 Vac; 230 Vac | 10 HP | 5 | NEMA 12 | 31A | 5.7 x 16.5 x 8.4 (144.78 x 419.1 x 213.36) | 22 (9.97) |
| HVFDSD3A0100G300/U | 208 Vac; 230 Vac | 10 HP | 5 | NEMA 3R | 31A | Contact Customer Care | Contact Customer Care |
| HVFDSD3A0150G100/U | 208 Vac; 230 Vac | 15 HP | 6 | NEMA 1 | 48A | 7.7 x 21.9 x 9 (195.58 x 556.26 x 228.6) | 44.1 (20) |
| HVFDSD3A0150G200/U | 208 Vac; 230 Vac | 15 HP | 6 | NEMA 12 | 48A | 7.7 x 21.9 x 9 (195.58 x 556.26 x 228.6) | 44.1 (20) |
| HVFDSD3A0150G300/U | 208 Vac; 230 Vac | 15 HP | 6 | NEMA 3R | 48A | Contact Customer Care | Contact Customer Care |
| HVFDSD3A0200G100/U | 208 Vac; 230 Vac | 20 HP | 6 | NEMA 1 | 62A | 7.7 x 21.9 x 9 (195.58 x 556.26 x 228.6) | 44.1 (20) |
| HVFDSD3A0200G200/U | 208 Vac; 230 Vac | 20 HP | 6 | NEMA 12 | 62A | 7.7 x 21.9 x 9 (195.58 x 556.26 x 228.6) | 44.1 (20) |
| HVFDSD3A0200G300/U | 208 Vac; 230 Vac | 20 HP | 6 | NEMA 3R | 62A | Contact Customer Care | Contact Customer Care |
| HVFDSD3A0250G100/U | 208 Vac; 230 Vac | 25 HP | 7 | NEMA 1 | 75A | 9.3 x 26 x 10.2 (236.22 x 660.4 x 259.08) | 82.7 (37.5) |
| HVFDSD3A0250G200/U | 208 Vac; 230 Vac | 25 HP | 7 | NEMA 12 | 75A | 9.3 x 26 x 10.2 (236.22 x 660.4 x 259.08) | 82.7 (37.5) |
| HVFDSD3A0250G300/U | 208 Vac; 230 Vac | 25 HP | 7 | NEMA 3R | 75A | Contact Customer Care | Contact Customer Care |
| HVFDSD3A0300G100/U | 208 Vac; 230 Vac | 30 HP | 7 | NEMA 1 | 88A | 9.3 x 26 x 10.2 (236.22 x 660.4 x 259.08) | 82.7 (37.5) |
| HVFDSD3A0300G200/U | 208 Vac; 230 Vac | 30 HP | 7 | NEMA 12 | 88A | 9.3 x 26 x 10.2 (236.22 x 660.4 x 259.08) | 82.7 (37.5) |
| HVFDSD3A0300G300/U | 208 Vac; 230 Vac | 30 HP | 7 | NEMA 3R | 88A | Contact Customer Care | Contact Customer Care |
| HVFDSD3A0400G100/U | 208 Vac; 230 Vac | 40 HP | 7 | NEMA 1 | 105A | 9.3 x 26 x 10.2 (236.22 x 660.4 x 259.08) | Contact Customer Care |
| HVFDSD3A0400G200/U | 208 Vac; 230 Vac | 40 HP | 7 | NEMA 12 | 105A | 9.3 x 26 x 10.2 (236.22 x 660.4 x 259.08) | Contact Customer Care |
| HVFDSD3A0400G300/U | 208 Vac; 230 Vac | 40 HP | 7 | NEMA 3R | 105A | Contact Customer Care | Contact Customer Care |
| HVFDSD3A0500G100/U | 208 Vac; 230 Vac | 50 HP | 8 | NEMA 1 | 140A | 11.4 x 38 x 13.5 (289.56 x 965.2 x 342.9) | 154.3 (70.0) |
| HVFDSD3A0500G200/U | 208 Vac; 230 Vac | 50 HP | 8 | NEMA 12 | 140A | 11.4 x 38 x 13.5 (289.56 x 965.2 x 342.9) | 154.3 (70.0) |
| HVFDSD3A0500G300/U | 208 Vac; 230 Vac | 50 HP | 8 | NEMA 3R | 140A | Contact Customer Care | Contact Customer Care |
| HVFDSD3A0600G100/U | 208 Vac; 230 Vac | 60 HP | 8 | NEMA 1 | 170A | 11.4 x 38 x 13.5 (289.56 x 965.2 x 342.9) | 154.3 (70.0) |
| HVFDSD3A0600G200/U | 208 Vac; 230 Vac | 60 HP | 8 | NEMA 12 | 170A | 11.4 x 38 x 13.5 (289.56 x 965.2 x 342.9) | 154.3 (70.0) |
| HVFDSD3A0600G300/U | 208 Vac; 230 Vac | 60 HP | 8 | NEMA 3R | 170A | Contact Customer Care | Contact Customer Care |
| HVFDSD3A0750G100/U | 208 Vac; 230 Vac | 75 HP | 8 | NEMA 1 | 205A | 11.4 x 38 x 13.5 (289.56 x 965.2 x 342.9) | 154.3 (70.0) |
| HVFDSD3A0750G200/U | 208 Vac; 230 Vac | 75 HP | 8 | NEMA 12 | 205A | 11.4 x 38 x 13.5 (289.56 x 965.2 x 342.9) | 154.3 (70.0) |
| HVFDSD3A0750G300/U | 208 Vac; 230 Vac | 75 HP | 8 | NEMA 3R | 205A | Contact Customer Care | Contact Customer Care |
| HVFDSD3A1000G100/U | 208 Vac; 230 Vac | 100 HP | 9 | NEMA 1 | 261A | 18.9 x 45.3 x 14.4 (480 x 1150 x 366) | 238.1 (108.0) |
| HVFDSD3A1000G200/U | 208 Vac; 230 Vac | 100 HP | 9 | NEMA 12 | 261A | 18.9 x 45.3 x 14.4 (480 x 1150 x 366) | 238.1 (108.0) |
| HVFDSD3A1250G100/U | 208 Vac; 230 Vac | 125 HP | 9 | NEMA 1 | 310A | 18.9 x 45.3 x 14.4 (480 x 1150 x 366) | 238.1 (108.0) |
| HVFDSD3A1250G200/U | 208 Vac; 230 Vac | 125 HP | 9 | NEMA 12 | 310A | 18.9 x 45.3 x 14.4 (480 x 1150 x 366) | 238.1 (108.0) |
| HVFDSD3C0015G100/U | 460 Vac | 1.5 HP | 4 | NEMA 1 | 3.4A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | 13.2 (5.98) |
| HVFDSD3C0015G200/U | 460 Vac | 1.5 HP | 4 | NEMA 12 | 3.4A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | 13.2 (5.98) |
| HVFDSD3C0015G300/U | 460 Vac | 1.5 HP | 4 | NEMA 3R | 3.4A | Contact Customer Care | Contact Customer Care |
| HVFDSD3C0020G100/U | 460 Vac | 2 HP | 4 | NEMA 1 | 4.8A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | 13.2 (5.98) |
| HVFDSD3C0020G200/U | 460 Vac | 2 HP | 4 | NEMA 12 | 4.8A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | 13.2 (5.98) |
| HVFDSD3C0020G300/U | 460 Vac | 2 HP | 4 | NEMA 3R | 4.8A | Contact Customer Care | Contact Customer Care |
| HVFDSD3C0030G100/U | 460 Vac | 3 HP | 4 | NEMA 1 | 5.6A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | 13.2 (5.98) |
| HVFDSD3C0030G200/U | 460 Vac | 3 HP | 4 | NEMA 12 | 5.6A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | 13.2 (5.98) |
| HVFDSD3C0030G300/U | 460 Vac | 3 HP | 4 | NEMA 3R | 5.6A | Contact Customer Care | Contact Customer Care |

Variable Frequency Drives

| Material Number | Voltage | Horsepower | Frame Type | Enclosure | Current Ratings | Approximate, Dimensions in. (mm) | Weight lb (kg) |
|--------------------|---------|------------|------------|-----------|-----------------|--|-----------------------|
| HVFDSD3C0040G100/U | 460 Vac | 4 HP | 4 | NEMA 1 | 8A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | Contact Customer Care |
| HVFDSD3C0040G200/U | 460 Vac | 4 HP | 4 | NEMA 12 | 8A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | Contact Customer Care |
| HVFDSD3C0040G300/U | 460 Vac | 4 HP | 4 | NEMA 3R | 8A | Contact Customer Care | Contact Customer Care |
| HVFDSD3C0050G100/U | 460 Vac | 5 HP | 4 | NEMA 1 | 9.6A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | 13.2 (5.98) |
| HVFDSD3C0050G200/U | 460 Vac | 5 HP | 4 | NEMA 12 | 9.6A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | 13.2 (5.98) |
| HVFDSD3C0050G300/U | 460 Vac | 5 HP | 4 | NEMA 3R | 9.6A | Contact Customer Care | Contact Customer Care |
| HVFDSD3C0075G100/U | 460 Vac | 7.5 HP | 4 | NEMA 1 | 12A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | 13.2 (5.98) |
| HVFDSD3C0075G200/U | 460 Vac | 7.5 HP | 4 | NEMA 12 | 12A | 5 x 12.9 x 7.5 (127 x 327.66 x 190.5) | 13.2 (5.98) |
| HVFDSD3C0075G300/U | 460 Vac | 7.5 HP | 4 | NEMA 3R | 12A | Contact Customer Care | Contact Customer Care |
| HVFDSD3C0100G100/U | 460 Vac | 10 HP | 5 | NEMA 1 | 16A | 5.7 x 16.5 x 8.4 (144.78 x 419.1 x 213.36) | 22 (9.97) |
| HVFDSD3C0100G200/U | 460 Vac | 10 HP | 5 | NEMA 12 | 16A | 5.7 x 16.5 x 8.4 (144.78 x 419.1 x 213.36) | 22 |
| HVFDSD3C0100G300/U | 460 Vac | 10 HP | 5 | NEMA 3R | 16A | Contact Customer Care | Contact Customer Care |
| HVFDSD3C0150G100/U | 460 Vac | 15 HP | 5 | NEMA 1 | 23A | 5.7 x 16.5 x 8.4 (144.78 x 419.1 x 213.36) | 22 (9.97) |
| HVFDSD3C0150G200/U | 460 Vac | 15 HP | 5 | NEMA 12 | 23A | 5.7 x 16.5 x 8.4 (144.78 x 419.1 x 213.36) | 22 (9.97) |
| HVFDSD3C0150G300/U | 460 Vac | 15 HP | 5 | NEMA 3R | 23A | Contact Customer Care | Contact Customer Care |
| HVFDSD3C0200G100/U | 460 Vac | 20 HP | 5 | NEMA 1 | 31A | 5.7 x 16.5 x 8.4 (144.78 x 419.1 x 213.36) | 22 (9.97) |
| HVFDSD3C0200G200/U | 460 Vac | 20 HP | 5 | NEMA 12 | 31A | 5.7 x 16.5 x 8.4 (144.78 x 419.1 x 213.36) | 22 (9.97) |
| HVFDSD3C0200G300/U | 460 Vac | 20 HP | 5 | NEMA 3R | 31A | Contact Customer Care | Contact Customer Care |
| HVFDSD3C0250G100/U | 460 Vac | 25 HP | 6 | NEMA 1 | 38A | 7.7 x 21.9 x 9 (195.58 x 556.26 x 228.6) | 44.1 (20) |
| HVFDSD3C0250G200/U | 460 Vac | 25 HP | 6 | NEMA 12 | 38A | 7.7 x 21.9 x 9 (195.58 x 556.26 x 228.6) | 44.1 (20) |
| HVFDSD3C0250G300/U | 460 Vac | 25 HP | 6 | NEMA 3R | 38A | Contact Customer Care | Contact Customer Care |
| HVFDSD3C0300G100/U | 460 Vac | 30 HP | 6 | NEMA 1 | 46A | 7.7 x 21.9 x 9 (195.58 x 556.26 x 228.6) | 44.1 (20) |
| HVFDSD3C0300G200/U | 460 Vac | 30 HP | 6 | NEMA 12 | 46A | 7.7 x 21.9 x 9 (195.58 x 556.26 x 228.6) | 44.1 (20) |
| HVFDSD3C0300G300/U | 460 Vac | 30 HP | 6 | NEMA 3R | 46A | Contact Customer Care | Contact Customer Care |
| HVFDSD3C0400G100/U | 460 Vac | 40 HP | 6 | NEMA 1 | 61A | 7.7 x 21.9 x 9 (195.58 x 556.26 x 228.6) | 44.1 (20) |
| HVFDSD3C0400G200/U | 460 Vac | 40 HP | 6 | NEMA 12 | 61A | 7.7 x 21.9 x 9 (195.58 x 556.26 x 228.6) | 44.1 (20) |
| HVFDSD3C0400G300/U | 460 Vac | 40 HP | 6 | NEMA 3R | 61A | Contact Customer Care | Contact Customer Care |
| HVFDSD3C0500G100/U | 460 Vac | 50 HP | 7 | NEMA 1 | 72A | 9.3 x 26 x 10.2 (236.22 x 660.4 x 259.08) | 82.7 (37.5) |
| HVFDSD3C0500G200/U | 460 Vac | 50 HP | 7 | NEMA 12 | 72A | 9.3 x 26 x 10.2 (236.22 x 660.4 x 259.08) | 82.7 (37.5) |
| HVFDSD3C0500G300/U | 460 Vac | 50 HP | 7 | NEMA 3R | 72A | Contact Customer Care | Contact Customer Care |
| HVFDSD3C0600G100/U | 460 Vac | 60 HP | 7 | NEMA 1 | 87A | 9.3 x 26 x 10.2 (236.22 x 660.4 x 259.08) | 82.7 (37.5) |
| HVFDSD3C0600G200/U | 460 Vac | 60 HP | 7 | NEMA 12 | 87A | 9.3 x 26 x 10.2 (236.22 x 660.4 x 259.08) | 82.7 (37.5) |
| HVFDSD3C0600G300/U | 460 Vac | 60 HP | 7 | NEMA 3R | 87A | Contact Customer Care | Contact Customer Care |
| HVFDSD3C0750G100/U | 460 Vac | 75 HP | 7 | NEMA 1 | 105A | 9.3 x 26 x 10.2 (236.22 x 660.4 x 259.08) | 82.7 (37.5) |
| HVFDSD3C0750G200/U | 460 Vac | 75 HP | 7 | NEMA 12 | 105A | 9.3 x 26 x 10.2 (236.22 x 660.4 x 259.08) | 82.7 (37.5) |
| HVFDSD3C0750G300/U | 460 Vac | 75 HP | 7 | NEMA 3R | 105A | Contact Customer Care | Contact Customer Care |
| HVFDSD3C1000G100/U | 460 Vac | 100 HP | 8 | NEMA 1 | 140A | 11.4 x 38 x 13.5 (289.56 x 965.2 x 342.9) | 154.3 (70.0) |
| HVFDSD3C1000G200/U | 460 Vac | 100 HP | 8 | NEMA 12 | 140A | 11.4 x 38 x 13.5 (289.56 x 965.2 x 342.9) | 154.3 (70.0) |
| HVFDSD3C1000G300/U | 460 Vac | 100 HP | 8 | NEMA 3R | 140A | Contact Customer Care | Contact Customer Care |
| HVFDSD3C1250G100/U | 460 Vac | 125 HP | 8 | NEMA 1 | 170A | 11.4 x 38 x 13.5 (289.56 x 965.2 x 342.9) | 154.3 (70.0) |
| HVFDSD3C1250G200/U | 460 Vac | 125 HP | 8 | NEMA 12 | 170A | 11.4 x 38 x 13.5 (289.56 x 965.2 x 342.9) | 154.3 (70.0) |
| HVFDSD3C1250G300/U | 460 Vac | 125 HP | 8 | NEMA 3R | 170A | Contact Customer Care | Contact Customer Care |
| HVFDSD3C1500G100/U | 460 Vac | 150 HP | 8 | NEMA 1 | 205A | 11.4 x 38 x 13.5 (289.56 x 965.2 x 342.9) | 154.3 (70.0) |
| HVFDSD3C1500G200/U | 460 Vac | 150 HP | 8 | NEMA 12 | 205A | 11.4 x 38 x 13.5 (289.56 x 965.2 x 342.9) | 154.3 (70.0) |
| HVFDSD3C1500G300/U | 460 Vac | 150 HP | 8 | NEMA 3R | 205A | Contact Customer Care | Contact Customer Care |
| HVFDSD3C2000G100/U | 460 Vac | 200 HP | 9 | NEMA 1 | 261A | 18.9 x 45.3 x 14.4 (480 x 1150 x 366) | 238.1 (108.0) |
| HVFDSD3C2000G200/U | 460 Vac | 200 HP | 9 | NEMA 12 | 261A | 18.9 x 45.3 x 14.4 (480 x 1150 x 366) | 238.1 (108.0) |
| HVFDSD3C2500G100/U | 460 Vac | 250 HP | 9 | NEMA 1 | 310A | 18.9 x 45.3 x 14.4 (480 x 1150 x 366) | 238.1 (108.0) |
| HVFDSD3C2500G200/U | 460 Vac | 250 HP | 9 | NEMA 12 | 310A | 18.9 x 45.3 x 14.4 (480 x 1150 x 366) | 238.1 (108.0) |

Variable Frequency Drives

SmartVFD HVAC and SmartVFD BYPASS



The Honeywell SmartHVAC drives with disconnect and/or bypass are designed specifically for commercial buildings to deliver the energy savings that building owners and facility managers need. The SmartVFD HVAC makes installation and commissioning easy for you and energy savings easy for your customers.

- Start-up Wizards—All you have to do is tell the VFD whether you have a pump or a fan, enter nominal motor information, and you are up and running
- Graphic Interface—The easy-to-use keypad and interface deliver menu-driven programming and monitoring for fast, uniform commissioning. It's also easy for the building owner or manager to learn and use, helping to reduce service calls. Plus, a manual is built into the keypad for easy access when needed
- Built-in Communications—With BACnet®, N2 and Modbus built in, your customers will enjoy a lower total installed cost and reliable communications with the building management system
- PC Software Wizards—Commissioning, programming and troubleshooting are all a snap thanks to these guided Startup and PID wizards
- Built-in PLC—Another reason why SmartVFD HVAC is a great value for your customer, the built-in PLC eliminates the need for an expensive external controller
- DC Choke for harmonic protection
- Standard RFI Filter—Ensures that EMC/RFI requirements are met
- Bypass Options—Meets specifications and system critical applications with a comprehensive bypass offering
- Real-Time Clock—Battery included
- Fire Mode for safe operation
- Motor Switch Ride-Through—easy, fault-free maintenance

Drive Family: SmartVFD HVAC

Acceleration time: 0.1 - 3000 sec

Deceleration time: .1 - 3000 sec

Analog Current Input: 0 (4) - 20 mA, 250 ohm differential

Analog Voltage Input: 0 - 10 Vdc, 200K ohm

Analog Current Output: 0 (4) - 20 mA, max 500 ohm

Digital Output: Open collector, max. load 48V/50mA

Continuous Output Current: overload 1.5 x High overload current (1min/10min); overload 1.1 x Low overload current (1min/10min)

Relay Output: Max. switching load: 250Vac/2A or 250Vdc/0,4A

Reference Output Voltage: Maximum Load 10mA

Auxiliary Voltage: ± 20%, max. load 50 mA

Starting Torque: Drive Input Disconnect: 510 x IN, 2 secs in every 20 sec period

Frequency (Hz): 0 Hz to 320 Hz

Operating Temperature: 14°F to 104°F (-10°C to 40°C), drives can be de-rated to operate up to 122°F (50°C)

Type of RFI Filter: EMC Filter

| HVFDS | VFD Compact Drive | | | | | | Product Family |
|--------------|------------------------------|---------------------------|--------------------------------------|----------|----------|----------|---------------------------|
| HVFDSB | SmartVFD BYPASS or DISC Only | | | | | | |
| | 3 | Three Phase (3-in, 3-out) | | | | | Input Phases |
| | | A | 208/230V Drive Alone, 208 Vac Bypass | | | | Nominal Voltage |
| | | B | 230 Vac Bypass | | | | |
| | | C | 480 Vac | | | | |
| | | D | 600 Vac | | | | |
| | | 0007 | 0.75 HP | | | | Nominal Horsepower |
| | | 0010 | 1 HP | | | | |
| | | 0100 | 10 HP | | | | |
| | | T | Text Keypad | | | | Interface |
| | | G | Graphic Keypad | | | | |
| | | 1 | NEMA 1 | | | | Enclosures |
| | | 2 | NEMA 12 | | | | |
| | | 3 | NEMA 3R | | | | |
| | | 0 | Drive Only | | | | Contactors |
| | | 1 | Disconnect Only | | | | |
| | | 2 | Two Contactor Bypass | | | | |
| | | 3 | Three Contactor Bypass | | | | |
| | | 0 | Drive Only or no Special Options | | | | Options |
| | | 1 | Auto-Bypass | | | | |
| HVFDS | 3 | C | 0100 | G | 1 | 0 | 0 Example |

SmartVFD HVAC and SmartVFD BYPASS

| Material Number | Horsepower | Frame Type | Enclosure | Current Ratings | Drive Input Disconnect | Drive Input Fuses | Approximate, Dimensions in. (mm) | Weight lb (kg) |
|--|------------|------------|-----------|-----------------|------------------------|-------------------|--|-----------------------|
| 208 Vac — Drive with 2 contactor bypass | | | | | | | | |
| HVFD3B3A0007G120/U | 0.75 HP | 4 | NEMA 1 | 3.7A | No | No | 8.9 x 31.9 x 9.6 (226.06 x 810.26 x 243.84) | 38 (17.24) |
| HVFD3B3A0007G220/U | 0.75 HP | 4 | NEMA 12 | 3.7A | No | No | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFD3B3A0007G320/U | 0.75 HP | 4 | NEMA 3R | 3.7A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 49 (22.23) |
| HVFD3B3A0010G120/U | 1 HP | 4 | NEMA 1 | 4.8A | No | No | 8.9 x 31.9 x 9.6 (226.06 x 810.26 x 243.84) | 38 (17.24) |
| HVFD3B3A0010G220/U | 1 HP | 4 | NEMA 12 | 4.8A | No | No | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFD3B3A0010G320/U | 1 HP | 4 | NEMA 3R | 4.8A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 49 (22.23) |
| HVFD3B3A0015G120/U | 1.5 HP | 4 | NEMA 1 | 6.6A | No | No | 8.9 x 31.9 x 9.6 (226.06 x 810.26 x 243.84) | 38 (17.24) |
| HVFD3B3A0015G220/U | 1.5 HP | 4 | NEMA 12 | 6.6A | No | No | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFD3B3A0015G320/U | 1.5 HP | 4 | NEMA 3R | 6.6A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 49 (22.23) |
| HVFD3B3A0020G120/U | 2 HP | 4 | NEMA 1 | 8A | No | No | 8.9 x 31.9 x 9.6 (226.06 x 810.26 x 243.84) | 38 (17.24) |
| HVFD3B3A0020G220/U | 2 HP | 4 | NEMA 12 | 8A | No | No | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFD3B3A0020G320/U | 2 HP | 4 | NEMA 3R | 8A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 49 (22.23) |
| HVFD3B3A0030G120/U | 3 HP | 4 | NEMA 1 | 11A | No | No | 8.9 x 31.9 x 9.6 (226.06 x 810.26 x 243.84) | 38 (17.24) |
| HVFD3B3A0030G220/U | 3 HP | 4 | NEMA 12 | 11A | No | No | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFD3B3A0030G320/U | 3 HP | 4 | NEMA 3R | 11A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 49 (22.23) |
| HVFD3B3A0050G120/U | 5 HP | 5 | NEMA 1 | 18A | No | No | 8.9 x 34.7 x 9.6 (226.06 x 881.38 x 243.84) | 48 (21.77) |
| HVFD3B3A0050G220/U | 5 HP | 5 | NEMA 12 | 18A | No | No | 16 x 41 x 11 (406 x 1041.4 x 279.4) | 70 (31.75) |
| HVFD3B3A0050G320/U | 5 HP | 5 | NEMA 3R | 18A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 72 (32.66) |
| HVFD3B3A0075G120/U | 7.5 HP | 5 | NEMA 1 | 24A | No | No | 8.9 x 34.7 x 9.6 (226.06 x 881.38 x 243.84) | 50 (22.68) |
| HVFD3B3A0075G220/U | 7.5 HP | 5 | NEMA 12 | 24A | No | No | 16 x 41 x 11 (406 x 1041.4 x 279.4) | 70 (31.75) |
| HVFD3B3A0075G320/U | 7.5 HP | 5 | NEMA 3R | 24A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 72 (32.66) |
| HVFD3B3A0100G120/U | 10 HP | 5 | NEMA 1 | 31A | No | No | 8.9 x 34.7 x 9.6 (226.06 x 881.38 x 243.84) | 50 (22.68) |
| HVFD3B3A0100G220/U | 10 HP | 5 | NEMA 12 | 31A | No | No | 16 x 45 x 11 (406 x 1143 x 279.4) | 84 (38.1) |
| HVFD3B3A0100G320/U | 10 HP | 5 | NEMA 3R | 31A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 72 (32.66) |
| HVFD3B3A0150G120/U | 15 HP | 6 | NEMA 1 | 48A | No | No | 12.4 x 45 x 10.1 (314.96 x 1143 x 256.54) | 55 (24.95) |
| HVFD3B3A0150G220/U | 15 HP | 6 | NEMA 12 | 48A | No | No | 16 x 50.5 x 13 (406.4 x 1282.7 x 256.54) | 125 (56.7) |
| HVFD3B3A0150G320/U | 15 HP | 6 | NEMA 3R | 48A | No | No | 28.5 x 36 x 10.5 (723.9 x 914.4 x 266.7) | 118 (53.52) |
| HVFD3B3A0200G120/U | 20 HP | 6 | NEMA 1 | 62A | No | No | 12.4 x 45 x 10.1 (314.96 x 1143 x 256.54) | 59 (26.76) |
| HVFD3B3A0200G220/U | 20 HP | 6 | NEMA 12 | 62A | No | No | 20 x 54.5 x 13 (508 x 1384.3 x 330.2) | 140 (63.5) |
| HVFD3B3A0200G320/U | 20 HP | 6 | NEMA 3R | 62A | No | No | 28.5 x 36 x 10.5 (723.9 x 914.4 x 266.7) | 118 (53.52) |
| HVFD3B3A0250G120/U | 25 HP | 6 | NEMA 1 | 75A | No | No | 20.9 x 51.7 x 12.2 (530.86 x 1313.18 x 309.88) | 169 (76.66) |
| HVFD3B3A0250G220/U | 25 HP | 6 | NEMA 12 | 75A | No | No | 20 x 58.5 x 13.5 (508 x 1485.9 x 342.9) | 160 (72.57) |
| HVFD3B3A0250G320/U | 25 HP | 6 | NEMA 3R | 75A | No | No | 28.5 x 48 x 12.5 (711.2 x 1219.2 x 317.5) | 185 (83.91) |
| HVFD3B3A0300G120/U | 30 HP | 7 | NEMA 1 | 88A | No | No | 20.9 x 51.7 x 12.2 (530.86 x 1313.18 x 309.88) | 179 (81.19) |
| HVFD3B3A0300G220/U | 30 HP | 7 | NEMA 12 | 88A | No | No | 24 x 65.5 x 13.5 (609 x 1663.7 x 342.9) | 175 (79.38) |
| HVFD3B3A0300G320/U | 30 HP | 7 | NEMA 3R | 88A | No | No | 28.5 x 48 x 12.5 (711.2 x 1219.2 x 317.5) | 185 (83.91) |
| HVFD3B3A0400G120/U | 40 HP | 7 | NEMA 1 | 105A | No | No | 20.9 x 51.7 x 12.2 (530.86 x 1313.18 x 309.88) | 189 (85.73) |
| HVFD3B3A0400G220/U | 40 HP | 7 | NEMA 12 | 105A | No | No | 30 x 70.5 x 13.5 (762 x 1790.7 x 342.9) | 200 (90.72) |
| HVFD3B3A0400G320/U | 40 HP | 7 | NEMA 3R | 105A | No | No | 28.5 x 48 x 12.5 (711.2 x 1219.2 x 317.5) | 185 (83.91) |
| HVFD3B3A0500G120/U | 50 HP | 8 | NEMA 1 | 140A | No | No | 25 x 60 x 15.2 (635 x 1524 x 386.08) | 250 (113.4) |
| HVFD3B3A0500G220/U | 50 HP | 8 | NEMA 12 | 140A | No | No | 40.5 x 60 x 12.5 (1028.7 x 1524 x 317.5) | Contact Customer Care |
| HVFD3B3A0500G320/U | 50 HP | 8 | NEMA 3R | 140A | No | No | 60 x 41 x 14 (1524 x 1041 x 356) | 185 (83.91) |
| HVFD3B3A0600G120/U | 60 HP | 8 | NEMA 1 | 170A | No | No | 25 x 60 x 15.2 (635 x 1524 x 386.08) | 265 (120.2) |
| HVFD3B3A0600G220/U | 60 HP | 8 | NEMA 12 | 170A | No | No | 40.5 x 60 x 12.5 (1028.7 x 1524 x 317.5) | Contact Customer Care |
| HVFD3B3A0600G320/U | 60 HP | 8 | NEMA 3R | 170A | No | No | 60 x 41 x 14 (1524 x 1041 x 356) | 185 (83.91) |
| HVFD3B3A0750G120/U | 75 HP | 8 | NEMA 1 | 205A | No | No | 25 x 60 x 15.2 (635 x 1524 x 386.08) | 280 (127.01) |
| HVFD3B3A0750G220/U | 75 HP | 8 | NEMA 12 | 205A | No | No | 40.5 x 60 x 12.5 (1028.7 x 1524 x 317.5) | Contact Customer Care |
| HVFD3B3A0750G320/U | 75 HP | 8 | NEMA 3R | 205A | No | No | 60 x 41 x 14 (1524 x 1041 x 356) | 185 (83.91) |
| 208 Vac — Drive with 3 contactor bypass | | | | | | | | |
| HVFD3B3A0007G130/U | 0.75 HP | 4 | NEMA 1 | 3.7A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 988.06 x 261.62) | 44 (19.96) |
| HVFD3B3A0007G230/U | 0.75 HP | 4 | NEMA 12 | 3.7A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFD3B3A0007G330/U | 0.75 HP | 4 | NEMA 3R | 3.7A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFD3B3A0010G130/U | 1 HP | 4 | NEMA 1 | 4.8A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 988.06 x 261.62) | 44 (19.96) |
| HVFD3B3A0010G230/U | 1 HP | 4 | NEMA 12 | 4.8A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFD3B3A0010G330/U | 1 HP | 4 | NEMA 3R | 4.8A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFD3B3A0015G130/U | 1.5 HP | 4 | NEMA 1 | 6.6A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 988.06 x 261.62) | 44 (19.96) |
| HVFD3B3A0015G230/U | 1.5 HP | 4 | NEMA 12 | 6.6A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFD3B3A0015G330/U | 1.5 HP | 4 | NEMA 3R | 6.6A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Enclosure | Current Ratings | Drive Input Disconnect | Drive Input Fuses | Approximate, Dimensions in. (mm) | Weight lb (kg) |
|--|------------|------------|-----------|-----------------|------------------------|-------------------|--|-----------------------|
| HVFDSB3A0020G130/U | 2 HP | 4 | NEMA 1 | 8A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 988.06 x 261.62) | 44 (19.96) |
| HVFDSB3A0020G230/U | 2 HP | 4 | NEMA 12 | 8A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFDSB3A0020G330/U | 2 HP | 4 | NEMA 3R | 8A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFDSB3A0030G130/U | 3 HP | 4 | NEMA 1 | 11A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 988.06 x 261.62) | 44 (19.96) |
| HVFDSB3A0030G230/U | 3 HP | 4 | NEMA 12 | 11A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFDSB3A0030G330/U | 3 HP | 4 | NEMA 3R | 11A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFDSB3A0050G130/U | 5 HP | 5 | NEMA 1 | 18A | Yes | Yes | 8.9 x 41.7 x 10.3 (226.06 x 1059.1 x 261.62) | 55 (24.95) |
| HVFDSB3A0050G230/U | 5 HP | 5 | NEMA 12 | 18A | Yes | Yes | 16 x 41 x 11 (406 x 1041.4 x 279.4) | 70 (31.75) |
| HVFDSB3A0050G330/U | 5 HP | 5 | NEMA 3R | 18A | Yes | Yes | 28.5 x 30 x 12 (723.9 x 762 x 304.8) | 78 (35.38) |
| HVFDSB3A0075G130/U | 7.5 HP | 5 | NEMA 1 | 24A | Yes | Yes | 8.9 x 41.7 x 10.3 (226.06 x 1059.1 x 261.62) | 57 (25.85) |
| HVFDSB3A0075G230/U | 7.5 HP | 5 | NEMA 12 | 24A | Yes | Yes | 16 x 41 x 11 (406 x 1041.4 x 279.4) | 70 (31.75) |
| HVFDSB3A0075G330/U | 7.5 HP | 5 | NEMA 3R | 24A | Yes | Yes | 28.5 x 30 x 12 (723.9 x 762 x 304.8) | 78 (35.38) |
| HVFDSB3A0100G130/U | 10 HP | 5 | NEMA 1 | 31A | Yes | Yes | 8.9 x 41.7 x 10.8 (226.06 x 1059.1 x 274.32) | 59.5 (26.99) |
| HVFDSB3A0100G230/U | 10 HP | 5 | NEMA 12 | 31A | Yes | Yes | 16 x 45 x 11 (406 x 1143 x 279.4) | 84 (38.1) |
| HVFDSB3A0100G330/U | 10 HP | 5 | NEMA 3R | 31A | Yes | Yes | 28.5 x 30 x 12 (723.9 x 762 x 304.8) | 78 (35.38) |
| HVFDSB3A0150G130/U | 15 HP | 6 | NEMA 1 | 48A | Yes | Yes | 12.4 x 55 x 11.3 (314.96 x 1397 x 287.02) | 94.5 (42.86) |
| HVFDSB3A0150G230/U | 15 HP | 6 | NEMA 12 | 48A | Yes | Yes | 16 x 50.5 x 13 (406.4 x 1282.7 x 256.54) | 125 (56.7) |
| HVFDSB3A0150G330/U | 15 HP | 6 | NEMA 3R | 48A | Yes | Yes | 34.5 x 36 x 12 (867.3 x 914.4 x 304.8) | 124 (56.25) |
| HVFDSB3A0200G130/U | 20 HP | 6 | NEMA 1 | 62A | Yes | Yes | 12.4 x 55 x 11.3 (314.96 x 1397 x 287.02) | 98.5 (44.68) |
| HVFDSB3A0200G230/U | 20 HP | 6 | NEMA 12 | 62A | Yes | Yes | 20 x 54.5 x 13 (508 x 1384.3 x 330.2) | 140 (63.5) |
| HVFDSB3A0200G330/U | 20 HP | 6 | NEMA 3R | 62A | Yes | Yes | 34.5 x 36 x 12 (867.3 x 914.4 x 304.8) | 124 (56.25) |
| HVFDSB3A0250G130/U | 25 HP | 6 | NEMA 1 | 75A | Yes | Yes | 20.9 x 59 x 13.2 (530.86 x 1498.6 x 335.28) | 175 (79.38) |
| HVFDSB3A0250G230/U | 25 HP | 6 | NEMA 12 | 75A | Yes | Yes | 20 x 58.5 x 13.5 (508 x 1485.9 x 342.9) | 160 (72.57) |
| HVFDSB3A0250G330/U | 25 HP | 6 | NEMA 3R | 75A | Yes | Yes | 28.5 x 48 x 14 (711.2 x 1219.2 x 355.6) | 193 (87.54) |
| HVFDSB3A0300G130/U | 30 HP | 7 | NEMA 1 | 88A | Yes | Yes | 20.9 x 59 x 13.2 (530.86 x 1498.6 x 335.28) | 184 (83.46) |
| HVFDSB3A0300G230/U | 30 HP | 7 | NEMA 12 | 88A | Yes | Yes | 24 x 65.5 x 13.5 (609 x 1663.7 x 342.9) | 175 (79.38) |
| HVFDSB3A0300G330/U | 30 HP | 7 | NEMA 3R | 88A | Yes | Yes | 28.5 x 48 x 14 (711.2 x 1219.2 x 355.6) | 193 (87.54) |
| HVFDSB3A0400G130/U | 40 HP | 7 | NEMA 1 | 105A | Yes | Yes | 20.9 x 59 x 13.2 (530.86 x 1498.6 x 335.28) | 195 (88.45) |
| HVFDSB3A0400G230/U | 40 HP | 7 | NEMA 12 | 105A | Yes | Yes | 30 x 70.5 x 13.5 (762 x 1790.7 x 342.9) | 200 (90.72) |
| HVFDSB3A0400G330/U | 40 HP | 7 | NEMA 3R | 105A | Yes | Yes | 28.5 x 48 x 14 (711.2 x 1219.2 x 355.6) | 193 (87.54) |
| HVFDSB3A0500G130/U | 50 HP | 8 | NEMA 1 | 140A | Yes | Yes | 25 x 70 x 16.2 (635 x 1778 x 411.48) | 285 (129.27) |
| HVFDSB3A0500G230/U | 50 HP | 8 | NEMA 12 | 140A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | Contact Customer Care |
| HVFDSB3A0500G330/U | 50 HP | 8 | NEMA 3R | 140A | Yes | Yes | 60 x 41 x 14 (1524 x 1041 x 356) | 193 (87.54) |
| HVFDSB3A0600G130/U | 60 HP | 8 | NEMA 1 | 170A | Yes | Yes | 25 x 70 x 16.2 (635 x 1778 x 411.48) | 295 (133.81) |
| HVFDSB3A0600G230/U | 60 HP | 8 | NEMA 12 | 170A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | Contact Customer Care |
| HVFDSB3A0600G330/U | 60 HP | 8 | NEMA 3R | 170A | Yes | Yes | 60 x 41 x 14 (1524 x 1041 x 356) | 193 (87.54) |
| HVFDSB3A0750G130/U | 75 HP | 8 | NEMA 1 | 205A | Yes | Yes | 25 x 70 x 16.2 (635 x 1778 x 411.48) | 331 (150.14) |
| HVFDSB3A0750G230/U | 75 HP | 8 | NEMA 12 | 205A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | Contact Customer Care |
| HVFDSB3A0750G330/U | 75 HP | 8 | NEMA 3R | 205A | Yes | Yes | 60 x 41 x 14 (1524 x 1041 x 356) | 193 (87.54) |
| 208 Vac — Drive with 3 contactor bypass and Auto bypass | | | | | | | | |
| HVFDSB3A0007G131/U | 0.75 HP | 4 | NEMA 1 | 3.7A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 988.06 x 261.62) | 46 (20.87) |
| HVFDSB3A0007G231/U | 0.75 HP | 4 | NEMA 12 | 3.7A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFDSB3A0007G331/U | 0.75 HP | 4 | NEMA 3R | 3.7A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFDSB3A0010G131/U | 1 HP | 4 | NEMA 1 | 4.8A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 988.06 x 261.62) | 46 (20.87) |
| HVFDSB3A0010G231/U | 1 HP | 4 | NEMA 12 | 4.8A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFDSB3A0010G331/U | 1 HP | 4 | NEMA 3R | 4.8A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFDSB3A0015G131/U | 1.5 HP | 4 | NEMA 1 | 6.6A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 988.06 x 261.62) | 46 (20.87) |
| HVFDSB3A0015G231/U | 1.5 HP | 4 | NEMA 12 | 6.6A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFDSB3A0015G331/U | 1.5 HP | 4 | NEMA 3R | 6.6A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFDSB3A0020G131/U | 2 HP | 4 | NEMA 1 | 8A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 988.06 x 261.62) | 46 (20.87) |
| HVFDSB3A0020G231/U | 2 HP | 4 | NEMA 12 | 8A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFDSB3A0020G331/U | 2 HP | 4 | NEMA 3R | 8A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFDSB3A0030G131/U | 3 HP | 4 | NEMA 1 | 11A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 988.06 x 261.62) | 46 (20.87) |
| HVFDSB3A0030G231/U | 3 HP | 4 | NEMA 12 | 11A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFDSB3A0030G331/U | 3 HP | 4 | NEMA 3R | 11A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFDSB3A0050G131/U | 5 HP | 5 | NEMA 1 | 18A | Yes | Yes | 8.9 x 41.7 x 10.3 (226.06 x 1059.1 x 261.62) | 56 (25.4) |
| HVFDSB3A0050G231/U | 5 HP | 5 | NEMA 12 | 18A | Yes | Yes | 16 x 41 x 11 (406 x 1041.4 x 279.4) | 70 (31.75) |
| HVFDSB3A0050G331/U | 5 HP | 5 | NEMA 3R | 18A | Yes | Yes | 28.5 x 30 x 12 (723.9 x 762 x 304.8) | 78 (35.38) |
| HVFDSB3A0075G131/U | 7.5 HP | 5 | NEMA 1 | 24A | Yes | Yes | 8.9 x 41.7 x 10.3 (226.06 x 1059.1 x 261.62) | 57.5 (26.08) |
| HVFDSB3A0075G231/U | 7.5 HP | 5 | NEMA 12 | 24A | Yes | Yes | 16 x 41 x 11 (406 x 1041.4 x 279.4) | 70 (31.75) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Enclosure | Current Ratings | Drive Input Disconnect | Drive Input Fuses | Approximate, Dimensions in. (mm) | Weight lb (kg) |
|--|------------|------------|-----------|-----------------|------------------------|-------------------|---|-----------------------|
| HVFDSB3A0075G331/U | 7.5 HP | 5 | NEMA 3R | 24A | Yes | Yes | 28.5 x 30 x 12 (723.9 x 762 x 304.8) | 78 (35.38) |
| HVFDSB3A0100G131/U | 10 HP | 5 | NEMA 1 | 31A | Yes | Yes | 8.9 x 41.7 x 10.8 (226.06 x 1059.1 x 274.32) | 60 (27.22) |
| HVFDSB3A0100G231/U | 10 HP | 5 | NEMA 12 | 31A | Yes | Yes | 16 x 45 x 11 (406 x 1143 x 279.4) | 84 (38.1) |
| HVFDSB3A0100G331/U | 10 HP | 5 | NEMA 3R | 31A | Yes | Yes | 28.5 x 30 x 12 (723.9 x 762 x 304.8) | 78 (35.38) |
| HVFDSB3A0150G131/U | 15 HP | 6 | NEMA 1 | 48A | Yes | Yes | 12.4 x 55 x 11.3 (314.96 x 1397 x 287.02) | 96.5 (43.77) |
| HVFDSB3A0150G231/U | 15 HP | 6 | NEMA 12 | 48A | Yes | Yes | 16 x 50.5 x 13 (406.4 x 1282.7 x 256.54) | 125 (56.7) |
| HVFDSB3A0150G331/U | 15 HP | 6 | NEMA 3R | 48A | Yes | Yes | 34.5 x 36 x 12 (867.3 x 914.4 x 304.8) | 124 (56.25) |
| HVFDSB3A0200G131/U | 20 HP | 6 | NEMA 1 | 62A | Yes | Yes | 12.4 x 55 x 11.3 (314.96 x 1397 x 287.02) | 100.5 (45.59) |
| HVFDSB3A0200G231/U | 20 HP | 6 | NEMA 12 | 62A | Yes | Yes | 20 x 54.5 x 13 (508 x 1384.3 x 330.2) | 140 (63.5) |
| HVFDSB3A0200G331/U | 20 HP | 6 | NEMA 3R | 62A | Yes | Yes | 34.5 x 36 x 12 (867.3 x 914.4 x 304.8) | 124 (56.25) |
| HVFDSB3A0250G131/U | 25 HP | 6 | NEMA 1 | 75A | Yes | Yes | 20.9 x 59 x 13.2 (530.86 x 1498.6 x 335.28) | 177 (80.29) |
| HVFDSB3A0250G231/U | 25 HP | 6 | NEMA 12 | 75A | Yes | Yes | 20 x 58.5 x 13.5 (508 x 1485.9 x 342.9) | 160 (72.57) |
| HVFDSB3A0250G331/U | 25 HP | 6 | NEMA 3R | 75A | Yes | Yes | 28.5 x 48 x 14 (711.2 x 1219.2 x 355.6) | 193 (87.54) |
| HVFDSB3A0300G131/U | 30 HP | 7 | NEMA 1 | 88A | Yes | Yes | 20.9 x 59 x 13.2 (530.86 x 1498.6 x 335.28) | 186 (84.37) |
| HVFDSB3A0300G231/U | 30 HP | 7 | NEMA 12 | 88A | Yes | Yes | 24 x 65.5 x 13.5 (609 x 1663.7 x 342.9) | 175 (79.38) |
| HVFDSB3A0300G331/U | 30 HP | 7 | NEMA 3R | 88A | Yes | Yes | 28.5 x 48 x 14 (711.2 x 1219.2 x 355.6) | 193 (87.54) |
| HVFDSB3A0400G131/U | 40 HP | 7 | NEMA 1 | 105A | Yes | Yes | 20.9 x 59 x 13.2 (530.86 x 1498.6 x 335.28) | 197 (89.36) |
| HVFDSB3A0400G231/U | 40 HP | 7 | NEMA 12 | 105A | Yes | Yes | 30 x 70.5 x 13.5 (762 x 1790.7 x 342.9) | 200 (90.72) |
| HVFDSB3A0400G331/U | 40 HP | 7 | NEMA 3R | 105A | Yes | Yes | 28.5 x 48 x 14 (711.2 x 1219.2 x 355.6) | 193 (87.54) |
| HVFDSB3A0500G131/U | 50 HP | 8 | NEMA 1 | 140A | Yes | Yes | 25 x 70 x 16.2 (635 x 1778 x 411.48) | 287 (130.18) |
| HVFDSB3A0500G231/U | 50 HP | 8 | NEMA 12 | 140A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | Contact Customer Care |
| HVFDSB3A0500G331/U | 50 HP | 8 | NEMA 3R | 140A | Yes | Yes | 60 x 41 x 14 (1524 x 1041 x 356) | 193 (87.54) |
| HVFDSB3A0600G131/U | 60 HP | 8 | NEMA 1 | 170A | Yes | Yes | 25 x 70 x 16.2 (635 x 1778 x 411.48) | 297 (134.72) |
| HVFDSB3A0600G231/U | 60 HP | 8 | NEMA 12 | 170A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | Contact Customer Care |
| HVFDSB3A0600G331/U | 60 HP | 8 | NEMA 3R | 170A | Yes | Yes | 60 x 41 x 14 (1524 x 1041 x 356) | 193 (87.54) |
| HVFDSB3A0750G131/U | 75 HP | 8 | NEMA 1 | 205A | Yes | Yes | 25 x 70 x 16.2 (635 x 1778 x 411.48) | 333 (151.05) |
| HVFDSB3A0750G231/U | 75 HP | 8 | NEMA 12 | 205A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | Contact Customer Care |
| HVFDSB3A0750G331/U | 75 HP | 8 | NEMA 3R | 205A | Yes | Yes | 60 x 41 x 14 (1524 x 1041 x 356) | 193 (87.54) |
| 208 Vac — Drive with Fused Disconnect | | | | | | | | |
| HVFDSB3A0007G110/U | 0.75 HP | 4 | NEMA 1 | 3.7A | Yes | Yes | 8.9 x 31.9 x 10.3 (226.06 x 810.26 x 261.62) | 33 (14.97) |
| HVFDSB3A0007G210/U | 0.75 HP | 4 | NEMA 12 | 3.7A | Yes | Yes | 12 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 40 (18.14) |
| HVFDSB3A0007G310/U | 0.75 HP | 4 | NEMA 3R | 3.7A | Yes | Yes | 20.5 x 20 x 12 (520.7 x 508 x 304.8) | 43 (19.5) |
| HVFDSB3A0010G110/U | 1 HP | 4 | NEMA 1 | 4.8A | Yes | Yes | 8.9 x 31.9 x 10.3 (226.06 x 810.26 x 261.62) | 33 (14.97) |
| HVFDSB3A0010G210/U | 1 HP | 4 | NEMA 12 | 4.8A | Yes | Yes | 12 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 40 (18.14) |
| HVFDSB3A0010G310/U | 1 HP | 4 | NEMA 3R | 4.8A | Yes | Yes | 20.5 x 20 x 12 (520.7 x 508 x 304.8) | 43 (19.5) |
| HVFDSB3A0015G110/U | 1.5 HP | 4 | NEMA 1 | 6.6A | Yes | Yes | 8.9 x 31.9 x 10.3 (226.06 x 810.26 x 261.62) | 33 (14.97) |
| HVFDSB3A0015G210/U | 1.5 HP | 4 | NEMA 12 | 6.6A | Yes | Yes | 12 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 40 (18.14) |
| HVFDSB3A0015G310/U | 1.5 HP | 4 | NEMA 3R | 6.6A | Yes | Yes | 20.5 x 20 x 12 (520.7 x 508 x 304.8) | 43 (19.5) |
| HVFDSB3A0020G110/U | 2 HP | 4 | NEMA 1 | 8A | Yes | Yes | 8.9 x 31.9 x 10.3 (226.06 x 810.26 x 261.62) | 33 (14.97) |
| HVFDSB3A0020G210/U | 2 HP | 4 | NEMA 12 | 8A | Yes | Yes | 12 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 40 (18.14) |
| HVFDSB3A0020G310/U | 2 HP | 4 | NEMA 3R | 8A | Yes | Yes | 20.5 x 20 x 12 (520.7 x 508 x 304.8) | 43 (19.5) |
| HVFDSB3A0030G110/U | 3 HP | 4 | NEMA 1 | 11A | Yes | Yes | 8.9 x 31.9 x 10.3 (226.06 x 810.26 x 261.62) | 33 (14.97) |
| HVFDSB3A0030G210/U | 3 HP | 4 | NEMA 12 | 11A | Yes | Yes | 12 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 40 (18.14) |
| HVFDSB3A0030G310/U | 3 HP | 4 | NEMA 3R | 11A | Yes | Yes | 20.5 x 20 x 12 (520.7 x 508 x 304.8) | 43 (19.5) |
| HVFDSB3A0050G110/U | 5 HP | 5 | NEMA 1 | 18A | Yes | Yes | 8.9 x 34.7 x 10.3 (226.06 x 881.38 x 261.62) | 43 (19.5) |
| HVFDSB3A0050G210/U | 5 HP | 5 | NEMA 12 | 18A | Yes | Yes | 12 x 41 x 11 (304.8 x 1041.4 x 279.4) | 72 (32.66) |
| HVFDSB3A0050G310/U | 5 HP | 5 | NEMA 3R | 18A | Yes | Yes | 20.5 x 24 x 12 (520.7 x 609.6 x 304.8) | 61 (27.67) |
| HVFDSB3A0075G110/U | 7.5 HP | 5 | NEMA 1 | 24A | Yes | Yes | 8.9 x 34.7 x 10.3 (226.06 x 881.38 x 261.62) | 43 (19.5) |
| HVFDSB3A0075G210/U | 7.5 HP | 5 | NEMA 12 | 24A | Yes | Yes | 12 x 41 x 11 (304.8 x 1041.4 x 279.4) | 72 (32.66) |
| HVFDSB3A0075G310/U | 7.5 HP | 5 | NEMA 3R | 24A | Yes | Yes | 20.5 x 24 x 12 (520.7 x 609.6 x 304.8) | 61 (27.67) |
| HVFDSB3A0100G110/U | 10 HP | 5 | NEMA 1 | 31A | Yes | Yes | 8.9 x 34.7 x 10.3 (226.06 x 881.38 x 261.62) | 43 (19.5) |
| HVFDSB3A0100G210/U | 10 HP | 5 | NEMA 12 | 31A | Yes | Yes | 12 x 41 x 11 (304.8 x 1041.4 x 279.4) | 72 (32.66) |
| HVFDSB3A0100G310/U | 10 HP | 5 | NEMA 3R | 31A | Yes | Yes | 20.5 x 24 x 12 (520.7 x 609.6 x 304.8) | 61 (27.67) |
| HVFDSB3A0150G110/U | 15 HP | 6 | NEMA 1 | 48A | Yes | Yes | 12.4 x 45 x 11.3 (314.96 x 1143 x 287.02) | 50 (22.68) |
| HVFDSB3A0150G210/U | 15 HP | 6 | NEMA 12 | 48A | Yes | Yes | 12 x 46.5 x 13 (304.8 x 1181.1 x 330.2) | 120 (54.43) |
| HVFDSB3A0150G310/U | 15 HP | 6 | NEMA 3R | 48A | Yes | Yes | 28.5 x 36 x 12 (723.9 x 914.4 x 304.8) | 88 (39.92) |
| HVFDSB3A0200G110/U | 20 HP | 6 | NEMA 1 | 62A | Yes | Yes | 12.4 x 45 x 11.3 (314.96 x 1143 x 287.02) | 50 (22.68) |
| HVFDSB3A0200G210/U | 20 HP | 6 | NEMA 12 | 62A | Yes | Yes | 12 x 46.5 x 13 (304.8 x 1181.1 x 330.2) | 120 (54.43) |
| HVFDSB3A0200G310/U | 20 HP | 6 | NEMA 3R | 62A | Yes | Yes | 28.5 x 36 x 12 (723.9 x 914.4 x 304.8) | 88 (39.92) |
| HVFDSB3A0250G110/U | 25 HP | 6 | NEMA 1 | 75A | Yes | Yes | 20.8 x 51.5 x 13.2 (528.32 x 1308.1 x 335.28) | 100 (45.36) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Enclosure | Current Ratings | Drive Input Disconnect | Drive Input Fuses | Approximate, Dimensions in. (mm) | Weight lb (kg) |
|--|------------|------------|-----------|-----------------|------------------------|-------------------|--|-----------------------|
| HVFDSB3A0250G210/U | 25 HP | 6 | NEMA 12 | 75A | Yes | Yes | 16 x 50.5 x 13.5 (406.4 x 1282.7 x 342.9) | 145 (65.77) |
| HVFDSB3A0250G310/U | 25 HP | 6 | NEMA 3R | 75A | Yes | Yes | 28.5 x 48 x 14 (711.2 x 1219.2 x 355.6) | 149 (67.59) |
| HVFDSB3A0300G110/U | 30 HP | 7 | NEMA 1 | 88A | Yes | Yes | 20.8 x 51.5 x 13.2 (528.32 x 1308.1 x 335.28) | 100 (45.36) |
| HVFDSB3A0300G210/U | 30 HP | 7 | NEMA 12 | 88A | Yes | Yes | 16 x 50.5 x 13.5 (406.4 x 1282.7 x 342.9) | 160 (72.57) |
| HVFDSB3A0300G310/U | 30 HP | 7 | NEMA 3R | 88A | Yes | Yes | 28.5 x 48 x 14 (711.2 x 1219.2 x 355.6) | 149 (67.59) |
| HVFDSB3A0400G110/U | 40 HP | 7 | NEMA 1 | 105A | Yes | Yes | 20.8 x 51.5 x 13.2 (528.32 x 1308.1 x 335.28) | 100 (45.36) |
| HVFDSB3A0400G210/U | 40 HP | 7 | NEMA 12 | 105A | Yes | Yes | 16 x 50.5 x 13.5 (406.4 x 1282.7 x 342.9) | 175 (79.38) |
| HVFDSB3A0400G310/U | 40 HP | 7 | NEMA 3R | 105A | Yes | Yes | 28.5 x 48 x 14 (711.2 x 1219.2 x 355.6) | 149 (67.59) |
| HVFDSB3A0500G110/U | 50 HP | 8 | NEMA 1 | 140A | Yes | Yes | 25 x 60 x 16.2 (635 x 1524 x 411.48) | 200 (90.72) |
| HVFDSB3A0500G210/U | 50 HP | 8 | NEMA 12 | 140A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | Contact Customer Care |
| HVFDSB3A0500G310/U | 50 HP | 8 | NEMA 3R | 140A | Yes | Yes | 48 x 36 x 16 (1219 x 914 x 406) | 149 (67.59) |
| HVFDSB3A0600G110/U | 60 HP | 8 | NEMA 1 | 170A | Yes | Yes | 25 x 60 x 16.2 (635 x 1524 x 411.48) | 200 (90.72) |
| HVFDSB3A0600G210/U | 60 HP | 8 | NEMA 12 | 170A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | Contact Customer Care |
| HVFDSB3A0600G310/U | 60 HP | 8 | NEMA 3R | 170A | Yes | Yes | 48 x 36 x 16 (1219 x 914 x 406) | 149 (67.59) |
| HVFDSB3A0750G110/U | 75 HP | 8 | NEMA 1 | 205A | Yes | Yes | 25 x 60 x 16.2 (635 x 1524 x 411.48) | 200 (90.72) |
| HVFDSB3A0750G210/U | 75 HP | 8 | NEMA 12 | 205A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | Contact Customer Care |
| HVFDSB3A0750G310/U | 75 HP | 8 | NEMA 3R | 205A | Yes | Yes | 48 x 36 x 16 (1219 x 914 x 406) | 149 (67.59) |
| 230 Vac — Drive with 2 contactor bypass | | | | | | | | |
| HVFDSB3B0007G120/U | 0.75 HP | 4 | NEMA 1 | 3.7A | No | No | 8.9 x 31.9 x 9.6 (226.06 x 810.26 x 243.84) | 38 (17.24) |
| HVFDSB3B0007G220/U | 0.75 HP | 4 | NEMA 12 | 3.7A | No | No | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFDSB3B0007G320/U | 0.75 HP | 4 | NEMA 3R | 3.7A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 49 (22.23) |
| HVFDSB3B0010G120/U | 1 HP | 4 | NEMA 1 | 4.8A | No | No | 8.9 x 31.9 x 9.6 (226.06 x 810.26 x 243.84) | 38 (17.24) |
| HVFDSB3B0010G220/U | 1 HP | 4 | NEMA 12 | 4.8A | No | No | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFDSB3B0010G320/U | 1 HP | 4 | NEMA 3R | 4.8A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 49 (22.23) |
| HVFDSB3B0015G120/U | 1.5 HP | 4 | NEMA 1 | 6.6A | No | No | 8.9 x 31.9 x 9.6 (226.06 x 810.26 x 243.84) | 38 (17.24) |
| HVFDSB3B0015G220/U | 1.5 HP | 4 | NEMA 12 | 6.6A | No | No | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFDSB3B0015G320/U | 1.5 HP | 4 | NEMA 3R | 6.6A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 49 (22.23) |
| HVFDSB3B0020G120/U | 2 HP | 4 | NEMA 1 | 8A | No | No | 8.9 x 31.9 x 9.6 (226.06 x 810.26 x 243.84) | 38 (17.24) |
| HVFDSB3B0020G220/U | 2 HP | 4 | NEMA 12 | 8A | No | No | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFDSB3B0020G320/U | 2 HP | 4 | NEMA 3R | 8A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 49 (22.23) |
| HVFDSB3B0030G120/U | 3 HP | 4 | NEMA 1 | 11A | No | No | 8.9 x 31.9 x 9.6 (226.06 x 810.26 x 243.84) | 38 (17.24) |
| HVFDSB3B0030G220/U | 3 HP | 4 | NEMA 12 | 11A | No | No | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFDSB3B0030G320/U | 3 HP | 4 | NEMA 3R | 11A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 49 (22.23) |
| HVFDSB3B0050G120/U | 5 HP | 5 | NEMA 1 | 18A | No | No | 8.9 x 34.7 x 9.6 (226.06 x 881.38 x 243.84) | 48 (21.77) |
| HVFDSB3B0050G220/U | 5 HP | 5 | NEMA 12 | 18A | No | No | 16 x 41 x 11 (406 x 1041.4 x 279.4) | 70 (31.75) |
| HVFDSB3B0050G320/U | 5 HP | 5 | NEMA 3R | 18A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 72 (32.66) |
| HVFDSB3B0075G120/U | 7.5 HP | 5 | NEMA 1 | 24A | No | No | 8.9 x 34.7 x 9.6 (226.06 x 881.38 x 243.84) | 50 (22.68) |
| HVFDSB3B0075G220/U | 7.5 HP | 5 | NEMA 12 | 24A | No | No | 16 x 41 x 11 (406 x 1041.4 x 279.4) | 70 (31.75) |
| HVFDSB3B0075G320/U | 7.5 HP | 5 | NEMA 3R | 24A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 72 (32.66) |
| HVFDSB3B0100G120/U | 10 HP | 5 | NEMA 1 | 31A | No | No | 8.9 x 34.7 x 9.6 (226.06 x 881.38 x 243.84) | 50 (22.68) |
| HVFDSB3B0100G220/U | 10 HP | 5 | NEMA 12 | 31A | No | No | 16 x 45 x 11 (406 x 1143 x 279.4) | 84 (38.1) |
| HVFDSB3B0100G320/U | 10 HP | 5 | NEMA 3R | 31A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 72 (32.66) |
| HVFDSB3B0150G120/U | 15 HP | 6 | NEMA 1 | 48A | No | No | 12.4 x 45 x 10.1 (314.96 x 1143 x 256.54) | 55 (24.95) |
| HVFDSB3B0150G220/U | 15 HP | 6 | NEMA 12 | 48A | No | No | 16 x 50.5 x 13 (406.4 x 1282.7 x 256.54) | 125 (56.7) |
| HVFDSB3B0150G320/U | 15 HP | 6 | NEMA 3R | 48A | No | No | 28.5 x 36 x 10.5 (723.9 x 914.4 x 266.7) | 118 (53.52) |
| HVFDSB3B0200G120/U | 20 HP | 6 | NEMA 1 | 62A | No | No | 12.4 x 45 x 10.1 (314.96 x 1143 x 256.54) | 59 (26.76) |
| HVFDSB3B0200G220/U | 20 HP | 6 | NEMA 12 | 62A | No | No | 20 x 54.5 x 13 (508 x 1384.3 x 330.2) | 140 (63.5) |
| HVFDSB3B0200G320/U | 20 HP | 6 | NEMA 3R | 62A | No | No | 28.5 x 36 x 10.5 (723.9 x 914.4 x 266.7) | 118 (53.52) |
| HVFDSB3B0250G120/U | 25 HP | 6 | NEMA 1 | 75A | No | No | 20.9 x 51.7 x 12.2 (530.86 x 1313.18 x 309.88) | 169 (76.66) |
| HVFDSB3B0250G220/U | 25 HP | 6 | NEMA 12 | 75A | No | No | 20 x 58.5 x 13.5 (508 x 1485.9 x 342.9) | 160 (72.57) |
| HVFDSB3B0250G320/U | 25 HP | 6 | NEMA 3R | 75A | No | No | 28.5 x 48 x 12.5 (711.2 x 1219.2 x 317.5) | 185 (83.91) |
| HVFDSB3B0300G120/U | 30 HP | 7 | NEMA 1 | 88A | No | No | 20.9 x 51.7 x 12.2 (530.86 x 1313.18 x 309.88) | 179 (81.19) |
| HVFDSB3B0300G220/U | 30 HP | 7 | NEMA 12 | 88A | No | No | 24 x 65.5 x 13.5 (609 x 1663.7 x 342.9) | 175 (79.38) |
| HVFDSB3B0300G320/U | 30 HP | 7 | NEMA 3R | 88A | No | No | 28.5 x 48 x 12.5 (711.2 x 1219.2 x 317.5) | 185 (83.91) |
| HVFDSB3B0400G120/U | 40 HP | 7 | NEMA 1 | 105A | No | No | 20.9 x 51.7 x 12.2 (530.86 x 1313.18 x 309.88) | 189 (85.73) |
| HVFDSB3B0400G220/U | 40 HP | 7 | NEMA 12 | 105A | No | No | 30 x 70.5 x 13.5 (762 x 1790.7 x 342.9) | 200 (90.72) |
| HVFDSB3B0400G320/U | 40 HP | 7 | NEMA 3R | 105A | No | No | 28.5 x 48 x 12.5 (711.2 x 1219.2 x 317.5) | 185 (83.91) |
| HVFDSB3B0500G120/U | 50 HP | 8 | NEMA 1 | 140A | No | No | 25 x 60 x 15.2 (635 x 1524 x 386.08) | 250 (113.4) |
| HVFDSB3B0500G220/U | 50 HP | 8 | NEMA 12 | 140A | No | No | 40.5 x 60 x 12.5 (1028.7 x 1524 x 317.5) | Contact Customer Care |
| HVFDSB3B0500G320/U | 50 HP | 8 | NEMA 3R | 140A | No | No | 60 x 41 x 14 (1524 x 1041 x 356) | 185 (83.91) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Enclosure | Current Ratings | Drive Input Disconnect | Drive Input Fuses | Approximate, Dimensions in. (mm) | Weight lb (kg) |
|--|------------|------------|-----------|-----------------|------------------------|-------------------|--|-----------------------|
| HVFDSB3B0600G120/U | 60 HP | 8 | NEMA 1 | 170A | No | No | 25 x 60 x 15.2 (635 x 1524 x 386.08) | 265 (120.2) |
| HVFDSB3B0600G220/U | 60 HP | 8 | NEMA 12 | 170A | No | No | 40.5 x 60 x 12.5 (1028.7 x 1524 x 317.5) | Contact Customer Care |
| HVFDSB3B0600G320/U | 60 HP | 8 | NEMA 3R | 170A | No | No | 60 x 41 x 14 (1524 x 1041 x 356) | 185 (83.91) |
| HVFDSB3B0750G120/U | 75 HP | 8 | NEMA 1 | 205A | No | No | 25 x 60 x 15.2 (635 x 1524 x 386.08) | 280 (127.01) |
| HVFDSB3B0750G220/U | 75 HP | 8 | NEMA 12 | 205A | No | No | 40.5 x 60 x 12.5 (1028.7 x 1524 x 317.5) | Contact Customer Care |
| HVFDSB3B0750G320/U | 75 HP | 8 | NEMA 3R | 205A | No | No | 60 x 41 x 14 (1524 x 1041 x 356) | 185 (83.91) |
| 230 Vac — Drive with 3 contactor bypass | | | | | | | | |
| HVFDSB3B0007G130/U | 0.75 HP | 4 | NEMA 1 | 3.7A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 988.06 x 261.62) | 44 (19.96) |
| HVFDSB3B0007G230/U | 0.75 HP | 4 | NEMA 12 | 3.7A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFDSB3B0007G330/U | 0.75 HP | 4 | NEMA 3R | 3.7A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFDSB3B0010G130/U | 1 HP | 4 | NEMA 1 | 4.8A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 988.06 x 261.62) | 44 (19.96) |
| HVFDSB3B0010G230/U | 1 HP | 4 | NEMA 12 | 4.8A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFDSB3B0010G330/U | 1 HP | 4 | NEMA 3R | 4.8A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFDSB3B0015G130/U | 1.5 HP | 4 | NEMA 1 | 6.6A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 988.06 x 261.62) | 44 (19.96) |
| HVFDSB3B0015G230/U | 1.5 HP | 4 | NEMA 12 | 6.6A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFDSB3B0015G330/U | 1.5 HP | 4 | NEMA 3R | 6.6A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFDSB3B0020G130/U | 2 HP | 4 | NEMA 1 | 8A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 988.06 x 261.62) | 44 (19.96) |
| HVFDSB3B0020G230/U | 2 HP | 4 | NEMA 12 | 8A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFDSB3B0020G330/U | 2 HP | 4 | NEMA 3R | 8A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFDSB3B0030G130/U | 3 HP | 4 | NEMA 1 | 11A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 988.06 x 261.62) | 44 (19.96) |
| HVFDSB3B0030G230/U | 3 HP | 4 | NEMA 12 | 11A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFDSB3B0030G330/U | 3 HP | 4 | NEMA 3R | 11A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFDSB3B0050G130/U | 5 HP | 5 | NEMA 1 | 18A | Yes | Yes | 8.9 x 41.7 x 10.3 (226.06 x 1059.1 x 261.62) | 55 (24.95) |
| HVFDSB3B0050G230/U | 5 HP | 5 | NEMA 12 | 18A | Yes | Yes | 16 x 41 x 11 (406 x 1041.4 x 279.4) | 70 (31.75) |
| HVFDSB3B0050G330/U | 5 HP | 5 | NEMA 3R | 18A | Yes | Yes | 28.5 x 30 x 12 (723.9 x 762 x 304.8) | 78 (35.38) |
| HVFDSB3B0075G130/U | 7.5 HP | 5 | NEMA 1 | 24A | Yes | Yes | 8.9 x 41.7 x 10.3 (226.06 x 1059.1 x 261.62) | 57 (25.85) |
| HVFDSB3B0075G230/U | 7.5 HP | 5 | NEMA 12 | 24A | Yes | Yes | 16 x 41 x 11 (406 x 1041.4 x 279.4) | 70 (31.75) |
| HVFDSB3B0075G330/U | 7.5 HP | 5 | NEMA 3R | 24A | Yes | Yes | 28.5 x 30 x 12 (723.9 x 762 x 304.8) | 78 (35.38) |
| HVFDSB3B0100G130/U | 10 HP | 5 | NEMA 1 | 31A | Yes | Yes | 8.9 x 41.7 x 10.8 (226.06 x 1059.1 x 274.32) | 59.5 (26.99) |
| HVFDSB3B0100G230/U | 10 HP | 5 | NEMA 12 | 31A | Yes | Yes | 16 x 45 x 11 (406 x 1143 x 279.4) | 84 (38.1) |
| HVFDSB3B0100G330/U | 10 HP | 5 | NEMA 3R | 31A | Yes | Yes | 28.5 x 30 x 12 (723.9 x 762 x 304.8) | 78 (35.38) |
| HVFDSB3B0150G130/U | 15 HP | 6 | NEMA 1 | 48A | Yes | Yes | 12.4 x 55 x 11.3 (314.96 x 1397 x 287.02) | 94.5 (42.86) |
| HVFDSB3B0150G230/U | 15 HP | 6 | NEMA 12 | 48A | Yes | Yes | 16 x 50.5 x 13 (406.4 x 1282.7 x 256.54) | 125 (56.7) |
| HVFDSB3B0150G330/U | 15 HP | 6 | NEMA 3R | 48A | Yes | Yes | 34.5 x 36 x 12 (867.3 x 914.4 x 304.8) | 124 (56.25) |
| HVFDSB3B0200G130/U | 20 HP | 6 | NEMA 1 | 62A | Yes | Yes | 12.4 x 55 x 11.3 (314.96 x 1397 x 287.02) | 98.5 (44.68) |
| HVFDSB3B0200G230/U | 20 HP | 6 | NEMA 12 | 62A | Yes | Yes | 20 x 54.5 x 13 (508 x 1384.3 x 330.2) | 140 (63.5) |
| HVFDSB3B0200G330/U | 20 HP | 6 | NEMA 3R | 62A | Yes | Yes | 34.5 x 36 x 12 (867.3 x 914.4 x 304.8) | 124 (56.25) |
| HVFDSB3B0250G130/U | 25 HP | 6 | NEMA 1 | 75A | Yes | Yes | 20.9 x 59 x 13.2 (530.86 x 1498.6 x 335.28) | 175 (79.38) |
| HVFDSB3B0250G230/U | 25 HP | 6 | NEMA 12 | 75A | Yes | Yes | 20 x 58.5 x 13.5 (508 x 1485.9 x 342.9) | 160 (72.57) |
| HVFDSB3B0250G330/U | 25 HP | 6 | NEMA 3R | 75A | Yes | Yes | 28.5 x 48 x 14 (711.2 x 1219.2 x 355.6) | 193 (87.54) |
| HVFDSB3B0300G130/U | 30 HP | 7 | NEMA 1 | 88A | Yes | Yes | 20.9 x 59 x 13.2 (530.86 x 1498.6 x 335.28) | 184 (83.46) |
| HVFDSB3B0300G230/U | 30 HP | 7 | NEMA 12 | 88A | Yes | Yes | 24 x 65.5 x 13.5 (609 x 1663.7 x 342.9) | 175 (79.38) |
| HVFDSB3B0300G330/U | 30 HP | 7 | NEMA 3R | 88A | Yes | Yes | 28.5 x 48 x 14 (711.2 x 1219.2 x 355.6) | 193 (87.54) |
| HVFDSB3B0400G130/U | 40 HP | 7 | NEMA 1 | 105A | Yes | Yes | 20.9 x 59 x 13.2 (530.86 x 1498.6 x 335.28) | 195 (88.45) |
| HVFDSB3B0400G230/U | 40 HP | 7 | NEMA 12 | 105A | Yes | Yes | 30 x 70.5 x 13.5 (762 x 1790.7 x 342.9) | 200 (90.72) |
| HVFDSB3B0400G330/U | 40 HP | 7 | NEMA 3R | 105A | Yes | Yes | 28.5 x 48 x 14 (711.2 x 1219.2 x 355.6) | 193 (87.54) |
| HVFDSB3B0500G130/U | 50 HP | 8 | NEMA 1 | 140A | Yes | Yes | 25 x 70 x 16.2 (635 x 1778 x 411.48) | 285 (129.27) |
| HVFDSB3B0500G230/U | 50 HP | 8 | NEMA 12 | 140A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | Contact Customer Care |
| HVFDSB3B0500G330/U | 50 HP | 8 | NEMA 3R | 140A | Yes | Yes | 60 x 41 x 14 (1524 x 1041 x 356) | 193 (87.54) |
| HVFDSB3B0600G130/U | 60 HP | 8 | NEMA 1 | 170A | Yes | Yes | 25 x 70 x 16.2 (635 x 1778 x 411.48) | 295 (133.81) |
| HVFDSB3B0600G230/U | 60 HP | 8 | NEMA 12 | 170A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | Contact Customer Care |
| HVFDSB3B0600G330/U | 60 HP | 8 | NEMA 3R | 170A | Yes | Yes | 60 x 41 x 14 (1524 x 1041 x 356) | 193 (87.54) |
| HVFDSB3B0750G130/U | 75 HP | 8 | NEMA 1 | 205A | Yes | Yes | 25 x 70 x 16.2 (635 x 1778 x 411.48) | 331 (150.14) |
| HVFDSB3B0750G230/U | 75 HP | 8 | NEMA 12 | 205A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | Contact Customer Care |
| HVFDSB3B0750G330/U | 75 HP | 8 | NEMA 3R | 205A | Yes | Yes | 60 x 41 x 14 (1524 x 1041 x 356) | Contact Customer Care |
| 230 Vac — Drive with 3 contactor bypass and Auto bypass | | | | | | | | |
| HVFDSB3B0007G131/U | 0.75 HP | 4 | NEMA 1 | 3.7A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 988.06 x 261.62) | 46 (20.87) |
| HVFDSB3B0007G231/U | 0.75 HP | 4 | NEMA 12 | 3.7A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Enclosure | Current Ratings | Drive Input Disconnect | Drive Input Fuses | Approximate, Dimensions in. (mm) | Weight lb (kg) |
|--|------------|------------|-----------|-----------------|------------------------|-------------------|--|-----------------------|
| HVFDSB3B0007G331/U | 0.75 HP | 4 | NEMA 3R | 3.7A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFDSB3B0010G131/U | 1 HP | 4 | NEMA 1 | 4.8A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 988.06 x 261.62) | 46 (20.87) |
| HVFDSB3B0010G231/U | 1 HP | 4 | NEMA 12 | 4.8A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFDSB3B0010G331/U | 1 HP | 4 | NEMA 3R | 4.8A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFDSB3B0015G131/U | 1.5 HP | 4 | NEMA 1 | 6.6A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 988.06 x 261.62) | 46 (20.87) |
| HVFDSB3B0015G231/U | 1.5 HP | 4 | NEMA 12 | 6.6A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFDSB3B0015G331/U | 1.5 HP | 4 | NEMA 3R | 6.6A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFDSB3B0020G131/U | 2 HP | 4 | NEMA 1 | 8A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 988.06 x 261.62) | 46 (20.87) |
| HVFDSB3B0020G231/U | 2 HP | 4 | NEMA 12 | 8A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFDSB3B0020G331/U | 2 HP | 4 | NEMA 3R | 8A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFDSB3B0030G131/U | 3 HP | 4 | NEMA 1 | 11A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 988.06 x 261.62) | 46 (20.87) |
| HVFDSB3B0030G231/U | 3 HP | 4 | NEMA 12 | 11A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 55 (24.95) |
| HVFDSB3B0030G331/U | 3 HP | 4 | NEMA 3R | 11A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFDSB3B0050G131/U | 5 HP | 5 | NEMA 1 | 18A | Yes | Yes | 8.9 x 41.7 x 10.3 (226.06 x 1059.1 x 261.62) | 56 (25.4) |
| HVFDSB3B0050G231/U | 5 HP | 5 | NEMA 12 | 18A | Yes | Yes | 16 x 41 x 11 (406 x 1041.4 x 279.4) | 70 (31.75) |
| HVFDSB3B0050G331/U | 5 HP | 5 | NEMA 3R | 18A | Yes | Yes | 28.5 x 30 x 12 (723.9 x 762 x 304.8) | 78 (35.38) |
| HVFDSB3B0075G131/U | 7.5 HP | 5 | NEMA 1 | 24A | Yes | Yes | 8.9 x 41.7 x 10.3 (226.06 x 1059.1 x 261.62) | 57.5 (26.08) |
| HVFDSB3B0075G231/U | 7.5 HP | 5 | NEMA 12 | 24A | Yes | Yes | 16 x 41 x 11 (406 x 1041.4 x 279.4) | 70 (31.75) |
| HVFDSB3B0075G331/U | 7.5 HP | 5 | NEMA 3R | 24A | Yes | Yes | 28.5 x 30 x 12 (723.9 x 762 x 304.8) | 78 (35.38) |
| HVFDSB3B0100G131/U | 10 HP | 5 | NEMA 1 | 31A | Yes | Yes | 8.9 x 41.7 x 10.8 (226.06 x 1059.1 x 274.32) | 60 (27.22) |
| HVFDSB3B0100G231/U | 10 HP | 5 | NEMA 12 | 31A | Yes | Yes | 16 x 45 x 11 (406 x 1143 x 279.4) | 84 (38.1) |
| HVFDSB3B0100G331/U | 10 HP | 5 | NEMA 3R | 31A | Yes | Yes | 28.5 x 30 x 12 (723.9 x 762 x 304.8) | 78 (35.38) |
| HVFDSB3B0150G131/U | 15 HP | 6 | NEMA 1 | 48A | Yes | Yes | 12.4 x 55 x 11.3 (314.96 x 1397 x 287.02) | 96.5 (43.77) |
| HVFDSB3B0150G231/U | 15 HP | 6 | NEMA 12 | 48A | Yes | Yes | 16 x 50.5 x 13 (406.4 x 1282.7 x 256.54) | 125 (56.7) |
| HVFDSB3B0150G331/U | 15 HP | 6 | NEMA 3R | 48A | Yes | Yes | 34.5 x 36 x 12 (867.3 x 914.4 x 304.8) | 124 (56.25) |
| HVFDSB3B0200G131/U | 20 HP | 6 | NEMA 1 | 62A | Yes | Yes | 12.4 x 55 x 11.3 (314.96 x 1397 x 287.02) | 100.5 (45.59) |
| HVFDSB3B0200G231/U | 20 HP | 6 | NEMA 12 | 62A | Yes | Yes | 20 x 54.5 x 13 (508 x 1384.3 x 330.2) | 140 (63.5) |
| HVFDSB3B0200G331/U | 20 HP | 6 | NEMA 3R | 62A | Yes | Yes | 34.5 x 36 x 12 (867.3 x 914.4 x 304.8) | 124 (56.25) |
| HVFDSB3B0250G131/U | 25 HP | 6 | NEMA 1 | 75A | Yes | Yes | 20.9 x 59 x 13.2 (530.86 x 1498.6 x 335.28) | 177 (80.29) |
| HVFDSB3B0250G231/U | 25 HP | 6 | NEMA 12 | 75A | Yes | Yes | 20 x 58.5 x 13.5 (508 x 1485.9 x 342.9) | 160 (72.57) |
| HVFDSB3B0250G331/U | 25 HP | 6 | NEMA 3R | 75A | Yes | Yes | 28.5 x 48 x 14 (711.2 x 1219.2 x 355.6) | 193 (87.54) |
| HVFDSB3B0300G131/U | 30 HP | 7 | NEMA 1 | 88A | Yes | Yes | 20.9 x 59 x 13.2 (530.86 x 1498.6 x 335.28) | 186 (84.37) |
| HVFDSB3B0300G231/U | 30 HP | 7 | NEMA 12 | 88A | Yes | Yes | 24 x 65.5 x 13.5 (609 x 1663.7 x 342.9) | 175 (79.38) |
| HVFDSB3B0300G331/U | 30 HP | 7 | NEMA 3R | 88A | Yes | Yes | 28.5 x 48 x 14 (711.2 x 1219.2 x 355.6) | 193 (87.54) |
| HVFDSB3B0400G131/U | 40 HP | 7 | NEMA 1 | 105A | Yes | Yes | 20.9 x 59 x 13.2 (530.86 x 1498.6 x 335.28) | 197 (89.36) |
| HVFDSB3B0400G231/U | 40 HP | 7 | NEMA 12 | 105A | Yes | Yes | 30 x 70.5 x 13.5 (762 x 1790.7 x 342.9) | 200 (90.72) |
| HVFDSB3B0400G331/U | 40 HP | 7 | NEMA 3R | 105A | Yes | Yes | 28.5 x 48 x 14 (711.2 x 1219.2 x 355.6) | 193 (87.54) |
| HVFDSB3B0500G131/U | 50 HP | 8 | NEMA 1 | 140A | Yes | Yes | 25 x 70 x 16.2 (635 x 1778 x 411.48) | 287 (130.18) |
| HVFDSB3B0500G231/U | 50 HP | 8 | NEMA 12 | 140A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | Contact Customer Care |
| HVFDSB3B0500G331/U | 50 HP | 8 | NEMA 3R | 140A | Yes | Yes | 60 x 41 x 14 (1524 x 1041 x 356) | 193 (87.54) |
| HVFDSB3B0600G131/U | 60 HP | 8 | NEMA 1 | 170A | Yes | Yes | 25 x 70 x 16.2 (635 x 1778 x 411.48) | 297 (134.72) |
| HVFDSB3B0600G231/U | 60 HP | 8 | NEMA 12 | 170A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | Contact Customer Care |
| HVFDSB3B0600G331/U | 60 HP | 8 | NEMA 3R | 170A | Yes | Yes | 60 x 41 x 14 (1524 x 1041 x 356) | 193 (87.54) |
| HVFDSB3B0750G131/U | 75 HP | 8 | NEMA 1 | 205A | Yes | Yes | 25 x 70 x 16.2 (635 x 1778 x 411.48) | 333 (151.05) |
| HVFDSB3B0750G231/U | 75 HP | 8 | NEMA 12 | 205A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | Contact Customer Care |
| HVFDSB3B0750G331/U | 75 HP | 8 | NEMA 3R | 205A | Yes | Yes | 60 x 41 x 14 (1524 x 1041 x 356) | 193 (87.54) |
| 230 Vac — Drive with Fused Disconnect | | | | | | | | |
| HVFDSB3B0007G110/U | 0.75 HP | 4 | NEMA 1 | 3.7A | Yes | Yes | 8.9 x 31.9 x 10.3 (226.06 x 810.26 x 261.62) | 33 (14.97) |
| HVFDSB3B0007G210/U | 0.75 HP | 4 | NEMA 12 | 3.7A | Yes | Yes | 12 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 40 (18.14) |
| HVFDSB3B0007G310/U | 0.75 HP | 4 | NEMA 3R | 3.7A | Yes | Yes | 20.5 x 20 x 12 (520.7 x 508 x 304.8) | 43 (19.5) |
| HVFDSB3B0010G110/U | 1 HP | 4 | NEMA 1 | 4.8A | Yes | Yes | 8.9 x 31.9 x 10.3 (226.06 x 810.26 x 261.62) | 33 (14.97) |
| HVFDSB3B0010G210/U | 1 HP | 4 | NEMA 12 | 4.8A | Yes | Yes | 12 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 40 (18.14) |
| HVFDSB3B0010G310/U | 1 HP | 4 | NEMA 3R | 4.8A | Yes | Yes | 20.5 x 20 x 12 (520.7 x 508 x 304.8) | 43 (19.5) |
| HVFDSB3B0015G110/U | 1.5 HP | 4 | NEMA 1 | 6.6A | Yes | Yes | 8.9 x 31.9 x 10.3 (226.06 x 810.26 x 261.62) | 33 (14.97) |
| HVFDSB3B0015G210/U | 1.5 HP | 4 | NEMA 12 | 6.6A | Yes | Yes | 12 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 40 (18.14) |
| HVFDSB3B0015G310/U | 1.5 HP | 4 | NEMA 3R | 6.6A | Yes | Yes | 20.5 x 20 x 12 (520.7 x 508 x 304.8) | 43 (19.5) |
| HVFDSB3B0020G110/U | 2 HP | 4 | NEMA 1 | 8A | Yes | Yes | 8.9 x 31.9 x 10.3 (226.06 x 810.26 x 261.62) | 33 (14.97) |
| HVFDSB3B0020G210/U | 2 HP | 4 | NEMA 12 | 8A | Yes | Yes | 12 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 40 (18.14) |
| HVFDSB3B0020G310/U | 2 HP | 4 | NEMA 3R | 8A | Yes | Yes | 20.5 x 20 x 12 (520.7 x 508 x 304.8) | 43 (19.5) |
| HVFDSB3B0030G110/U | 3 HP | 4 | NEMA 1 | 11A | Yes | Yes | 8.9 x 31.9 x 10.3 (226.06 x 810.26 x 261.62) | 33 (14.97) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Enclosure | Current Ratings | Drive Input Disconnect | Drive Input Fuses | Approximate, Dimensions in. (mm) | Weight lb (kg) |
|--|------------|------------|-----------|-----------------|------------------------|-------------------|---|-----------------------|
| HVFD3B3B0030G210/U | 3 HP | 4 | NEMA 12 | 11A | Yes | Yes | 12 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 40 (18.14) |
| HVFD3B3B0030G310/U | 3 HP | 4 | NEMA 3R | 11A | Yes | Yes | 20.5 x 20 x 12 (520.7 x 508 x 304.8) | 43 (19.5) |
| HVFD3B3B0050G110/U | 5 HP | 5 | NEMA 1 | 18A | Yes | Yes | 8.9 x 34.7 x 10.3 (226.06 x 881.38 x 261.62) | 43 (19.5) |
| HVFD3B3B0050G210/U | 5 HP | 5 | NEMA 12 | 18A | Yes | Yes | 12 x 41 x 11 (304.8 x 1041.4 x 279.4) | 72 (32.66) |
| HVFD3B3B0050G310/U | 5 HP | 5 | NEMA 3R | 18A | Yes | Yes | 20.5 x 24 x 12 (520.7 x 609.6 x 304.8) | 61 (27.67) |
| HVFD3B3B0075G110/U | 7.5 HP | 5 | NEMA 1 | 24A | Yes | Yes | 8.9 x 34.7 x 10.3 (226.06 x 881.38 x 261.62) | 43 (19.5) |
| HVFD3B3B0075G210/U | 7.5 HP | 5 | NEMA 12 | 24A | Yes | Yes | 12 x 41 x 11 (304.8 x 1041.4 x 279.4) | 72 (32.66) |
| HVFD3B3B0075G310/U | 7.5 HP | 5 | NEMA 3R | 24A | Yes | Yes | 20.5 x 24 x 12 (520.7 x 609.6 x 304.8) | 61 (27.67) |
| HVFD3B3B0100G110/U | 10 HP | 5 | NEMA 1 | 31A | Yes | Yes | 8.9 x 34.7 x 10.3 (226.06 x 881.38 x 261.62) | 43 (19.5) |
| HVFD3B3B0100G210/U | 10 HP | 5 | NEMA 12 | 31A | Yes | Yes | 12 x 41 x 11 (304.8 x 1041.4 x 279.4) | 72 (32.66) |
| HVFD3B3B0100G310/U | 10 HP | 5 | NEMA 3R | 31A | Yes | Yes | 20.5 x 24 x 12 (520.7 x 609.6 x 304.8) | 61 (27.67) |
| HVFD3B3B0150G110/U | 15 HP | 6 | NEMA 1 | 48A | Yes | Yes | 12.4 x 45 x 11.3 (314.96 x 1143 x 287.02) | 50 (22.68) |
| HVFD3B3B0150G210/U | 15 HP | 6 | NEMA 12 | 48A | Yes | Yes | 12 x 46.5 x 13 (304.8 x 1181.1 x 330.2) | 120 (54.43) |
| HVFD3B3B0150G310/U | 15 HP | 6 | NEMA 3R | 48A | Yes | Yes | 28.5 x 36 x 12 (723.9 x 914.4 x 304.8) | 88 (39.92) |
| HVFD3B3B0200G110/U | 20 HP | 6 | NEMA 1 | 62A | Yes | Yes | 12.4 x 45 x 11.3 (314.96 x 1143 x 287.02) | 50 (22.68) |
| HVFD3B3B0200G210/U | 20 HP | 6 | NEMA 12 | 62A | Yes | Yes | 12 x 46.5 x 13 (304.8 x 1181.1 x 330.2) | 120 (54.43) |
| HVFD3B3B0200G310/U | 20 HP | 6 | NEMA 3R | 62A | Yes | Yes | 28.5 x 36 x 12 (723.9 x 914.4 x 304.8) | 88 (39.92) |
| HVFD3B3B0250G110/U | 25 HP | 6 | NEMA 1 | 75A | Yes | Yes | 20.8 x 51.5 x 13.2 (528.32 x 1308.1 x 335.28) | 100 (45.36) |
| HVFD3B3B0250G210/U | 25 HP | 6 | NEMA 12 | 75A | Yes | Yes | 16 x 50.5 x 13.5 (406.4 x 1282.7 x 342.9) | 145 (65.77) |
| HVFD3B3B0250G310/U | 25 HP | 6 | NEMA 3R | 75A | Yes | Yes | 28.5 x 48 x 14 (711.2 x 1219.2 x 355.6) | 149 (67.59) |
| HVFD3B3B0300G110/U | 30 HP | 7 | NEMA 1 | 88A | Yes | Yes | 20.8 x 51.5 x 13.2 (528.32 x 1308.1 x 335.28) | 100 (45.36) |
| HVFD3B3B0300G210/U | 30 HP | 7 | NEMA 12 | 88A | Yes | Yes | 16 x 50.5 x 13.5 (406.4 x 1282.7 x 342.9) | 160 (72.57) |
| HVFD3B3B0300G310/U | 30 HP | 7 | NEMA 3R | 88A | Yes | Yes | 28.5 x 48 x 14 (711.2 x 1219.2 x 355.6) | 149 (67.59) |
| HVFD3B3B0400G110/U | 40 HP | 7 | NEMA 1 | 105A | Yes | Yes | 20.8 x 51.5 x 13.2 (528.32 x 1308.1 x 335.28) | 100 (45.36) |
| HVFD3B3B0400G210/U | 40 HP | 7 | NEMA 12 | 105A | Yes | Yes | 16 x 50.5 x 13.5 (406.4 x 1282.7 x 342.9) | 175 (79.38) |
| HVFD3B3B0400G310/U | 40 HP | 7 | NEMA 3R | 105A | Yes | Yes | 28.5 x 48 x 14 (711.2 x 1219.2 x 355.6) | 149 (67.59) |
| HVFD3B3B0500G110/U | 50 HP | 8 | NEMA 1 | 140A | Yes | Yes | 25 x 60 x 16.2 (635 x 1524 x 411.48) | 200 (90.72) |
| HVFD3B3B0500G210/U | 50 HP | 8 | NEMA 12 | 140A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | Contact Customer Care |
| HVFD3B3B0500G310/U | 50 HP | 8 | NEMA 3R | 140A | Yes | Yes | 48 x 36 x 16 (1219 x 914 x 406) | 149 (67.59) |
| HVFD3B3B0600G110/U | 60 HP | 8 | NEMA 1 | 170A | Yes | Yes | 25 x 60 x 16.2 (635 x 1524 x 411.48) | 200 (90.72) |
| HVFD3B3B0600G210/U | 60 HP | 8 | NEMA 12 | 170A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | Contact Customer Care |
| HVFD3B3B0600G310/U | 60 HP | 8 | NEMA 3R | 170A | Yes | Yes | 48 x 36 x 16 (1219 x 914 x 406) | 149 (67.59) |
| HVFD3B3B0750G110/U | 75 HP | 8 | NEMA 1 | 205A | Yes | Yes | 25 x 60 x 16.2 (635 x 1524 x 411.48) | 200 (90.72) |
| HVFD3B3B0750G210/U | 75 HP | 8 | NEMA 12 | 205A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | Contact Customer Care |
| HVFD3B3B0750G310/U | 75 HP | 8 | NEMA 3R | 205A | Yes | Yes | 48 x 36 x 16 (1219 x 914 x 406) | 149 (67.59) |
| 460 Vac — Drive with 2 contactor bypass | | | | | | | | |
| HVFD3B3C0015G120/U | 1.5 HP | 4 | NEMA 1 | 3.4A | No | No | 8.9 x 319. x 9.6 (226.06 x 805.18 x 243.84) | 38 (17.24) |
| HVFD3B3C0015G220/U | 1.5 HP | 4 | NEMA 12 | 3.4A | No | No | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 53 (24.04) |
| HVFD3B3C0015G320/U | 1.5 HP | 4 | NEMA 3R | 3.4A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 49 (22.23) |
| HVFD3B3C0020G120/U | 2 HP | 4 | NEMA 1 | 4.8A | No | No | 8.9 x 319. x 9.6 (226.06 x 805.18 x 243.84) | 38 (17.24) |
| HVFD3B3C0020G220/U | 2 HP | 4 | NEMA 12 | 4.8A | No | No | 12 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 53 (24.04) |
| HVFD3B3C0020G320/U | 2 HP | 4 | NEMA 3R | 4.8A | No | No | 20.5 x 20 x 12 (520.7 x 208 x 304.8) | 49 (22.23) |
| HVFD3B3C0030G120/U | 3 HP | 4 | NEMA 1 | 5.6A | No | No | 8.9 x 319. x 9.6 (226.06 x 805.18 x 243.84) | 38 (17.24) |
| HVFD3B3C0030G220/U | 3 HP | 4 | NEMA 12 | 5.6A | No | No | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 53 (24.04) |
| HVFD3B3C0030G320/U | 3 HP | 4 | NEMA 3R | 5.6A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 49 (22.23) |
| HVFD3B3C0040G120/U | 4 HP | 4 | NEMA 1 | 8A | No | No | 8.9 x 319. x 9.6 (226.06 x 805.18 x 243.84) | 38 (17.24) |
| HVFD3B3C0040G220/U | 4 HP | 4 | NEMA 12 | 8A | No | No | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 53 (24.04) |
| HVFD3B3C0040G320/U | 4 HP | 4 | NEMA 3R | 8A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 49 (22.23) |
| HVFD3B3C0050G120/U | 5 HP | 4 | NEMA 1 | 9.6A | No | No | 8.9 x 319. x 9.6 (226.06 x 805.18 x 243.84) | 38 (17.24) |
| HVFD3B3C0050G220/U | 5 HP | 4 | NEMA 12 | 9.6A | No | No | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 53 (24.04) |
| HVFD3B3C0050G320/U | 5 HP | 4 | NEMA 3R | 9.6A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 49 (22.23) |
| HVFD3B3C0075G120/U | 7.5 HP | 4 | NEMA 1 | 12A | No | No | 8.9 x 319. x 9.6 (226.06 x 805.18 x 243.84) | 38 (17.24) |
| HVFD3B3C0075G220/U | 7.5 HP | 4 | NEMA 12 | 12A | No | No | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 53 (24.04) |
| HVFD3B3C0075G320/U | 7.5 HP | 4 | NEMA 3R | 12A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 49 (22.23) |
| HVFD3B3C0100G120/U | 10 HP | 5 | NEMA 1 | 16A | No | No | 8.9 x 34.7 x 9.6 (226.06 x 876.3 x 243.84) | 48 (21.77) |
| HVFD3B3C0100G220/U | 10 HP | 5 | NEMA 12 | 16A | No | No | 16 x 41 x 11 (406.4 x 1041.4 x 279.4) | 64 (29.03) |
| HVFD3B3C0100G320/U | 10 HP | 5 | NEMA 3R | 16A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 72 (32.66) |
| HVFD3B3C0150G120/U | 15 HP | 5 | NEMA 1 | 23A | No | No | 8.9 x 34.7 x 9.6 (226.06 x 876.3 x 243.84) | 50 (22.68) |
| HVFD3B3C0150G220/U | 15 HP | 5 | NEMA 12 | 23A | No | No | 16 x 41 x 11 (406.4 x 1041.4 x 279.4) | 64 (29.03) |
| HVFD3B3C0150G320/U | 15 HP | 5 | NEMA 3R | 23A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 72 (32.66) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Enclosure | Current Ratings | Drive Input Disconnect | Drive Input Fuses | Approximate, Dimensions in. (mm) | Weight lb (kg) |
|--|------------|------------|-----------|-----------------|------------------------|-------------------|--|-----------------------|
| HVFD3B3C0200G120/U | 20 HP | 5 | NEMA 1 | 31A | No | No | 8.9 x 34.7 x 9.6 (226.06 x 876.3 x 243.84) | 50 (22.68) |
| HVFD3B3C0200G220/U | 20 HP | 5 | NEMA 12 | 31A | No | No | 16 x 45 x 11 (406.4 x 1143 x 279.4) | 76 (34.47) |
| HVFD3B3C0200G320/U | 20 HP | 5 | NEMA 3R | 31A | No | No | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 72 (32.66) |
| HVFD3B3C0250G120/U | 25 HP | 6 | NEMA 1 | 38A | No | No | 12.4 x 45.1 x 10.1 (314.96 x 1143 x 256.54) | 85 (24.95) |
| HVFD3B3C0250G220/U | 25 HP | 6 | NEMA 12 | 38A | No | No | 16 x 50.5 x 13 (406.4 x 1282.7 x 330.2) | 120 (54.43) |
| HVFD3B3C0250G320/U | 25 HP | 6 | NEMA 3R | 38A | No | No | 28.5 x 36 x 10.5 (723.9 x 914.4 x 266.7) | 118 (53.52) |
| HVFD3B3C0300G120/U | 30 HP | 6 | NEMA 1 | 46A | No | No | 12.4 x 45.1 x 10.1 (314.96 x 1143 x 256.54) | 59 (26.76) |
| HVFD3B3C0300G220/U | 30 HP | 6 | NEMA 12 | 46A | No | No | 16 x 50.5 x 13 (406.4 x 1282.7 x 330.2) | 120 (54.43) |
| HVFD3B3C0300G320/U | 30 HP | 6 | NEMA 3R | 46A | No | No | 28.5 x 36 x 10.5 (723.9 x 914.4 x 266.7) | 118 (53.52) |
| HVFD3B3C0400G120/U | 40 HP | 6 | NEMA 1 | 61A | No | No | 12.4 x 45.1 x 10.1 (314.96 x 1143 x 256.54) | 59 (26.76) |
| HVFD3B3C0400G220/U | 40 HP | 6 | NEMA 12 | 61A | No | No | 16 x 50.5 x 13 (406.4 x 1282.7 x 330.2) | 136 (61.69) |
| HVFD3B3C0400G320/U | 40 HP | 6 | NEMA 3R | 61A | No | No | 28.5 x 36 x 10.5 (723.9 x 914.4 x 266.7) | 118 (53.52) |
| HVFD3B3C0500G120/U | 50 HP | 7 | NEMA 1 | 72A | No | No | 20.8 x 51.5 x 12.2 (530.86 x 1313.18 x 309.88) | 169 (76.66) |
| HVFD3B3C0500G220/U | 50 HP | 7 | NEMA 12 | 72A | No | No | 20 x 58.5 x 13.5 (508 x 1485.9 x 342.9) | 150 (68.04) |
| HVFD3B3C0500G320/U | 50 HP | 7 | NEMA 3R | 72A | No | No | 28.5 x 48 x 12.5 (723.9 x 1219.2 x 317.5) | 185 (83.91) |
| HVFD3B3C0600G120/U | 60 HP | 7 | NEMA 1 | 87A | No | No | 20.8 x 51.5 x 12.2 (530.86 x 1313.18 x 309.88) | 179 (81.19) |
| HVFD3B3C0600G220/U | 60 HP | 7 | NEMA 12 | 87A | No | No | 20 x 58.5 x 13.5 (508 x 1485.9 x 342.9) | 165 (74.84) |
| HVFD3B3C0600G320/U | 60 HP | 7 | NEMA 3R | 87A | No | No | 28.5 x 48 x 12.5 (723.9 x 1219.2 x 317.5) | 185 (83.91) |
| HVFD3B3C0750G120/U | 75 HP | 7 | NEMA 1 | 105A | No | No | 20.8 x 51.5 x 12.2 (530.86 x 1313.18 x 309.88) | 189 (85.73) |
| HVFD3B3C0750G220/U | 75 HP | 7 | NEMA 12 | 105A | No | No | 20 x 58.5 x 13.5 (508 x 1485.9 x 342.9) | 193 (87.54) |
| HVFD3B3C0750G320/U | 75 HP | 7 | NEMA 3R | 105A | No | No | 28.5 x 48 x 12.5 (723.9 x 1219.2 x 317.5) | 185 (83.91) |
| HVFD3B3C1000G120/U | 100 HP | 8 | NEMA 1 | 140A | No | No | 25 x 60 x 15.2 (635 x 1524 x 386.08) | 250 (113.4) |
| HVFD3B3C1000G220/U | 100 HP | 8 | NEMA 12 | 140A | No | No | Contact Customer Care | Contact Customer Care |
| HVFD3B3C1000G320/U | 100 HP | 8 | NEMA 3R | 140A | No | No | 40.5 x 60 x 12.5 (1028.7 x 1524 x 317.5) | 430 (195.04) |
| HVFD3B3C1250G120/U | 125 HP | 8 | NEMA 1 | 170A | No | No | 25 x 60 x 15.2 (635 x 1524 x 386.08) | 265 (120.2) |
| HVFD3B3C1250G220/U | 125 HP | 8 | NEMA 12 | 170A | No | No | Contact Customer Care | Contact Customer Care |
| HVFD3B3C1250G320/U | 125 HP | 8 | NEMA 3R | 170A | No | No | 40.5 x 60 x 12.5 (1028.7 x 1524 x 317.5) | 430 (195.04) |
| HVFD3B3C1500G120/U | 150 HP | 8 | NEMA 1 | 205A | No | No | 25 x 60 x 15.2 (635 x 1524 x 386.08) | 280 (127.01) |
| HVFD3B3C1500G220/U | 150 HP | 8 | NEMA 12 | 205A | No | No | Contact Customer Care | Contact Customer Care |
| HVFD3B3C1500G320/U | 150 HP | 8 | NEMA 3R | 205A | No | No | 40.5 x 60 x 12.5 (1028.7 x 1524 x 317.5) | 430 (195.04) |
| 460 Vac — Drive with 3 contactor bypass | | | | | | | | |
| HVFD3B3C0015G130/U | 1.5 HP | 4 | NEMA 1 | 3.4A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 810.26 x 261.62) | 44 (19.96) |
| HVFD3B3C0015G230/U | 1.5 HP | 4 | NEMA 12 | 3.4A | Yes | Yes | 16 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 53 (24.04) |
| HVFD3B3C0015G330/U | 1.5 HP | 4 | NEMA 3R | 3.4A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFD3B3C0020G130/U | 2 HP | 4 | NEMA 1 | 4.8A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 810.26 x 261.62) | 44 (19.96) |
| HVFD3B3C0020G230/U | 2 HP | 4 | NEMA 12 | 4.8A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 53 (24.04) |
| HVFD3B3C0020G330/U | 2 HP | 4 | NEMA 3R | 4.8A | Yes | Yes | 24.5 x 24 x 10.5 (622.3 x 609.6 x 266.7) | 54 (24.49) |
| HVFD3B3C0030G130/U | 3 HP | 4 | NEMA 1 | 5.6A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 810.26 x 261.62) | 44 (19.96) |
| HVFD3B3C0030G230/U | 3 HP | 4 | NEMA 12 | 5.6A | Yes | Yes | 16 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 53 (24.04) |
| HVFD3B3C0030G330/U | 3 HP | 4 | NEMA 3R | 5.6A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFD3B3C0040G130/U | 4 HP | 4 | NEMA 1 | 8A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 810.26 x 261.62) | 44 (19.96) |
| HVFD3B3C0040G230/U | 4 HP | 4 | NEMA 12 | 8A | Yes | Yes | 16 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 53 (24.04) |
| HVFD3B3C0040G330/U | 4 HP | 4 | NEMA 3R | 8A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFD3B3C0050G130/U | 5 HP | 4 | NEMA 1 | 9.6A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 810.26 x 261.62) | 44 (19.96) |
| HVFD3B3C0050G230/U | 5 HP | 4 | NEMA 12 | 9.6A | Yes | Yes | 16 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 53 (24.04) |
| HVFD3B3C0050G330/U | 5 HP | 4 | NEMA 3R | 9.6A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFD3B3C0075G130/U | 7.5 HP | 4 | NEMA 1 | 12A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 810.26 x 261.62) | 44 (19.96) |
| HVFD3B3C0075G230/U | 7.5 HP | 4 | NEMA 12 | 12A | Yes | Yes | 16 x 37.5 x 11 (406.4 x 952.5 x 279.4) | 53 (24.04) |
| HVFD3B3C0075G330/U | 7.5 HP | 4 | NEMA 3R | 12A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFD3B3C0100G130/U | 10 HP | 5 | NEMA 1 | 16A | Yes | Yes | 8.9 x 41.7 x 10.3 (226.06 x 881.38 x 261.62) | 55 (24.95) |
| HVFD3B3C0100G230/U | 10 HP | 5 | NEMA 12 | 16A | Yes | Yes | 16 x 41 x 11 (406.4 x 1041.4 x 279.4) | 64 (29.03) |
| HVFD3B3C0100G330/U | 10 HP | 5 | NEMA 3R | 16A | Yes | Yes | 28.5 x 30 x 12 (723.9 x 762 x 304.8) | 78 (35.38) |
| HVFD3B3C0150G130/U | 15 HP | 5 | NEMA 1 | 23A | Yes | Yes | 8.9 x 41.7 x 10.3 (226.06 x 881.38 x 261.62) | 57 (25.85) |
| HVFD3B3C0150G230/U | 15 HP | 5 | NEMA 12 | 23A | Yes | Yes | 16 x 41 x 11 (406.4 x 1041.4 x 279.4) | 64 (29.03) |
| HVFD3B3C0150G330/U | 15 HP | 5 | NEMA 3R | 23A | Yes | Yes | 28.5 x 30 x 12 (723.9 x 762 x 304.8) | 78 (35.38) |
| HVFD3B3C0200G130/U | 20 HP | 5 | NEMA 1 | 31A | Yes | Yes | 8.9 x 41.7 x 10.8 (226.06 x 881.38 x 274.32) | 59 (26.76) |
| HVFD3B3C0200G230/U | 20 HP | 5 | NEMA 12 | 31A | Yes | Yes | 16 x 45 x 11 (406.4 x 1143 x 279.4) | 76 (34.47) |
| HVFD3B3C0200G330/U | 20 HP | 5 | NEMA 3R | 31A | Yes | Yes | 28.5 x 30 x 12 (723.9 x 762 x 304.8) | 78 (35.38) |
| HVFD3B3C0250G130/U | 25 HP | 6 | NEMA 1 | 38A | Yes | Yes | 12.4 x 55.2 x 11.3 (314.96 x 1145.5 x 287.02) | 94.5 (42.86) |
| HVFD3B3C0250G230/U | 25 HP | 6 | NEMA 12 | 38A | Yes | Yes | 16 x 50.5 x 13 (406.4 x 1282.7 x 330.2) | 120 (54.43) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Enclosure | Current Ratings | Drive Input Disconnect | Drive Input Fuses | Approximate, Dimensions in. (mm) | Weight lb (kg) |
|--|------------|------------|-----------|-----------------|------------------------|-------------------|---|-----------------------|
| HVFD3B3C0250G330/U | 25 HP | 6 | NEMA 3R | 38A | Yes | Yes | 34.5 x 36 x 12 (723.9 x 914.4 x 304.8) | 124 (56.25) |
| HVFD3B3C0300G130/U | 30 HP | 6 | NEMA 1 | 46A | Yes | Yes | 12.4 x 55.2 x 11.3 (314.96 x 1145.5 x 287.02) | 98.5 (44.68) |
| HVFD3B3C0300G230/U | 30 HP | 6 | NEMA 12 | 46A | Yes | Yes | 16 x 50.5 x 13 (406.4 x 1282.7 x 330.2) | 120 (54.43) |
| HVFD3B3C0300G330/U | 30 HP | 6 | NEMA 3R | 46A | Yes | Yes | 34.5 x 36 x 12 (723.9 x 914.4 x 304.8) | 124 (56.25) |
| HVFD3B3C0400G130/U | 40 HP | 6 | NEMA 1 | 61A | Yes | Yes | 12.4 x 55.2 x 11.3 (314.96 x 1145.5 x 287.02) | 105.5 (47.85) |
| HVFD3B3C0400G230/U | 40 HP | 6 | NEMA 12 | 61A | Yes | Yes | 16 x 50.5 x 13 (406.4 x 1282.7 x 330.2) | 136 (61.69) |
| HVFD3B3C0400G330/U | 40 HP | 6 | NEMA 3R | 61A | Yes | Yes | 34.5 x 36 x 12 (723.9 x 914.4 x 304.8) | 124 (56.25) |
| HVFD3B3C0500G130/U | 50 HP | 7 | NEMA 1 | 72A | Yes | Yes | 20.8 x 59 x 13.2 (528.32 x 1308.1 x 335.28) | 175 (79.38) |
| HVFD3B3C0500G230/U | 50 HP | 7 | NEMA 12 | 72A | Yes | Yes | 20 x 58.5 x 13.5 (508 x 1485.9 x 342.9) | 150 (68.04) |
| HVFD3B3C0500G330/U | 50 HP | 7 | NEMA 3R | 72A | Yes | Yes | 40.5 x 48 x 14 (1028.7 x 1219.2 x 355.6) | 193 (87.54) |
| HVFD3B3C0600G130/U | 60 HP | 7 | NEMA 1 | 87A | Yes | Yes | 20.8 x 59 x 13.2 (528.32 x 1308.1 x 335.28) | 184 (83.46) |
| HVFD3B3C0600G230/U | 60 HP | 7 | NEMA 12 | 87A | Yes | Yes | 20 x 58.5 x 13.5 (508 x 1485.9 x 342.9) | 165 (74.84) |
| HVFD3B3C0600G330/U | 60 HP | 7 | NEMA 3R | 87A | Yes | Yes | 40.5 x 48 x 14 (1028.7 x 1219.2 x 355.6) | 193 (87.54) |
| HVFD3B3C0750G130/U | 75 HP | 7 | NEMA 1 | 105A | Yes | Yes | 20.8 x 59 x 13.2 (528.32 x 1308.1 x 335.28) | 195 (88.45) |
| HVFD3B3C0750G230/U | 75 HP | 7 | NEMA 12 | 105A | Yes | Yes | 20 x 58.5 x 13.5 (508 x 1485.9 x 342.9) | 193 (87.54) |
| HVFD3B3C0750G330/U | 75 HP | 7 | NEMA 3R | 105A | Yes | Yes | 40.5 x 48 x 14 (1028.7 x 1219.2 x 355.6) | 193 (87.54) |
| HVFD3B3C1000G130/U | 100 HP | 8 | NEMA 1 | 140A | Yes | Yes | 25 x 70 x 16.2 (635 x 1524 x 411.48) | 285 (129.27) |
| HVFD3B3C1000G230/U | 100 HP | 8 | NEMA 12 | 140A | Yes | Yes | Contact Customer Care | Contact Customer Care |
| HVFD3B3C1000G330/U | 100 HP | 8 | NEMA 3R | 140A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | 440 (199.58) |
| HVFD3B3C1250G130/U | 125 HP | 8 | NEMA 1 | 170A | Yes | Yes | 25 x 70 x 16.2 (635 x 1524 x 411.48) | 295 (133.81) |
| HVFD3B3C1250G230/U | 125 HP | 8 | NEMA 12 | 170A | Yes | Yes | Contact Customer Care | Contact Customer Care |
| HVFD3B3C1250G330/U | 125 HP | 8 | NEMA 3R | 170A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | 440 (199.58) |
| HVFD3B3C1500G130/U | 150 HP | 8 | NEMA 1 | 205A | Yes | Yes | 25 x 70 x 16.2 (635 x 1524 x 411.48) | 331 (150.14) |
| HVFD3B3C1500G230/U | 150 HP | 8 | NEMA 12 | 205A | Yes | Yes | Contact Customer Care | Contact Customer Care |
| HVFD3B3C1500G330/U | 150 HP | 8 | NEMA 3R | 205A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | 440 (199.58) |
| 460 Vac — Drive with 3 contactor bypass and Auto bypass | | | | | | | | |
| HVFD3B3C0015G131/U | 1.5 HP | 4 | NEMA 1 | 3.4A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 810.26 x 261.62) | 46 (20.87) |
| HVFD3B3C0015G231/U | 1.5 HP | 4 | NEMA 12 | 3.4A | Yes | Yes | 16 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 53 (24.04) |
| HVFD3B3C0015G331/U | 1.5 HP | 4 | NEMA 3R | 3.4A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFD3B3C0020G131/U | 2 HP | 4 | NEMA 1 | 4.8A | Yes | Yes | 8.9 x 38.7 x 10.7 (226.06 x 982.98 x 271.78) | Contact Customer Care |
| HVFD3B3C0020G231/U | 2 HP | 4 | NEMA 12 | 4.8A | Yes | Yes | 16 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 53 (24.04) |
| HVFD3B3C0020G331/U | 2 HP | 4 | NEMA 3R | 4.8A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFD3B3C0030G131/U | 3 HP | 4 | NEMA 1 | 5.6A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 810.26 x 261.62) | 46 (20.87) |
| HVFD3B3C0030G231/U | 3 HP | 4 | NEMA 12 | 5.6A | Yes | Yes | 16 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 53 (24.04) |
| HVFD3B3C0030G331/U | 3 HP | 4 | NEMA 3R | 5.6A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFD3B3C0040G131/U | 4 HP | 4 | NEMA 1 | 8A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 810.26 x 261.62) | 46 (20.87) |
| HVFD3B3C0040G231/U | 4 HP | 4 | NEMA 12 | 8A | Yes | Yes | 16 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 53 (24.04) |
| HVFD3B3C0040G331/U | 4 HP | 4 | NEMA 3R | 8A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFD3B3C0050G131/U | 5 HP | 4 | NEMA 1 | 9.6A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 810.26 x 261.62) | 46 (20.87) |
| HVFD3B3C0050G231/U | 5 HP | 4 | NEMA 12 | 9.6A | Yes | Yes | 16 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 53 (24.04) |
| HVFD3B3C0050G331/U | 5 HP | 4 | NEMA 3R | 9.6A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFD3B3C0075G131/U | 7.5 HP | 4 | NEMA 1 | 12A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 810.26 x 261.62) | 46 (20.87) |
| HVFD3B3C0075G231/U | 7.5 HP | 4 | NEMA 12 | 12A | Yes | Yes | 16 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 53 (24.04) |
| HVFD3B3C0075G331/U | 7.5 HP | 4 | NEMA 3R | 12A | Yes | Yes | 24.5 x 24 x 12 (622.3 x 609.6 x 304.8) | 54 (24.49) |
| HVFD3B3C0100G131/U | 10 HP | 5 | NEMA 1 | 16A | Yes | Yes | 8.9 x 41.7 x 10.3 (226.06 x 881.38 x 261.62) | 56 (25.4) |
| HVFD3B3C0100G231/U | 10 HP | 5 | NEMA 12 | 16A | Yes | Yes | 16 x 41 x 11 (406.4 x 1041.4 x 279.4) | 64 (29.03) |
| HVFD3B3C0100G331/U | 10 HP | 5 | NEMA 3R | 16A | Yes | Yes | 28.5 x 30 x 12 (723.9 x 762 x 304.8) | 78 (35.38) |
| HVFD3B3C0150G131/U | 15 HP | 5 | NEMA 1 | 23A | Yes | Yes | 8.9 x 41.7 x 10.3 (226.06 x 881.38 x 261.62) | 56 (25.4) |
| HVFD3B3C0150G231/U | 15 HP | 5 | NEMA 12 | 23A | Yes | Yes | 16 x 41 x 11 (406.4 x 1041.4 x 279.4) | 64 (29.03) |
| HVFD3B3C0150G331/U | 15 HP | 5 | NEMA 3R | 23A | Yes | Yes | 28.5 x 30 x 12 (723.9 x 762 x 304.8) | 78 (35.38) |
| HVFD3B3C0200G131/U | 20 HP | 5 | NEMA 1 | 31A | Yes | Yes | 8.9 x 41.7 x 10.8 (226.06 x 881.38 x 274.32) | 60 (27.22) |
| HVFD3B3C0200G231/U | 20 HP | 5 | NEMA 12 | 31A | Yes | Yes | 16 x 45 x 11 (406.4 x 1143 x 279.4) | 76 (34.47) |
| HVFD3B3C0200G331/U | 20 HP | 5 | NEMA 3R | 31A | Yes | Yes | 28.5 x 30 x 12 (723.9 x 762 x 304.8) | 78 (35.38) |
| HVFD3B3C0250G131/U | 25 HP | 6 | NEMA 1 | 38A | Yes | Yes | 12.4 x 55.2 x 11.3 (314.96 x 1145.5 x 287.02) | 96.5 (43.77) |
| HVFD3B3C0250G231/U | 25 HP | 6 | NEMA 12 | 38A | Yes | Yes | 16 x 50.5 x 13 (406.4 x 1282.7 x 330.2) | 120 (54.43) |
| HVFD3B3C0250G331/U | 25 HP | 6 | NEMA 3R | 38A | Yes | Yes | 34.5 x 36 x 12 (723.9 x 914.4 x 304.8) | 124 (56.25) |
| HVFD3B3C0300G131/U | 30 HP | 6 | NEMA 1 | 46A | Yes | Yes | 12.4 x 55.2 x 11.3 (314.96 x 1145.5 x 287.02) | 100.5 (45.59) |
| HVFD3B3C0300G231/U | 30 HP | 6 | NEMA 12 | 46A | Yes | Yes | 16 x 50.5 x 13 (406.4 x 1282.7 x 330.2) | 120 (54.43) |
| HVFD3B3C0300G331/U | 30 HP | 6 | NEMA 3R | 46A | Yes | Yes | 34.5 x 36 x 12 (723.9 x 914.4 x 304.8) | 124 (56.25) |
| HVFD3B3C0400G131/U | 40 HP | 6 | NEMA 1 | 61A | Yes | Yes | 12.4 x 55.2 x 11.3 (314.96 x 1145.5 x 287.02) | 107.5 (48.76) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Enclosure | Current Ratings | Drive Input Disconnect | Drive Input Fuses | Approximate, Dimensions in. (mm) | Weight lb (kg) |
|--|------------|------------|-----------|-----------------|------------------------|-------------------|---|-----------------------|
| HVFDSB3C0400G231/U | 40 HP | 6 | NEMA 12 | 61A | Yes | Yes | 16 x 50.5 x 13 (406.4 x 1282.7 x 330.2) | 136 (61.69) |
| HVFDSB3C0400G331/U | 40 HP | 6 | NEMA 3R | 61A | Yes | Yes | 34.5 x 36 x 12 (723.9 x 914.4 x 304.8) | 124 (56.25) |
| HVFDSB3C0500G131/U | 50 HP | 7 | NEMA 1 | 72A | Yes | Yes | 20.8 x 59 x 13.2 (528.32 x 1308.1 x 335.28) | 177 (80.29) |
| HVFDSB3C0500G231/U | 50 HP | 7 | NEMA 12 | 72A | Yes | Yes | 20 x 58.5 x 13.5 (508 x 1485.9 x 342.9) | 150 (68.04) |
| HVFDSB3C0500G331/U | 50 HP | 7 | NEMA 3R | 72A | Yes | Yes | 40.5 x 48 x 14 (1028.7 x 1219.2 x 355.6) | 193 (87.54) |
| HVFDSB3C0600G131/U | 60 HP | 7 | NEMA 1 | 87A | Yes | Yes | 20.8 x 59 x 13.2 (528.32 x 1308.1 x 335.28) | 186 (84.37) |
| HVFDSB3C0600G231/U | 60 HP | 7 | NEMA 12 | 87A | Yes | Yes | 20 x 58.5 x 13.5 (508 x 1485.9 x 342.9) | 165 (74.84) |
| HVFDSB3C0600G331/U | 60 HP | 7 | NEMA 3R | 87A | Yes | Yes | 40.5 x 48 x 14 (1028.7 x 1219.2 x 355.6) | 193 (87.54) |
| HVFDSB3C0750G131/U | 75 HP | 7 | NEMA 1 | 105A | Yes | Yes | 20.8 x 59 x 13.2 (528.32 x 1308.1 x 335.28) | 197 (89.36) |
| HVFDSB3C0750G231/U | 75 HP | 7 | NEMA 12 | 105A | Yes | Yes | 20 x 58.5 x 13.5 (508 x 1485.9 x 342.9) | 193 (87.54) |
| HVFDSB3C0750G331/U | 75 HP | 7 | NEMA 3R | 105A | Yes | Yes | 40.5 x 48 x 14 (1028.7 x 1219.2 x 355.6) | 193 (87.54) |
| HVFDSB3C1000G131/U | 100 HP | 8 | NEMA 1 | 140A | Yes | Yes | 25 x 70 x 16.2 (635 x 1524 x 411.48) | 287 (130.18) |
| HVFDSB3C1000G231/U | 100 HP | 8 | NEMA 12 | 140A | Yes | Yes | Contact Customer Care | Contact Customer Care |
| HVFDSB3C1000G331/U | 100 HP | 8 | NEMA 3R | 140A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | 440 (199.58) |
| HVFDSB3C1250G131/U | 125 HP | 8 | NEMA 1 | 170A | Yes | Yes | 25 x 70 x 16.2 (635 x 1524 x 411.48) | 297 (134.72) |
| HVFDSB3C1250G231/U | 125 HP | 8 | NEMA 12 | 170A | Yes | Yes | Contact Customer Care | Contact Customer Care |
| HVFDSB3C1250G331/U | 125 HP | 8 | NEMA 3R | 170A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | 440 (199.58) |
| HVFDSB3C1500G131/U | 150 HP | 8 | NEMA 1 | 205A | Yes | Yes | 25 x 70 x 16.2 (635 x 1524 x 411.48) | 333 (151.05) |
| HVFDSB3C1500G231/U | 150 HP | 8 | NEMA 12 | 205A | Yes | Yes | Contact Customer Care | Contact Customer Care |
| HVFDSB3C1500G331/U | 150 HP | 8 | NEMA 3R | 205A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | 440 (199.58) |
| 460 Vac — Drive with Fused Disconnect | | | | | | | | |
| HVFDSB3C0015G110/U | 1.5 HP | 4 | NEMA 1 | 3.4A | Yes | Yes | 8.9 x 31.9 x 10.3 (226.06 x 810.26 x 261.62) | 33 (14.97) |
| HVFDSB3C0015G210/U | 1.5 HP | 4 | NEMA 12 | 3.4A | Yes | Yes | 12 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 40 (18.14) |
| HVFDSB3C0015G310/U | 1.5 HP | 4 | NEMA 3R | 3.4A | Yes | Yes | 20.5 x 20 x 12 (520.7 x 208 x 304.8) | 43 (19.5) |
| HVFDSB3C0020G110/U | 2 HP | 4 | NEMA 1 | 4.8A | Yes | Yes | 8.9 x 31.9 x 10.3 (226.06 x 810.26 x 261.62) | 33 (14.97) |
| HVFDSB3C0020G210/U | 2 HP | 4 | NEMA 12 | 4.8A | Yes | Yes | 8.9 x 38.9 x 10.3 (226.06 x 810.26 x 261.62) | 40 (18.14) |
| HVFDSB3C0020G310/U | 2 HP | 4 | NEMA 3R | 4.8A | Yes | Yes | 16 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 43 (19.5) |
| HVFDSB3C0030G110/U | 3 HP | 4 | NEMA 1 | 5.6A | Yes | Yes | 8.9 x 31.9 x 10.3 (226.06 x 810.26 x 261.62) | 33 (14.97) |
| HVFDSB3C0030G210/U | 3 HP | 4 | NEMA 12 | 5.6A | Yes | Yes | 12 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 40 (18.14) |
| HVFDSB3C0030G310/U | 3 HP | 4 | NEMA 3R | 5.6A | Yes | Yes | 20.5 x 20 x 12 (520.7 x 208 x 304.8) | 43 (19.5) |
| HVFDSB3C0040G110/U | 4 HP | 4 | NEMA 1 | 8A | Yes | Yes | 8.9 x 31.9 x 10.3 (226.06 x 810.26 x 261.62) | 33 (14.97) |
| HVFDSB3C0040G210/U | 4 HP | 4 | NEMA 12 | 8A | Yes | Yes | 12 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 40 (18.14) |
| HVFDSB3C0040G310/U | 4 HP | 4 | NEMA 3R | 8A | Yes | Yes | 20.5 x 20 x 12 (520.7 x 208 x 304.8) | 43 (19.5) |
| HVFDSB3C0050G110/U | 5 HP | 4 | NEMA 1 | 9.6A | Yes | Yes | 8.9 x 31.9 x 10.3 (226.06 x 810.26 x 261.62) | 33 (14.97) |
| HVFDSB3C0050G210/U | 5 HP | 4 | NEMA 12 | 9.6A | Yes | Yes | 12 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 40 (18.14) |
| HVFDSB3C0050G310/U | 5 HP | 4 | NEMA 3R | 9.6A | Yes | Yes | 20.5 x 20 x 12 (520.7 x 208 x 304.8) | 43 (19.5) |
| HVFDSB3C0075G110/U | 7.5 HP | 4 | NEMA 1 | 12A | Yes | Yes | 8.9 x 31.9 x 10.3 (226.06 x 810.26 x 261.62) | 33 (14.97) |
| HVFDSB3C0075G210/U | 7.5 HP | 4 | NEMA 12 | 12A | Yes | Yes | 12 x 37.5 x 11 (304.8 x 952.5 x 279.4) | 40 (18.14) |
| HVFDSB3C0075G310/U | 7.5 HP | 4 | NEMA 3R | 12A | Yes | Yes | 20.5 x 20 x 12 (520.7 x 208 x 304.8) | 43 (19.5) |
| HVFDSB3C0100G110/U | 10 HP | 4 | NEMA 1 | 16A | Yes | Yes | 8.9 x 34.7 x 10.3 (226.06 x 881.38 x 261.62) | 43 (19.5) |
| HVFDSB3C0100G210/U | 10 HP | 5 | NEMA 12 | 16A | Yes | Yes | 12 x 41 x 11 (304.8 x 1041.4 x 279.4) | 72 (32.66) |
| HVFDSB3C0100G310/U | 10 HP | 5 | NEMA 3R | 16A | Yes | Yes | 20.5 x 24 x 12 (520.7 x 609.6 x 304.8) | 61 (27.67) |
| HVFDSB3C0150G110/U | 15 HP | 5 | NEMA 1 | 23A | Yes | Yes | 8.9 x 34.7 x 10.3 (226.06 x 881.38 x 261.62) | 43 (19.5) |
| HVFDSB3C0150G210/U | 15 HP | 5 | NEMA 12 | 23A | Yes | Yes | 12 x 41 x 11 (304.8 x 1041.4 x 279.4) | 72 (32.66) |
| HVFDSB3C0150G310/U | 15 HP | 5 | NEMA 3R | 23A | Yes | Yes | 20.5 x 24 x 12 (520.7 x 609.6 x 304.8) | 61 (27.67) |
| HVFDSB3C0200G110/U | 20 HP | 5 | NEMA 1 | 31A | Yes | Yes | 8.9 x 34.7 x 10.3 (226.06 x 881.38 x 261.62) | 43 (19.5) |
| HVFDSB3C0200G210/U | 20 HP | 5 | NEMA 12 | 31A | Yes | Yes | 12 x 41 x 11 (304.8 x 1041.4 x 279.4) | 72 (32.66) |
| HVFDSB3C0200G310/U | 20 HP | 5 | NEMA 3R | 31A | Yes | Yes | 20.5 x 24 x 12 (520.7 x 609.6 x 304.8) | 61 (27.67) |
| HVFDSB3C0250G110/U | 25 HP | 6 | NEMA 1 | 38A | Yes | Yes | 12.4 x 45.1 x 11.3 (314.96 x 1145.5 x 287.02) | 50 (22.68) |
| HVFDSB3C0250G210/U | 25 HP | 6 | NEMA 12 | 38A | Yes | Yes | 12 x 46.5 x 13 (304.8 x 1181.1 x 330.2) | 120 (54.43) |
| HVFDSB3C0250G310/U | 25 HP | 6 | NEMA 3R | 38A | Yes | Yes | 28.5 x 36 x 12 (723.9 x 914.4 x 304.8) | 88 (39.92) |
| HVFDSB3C0300G110/U | 30 HP | 6 | NEMA 1 | 46A | Yes | Yes | 12.4 x 45.1 x 11.3 (314.96 x 1145.5 x 287.02) | 50 (22.68) |
| HVFDSB3C0300G210/U | 30 HP | 6 | NEMA 12 | 46A | Yes | Yes | 12 x 46.5 x 13 (304.8 x 1181.1 x 330.2) | 120 (54.43) |
| HVFDSB3C0300G310/U | 30 HP | 6 | NEMA 3R | 46A | Yes | Yes | 28.5 x 36 x 12 (723.9 x 914.4 x 304.8) | 88 (39.92) |
| HVFDSB3C0400G110/U | 40 HP | 6 | NEMA 1 | 61A | Yes | Yes | 12.4 x 45.1 x 11.3 (314.96 x 1145.5 x 287.02) | 50 (22.68) |
| HVFDSB3C0400G210/U | 40 HP | 6 | NEMA 12 | 61A | Yes | Yes | 12 x 46.5 x 13 (304.8 x 1181.1 x 330.2) | 136 (61.69) |
| HVFDSB3C0400G310/U | 40 HP | 6 | NEMA 3R | 61A | Yes | Yes | 28.5 x 36 x 12 (723.9 x 914.4 x 304.8) | 88 (39.92) |
| HVFDSB3C0500G110/U | 50 HP | 7 | NEMA 1 | 72A | Yes | Yes | 20.8 x 51.5 x 13.2 (528.32 x 1308.1 x 335.28) | 100 (45.36) |
| HVFDSB3C0500G210/U | 50 HP | 7 | NEMA 12 | 72A | Yes | Yes | 16 x 50.5 x 13.5 (406.4 x 1282.7 x 342.9) | 145 (65.77) |
| HVFDSB3C0500G310/U | 50 HP | 7 | NEMA 3R | 72A | Yes | Yes | 28.5 x 48 x 14 (723.9 x 1219.2 x 355.6) | 149 (67.59) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Enclosure | Current Ratings | Drive Input Disconnect | Drive Input Fuses | Approximate, Dimensions in. (mm) | Weight lb (kg) |
|--------------------|------------|------------|-----------|-----------------|------------------------|-------------------|---|-----------------------|
| HVFDSB3C0600G110/U | 60 HP | 7 | NEMA 1 | 87A | Yes | Yes | 20.8 x 51.5 x 13.2 (528.32 x 1308.1 x 335.28) | 100 (45.36) |
| HVFDSB3C0600G210/U | 60 HP | 7 | NEMA 12 | 87A | Yes | Yes | 16 x 50.5 x 13.5 (406.4 x 1282.7 x 342.9) | 160 (72.57) |
| HVFDSB3C0600G310/U | 60 HP | 7 | NEMA 3R | 87A | Yes | Yes | 28.5 x 48 x 14 (723.9 x 1219.2 x 355.6) | 149 (67.59) |
| HVFDSB3C0750G110/U | 75 HP | 7 | NEMA 1 | 105A | Yes | Yes | 20.8 x 51.5 x 13.2 (528.32 x 1308.1 x 335.28) | 100 (45.36) |
| HVFDSB3C0750G210/U | 75 HP | 7 | NEMA 12 | 105A | Yes | Yes | 16 x 50.5 x 13.5 (406.4 x 1282.7 x 342.9) | 193 (87.54) |
| HVFDSB3C0750G310/U | 75 HP | 7 | NEMA 3R | 105A | Yes | Yes | 28.5 x 48 x 14 (723.9 x 1219.2 x 355.6) | 149 (67.59) |
| HVFDSB3C1000G110/U | 100 HP | 8 | NEMA 1 | 140A | Yes | Yes | 25 x 60 x 16.2 (635 x 1524 x 411.48) | 200 (90.72) |
| HVFDSB3C1000G210/U | 100 HP | 8 | NEMA 12 | 140A | Yes | Yes | Contact Customer Care | Contact Customer Care |
| HVFDSB3C1000G310/U | 100 HP | 8 | NEMA 3R | 140A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | 340 (154.22) |
| HVFDSB3C1250G110/U | 125 HP | 8 | NEMA 1 | 170A | Yes | Yes | 25 x 60 x 16.2 (635 x 1524 x 411.48) | 200 (90.72) |
| HVFDSB3C1250G210/U | 125 HP | 8 | NEMA 12 | 170A | Yes | Yes | Contact Customer Care | Contact Customer Care |
| HVFDSB3C1250G310/U | 125 HP | 8 | NEMA 3R | 170A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | 340 (154.22) |
| HVFDSB3C1500G110/U | 150 HP | 8 | NEMA 1 | 205A | Yes | Yes | 25 x 60 x 16.2 (635 x 1524 x 411.48) | 200 (90.72) |
| HVFDSB3C1500G210/U | 150 HP | 8 | NEMA 12 | 205A | Yes | Yes | Contact Customer Care | Contact Customer Care |
| HVFDSB3C1500G310/U | 150 HP | 8 | NEMA 3R | 205A | Yes | Yes | 40.5 x 60 x 14 (1028.7 x 1524 x 355.6) | 340 (154.22) |

Variable Frequency Drives

SmartVFD HVAC Accessories

| Material Number | Description | Used With |
|-------------------|---|---------------------------|
| 32006630-001/U | LON Communications Card (NXOPTC4) | SmartVFD HVAC |
| HVFDSDBATTERY/U | Battery Package, 5 pcs, for Real Time Clock | SmartVFD HVAC |
| HVFDCCABLE/U | SmartVFD HVAC Commissioning Cable | SmartVFD HVAC and COMPACT |
| HVFSDSFANFR4/U | SmartVFD HVAC Frame 4 Replacement Fan | SmartVFD HVAC |
| HVFSDSFANFR5/U | SmartVFD HVAC Frame 5 Replacement Fan | SmartVFD HVAC |
| HVFSDSFANFR6/U | SmartVFD HVAC Frame 6 Replacement Fan | SmartVFD HVAC |
| HVFSDSFANFR7/U | SmartVFD HVAC Frame 7 Replacement Fan | SmartVFD HVAC |
| HVFSDDFLANGFR4/U | SmartVFD HVAC Flange Mounting Kit for Frame 4 | SmartVFD HVAC |
| HVFSDDFLANGFR5/U | SmartVFD HVAC Flange Mounting Kit for Frame 5 | SmartVFD HVAC |
| HVFSDDFLANGFR6/U | SmartVFD HVAC Flange Mounting Kit for Frame 6 | SmartVFD HVAC |
| HVFSDDFLANGFR7/U | SmartVFD HVAC Flange Mounting Kit for Frame 7 | SmartVFD HVAC |
| HVFSDGRAPHICKP/U | Replacement Graphical Keypad | SmartVFD HVAC |
| HVFSDINSTALLFR4/U | SmartVFD HVAC Replacement Installation Accessories Frame 4 | SmartVFD HVAC |
| HVFSDINSTALLFR5/U | SmartVFD HVAC Replacement Installation Accessories Frame 5 | SmartVFD HVAC |
| HVFSDINSTALLFR6/U | SmartVFD HVAC Replacement Installation Accessories Frame 6 | SmartVFD HVAC |
| HVFSDMOUNTKIT/U | SmartVFD HVAC Panel Mount Kit for NEMA 12 Install 3 Meter Cable | SmartVFD HVAC |
| HVFSDNEMA12FR4/U | SmartVFD HVAC NEMA12 Kit Frame 4 | SmartVFD HVAC |
| HVFSDNEMA12FR5/U | SmartVFD HVAC NEMA12 Kit Frame 5 | SmartVFD HVAC |
| HVFSDNEMA12FR6/U | SmartVFD HVAC NEMA12 Kit Frame 6 | SmartVFD HVAC |
| HVFSDOPT1AI2AO/U | 1 x AI, 2 x AO (isolated, D- and E-slot compatible) | SmartVFD HVAC |
| HVFSDOPT1RO5DI/U | 1 x RO, 5 x DI (42-240VAC, D- and E-slot compatible) | SmartVFD HVAC |
| HVFSDOPT2RO1T/U | 2 x RO + Thermistor (D- and E-slot compatible) | SmartVFD HVAC |
| HVFSDOPT3RO/U | 3 x RO (D- and E-slot compatible) | SmartVFD HVAC |
| HVFSDOPT6DI/U | 6 x DI / DO Programmable (D- and E-slot compatible) | SmartVFD HVAC |
| HVFSDREP2RO1T/U | 2 x RO + Thermistor (B-slot compatible) | SmartVFD HVAC |
| HVFSDREP3RO/U | 3 x RO (B-slot compatible) | SmartVFD HVAC |
| HVFSDTRAINER/U | SmartVFD HVAC Training Demonstration Kit | SmartVFD HVAC |

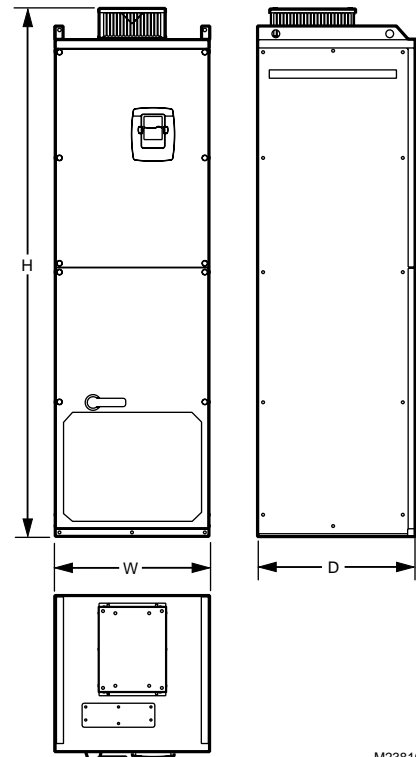
NXS/NXP Series Variable Frequency Drives



Variable Frequency Drives (VFD) accept a control input and then output tailored PWM control signal to operate fans, pumps, etc. with maximum efficiency. The VFD can be field-programmed without any extra devices or computer connections.

- Broad application, simple startup, long life
- Flexible, general purpose, dual rated drives
- Easy programming and commissioning simplify startup
- Easily set parameters using the control panel or the PC tools
- Modular design allows the choice of only the needed functions and features for specific applications
- Bypass options: 2-contactor, 3-contactor, and 3-contactor auto-bypass
- Quick Installation (Startup Wizard, Quick Start Guide, Built-in real time clock)
- Easy multi-line, alpha-numeric keypad interface
- 3-Year warranty
- Seven configurable applications built in.
- Easy commissioning through software or control panel.
- Devices can be wall-mounted or panel-mounted.
- Eleven protective functions (see Form 63-2600, Users Manual, Technical Data sections).
- Compact Size.
- Insulated gate bi-polar transistor (IGBT) technology.
- Modbus, BacNet, Device Net, Profibus, and LobBus available as options cards.

Voltage: 208 Vac; 230 Vac
Bypass: Drive alone
Drive Family: NXS
Type of RFI Filter: Industrial filter
Weight: 11 lb (5.0 kg)
Continuous Output Current: overload 1.5 x High overload current (1min/10min); overload 1.1 x Low overload current (1min/10min)
Starting Torque: 200% High; 150% Low
Peak Current: 2 x high overload current, 2 seconds every 20 seconds
Acceleration time: 0 - 3000 sec
Deceleration time: 0 - 3000 sec
Analog Voltage Input: 0 - 10 Vdc, 200K ohm
Analog Current Input: 0 (4) - 20 mA, 250 ohm differential
Analog Current Output: 0 (4) - 20 mA, max 500 ohm
Digital Output: 50 mA/48v open collector
Reference Output Voltage: +10V, +3%, max 10mA
Auxiliary Voltage: 24V, ± 15%, max 250 mA
Frequency: 0 Hz to 320 Hz
Operating Temperature Range: High Overload 14°F to 122°F, (-10°C to 50°C); Low Overload 14°F to 104°F, (-10°C to 40°C)
Relay Outputs: 24 Vdc/8A; 125 Vdc/0.4A; 250 Vac/8A



M23816

| Material Number | Horsepower | Frame Type | Layout | Enclosure | Current Ratings | Approximate, Dimensions in. (mm) | Weight |
|-------------------------|------------|------------|-------------------|-----------|-----------------|--|------------------|
| 208 Vac; 230 Vac | | | | | | | |
| NXS0010B1000/U | 1 HP | FR4 | Stand-alone drive | NEMA 1 | 4.8A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 11 lb (5.0 kg) |
| NXS0010B1208/U | 1 HP | FR4 | Stand-alone drive | NEMA 12 | 4.8A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 11 lb (5.0 kg) |
| NXS0015B1005/U | 1.5 HP | FR4 | Stand-alone drive | NEMA 1 | 6.6A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 11 lb (5.0 kg) |
| NXS0015B1203/U | 1.5 HP | FR4 | Stand-alone drive | NEMA 12 | 6.6A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 11 lb (5.0 kg) |
| NXS0020B1008/U | 2 HP | FR4 | Stand-alone drive | NEMA 1 | 7.8A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 11 lb (5.0 kg) |
| NXS0020B1206/U | 2 HP | FR4 | Stand-alone drive | NEMA 12 | 7.8A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 11 lb (5.0 kg) |
| NXS0030B1006/U | 3 HP | FR4 | Stand-alone drive | NEMA 1 | 11A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 11 lb (5.0 kg) |
| NXS0030B1204/U | 3 HP | FR4 | Stand-alone drive | NEMA 12 | 11A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 11 lb (5.0 kg) |
| NXS0040B1004/U | 4 HP | FR4 | Stand-alone drive | NEMA 1 | 12.5A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 17.9 lb (8.1 kg) |
| NXS0040B1202/U | 4 HP | FR4 | Stand-alone drive | NEMA 12 | 12.5A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 17.9 lb (8.1 kg) |
| NXS0050B1001/U | 5 HP | FR5 | Stand-alone drive | NEMA 1 | 17.5A | 5.7 x 15.4 x 8.4 (144.8 x 391.2 x 213.4) | 17.9 lb (8.1 kg) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Layout | Enclosure | Current Ratings | Approximate, Dimensions in. (mm) | Weight |
|-----------------|------------|------------|-------------------|-----------|-----------------|--|----------------------|
| NXS0050B1209/U | 5 HP | FR5 | Stand-alone drive | NEMA 12 | 17.5A | 5.7 x 15.4 x 8.4 (144.8 x 391.2 x 213.4) | 17.9 lb (8.1 kg) |
| NXS0075B1002/U | 7.5 HP | FR5 | Stand-alone drive | NEMA 1 | 25A | 5.7 x 15.4 x 8.4 (144.8 x 391.2 x 213.4) | 17.9 lb (8.1 kg) |
| NXS0075B1200/U | 7.5 HP | FR5 | Stand-alone drive | NEMA 12 | 25A | 5.7 x 15.4 x 8.4 (144.8 x 391.2 x 213.4) | 17.9 lb (8.1 kg) |
| NXS0100B1001/U | 10 HP | FR5 | Stand-alone drive | NEMA 1 | 31A | 5.7 x 15.4 x 8.4 (144.8 x 391.2 x 213.4) | 40.8 lb (18.5 kg) |
| NXS0100B1209/U | 10 HP | FR5 | Stand-alone drive | NEMA 12 | 31A | 5.7 x 15.4 x 8.4 (144.8 x 391.2 x 213.4) | 40.8 lb (18.5 kg) |
| NXS0150B1000/U | 15 HP | FR6 | Stand-alone drive | NEMA 1 | 48A | 7.7 x 20.4 x 9.3 (195.6 x 518.2 x 236.2) | 40.8 lb (18.5 kg) |
| NXS0150B1208/U | 15 HP | FR6 | Stand-alone drive | NEMA 12 | 48A | 7.7 x 20.4 x 9.3 (195.6 x 518.2 x 236.2) | 40.8 lb (18.5 kg) |
| NXS0200B1000/U | 20 HP | FR6 | Stand-alone drive | NEMA 1 | 61A | 7.7 x 20.4 x 9.3 (195.6 x 518.2 x 236.2) | 77.2 lb (35.0 kg) |
| NXS0200B1208/U | 20 HP | FR6 | Stand-alone drive | NEMA 12 | 61A | 7.7 x 20.4 x 9.3 (195.6 x 518.2 x 236.2) | 77.2 lb (35.0 kg) |
| NXS0250B1009/U | 25 HP | FR7 | Stand-alone drive | NEMA 1 | 75A | 9.3 x 23.3 x 10.1 (236.2 x 519.9 x 256.5) | 77.2 lb (35.0 kg) |
| NXS0250B1207/U | 25 HP | FR7 | Stand-alone drive | NEMA 12 | 75A | 9.3 x 23.3 x 10.1 (236.2 x 519.9 x 256.5) | 77.2 lb (35.0 kg) |
| NXS0300B1009/U | 30 HP | FR7 | Stand-alone drive | NEMA 1 | 88A | 9.3 x 23.3 x 10.1 (236.2 x 519.9 x 256.5) | 77.2 lb (35.0 kg) |
| NXS0300B1207/U | 30 HP | FR7 | Stand-alone drive | NEMA 12 | 88A | 9.3 x 23.3 x 10.1 (236.2 x 519.9 x 256.5) | 77.2 lb (35.0 kg) |
| NXS0400B1008/U | 40 HP | FR8 | Stand-alone drive | NEMA 1 | 114A | 9.3 x 23.3 x 10.1 (236.2 x 519.9 x 256.5) | 127.9 lb (58.0 kg) |
| NXS0400B1206/U | 40 HP | FR8 | Stand-alone drive | NEMA 12 | 114A | 11.2 x 28.4 x 12.3 (284.5 x 721.4 x 312.4) | 127.9 lb (58.0 kg) |
| NXS0500B1007/U | 50 HP | FR8 | Stand-alone drive | NEMA 1 | 143A | 11.2 x 28.4 x 12.3 (284.5 x 721.4 x 312.4) | 127.9 lb (58.0 kg) |
| NXS0500B1205/U | 50 HP | FR8 | Stand-alone drive | NEMA 12 | 143A | 11.2 x 28.4 x 12.3 (284.5 x 721.4 x 312.4) | 127.9 lb (58.0 kg) |
| NXS0600B1006/U | 60 HP | FR8 | Stand-alone drive | NEMA 1 | 169A | 11.2 x 28.4 x 12.3 (284.5 x 721.4 x 312.4) | 127.9 lb (58.0 kg) |
| NXS0600B1204/U | 60 HP | FR8 | Stand-alone drive | NEMA 12 | 169A | 11.2 x 28.4 x 12.3 (284.5 x 721.4 x 312.4) | 127.9 lb (58.0 kg) |
| NXS0750B1004/U | 75 HP | FR8 | Stand-alone drive | NEMA 1 | 205A | 11.2 x 28.4 x 12.3 (284.5 x 721.4 x 312.4) | 127.9 lb (58.0 kg) |
| NXS0750B1202/U | 75 HP | FR8 | Stand-alone drive | NEMA 12 | 205A | 11.2 x 28.4 x 12.3 (284.5 x 721.4 x 312.4) | 127.9 lb (58.0 kg) |
| 460 Vac | | | | | | | |
| NXS0015A1007/U | 1.5 HP | FR4 | Stand-alone drive | NEMA 1 | 3.3A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 11 lb (5.0 kg) |
| NXS0015A1205/U | 1.5 HP | FR4 | Stand-alone drive | NEMA 12 | 3.3A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 11 lb (5.0 kg) |
| NXS0020A1000/U | 2 HP | FR4 | Stand-alone drive | NEMA 1 | 4.3A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 11 lb (5.0 kg) |
| NXS0020A1208/U | 2 HP | FR4 | Stand-alone drive | NEMA 12 | 4.3A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 11 lb (5.0 kg) |
| NXS0030A1008/U | 3 HP | FR4 | Stand-alone drive | NEMA 1 | 5.6A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 11 lb (5.0 kg) |
| NXS0030A1206/U | 3 HP | FR4 | Stand-alone drive | NEMA 12 | 5.6A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 11 lb (5.0 kg) |
| NXS0040A1006/U | 4 HP | FR4 | Stand-alone drive | NEMA 1 | 7.6A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 11 lb (5.0 kg) |
| NXS0040A1204/U | 4 HP | FR4 | Stand-alone drive | NEMA 12 | 7.6A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 11 lb (5.0 kg) |
| NXS0050A1003/U | 5 HP | FR4 | Stand-alone drive | NEMA 1 | 9A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 11 lb (5.0 kg) |
| NXS0050A1201/U | 5 HP | FR4 | Stand-alone drive | NEMA 12 | 9A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 11 lb (5.0 kg) |
| NXS0075A1004/U | 7.5 HP | FR4 | Stand-alone drive | NEMA 1 | 12A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 11 lb (5.0 kg) |
| NXS0075A1202/U | 7.5 HP | FR4 | Stand-alone drive | NEMA 12 | 12A | 5.4 x 11.5 x 7.5 (137.2 x 292.1 x 190.5) | 11 lb (5.0 kg) |
| NXS0100A1003/U | 10 HP | FR5 | Stand-alone drive | NEMA 1 | 16A | 5.7 x 15.4 x 8.4 (144.8 x 391.2 x 213.4) | 17.9 lb (8.1 kg) |
| NXS0100A1201/U | 10 HP | FR5 | Stand-alone drive | NEMA 12 | 16A | 5.7 x 15.4 x 8.4 (144.8 x 391.2 x 213.4) | 17.9 lb (8.1 kg) |
| NXS0150A1002/U | 15 HP | FR5 | Stand-alone drive | NEMA 1 | 23A | 5.7 x 15.4 x 8.4 (144.8 x 391.2 x 213.4) | 17.9 lb (8.1 kg) |
| NXS0150A1200/U | 15 HP | FR5 | Stand-alone drive | NEMA 12 | 23A | 5.7 x 15.4 x 8.4 (144.8 x 391.2 x 213.4) | 17.9 lb (8.1 kg) |
| NXS0200A1002/U | 20 HP | FR5 | Stand-alone drive | NEMA 1 | 31A | 5.7 x 15.4 x 8.4 (144.8 x 391.2 x 213.4) | 17.9 lb (8.1 kg) |
| NXS0200A1200/U | 20 HP | FR5 | Stand-alone drive | NEMA 12 | 31A | 5.7 x 15.4 x 8.4 (144.8 x 391.2 x 213.4) | 17.9 lb (8.1 kg) |
| NXS0250A1001/U | 25 HP | FR6 | Stand-alone drive | NEMA 1 | 38A | 7.7 x 20.4 x 9.3 (195.6 x 518.2 x 236.2) | 40.8 lb (18.5 kg) |
| NXS0250A1209/U | 25 HP | FR6 | Stand-alone drive | NEMA 12 | 38A | 7.7 x 20.4 x 9.3 (195.6 x 518.2 x 236.2) | 40.8 lb (18.5 kg) |
| NXS0300A1001/U | 30 HP | FR6 | Stand-alone drive | NEMA 1 | 46A | 7.7 x 20.4 x 9.3 (195.6 x 518.2 x 236.2) | 40.8 lb (18.5 kg) |
| NXS0300A1209/U | 30 HP | FR6 | Stand-alone drive | NEMA 12 | 46A | 7.7 x 20.4 x 9.3 (195.6 x 518.2 x 236.2) | 40.8 lb (18.5 kg) |
| NXS0400A1000/U | 40 HP | FR6 | Stand-alone drive | NEMA 1 | 61A | 7.7 x 20.4 x 9.3 (195.6 x 518.2 x 236.2) | 40.8 lb (18.5 kg) |
| NXS0400A1208/U | 40 HP | FR6 | Stand-alone drive | NEMA 12 | 61A | 7.7 x 20.4 x 9.3 (195.6 x 518.2 x 236.2) | 40.8 lb (18.5 kg) |
| NXS0500A1009/U | 50 HP | FR7 | Stand-alone drive | NEMA 1 | 72A | 9.3 x 23.3 x 10.1 (236.2 x 519.9 x 256.5) | 77.2 lb (35.0 kg) |
| NXS0500A1207/U | 50 HP | FR7 | Stand-alone drive | NEMA 12 | 72A | 9.3 x 23.3 x 10.1 (236.2 x 519.9 x 256.5) | 77.2 lb (35.0 kg) |
| NXS0600A1008/U | 60 HP | FR7 | Stand-alone drive | NEMA 1 | 87A | 9.3 x 23.3 x 10.1 (236.2 x 519.9 x 256.5) | 77.2 lb (35.0 kg) |
| NXS0600A1206/U | 60 HP | FR7 | Stand-alone drive | NEMA 12 | 87A | 9.3 x 23.3 x 10.1 (236.2 x 519.9 x 256.5) | 77.2 lb (35.0 kg) |
| NXS0750A1006/U | 75 HP | FR7 | Stand-alone drive | NEMA 1 | 105A | 9.3 x 23.3 x 10.1 (236.2 x 519.9 x 256.5) | 77.2 lb (35.0 kg) |
| NXS0750A1204/U | 75 HP | FR7 | Stand-alone drive | NEMA 12 | 105A | 9.3 x 23.3 x 10.1 (236.2 x 519.9 x 256.5) | 77.2 lb (35.0 kg) |
| NXS1000A1002/U | 100 HP | FR8 | Stand-alone drive | NEMA 1 | 140A | 11.2 x 28.4 x 12.3 (284.5 x 721.4 x 312.4) | 127.9 lb (58.0 kg) |
| NXS1000A1200/U | 100 HP | FR8 | Stand-alone drive | NEMA 12 | 140A | 11.2 x 28.4 x 12.3 (284.5 x 721.4 x 312.4) | 127.9 lb (58.0 kg) |
| NXS1250A1009/U | 125 HP | FR8 | Stand-alone drive | NEMA 1 | 170A | 11.2 x 28.4 x 12.3 (284.5 x 721.4 x 312.4) | 127.9 lb (58.0 kg) |
| NXS1250A1207/U | 125 HP | FR8 | Stand-alone drive | NEMA 12 | 170A | 11.2 x 28.4 x 12.3 (284.5 x 721.4 x 312.4) | 127.9 lb (58.0 kg) |
| NXS1500A1007/U | 150 HP | FR8 | Stand-alone drive | NEMA 1 | 205A | 11.2 x 28.4 x 12.3 (284.5 x 721.4 x 312.4) | 127.9 lb (58.0 kg) |
| NXS1500A1205/U | 150 HP | FR8 | Stand-alone drive | NEMA 12 | 205A | 11.2 x 28.4 x 12.3 (284.5 x 721.4 x 312.4) | 127.9 lb (58.0 kg) |
| NXS2000A1000/U | 200 HP | FR9 | Stand-alone drive | NEMA 1 | 261A | 18.9 x 45.3 x 14.3 (480 x 1150 x 362) | 321.9 lb (146.0 kg) |
| NXS2500A1005/U | 250 HP | FR9 | Stand-alone drive | NEMA 1 | 300A | 18.9 x 45.3 x 14.3 (480 x 1150 x 362) | 321.9 lb (146.0 kg) |
| NXP3000A1003/U | 300 HP | FR10 | Stand-alone drive | NEMA 1 | 385A | 23.4 x 79.5 x 23.7 (595 x 2018 x 602) | 595.25 lb (270.0 kg) |
| NXP3500A1008/U | 350 HP | FR10 | Stand-alone drive | NEMA 1 | 460A | 23.4 x 79.5 x 23.7 (595 x 2018 x 602) | 595.25 lb (270.0 kg) |
| NXP4500A1006/U | 450 HP | FR10 | Stand-alone drive | NEMA 1 | 520A | 23.4 x 79.5 x 23.7 (595 x 2018 x 602) | 595.25 lb (270.0 kg) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Layout | Enclosure | Current Ratings | Approximate, Dimensions in. (mm) | Weight |
|-----------------|------------|------------|-------------------|-----------|-----------------|--|---------------------|
| 600 Vac | | | | | | | |
| NXS0030C1004/U | 3 HP | FR6 | Stand-alone drive | NEMA 1 | 4.5A | 7.7 x 20.4 x 9.3 (195 x 519 x 237) | 40.8 lb (18.5 kg) |
| NXS0030C1202/U | 3 HP | FR6 | Stand-alone drive | NEMA 12 | 4.5A | 7.7 x 20.4 x 9.3 (195 x 519 x 237) | 40.8 lb (18.5 kg) |
| NXS0040C1002/U | 4 HP | FR6 | Stand-alone drive | NEMA 1 | 5.5A | 7.7 x 20.4 x 9.3 (195 x 519 x 237) | 40.8 lb (18.5 kg) |
| NXS0040C1200/U | 4 HP | FR6 | Stand-alone drive | NEMA 12 | 5.5A | 7.7 x 20.4 x 9.3 (195 x 519 x 237) | 40.8 lb (18.5 kg) |
| NXS0050C1009/U | 5 HP | FR6 | Stand-alone drive | NEMA 1 | 7.5A | 7.7 x 20.4 x 9.3 (195 x 519 x 237) | 40.8 lb (18.5 kg) |
| NXS0050C1207/U | 5 HP | FR6 | Stand-alone drive | NEMA 12 | 7.5A | 7.7 x 20.4 x 9.3 (195 x 519 x 237) | 40.8 lb (18.5 kg) |
| NXS0075C1000/U | 7.5 HP | FR6 | Stand-alone drive | NEMA 1 | 10A | 7.7 x 20.4 x 9.3 (195 x 519 x 237) | 40.8 lb (18.5 kg) |
| NXS0075C1208/U | 7.5 HP | FR6 | Stand-alone drive | NEMA 12 | 10A | 7.7 x 20.4 x 9.3 (195 x 519 x 237) | 40.8 lb (18.5 kg) |
| NXS0100C1009/U | 10 HP | FR6 | Stand-alone drive | NEMA 1 | 13.5A | 7.7 x 20.4 x 9.3 (195 x 519 x 237) | 40.8 lb (18.5 kg) |
| NXS0100C1207/U | 10 HP | FR6 | Stand-alone drive | NEMA 12 | 13.5A | 7.7 x 20.4 x 9.3 (195 x 519 x 237) | 40.8 lb (18.5 kg) |
| NXS0150C1008/U | 15 HP | FR6 | Stand-alone drive | NEMA 1 | 18A | 7.7 x 20.4 x 9.3 (195.6 x 518.2 x 236.2) | 40.8 lb (18.5 kg) |
| NXS0150C1206/U | 15 HP | FR6 | Stand-alone drive | NEMA 12 | 18A | 7.7 x 20.4 x 9.3 (195.6 x 518.2 x 236.2) | 40.8 lb (18.5 kg) |
| NXS0200C1008/U | 20 HP | FR6 | Stand-alone drive | NEMA 1 | 22A | 7.7 x 20.4 x 9.3 (195.6 x 518.2 x 236.2) | 40.8 lb (18.5 kg) |
| NXS0200C1206/U | 20 HP | FR6 | Stand-alone drive | NEMA 12 | 22A | 7.7 x 20.4 x 9.3 (195.6 x 518.2 x 236.2) | 40.8 lb (18.5 kg) |
| NXS0250C1007/U | 25 HP | FR6 | Stand-alone drive | NEMA 1 | 27A | 7.7 x 20.4 x 9.3 (195.6 x 518.2 x 236.2) | 40.8 lb (18.5 kg) |
| NXS0250C1205/U | 25 HP | FR6 | Stand-alone drive | NEMA 12 | 27A | 7.7 x 20.4 x 9.3 (195.6 x 518.2 x 236.2) | 40.8 lb (18.5 kg) |
| NXS0300C1007/U | 30 HP | FR6 | Stand-alone drive | NEMA 1 | 34A | 7.7 x 20.4 x 9.3 (195.6 x 518.2 x 236.2) | 40.8 lb (18.5 kg) |
| NXS0300C1205/U | 30 HP | FR6 | Stand-alone drive | NEMA 12 | 34A | 7.7 x 20.4 x 9.3 (195.6 x 518.2 x 236.2) | 40.8 lb (18.5 kg) |
| NXS0400C1006/U | 40 HP | FR7 | Stand-alone drive | NEMA 1 | 41A | 16 x 62 x 12 (406 x 1575 x 330) | 77.2 lb (35.0 kg) |
| NXS0400C1204/U | 40 HP | FR7 | Stand-alone drive | NEMA 12 | 41A | 9.3 x 23.3 x 10.1 (236.2 x 519.9 x 256.5) | 77.2 lb (35.0 kg) |
| NXS0500C1005/U | 50 HP | FR7 | Stand-alone drive | NEMA 1 | 52A | 16 x 62 x 12 (406 x 1575 x 330) | 77.2 lb (35.0 kg) |
| NXS0500C1203/U | 50 HP | FR7 | Stand-alone drive | NEMA 12 | 52A | 16 x 62 x 12 (406 x 1575 x 330) | 77.2 lb (35.0 kg) |
| NXS0600C1004/U | 60 HP | FR8 | Stand-alone drive | NEMA 1 | 62A | 11.2 x 28.4 x 12.3 (284.5 x 721.4 x 312.4) | 127.9 lb (58.0 kg) |
| NXS0600C1202/U | 60 HP | FR8 | Stand-alone drive | NEMA 12 | 62A | 11.2 x 28.4 x 12.3 (284.5 x 721.4 x 312.4) | 127.9 lb (58.0 kg) |
| NXS0750C1002/U | 75 HP | FR8 | Stand-alone drive | NEMA 1 | 80A | 11.2 x 28.4 x 12.3 (284.5 x 721.4 x 312.4) | 127.9 lb (58.0 kg) |
| NXS0750C1200/U | 75 HP | FR8 | Stand-alone drive | NEMA 12 | 80A | 11.2 x 28.4 x 12.3 (284.5 x 721.4 x 312.4) | 127.9 lb (58.0 kg) |
| NXS1000C1008/U | 100 HP | FR8 | Stand-alone drive | NEMA 1 | 100A | 11.2 x 28.4 x 12.3 (284.5 x 721.4 x 312.4) | 127.9 lb (58.0 kg) |
| NXS1000C1206/U | 100 HP | FR8 | Stand-alone drive | NEMA 12 | 100A | 11.2 x 28.4 x 12.3 (284.5 x 721.4 x 312.4) | 127.9 lb (58.0 kg) |
| NXS1250C1005/U | 125 HP | FR9 | Stand-alone drive | NEMA 1 | 125A | 18.9 x 45.3 x 14.3 (480 x 1150 x 362) | 321.9 lb (146.0 kg) |
| NXS1250C1203/U | 125 HP | FR9 | Stand-alone drive | NEMA 12 | 125A | 18.9 x 45.3 x 14.3 (480 x 1150 x 362) | 321.9 lb (146.0 kg) |
| NXS1500C1003/U | 150 HP | FR9 | Stand-alone drive | NEMA 1 | 144A | 18.9 x 45.3 x 14.3 (480 x 1150 x 362) | 321.9 lb (146.0 kg) |
| NXS1500C1201/U | 150 HP | FR9 | Stand-alone drive | NEMA 12 | 144A | 18.9 x 45.3 x 14.3 (480 x 1150 x 362) | 321.9 lb (146.0 kg) |
| NXS2000C1006/U | 200 HP | FR9 | Stand-alone drive | NEMA 1 | 208A | 18.9 x 45.3 x 14.3 (480 x 1150 x 362) | 321.9 lb (146.0 kg) |
| NXS2000C1204/U | 200 HP | FR9 | Stand-alone drive | NEMA 12 | 208A | 18.9 x 45.3 x 14.3 (480 x 1150 x 362) | 321.9 lb (146.0 kg) |

Variable Frequency Drives

NX Series Drives with Bypass and/or Disconnect



Variable Frequency Drives (VFD) accept a control input and then output tailored PWM control signal to operate (motors, fans, pumps, etc.) with maximum efficiency. The VFD can be field programmed without any extra devices or computer connections. The NXS/NXP series of drives are available with a diverse offering of bypass options to complement the NXS/NXP family.

Our five configurations make it easy to select the right bypass to complete your drive package. All bundles are available in NEMA 1, NEMA 12 and ventilated NEMA 3R.

NXS/NXP Disconnect Option

- Adds a fused disconnect to the VFD NXS/NXP 2-Contactor Bypass Option Provides an economical means of bypassing the VFD.
- No Main Disconnect
- Freeze/Fire/Smoke Interlock NXS/NXP 3-Contactor Bypass Option During commissioning, the TEST position enables power-up of the VFD without sending power to the motor.
- In Bypass mode, the VFD is isolated from the power supply
- Fused Disconnect
- Freeze/Fire/Smoke Interlock NXS/NXP 3-Contactor Auto-Bypass Option

All the features of the 3-Contactor bypass plus:

- Any VFD fault will automatically send the bypass to bypass mode
- A contact closure sends the bypass to bypass mode
- Dry contacts indicate when the bypass is in bypass mode, alerting the building management system mode, alerting the building management system

Acceleration time: 0 - 3000 sec

Deceleration time: 0 - 3000 sec

Analog Voltage Input: 0 - 10 Vdc , 200K ohm

Analog Current Input: 0 (4) - 20 mA, 250 ohm differential

Analog Current Output: 0 (4) - 20 mA, max 500 ohm

Digital Output: 50 mA/48v open collector

Reference Output Voltage: +10V, +3%, max 10mA

Auxiliary Voltage: 24V, \pm 15%, max 250 mA

Frequency: 0 Hz to 320 Hz

Operating Temperature Range: High Overload 14 to 122; Low Overload 14 to 104 (High Overload -10 to 50; Low Overload -10 to 40)

Relay Outputs: 24 Vdc/8A; 125 Vdc/0.4A; 250 Vac/8A

Enclosure: NEMA 3R

Drive Family: NXS

Disconnect Type: No Disconnect

Pilot Lights: No

Control Transformer: No

Drive Input Disconnect: No

Drive Input Fuses: No

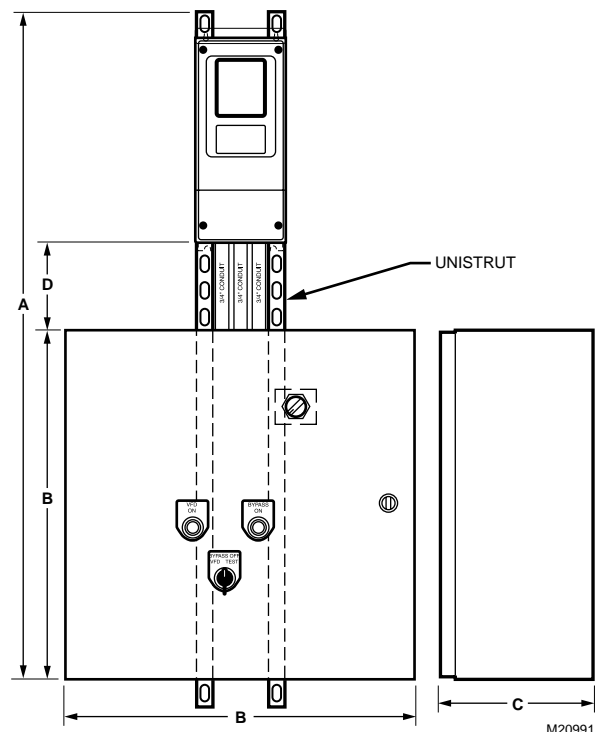
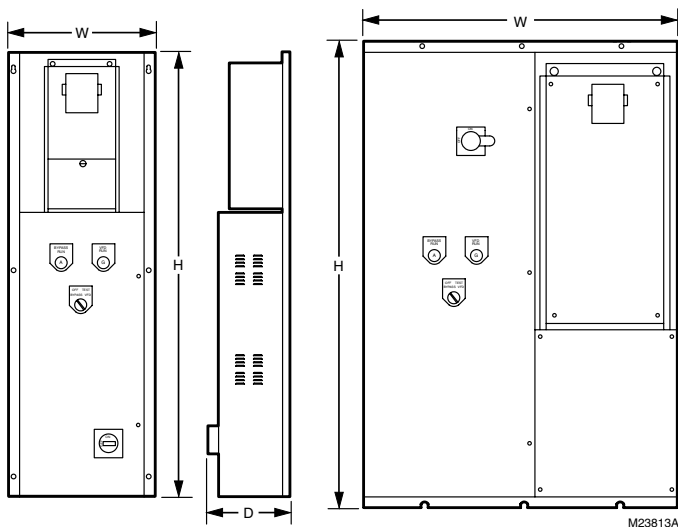
Type of RFI Filter: Industrial filter

Weight: 54 lb (118.8 kg)

Continuous Output Current: overload 1.5 x High overload current (1min/10min); overload 1.1 x Low overload current (1min/10min)

Starting Torque: 200% High; 150% Low

Peak Current: 2 x high overload current, 2 seconds every 20 seconds



Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Layout | Auto Bypass | Additional Features | Current Ratings | Approximate, Dimensions in. (mm) | Weight |
|--|------------|------------|--------------|-------------|---------------------|-----------------|---|-------------------|
| 208 Vac — Drive alone | | | | | | | | |
| NXBK0010CS30000000 | 1 HP | FR4 | Vertical | No | | 4.8A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBK0015CS30000000 | 1.5 HP | FR4 | Vertical | No | | 6.6A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBK0020CS30000000 | 2 HP | FR4 | Vertical | No | | 7.8A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBK0030CS30000000 | 3 HP | FR4 | Vertical | No | | 11A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBK0040CS30000000 | 4 HP | FR4 | Vertical | No | | 12.5A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBK0050CS30000000 | 5 HP | FR5 | Vertical | No | | 17.5A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBK0075CS30000000 | 7.5 HP | FR5 | Vertical | No | | 25A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBK0100CS30000000 | 10 HP | FR5 | Vertical | No | | 31A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBK0150CS30000000 | 15 HP | FR6 | Vertical | No | | 48A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBK0200CS30000000 | 20 HP | FR6 | Vertical | No | | 61A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBK0250CS30000000 | 25 HP | FR7 | Vertical | No | | 75A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBK0300CS30000000 | 30 HP | FR7 | Vertical | No | | 88A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBK0400CS30000000 | 40 HP | FR7 | Vertical | No | | 114A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| 208 Vac — Drive with 2 contactor bypass | | | | | | | | |
| NXBK0010CS10200000 | 1 HP | FR4 | Vertical | No | | 4.8A | 40H x 9.5D x 9.5W (1016H x 241D x 231W) | 43 lb (94.6 kg) |
| NXBK0010CS20200000 | 1 HP | FR4 | Vertical | No | | 4.8A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBK0010CS30200000 | 1 HP | FR4 | Vertical | No | | 4.8A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBK0015CS10200000 | 1.5 HP | FR4 | Vertical | No | | 6.6A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBK0015CS20200000 | 1.5 HP | FR4 | Vertical | No | | 6.6A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBK0020CS10200000 | 2 HP | FR4 | Vertical | No | | 7.8A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBK0020CS20200000 | 2 HP | FR4 | Vertical | No | | 7.8A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBK0020CS30200000 | 2 HP | FR4 | Vertical | No | | 7.8A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBK0030CS10200000 | 3 HP | FR4 | Vertical | No | | 0.46A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBK0030CS20200000 | 3 HP | FR4 | Vertical | No | | 0.46A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBK0040CS10200000 | 4 HP | FR4 | Vertical | No | | 12.5A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBK0040CS20200000 | 4 HP | FR4 | Vertical | No | | 12.5A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBK0050CS10200000 | 5 HP | FR5 | Vertical | No | | 17.5A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBK0050CS20200000 | 5 HP | FR5 | Vertical | No | | 17.5A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBK0075CS10200000 | 7.5 HP | FR5 | Vertical | No | | 25A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBK0075CS20200000 | 7.5 HP | FR5 | Vertical | No | | 25A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBK0075CS30200000 | 7.5 HP | FR5 | Vertical | No | | 25A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBK0100CS10200000 | 10 HP | FR5 | Vertical | No | | 31A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBK0100CS20200000 | 10 HP | FR5 | Vertical | No | | 31A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBK0150CS10200000 | 15 HP | FR6 | Vertical | No | | 48A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBK0150CS20200000 | 15 HP | FR6 | Vertical | No | | 48A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBK0200CS10200000 | 20 HP | FR6 | Vertical | No | | 61A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBK0200CS20200000 | 20 HP | FR6 | Vertical | No | | 61A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBK0250CS10200000 | 25 HP | FR7 | Vertical | No | | 75A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBK0250CS20200000 | 25 HP | FR7 | Vertical | No | | 75A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBK0250CS30200000 | 25 HP | FR7 | Vertical | No | | 75A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBK0300CS10200000 | 30 HP | FR7 | Vertical | No | | 88A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBK0300CS20200000 | 30 HP | FR7 | Vertical | No | | 88A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBK0400CS10200000 | 40 HP | FR8 | Side by Side | No | | 114A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBK0400CS20200000 | 40 HP | FR8 | Side by Side | No | | 114A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBK0500CS10200000 | 50 HP | FR8 | Side by Side | No | | 140A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBK0500CS20200000 | 50 HP | FR8 | Side by Side | No | | 140A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBK0600CS10200000 | 60 HP | FR8 | Side by Side | No | | 170A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBK0600CS20200000 | 60 HP | FR8 | Side by Side | No | | 170A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBK0600CS30200000 | 60 HP | FR8 | Side by Side | No | | 170A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| NXBK0750CS10200000 | 75 HP | FR8 | Side by Side | No | | 205A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBK0750CS20200000 | 75 HP | FR8 | Side by Side | No | | 205A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBK0750CS21200000 | 75 HP | FR8 | Side by Side | Yes | | 205A | 48H x 14D x 36W (1176H x 343D x 882W) | 350 lb (770 kg) |
| 208 Vac — Drive with 3 contactor bypass | | | | | | | | |
| NXBK0010CS103F1110 | 1 HP | FR4 | Vertical | No | | 4.8A | 40H x 9.5D x 9.5W (1016H x 241D x 231W) | 43 lb (94.6 kg) |
| NXBK0010CS113F1110 | 1 HP | FR4 | Vertical | Yes | | 4.8A | 40H x 9.5D x 9.5W (1016H x 241D x 231W) | 43 lb (94.6 kg) |
| NXBK0010CS203F1110 | 1 HP | FR4 | Vertical | No | | 4.8A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBK0010CS213F1110 | 1 HP | FR4 | Vertical | Yes | | 4.8A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBK0010CS303F1110 | 1 HP | FR4 | Vertical | No | | 4.8A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBK0010CS313F1110 | 1 HP | FR4 | Vertical | Yes | | 4.8A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBK0015CS103F1110 | 1.5 HP | FR4 | Vertical | No | | 6.6A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBK0015CS113F1110 | 1.5 HP | FR4 | Vertical | Yes | | 6.6A | 40H x 9.5D x 9.5W (1016H x 241D x 231W) | 43 lb (94.6 kg) |
| NXBK0015CS203F1110 | 1.5 HP | FR4 | Vertical | No | | 6.6A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Layout | Auto Bypass | Additional Features | Current Ratings | Approximate, Dimensions in. (mm) | Weight |
|--------------------|------------|------------|--------------|-------------|---------------------|-----------------|---|-------------------|
| NXBK0015CS213F1110 | 1.5 HP | FR4 | Vertical | Yes | | 6.6A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBK0015CS303F1110 | 1.5 HP | FR4 | Vertical | No | | 6.6A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBK0015CS313F1110 | 1.5 HP | FR4 | Vertical | Yes | | 6.6A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBK0020CS103F1110 | 2 HP | FR4 | Vertical | No | | 7.8A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBK0020CS113F1110 | 2 HP | FR4 | Vertical | Yes | | 7.8A | 40H x 9.5D x 9.5W (1016H x 241D x 231W) | 43 lb (94.6 kg) |
| NXBK0020CS203F1110 | 2 HP | FR4 | Vertical | No | | 7.8A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBK0020CS213F1110 | 2 HP | FR4 | Vertical | Yes | | 7.8A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBK0020CS303F1110 | 2 HP | FR4 | Vertical | No | | 7.8A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBK0020CS313F1110 | 2 HP | FR4 | Vertical | Yes | | 7.8A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBK0030CS103F1110 | 3 HP | FR4 | Vertical | No | | 0.46A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBK0030CS113F1110 | 3 HP | FR4 | Vertical | Yes | | 11A | 40H x 9.5D x 9.5W (1016H x 241D x 231W) | 43 lb (94.6 kg) |
| NXBK0030CS203F1110 | 3 HP | FR4 | Vertical | No | | 0.46A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBK0030CS213F1110 | 3 HP | FR4 | Vertical | Yes | | 11A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBK0030CS303F1110 | 3 HP | FR4 | Vertical | No | | 11A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBK0030CS313F1110 | 3 HP | FR4 | Vertical | Yes | | 11A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBK0040CS103F1110 | 4 HP | FR4 | Vertical | No | | 12.5A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBK0040CS113F1110 | 4 HP | FR4 | Vertical | Yes | | 12.5A | 40H x 9.5D x 9.5W (1016H x 241D x 231W) | 43 lb (94.6 kg) |
| NXBK0040CS203F1110 | 4 HP | FR4 | Vertical | No | | 12.5A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBK0040CS213F1110 | 4 HP | FR4 | Vertical | Yes | | 12.5A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBK0040CS303F1110 | 4 HP | FR4 | Vertical | No | | 12.5A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBK0040CS313F1110 | 4 HP | FR4 | Vertical | Yes | | 12.5A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBK0050CS103F1110 | 5 HP | FR5 | Vertical | No | | 17.5A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBK0050CS113F1110 | 5 HP | FR5 | Vertical | Yes | | 17.5A | 46H x 10.5D x 11W (1168H x 257D x 279W) | 62 lb (136.4 kg) |
| NXBK0050CS203F1110 | 5 HP | FR5 | Vertical | No | | 17.5A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBK0050CS213F1110 | 5 HP | FR5 | Vertical | Yes | | 17.5A | 36H x 10D x 16W (882H x 245D x 392W) | 64 lb (140.8 kg) |
| NXBK0050CS303F1110 | 5 HP | FR5 | Vertical | No | | 17.5A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBK0050CS313F1110 | 5 HP | FR5 | Vertical | Yes | | 17.5A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBK0075CS103F1110 | 7.5 HP | FR5 | Vertical | No | | 25A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBK0075CS113F1110 | 7.5 HP | FR5 | Vertical | Yes | | 25A | 46H x 10.5D x 11W (1168H x 257D x 279W) | 62 lb (136.4 kg) |
| NXBK0075CS203F1110 | 7.5 HP | FR5 | Vertical | No | | 25A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBK0075CS213F1110 | 7.5 HP | FR5 | Vertical | Yes | | 25A | 36H x 10D x 16W (882H x 245D x 392W) | 64 lb (140.8 kg) |
| NXBK0075CS303F1110 | 7.5 HP | FR5 | Vertical | No | | 25A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBK0075CS313F1110 | 7.5 HP | FR5 | Vertical | Yes | | 25A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBK0100CS103F1110 | 10 HP | FR5 | Vertical | No | | 31A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBK0100CS113F1110 | 10 HP | FR5 | Vertical | Yes | | 31A | 46H x 10.5D x 11W (1168H x 257D x 279W) | 62 lb (136.4 kg) |
| NXBK0100CS203F1110 | 10 HP | FR5 | Vertical | No | | 31A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBK0100CS213F1110 | 10 HP | FR5 | Vertical | Yes | | 31A | 44H x 10D x 16W (1078H x 245D x 392W) | 70 lb (154 kg) |
| NXBK0100CS303F1110 | 10 HP | FR5 | Vertical | No | | 31A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBK0100CS313F1110 | 10 HP | FR5 | Vertical | Yes | | 31A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBK0150CS103F1110 | 15 HP | FR6 | Vertical | No | | 48A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBK0150CS113F1110 | 15 HP | FR6 | Vertical | Yes | | 48A | 53H x 12D x 14W (1298H x 294D x 343W) | 99 lb (217.8 kg) |
| NXBK0150CS203F1110 | 15 HP | FR6 | Vertical | No | | 48A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBK0150CS213F1110 | 15 HP | FR6 | Vertical | Yes | | 48A | 50H x 10D x 16W (1225H x 245D x 392W) | 120 lb (264 kg) |
| NXBK0150CS313F1110 | 15 HP | FR6 | Vertical | Yes | | 48A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBK0200CS103F1110 | 20 HP | FR6 | Vertical | No | | 61A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBK0200CS113F1110 | 20 HP | FR6 | Vertical | Yes | | 61A | 53H x 12D x 14W (1298H x 294D x 343W) | 99 lb (217.8 kg) |
| NXBK0200CS203F1110 | 20 HP | FR6 | Vertical | No | | 61A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBK0200CS213F1110 | 20 HP | FR6 | Vertical | Yes | | 61A | 54H x 10D x 20W (1323H x 245D x 490W) | 136 lb (299.2 kg) |
| NXBK0200CS303F1110 | 20 HP | FR6 | Vertical | No | | 61A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBK0200CS313F1110 | 20 HP | FR6 | Vertical | Yes | | 61A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBK0250CS103F1110 | 25 HP | FR7 | Vertical | No | | 75A | 16 x 62 x 12 (400 x 1550 x 300) | 154 lb (69.8 kg) |
| NXBK0250CS113F1110 | 25 HP | FR7 | Vertical | Yes | | 75A | 62H x 13D x 16W (1574H x 339D x 406W) | 154 lb (338.8 kg) |
| NXBK0250CS213F1110 | 25 HP | FR7 | Vertical | Yes | | 75A | 58H x 10D x 20W (1421H x 245D x 490W) | 150 lb (330 kg) |
| NXBK0250CS303F1110 | 25 HP | FR7 | Vertical | No | | 75A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBK0250CS313F1110 | 25 HP | FR7 | Vertical | Yes | | 75A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBK0300CS103F1110 | 30 HP | FR7 | Vertical | No | | 88A | 16 x 62 x 12 (400 x 1550 x 300) | 154 lb (69.8 kg) |
| NXBK0300CS113F1110 | 30 HP | FR7 | Vertical | Yes | | 88A | 62H x 13D x 16W (1574H x 339D x 406W) | 154 lb (338.8 kg) |
| NXBK0300CS213F1110 | 30 HP | FR7 | Vertical | Yes | | 88A | 58H x 10D x 20W (1421H x 245D x 490W) | 150 lb (330 kg) |
| NXBK0300CS303F1110 | 30 HP | FR7 | Vertical | No | | 88A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBK0300CS313F1110 | 30 HP | FR7 | Vertical | Yes | | 88A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBK0400CS103F1110 | 40 HP | FR8 | Side by Side | No | | 114A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBK0400CS113F1110 | 40 HP | FR7 | Vertical | Yes | | 114A | 62H x 13D x 16W (1574H x 339D x 406W) | 154 lb (338.8 kg) |
| NXBK0400CS213F1110 | 40 HP | FR7 | Vertical | Yes | | 114A | 64H x 12D x 24W (1568H x 294D x 588W) | 200 lb (440 kg) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Layout | Auto Bypass | Additional Features | Current Ratings | Approximate, Dimensions in. (mm) | Weight |
|--|------------|--------------------|--------------|-------------|---------------------|-----------------|---|--|
| NXBK0400CS303F1110 | 40 HP | FR7 | Vertical | No | | 114A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBK0400CS313F1110 | 40 HP | FR7 | Vertical | Yes | | 114A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBK0500CS103F1110 | 50 HP | FR8 | Side by Side | No | | 140A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBK0500CS113F1110 | 50 HP | FR8 | Side by Side | Yes | | 140A | 54H x 16D x 36W (1350H x 400D x 900W) | 360 lb (792 kg) |
| NXBK0500CS213F1110 | 50 HP | FR8 | Side by Side | Yes | | 140A | 48H x 14D x 36W (1176H x 343D x 882W) | 350 lb (770 kg) |
| NXBK0500CS303F1110 | 50 HP | FR8 | Side by Side | No | | 140A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| NXBK0500CS313F1110 | 50 HP | FR8 | Side by Side | Yes | | 140A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| NXBK0600CS103F1110 | 60 HP | FR8 | Side by Side | No | | 170A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBK0600CS113F1110 | 60 HP | FR8 | Side by Side | Yes | | 170A | 54H x 16D x 36W (1350H x 400D x 900W) | 360 lb (792 kg) |
| NXBK0600CS213F1110 | 60 HP | FR8 | Side by Side | Yes | | 170A | 48H x 14D x 36W (1176H x 343D x 882W) | 350 lb (770 kg) |
| NXBK0600CS303F1110 | 60 HP | FR8 | Side by Side | No | | 170A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| NXBK0600CS313F1110 | 60 HP | FR8 | Side by Side | Yes | | 170A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| NXBK0750CS103F1110 | 75 HP | FR8 | Side by Side | No | | 205A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBK0750CS113F1110 | 75 HP | FR8 | Side by Side | Yes | | 205A | 54H x 16D x 36W (1350H x 400D x 900W) | 360 lb (792 kg) |
| NXBK0750CS213F1110 | 75 HP | FR8 | Side by Side | Yes | | 205A | 48H x 14D x 36W (1176H x 343D x 882W) | 350 lb (770 kg) |
| NXBK0750CS303F1110 | 75 HP | FR8 | Side by Side | No | | 205A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| NXBK0750CS313F1110 | 75 HP | FR8 | Side by Side | Yes | | 205A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| 208 Vac — Drive with Fused Disconnect | | | | | | | | |
| NXBK0010DS100F0000 | 1 HP | FR4 | Vertical | No | | 4.8A | 40H x 9.5D x 9.5W (1016H x 241D x 231W) | 43 lb (94.6 kg) |
| NXBK0010DS200F0000 | 1 HP | FR4 | Vertical | No | | 4.8A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBK0010DS300F0000 | 1 HP | FR4 | Vertical | No | | 4.8A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBK0015DS100F0000 | 1.5 HP | Call Customer Care | Vertical | No | | 6.6A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0015DS200F0000 | 1.5 HP | Call Customer Care | Vertical | No | | 6.6A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0015DS300F0000 | 1.5 HP | Call Customer Care | Vertical | No | | 6.6A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0020DS100F0000 | 2 HP | Call Customer Care | Vertical | No | | 7.8A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0020DS200F0000 | 2 HP | Call Customer Care | Vertical | No | | 7.8A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0020DS300F0000 | 2 HP | Call Customer Care | Vertical | No | | 7.8A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0030DS100F0000 | 3 HP | Call Customer Care | Vertical | No | | 0.46A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0030DS200F0000 | 3 HP | Call Customer Care | Vertical | No | | 0.46A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0030DS300F0000 | 3 HP | Call Customer Care | Vertical | No | | 0.46A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0040DS100F0000 | 4 HP | Call Customer Care | Vertical | No | | 12.5A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0040DS200F0000 | 4 HP | Call Customer Care | Vertical | No | | 12.5A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0040DS300F0000 | 4 HP | Call Customer Care | Vertical | No | | 12.5A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0050DS100F0000 | 5 HP | Call Customer Care | Vertical | No | | 17.5A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0050DS200F0000 | 5 HP | Call Customer Care | Vertical | No | | 17.5A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0050DS300F0000 | 5 HP | Call Customer Care | Vertical | No | | 17.5A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0075DS100F0000 | 7.5 HP | FR5 | Vertical | No | | 25A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBK0075DS200F0000 | 7.5 HP | Call Customer Care | Vertical | No | | 25A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0075DS300F0000 | 7.5 HP | Call Customer Care | Vertical | No | | 25A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0100DS100F0000 | 10 HP | Call Customer Care | Vertical | No | | 31A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0100DS200F0000 | 10 HP | Call Customer Care | Vertical | No | | 31A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0100DS300F0000 | 10 HP | Call Customer Care | Vertical | No | | 31A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0150DS100F0000 | 15 HP | Call Customer Care | Vertical | No | | 48A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0150DS200F0000 | 15 HP | Call Customer Care | Vertical | No | | 48A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0150DS300F0000 | 15 HP | Call Customer Care | Vertical | No | | 48A | Contact Customer Care | Contact Customer Care (Call Customer Care) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Layout | Auto Bypass | Additional Features | Current Ratings | Approximate, Dimensions in. (mm) | Weight |
|--|------------|--------------------|--------------|-------------|---------------------|-----------------|---|--|
| NXBK0200DS100F0000 | 20 HP | Call Customer Care | Vertical | No | | 61A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0200DS200F0000 | 20 HP | Call Customer Care | Vertical | No | | 61A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0200DS300F0000 | 20 HP | Call Customer Care | Vertical | No | | 61A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0250DS100F0000 | 25 HP | Call Customer Care | Vertical | No | | 75A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0250DS200F0000 | 25 HP | Call Customer Care | Vertical | No | | 75A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0250DS300F0000 | 25 HP | Call Customer Care | Vertical | No | | 75A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0300DS100F0000 | 30 HP | Call Customer Care | Vertical | No | | 88A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0300DS200F0000 | 30 HP | Call Customer Care | Vertical | No | | 88A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0300DS300F0000 | 30 HP | Call Customer Care | Vertical | No | | 88A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0400DS100F0000 | 40 HP | Call Customer Care | Side by Side | No | | 114A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0400DS200F0000 | 40 HP | Call Customer Care | Side by Side | No | | 114A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0400DS300F0000 | 40 HP | Call Customer Care | Side by Side | No | | 114A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0500DS100F0000 | 50 HP | Call Customer Care | Side by Side | No | | 140A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0500DS200F0000 | 50 HP | Call Customer Care | Side by Side | No | | 140A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0500DS300F0000 | 50 HP | Call Customer Care | Side by Side | No | | 140A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0600DS100F0000 | 60 HP | Call Customer Care | Side by Side | No | | 170A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0600DS200F0000 | 60 HP | Call Customer Care | Side by Side | No | | 170A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0600DS300F0000 | 60 HP | Call Customer Care | Side by Side | No | | 170A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0750DS100F0000 | 75 HP | Call Customer Care | Side by Side | No | | 205A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0750DS200F0000 | 75 HP | Call Customer Care | Side by Side | No | | 205A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBK0750DS300F0000 | 75 HP | Call Customer Care | Side by Side | No | | 205A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| 230 Vac — Drive alone | | | | | | | | |
| NXBS0010CS30000000 | 1 HP | FR4 | Vertical | No | | 4.8A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBS0015CS30000000 | 1.5 HP | FR4 | Vertical | No | | 6.6A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBS0020CS30000000 | 2 HP | FR4 | Vertical | No | | 7.8A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBS0030CS30000000 | 3 HP | FR4 | Vertical | No | | 11A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBS0040CS30000000 | 4 HP | FR4 | Vertical | No | | 12.5A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBS0050CS30000000 | 5 HP | FR5 | Vertical | No | | 17.5A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBS0075CS30000000 | 7.5 HP | FR5 | Vertical | No | | 25A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBS0100CS30000000 | 10 HP | FR5 | Vertical | No | | 31A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBS0150CS30000000 | 15 HP | FR6 | Vertical | No | | 48A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBS0200CS30000000 | 20 HP | FR6 | Vertical | No | | 61A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBS0250CS30000000 | 25 HP | FR7 | Vertical | No | | 75A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBS0300CS30000000 | 30 HP | FR7 | Vertical | No | | 88A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBS0400CS30000000 | 40 HP | FR7 | Vertical | No | | 114A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| 230 Vac — Drive with 2 contactor bypass | | | | | | | | |
| NXBS0010CS10200000 | 1 HP | FR4 | Vertical | No | | 4.8A | 40H x 9.5D x 9.5W (1016H x 241D x 231W) | 43 lb (94.6 kg) |
| NXBS0010CS20200000 | 1 HP | FR4 | Vertical | No | | 4.8A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBS0010CS30200000 | 1 HP | FR4 | Vertical | No | | 4.8A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBS0015CS10200000 | 1.5 HP | FR4 | Vertical | No | | 6.6A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBS0015CS20200000 | 1.5 HP | FR4 | Vertical | No | | 6.6A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBS0015CS30200000 | 1.5 HP | FR4 | Vertical | No | | 6.6A | 20 x 24 x 10 (500 x 600 x 250) | 54 lb (24.5 kg) |
| NXBS0020CS10200000 | 2 HP | FR4 | Vertical | No | | 7.8A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBS0020CS20200000 | 2 HP | FR4 | Vertical | No | | 7.8A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBS0020CS30200000 | 2 HP | FR4 | Vertical | No | | 7.8A | 20 x 24 x 10 (500 x 600 x 250) | 54 lb (24.5 kg) |
| NXBS0030CS10200000 | 3 HP | FR4 | Vertical | No | | 11A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Layout | Auto Bypass | Additional Features | Current Ratings | Approximate, Dimensions in. (mm) | Weight |
|--|------------|------------|--------------|-------------|---------------------|-----------------|---|-------------------|
| NXBS0030CS20200000 | 3 HP | FR4 | Vertical | No | | 11A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBS0030CS30200000 | 3 HP | FR4 | Vertical | No | | 11A | 20 x 24 x 10 (500 x 600 x 250) | 54 lb (24.5 kg) |
| NXBS0040CS10200000 | 4 HP | FR4 | Vertical | No | | 12.5A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBS0040CS20200000 | 4 HP | FR4 | Vertical | No | | 12.5A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBS0050CS10200000 | 5 HP | FR5 | Vertical | No | | 17.5A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBS0050CS20200000 | 5 HP | FR5 | Vertical | No | | 17.5A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBS0075CS10200000 | 7.5 HP | FR5 | Vertical | No | | 25A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBS0075CS20200000 | 7.5 HP | FR5 | Vertical | No | | 25A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBS0100CS10200000 | 10 HP | FR5 | Vertical | No | | 31A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBS0100CS20200000 | 10 HP | FR5 | Vertical | No | | 31A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBS0100CS30200000 | 10 HP | FR5 | Vertical | No | | 31A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBS0150CS10200000 | 15 HP | FR6 | Vertical | No | | 48A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBS0150CS20200000 | 15 HP | FR6 | Vertical | No | | 48A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBS0200CS10200000 | 20 HP | FR6 | Vertical | No | | 61A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBS0200CS20200000 | 20 HP | FR6 | Vertical | No | | 61A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBS0250CS10200000 | 25 HP | FR7 | Vertical | No | | 75A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBS0250CS20200000 | 25 HP | FR7 | Vertical | No | | 75A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBS0300CS10200000 | 30 HP | FR7 | Vertical | No | | 88A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBS0300CS20200000 | 30 HP | FR7 | Vertical | No | | 88A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBS0300CS30200000 | 30 HP | FR7 | Vertical | No | | 88A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (82.6 kg) |
| NXBS0400CS10200000 | 40 HP | FR8 | Side by Side | No | | 114A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBS0400CS20200000 | 40 HP | FR8 | Side by Side | No | | 114A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBS0500CS10200000 | 50 HP | FR8 | Side by Side | No | | 140A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBS0500CS20200000 | 50 HP | FR8 | Side by Side | No | | 140A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBS0600CS10200000 | 60 HP | FR8 | Side by Side | No | | 170A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBS0600CS20200000 | 60 HP | FR8 | Side by Side | No | | 170A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBS0750CS10200000 | 75 HP | FR8 | Side by Side | No | | 205A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBS0750CS20200000 | 75 HP | FR8 | Side by Side | No | | 205A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBS0750CS30200000 | 75 HP | FR8 | Side by Side | No | | 205A | 60 x 12 x 34 (152 x 30.5 x 86) | 440 lb (199.5 kg) |
| 230 Vac — Drive with 3 contactor bypass | | | | | | | | |
| NXBS0010CS103F1110 | 1 HP | FR4 | Vertical | No | | 4.8A | 40H x 9.5D x 9.5W (1016H x 241D x 231W) | 43 lb (94.6 kg) |
| NXBS0010CS113F1110 | 1 HP | FR4 | Vertical | Yes | | 4.8A | 40H x 9.5D x 9.5W (1016H x 241D x 231W) | 43 lb (94.6 kg) |
| NXBS0010CS203F1110 | 1 HP | FR4 | Vertical | No | | 4.8A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBS0010CS213F1110 | 1 HP | FR4 | Vertical | Yes | | 4.8A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBS0010CS303F1110 | 1 HP | FR4 | Vertical | No | | 4.8A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBS0010CS313F1110 | 1 HP | FR4 | Vertical | Yes | | 4.8A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBS0015CS103F1110 | 1.5 HP | FR4 | Vertical | No | | 6.6A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBS0015CS113F1110 | 1.5 HP | FR4 | Vertical | Yes | | 6.6A | 40H x 9.5D x 9.5W (1016H x 241D x 231W) | 43 lb (94.6 kg) |
| NXBS0015CS203F1110 | 1.5 HP | FR4 | Vertical | No | | 6.6A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBS0015CS213F1110 | 1.5 HP | FR4 | Vertical | Yes | | 6.6A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBS0015CS303F1110 | 1.5 HP | FR4 | Vertical | No | | 6.6A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBS0015CS313F1110 | 1.5 HP | FR4 | Vertical | Yes | | 6.6A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBS0020CS103F1110 | 2 HP | FR4 | Vertical | No | | 7.8A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBS0020CS113F1110 | 2 HP | FR4 | Vertical | Yes | | 7.8A | 40H x 9.5D x 9.5W (1016H x 241D x 231W) | 43 lb (94.6 kg) |
| NXBS0020CS203F1110 | 2 HP | FR4 | Vertical | No | | 7.8A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBS0020CS213F1110 | 2 HP | FR4 | Vertical | Yes | | 7.8A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBS0020CS303F1110 | 2 HP | FR4 | Vertical | No | | 7.8A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBS0020CS313F1110 | 2 HP | FR4 | Vertical | Yes | | 7.8A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBS0030CS103F1110 | 3 HP | FR4 | Vertical | No | | 11A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBS0030CS113F1110 | 3 HP | FR4 | Vertical | Yes | | 11A | 40H x 9.5D x 9.5W (1016H x 241D x 231W) | 43 lb (94.6 kg) |
| NXBS0030CS203F1110 | 3 HP | FR4 | Vertical | No | | 11A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBS0030CS213F1110 | 3 HP | FR4 | Vertical | Yes | | 11A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBS0030CS303F1110 | 3 HP | FR4 | Vertical | No | | 11A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBS0030CS313F1110 | 3 HP | FR4 | Vertical | Yes | | 11A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBS0040CS103F1110 | 4 HP | FR4 | Vertical | No | | 12.5A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBS0040CS113F1110 | 4 HP | FR4 | Vertical | Yes | | 12.5A | 40H x 9.5D x 9.5W (1016H x 241D x 231W) | 43 lb (94.6 kg) |
| NXBS0040CS203F1110 | 4 HP | FR4 | Vertical | No | | 12.5A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBS0040CS213F1110 | 4 HP | FR4 | Vertical | Yes | | 12.5A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBS0040CS303F1110 | 4 HP | FR4 | Vertical | No | | 12.5A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBS0040CS313F1110 | 4 HP | FR4 | Vertical | Yes | | 12.5A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBS0050CS103F1110 | 5 HP | FR5 | Vertical | No | | 17.5A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBS0050CS113F1110 | 5 HP | FR5 | Vertical | Yes | | 17.5A | 46H x 10.5D x 11W (1168H x 257D x 279W) | 62 lb (136.4 kg) |
| NXBS0050CS203F1110 | 5 HP | FR5 | Vertical | No | | 17.5A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Layout | Auto Bypass | Additional Features | Current Ratings | Approximate, Dimensions in. (mm) | Weight |
|--|------------|--------------------|--------------|-------------|---------------------|-----------------|---|--|
| NXBS0050CS213F1110 | 5 HP | FR5 | Vertical | Yes | | 17.5A | 36H x 10D x 16W (882H x 245D x 392W) | 64 lb (140.8 kg) |
| NXBS0050CS303F1110 | 5 HP | FR5 | Vertical | No | | 17.5A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBS0050CS313F1110 | 5 HP | FR5 | Vertical | Yes | | 17.5A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBS0075CS103F1110 | 7.5 HP | FR5 | Vertical | No | | 25A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBS0075CS113F1110 | 7.5 HP | FR5 | Vertical | Yes | | 25A | 46H x 10.5D x 11W (1168H x 257D x 279W) | 62 lb (136.4 kg) |
| NXBS0075CS203F1110 | 7.5 HP | FR5 | Vertical | No | | 25A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBS0075CS213F1110 | 7.5 HP | FR5 | Vertical | Yes | | 25A | 36H x 10D x 16W (882H x 245D x 392W) | 64 lb (140.8 kg) |
| NXBS0075CS303F1110 | 7.5 HP | FR5 | Vertical | No | | 25A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBS0075CS313F1110 | 7.5 HP | FR5 | Vertical | Yes | | 25A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBS0100CS103F1110 | 10 HP | FR5 | Vertical | No | | 31A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBS0100CS113F1110 | 10 HP | FR5 | Vertical | Yes | | 31A | 46H x 10.5D x 11W (1168H x 257D x 279W) | 62 lb (136.4 kg) |
| NXBS0100CS203F1110 | 10 HP | FR5 | Vertical | No | | 31A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBS0100CS213F1110 | 10 HP | FR5 | Vertical | Yes | | 31A | 44H x 10D x 16W (1078H x 245D x 392W) | 70 lb (154 kg) |
| NXBS0100CS303F1110 | 10 HP | FR5 | Vertical | No | | 31A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBS0100CS313F1110 | 10 HP | FR5 | Vertical | Yes | | 31A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBS0150CS103F1110 | 15 HP | FR6 | Vertical | No | | 48A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBS0150CS113F1110 | 15 HP | FR6 | Vertical | Yes | | 48A | 53H x 12D x 14W (1298H x 294D x 343W) | 99 lb (217.8 kg) |
| NXBS0150CS203F1110 | 15 HP | FR6 | Vertical | No | | 48A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBS0150CS213F1110 | 15 HP | FR6 | Vertical | Yes | | 48A | 50H x 10D x 16W (1225H x 245D x 392W) | 120 lb (264 kg) |
| NXBS0150CS303F1110 | 15 HP | FR6 | Vertical | No | | 48A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBS0150CS313F1110 | 15 HP | FR6 | Vertical | Yes | | 48A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBS0200CS103F1110 | 20 HP | FR6 | Vertical | No | | 61A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBS0200CS113F1110 | 20 HP | FR6 | Vertical | Yes | | 61A | 53H x 12D x 14W (1298H x 294D x 343W) | 99 lb (217.8 kg) |
| NXBS0200CS203F1110 | 20 HP | FR6 | Vertical | No | | 61A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBS0200CS213F1110 | 20 HP | FR6 | Vertical | Yes | | 61A | 54H x 10D x 20W (1323H x 245D x 490W) | 136 lb (299.2 kg) |
| NXBS0200CS303F1110 | 20 HP | FR6 | Vertical | No | | 61A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBS0200CS313F1110 | 20 HP | FR6 | Vertical | Yes | | 61A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBS0250CS103F1110 | 25 HP | FR7 | Vertical | No | | 75A | 16 x 62 x 12 (400 x 1550 x 300) | 154 lb (69.8 kg) |
| NXBS0250CS113F1110 | 25 HP | FR7 | Vertical | Yes | | 75A | 62H x 13D x 16W (1574H x 339D x 406W) | 154 lb (338.8 kg) |
| NXBS0250CS213F1110 | 25 HP | FR7 | Vertical | Yes | | 75A | 58H x 10D x 20W (1421H x 245D x 490W) | 150 lb (330 kg) |
| NXBS0250CS303F1110 | 25 HP | FR7 | Vertical | No | | 75A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBS0250CS313F1110 | 25 HP | FR7 | Vertical | Yes | | 75A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBS0300CS103F1110 | 30 HP | FR7 | Vertical | No | | 88A | 16 x 62 x 12 (400 x 1550 x 300) | 154 lb (69.8 kg) |
| NXBS0300CS113F1110 | 30 HP | FR7 | Vertical | Yes | | 88A | 62H x 13D x 16W (1574H x 339D x 406W) | 154 lb (338.8 kg) |
| NXBS0300CS213F1110 | 30 HP | FR7 | Vertical | Yes | | 88A | 58H x 10D x 20W (1421H x 245D x 490W) | 150 lb (330 kg) |
| NXBS0300CS303F1110 | 30 HP | FR7 | Vertical | No | | 88A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBS0300CS313F1110 | 30 HP | FR7 | Vertical | Yes | | 88A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBS0400CS103F1110 | 40 HP | FR8 | Side by Side | No | | 114A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBS0400CS113F1110 | 40 HP | FR7 | Vertical | Yes | | 114A | 62H x 13D x 16W (1574H x 339D x 406W) | 154 lb (338.8 kg) |
| NXBS0400CS213F1110 | 40 HP | FR7 | Vertical | Yes | | 114A | 64H x 12D x 24W (1568H x 294D x 588W) | 200 lb (440 kg) |
| NXBS0400CS303F1110 | 40 HP | FR7 | Vertical | No | | 114A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBS0400CS313F1110 | 40 HP | FR7 | Vertical | Yes | | 114A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBS0500CS103F1110 | 50 HP | FR8 | Side by Side | No | | 140A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBS0500CS113F1110 | 50 HP | FR8 | Side by Side | Yes | | 140A | 54H x 16D x 36W (1350H x 400D x 900W) | 360 lb (792 kg) |
| NXBS0500CS213F1110 | 50 HP | FR8 | Side by Side | Yes | | 140A | 48H x 14D x 36W (1176H x 343D x 882W) | 350 lb (770 kg) |
| NXBS0500CS303F1110 | 50 HP | FR8 | Side by Side | No | | 140A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| NXBS0500CS313F1110 | 50 HP | FR8 | Side by Side | Yes | | 140A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| NXBS0600CS103F1110 | 60 HP | FR8 | Side by Side | No | | 170A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBS0600CS113F1110 | 60 HP | FR8 | Side by Side | Yes | | 170A | 54H x 16D x 36W (1350H x 400D x 900W) | 360 lb (792 kg) |
| NXBS0600CS213F1110 | 60 HP | FR8 | Side by Side | Yes | | 170A | 48H x 14D x 36W (1176H x 343D x 882W) | 350 lb (770 kg) |
| NXBS0600CS303F1110 | 60 HP | FR8 | Side by Side | No | | 170A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| NXBS0600CS313F1110 | 60 HP | FR8 | Side by Side | Yes | | 170A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| NXBS0750CS103F1110 | 75 HP | FR8 | Side by Side | No | | 205A | 36 x 54 x 16 (914.4 x 1371.6 x 406.4) | 360 lb (163.3 kg) |
| NXBS0750CS113F1110 | 75 HP | FR8 | Side by Side | Yes | | 205A | 54H x 16D x 36W (1350H x 400D x 900W) | 360 lb (792 kg) |
| NXBS0750CS213F1110 | 75 HP | FR8 | Side by Side | Yes | | 205A | 48H x 14D x 36W (1176H x 343D x 882W) | 350 lb (770 kg) |
| NXBS0750CS303F1110 | 75 HP | FR8 | Side by Side | No | | 205A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| NXBS0750CS313F1110 | 75 HP | FR8 | Side by Side | Yes | | 205A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| 230 Vac — Drive with Fused Disconnect | | | | | | | | |
| NXBS0010DS100F0000 | 1 HP | FR4 | Vertical | No | | 4.8A | 40H x 9.5D x 9.5W (1016H x 241D x 231W) | 43 lb (94.6 kg) |
| NXBS0010DS200F0000 | 1 HP | FR4 | Vertical | No | | 4.8A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBS0010DS300F0000 | 1 HP | FR4 | Vertical | No | | 4.8A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBS0015DS100F0000 | 1.5 HP | Call Customer Care | Vertical | No | | 6.6A | Contact Customer Care | Contact Customer Care (Call Customer Care) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Layout | Auto Bypass | Additional Features | Current Ratings | Approximate, Dimensions in. (mm) | Weight |
|--------------------|------------|--------------------|--------------|-------------|---------------------|-----------------|-------------------------------------|--|
| NXBS0015DS200F0000 | 1.5 HP | Call Customer Care | Vertical | No | | 6.6A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0015DS300F0000 | 1.5 HP | Call Customer Care | Vertical | No | | 6.6A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0020DS100F0000 | 2 HP | Call Customer Care | Vertical | No | | 7.8A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0020DS200F0000 | 2 HP | Call Customer Care | Vertical | No | | 7.8A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0020DS300F0000 | 2 HP | Call Customer Care | Vertical | No | | 7.8A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0030DS100F0000 | 3 HP | FR4 | Vertical | No | | 11A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBS0030DS200F0000 | 3 HP | Call Customer Care | Vertical | No | | 11A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0030DS300F0000 | 3 HP | Call Customer Care | Vertical | No | | 11A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0040DS100F0000 | 4 HP | Call Customer Care | Vertical | No | | 12.5A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0040DS200F0000 | 4 HP | Call Customer Care | Vertical | No | | 12.5A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0040DS300F0000 | 4 HP | Call Customer Care | Vertical | No | | 12.5A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0050DS100F0000 | 5 HP | Call Customer Care | Vertical | No | | 17.5A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0050DS200F0000 | 5 HP | Call Customer Care | Vertical | No | | 17.5A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0050DS300F0000 | 5 HP | Call Customer Care | Vertical | No | | 17.5A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0075DS100F0000 | 7.5 HP | Call Customer Care | Vertical | No | | 25A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0075DS200F0000 | 7.5 HP | Call Customer Care | Vertical | No | | 25A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0075DS300F0000 | 7.5 HP | Call Customer Care | Vertical | No | | 25A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0100DS100F0000 | 10 HP | Call Customer Care | Vertical | No | | 31A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0100DS200F0000 | 10 HP | Call Customer Care | Vertical | No | | 31A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0100DS300F0000 | 10 HP | Call Customer Care | Vertical | No | | 31A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0150DS100F0000 | 15 HP | Call Customer Care | Vertical | No | | 48A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0150DS200F0000 | 15 HP | Call Customer Care | Vertical | No | | 48A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0150DS300F0000 | 15 HP | Call Customer Care | Vertical | No | | 48A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0200DS100F0000 | 20 HP | FR5 | Vertical | No | | 61A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBS0200DS200F0000 | 20 HP | Call Customer Care | Vertical | No | | 61A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0200DS300F0000 | 20 HP | Call Customer Care | Vertical | No | | 61A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0250DS100F0000 | 25 HP | Call Customer Care | Vertical | No | | 75A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0250DS200F0000 | 25 HP | Call Customer Care | Vertical | No | | 75A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0250DS300F0000 | 25 HP | Call Customer Care | Vertical | No | | 75A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0300DS100F0000 | 30 HP | Call Customer Care | Vertical | No | | 88A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0300DS200F0000 | 30 HP | Call Customer Care | Vertical | No | | 88A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0300DS300F0000 | 30 HP | Call Customer Care | Vertical | No | | 88A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0400DS100F0000 | 40 HP | Call Customer Care | Vertical | No | | 114A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0400DS200F0000 | 40 HP | Call Customer Care | Vertical | No | | 114A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0400DS300F0000 | 40 HP | Call Customer Care | Vertical | No | | 114A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0500DS100F0000 | 50 HP | Call Customer Care | Side by Side | No | | 140A | Contact Customer Care | Contact Customer Care (Call Customer Care) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Layout | Auto Bypass | Additional Features | Current Ratings | Approximate, Dimensions in. (mm) | Weight |
|--|------------|--------------------|--------------|-------------|---------------------|-----------------|---------------------------------------|--|
| NXBS0500DS200F0000 | 50 HP | Call Customer Care | Side by Side | No | | 140A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0500DS300F0000 | 50 HP | Call Customer Care | Side by Side | No | | 140A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0600DS100F0000 | 60 HP | Call Customer Care | Side by Side | No | | 170A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0600DS200F0000 | 60 HP | Call Customer Care | Side by Side | No | | 170A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0600DS300F0000 | 60 HP | Call Customer Care | Side by Side | No | | 170A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0750DS100F0000 | 75 HP | Call Customer Care | Side by Side | No | | 205A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0750DS200F0000 | 75 HP | Call Customer Care | Side by Side | No | | 205A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBS0750DS300F0000 | 75 HP | Call Customer Care | Side by Side | No | | 205A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| 460 Vac — Drive alone | | | | | | | | |
| NXBJ0015CS30000000 | 1.5 HP | FR4 | Vertical | No | | 3.3A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBJ0020CS30000000 | 2 HP | FR4 | Vertical | No | | 4.3A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBJ0030CS30000000 | 3 HP | FR4 | Vertical | No | | 5.6A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBJ0040CS30000000 | 4 HP | FR4 | Vertical | No | | 7.6A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBJ0050CS30000000 | 5 HP | FR4 | Vertical | No | | 9A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBJ0075CS30000000 | 7.5 HP | FR4 | Vertical | No | | 12A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBJ0100CS30000000 | 10 HP | FR5 | Vertical | No | | 16A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBJ0150CS30000000 | 15 HP | FR5 | Vertical | No | | 23A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBJ0200CS30000000 | 20 HP | FR5 | Vertical | No | | 31A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBJ0250CS30000000 | 25 HP | FR6 | Vertical | No | | 38A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBJ0300CS30000000 | 30 HP | FR6 | Vertical | No | | 46A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBJ0400CS30000000 | 40 HP | FR6 | Vertical | No | | 61A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBJ0500CS30000000 | 50 HP | FR7 | Vertical | No | | 72A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBJ0600CS30000000 | 60 HP | FR7 | Vertical | No | | 87A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBJ0750CS30000000 | 75 HP | FR7 | Vertical | No | | 105A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| 460 Vac — Drive with 2 contactor bypass | | | | | | | | |
| NXBJ0015CS20200000 | 1.5 HP | FR4 | Vertical | No | | 3.3A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0020CS10200000 | 2 HP | FR4 | Vertical | No | | 4.3A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0020CS20200000 | 2 HP | FR4 | Vertical | No | | 4.3A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0030CS10200000 | 3 HP | FR4 | Vertical | No | | 5.6A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0030CS20200000 | 3 HP | FR4 | Vertical | No | | 5.6A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0040CS10200000 | 4 HP | FR4 | Vertical | No | | 7.6A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0040CS20200000 | 4 HP | FR4 | Vertical | No | | 7.6A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0050CS10200000 | 5 HP | FR4 | Vertical | No | | 0.37A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0050CS20200000 | 5 HP | FR4 | Vertical | No | | 0.37A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0050CS30200000 | 5 HP | FR4 | Vertical | No | | 0.37A | 20 x 24 x 10 (500 x 600 x 250) | 54 lb (24.5 kg) |
| NXBJ0075CS10200000 | 7.5 HP | FR4 | Vertical | No | | | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0075CS20200000 | 7.5 HP | FR4 | Vertical | No | | | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0100CS10200000 | 10 HP | FR5 | Vertical | No | | 16A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBJ0100CS20200000 | 10 HP | FR5 | Vertical | No | | 16A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBJ0150CS10200000 | 15 HP | FR5 | Vertical | No | | 23A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBJ0150CS20200000 | 15 HP | FR5 | Vertical | No | | 23A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBJ0150CS30200000 | 15 HP | FR5 | Vertical | No | | 23A | 24 x 30 x 10 (600 x 750 x 250) | 78 lb (35.4 kg) |
| NXBJ0200CS10200000 | 20 HP | FR5 | Vertical | No | | 31A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBJ0200CS20200000 | 20 HP | FR5 | Vertical | No | | 31A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBJ0250CS10200000 | 25 HP | FR6 | Vertical | No | | 38A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBJ0250CS20200000 | 25 HP | FR6 | Vertical | No | | 38A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBJ0300CS10200000 | 30 HP | FR6 | Vertical | No | | 46A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBJ0300CS20200000 | 30 HP | FR6 | Vertical | No | | 46A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBJ0300CS30200000 | 30 HP | FR6 | Vertical | No | | 46A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBJ0400CS10200000 | 40 HP | FR6 | Vertical | No | | 61A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBJ0400CS20200000 | 40 HP | FR6 | Vertical | No | | 61A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBJ0500CS10200000 | 50 HP | FR7 | Vertical | No | | 72A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBJ0500CS20200000 | 50 HP | FR7 | Vertical | No | | 72A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBJ0600CS10200000 | 60 HP | FR7 | Vertical | No | | 87A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBJ0600CS20200000 | 60 HP | FR7 | Vertical | No | | 87A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBJ0600CS30200000 | 60 HP | FR7 | Vertical | No | | 87A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBJ0750CS10200000 | 75 HP | FR7 | Vertical | No | | 105A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Layout | Auto Bypass | Additional Features | Current Ratings | Approximate, Dimensions in. (mm) | Weight |
|--|------------|------------|--------------|-------------|---------------------|-----------------|---|-------------------|
| NXBJ0750CS20200000 | 75 HP | FR7 | Vertical | No | | 105A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBJ1000CS10200000 | 100 HP | FR8 | Side by Side | No | | 140A | 36 x 54 x 16 (900 x 1350 x 400) | 360 lb (163.3 kg) |
| NXBJ1000CS20200000 | 100 HP | FR8 | Side by Side | No | | 140A | 36 x 54 x 16 (900 x 1350 x 400) | 360 lb (163.3 kg) |
| NXBJ1250CS10200000 | 125 HP | FR8 | Side by Side | No | | 170A | 36 x 54 x 16 (900 x 1350 x 400) | 360 lb (163.3 kg) |
| NXBJ1250CS20200000 | 125 HP | FR8 | Side by Side | No | | 170A | 36 x 54 x 16 (900 x 1350 x 400) | 360 lb (163.3 kg) |
| NXBJ1500CS10200000 | 150 HP | FR8 | Side by Side | No | | 205A | 36 x 54 x 16 (900 x 1350 x 400) | 360 lb (163.3 kg) |
| NXBJ1500CS20200000 | 150 HP | FR8 | Side by Side | No | | 205A | 36 x 54 x 16 (900 x 1350 x 400) | 360 lb (163.3 kg) |
| NXBJ1500CS30200000 | 150 HP | FR8 | Side by Side | No | | 205A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| 460 Vac — Drive with 3 contactor bypass | | | | | | | | |
| NXBJ0015CS103F1110 | 1.5 HP | FR4 | Vertical | No | | 3.3A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0015CS113F1110 | 1.5 HP | FR4 | Vertical | Yes | | 3.3A | 40H x 9.5D x 9.5W (1016H x 241D x 231W) | 43 lb (94.6 kg) |
| NXBJ0015CS203F1110 | 1.5 HP | FR4 | Vertical | No | | 3.3A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0015CS213F1110 | 1.5 HP | FR4 | Vertical | Yes | | 3.3A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBJ0015CS303F1110 | 1.5 HP | FR4 | Vertical | No | | 3.3A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBJ0015CS313F1110 | 1.5 HP | FR4 | Vertical | Yes | | 3.3A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBJ0020CS103F1110 | 2 HP | FR4 | Vertical | No | | 4.3A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0020CS113F1110 | 2 HP | FR4 | Vertical | Yes | | 4.3A | 40H x 9.5D x 9.5W (1016H x 241D x 231W) | 43 lb (94.6 kg) |
| NXBJ0020CS203F1110 | 2 HP | FR4 | Vertical | No | | 4.3A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0020CS213F1110 | 2 HP | FR4 | Vertical | Yes | | 4.3A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBJ0020CS303F1110 | 2 HP | FR4 | Vertical | No | | 4.3A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBJ0020CS313F1110 | 2 HP | FR4 | Vertical | Yes | | 4.3A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBJ0030CS103F1110 | 3 HP | FR4 | Vertical | No | | 5.6A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0030CS113F1110 | 3 HP | FR4 | Vertical | Yes | | 5.6A | 40H x 9.5D x 9.5W (1016H x 241D x 231W) | 43 lb (94.6 kg) |
| NXBJ0030CS203F1110 | 3 HP | FR4 | Vertical | No | | 5.6A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0030CS213F1110 | 3 HP | FR4 | Vertical | Yes | | 5.6A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBJ0030CS303F1110 | 3 HP | FR4 | Vertical | No | | 5.6A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBJ0030CS313F1110 | 3 HP | FR4 | Vertical | Yes | | 5.6A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBJ0040CS103F1110 | 4 HP | FR4 | Vertical | No | | 7.6A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0040CS113F1110 | 4 HP | FR4 | Vertical | Yes | | 7.6A | 40H x 9.5D x 9.5W (1016H x 241D x 231W) | 43 lb (94.6 kg) |
| NXBJ0040CS203F1110 | 4 HP | FR4 | Vertical | No | | 7.6A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0040CS213F1110 | 4 HP | FR4 | Vertical | Yes | | 7.6A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBJ0040CS303F1110 | 4 HP | FR4 | Vertical | No | | 7.6A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBJ0040CS313F1110 | 4 HP | FR4 | Vertical | Yes | | 7.6A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBJ0050CS103F1110 | 5 HP | FR4 | Vertical | No | | 0.37A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0050CS113F1110 | 5 HP | FR4 | Vertical | Yes | | 9A | 40H x 9.5D x 9.5W (1016H x 241D x 231W) | 43 lb (94.6 kg) |
| NXBJ0050CS203F1110 | 5 HP | FR4 | Vertical | No | | 0.37A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0050CS213F1110 | 5 HP | FR4 | Vertical | Yes | | 9A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBJ0050CS303F1110 | 5 HP | FR4 | Vertical | No | | 9A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBJ0050CS313F1110 | 5 HP | FR4 | Vertical | Yes | | 9A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBJ0075CS103F1110 | 7.5 HP | FR4 | Vertical | No | | | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0075CS113F1110 | 7.5 HP | FR4 | Vertical | Yes | Auto-Bypass | | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0075CS203F1110 | 7.5 HP | FR4 | Vertical | No | | | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0075CS213F1110 | 7.5 HP | FR4 | Vertical | Yes | | 12A | 36H x 10D x 16W (882H x 245D x 392W) | 53 lb (116.6 kg) |
| NXBJ0075CS303F1110 | 7.5 HP | FR4 | Vertical | No | | 12A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBJ0075CS313F1110 | 7.5 HP | FR4 | Vertical | Yes | | 12A | 24H x 10D x 20W (588H x 245D x 490W) | 54 lb (118.8 kg) |
| NXBJ0100CS103F1110 | 10 HP | FR5 | Vertical | No | | 16A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBJ0100CS113F1110 | 10 HP | FR5 | Vertical | Yes | Auto-Bypass | 16A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBJ0100CS203F1110 | 10 HP | FR5 | Vertical | No | | 16A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBJ0100CS213F1110 | 10 HP | FR5 | Vertical | Yes | | 16A | 36H x 10D x 16W (882H x 245D x 392W) | 64 lb (140.8 kg) |
| NXBJ0100CS303F1110 | 10 HP | FR5 | Vertical | No | | 16A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBJ0100CS313F1110 | 10 HP | FR5 | Vertical | Yes | | 16A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBJ0150CS103F1110 | 15 HP | FR5 | Vertical | No | | 23A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBJ0150CS113F1110 | 15 HP | FR5 | Vertical | Yes | Auto-Bypass | 23A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBJ0150CS203F1110 | 15 HP | FR5 | Vertical | No | | 23A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBJ0150CS213F1110 | 15 HP | FR5 | Vertical | Yes | | 23A | 36H x 10D x 16W (882H x 245D x 392W) | 64 lb (140.8 kg) |
| NXBJ0150CS313F1110 | 15 HP | FR5 | Vertical | Yes | | 23A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBJ0200CS103F1110 | 20 HP | FR5 | Vertical | No | | 31A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBJ0200CS113F1110 | 20 HP | FR5 | Vertical | Yes | | 31A | 46H x 10.5D x 11W (1168H x 257D x 279W) | 62 lb (136.4 kg) |
| NXBJ0200CS203F1110 | 20 HP | FR5 | Vertical | No | | 31A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBJ0200CS213F1110 | 20 HP | FR5 | Vertical | Yes | | 31A | 44H x 10D x 16W (1078H x 245D x 392W) | 70 lb (154 kg) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Layout | Auto Bypass | Additional Features | Current Ratings | Approximate, Dimensions in. (mm) | Weight |
|--|------------|--------------------|--------------|-------------|---------------------|-----------------|---------------------------------------|--|
| NXBJ0200CS303F1110 | 20 HP | FR5 | Vertical | No | | 31A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBJ0200CS313F1110 | 20 HP | FR5 | Vertical | Yes | | 31A | 30H x 10D x 24W (735H x 245D x 588W) | 78 lb (171.6 kg) |
| NXBJ0250CS103F1110 | 25 HP | FR6 | Vertical | No | | 38A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBJ0250CS113F1110 | 25 HP | FR6 | Vertical | Yes | | 38A | 53H x 12D x 14W (1298H x 294D x 343W) | 99 lb (217.8 kg) |
| NXBJ0250CS203F1110 | 25 HP | FR6 | Vertical | No | | 38A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBJ0250CS213F1110 | 25 HP | FR6 | Vertical | Yes | | 38A | 50H x 10D x 16W (1225H x 245D x 392W) | 120 lb (264 kg) |
| NXBJ0250CS303F1110 | 25 HP | FR6 | Vertical | No | | 38A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBJ0250CS313F1110 | 25 HP | FR6 | Vertical | Yes | | 38A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBJ0300CS103F1110 | 30 HP | FR6 | Vertical | No | | 46A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBJ0300CS113F1110 | 30 HP | FR6 | Vertical | Yes | | 46A | 53H x 12D x 14W (1298H x 294D x 343W) | 99 lb (217.8 kg) |
| NXBJ0300CS203F1110 | 30 HP | FR6 | Vertical | No | | 46A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBJ0300CS213F1110 | 30 HP | FR6 | Vertical | Yes | | 46A | 50H x 10D x 16W (1225H x 245D x 392W) | 120 lb (264 kg) |
| NXBJ0300CS303F1110 | 30 HP | FR6 | Vertical | No | | 46A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBJ0300CS313F1110 | 30 HP | FR6 | Vertical | Yes | | 46A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBJ0400CS103F1110 | 40 HP | FR6 | Vertical | No | | 61A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBJ0400CS113F1110 | 40 HP | FR6 | Vertical | Yes | | 61A | 53H x 12D x 14W (1298H x 294D x 343W) | 99 lb (217.8 kg) |
| NXBJ0400CS203F1110 | 40 HP | FR6 | Vertical | No | | 61A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBJ0400CS213F1110 | 40 HP | FR6 | Vertical | Yes | | 61A | 54H x 10D x 20W (1323H x 245D x 490W) | 136 lb (299.2 kg) |
| NXBJ0400CS303F1110 | 40 HP | FR6 | Vertical | No | | 61A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBJ0400CS313F1110 | 40 HP | FR6 | Vertical | Yes | | 61A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBJ0500CS103F1110 | 50 HP | FR7 | Vertical | No | | 72A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBJ0500CS113F1110 | 50 HP | FR7 | Vertical | Yes | | 72A | 62H x 13D x 16W (1574H x 339D x 406W) | 154 lb (338.8 kg) |
| NXBJ0500CS203F1110 | 50 HP | FR7 | Vertical | No | | 72A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBJ0500CS213F1110 | 50 HP | FR7 | Vertical | Yes | | 72A | 58H x 10D x 20W (1421H x 245D x 490W) | 150 lb (330 kg) |
| NXBJ0500CS303F1110 | 50 HP | FR7 | Vertical | No | | 72A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBJ0500CS313F1110 | 50 HP | FR7 | Vertical | Yes | | 72A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBJ0600CS103F1110 | 60 HP | FR7 | Vertical | No | | 87A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBJ0600CS113F1110 | 60 HP | FR7 | Vertical | Yes | | 87A | 62H x 13D x 16W (1574H x 339D x 406W) | 154 lb (338.8 kg) |
| NXBJ0600CS203F1110 | 60 HP | FR7 | Vertical | No | | 87A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBJ0600CS213F1110 | 60 HP | FR7 | Vertical | Yes | | 87A | 58H x 10D x 20W (1421H x 245D x 490W) | 150 lb (330 kg) |
| NXBJ0600CS303F1110 | 60 HP | FR7 | Vertical | No | | 87A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBJ0600CS313F1110 | 60 HP | FR7 | Vertical | Yes | | 87A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBJ0750CS103F1110 | 75 HP | FR7 | Vertical | No | | 105A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBJ0750CS113F1110 | 75 HP | FR7 | Vertical | Yes | | 105A | 62H x 13D x 16W (1574H x 339D x 406W) | 154 lb (338.8 kg) |
| NXBJ0750CS203F1110 | 75 HP | FR7 | Vertical | No | | 105A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBJ0750CS213F1110 | 75 HP | FR7 | Vertical | Yes | | 105A | 58H x 10D x 20W (1421H x 245D x 490W) | 150 lb (330 kg) |
| NXBJ0750CS303F1110 | 75 HP | FR7 | Vertical | No | | 105A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBJ0750CS313F1110 | 75 HP | FR7 | Vertical | Yes | | 105A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBJ1000CS103F1110 | 100 HP | FR8 | Side by Side | No | | 140A | 36 x 54 x 16 (900 x 1350 x 400) | 360 lb (163.3 kg) |
| NXBJ1000CS113F1110 | 100 HP | FR8 | Side by Side | Yes | | 140A | 54H x 16D x 36W (1350H x 400D x 900W) | 360 lb (792 kg) |
| NXBJ1000CS203F1110 | 100 HP | FR8 | Side by Side | No | | 140A | 36 x 54 x 16 (900 x 1350 x 400) | 360 lb (163.3 kg) |
| NXBJ1000CS213F1110 | 100 HP | FR8 | Side by Side | Yes | | 140A | 48H x 14D x 36W (1176H x 343D x 882W) | 350 lb (770 kg) |
| NXBJ1000CS303F1110 | 100 HP | FR8 | Side by Side | No | | 140A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| NXBJ1000CS313F1110 | 100 HP | FR8 | Side by Side | Yes | | 140A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| NXBJ1250CS103F1110 | 125 HP | FR8 | Side by Side | No | | 170A | 36 x 54 x 16 (900 x 1350 x 400) | 360 lb (163.3 kg) |
| NXBJ1250CS113F1110 | 125 HP | FR8 | Side by Side | Yes | | 170A | 54H x 16D x 36W (1350H x 400D x 900W) | 360 lb (792 kg) |
| NXBJ1250CS203F1110 | 125 HP | FR8 | Side by Side | No | | 170A | 36 x 54 x 16 (900 x 1350 x 400) | 360 lb (163.3 kg) |
| NXBJ1250CS213F1110 | 125 HP | FR8 | Side by Side | Yes | | 170A | 48H x 14D x 36W (1176H x 343D x 882W) | 350 lb (770 kg) |
| NXBJ1250CS303F1110 | 125 HP | FR8 | Side by Side | No | | 140A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| NXBJ1250CS313F1110 | 125 HP | FR8 | Side by Side | Yes | | 140A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| NXBJ1500CS103F1110 | 150 HP | FR8 | Side by Side | No | | 205A | 36 x 54 x 16 (900 x 1350 x 400) | 360 lb (163.3 kg) |
| NXBJ1500CS113F1110 | 150 HP | FR8 | Side by Side | Yes | | 205A | 54H x 16D x 36W (1350H x 400D x 900W) | 360 lb (792 kg) |
| NXBJ1500CS203F1110 | 150 HP | FR8 | Side by Side | No | | 205A | 36 x 54 x 16 (900 x 1350 x 400) | 360 lb (163.3 kg) |
| NXBJ1500CS213F1110 | 150 HP | FR8 | Side by Side | Yes | | 205A | 48H x 14D x 36W (1176H x 343D x 882W) | 350 lb (770 kg) |
| NXBJ1500CS303F1110 | 150 HP | FR8 | Side by Side | No | | 205A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| NXBJ1500CS313F1110 | 150 HP | FR8 | Side by Side | Yes | | 205A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| 460 Vac — Drive with Fused Disconnect | | | | | | | | |
| NXBJ0015DS100F0000 | 1.5 HP | Call Customer Care | Vertical | No | | 3.3A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0015DS200F0000 | 1.5 HP | Call Customer Care | Vertical | No | | 3.3A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0015DS300F0000 | 1.5 HP | Call Customer Care | Vertical | No | | 3.3A | Contact Customer Care | Contact Customer Care (Call Customer Care) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Layout | Auto Bypass | Additional Features | Current Ratings | Approximate, Dimensions in. (mm) | Weight |
|--------------------|------------|--------------------|----------|-------------|---------------------|-----------------|---------------------------------------|--|
| NXBJ0020DS100F0000 | 2 HP | Call Customer Care | Vertical | No | | 4.3A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0020DS200F0000 | 2 HP | Call Customer Care | Vertical | No | | 4.3A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0020DS300F0000 | 2 HP | Call Customer Care | Vertical | No | | 4.3A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0030DS100F0000 | 3 HP | Call Customer Care | Vertical | No | | 5.6A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0030DS200F0000 | 3 HP | Call Customer Care | Vertical | No | | 5.6A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0030DS300F0000 | 3 HP | Call Customer Care | Vertical | No | | 5.6A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0040DS100F0000 | 4 HP | Call Customer Care | Vertical | No | | 7.6A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0040DS200F0000 | 4 HP | Call Customer Care | Vertical | No | | 7.6A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0040DS300F0000 | 4 HP | Call Customer Care | Vertical | No | | 7.6A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0050DS100F0000 | 5 HP | Call Customer Care | Vertical | No | | 0.37A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0050DS200F0000 | 5 HP | Call Customer Care | Vertical | No | | 0.37A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0050DS300F0000 | 5 HP | Call Customer Care | Vertical | No | | 0.37A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0075DS100F0000 | 7.5 HP | Call Customer Care | Vertical | No | | | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0075DS200F0000 | 7.5 HP | Call Customer Care | Vertical | No | | | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0075DS300F0000 | 7.5 HP | Call Customer Care | Vertical | No | | | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0100DS100F0000 | 10 HP | Call Customer Care | Vertical | No | | 16A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0100DS200F0000 | 10 HP | Call Customer Care | Vertical | No | | 16A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0100DS300F0000 | 10 HP | Call Customer Care | Vertical | No | | 16A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0150DS100F0000 | 15 HP | Call Customer Care | Vertical | No | | 23A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0150DS200F0000 | 15 HP | Call Customer Care | Vertical | No | | 23A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0150DS300F0000 | 15 HP | Call Customer Care | Vertical | No | | 23A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0200DS100F0000 | 20 HP | Call Customer Care | Vertical | No | | 31A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0200DS200F0000 | 20 HP | Call Customer Care | Vertical | No | | 31A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0200DS300F0000 | 20 HP | Call Customer Care | Vertical | No | | 31A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0250DS100F0000 | 25 HP | Call Customer Care | Vertical | No | | 38A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0250DS200F0000 | 25 HP | Call Customer Care | Vertical | No | | 38A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0250DS300F0000 | 25 HP | Call Customer Care | Vertical | No | | 38A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0250DS400F0000 | 25 HP | FR6 | Vertical | No | | 38A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBJ0300DS100F0000 | 30 HP | Call Customer Care | Vertical | No | | 46A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0300DS200F0000 | 30 HP | Call Customer Care | Vertical | No | | 46A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0300DS300F0000 | 30 HP | Call Customer Care | Vertical | No | | 46A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0400DS100F0000 | 40 HP | FR4 | Vertical | No | | 61A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBJ0400DS200F0000 | 40 HP | Call Customer Care | Vertical | No | | 61A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0400DS300F0000 | 40 HP | Call Customer Care | Vertical | No | | 61A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0500DS100F0000 | 50 HP | Call Customer Care | Vertical | No | | 72A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0500DS200F0000 | 50 HP | Call Customer Care | Vertical | No | | 72A | Contact Customer Care | Contact Customer Care (Call Customer Care) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Layout | Auto Bypass | Additional Features | Current Ratings | Approximate, Dimensions in. (mm) | Weight |
|--|------------|--------------------|--------------|-------------|---------------------|-----------------|---------------------------------------|--|
| NXBJ0500DS300F0000 | 50 HP | Call Customer Care | Vertical | No | | 72A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0600DS100F0000 | 60 HP | FR7 | Vertical | No | | 87A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBJ0600DS200F0000 | 60 HP | Call Customer Care | Vertical | No | | 87A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0600DS300F0000 | 60 HP | Call Customer Care | Vertical | No | | 87A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ0750DS100F0000 | 75 HP | FR7 | Vertical | No | | 105A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBJ0750DS200F0000 | 75 HP | FR7 | Vertical | No | | 105A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBJ0750DS300F0000 | 75 HP | FR7 | Vertical | No | | 105A | 36 x 48 x 12 (900 x 1250 x 300) | 193 lb (87.5 kg) |
| NXBJ1000DS100F0000 | 100 HP | Call Customer Care | Side by Side | No | | 140A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ1000DS200F0000 | 100 HP | Call Customer Care | Side by Side | No | | 140A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ1000DS300F0000 | 100 HP | Call Customer Care | Side by Side | No | | 140A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ1250DS100F0000 | 125 HP | Call Customer Care | Side by Side | No | | 170A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ1250DS200F0000 | 125 HP | Call Customer Care | Side by Side | No | | 170A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ1250DS300F0000 | 125 HP | Call Customer Care | Side by Side | No | | 170A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ1500DS100F0000 | 150 HP | Call Customer Care | Side by Side | No | | 205A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ1500DS200F0000 | 150 HP | Call Customer Care | Side by Side | No | | 205A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| NXBJ1500DS300F0000 | 150 HP | Call Customer Care | Side by Side | No | | 205A | Contact Customer Care | Contact Customer Care (Call Customer Care) |
| 575 Vac — Drive with 2 contactor bypass | | | | | | | | |
| NXBL0030CS10200000 | 3 HP | FR4 | Vertical | No | | 4.5A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBL0030CS20200000 | 3 HP | FR4 | Vertical | No | | 4.5A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBL0040CS10200000 | 4 HP | FR4 | Vertical | No | | 5.5A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBL0040CS20200000 | 4 HP | FR4 | Vertical | No | | 5.5A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBL0050CS10200000 | 5 HP | FR4 | Vertical | No | | 7.5A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBL0050CS20200000 | 5 HP | FR4 | Vertical | No | | 7.5A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBL0075CS10200000 | 7.5 HP | FR4 | Vertical | No | | 0.42A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBL0075CS20200000 | 7.5 HP | FR4 | Vertical | No | | 0.42A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBL0100CS10200000 | 10 HP | FR5 | Vertical | No | | 13.5A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBL0100CS20200000 | 10 HP | FR5 | Vertical | No | | 13.5A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBL0150CS10200000 | 15 HP | FR5 | Vertical | No | | 18A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBL0150CS20200000 | 15 HP | FR5 | Vertical | No | | 18A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBL0200CS10200000 | 20 HP | FR5 | Vertical | No | | 22A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBL0200CS20200000 | 20 HP | FR5 | Vertical | No | | 22A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBL0250CS10200000 | 25 HP | FR6 | Vertical | No | | 27A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBL0250CS20200000 | 25 HP | FR6 | Vertical | No | | 27A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBL0300CS10200000 | 30 HP | FR6 | Vertical | No | | 34A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBL0300CS20200000 | 30 HP | FR6 | Vertical | No | | 34A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBL0400CS10200000 | 40 HP | FR6 | Vertical | No | | 41A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBL0400CS20200000 | 40 HP | FR6 | Vertical | No | | 41A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBL0500CS10200000 | 50 HP | FR7 | Vertical | No | | 52A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBL0500CS20200000 | 50 HP | FR7 | Vertical | No | | 52A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBL0600CS10200000 | 60 HP | FR7 | Vertical | No | | 62A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBL0600CS20200000 | 60 HP | FR7 | Vertical | No | | 62A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBL0750CS10200000 | 75 HP | FR7 | Vertical | No | | 80A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBL0750CS20200000 | 75 HP | FR7 | Vertical | No | | 80A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBL1000CS10200000 | 100 HP | FR8 | Side by Side | No | | 100A | 36 x 54 x 16 (900 x 1350 x 400) | 360 lb (163.3 kg) |
| NXBL1000CS20200000 | 100 HP | FR8 | Side by Side | No | | 100A | 36 x 54 x 16 (900 x 1350 x 400) | 360 lb (163.3 kg) |
| NXBL1500CS10200000 | 150 HP | FR8 | Side by Side | No | | 144A | 36 x 54 x 16 (900 x 1350 x 400) | 360 lb (163.3 kg) |
| NXBL1500CS20200000 | 150 HP | FR8 | Side by Side | No | | 144A | 36 x 54 x 16 (900 x 1350 x 400) | 360 lb (163.3 kg) |
| 575 Vac — Drive with 3 contactor bypass | | | | | | | | |
| NXBL0030CS103F1110 | 3 HP | FR4 | Vertical | No | | 4.5A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBL0030CS113F1110 | 3 HP | FR6 | Vertical | Yes | | 4.5A | 53H x 12D x 14W (1298H x 294D x 343W) | 99 lb (217.8 kg) |
| NXBL0030CS203F1110 | 3 HP | FR4 | Vertical | No | | 4.5A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBL0030CS213F1110 | 3 HP | FR6 | Vertical | Yes | | 4.5A | 48H x 14D x 36W (1176H x 343D x 882W) | 99 lb (217.8 kg) |
| NXBL0030CS303F1110 | 3 HP | FR6 | Vertical | No | | 4.5A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Layout | Auto Bypass | Additional Features | Current Ratings | Approximate, Dimensions in. (mm) | Weight |
|--------------------|------------|------------|--------------|-------------|---------------------|-----------------|---------------------------------------|-------------------|
| NXBL0030CS313F1110 | 3 HP | FR6 | Vertical | Yes | | 4.5A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBL0040CS103F1110 | 4 HP | FR4 | Vertical | No | | 5.5A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBL0040CS113F1110 | 4 HP | FR6 | Vertical | Yes | | 5.5A | 53H x 12D x 14W (1298H x 294D x 343W) | 99 lb (217.8 kg) |
| NXBL0040CS203F1110 | 4 HP | FR4 | Vertical | No | | 5.5A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBL0040CS213F1110 | 4 HP | FR6 | Vertical | Yes | | 5.5A | 48H x 14D x 36W (1176H x 343D x 882W) | 99 lb (217.8 kg) |
| NXBL0040CS303F1110 | 4 HP | FR6 | Vertical | No | | 5.5A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBL0040CS313F1110 | 4 HP | FR6 | Vertical | Yes | | 5.5A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBL0050CS103F1110 | 5 HP | FR4 | Vertical | No | | 7.5A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBL0050CS113F1110 | 5 HP | FR6 | Vertical | Yes | | 7.5A | 53H x 12D x 14W (1298H x 294D x 343W) | 99 lb (217.8 kg) |
| NXBL0050CS203F1110 | 5 HP | FR4 | Vertical | No | | 7.5A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBL0050CS213F1110 | 5 HP | FR6 | Vertical | Yes | | 7.5A | 48H x 14D x 36W (1176H x 343D x 882W) | 99 lb (217.8 kg) |
| NXBL0050CS303F1110 | 5 HP | FR6 | Vertical | No | | 7.5A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBL0050CS313F1110 | 5 HP | FR6 | Vertical | Yes | | 7.5A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBL0075CS103F1110 | 7.5 HP | FR4 | Vertical | No | | 0.42A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBL0075CS113F1110 | 7.5 HP | FR6 | Vertical | Yes | | 10A | 53H x 12D x 14W (1298H x 294D x 343W) | 99 lb (217.8 kg) |
| NXBL0075CS203F1110 | 7.5 HP | FR4 | Vertical | No | | 0.42A | 9.5 x 40 x 9.5 (237.5 x 1000 x 237.5) | 43 lb (19.5 kg) |
| NXBL0075CS213F1110 | 7.5 HP | FR6 | Vertical | Yes | | 10A | 48H x 14D x 36W (1176H x 343D x 882W) | 99 lb (217.8 kg) |
| NXBL0075CS303F1110 | 7.5 HP | FR6 | Vertical | No | | 10A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBL0075CS313F1110 | 7.5 HP | FR6 | Vertical | Yes | | 10A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBL0100CS103F1110 | 10 HP | FR5 | Vertical | No | | 13.5A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBL0100CS113F1110 | 10 HP | FR6 | Vertical | Yes | | 13.5A | 53H x 12D x 14W (1298H x 294D x 343W) | 99 lb (217.8 kg) |
| NXBL0100CS203F1110 | 10 HP | FR5 | Vertical | No | | 13.5A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBL0100CS213F1110 | 10 HP | FR6 | Vertical | Yes | | 13.5A | 48H x 14D x 36W (1176H x 343D x 882W) | 99 lb (217.8 kg) |
| NXBL0100CS303F1110 | 10 HP | FR6 | Vertical | No | | 13.5A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBL0100CS313F1110 | 10 HP | FR6 | Vertical | Yes | | 13.5A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBL0150CS103F1110 | 15 HP | FR5 | Vertical | No | | 18A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBL0150CS113F1110 | 15 HP | FR6 | Vertical | Yes | | 18A | 53H x 12D x 14W (1298H x 294D x 343W) | 99 lb (217.8 kg) |
| NXBL0150CS203F1110 | 15 HP | FR5 | Vertical | No | | 18A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBL0150CS213F1110 | 15 HP | FR6 | Vertical | Yes | | 18A | 48H x 14D x 36W (1176H x 343D x 882W) | 99 lb (217.8 kg) |
| NXBL0150CS303F1110 | 15 HP | FR6 | Vertical | No | | 18A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBL0150CS313F1110 | 15 HP | FR6 | Vertical | Yes | | 18A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBL0200CS103F1110 | 20 HP | FR5 | Vertical | No | | 22A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBL0200CS113F1110 | 20 HP | FR6 | Vertical | Yes | | 22A | 53H x 12D x 14W (1298H x 294D x 343W) | 99 lb (217.8 kg) |
| NXBL0200CS203F1110 | 20 HP | FR5 | Vertical | No | | 22A | 11 x 46 x 10.5 (275 x 1150 x 262.5) | 62 lb (28.1 kg) |
| NXBL0200CS213F1110 | 20 HP | FR6 | Vertical | Yes | | 22A | 48H x 14D x 36W (1176H x 343D x 882W) | 99 lb (217.8 kg) |
| NXBL0200CS303F1110 | 20 HP | FR6 | Vertical | No | | 22A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBL0200CS313F1110 | 20 HP | FR6 | Vertical | Yes | | 22A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBL0250CS103F1110 | 25 HP | FR6 | Vertical | No | | 27A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBL0250CS113F1110 | 25 HP | FR6 | Vertical | Yes | | 27A | 53H x 12D x 14W (1298H x 294D x 343W) | 99 lb (217.8 kg) |
| NXBL0250CS203F1110 | 25 HP | FR6 | Vertical | No | | 27A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBL0250CS213F1110 | 25 HP | FR6 | Vertical | Yes | | 27A | 48H x 14D x 36W (1176H x 343D x 882W) | 99 lb (217.8 kg) |
| NXBL0250CS303F1110 | 25 HP | FR6 | Vertical | No | | 27A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBL0250CS313F1110 | 25 HP | FR6 | Vertical | Yes | | 27A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBL0300CS103F1110 | 30 HP | FR6 | Vertical | No | | 34A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBL0300CS113F1110 | 30 HP | FR6 | Vertical | Yes | | 34A | 53H x 12D x 14W (1298H x 294D x 343W) | 99 lb (217.8 kg) |
| NXBL0300CS203F1110 | 30 HP | FR6 | Vertical | No | | 34A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBL0300CS213F1110 | 30 HP | FR6 | Vertical | Yes | | 34A | 48H x 14D x 36W (1176H x 343D x 882W) | 99 lb (217.8 kg) |
| NXBL0300CS303F1110 | 30 HP | FR6 | Vertical | No | | 34A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBL0300CS313F1110 | 30 HP | FR6 | Vertical | Yes | | 34A | 36H x 12D x 30W (882H x 294D x 735W) | 124 lb (272.8 kg) |
| NXBL0400CS103F1110 | 40 HP | FR6 | Vertical | No | | 41A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBL0400CS113F1110 | 40 HP | FR7 | Vertical | Yes | | 41A | 62H x 13D x 16W (1574H x 339D x 406W) | 154 lb (338.8 kg) |
| NXBL0400CS203F1110 | 40 HP | FR6 | Vertical | No | | 41A | 14 x 53 x 12 (350 x 1325 x 300) | 99 lb (44.9 kg) |
| NXBL0400CS213F1110 | 40 HP | FR7 | Vertical | Yes | | 41A | 48H x 14D x 36W (1176H x 343D x 882W) | 154 lb (338.8 kg) |
| NXBL0400CS303F1110 | 40 HP | FR7 | Vertical | No | | 41A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBL0400CS313F1110 | 40 HP | FR7 | Vertical | Yes | | 41A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBL0500CS103F1110 | 50 HP | FR7 | Vertical | No | | 52A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBL0500CS113F1110 | 50 HP | FR7 | Vertical | Yes | | 52A | 62H x 13D x 16W (1574H x 339D x 406W) | 154 lb (338.8 kg) |
| NXBL0500CS203F1110 | 50 HP | FR7 | Vertical | No | | 52A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBL0500CS213F1110 | 50 HP | FR7 | Vertical | Yes | | 52A | 48H x 14D x 36W (1176H x 343D x 882W) | 154 lb (338.8 kg) |
| NXBL0500CS303F1110 | 50 HP | FR7 | Vertical | No | | 52A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBL0500CS313F1110 | 50 HP | FR7 | Vertical | Yes | | 52A | 48H x 12D x 36W (1176H x 294D x 882W) | 193 lb (424.6 kg) |
| NXBL0600CS103F1110 | 60 HP | FR7 | Vertical | No | | 62A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBL0600CS113F1110 | 60 HP | FR8 | Side by Side | Yes | | 62A | 54H x 16D x 36W (1350H x 400D x 900W) | 360 lb (792 kg) |

Variable Frequency Drives

| Material Number | Horsepower | Frame Type | Layout | Auto Bypass | Additional Features | Current Ratings | Approximate, Dimensions in. (mm) | Weight |
|--------------------|------------|------------|--------------|-------------|---------------------|-----------------|---------------------------------------|-------------------|
| NXBL0600CS203F1110 | 60 HP | FR7 | Vertical | No | | 62A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBL0600CS213F1110 | 60 HP | FR8 | Side by Side | Yes | | 62A | 48H x 14D x 36W (1176H x 343D x 882W) | 360 lb (792 kg) |
| NXBL0600CS303F1110 | 60 HP | FR8 | Side by Side | No | | 62A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| NXBL0600CS313F1110 | 60 HP | FR8 | Side by Side | Yes | | 62A | 60H x 14D x 36W (1470H x 343D x 882W) | 440 lb (968 kg) |
| NXBL0750CS103F1110 | 75 HP | FR7 | Vertical | No | | 80A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBL0750CS113F1110 | 75 HP | FR8 | Side by Side | Yes | | 80A | 54H x 16D x 36W (1350H x 400D x 900W) | 360 lb (792 kg) |
| NXBL0750CS203F1110 | 75 HP | FR7 | Vertical | No | | 80A | 16 x 62 x 13 (400 x 1550 x 325) | 154 lb (69.8 kg) |
| NXBL0750CS213F1110 | 75 HP | FR8 | Side by Side | Yes | | 80A | 48H x 14D x 36W (1176H x 343D x 882W) | 360 lb (792 kg) |
| NXBL1000CS103F1110 | 100 HP | FR8 | Side by Side | No | | 100A | 36 x 54 x 16 (900 x 1350 x 400) | 360 lb (163.3 kg) |
| NXBL1000CS113F1110 | 100 HP | FR8 | Side by Side | Yes | | 100A | 54H x 16D x 36W (1350H x 400D x 900W) | 360 lb (792 kg) |
| NXBL1000CS203F1110 | 100 HP | FR8 | Side by Side | No | | 100A | 36 x 54 x 16 (900 x 1350 x 400) | 360 lb (163.3 kg) |
| NXBL1000CS213F1110 | 100 HP | FR8 | Side by Side | Yes | | 100A | 48H x 14D x 36W (1176H x 343D x 882W) | 360 lb (792 kg) |
| NXBL1500CS103F1110 | 150 HP | FR8 | Side by Side | No | | 144A | 36 x 54 x 16 (900 x 1350 x 400) | 360 lb (163.3 kg) |
| NXBL1500CS203F1110 | 150 HP | FR8 | Side by Side | No | | 144A | 36 x 54 x 16 (900 x 1350 x 400) | 360 lb (163.3 kg) |

Variable Frequency Drive Accessories

| Material Number | Description | Used With |
|-----------------|---|-----------|
| 32006628-001/U | Panel mount kit, NEMA 12 Enclosure, 6ft | NXS |
| 32006629-001/U | Blank display | NXS |
| 32006629-002/U | Alphanumeric Display | NXS |
| 32006629-003/U | 7 segment display for NXL | NXL |
| 32006629-004/U | Variable Frequency Drive RS232 Adapter | NXL |
| 32006629-010/U | 2M RS232 SERIAL LINK CABLE | NXS/NXL |
| 32006629-011/U | 1.5M RS232 PC-CABLE FOR NXS/NXL MODELS | NXS/NXL |
| 32006630-001/U | Lonbus Card | NXS/NXL |
| 32006630-002/U | Modbus Card | NXS/NXL |
| 32006630-003/U | 2 RO (NO/NC) | NXS/NXL |
| 32006630-004/U | 6DI/DO Programmable | NXS/NXL |
| 32006630-005/U | 6DI, 1DO, 2AI, 1AO | NXS/NXL |
| 32006630-006/U | 1RO (NO/NC), 1RO (NO) | NXS/NXL |
| 32006630-007/U | 3RO (NO) | NXS/NXL |
| 32006630-008/U | 1AI (mA), 2AO (mA) | NXS/NXL |
| 32006630-013/U | BACnet card | NXS/NXL |
| 32006662-002/U | NXS demo | NXS |

SmartVFD HVAC Accessories

| Material Number | Description | Used With |
|------------------|---|---------------|
| HVFDSDMOUNTKIT/U | SmartVFD HVAC, Panel mount kit, NEMA 12 Enclosure, 6 ft | SmartVFD HVAC |

Variable Frequency Drive Replacement Parts

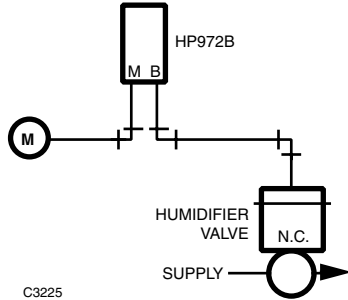
| Material Number | Description | Frame Size | Used With |
|-----------------|--|--------------|--------------|
| 32006803-001/U | Control Module NXS | | NXS |
| 32006803-002/U | Replacement Fan Assembly for Frame size 4 NXS or NXL | Frame size 4 | NXS or NXL * |
| 32006803-003/U | Replacement Fan Assembly for Frame size 5 NXS or NXL | Frame size 5 | NXS or NXL * |
| 32006803-004/U | Replacement Fan Assembly for Frame size 6 NXS or NXL | Frame size 6 | NXS or NXL * |
| 32006803-005/U | Replacement Fan Assembly for Frame size 7 NXS or NXL | Frame size 7 | NXS or NXL * |

* For frame sizes 8-9, contact Customer Care with model and serial numbers as fan is dependent on date product was built.

HP970 Pneumatic Humidistat



HP970 Typical Piping



Two-pipe, single setpoint, pneumatic humidistat used to provide proportional control of pneumatic valves on humidification or dehumidification systems.

- Durable HP970 series humidistat.
- Pilot operated for high capacity.
- Direct Acting (DA) and Reverse Acting (RA) models are available.
- Vertical or horizontal mounting.
- Backplate has molded air connections; no separate fittings needed.
- Variety of cover finishes and display styles available.

Applications: Humidity

Airflow Usage: 0.011 scfm (5.2 mL/s)

Maximum Safe Operating Pressure (psi): 25 psi

Maximum Safe Operating Pressure (kPa): 170 kPa

Temperature Range: 45°F to 125°F (7°C to 52°C)

Shipping and Storage Temperature Range: -30 to +150°F (-34 to +66°C)

Dimensions: 3 1/4 in. high x 2 in. wide x 1 5/8 in. deep (83 mm high x 51 mm wide x 41 mm deep)

Accessories

14002430-001/U – Thermostat guard

14003192-001/U – Wall plate adapter kit. Adapts HP970 or TP970 series stats to HP900 and TP900 flush mounted and TP910 series flush or surface mounted installations

305965/U – 1-1/2 in. diameter, 1/8 NPT center stem back mount Pressure Indicating gauge (0 to 30 psi scale) with ± 4% accuracy

AK3863/U – Thermostat Tool Kit,

CCT729A/U – Gauge adapter for calibration. Add 305965/U (0 to 30 psi gauge) for complete tool

CCT735A/U – Thermostat calibration tool includes Allen wrench for cover installation.

Replacement Parts

14002053-001/U – Back Plate Assembly

14002573-001/U – Modernization Kit to convert all 1 & 2 pipe Honeywell & competitive pneumatic stats to TP970, TP971A, TP972, TP973, TP974, TP9600 family; HP970, HP971 and HP972

| Material Number | Product Action | Number of Pipes | Scale Markings | Throttling Range (% RH) | Setpoint | Comments |
|-----------------|----------------|-----------------|----------------|-------------------------|----------|------------------------|
| HP970A1009/U | Direct Acting | 2 | 15 to 75% RH | 3 to 15% RH | Single | Order Cover Separately |
| HP970B1007/U | Reverse Acting | 2 | 15 to 75% RH | 3 to 15% RH | Single | Order Cover Separately |
| HP970B1015/U | Reverse Acting | 2 | 65 to 95% RH | 3 to 15% RH | Single | Order Cover Separately |

Pneumatic Humidistats

HP972 Pneumatic Humidistat

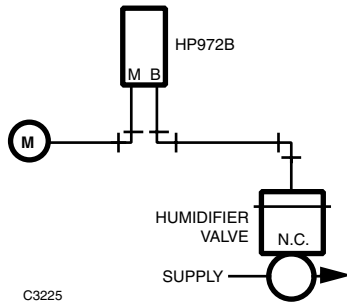


Applications: Humidity
Airflow Usage: 0.011 scfm (5.2 mL/s)
Maximum Safe Operating Pressure (psi): 25 psi
Maximum Safe Operating Pressure (kPa): 170 kPa
Temperature Range: 45°F to 125°F (7°C to 52°C)
Shipping and Storage Temperature Range: -30 to +150°F (-34 to +66°C)
Dimensions: 3 1/4 in. high x 2 in. wide x 1 5/8 in. deep (83 mm high x 51 mm wide x 41 mm deep)

Accessories

14002362-001/U – Duct Sampling Chamber
14002430-001/U – Thermostat guard
14003192-001/U – Wall plate adapter kit. Adapts HP970 or TP970 series stats to HP900 and TP900 flush mounted and TP910 series flush or surface mounted installations

Typical Two-Pipe HP972B Hook-up



A proportioning pneumatic humidistat used on one- or two-pipe installations for controlling actuators on valves and dampers in air conditioning systems for humidification or dehumidification control.

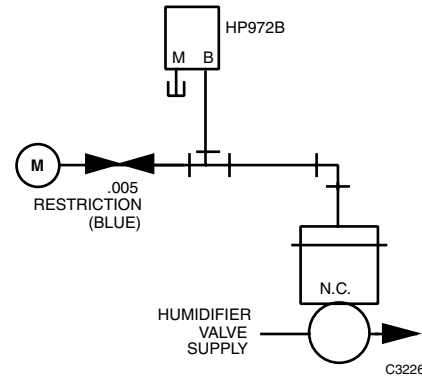
- Durable HP970 series humidistat.
- Snap-on mounting to backplate.
- Vertical or horizontal mounting.
- Backplate has molded air connections; no separate fittings needed.
- Variety of cover finishes and display styles available.
- Wide throttling range.

305965/U – 1-1/2 in. diameter, 1/8 NPT center stem back mount Pressure Indicating gauge (0 to 30 psi scale) with ± 4% accuracy
AK3863/U – Thermostat Tool Kit,
CCT729A/U – Gauge adapter for calibration. Add 305965/U (0 to 30 psi gauge) for complete tool
CCT735A/U – Thermostat calibration tool includes Allen wrench for cover installation.

Replacement Parts



14002053-001/U – Back Plate Assembly
14002496-003/U – Nylon element assembly, with spring
14002573-001/U – Modernization Kit to convert all 1 & 2 pipe Honeywell & competitive pneumatic stats to TP970, TP971A, TP972, TP973, TP974, TP9600 family; HP970, HP971 and HP972

Typical One-pipe HP972B Hook-up




| Material Number | Product Action | Number of Pipes | Scale Markings | Throttling Range (% RH) | Setpoint | Description | Comments |
|-----------------|----------------|-----------------|----------------|-------------------------|----------|---|------------------------|
| HP972B1005/U | Reverse Acting | 1 or 2 | 15 to 75% RH | 7 to 35% RH | Single | Pneumatic Humidity Controller, number of pipes: 1 or 2, Action: Reverse | Order Cover Separately |

Humidistat Accessories

| Material Number | Description | Used With | |
|-----------------|--|--------------|---|
| CCT729A/U | Gauge Adapter for Calibration. Add 305965 0 to 30 psi gauge for Complete Tool. | HP970; HP972 |  |
| CCT735A/U | Thermostat Calibration Tool includes Allen wrench for cover installation. | HP970; HP972 |  |

Humidistat Cover Assemblies

Applications: Accessory or Replacement Part

| Material Number | Scale Markings | Description | Used With | |
|-----------------|----------------|--|--------------|---|
| 14004406-910H/U | 15 to 75% RH | Humidistat Satin Chrome Cover Kit with setpoint display and Honeywell logo for vertical and horizontal mounting, scale range 15 to 75% RH. Includes the Setpoint Knob Insert | HP970; HP972 |  |

Replacement Parts

| Material Number | Description | Used With |
|-----------------|-------------------------------------|--------------------|
| 14002496-003/U | Nylon element assembly, with Spring | HP970B1015; HP972B |

Pneumatic Controls

Pneumatic Thermostats

LP907 Airstream Insertion Pneumatic Thermostat



One-pipe, single setpoint, pneumatic thermostat used to provide proportional control of pneumatic valves and damper actuators in heating and air conditioning systems. Commonly used as discharge controllers for unit ventilators.

- Rod and tube insertion sensing element.
- Wide throttling range.
- Gage tee and tank valve facilitate checking line pressures.

Applications: Low Limit controller

Air Connections: Barb fittings 1/4 in. (6 mm) poly tubing

Airflow Usage: 0.011 scfm (5.2 mL/s)

Number of Pipes: 1

Sensor Element: Invar rod and seamless brass tube, 18 3/4 in. (476 mm) long and 11/32 in. (9 mm) diameter; Remote Bulb

Maximum Safe Operating Pressure (psi): 25 psi

Maximum Safe Operating Pressure (kPa): 170 kPa

Dimensions: 5 7/16 in. high x 1 1/16 in. wide x 2 1/4 in. deep (138 mm high x 27 mm wide x 57 mm deep)

Mounting: Insertion with locknut on boss of insertion shank

Includes: Fittings for mounting on sheet metal duct. Order restrictor separately.

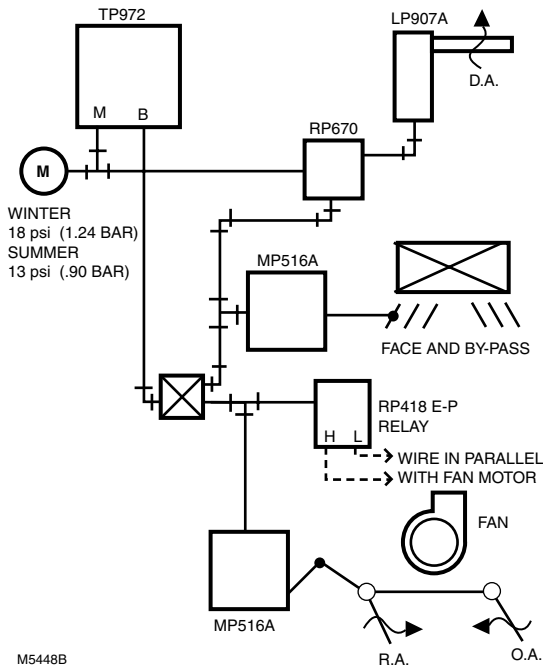
Accessories

CCT2085/U – Pneumatic Fitting – Gauge Adapter fits any standard 1/8 in. NPT gauge,

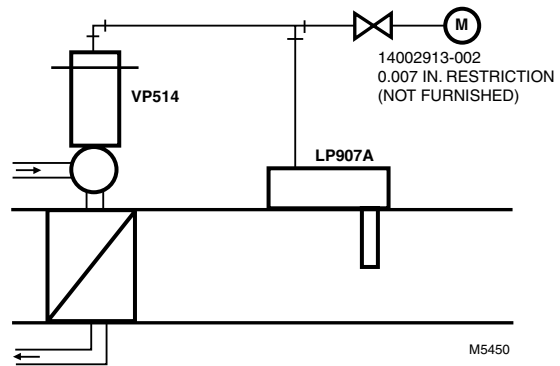
14002913-002/U – 0.007 in. Red in-line Filtered Restriction Assembly; Inlet: 1/4 in., Outlets: 1/4 in. Order in Quantities of 10

14002913-003/U – External Restriction Assembly. 0.007 in. Restriction, Red, Inlet 1/4 in.; Outlet 1/4 in. and 5/32 in.

Typical Heating/Cooling Application



Typical Duct Mounted Application



| Material Number | Product Action | Setpoint | Temperature Range | Setpoint Temperature Range | Shipping and Storage Temperature Range | Throttling Range | Capacity |
|-----------------|----------------|----------|------------------------------|-----------------------------|--|----------------------------|----------|
| LP907A1002/U | Direct Acting | Single | 40°F to 140°F (4°C to 60°C) | 40°F to 140°F (4°C to 60°C) | 150°F maximum (66°C maximum) | 10°F to 70°F (6°C to 39°C) | Low |
| LP907A1044/U | Direct Acting | Single | 135°F maximum (57°C maximum) | 40°F to 140°F (4°C to 60°C) | 150°F maximum (66°C maximum) | 5°F to 35°F (3°C to 19°C) | Low |

LP916 Pneumatic Thermostat



Two-pipe, single temperature, unit mounted, remote bulb pneumatic thermostat used to provide proportional control of pneumatic valves and damper actuators in heating and air conditioning systems.

- Liquid filled remote bulb.
- Direct Acting (DA), Reverse Acting (RA) and Heating/Cooling (DA/RA) models are available.

Applications: Typical applications for the LP916A are duct-mounted and mixed air control. The LP916B is typically used for fan coil unit control. Typical applications for the reverse acting LP916C are cooling coil control or fan coil control.

Air Connections: Barb fittings 1/4 in. (6 mm)

Number of Pipes 2

Setpoint: Single

Maximum Safe Operating Pressure (psi): 25 psi

Maximum Safe Operating Pressure (kPa): 170 kPa

Temperature Range: 135°F maximum (57°C maximum)

Shipping and Storage Temperature Range: 150°F maximum (66°C maximum)

Dimensions: 4 3/4 in. high x 3 3/4 in. wide x 3 in. deep (121 mm high x 95 mm wide x 76 mm deep)

Accessories:

107324A/U – Capillary Holder Assembly for duct insertion, 8 3/8 in. long

Replacement Parts:

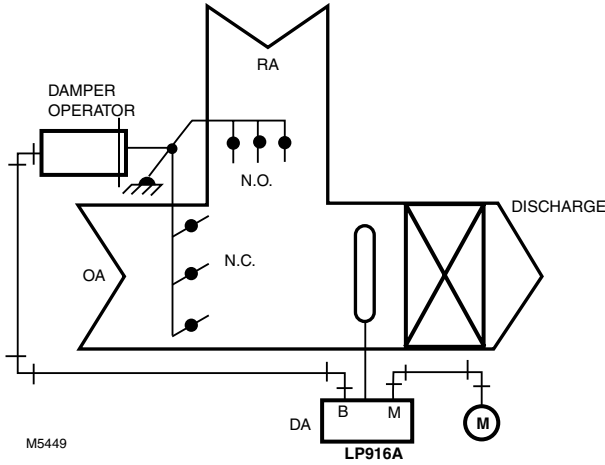
14003113-002/U – Repair kit containing 0.007 in. restrictor plate, filters, and gaskets

| Material Number | Airflow Usage | Product Action | Scale Markings | Sensor Element | Changeover Pressure (psi) | Changeover Pressure (kPa) | Setpoint Temperature Range | Throttling Range | Mounting | Includes |
|-----------------|---|---|-----------------|---|---------------------------|---------------------------|-----------------------------|------------------|-------------------------------------|---|
| LP916A1019/U | 0.022 scfm (10.4 mL/s) with 0.007 in. restriction | Direct Acting | Warmer / Cooler | Bulb 1/2 x 5 7/8 in., capillary 36 in. (914 mm) long; Remote Bulb | | | 65°F to 85°F (19°C to 30°C) | 3.5°F (2°C) | In compartment of a unit ventilator | Integral Mounting Bracket and 304528A Bag Assembly (mounting hardware). Order bulb hangers (316297-00021) separately. |
| LP916A1134/U | 0.011 scfm (5.2 mL/s) with 0.005 in. restriction | Direct Acting | Warmer / Cooler | Bulb 3/8 x 7 in., capillary 36 in. (914 mm) long; Remote Bulb | | | 65°F to 85°F (19°C to 30°C) | 3.5°F (2°C) | In compartment of a unit ventilator | Integral Mounting Bracket, (2) 316297-00021 Bulb Hangers and 304528A Bag Assembly (mounting hardware). |
| LP916A1159/U | 0.011 scfm (5.2 mL/s) with 0.005 in. restriction | Direct Acting | Warmer / Cooler | Bulb 3/8 x 9 in., capillary 36 in. (914 mm) long; Remote Bulb | | | 60°F to 80°F (16°C to 27°C) | 3.5°F (2°C) | In compartment of a unit ventilator | Integral mounting bracket |
| LP916A1175/U | 0.022 scfm (10.4 mL/s) with 0.007 in. restriction | Direct Acting | 40°F to 80°F | Bulb 3/8 x 7 in., capillary 36 in. (914 mm) long; Remote Bulb | | | 40°F to 80°F (4°C to 26°C) | 7°F (-13°C) | In compartment of a unit ventilator | Integral Mounting Bracket, (2) 316297-00021 Bulb Hangers and 304528A Bag Assembly (mounting hardware). |
| LP916B1017/U | 0.022 scfm (10.4 mL/s) with 0.007 in. restriction | Direct Acting Heating, Reverse Acting Cooling | Warmer / Cooler | Bulb 1/2 x 5 7/8 in., capillary 36 in. (914 mm) long; Remote Bulb | Heat 18 psi, Cool 13 psi | Heat 124 kPa, Cool 90 kPa | 65°F to 85°F (19°C to 30°C) | 3.5°F (2°C) | In compartment of a unit ventilator | Integral Mounting Bracket and 304528A Bag Assembly (mounting hardware). Order bulb hangers (316297-00021) separately. |
| LP916B1058/U | 0.022 scfm (10.4 mL/s) with 0.007 in. restriction | Direct Acting Heating, Reverse Acting Cooling | Warmer / Cooler | Bulb 1/2 x 5 7/8 in., capillary 36 in. (914 mm) long; Remote Bulb | Heat 18 psi, Cool 9 psi | Heat 124 kPa, Cool 62 kPa | 65°F to 85°F (19°C to 30°C) | 3.5°F (2°C) | In compartment of a unit ventilator | Integral Mounting Bracket and 304528A Bag Assembly (mounting hardware). Order bulb hangers (316297-00021) separately. |
| LP916B1074/U | 0.011 scfm (5.2 mL/s) with 0.005 in. restriction | Direct Acting Heating, Reverse Acting Cooling | Warmer / Cooler | Bulb 3/8 x 7 in., capillary 36 in. (914 mm) long; Remote Bulb | Heat 18 psi, Cool 13 psi | Heat 124 kPa, Cool 90 kPa | 65°F to 85°F (19°C to 30°C) | 3.5°F (2°C) | Direct | Order Mounting Bracket, Knob, Bulb Hangers, and Scale Plate separately. |
| LP916B1082/U | 0.011 scfm (5.2 mL/s) with 0.005 in. restriction | Direct Acting Heating, Reverse Acting Cooling | Warmer / Cooler | Bulb 3/8 x 7 in., capillary 36 in. (914 mm) long; Remote Bulb | Heat 18 psi, Cool 13 psi | Heat 124 kPa, Cool 90 kPa | 65°F to 85°F (19°C to 30°C) | 3.5°F (2°C) | In compartment of a unit ventilator | Integral Mounting Bracket, (2) 316297-00021 Bulb Hangers and 304528A Bag Assembly (mounting hardware). |

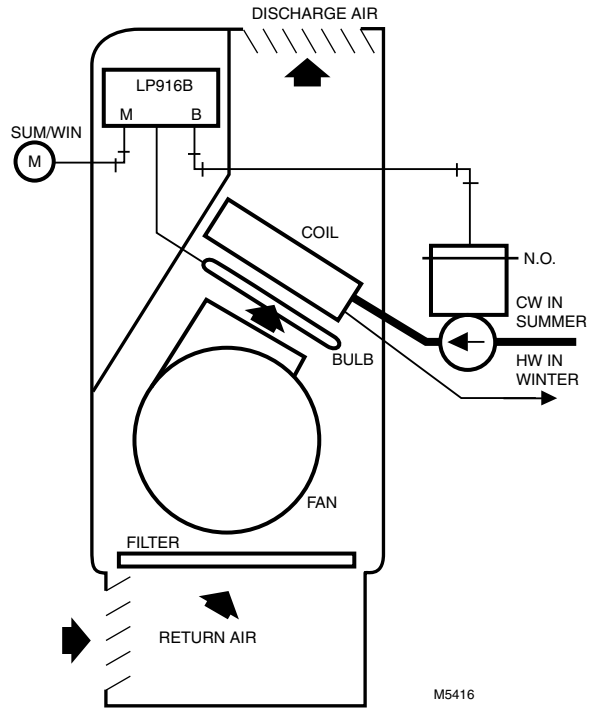
Pneumatic Thermostats

| Material Number | Airflow Usage | Product Action | Scale Markings | Sensor Element | Changeover Pressure (psi) | Changeover Pressure (kPa) | Setpoint Temperature Range | Throttling Range | Mounting | Includes |
|-----------------|---|---|-----------------|---|---------------------------|---------------------------|-----------------------------|------------------|-------------------------------------|--|
| LP916B1090/U | 0.011 scfm (5.2 mL/s) with 0.005 in. restriction | Direct Acting Heating, Reverse Acting Cooling | Warmer / Cooler | Bulb 3/8 x 9 in., capillary 36 in. (914 mm) long; Remote Bulb | Heat 18 psi, Cool 13 psi | Heat 124 kPa, Cool 90 kPa | 65°F to 85°F (19°C to 30°C) | 3.5°F (2°C) | In compartment of a unit ventilator | Integral Mounting Bracket, (2) 316297-00021 Bulb Hangers and 304528A Bag Assembly (mounting hardware). |
| LP916C1023/U | 0.022 scfm (10.4 mL/s) with 0.007 in. restriction | Reverse Acting | 60°F to 80°F | Bulb 3/8 x 9 in., capillary 36 in. (914 mm) long; Remote Bulb | | | 60°F to 80°F (15°C to 26°C) | 3.5°F (2°C) | In compartment of a unit ventilator | Integral Mounting Bracket, (2) 316297-00021 Bulb Hangers and 304528A Bag Assembly (mounting hardware). |

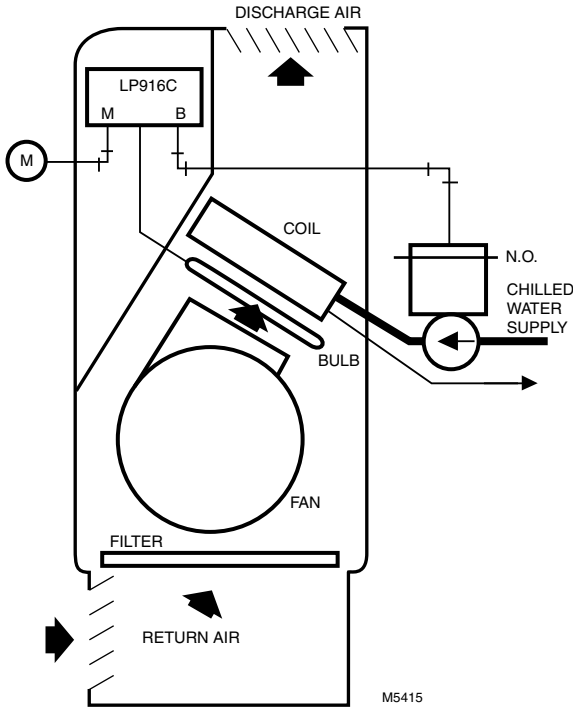
Typical LP916A Mixed Air Application



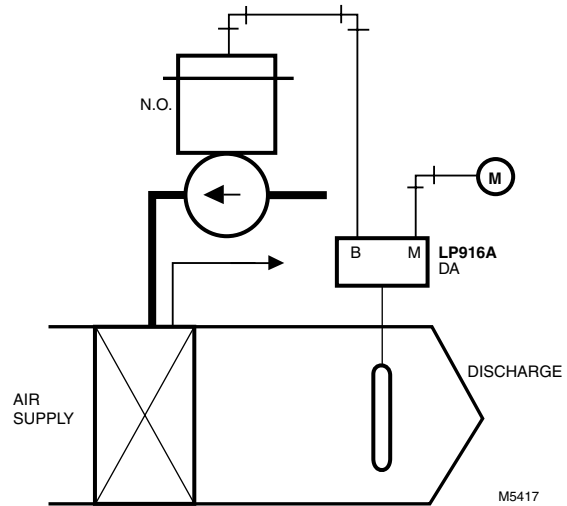
Typical LP916B Fan Coil Application, Heating/Cooling with Seasonal Changeover



Typical LP916C Fan Coil Application, Cooling Only



Typical LP916A Duct Mounted Heating Application



TP9600 Pneumatic Thermostat



Air Connections: Barb fittings 5/32 in. (4 mm)
Airflow Usage: 0.011 scfm (5.2 mL/s)
Sensor Element: Bimetal
Maximum Safe Operating Pressure (psi): 25 psi
Maximum Safe Operating Pressure (kPa): 170 kPa
Temperature Range: 50°F to 100°F (10°C to 38°C)
Shipping and Storage Temperature Range: 150°F maximum (66°C maximum)
Throttling Range: 2°F to 10°F (1°C to 5°C)
Dimensions: 3 1/4 in. high x 2 in. wide x 1 5/8 in. deep (83 mm high x 51 mm wide x 41 mm deep)
Mounting: Vertical Wall Mounting

Accessories:

AK3863/U – Thermostat Tool Kit,
CCT729A/U – Gauge adapter for calibration. Add 305965/U (0 to 30 psi gauge) for complete tool
CCT735A/U – Thermostat calibration tool includes Allen wrench for cover installation.
305965/U – 1-1/2 in. diameter, 1/8 NPT center stem back mount Pressure Indicating gauge (0 to 30 psi scale) with ± 4% accuracy

TP9600 Pneumatic thermostat, for proportional control of pneumatic valves and actuators with one/two-pipe systems, is not only affordable and easy to install, but it controls temperature with Honeywell reliability. Available with two cover options.

- TP9600 delivers the Honeywell TP970s unparalleled sensing and control.
- Redesigned models fit your high-volume pneumatic applications.
- Backplate mounts quickly.
- Thermostat snaps onto backplate.
- Cover is mounted and locked into place with concealed setscrews.
- Attractive Euro-contoured design comes with choice of two cover options.
- Neutral taupe color blends with today's commercial interiors.
- Adapter kits are available to retrofit most pneumatic jobs.
- Branch line capacity Low for TP9630 and TP9633 Branch line capacity High for TP9600, TP9610, TP9603, TP9620.

14002362-001/U – Duct Sampling Chamber

14002430-001/U – Thermostat Guard

14002913-001/U – 0.005 in. Blue Filter Restriction Assembly; Inlet: 1/4 in., Outlets: 1/4 in. and 5/32 in.; Order in Quantities of 10

14002913-004/U – External Restriction Assembly. 0.005 in. Restriction, Blue Inlet 1/4 in; Outlet 5/32 in. and 5/32 in.

14003192-001/U – Wallplate adapter kit. Adapts HP970 or TP970 series thermostats to HP900 and TP900 flush mounted and TP910 series flush or surface mounted installations

14004439-001/U – Setpoint Extension

Replacement Parts:

14001865-001/U – Filter Cartridge Assembly

14002053-001/U – Back Plate Assembly

14002573-001/U – Modernization Kit to convert all 1 & 2 pipe Honeywell & competitive pneumatic thermostats to TP970, TP971A, TP972, TP973, TP974, TP9600 family; HP970, HP971 and HP972

| Material Number | Applications | Setpoint | Product Action | Number of Pipes | Changeover Pressure (psi) | Changeover Pressure (kPa) | Setpoint Temperature Range | Includes |
|-----------------|--------------------------------------|-----------|---|-----------------|---------------------------|---------------------------|---|--|
| TP9600A1007/U | Wall Thermostat | Single | Direct Acting | 2 | | | 59°F to 90°F (15°C to 32°C) | Cover, Setpoint, and Thermometer are Visible |
| TP9600B1006/U | Wall Thermostat | Single | Reverse Acting | 2 | | | 59°F to 90°F (15°C to 32°C) | Cover, Setpoint, and Thermometer are Visible |
| TP9603A1001/U | Wall Thermostat | Single | Direct Acting | 2 | | | 59°F to 90°F (15°C to 32°C) | Blank Cover, Setpoint, and Thermometer are Not Visible |
| TP9610A1006/U | Wall Thermostat, Day/Night operation | Day/Night | Direct Acting | 2 | Day 13 psi, Night 18 psi | Day 90 kPa, Night 124 kPa | Day: 59°F to 90°F, Night: 50°F to 75°F (Day: 15°C to 30°C, Night: 10°C to 27°C) | Cover, Setpoint, and Thermometer are Visible |
| TP9620A1005/U | Wall Thermostat, Heat/Cool Operation | Single | Direct Acting Heating, Reverse Acting Cooling | 2 | Heat 18 psi, Cool 13 psi | Heat 124 kPa, Cool 90 kPa | 60°F to 90°F (16°C to 32°C) | Cover, Setpoint, and Thermometer are Visible |
| TP9630A1004/U | Wall Thermostat | Single | Direct Acting | 1 or 2 | | | 60°F to 90°F (16°C to 32°C) | Cover, Setpoint, and Thermometer are Visible |
| TP9630B1003/U | Wall Thermostat | Single | Reverse Acting | 1 or 2 | | | 60°F to 90°F (16°C to 32°C) | Cover, Setpoint, and Thermometer are Visible |

Pneumatic Thermostats

TP970 Pneumatic Thermostat



Airflow Usage: 0.011 scfm (5.2 mL/s)

Setpoint: Single

Number of Pipes: 2

Sensor Element: Bimetal

Maximum Safe Operating Pressure (psi): 25 psi

Maximum Safe Operating Pressure (kPa): 170 kPa

Shipping and Storage Temperature Range: 150°F maximum (66°C maximum)

Dimensions: 3 1/4 in. high x 2 in. wide x 1 5/8 in. deep (83 mm high x 51 mm wide x 41 mm deep)

Mounting: Wall mount

Accessories:

AK3863/U – Thermostat Tool Kit,

CCT729A/U – Gauge adapter for calibration. Add 305965/U (0 to 30 psi gauge) for complete tool

CCT735A/U – Thermostat calibration tool includes Allen wrench for cover installation.

305965/U – 1-1/2 in. diameter, 1/8 NPT center stem back mount Pressure Indicating gauge (0 to 30 psi scale) with ± 4% accuracy

14002362-001/U – Duct Sampling Chamber

14002430-001/U – Thermostat Guard

Pneumatic thermostat gives comparable control of pneumatic valves and damper actuators in heating & air conditioning systems. Replacement kits available for Johnson, Powers, Robertshaw, Barber-Colman, and past Honeywell 2-pipe pneumatic thermostats.

- Honeywell's best pneumatic thermostat-TP970 series.
- Shock-resistant, suspension-mounted thermostats provide dependable performance and responsiveness year in and year out.
- Pilot operated for high capacity.
- Direct Acting (DA) and Reverse Acting (RA) models are available.
- Wide throttling range models for Zero Energy Band (ZEB) operation are available.
- Adapter plate in Convertastat™ and Modernization kits covers existing thermostat wall mark.
- Backplate has molded air connections-no separate fittings needed.
- Universal locking cover with satin chrome finish and horizontal, vertical, or blank window options.
- Typical Wide Throttling Range Application.

14002913-001/U – 0.005 in. Blue Filter Restriction Assembly; Inlet: 1/4 in., Outlets: 1/4 in. and 5/32 in.; Order in Quantities of 10

14002913-004/U – External Restriction Assembly. 0.005 in. Restriction, Blue Inlet 1/4 in.; Outlet 5/32 in. and 5/32 in.

14003192-001/U – Wallplate adapter kit. Adapts HP970 or TP970 series thermostats to HP900 and TP900 flush mounted and TP910 series flush or surface mounted installations

14004439-001/U – Setpoint Extension

14004447-001/U – Setpoint cam assembly for TP970A, TP970C, TP972A and TP973A Thermostats

14004447-002/U – Setpoint Cam Assembly for TP970B, TP970D, TP972A, and TP973B

14004447-005/U – Setpoint Cam Assembly for TP970B, and TP972A

Replacement Parts:

14001865-001/U – Filter Cartridge Assembly

14002053-001/U – Back Plate Assembly

14002573-001/U – Modernization Kit to convert all 1 & 2 pipe Honeywell & competitive pneumatic thermostats to TP970, TP971A, TP972, TP973, TP974, TP9600 family; HP970, HP971 and HP972

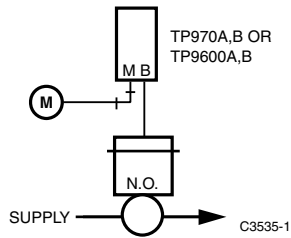
14004459-001/U – Repair kit consisting of a thermometer assembly, a thermometer post and a 60 to 90°F aluminum scaleplate

| Material Number | Applications | Product Action | Temperature Range | Setpoint Temperature Range | Throttling Range | Includes | Comments |
|-----------------|----------------------|----------------|-------------------|----------------------------|--|--|--|
| TP970A2004/U | Heating | Direct Acting | 100°F maximum | 59°F to 90°F | 2°F to 10°F (factory set 4°F) (-16°C to -12°C (factory set -15°C)) | Order Cover Separately | |
| TP970A2012/U | Heating | Direct Acting | 100°F maximum | 40°F to 70°F | 2°F to 10°F (factory set 4°F) (-16°C to -12°C (factory set -15°C)) | Order Cover Separately | |
| TP970A2020/U | Heating | Direct Acting | (38°C maximum) | (15°C to 30°C) | 33°F to 41°F (factory set 35°C) (1°C to 5°C (factory set 2°C)) | Order Cover Separately | |
| TP970A2038/U | Heating | Direct Acting | 100°F maximum | 59°F to 90°F | 2°F to 10°F (factory set 4°F) (-16°C to -12°C (factory set -15°C)) | Thermostat, large wall plate and satin chrome cover. | Modernization kit used to convert older Honeywell Thermostats. |
| TP970A2145/U | Heating | Direct Acting | 100°F maximum | 59°F to 90°F | 2°F to 10°F (factory set 4°F) (-16°C to -12°C (factory set -15°C)) | Thermostat, small wall plate and satin chrome cover. | Convertastat Kit |
| TP970A2234/U | Heating | Direct Acting | (38°C maximum) | (15°C to 30°C) | 33°F to 41°F (factory set 35°C) (1°C to 5°C (factory set 2°C)) | Thermostat, small wall plate and satin chrome cover. | Convertastat Kit |
| TP970A2242/U | Heating | Direct Acting | 100°F maximum | 59°F to 90°F | 2°F to 10°F (factory set 4°F) (-16°C to -12°C (factory set -15°C)) | Thermostat, small wall plate and beige cover. | Convertastat Kit |
| TP970A2259/U | Heating | Direct Acting | 100°F maximum | 59°F to 90°F | 2°F to 10°F (factory set 4°F) (-16°C to -12°C (factory set -15°C)) | Thermostat and satin chrome cover. | Tradeline Kit |
| TP970B2002/U | Cooling only systems | Reverse Acting | 100°F maximum | 59°F to 90°F | 2°F to 10°F (factory set 4°F) (-16°C to -12°C (factory set -15°C)) | Order Cover Separately | |

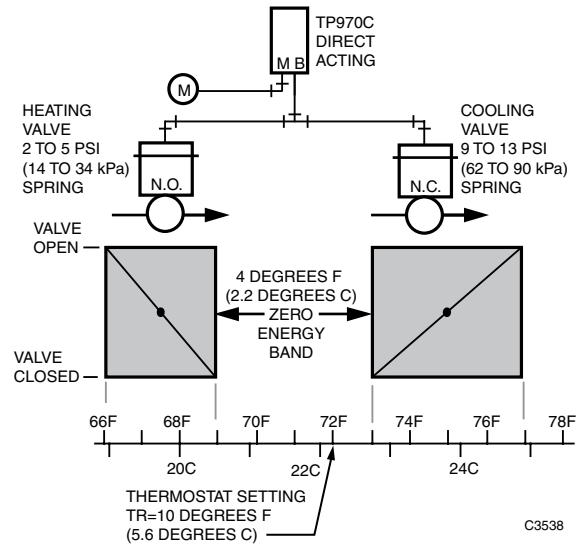
Pneumatic Thermostats

| Material Number | Applications | Product Action | Temperature Range | Setpoint Temperature Range | Throttling Range | Includes | Comments |
|-----------------|----------------------------|----------------|-------------------|----------------------------|--|--|------------------------------|
| TP970B2010/U | Cooling only systems | Reverse Acting | (38°C maximum) | (15°C to 30°C) | 33°F to 41°F (factory set 35°C) (1°C to 5°C (factory set 2°C)) | Order Cover Separately | |
| TP970B2077/U | Cooling only systems | Reverse Acting | 100°F maximum | 59°F to 90°F | 2°F to 10°F (factory set 4°F) (-16°C to -12°C (factory set -15°C)) | Thermostat, small wall plate and satin chrome cover. | Convertastat Kit |
| TP970B2150/U | Cooling only systems | Reverse Acting | (38°C maximum) | (15°C to 30°C) | 33°F to 41°F (factory set 35°C) (1°C to 5°C (factory set 2°C)) | Thermostat, small wall plate and satin chrome cover. | Convertastat Kit |
| TP970B2166/U | Cooling only systems | Reverse Acting | 100°F maximum | 59°F to 90°F | 2°F to 10°F (factory set 4°F) (1°C to 5°C (factory set 2°C)) | Thermostat, small wall plate and beige cover. | Convertastat Kit |
| TP970B2182/U | Cooling only systems | Reverse Acting | 100°F maximum | 59°F to 90°F | 2°F to 10°F (factory set 4°F) (-16°C to -12°C (factory set -15°C)) | Thermostat and satin chrome cover. | Tradeline Kit |
| TP970C2000/U | Heat; Cooling only systems | Direct Acting | 100°F maximum | 59°F to 90°F | 5°F to 25°F (-15°C to -3°C) | Order Cover Separately | Wide Throttling Range 5-25°F |

Typical Standard Throttling Range Piping



Typical Wide Throttling Range Piping



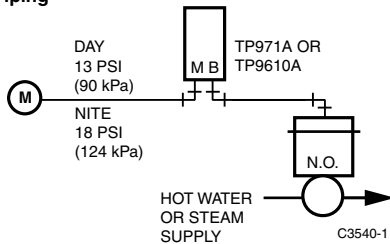
Pneumatic Thermostats

TP971 Pneumatic Day/Night Thermostat



Applications: Wall Thermostat, Day/Night operation
Airflow Usage: 0.011 scfm (5.2 mL/s)
Setpoint: Day/Night
Sensor Element: Bimetal
Maximum Safe Operating Pressure (psi): 25 psi
Maximum Safe Operating Pressure (kPa): 170 kPa
Shipping and Storage Temperature Range: 150°F maximum (66°C maximum)
Throttling Range: 2°F to 10°F (1°C to 5°C)
Dimensions: 3 1/4 in. high x 2 in. wide x 1 5/8 in. deep (83 mm high x 51 mm wide x 41 mm deep)
Mounting: Wall mount

TP971 Typical Piping



Pneumatic thermostat with night setback used for proportional control of pneumatic valves and damper actuators. Replacement kits are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell two-pipe pneumatic thermostats.

- Durable TP970 series thermostat Pilot operated for high capacity.
- Direct Acting (DA) and Reverse Acting (RA) models are available.
- Three-pipe thermostats are available for unit ventilator applications where the outdoor damper must operate when the thermostat is manually set to day operation.
- Adapter plate in thermostat kits covers existing thermostat watermark.
- Backplate has molded air connections-no separate fittings needed.
- Universal Locking cover with satin chrome finish and horizontal, vertical, or blank window options-other covers available.

Accessories:

- AK3863/U** – Thermostat Tool Kit,
- CCT729A/U** – Gauge adapter for calibration. Add 305965/U (0 to 30 psi gauge) for complete tool
- CCT735A/U** – Thermostat calibration tool includes Allen wrench for cover installation.
- 305965/U** – 1-1/2 in. diameter, 1/8 NPT center stem back mount Pressure Indicating gauge (0 to 30 psi scale) with ± 4% accuracy
- 14002362-001/U** – Duct Sampling Chamber
- 14002430-001/U** – Thermostat Guard
- 14003192-001/U** – Wallplate adapter kit. Adapts HP970 or TP970 series thermostats to HP900 and TP900 flush mounted and TP910 series flush or surface mounted installations
- 14004439-001/U** – Setpoint Extension
- 14004447-003/U** – Setpoint cam assembly for TP971A, TP971C, TP971D and TP972A Thermostats

Replacement Parts:

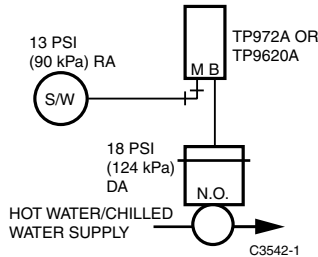
- 14001865-001/U** – Filter Cartridge Assembly

| Material Number | Product Action | Number of Pipes | Changeover Pressure (psi) | Changeover Pressure (kPa) | Temperature Range | Setpoint Temperature Range | Includes | Comments |
|-----------------|-----------------------------------|-----------------|---------------------------------------|----------------------------|-------------------|--|--|---------------------------|
| TP971A2003/U | Direct Acting Heating, two temp. | 2 | Day 13 psi, Night 18 psi | Day 90 kPa, Night 124 kPa | 100°F maximum | Day: 59°F to 90°F, Night: 50°F to 80°F | Order Cover Separately | |
| TP971A2011/U | Direct Acting Heating, two temp. | 2 | Day 13 psi, Night 18 psi | Day 90 kPa, Night 124 kPa | (38°C maximum) | (Day: 15°C to 30°C, Night: 10°C to 27°C) | Order Cover Separately | |
| TP971A2029/U | Direct Acting Heating, two temp. | 2 | Day 16 psi, Night 21 psi | Day 110 kPa, Night 144 kPa | 100°F maximum | Day: 59°F to 90°F, Night: 50°F to 80°F | Order Cover Separately | |
| TP971A2052/U | Direct Acting Heating, two temp. | 2 | Day 16 psi, Night 21 psi | Day 110 kPa, 144 kPa | (38°C maximum) | (Day: 15°C to 30°C, Night: 10°C to 27°C) | Order Cover Separately | |
| TP971A2086/U | Direct Acting Heating, two temp. | 2 | Day 20 psi, Night 25 psi | Day 137 kPa, Night 172 kPa | 100°F maximum | Day: 59°F to 90°F, Night: 50°F to 80°F | Order Cover Separately | |
| TP971A2102/U | Direct Acting Heating, two temp. | 2 | Day 13 psi, Night 18 psi or 16-20 psi | Day 90 kPa, Night 124 kPa | 100°F maximum | Day: 59°F to 90°F, Night: 50°F to 80°F | Thermostat, small wall plate and satin chrome cover. | Convertastat Kit |
| TP971B2001/U | Reverse Acting Heating, two temp. | 2 | Day 13 psi, Night 18 psi | Day 90 kPa, Night 124 kPa | 100°F maximum | Day: 59°F to 90°F, Night: 50°F to 80°F | Order Cover Separately | |
| TP971B2019/U | Reverse Acting Heating, two temp. | 2 | Day 16 psi, Night 21 psi | Day 110 kPa, Night 144 kPa | 100°F maximum | Day: 59°F to 90°F, Night: 50°F to 80°F | Order Cover Separately | |
| TP971B2043/U | Reverse Acting Heating, two temp. | 2 | Day 20 psi, Night 25 psi | Day 137 kPa, Night 172 kPa | 100°F maximum | Day: 59°F to 90°F, Night: 50°F to 80°F | Order Cover Separately | |
| TP971C2009/U | Direct Acting Heating, two temp. | 3 | Day 13 psi, Night 18 psi | Day 90 kPa, Night 124 kPa | 100°F maximum | Day: 59°F to 90°F, Night: 50°F to 80°F | Order Cover Separately | Has secondary branch line |
| TP971C2017/U | Direct Acting Heating, two temp. | 3 | Day 13 psi, Night 18 psi | Day 90 kPa, Night 124 kPa | (38°C maximum) | (Day: 15°C to 30°C, Night: 10°C to 27°C) | Order Cover Separately | Has secondary branch line |
| TP971C2025/U | Direct Acting Heating, two temp. | 3 | Day 16 psi, Night 21 psi | Day 110 kPa, Night 144 kPa | 100°F maximum | Day: 59°F to 90°F, Night: 50°F to 80°F | Order Cover Separately | Has secondary branch line |

TP972 Pneumatic Heating/Cooling Thermostat



TP972 Typical Piping



Two-pipe, one- or two-temperature, pneumatic thermostat gives proportional control of pneumatic valves & damper actuators. Replacement kits available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell two-pipe pneumatic thermostats.

- Durable TP970 Series Thermostat. Pilot operated for high capacity.
- Two-temperature energy conservation model available.
- Adapter plate in Convertastat™ kits covers existing thermostat wall mark.
- Backplate has molded air connections-no separate fittings needed.
- Universal locking cover with satin chrome finish and horizontal, vertical, or blank window options with Tradeline model-other covers available.

Applications: Wall Thermostat, Heat/Cool Operation
Airflow Usage: 0.011 scfm (5.2 mL/s)
Product Action: Direct Acting Heating, Reverse Acting Cooling
Number of Pipes: 2
Sensor Element: Bimetal
Maximum Safe Operating Pressure (psi): 25 psi
Maximum Safe Operating Pressure (kPa): 170 kPa
Shipping and Storage Temperature Range: 150°F maximum (66°C maximum)
Throttling Range: 2°F to 10°F (1°C to 5°C)
Dimensions: 3 1/4 in. high x 2 in. wide x 1 5/8 in. deep (83 mm high x 51 mm wide x 41 mm deep)
Mounting: Wall mount

Accessories:

- AK3863/U** – Thermostat Tool Kit,
- CCT729A/U** – Gauge adapter for calibration. Add 305965/U (0 to 30 psi gauge) for complete tool
- CCT735A/U** – Thermostat calibration tool includes Allen wrench for cover installation.
- 305965/U** – 1-1/2 in. diameter, 1/8 NPT center stem back mount Pressure Indicating gauge (0 to 30 psi scale) with ± 4% accuracy
- 14002362-001/U** – Duct Sampling Chamber
- 14002430-001/U** – Thermostat Guard
- 14003192-001/U** – Wallplate adapter kit. Adapts HP970 or TP970 series thermostats to HP900 and TP970 flush mounted and TP910 series flush or surface mounted installations
- 14004439-001/U** – Setpoint Extension
- 14004447-001/U** – Setpoint Cam Assembly for TP970A, TP970C, TP972A, and TP973A
- 14004447-002/U** – Setpoint Cam Assembly for TP970B, TP970D, TP972A, and TP973B
- 14004447-003/U** – Setpoint cam assembly for TP971A, TP971C, TP971D and TP972A Thermostats
- 14004447-005/U** – Setpoint Cam Assembly for TP970B, and TP972A

Replacement Parts:

- 14001865-001/U** – Filter Cartridge Assembly
- 14002573-001/U** – Modernization Kit to convert all 1 & 2 pipe Honeywell & competitive pneumatic thermostats to TP970, TP971A, TP972, TP973, TP974, TP9600 family; HP970, HP971 and HP972

| Material Number | Setpoint | Changeover Pressure (psi) | Changeover Pressure (kPa) | Temperature Range | Setpoint Temperature Range | Includes | Comments |
|-----------------|----------|---------------------------|---------------------------|-------------------|--|---|------------------------------|
| TP972A2002/U | Single | Heat 18 psi, Cool 13 psi | Heat 124 kPa, Cool 90 kPa | 100°F maximum | 59°F to 90°F | Order Cover Separately | |
| TP972A2010/U | Single | Heat 18 psi, Cool 13 psi | Heat 124 kPa, Cool 90 kPa | (38°C maximum) | (15°C to 30°C) | Order Cover Separately | |
| TP972A2036/U | Dual | Heat 18 psi, Cool 13 psi | Heat 124 kPa, Cool 90 kPa | 100°F maximum | Heating 50°F to 75°F, Cooling 60°F to 90°F | Energy Conservation Model, Order Cover Separately | Two concealed setpoint knobs |
| TP972A2143/U | Single | Heat 14 psi, Cool 19 psi | Heat 96 kPa, Cool 131 kPa | 100°F maximum | 59°F to 90°F | Order Cover Separately | |
| TP972A2192/U | Single | Heat 18 psi, Cool 13 psi | Heat 124 kPa, Cool 90 kPa | 100°F maximum | 59°F to 90°F | Thermostat, small wall plate and satin chrome cover | Convertastat Kit |

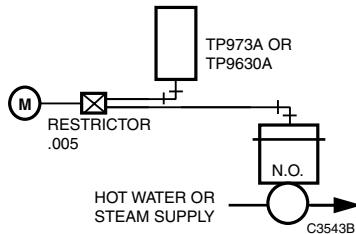
Pneumatic Controls

Pneumatic Thermostats

TP973 Pneumatic Thermostat



TP973 Typical Piping (One-pipe)



Single temperature, low capacity, pneumatic thermostat provides control of pneumatic valves & damper actuators in HVAC systems. Replacement kits are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell pneumatic thermostats.

- Durable TP970 Series Thermostat. Direct Acting (DA) and Reverse Acting (RA) models are available.
- Backplate has molded air connections-no separate fittings needed.
- Universal locking cover with satin chrome finish and horizontal, vertical, or blank window options available.
- Other Covers Available.
- Low capacity thermostat.
- Built in restrictor for two-pipe applications.

Applications: Wall Thermostat, Single Temperature
Airflow Usage: 0.011 scfm (5.2 mL/s)
Setpoint: Single
Sensor Element: Bimetal
Maximum Safe Operating Pressure (psi): 25 psi
Maximum Safe Operating Pressure (kPa): 170 kPa
Shipping and Storage Temperature Range: 150°F maximum (66°C maximum)
Throttling Range: 2°F to 10°F (1°C to 5°C)
Dimensions: 3 1/4 in. high x 2 in. wide x 1 5/8 in. deep (83 mm high x 51 mm wide x 41 mm deep)
Mounting: Wall mount

Accessories:

- AK3863/U** – Thermostat Tool Kit,
- CCT729A/U** – Gauge adapter for calibration. Add 305965/U (0 to 30 psi gauge) for complete tool
- CCT735A/U** – Thermostat calibration tool includes Allen wrench for cover installation.
- 305965/U** – 1-1/2 in. diameter, 1/8 NPT center stem back mount Pressure Indicating gauge (0 to 30 psi scale) with ± 4% accuracy
- 14002362-001/U** – Duct Sampling Chamber
- 14002430-001/U** – Thermostat Guard
- 14002913-004/U** – External Restriction Assembly. 0.005 in. Restriction, Blue Inlet 1/4 in.; Outlet 5/32 in. and 5/32 in.
- 14003192-001/U** – Wallplate adapter kit. Adapts HP970 or TP970 series thermostats to HP900 and TP900 flush mounted and TP910 series flush or surface mounted installations
- 14004439-001/U** – Setpoint Extension
- 14004447-001/U** – Setpoint Cam Assembly for TP970A, TP970C, TP972A, and TP973A
- 14004447-002/U** – Setpoint Cam Assembly for TP970B, TP970D, TP972A, and TP973B

Replacement Parts:

- 14001865-001/U** – Filter Cartridge Assembly
- 14002573-001/U** – Modernization Kit to convert all 1 & 2 pipe Honeywell & competitive pneumatic thermostats to TP970, TP971A, TP972, TP973, TP974, TP9600 family; HP970, HP971 and HP972

| Material Number | Product Action | Number of Pipes | Temperature Range | Setpoint Temperature Range | Includes | Comments |
|-----------------|----------------|-----------------|-------------------|----------------------------|-----------------------------------|--|
| TP973A2076/U | Direct Acting | 1 or 2 | 100°F | 59°F to 90°F | Order Cover Separately | For one-pipe order an external 0.005 in. restriction |
| TP973A2084/U | Direct Acting | 1 or 2 | (38°C) | (15°C to 30°C) | Order Cover Separately | For one-pipe order an external 0.005 in. restriction |
| TP973A2209/U | Direct Acting | 1 or 2 | 100°F | 59°F to 90°F | Thermostat and Satin Chrome Cover | Tradeline Kit. For one-pipe application-order an external .005 in. restriction |
| TP973B2066/U | Reverse Acting | 1 or 2 | 100°F | 59°F to 90°F | Order Cover Separately | For one-pipe order an external 0.005 in. restriction |
| TP973B2074/U | Reverse Acting | 1 or 2 | (38°C) | (15°C to 30°C) | Order Cover Separately | For one-pipe order an external 0.005 in. restriction |
| TP973B2171/U | Reverse Acting | 1 or 2 | 100°F | 59°F to 90°F | Thermostat and Satin Chrome Cover | Tradeline Kit. For one-pipe application-order an external .005 in. restriction |

TP975 Pneumatic Diffuser Thermostat



One-pipe, single temperature, low-capacity pneumatic thermostat used to provide proportional control of pneumatic valves and mixing boxes in heating and air conditioning systems. It mounts in a slot or light troffer diffuser or a return air grill.

- Two-way setpoint indicator for vertical or horizontal mounting.
- Detents in 1°F (0.5°C) increments for blind operation.

Applications: Single temperature, low capacity, pneumatic thermostat

Airflow Usage: 0.011 scfm (5.2 mL/s)

Number of Pipes: 1

Sensor Element: Bimetal

Maximum Safe Operating Pressure (psi): 30 psi

Maximum Safe Operating Pressure (kPa): 207 kPa

Temperature Range: 110°F maximum (43°C maximum)

Shipping and Storage Temperature Range: 150°F maximum (66°C maximum)

Dimensions: 1 in. high x 2 1/2 in. wide x 1 1/8 in. deep (25 mm high x 63 mm wide x 27 mm deep)

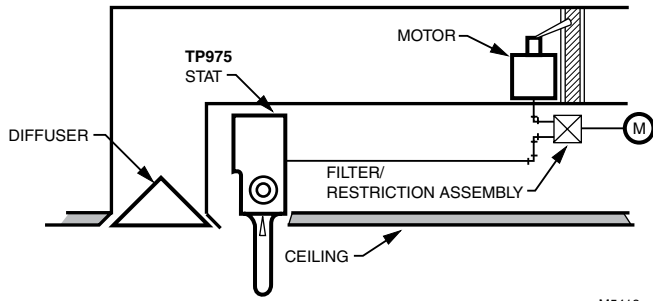
Mounting: Wall mount

Accessories:

14002913-001/U – 0.005 in. Blue Filter Restriction Assembly; Inlet: 1/4 in., Outlets: 1/4 in. and 5/32 in.; Order in Quantities of 10

14002913-004/U – External Restriction Assembly. 0.005 in. Restriction, Blue Inlet 1/4 in.; Outlet 5/32 in. and 5/32 in.

TP975 Typical Piping





M5418





| Material Number | Product Action | Setpoint | Setpoint Temperature Range | Throttling Range | Comments |
|-----------------|----------------|----------|----------------------------|--------------------------|--|
| TP975A1009/U | Direct Acting | Single | 67°F to 83°F | 2°F to 10°F (1°C to 5°C) | Requires external 0.005 in. restrictor |

Pneumatic Thermostats

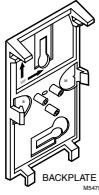
TP9600 Series Standard Covers

| Material Number | Description | Used With | |
|-----------------|--|-----------|---|
| 14004910-001/U | Fahrenheit scale (60 to 90°F) Taupe Thermostat Cover Kit with thermometer and setpoint display visible and Honeywell logo for vertical mounting. | TP9600 |  |
| 14004910-004/U | Taupe Thermostat Cover with setpoint and thermometer concealed with Honeywell logo, for vertical mounting | TP9600 |  |

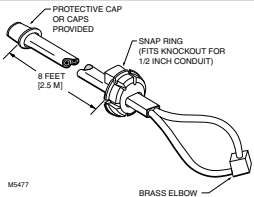

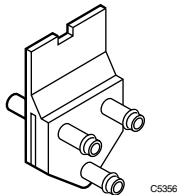
TP970 Series Standard Covers

| Material Number | Description | Comments | Used With | |
|-----------------|--|--|----------------------------|---|
| 14004406-910/U | Thermostat Cover Kit - Satin Chrome includes window inserts for 60 to 90°F setpoint display for vertical and horizontal mounting, or 60 to 90°F thermometer display and setpoint display for vertical and horizontal mounting. | | TP970; TP971; TP972; TP973 |  |
| 14004407-910/U | Thermostat Cover Kit - Beige includes window inserts for 60 to 90°F setpoint display for vertical and horizontal mounting, or 60 to 90°F thermometer display and setpoint display for vertical and horizontal mounting. | See Specification Data sheet, Form No. 77-1003 for details | TP970; TP971; TP972; TP973 |  |
| 14004787-910/U | Thermostat Cover Kit; Bright Chrome Finish | | TP970, TP971, TP972, TP973 |  |
| 14004878-910/U | Premier White Thermostat Cover Kit includes window inserts for 60 to 90°F setpoint display for vertical and horizontal mounting, or 60 to 90°F thermometer display and setpoint display for vertical and horizontal mounting. | | TP970, TP971, TP972, TP973 |  |

Pneumatic Thermostat Replacement Parts

| Material Number | Description | Used With | |
|-----------------|--|---|---|
| 14000742-002/U | Two-pipe straight red connector | TP970; TP971; TP972; TP973; TP9600 Family; HP970 Family | |
| 14001957-001/U | Plug, BLP Tap | TP970 | |
| 14002053-001/U | Back Plate Assembly | TP970; TP971; TP972; TP973; TP9600 Family; HP970 Family |  |
| 14002573-001/U | Modernization Kit to convert all 1 & 2 pipe Honeywell & competitive pneumatic stats to TP970, TP971A, TP972, TP973, TP974, TP9600 family; HP970, HP971 and HP972 | TP9600; TP970; TP972; TP973; HP970; HP971; TP971A; HP972; TP974 | |
| 14003192-001/U | Wall plate adapter kit. Adapts HP970 or TP970 series stats to HP900 and TP900 flush mounted and TP910 series flush or surface mounted installations | TP970; TP971; TP972; TP973; TP9600 Family; HP970 Family | |
| 14004459-003/U | Repair Kit consisting of a thermometer assembly, a thermometer post and a 15 to 30°C aluminum Scale Plate | TP970 | |
| 14004610-001/U | Zinc plate metal stud Adapter | TP970 | |

Pneumatic Thermostat Accessories


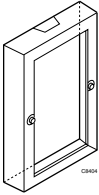

| Material Number | Description | Used With | |
|-----------------|---|--|---|
| 14001491-002/U | Two-Pipe Airhead, plastic tubing assembly for deep wall box | TP970; TP971; TP972; TP973; TP9600 Family; HP970 Family |  |
| 14001494-002/U | 2 Pipe Airhead Assembly, copper tubing for deep wall box | | |
| 14001496-001/U | Mounting Plate for TP970 to 2 in. x 4 in. Electrical Box | TP970 |  |
| 14001527-001/U | Three pipe straight white connector | TP970; TP971; TP972; TP973; TP9600 Family; HP970 Family |  |
| 14001614-001/U | Shallow wall plate assembly | TP970; TP971; TP972; TP973; TP9600 Family; HP970 Family | |
| 14001615-002/U | Two-pipe copper tube assembly for shallow wall | TP971; TP972; TP973; HP970 Family; TP9600 Family; TP970 | |
| 14001616-002/U | Two-pipe plastic tube assembly for shallow wall box | | |
| 14001918-001/U | Branchline Pressure plug | TP971; TP972; TP973; HP970 Family; TP9600 Family; TP970 | |

Pneumatic Controls

Pneumatic Thermostats

| Material Number | Description | Used With | |
|-----------------|---|--|---|
| 14002136-004/U | Black Trim plate | TP970; TP971; TP972; TP973; TP9600 Family; HP970 Family |  |
| 14002136-005/U | Beige Trim plate | TP970; TP971; TP972; TP973; TP9600 Family; HP970 Family | |
| 14002136-006 | Premier White Trim Plate | TP971; TP972; TP973; HP970 Family; TP9600 Family; TP970 | |
| 14002362-001/U | Duct Sampling Chamber | TP970; TP971; TP972; TP973; TP974; TP9600 Family; HP970 Family |  |
| 14002430-001/U | Thermostat Guard | TP970; TP971; TP972; TP973; TP9600 Family; HP970 Family |  |
| 14002573-002/U | Modernization Kit to convert 3 pipe Honeywell TP911C & competitive three pipe pneumatic | TP971C | |
| 14002636-001/U | Base for 14002362-001 Sampling Chamber | 14002362-001 | |
| 14002913-001/U | .005 in. Blue Filter Restriction Assembly; Inlet: 1/4 in., Outlets: 1/4 in. and 5/32 in.; Order in Quantities of 10 | |  |
| 14002913-002/U | .007 in. Red In-line Filtered Restriction Assembly; Inlet: 1/4 in., Outlets: 1/4 in.; Order in quantities of 10 | | |
| 14003113-002/U | Repair kit containing 0.007 in. restrictor plate, filters, and gaskets | LP916 | |
| 14003203-001/U | Bag assembly | | |
| 14004068-001/U | Mounting Hardware | | |
| 14004401-002/U | Convertastat Wall plate, black | |  |
| 14004401-004/U | Adaptor plate for conversant, beige | | |
| 14004437-001/U | INSERT COVER, Day, Satin Chrome | |  |
| 14004438-001/U | Satin Chrome Cover Insert with Setpoint Slot Setpoint Display | Pneumatic Thermostats |  |
| 14004438-002/U | Beige Cover Insert with Setpoint Slot | Pneumatic Thermostats | |

Pneumatic Thermostats

| Material Number | Description | Used With | |
|-----------------|---|--|---|
| 14004439-001/U | SETPPOINT EXTENSION | |  |
| 14004447-001/U | Setpoint Cam Assembly for TP970A1004, A1012, A1020, A1038, A1046, A1053, A1095, A2004, A2012, A2020, A2038, A2053, A2095; TP970C; TP972A1143, A2143; TP973A1001, A1019, A1127 | TP970A; TP970C; TP972A2143; TP979A | |
| 14004447-002/U | Setpoint Cam Assembly for TP970B1002, B1010, B1028, B1036, B2002, B2010, B2028, B2036; TP970D; TP972A1002, A1010, A1028, A1044, A2002, A2010, A2028, A2044; TP973B1009, B1017, B1025, B1108 | TP970B; TP970D; TP972A2002; TP972A2010; TP973B2108; TP979B | |
| 14004447-003/U | Setpoint Cam Assembly for TP971A, C, D; TP972A1168, A2168, A2176 | TP971A; TP971C; TP971D | |
| 14004447-005/U | Setpoint Cam Assembly for TP970B1044; TP972A1051, A1101 | TP972A; TP970B | |
| 14004458-001/U | Stand-Off Ring for surface or flush mounting | TP970; TP971; TP972; TP973; TP9600 Family; HP970 Family |  |
| 14004459-001/U | Scaleplate Bag Assembly, 60 to 90°F | TP970 Family | |
| 14004505-001/U | Twin elbow connector | TP970; TP971; TP972; TP973; TP9600 Family; HP970 Family | |
| 14004558-001/U | Six inch main branch tube-spring assembly | TP970; TP971; TP972; TP973; TP9600 Family; HP970 Family | |
| 311699/U | 6 inch long anti-kink spring used with 5/32 inch OD plastic tubing | LP916 | |
| 316016A/U | General purpose mounting assembly, includes 3 3/4 in. mounting bracket, scale plate, knob, bulb hangers, screws, and nuts | LP916 | |
| 316016C/U | Knob and scale plate assembly with screws | LP916 | |
| 316016M/U | Knob, large scale plate and hanger assembly with screws | LP916 | |
| AK3863/U | Honeywell Thermostat Tool Kit, TP970/TP900 | HP970, HP972, TP970 |  |

Pneumatic Transducers

RP7517 Electronic-Pneumatic Transducer



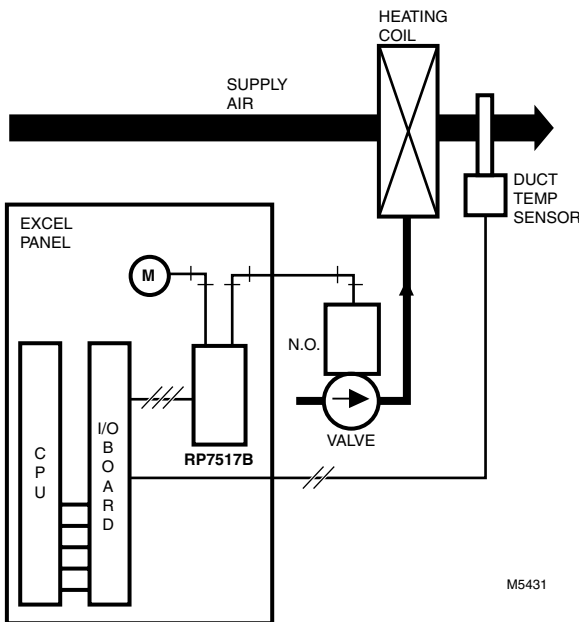
Electronic-Pneumatic Transducers are used in electronic-pneumatic control systems to convert a proportional electric output signal from a controller into a direct-acting, proportional pneumatic signal.

- Screw mounting or snap rail (models with cover).
- Factory calibrated.
- Dual barb fittings.
- High accuracy.

Applications: Electric to pneumatic Transducer
Airflow Usage: 0.025 scfm (117mL/s)
Capacity: 0.45 scfm (211 mL/s)
Air Connections: Dual barb-fittings for 1/4 in. or 5/32 in. O.D. plastic tubing
Nominal Low End (psi): 0.5 psi at 0 Vdc
Nominal Low End (kPa): 3.5 kPa at 0 Vdc

Operating Humidity Range (% RH): 5 to 95% RH
Temperature Range: 131°F, maximum (55°C, maximum)
Pressure Range (psi): 0 to 18 psi; Output – 3 to 15 psi
Pressure Range (kPa): 0 to 125 kPa; Output – 21 to 103 kPa
Maximum Safe Operating Pressure (psi): 30 psi, maximum
Maximum Safe Operating Pressure (kPa): 205 kPa, maximum
Current: 16 mA

RP7517 Typical Piping/Wiring



M5431

| Material Number | Electrical Connections | Voltage | Nominal High End (psi) | Nominal High End (kPa) | Dimensions | Input Signal | Includes |
|-----------------|--|-----------------------------|---|--|--|---------------------------|--|
| RP7517A1009 | 30 in. (762 mm) lead wire | Powered by Control signal | 16 psi with 18 psi main pressure at 12 Vdc | 110 kPa with 125 kPa main pressure at 12 Vdc | 2 7/16 in. wide x 3 5/8 in. high x 2 in. deep (62 mm wide x 92 mm high x 52 mm deep) | 2 to 10 Vdc | With cover, without internal power supply (2-wire) |
| RP7517A1017 | Screw terminals for 14 to 22 gage wire | Powered by Control signal | 16 psi with 18 psi main pressure at 12 Vdc or 16 psi at 11 Vdc (min.) | 116 kPa with 125 kPa main pressure at 12 Vdc or 110 kPa at 11 Vdc (min.) | 2 7/16 in. wide x 3 3/8 in. high x 1 7/8 in. deep (62 mm wide x 86 mm high x 48 mm deep) | 2 to 10 Vdc | Without cover, without internal power supply for panel mounting (2 wire) |
| RP7517B1016 | 30 in. (762 mm) lead wire | 24 Vac external transformer | 16 psi with 18 psi main pressure at 12 Vdc or 16 psi at 11 Vdc (min.) | 116 kPa with 125 kPa main pressure at 12 Vdc or 110 kPa at 11 Vdc (min.) | 2 7/16 in. wide x 3 5/8 in. high x 2 in. deep (62 mm wide x 92 mm high x 52 mm deep) | 2 to 10 Vdc at 0.1 mA max | With cover, external transformer required, 24 Vac, 50/60 Hz, (3 wire) |
| RP7517B1024 | Screw terminals for 14 to 22 gage wire | 24 Vac external transformer | 16 psi with 18 psi main pressure at 12 Vdc or 16 psi at 11 Vdc (min.) | 116 kPa with 125 kPa main pressure at 12 Vdc or 110 kPa at 11 Vdc (min.) | 2 7/16 in. wide x 3 3/8 in. high x 1 7/8 in. deep (62 mm wide x 86 mm high x 48 mm deep) | 2 to 10 Vdc at 0.1 mA max | Without cover, external transformer required, 24 Vac, 50/60 Hz, (3 wire) |

CP980 Velocitrol Velocity Sensor/Controller



An ultra-sensitive air velocity sensor and pneumatic controller, control pneumatic damper actuators in heating and air conditioning systems to provide constant air velocity in the duct regardless of the static pressure.

- State-of-the-art design provides reliable operation.
- Not position sensitive.
- Direct Acting (DA) and Reverse Acting (RA) models are available.
- Insensitive to static pressure changes.
- Accurate control throughout entire velocity range.
- Graduated scales for minimum and maximum velocity adjustments.
- Velocity reset by thermostat demand.
- Adaptable to many terminal unit control strategies.

Applications: Velocitrol Air Velocity Sensor

Airflow Usage: 0.029 scfm (13.7 mL/s), includes supply for bleed type thermostats for type B, does not include thermostat air for type C controller

Maximum Safe Operating Pressure (psi): 30 psi

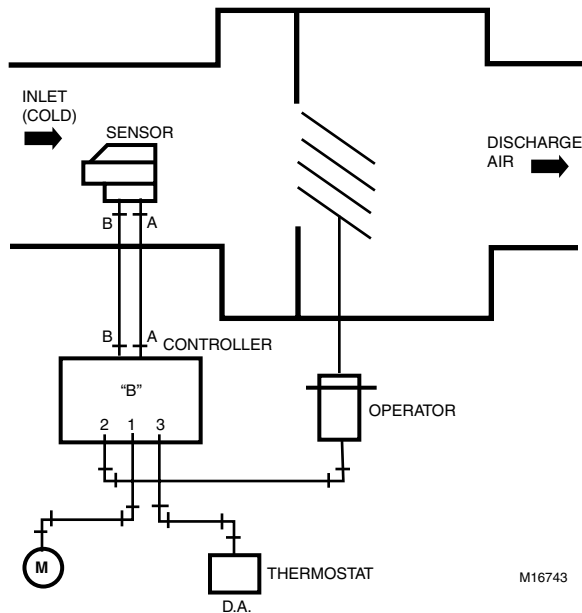
Maximum Safe Operating Pressure (kPa): 207 kPa

Mainline Pressure Range (psi): 18 psi Minimum, 20 psi Nominal

Mainline Pressure Range (kPa): 124 kPa Minimum, 138 kPa Nominal

Temperature Range: 40°F to 130°F (5°C to 55°C)

Single Duct, Variable Constant Volume Application



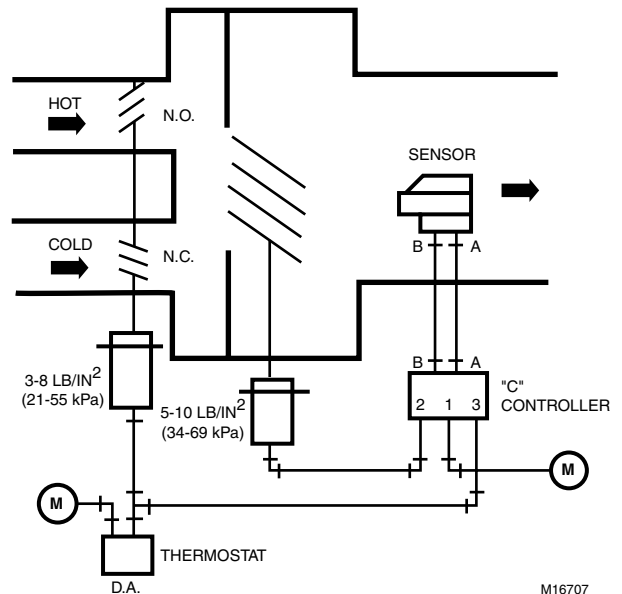
Dimensions: Controller: 1 3/4 in. high x 3 1/4 in. wide x 2 3/8 in. deep / Sensor: 3 3/16 in. high x 1 3/4 in. wide x 4 3/16 in. long with orifice and 3 3/8 in. long without orifice (Controller: 44 mm high x 83 mm wide x 60 mm deep / Sensor: 81 mm high x 45 mm wide x 107 mm long with orifice and 86 mm long without orifice.)

Control Range (fpm): 500 fpm up to 3500 fpm by changing orifice

Control Range (m/s): 2.5 m/s up to 17.8 m/s by changing orifice

Operating Humidity Range (% RH): 5 to 95% RH

Dual Duct, Variable Constant Volume Application



| Material Number | Sensor Element | Pressure Rating (psi) | Pressure Rating (kPa) | Description | Comments |
|-----------------|----------------|-----------------------|-----------------------|---|--|
| CP980C1065/U | Remote Sensor | Reset – 1 to 15 psi | Reset – 7 to 103 kPa | Direct acting Pneumatic Velocity Controller, uses "B" type supply unit | For normally open damper and one-pipe thermostat |
| CP980D1063/U | Remote Sensor | Reset – 1 to 15 psi | Reset – 7 to 103 kPa | Reverse acting Pneumatic Velocity Controller, uses "B" type supply unit | For normally closed damper and one-pipe thermostat |
| CP980E1060/U | Remote Sensor | Reset – 9 to 15 psi | Reset – 62 to 103 kPa | Direct acting Pneumatic Velocity Controller for reheat sequencing, uses "C" type supply unit | For normally open damper and two-pipe thermostat |
| CP980F1068/U | Remote Sensor | Reset – 9 to 15 psi | Reset – 62 to 103 kPa | Reverse acting Pneumatic Velocity Controller for reheat sequencing, uses "C" type supply unit | For normally closed damper and two-pipe thermostat |

Pneumatic Velocity Sensors/Controllers

CP980C, D, E, and F Cross-Reference Table

| Current Order Number (Less Orifice) | Orifice Order No. | Velocity Range ft/min (m/s) | Orifice Set | Replaces Honeywell | | |
|--|-------------------|--------------------------------|---|---|---|-----------------------------------|
| | | | | Original Set Less Orifice | Interim Matched Set (Less Orifice) | Matched Set (Includes Orifice) |
| CP980C1065 | None | 500 (2.5) | None | — | — | — |
| | 14003642-002 | 750 (3.8) | Green | | | CP980C1016 |
| | 14003642-003 | 1500 (7.6) | White | | | CP980C1024 |
| | 14003642-004 | 2000 (10.2) | Blue | | | CP980C1032 |
| | 14003749-001 | 2500 (12.7) | Black | | | CP980C1040 |
| | 14003749-002 | 3500 (17.8) | Gray | | | CP980C1057 |
| CP980D1063 | None | 500 (2.5) | None | CP980A1002/ RP980A1006 or CP980A1002/ RP980B1004 | CP980B1000 or CP980B1018 | — |
| | 14003642-002 | 750 (3.8) | Green | | | CP980D1014 |
| | 14003642-003 | 1500 (7.6) | White | | | CP980D1022 |
| | 14003642-004 | 2000 (10.2) | Blue | CP980D1030 | | |
| | 14003749-001 | 2500 (12.7) | Black | CP980D1048 | | |
| | 14003749-002 | 3500 (17.8) | Gray RP980A1006 or RP980A1010/ RP980B1004 | CP980A1010/ or CP980B1042 | CP980B1034 | CP980D1055 |
| CP980E1060 | None | 500 (2.5) | None | — | — | — |
| | 14003642-002 | 750 (3.8) | Green | | | CP980E1011 |
| | 14003642-003 | 1500 (7.6) | White | | | CP980E1029 |
| | 14003642-004 | 2000 (10.2) | Blue | | | CP980E1037 |
| | 14003749-001 | 2500 (12.7) | Black | | | CP980E1045 |
| | 14003749-002 | 3500 (17.8) | Gray | | | CP980E1052 |
| CP980F1068 | None | 500 (2.5) | None | CP980A1002/ RP980C1002 CP980A1010/ RP980C1002 ^a | CP980B1026 CP980B1059 ^a | — |
| | 14003642-002 | 750 (3.8) | Green | | | CP980F1019 |
| | 14003642-003 | 1500 (7.6) | White | | | CP980F1027 |
| | 14003642-004 | 2000 (10.2) | Blue | CP980F1035 | | |
| | 14003749-001 | 2500 (12.7) | Black | CP980F1043 | | |
| | 14003749-002 | 3500 (17.8) | Gray | CP980F1050 | | |

^a Valid with green (1500 ft/min), red (2500 ft/min), white (3500 ft/min) or blue (4250 ft/min) orifices only.

Pneumatic Velocity Control Accessories and Replacement Parts

| Material Number | Description | Used With |
|-----------------|---|----------------|
| 14003642-002/U | Orifice Green, Velocity Range 750 ft/min (3.8 m/s) | CP980 |
| 14003642-003/U | Orifice White, Velocity Range 1500 ft/min (7.6 m/s) | CP980 |
| 14003642-004/U | Orifice Blue, Velocity Range 2000 ft/min (10.2 m/s) | CP980 |
| 14003749-001/U | Orifice Black, Velocity Range 2500 ft/min (12.7 m/s) | CP980 |
| 14003749-002/U | Orifice Gray, Velocity Range 3500 ft/min (17.8 m/s) | CP980 |
| 14003931-006/U | Stainless steel SCCM flow Restriction of 120-160 at 100 kPa | CP980C; CP980E |
| 316155A/U | Cover Assembly, RP908 | RP908 |

LP920 Remote Bulb Temperature Controllers



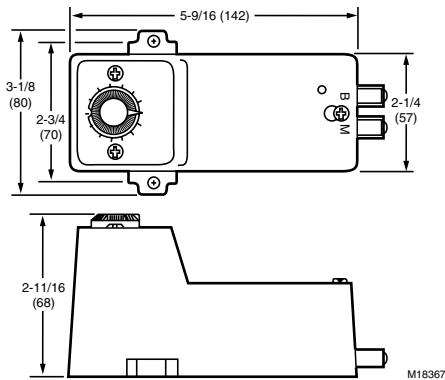
Pneumatic temperature controllers provide proportional control of pneumatic valves and damper actuators in HVAC. Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell pneumatic temperature controllers.

- Fahrenheit or Celsius scales for all adjustments.
- Pilot operated for high capacity.
- Direct Acting (DA) and Reverse Acting (RA) models are available.
- Adjustable setpoint and throttling ranges.
- Scales in bold type for high visibility.
- Replaceable filter cartridge.
- Single point or averaging elements.

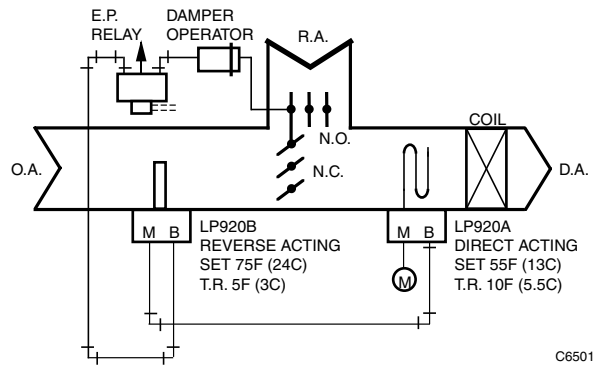
Applications: Remote Bulb Temperature
Airflow Usage: 0.011 scfm (5.2 mL/s)
Sensor Element: Remote bulb
Maximum Safe Operating Pressure (psi): 30 psi
Maximum Safe Operating Pressure (kPa): 207 kPa
Temperature Range: Element: 230°F, Controller: 150°F (Element: 110°C, Controller: 66°C)

Shipping and Storage Temperature Range: 150°F (66°C)
Throttling Range: Factory set at 10°F with adjustment range of 5 to 25°F (Factory set at 6K with adjustment range of 3 to 15 K)
Dimensions: 5 9/16 in. high x 3 1/8 in. wide x 2 11/16 in. deep (142 mm high x 80 mm wide x 68 mm deep)
Comments: Scale plate is reversible for °F and °C applications

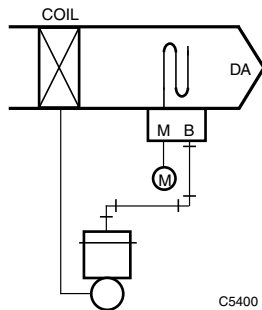
Dimensions Diagram in inches (millimeters)



Typical mixed air control



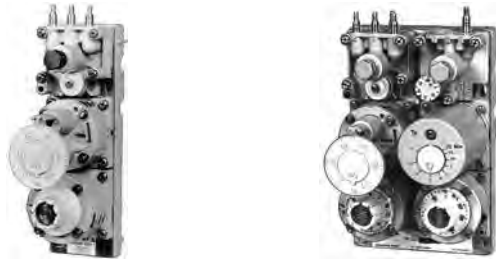
Typical coil discharge control



| Material Number | Product Action | Number of Pipes | Setpoint Temperature Range | Includes |
|-----------------|----------------|-----------------|-------------------------------|--|
| LP920A1005/U | Direct Acting | 2 | 30°F to 150°F (-1°C to +66°C) | 8 ft (2.4 m) averaging element for duct mounting |
| LP920A1013/U | Direct Acting | 2 | 30°F to 150°F (-1°C to +66°C) | 3/8 x 5 1/4 in. (10 x 133 mm) bulb with 3 in. (76 mm) capillary, well mount |
| LP920A1021/U | Direct Acting | 2 | 30°F to 150°F (-1°C to +66°C) | 3/8 x 5 1/4 in. (10 x 133 mm) bulb with 10 in. (254 mm) capillary, integral duct mount |
| LP920A1039/U | Direct Acting | 2 | 30°F to 150°F (-1°C to +66°C) | 3/8 x 5 1/4 in. (10 x 133 mm) bulb with 5 ft. (1.5 m) capillary, remote duct mount |
| LP920B1037/U | Reverse Acting | 2 | 30°F to 150°F (-1°C to +66°C) | 3/8 x 5 1/4 in. (10 x 133 mm) bulb with 5 ft. (1.5 m) capillary, remote duct mount |

Pneumatic Temperature Controllers

RP920 Pneumatic Controller



High capacity, single/dual input pneumatic controller, used in conjunction with remote sensors, to provide proportional (P) or proportional plus integral (P+I) control of temperature, humidity, pressure, or dewpoint for heating and air conditioning.

- Proportional plus integral control option minimizes offset.
- Miniature diaphragm technology provides high degree of accuracy and reliability.
- Direct Acting models can be converted to Reverse Acting (RA) function in field.
- Field adjustable compensation start point.
- Local or remote setpoint field option. Integral action cut-off provides trouble-free automatic startup.
- Transparent cover (optional) provides protection while allowing easy reading of settings and gages.
- Corrosion resistant construction.

Applications: Proportional plus integral pneumatic controller

Airflow Usage: 0.07 scfm (33.0 mL/s) with 1 psi (7kPa) pressure drop at 18 psi (124 kPa) main air supply

Maximum Safe Operating Pressure (psi): 30 psi

Maximum Safe Operating Pressure (kPa): 207 kPa

Pressure Ratings (psi): Input Signal – 3 to 15 psi; Output – 3 to 13 psi, output signal maximum is Mainline Pressure minus 1/2 psi

Pressure Rating (kPa): Input Signal – 21 to 103 kPa; Output – 21 to 90 kPa, output signal maximum is Mainline Pressure minus 7 kPa

Mainline Pressure Range (psi): 17 to 21 psi; Maximum Safe – 30 psi

Mainline Pressure Range (kPa): 115 to 145 kPa; Maximum Safe – 205 kPa

Temperature Range: 40°F to 130°F (5°C to 55°C)

Dimensions: 5 7/8 in. high x 3 13/16 in. wide x 3 1/4 in. without cover x 3 3/8 in. deep with cover (148 mm high x 96 mm wide x 83 mm without cover x 86 mm deep with cover)

Comments: The controller is capable of operating with the MLP (Mainline pressure) as low as 15 psi (100 kPa) or as high as 23 psi (160 kPa), however recalibration may be required. All RP920s can be converted to reverse acting in the field.

Operating Humidity Range (% RH): 5 to 95% RH

Connection Size (in.): Air: Combination 5/32 in. by 1/4 in. barb.

Optional accessory 14003755-001 (barb fitting for port 4, 6, 7, or 8 for all RP920).

Accessories:

305929/U – 1-1/2 in. diameter, 1/8 NPT center back stem mount

Receiver gauge (-40 to +160°F scale) with ±2% accuracy

305930/U – 1-1/2 in. diameter, 1/8 NPT center back stem mount

Receiver gauge (0 to 200°F scale) with ±2% accuracy

305931/U – 1-1/2 in. diameter, 1/8 NPT center back stem mount

Receiver gauge (40 to 240°F scale) with ±2% accuracy

305965/U – 1-1/2 in. diameter, 1/8 NPT center stem back mount

Pressure Indicating gauge (0 to 30 psi scale) with ±4% accuracy

305972/U – Receiver gauge, 1-1/2 in. 1/8 NPT center back,

temperature 50 to 100°F

14000786-001/U – Receiver Gauge, 25°F-125°F scale, 1 1/2 in.

diameter, 1/8 in. NPT connection

14000786-002/U – Receiver Gauge, -5 to 55°C scale, 1 1/2 in.

diameter, 1/8 in. NPT connection

14000786-003/U – Receiver Gauge, 15 to 75% RH scale, 1 1/2 in.

diameter, 1/8 in. NPT connection

14000786-004/U – Receiver Gauge, 65 to 95% RH scale, 1 1/2 in.

diameter, 1/8 in. NPT connection

14000786-005/U – Receiver Gauge, 15 to 85% RH scale, 1 1/2 in.

diameter, 1/8 in. NPT connection

14505694-004/U – 17 3/4 inch (450 mm) long mounting rail for RP920

43188123-010/U – Clear plastic cover for all RP920B, RP920C, RP920D pneumatic controllers

Replacement Parts:

14004277-003/U – Setpoint module with gasket with CPA for RP920

14004278-002/U – Compensation module with gasket for RP920B and RP920D

14004533-001/U – Connector block with gasket and CPA for RP920

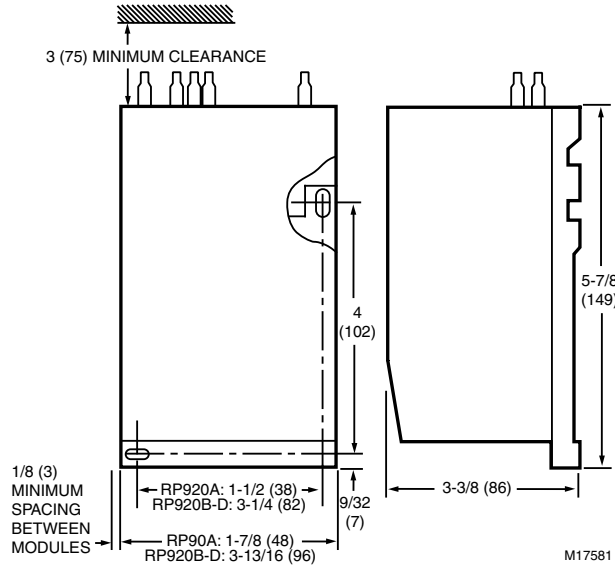
43188059-001/U – Setpoint knob for all RP920 pneumatic controllers

43915905-110/U – O-ring for filter in RP920

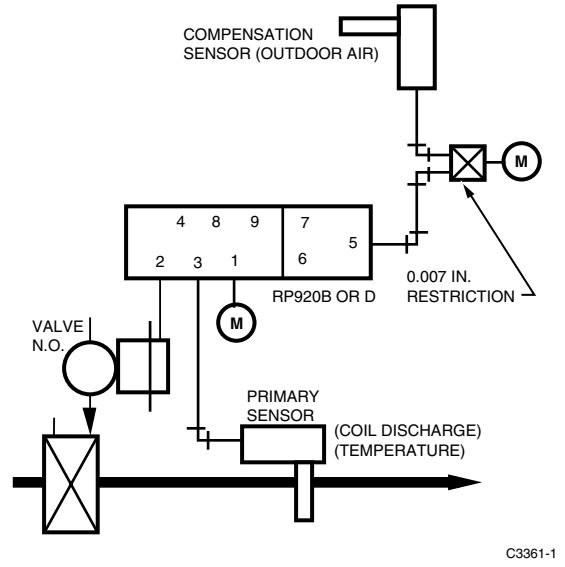
| Material Number | Product Action | Capacity | Number of Sensor Inputs | Remote Control Point Adjustment | Includes |
|--|----------------|--|-------------------------|---------------------------------|---|
| Proportional plus integral pneumatic controller | | | | | |
| RP920C1021/U | Direct Acting | at 18 psi (124 kPa) MLP and 8.5 psi (59 kPa) BLP (does not include sensor usage): 0.021 scfm (10 mL/s) | single | Yes | With remote control point adjustment capability. |
| RP920C1039/U | Direct Acting | at 18 psi (124 kPa) MLP and 8.5 psi (59 kPa) BLP (does not include sensor usage): 0.021 scfm (10 mL/s) | single | No | Without remote control point adjustment capability. |
| RP920D1029/U | Direct Acting | at 18 psi (124 kPa) MLP and 8.5 psi (59 kPa) BLP (does not include sensor usage): 0.046 scfm (21.7 mL/s) | dual | No | With remote control point adjustment capability. |
| Proportional pneumatic controller | | | | | |
| RP920A1025/U | Direct Acting | at 18 psi (124 kPa) MLP and 8.5 psi (59 kPa) BLP (does not include sensor usage): 0.021 scfm (10 mL/s) | single | Yes | With remote control point adjustment capability. |
| RP920A1033/U | Direct Acting | at 18 psi (124 kPa) MLP and 8.5 psi (59 kPa) BLP (does not include sensor usage): 0.021 scfm (10 mL/s) | single | No | Without remote control point adjustment capability. |
| RP920B1023/U | Direct Acting | at 18 psi (124 kPa) MLP and 8.5 psi (59 kPa) BLP (does not include sensor usage): 0.046 scfm (21.7 mL/s) | dual | Yes | With remote control point adjustment capability. |
| RP920B1031/U | Direct Acting | at 18 psi (124 kPa) MLP and 8.5 psi (59 kPa) BLP (does not include sensor usage): 0.046 scfm (21.7 mL/s) | dual | No | Without remote control point adjustment capability. |

Pneumatic Temperature Controllers

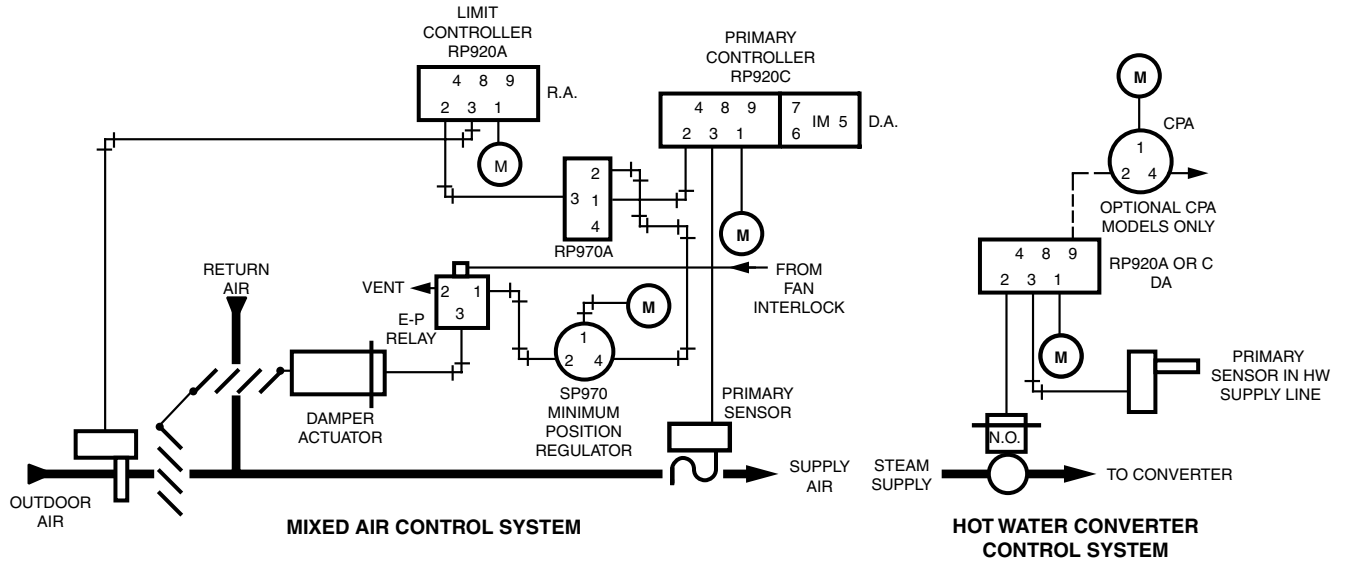
Dimensions Diagram in inches (millimeters)



Typical Dual-Input Control System



Typical Single-Input Control System



Pneumatic Controls

Pneumatic Temperature Controllers

Pneumatic Temperature Controller Accessories

| Material Number | Description | Used With |
|-----------------|---|--------------|
| 14000786-001/U | Receiver Gauge, 25°F-125°F scale, 1 1/2 in. diameter, 1/8 in. NPT connection | RP920 |
| 14000786-002/U | Receiver Gauge, -5 to 55°C scale, 1 1/2 in. diameter, 1/8 in. NPT connection | RP920 |
| 14000786-003/U | Receiver Gauge, 15 to 75% RH scale, 1 1/2 in. diameter, 1/8 in. NPT connection | RP920 |
| 14000786-004/U | Receiver Gauge, 65 to 95% RH scale, 1 1/2 in. diameter, 1/8 in. NPT connection | RP920 |
| 14000786-005/U | Receiver Gauge, 15 to 85% RH scale, 1 1/2 in. diameter, 1/8 in. NPT connection | RP920 |
| 14002696-001/U | Repair kit including filters, screens, washers, gaskets, O-rings, and restrictors for RP908A and RP908B controllers | RP908 |
| 14004278-002/U | Compensation module with gasket for RP920B and RP920D | RP920 |
| 14505694-002/U | 225 mm Honeywell for RP920 | RP920 |
| 14505694-004/U | 17 3/4 inch (450 mm) long mounting rail for RP920 | RP920 |
| 305617/U | 1-1/2 in. diameter, 1/8 NPT center stem back mount Receiver gauge (1.0 to 3.0 in. w.c. scale) with ± 2% accuracy | RP920 |
| 305929/U | 1-1/2 in. diameter, 1/8 NPT center back stem mount Receiver gauge (-40 to +160°F scale) with ± 2% accuracy | RP920 |
| 305930/U | 1-1/2 in. diameter, 1/8 NPT center back stem mount Receiver gauge (0 to 200°F scale) with ± 2% accuracy | RP920 |
| 305931/U | 1-1/2 in. diameter, 1/8 NPT center back stem mount Receiver gauge (40 to 240°F scale) with ± 2% accuracy | RP920 |
| 305965/U | 1-1/2 in. diameter, 1/8 NPT center stem back mount Pressure Indicating gauge (0 to 30 psi scale) with ± 4% accuracy | RP920 |
| 305972/U | Receiver gauge, 1-1/2 in. 1/8 NPT center back, temperature 50 to 100°F scale | RP920 |
| 43188057-010 | Clear plastic cover for all RP920A pneumatic controllers | RP920 |
| 43188123-010/U | Clear plastic cover for all RP920B, RP920C, RP920D pneumatic controllers | RP920 |
| CCT813/U | Slide Rule for Calculating Pneumatic Controller Settings for all RP908 and RP920's. | RP908; RP920 |

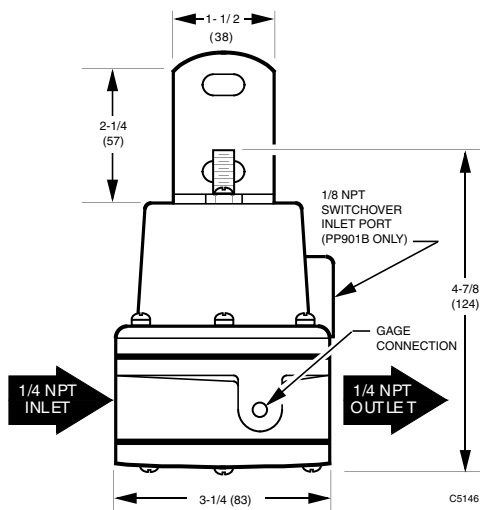
Pneumatic Temperature Controller Replacement Parts

| Material Number | Description | Used With |
|-----------------|---|-----------|
| 14003461-001/U | Mounting back plate | RP980 |
| 14003757-001/U | Seal screw for port 8 and O-ring repair parts for RP920 | RP920 |
| 14004277-003/U | Setpoint module with gasket with CPA for RP920 | RP920 |
| 14004533-001/U | Connector block with gasket and CPA for RP920 | RP920 |
| 43188059-001/U | Setpoint knob for all RP920 pneumatic controllers | RP920 |
| 43915905-110/U | O-ring for filter in RP920 | RP920 |

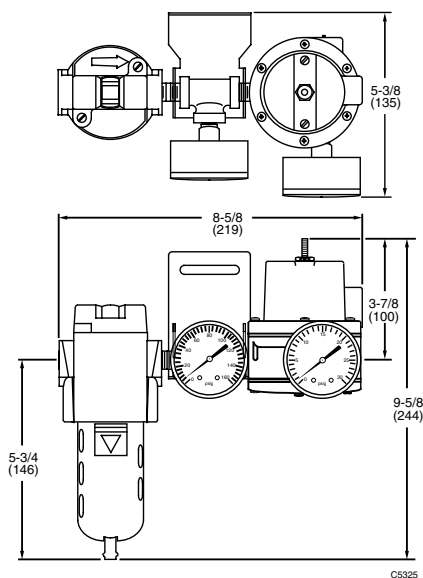
PP901; PP902 Pressure Reducing Valves



PP901 Dimensions in inches (millimeters)



PP902 Dimensions in inches (millimeters)



PP901 pneumatic valve controls the pressure of the air delivered to pneumatic control systems. Models available for single-pressure systems or two-pressure systems (Day/Night or Summer/Winter) requiring two independently regulated pressure settings.

- Built-in adjustable safety relief valve for limiting downstream pressure.
- For two-pressure models: Pressure changes accomplished with manual switch or automatically with electric pneumatic switch.
- Adjustable stops for desired settings.

Pressure Ratings (psi): Inlet – 45 to 150 psi; Output – primary pressure: adjustable 0 to 25 psi

Pressure Ratings (kPa): Inlet – 310 to 1034 kPa; Output – primary pressure: adjustable 0 to 172 kPa

Dimensions: 11 in. high, 8 7/8 in. wide, 3 3/4 in. deep (279 mm high, 225 mm wide, 95 mm deep)

Mounting: Bracket furnished

Accessories:

305917/U – 2 in. diameter, 1/4 NPT center stem back mount Pressure Indicating gauge (0 to 160 psi scale) with $\pm 3\%$ accuracy

305965/U – 1-1/2 in. diameter, 1/8 NPT center stem back mount Pressure Indicating gauge (0 to 30 psi scale) with $\pm 4\%$ accuracy

804191E/U – 2-1/2 in. diameter, panel-mounted Pneumatic Pressure Indicating Gauge (0 to 160 psi), 1/8 in. NPT connection, $\pm 3\%$ accuracy

Replacement Parts:

316203A/U – Pressure Regulator Valve Assembly for PP901A; PP902A, C

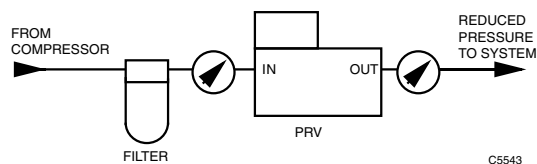
316134B/U – PP901A & B Diaphragm Repair Kit

14004203-001/U – Filter cartridge kit for PP902C and PP902D.

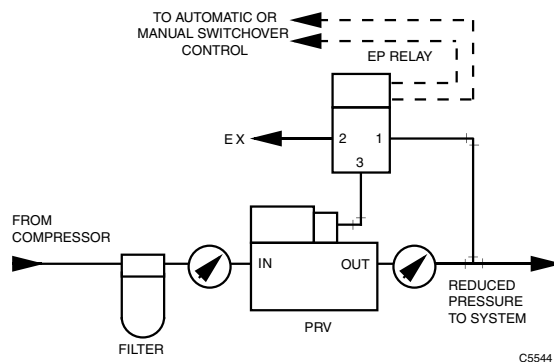
14004205-002/U – Filter Station Assembly for PP901, PP902A or B

14003121-002/U – Filter for PP902A or B

PP902C Typical Operation



PP902D Typical Operation



| Material Number | Applications | Description | Connection Size (in.) | Includes |
|-----------------|-------------------|---|---|---|
| PP901A1004/U | Pressure Reducing | High Pressure Diaphragm Operated Reducing Valve with Built-in Adjustable Relief Valve for Single Pressure Systems. Includes Mounting Bracket and Gage Taps But No Gages. | Inlet and out air: 1/4 in. NPT (female) Air gage: 1/8 in. NPT (female) | Gage tapping to measure the regulated pressure. |
| PP901B1002/U | | High Pressure Diaphragm Operated Reducing Valve with Built-in Adjustable Relief Valve for Dual Pressure Systems. Includes Mounting Bracket and Gage Taps But No Gages. | Inlet and out air: 1/4 in. NPT (female) Air gage: 1/8 in. NPT (female); 1/8 in. NPT pilot | Gage tapping to measure the regulated pressure. |
| PP902C1009/U | | Pressure Reducing Valve for Single Pressure Systems, consists of a PP901A Valve, a sub-micron filter station, 2 psig gages, Interconnecting Pipe Fittings, and a Mounting Bracket | Inlet and out air: 1/4 in. NPT (female); 1/8 in. NPT pilot | Sub-micron filter assembly and two psig gages. |
| PP902D1007/U | | Pressure Reducing Valve for Dual Pressure Systems, consists of a PP901B Valve, a sub-micron filter station, 2 psig gages, Interconnecting Pipe Fittings, and a Mounting Bracket | Inlet and out air: 1/4 in. NPT (female) | Sub-micron filter assembly and two psig gages. |

Pneumatic Pressure Controllers

PP903 Pneumatic Differential Pressuretrol



Provides proportional control of pneumatic actuators by varying the pressure between separate water pressures. Replacement devices are available for Johnson, Powers, Robertshaw, and older Honeywell pneumatic pressure controllers.

- Easily accessible adjustments.
- Direct Acting (DA) or Reverse Acting (RA) setting.
- Mounting lugs for quick mounting.

Applications: Differential Pressure

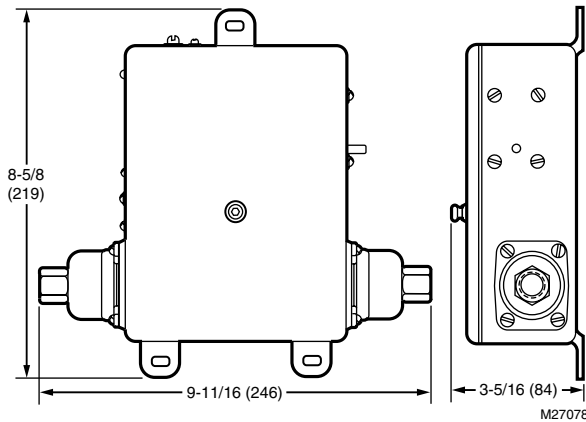
Product Action: Reverse Acting, Direct Acting

Pressure Ratings (psi): 0 to 300 psi

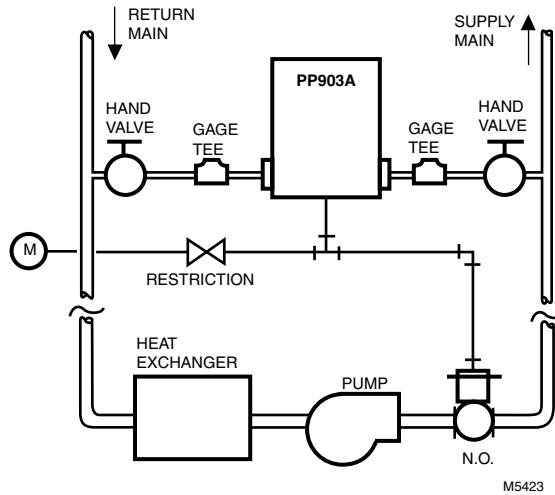
Pressure Ratings (kPa): 0 to 2068 kPa

Dimensions: 8 5/8 in. high, 9 5/8 in. wide, 3 1/4 in. deep (219 mm high, 244 mm wide, 83 mm deep)

Dimensions Diagram in inches (millimeters)



PP903A Typical Piping



| Material Number | Actuator Force (psi) | Actuator Force (kPa) | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Differential Pressure Range (psi) | Differential Pressure Range (kPa) |
|-----------------|----------------------|----------------------|---------------------------------------|---------------------------------------|-----------------------------------|-----------------------------------|
| PP903A1036/U | 7.5 psi | 52 kPa | 18 psi | 124 kPa | 5 to 65 psi | 34 to 448 kPa |

PP904 Static Pressure Regulators



Applications: Static or Differential Pressure

Product Action: Reverse Acting, Direct Acting

Pressure Ratings (psi): Maximum Safe Static Pressure – 28 in. wc

Pressure Ratings (kPa): Maximum Safe Static Pressure – 7 kPa

Mainline Pressure Range (psi): 16 to 25 psi

Mainline Pressure Range (kPa): 112 to 175 kPa

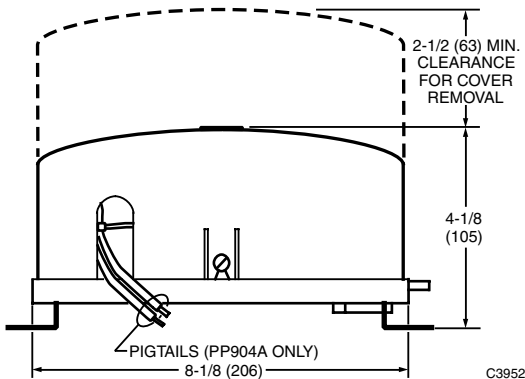
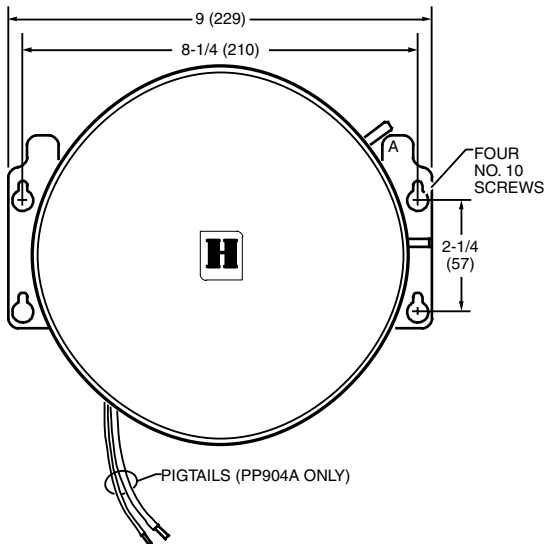
Temperature Range: 40°F to 120°F (5°C to 50°C)

Connection Size (in.): Main: Sharp-barbed fittings for 1/4 in. diameter tubing; Branch: Sharp-barbed fittings for 5/32 in. diameter tubing

Setpoint Range (psi): 0 to ±8 in. wc (adjustable)

Setpoint Range (kPa): 0 to ±2 kPa (adjustable)

Dimensions Diagram in inches (millimeters)



One- or two-pipe, direct- or reverse-acting, low- or high-capacity controller used with pneumatic actuators in central fan installations. Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

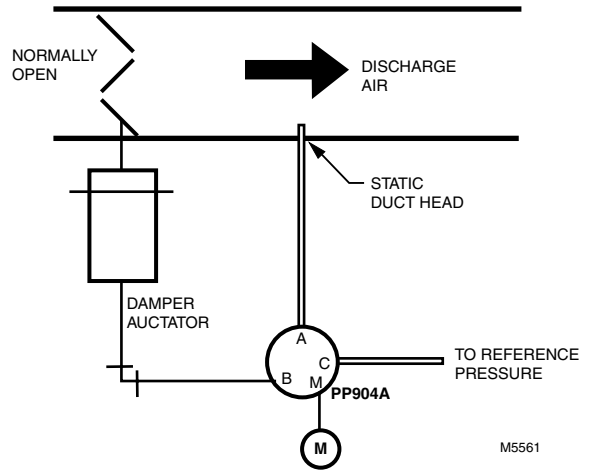
- Adjustable setpoint and throttling range (Zero and span).
- Direct Acting (DA) and Reverse Acting (RA).
- Sharp-barb, push-on connectors for plastic tubing.
- Field calibration possible.

Accessories:

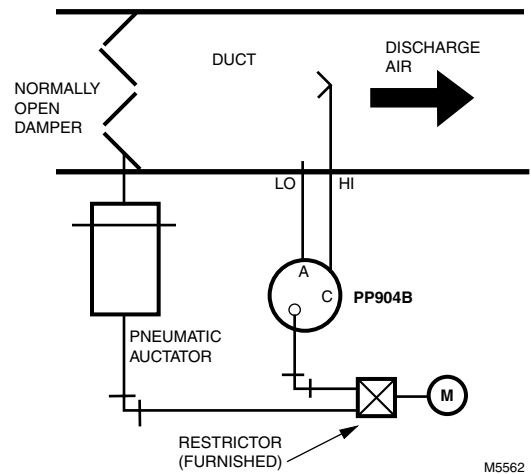
14004238-001/U – Static Pressure Duct Head for 1/4 in., 6 mm diameter Plastic Tubing

301298B/U – Outdoor Static Pressure Head

PP904A Typical Piping



PP904B Typical Piping



| Material Number | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Throttling Range (in. wc) | Number of Pipes | Airflow Usage | Mounting | Comments |
|-----------------|---------------------------------------|---------------------------------------|---------------------------------|-----------------|--|------------|-----------------------------------|
| PP904A1035/U | 25 psi | 170 kPa | 0.03 to 0.5 in. wc (adjustable) | 2 | 0.022 scfm (10.0 mL/s) at 18 psi (124 kPa) | Duct mount | High capacity branchline pressure |
| PP904B1009/U | 25 psi | 170 kPa | 0.06 to 0.5 in. wc (adjustable) | 1 | | | Low capacity branchline pressure |

Pneumatic Pressure Controllers

PP905 Static Pressure Sensor



Applications: Static Pressure
Airflow Usage: 0.021 cfm (9.9 ml/s)
Product Action: Can be set for Direct Acting or Reverse Acting
Pressure Ratings (psi): Maximum Safe Static Pressure – 28 in. wc;
 Output – 3 to 15 psi
Pressure Ratings (kPa): Maximum Safe Static Pressure – 7 kPa;
 Output – 21 to 103 kPa
Mainline Pressure Range (psi): 16 to 25 psi
Mainline Pressure Range (kPa): 112 to 175 kPa
Temperature Range: 40°F to 120°F (4°C to 50°C)

PP905 is a one-pipe, direct- or reverse-acting pressure sensor, used with RP908/RP920 Controllers, to provide control of duct static, velocity or differential pressure in airflow applications. Replacement devices are available for most models.

- Three-diaphragm design minimizes calibration shift with static pressure changes in velocity pressure applications.
- Not sensitive to normal supply air variations.
- Continuous static, total, velocity, or differential pressure indication available by using differential pressure gage.

Dimensions: 8 in high, 9 in wide, 4 1/8 in deep (203 mm high, 228 mm wide, 105 mm deep)

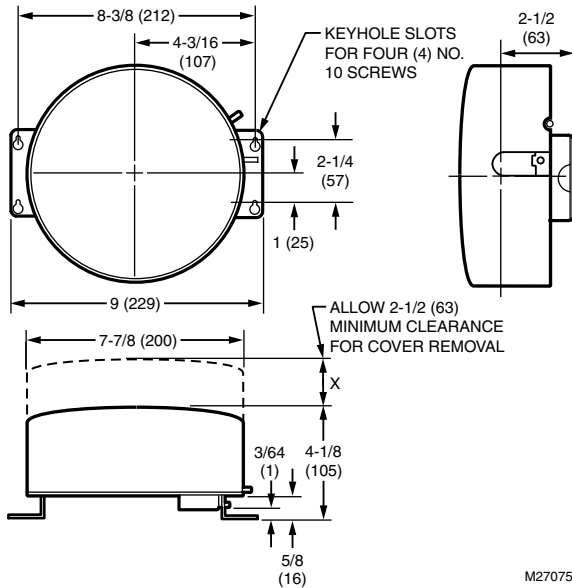
Mounting: Duct mount

Connection Size (in.): Push-on barb for 1/4 in (6 mm) Diameter tubing

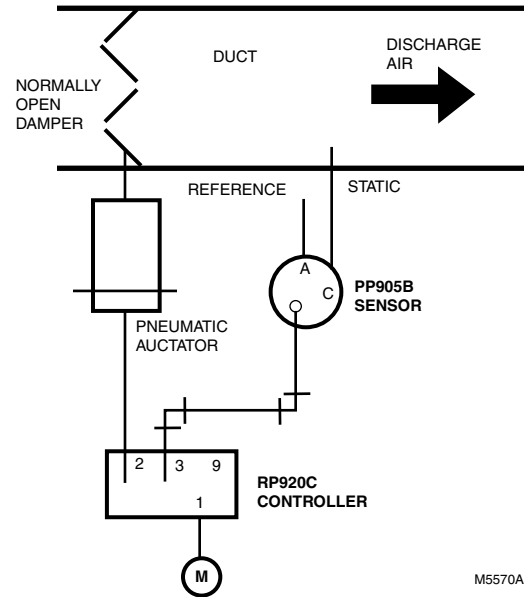
Accessories

14004238-001/U – Static Pressure Duct Head for 1/4 in., 6 mm diameter

Dimensions Diagram in inches (millimeters)



PP905 in Pneumatic Static Pressure Application



| Material Number | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Setpoint Range (psi) | Setpoint Range (kPa) | Span (Non-Adjustable) (in. wc) | Span (Non-Adjustable) (kPa) | Comments |
|-----------------|---------------------------------------|---------------------------------------|-------------------------------------|-------------------------------|--------------------------------|-----------------------------|---|
| PP905B1008/U | 25 psi | 172 kPa | 0 in. wc. to 7 in. wc. (Adjustable) | 0 kPa to 1.7 kPa (Adjustable) | 2 in. wc. | 0.5 kPa | The setpoint determines the midpoint of the span. |

PP97 Pneumatic Pressure Control



PP97 is a one-pipe, pressure operated device, that provides proportional control of pneumatic valves to control steam, air, noncorrosive gas, or noncorrosive liquid pressure. Replacement devices are available for many models.

- Easily accessible adjustments.
- Direct Acting (DA) or Reverse Acting (RA) setting.

Applications: Proportional Pressure

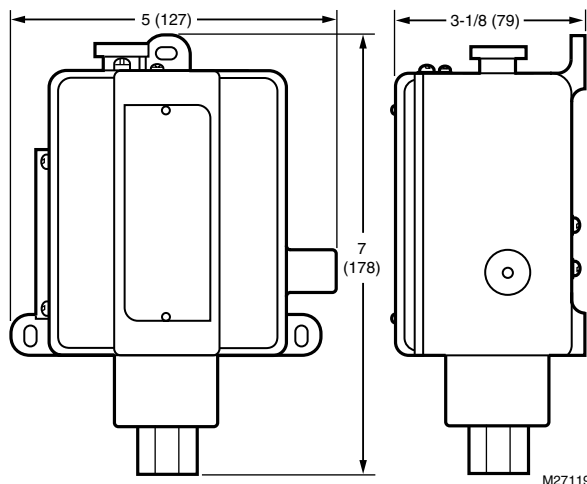
Product Action: Reverse Acting, Direct Acting

Dimensions: 7 in. high, 5 in. wide, 3-1/8 in. deep (178 mm high x 127 mm wide x 79 mm deep)

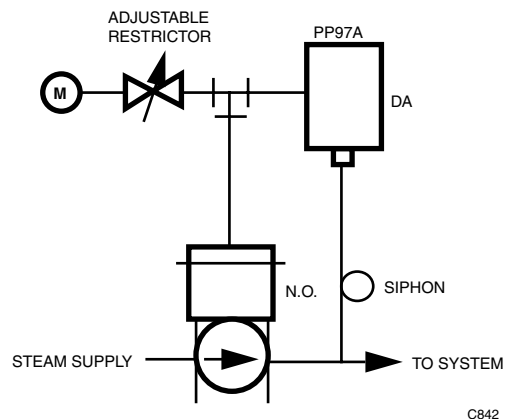
Mounting: Lugs for 3-point surface mounting

Connection Size (in.): Bellows: 1/4 in. NPT; Air: 1/8 in. NPT

Dimensions Diagram in inches (millimeters)



PP97A Typical Piping



C842

| Material Number | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Setpoint Range (psi) | Setpoint Range (kPa) | Approximate Throttling Range, Midscale (psi) | Approximate Throttling Range, Midscale (kPa) | Description |
|-----------------|---------------------------------------|---------------------------------------|----------------------|----------------------|--|--|--|
| PP97A1035/U | 25 psi | 172 kPa | 0 to 15 psi | 0 to 103 kPa | 0.1 to 1.5 psi | 0.7 to 10 kPa | Pneumatic Pressure Controller, Proportional Pressure, Action: Direct or Reverse, Output: Proportional Pressure, 0 to 15 psi pressure range |
| PP97A1076/U | 350 psi | 2413 kPa | 10 to 300 psi | 69 to 2068 kPa | 2.5 to 12 psi | 17 to 83 kPa | Pneumatic Pressure Controller, Proportional Pressure, Action: Direct or Reverse, Output: Proportional Pressure, 10 to 300 psi pressure range |

Pneumatic Pressure Controllers

UEC24014 Differential Pressure Switch



Differential pressure switches open or close a switch contact in response to a change in sensed differential pressure.

- NEMA Enclosures.
- UL and CSA Listed.
- Gold Clad Contacts.
- Brass Pipe Connection.
- Pipe or Surface Mount.

Pressure Ratings (psi): 150 psi at either port
Pressure Ratings (kPa): 1034 kPa at either port
Temperature Range: 30°F to 160°F (-1°C to +71°C)
Dimensions: 3 1/2 in. high x 2 3/8 in. wide (89 mm high x 58 mm wide)
Mounting: Pipe or surface

Connection Size (in.): Electric connection: terminal strip, 16 AWG max.; Pipe connection: Brass, 1/4 in. NPT
Approvals, Underwriters Laboratories Inc: Certified
Approvals, CSA: Approved
Approvals, Factory Mutual: Approved
Approvals, NEMA Standard: NEMA 1

| Material Number | Differential Pressure Range (psi) | Differential Pressure Range (kPa) | Description |
|--------------------|-----------------------------------|-----------------------------------|--|
| UEC24014M262/U | 4 to 45 psi | 28 to 310 kPa | Pneumatic, Type of control: Pneumatic, NEMA 1, 150 psi at either end |
| UEC24014M262M900/U | 4 to 45 psi | 28 to 310 kPa | Pneumatic, Type of control: Pneumatic, NEMA 4, 150 psi at either end |

Pneumatic Pressure Controller Accessories and Replacement Parts

| Material Number | Description | Used With |
|-----------------|---|-------------------|
| 14003121-002/U | Filter for PP902A or B | PP902A,B |
| 14004203-001/U | Filter cartridge kit for PP902c and PP902D | PP902C,D |
| 14004205-002/U | Filter Station Assembly for PP901, PP902A or B | PP902A,B; PP901 |
| 14004238-001/U | Static Pressure Duct Head for 1/4 in., 6 mm diameter Plastic Tubing | PP904 |
| 301298B/U | Outdoor Static Pressure Head | PP904 |
| 316203A/U | Pressure Regulator Valve Assembly for PP901A; PP902A, C | PP901A; PP902A, C |

HP971 Pneumatic Humidity Sensor



One- or two-pipe, direct-acting humidity sensor used with RP908/ RP920 Controllers to provide proportional control of pneumatic valve or damper actuators in systems requiring humidification or dehumidification control.

- Corrosion resistant materials.
- Simple plug-in air head connections.
- Factory calibrated.
- Continuous relative humidity indication available by using receiver gage.
- Integral or external restriction can be used.

Applications: Humidity Sensor

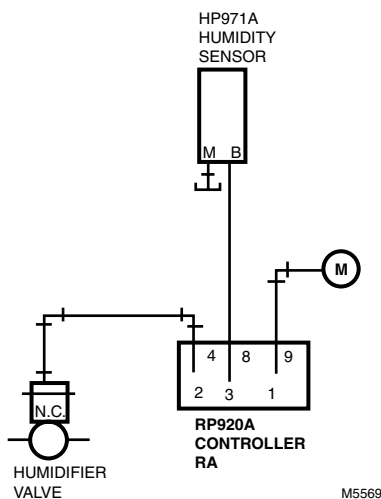
Mounting: Vertical or Horizontal Wall Mounting or Mounted in Duct Sampling Chamber

Operating Temperature Range: 125°F Maximum (52°C Maximum)

Dimensions: 3 1/4 in. high x 2 in. wide x 1 5/8 in. deep (88 mm high x 51 mm wide x 41 mm deep)

Product Action: Direct Acting

HP971A One-Pipe Application



Airflow Usage: 0.022 scfm (10.4 mL/s)

Connections: Push-on barb for 5/32 in. (4 mm) O.D. tubing

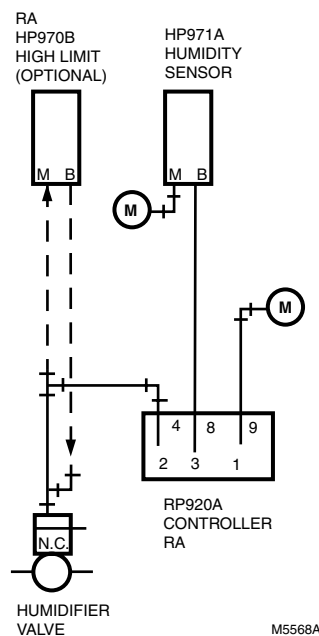
Maximum Safe Operating Pressure (psi): 25 psi

Maximum Safe Operating Pressure (kPa): 172 kPa

Pressure Ratings (psi): Output – 3 psi to 15 psi; Supply – 16 to 21 psi

Pressure Ratings (kPa): Output – 21 kPa to 103 kPa; Supply – 110-145 kPa

HP971A Two-Pipe Application



| Material Number | Number of Pipes | Sensor Range | Comments |
|-----------------|-----------------|--------------|------------------------|
| HP971A1008/U | 1 or 2 | 15 to 75% RH | Order Cover Separately |
| HP971A1024/U | 1 or 2 | 15 to 85% RH | Order Cover Separately |

Pneumatic Temperature Sensors

LP914 Pneumatic Temperature Sensor



One-pipe, direct-acting temperature sensor used with RP908/ RP920 Controllers to provide proportional control of pneumatic valve or damper actuators. Rod and tube insertion element for duct, well, or through-the-wall mounting.

- Corrosion resistant.
- Continuous temperature indication available by using receiver gage.

Applications: Temperature Sensor

Operating Temperature Range: 265°F Maximum (129°C Maximum)

Dimensions: Body: 2 in. high x 2 1/2 in. wide (Body: 51 mm high x 64 mm wide)

Product Action: Direct Acting

Airflow Usage: 0.019 scfm (540 sccm)

Connections: Push-on barb for 5/32 in. (4 mm) and 1/4 in. (6 mm) O.D. tubing

Maximum Safe Operating Pressure (psi): 25 psi

Maximum Safe Operating Pressure (kPa): 172 kPa

Pressure Ratings (psi): Output – 3 psi to 15 psi; Supply – 18 psi

Pressure Ratings (kPa): Output – 21 kPa to 103 kPa; Supply – 124 kPa

Accessories:

315046A/U – Well, 1/2 NPT Copper, 15 1/2 in. (392 mm) long

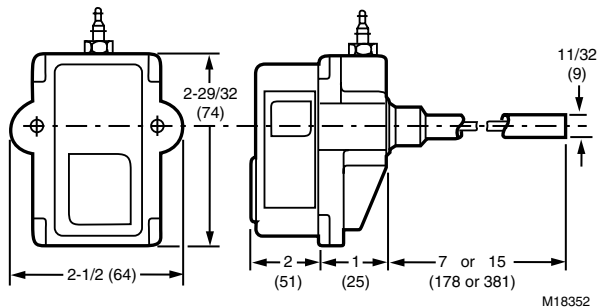
315046B/U – Well, 1/2 NPT Copper, 7 1/2 in. (191 mm) long

315602/U – Inner Filter

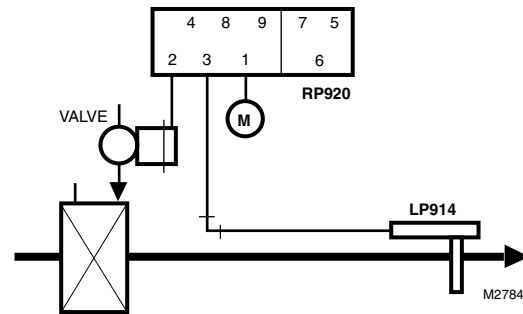
315904A/U – Well, 1/2 NPT Stainless Steel, 15 7/16 in. (394 mm)

315904B/U – Well, 1/2 in. NPT stainless steel 7 5/16 in. (186 mm) long

Dimensions Diagram in inches (millimeters)



LP914 Typical Piping Duct-Mounted Applications



| Material Number | Number of Pipes | Sensor | Sensor Range | Mounting | Insertion Length |
|-----------------|-----------------|--------------|---------------------------------|--------------------|--------------------|
| LP914A1003/U | 1 | Rod and tube | -40°F to +160°F; -40°C to +71°C | Duct mount | 15 in. (381 mm) |
| LP914A1011/U | 1 | Rod and tube | -40°F to +160°F; -40°C to +71°C | Wall mount | 27 in. (686 mm) |
| LP914A1029/U | 1 | Rod and tube | 40°F to 240°F; 5°C to 115°C | Well | 15 in. (381 mm) |
| LP914A1045/U | 1 | Rod and tube | -40°F to +160°F; -40°C to +71°C | Duct mount | 7 in. (178 mm) |
| LP914A1052/U | 1 | Rod and tube | 40°F to 240°F; 5°C to 115°C | Well | 7 in. (178 mm) |
| LP914A1060/U | 1 | Rod and tube | -40°F to +160°F; -40°C to +71°C | Well | 7 in. (178 mm) |
| LP914A1144/U | 1 | Rod and tube | 25°F to 125°F; -4°C to +52°C | Duct mount | 15 in. (381 mm) |
| LP914A1151/U | 1 | Rod and tube | -40°F to +160°F; -40°C to +71°C | Duct mount | 15 in. (381 mm) |
| LP914A1177/U | 1 | Rod and tube | 40°F to 240°F; 5°C to 115°C | Well | 15 in. (381 mm) |
| LP914A1193/U | 1 | Rod and tube | -40°F to +160°F; -40°C to +71°C | Duct mount | 6 1/2 in. (165 mm) |
| LP914A1201/U | 1 | Rod and tube | 40°F to 240°F; 5°C to 115°C | Well | 6 1/2 in. (165 mm) |
| LP914A1235/U | 1 | Rod and tube | 25°F to 125°F; -4°C to +52°C | Duct mount | 15 in. (381 mm) |
| LP914A1243/U | 1 | Rod and tube | -20°F to +80°F; -30°C to +30°C | Duct mount | 15 in. (381 mm) |
| LP914A1268/U | 1 | Rod and tube | 40°F to 240°F; 5°C to 115°C | Duct or Well mount | 15 in. (381 mm) |

LP915 Pneumatic Temperature Sensor



One-pipe, direct-acting temperature sensor used with RP908/ RP920 Controllers to provide proportional control of pneumatic valve or damper actuators. Averaging, liquid-filled element for duct mounting.

- Easily formed into variety of configurations to assure sensing of average temperatures.
- Continuous temperature indication available by using receiver gage.

Applications: Temperature Sensor

Operating Temperature Range: 225°F Maximum (118°C Maximum)

Dimensions: 3 in. high x 1 7/8 in. wide x 1 1/2 in. deep (76 mm high x 44 mm wide x 33 mm deep)

Product Action: Direct Acting

Airflow Usage: 0.019 scfm (540 sccm)

Connections: Push-on barb for 5/32 in. (4 mm) and 1/4 in. (6 mm) O.D. tubing

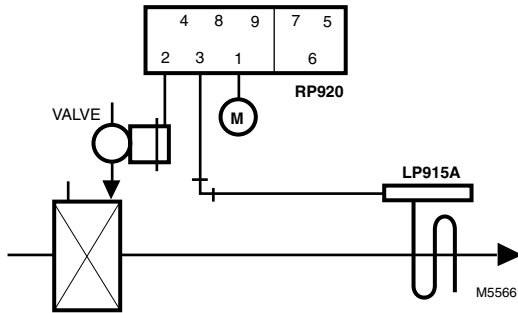
Maximum Safe Operating Pressure (psi): 25 psi

Maximum Safe Operating Pressure (kPa): 172 kPa

Pressure Ratings (psi): Output – 3 psi to 15 psi; Supply – 18 psi

Pressure Ratings (kPa): Output – 21 kPa to 103 kPa; Supply – 124 kPa

LP915A Typical Piping Duct-Mounted Application



| Material Number | Number of Pipes | Sensor | Sensor Range | Mounting | Insertion Length |
|-----------------|-----------------|---------------|------------------------------|------------|------------------|
| LP915A1044/U | 1 | Liquid-filled | 0°F to 200°F; -18°C to +93°C | Duct mount | 18 1/2 ft (5.6m) |
| LP915A1051/U | 1 | Liquid-filled | 0°F to 200°F; -18°C to +93°C | Duct mount | 8 7/8 ft (2.7m) |
| LP915A1077/U | 1 | Liquid-filled | 25°F to 125°F; -4°C to +52°C | Duct mount | 18 1/2 ft (5.6m) |

Pneumatic Temperature Sensors

TP974 Pneumatic Temperature Sensor



One- or two-pipe direct-acting temperature sensor used with RP908/RP920 Controllers to provide proportional control of pneumatic valve and damper actuators.

- Plug-in air connections.
- High efficiency air filter.
- Bimetal element.
- Continuous temperature indication available by using receiver gage.

Applications: Temperature Sensor

Operating Temperature Range: 110°F Maximum (43°C Maximum)

Dimensions: 3 1/4 in. high x 2 in. wide x 1 5/8 in. deep (83 mm high x 51 mm wide x 41 mm deep)

Product Action: Direct Acting

Airflow Usage: 0.019 scfm (9 mL/s)

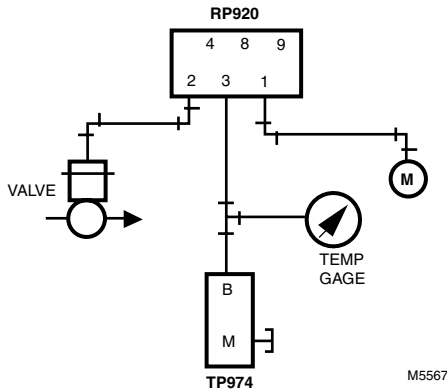
Maximum Safe Operating Pressure (psi): 25 psi

Maximum Safe Operating Pressure (kPa): 170 kPa

Pressure Ratings (psi): Output – 3 psi to 15 psi; Supply – 16-25 psi

Pressure Ratings (kPa): Output – 21 kPa to 103 kPa; Supply – 110 to 172 kPa

TP974A Typical Piping



| Material Number | Number of Pipes | Sensor | Sensor Range | Mounting | Comments |
|-----------------|-----------------|---------|-----------------------------|--------------------------------------|------------------------|
| TP974A2000/U | 1 or 2 | Bimetal | 50°F to 100°F; 10°C to 38°C | Vertical or Horizontal Wall Mounting | Order Cover Separately |

Pneumatic Sensor Accessories

| Material Number | Description | Used With |
|-----------------|--|---------------------|
| 314439/U | Duct Mounting Clip for Averaging Capillary. For Bulk Pack 314439/B | LP915 |
| 315046A/U | 1/2 in. NPT copper Well, 15 1/2 in. (392 mm) long | LP914 |
| 315046B/U | 1/2 in NPT copper Well, 7 1/2 in. (191 mm) long | LP914 |
| 315602/U | Inner Filter for LP907; LP914; LP915 | LP907; LP914; LP915 |
| 315904A/U | 1/2 in. NPT stainless steel Well, 15 7/16 in., (394 mm) long | LP914 |
| 315904B/U | 1/2 in. NPT stainless steel Well, 7 5/16 in. (186 mm) long | LP914 |

RP418, RP818 Electric/Pneumatic Relay



Electrically operated pneumatic switches used to interlock an electrical system and a pneumatic control system. Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Usable as a diverting relay, a selector relay, or a stop and bleed relay.
- Mount and operate in any position.
- Available with lead wires or junction box.
- Line or low voltage models available.

Applications: Electric / Pneumatic Relay

Airflow Usage: 0.42 scfm (200 mL/s) at 20 psi (138 kPa) supply with 1 psi (7 kPa) pressure drop

Capacity: 0.075 Cv minimum

Air Connections: Barbed fitting for 1/4 in. O.D. plastic tubing

Operating Humidity Range (% RH): 5 to 95% RH

Dimensions: 2 7/8 in. high x 3 13/16 in. wide x 1 1/4 in. deep (73 mm high x 97 mm wide x 32 mm deep)

Temperature Range: 0°F to 100°F (-18°C to +38°C)

Maximum Safe Operating Pressure (psi): 50 psi, maximum

Maximum Safe Operating Pressure (kPa): 340 kPa, maximum

Approvals, Underwriters Laboratories Inc: Component Recognized File: MP1502, Vol. 11, Sec. 1, UL Listed: Guide Y10Z

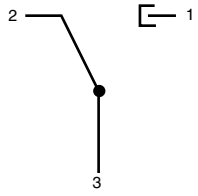
Approvals, CSA: Listed: File No. LR50900

Approvals, Canadian Underwriters Laboratories Inc: Listed: File No. LR50900

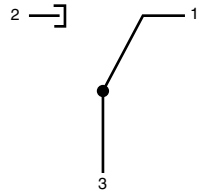
| Material Number | Operation | Electrical Connections | Mounting | Voltage | Frequency | Includes |
|-----------------|---|--|-------------|---------------------------------------|--------------|--------------|
| RP418A1008/U | Energized: ports 1 and 3 connected, port 2 blocked, De-energized: ports 2 and 3 connected, port 1 blocked | Junction Box and 15 in. (380 mm) leads | Surface | 208 Vac | 50 Hz | Junction Box |
| RP418A1057/U | Energized: ports 1 and 3 connected, port 2 blocked, De-energized: ports 2 and 3 connected, port 1 blocked | Junction Box and 15 in. (380 mm) leads | Surface | 120 Vac | 50 Hz | Junction Box |
| RP418A1065/U | Energized: ports 1 and 3 connected, port 2 blocked, De-energized: ports 2 and 3 connected, port 1 blocked | Junction Box and 15 in. (380 mm) leads | Surface | 440 Vac at 50 Hz; 480 Vac at 60 Hz | 50 Hz; 60 Hz | Junction Box |
| RP418A1073/U | Energized: ports 1 and 3 connected, port 2 blocked, De-energized: ports 2 and 3 connected, port 1 blocked | Junction Box and 15 in. (380 mm) leads | Surface | 277 Vac | 60 Hz | Junction Box |
| RP418A1081/U | Energized: ports 1 and 3 connected, port 2 blocked, De-energized: ports 2 and 3 connected, port 1 blocked | Junction Box and 15 in. (380 mm) leads | Surface | 208 Vac | 60 Hz | Junction Box |
| RP418A1099/U | Energized: ports 1 and 3 connected, port 2 blocked, De-energized: ports 2 and 3 connected, port 1 blocked | Junction Box and 15 in. (380 mm) leads | Surface | 220 Vac at 50 Hz; 240 Vac at 60 Hz | 50 Hz; 60 Hz | Junction Box |
| RP418A1107/U | Energized: ports 1 and 3 connected, port 2 blocked, De-energized: ports 2 and 3 connected, port 1 blocked | Junction Box and 15 in. (380 mm) leads | Surface | 110 Vac at 50 Hz; 120 Vac at 60 Hz | 50 Hz; 60 Hz | Junction Box |
| RP418A1115/U | Energized: ports 1 and 3 connected, port 2 blocked, De-energized: ports 2 and 3 connected, port 1 blocked | Junction Box and 15 in. (380 mm) leads | Surface | 277 Vac at 50 Hz; 575 Vac at 60 Hz | 50 Hz; 60 Hz | |
| RP418B1022/U | Energized: ports 1 and 3 connected, port 2 blocked, De-energized: ports 2 and 3 connected, port 1 blocked | 15 in. (380 mm) leads | Panel mount | 240 Vac | 50 Hz | |
| RP418B1030/U | Energized: ports 1 and 3 connected, port 2 blocked, De-energized: ports 2 and 3 connected, port 1 blocked | 15 in. (380 mm) leads | Panel mount | 120 Vac | 50 Hz | |
| RP418B1048/U | Energized: ports 1 and 3 connected, port 2 blocked, De-energized: ports 2 and 3 connected, port 1 blocked | 15 in. (380 mm) leads | Panel mount | 440 Vac at 50 Hz; 480 Vac at 60 Hz | 50 Hz; 60 Hz | |
| RP418B1055/U | Energized: ports 1 and 3 connected, port 2 blocked, De-energized: ports 2 and 3 connected, port 1 blocked | 15 in. (380 mm) leads | Panel mount | 208 Vac | 60 Hz | |
| RP418B1071/U | Energized: ports 1 and 3 connected, port 2 blocked, De-energized: ports 2 and 3 connected, port 1 blocked | 15 in. (380 mm) leads | Panel mount | 110 Vac at 50 Hz; 120 Vac at 60 Hz | 50 Hz; 60 Hz | |
| RP818A1004/U | Energized: ports 1 and 3 connected, port 2 blocked, De-energized: ports 2 and 3 connected, port 1 blocked | Junction Box and 15 in. (380 mm) leads | Surface | 24 Vac | 60 Hz | Junction Box |
| RP818B1002/U | Energized: ports 1 and 3 connected, port 2 blocked, De-energized: ports 2 and 3 connected, port 1 blocked | 15 in. (380 mm) leads | Panel mount | 24 Vac | 60 Hz | |
| RP818B1010/U | Energized: ports 1 and 3 connected, port 2 blocked, De-energized: ports 2 and 3 connected, port 1 blocked | 15 in. (380 mm) leads | Panel mount | 24 Vac | 50 Hz | |

Pneumatic Relays

Internal Connections



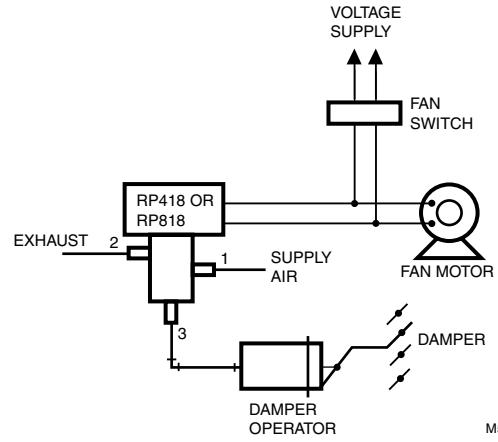
DEENERGIZED:
PORTS 2 AND
3 CONNECTED,
PORT 1 BLOCKED.



ENERGIZED:
PORTS 1 AND
3 CONNECTED,
PORT 2 BLOCKED.

M5428

RP418 & RP818 Typical Piping and Wiring



M5429C

RP470 Pneumatic Selector Relay



Three-port relays are used in HVAC systems, to perform a variety of relay functions, such as; transmit the higher of two input signals, lock out one pressure signal when a second signal is higher, or transmit the lower of two pressure signals.

- Uses diaphragm-logic technology.
- In-line, wall, or panel mounted.
- Sharp-barb air connections.
- Molded plastic construction.

Applications: Pneumatic Three-port Selector Relay
Capacity: 0.039 scfm at 1 psi differential (18 mL/s at 5 kPa differential)
Air Connections: Barb fittings 5/32 in. (4 mm) O.D. plastic tubing
Mounting: Wall or In-line or panel
Operating Humidity Range (% RH): 5 to 95% RH

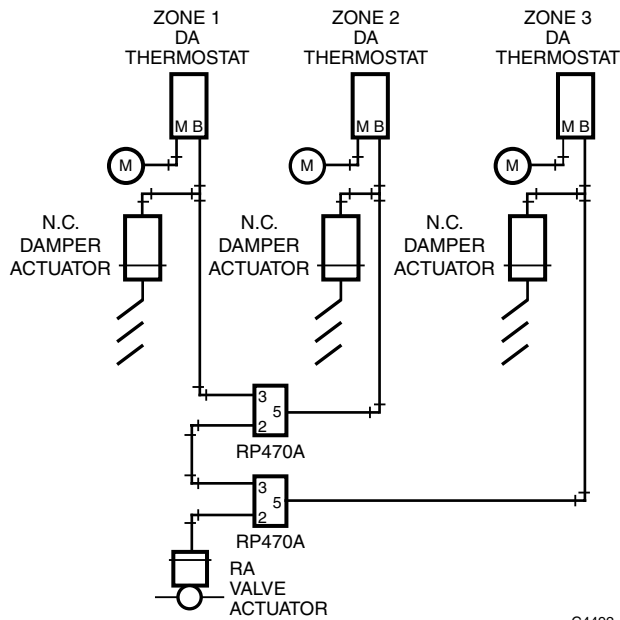
Dimensions: 1 1/2 in. diameter x 1 in. deep (38 mm diameter x 25 mm deep)

Temperature Range: 0°F to 140°F (-18°C to +60°C)

Maximum Safe Operating Pressure (psi): 30 psi, maximum

Maximum Safe Operating Pressure (kPa): 205 kPa, maximum

RP470A Higher-of-Two Pressures Application



C4492

| Material Number | Operation | Pressure Range (psi) | Pressure Range (kPa) | Includes |
|-----------------|---|-------------------------------|--------------------------------|---|
| RP470A1003/U | Higher-of-two-pressures selector relay | Input Operating – 0 to 20 psi | Input Operating – 0 to 138 kPa | 1 1/2 in. Mounting Clip for Mounting relay to wall or panel |
| RP470B1001/U | Lockout, Lower-of-two pressures, repeater relay | Input Operating – 0 to 20 psi | Input Operating – 0 to 138 kPa | 1 1/2 in. Mounting Clip for Mounting relay to wall or panel |

Pneumatic Relays

RP471 Snap Acting Pneumatic Relay



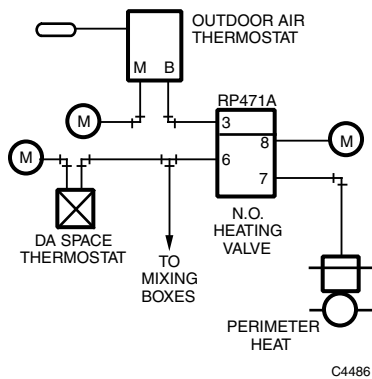
The four port, snap acting relay, converts a proportional air pressure change, from a controller to a positive (two-position) pressure change. It can also divert a supply line to one of two branches.

- Manually adjustable switching pressure.
- Sharp barb connections for 5/32 inch (4 mm) O.D. plastic tubing.
- Molded plastic construction with neoprene diaphragms and stainless steel lever.
- Mounts in any position with mounting clip.

Applications: Pneumatic, four-port, snap acting relay
Capacity: 0.039 scfm at 1 psi differential (18 mL/s at 5 kPa differential)
Air Connections: Barb fittings 5/32 in. (4 mm) O.D. plastic tubing
Mounting: Wall or Panel
Nominal Switch Differential (psi): 0.5 psi
Nominal Switch Differential (kPa): 3 kPa
Setpoint Range (psi): Adjustable between 3 to 15 psi

Setpoint Range (kPa): Adjustable between 21 to 103 kPa
Operating Humidity Range (% RH): 5 to 95% RH
Dimensions: 1 1/2 in. diameter x 2 3/4 in. deep (38 mm diameter x 70 mm deep)
Temperature Range: 0°F to 140°F (-18°C to +60°C)
Maximum Safe Operating Pressure (psi): 30 psi, maximum
Maximum Safe Operating Pressure (kPa): 205 kPa, maximum

RP471A Typical Piping



| Material Number | Operation | Differential Pressure Range (psi) | Differential Pressure Range (kPa) | Includes |
|-----------------|--------------------------------------|-----------------------------------|-----------------------------------|---|
| RP471A1002/U | Proportional to 2-position converter | 1 psi maximum | 7 kPa maximum | 1 1/2 in. Mounting Clip for Mounting relay to wall or panel |

RP670 Pneumatic Switching Relay



Pneumatic relays block, divert, or bleed pneumatic air lines when pilot pressure is changed between values. Commonly applied in Day-Night, Summer-Winter, Start-Stop, On-Off-Auto and other multiple condition systems.

- Available with either single-pole, double-throw (SPDT) or double-pole, double-throw (DPDT) switching action.
- Second switch on DPDT (RP670B) models molded in natural color for identification.
- Air connections for 5/32 in. (4 mm) O.D. plastic tubing.
- Molded plastic construction with neoprene diaphragms, stainless steel lever.
- In-line mounting, or wall or panel mounting with provided metal spring clip.

Applications: Pneumatic Switching Relay

Capacity: 0.039 scfm at 1 psi differential (18 mL/s at 5 kPa differential)

Air Connections: Barb fittings 5/32 in. (4 mm) O.D. plastic tubing

Operating Humidity Range (% RH): 5 to 95% RH

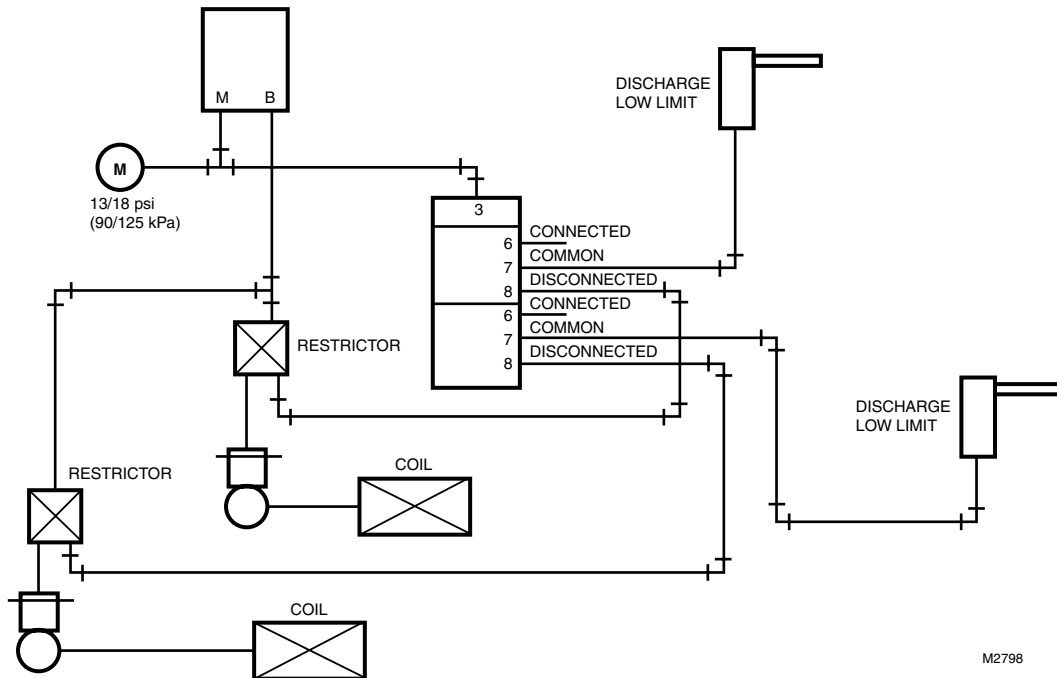
Dimensions: 1 1/2 in. diameter x 2 1/4 in. deep (38 mm diameter x 56 mm deep)

Temperature Range: 0°F to 140°F (-18°C to +60°C)

Maximum Safe Operating Pressure (psi): 30 psi, maximum

Maximum Safe Operating Pressure (kPa): 205 kPa, maximum

RP670 Typical Piping



M2798

| Material Number | Operation | Pressure Range (psi) | Pressure Range (kPa) | Includes |
|-----------------|------------|--|--|---|
| RP670A1001/U | SPDT relay | Switching Occurs Between 3 and 7 psi | Switching Occurs Between 20 and 50 kPa | 1 1/2 in. Mounting Clip for Mounting relay to wall or panel |
| RP670A1019/U | SPDT relay | Switching Occurs Between 13 and 17 psi | Switching Occurs Between 90 and 120 kPa | 1 1/2 in. Mounting Clip for Mounting relay to wall or panel |
| RP670B1009/U | DPDT relay | Switching Occurs Between 3 and 7 psi | Switching Occurs Between 20 and 50 kPa | 1 1/2 in. Mounting Clip for Mounting relay to wall or panel |
| RP670B1017/U | DPDT relay | Switching Occurs Between 13 and 17 psi | Switching Occurs Between 90 and 120 kPa | 1 1/2 in. Mounting Clip for Mounting relay to wall or panel |
| RP670B1066/U | DPDT relay | Switching Occurs Between 18 and 22 psi | Switching Occurs Between 124 and 152 kPa | 1 1/2 in. Mounting Clip for Mounting relay to wall or panel |
| RP670B1074/U | DPDT relay | Switching Occurs Between 20 and 25 psi | Switching Occurs Between 140 and 175 kPa | 1 1/2 in. Mounting Clip for Mounting relay to wall or panel |

Pneumatic Relays

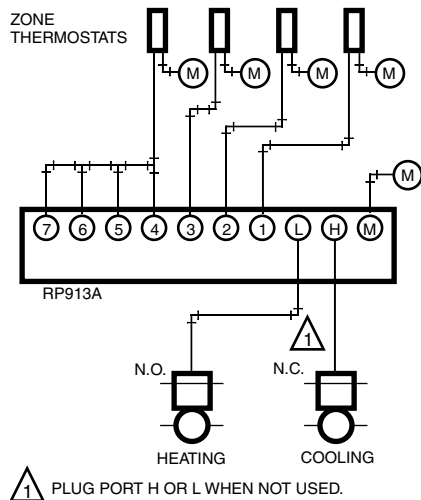
RP913 Pneumatic Load Analyzer



A diaphragm logic pressure selector selects the highest/lowest branch pressure input from zone thermostats to operate final control elements in pneumatic control applications. Replacements available for Johnson, Powers, Robertshaw, and Barber-Colman.

- Seven input manifold containing logic diaphragm, air filter, and restrictions.
- Ten sharp barb connectors for all piping requirements.
- Large integral filter assures clean air to the manifold.
- Requires no field adjustment, and plastic construction results in minimum maintenance.
- Two analyzers can be connected together to increase inputs to twelve.

RP913A Typical Piping



C4483

Applications: Load Analyzer Relay, 7 input

Airflow Usage: 0.04 scfm (0.019 mL/s)

Capacity: 0.039 scfm at 1 psi differential (18 mL/s at 5 kPa differential)

Air Connections: Barb fittings (10) for 1/4 in. (6 mm) O.D. plastic tubing

Mounting: Wall or In-line or panel

Operating Humidity Range (% RH): 5 to 95% RH

Dimensions: 3/4 in. high x 6 1/2 in. long x 2 1/16 in. deep (19 mm high x 165 mm long x 52 mm deep)

Temperature Range: 0°F to 140°F (-18°C to +60°C)

Maximum Safe Operating Pressure (psi): 25 psi, maximum

Maximum Safe Operating Pressure (kPa): 172 kPa, maximum

Replacement Parts

14001865-001/U – Filter Cartridge Assembly

| Material Number | Operation |
|-----------------|---|
| RP913A1008/U | Selects highest and/or lowest branch pressure input to operate final control elements |

RP922 Pneumatic Potentiometer



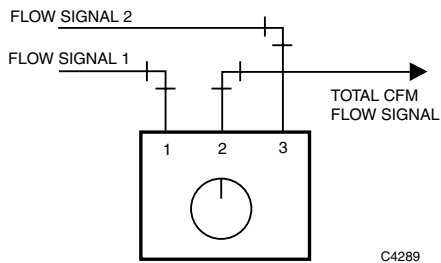
A three-port pneumatic potentiometer can sum and average two input pressures, be a flow restriction, or be an adjustable pressure supply. Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- High efficiency integral filters for all ports.
- High reliability, no internal moving parts.
- Compact size.
- High accuracy.

Applications: Pneumatic Averaging / Ratio Relay
Airflow Usage: Average of two input pressures
Air Connections: Barb fittings 5/32 in. (4 mm) O.D. plastic tubing
Mounting: Wall or panel or Snap onto DIN rail
Operating Humidity Range (% RH): 5 to 95% RH

Dimensions: 2 7/16 in. wide x 1 5/8 in. deep x 2 7/8 in. high (62 mm wide x 42 mm deep x 73 mm high)
Maximum Safe Operating Pressure (psi): 30 psi, maximum
Maximum Safe Operating Pressure (kPa): 205 kPa, maximum

Typical Wiring Diagram for RP922



| Material Number | Operation |
|-----------------|---|
| RP922A1007/U | Can sum two input pressures, average two input pressures, be adjustable flow restriction or be an adjustable pressure supply. |

Pneumatic Relays

RP970 Pneumatic Capacity Relay



Direct acting, modulating relay provides increased capacity of the branchline pressure to the final control device. Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- In-line, wall, or panel mounted.
- Sharp-barb air connections.
- Molded plastic construction with neoprene diaphragms.
- Mounting clip provided.

Applications: Pneumatic Capacity Relay

Product Action: Direct Acting

Airflow Usage: 0.002 scfm (1.0 mL/s) maximum

Capacity: 0.039 scfm at 1 psi differential (18 mL/s at 5 kPa differential)

Air Connections: Barb fittings, Port 1: 1/4 in. (6 mm) O.D. plastic tubing; Other Ports: 5/32 in. (4 mm) O.D. plastic tubing

Mounting: Wall or In-line or panel

Operating Humidity Range (% RH): 5 to 95% RH

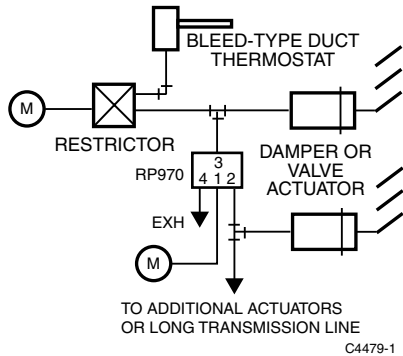
Dimensions: 1 1/2 in. diameter, 1 1/2 in. deep (38 mm dia., 38 mm deep)

Temperature Range: 0°F to 140°F (-18°C to +60°C)

Maximum Safe Operating Pressure (psi): 30 psi, maximum

Maximum Safe Operating Pressure (kPa): 205 kPa, maximum

RP970 Typical Piping



| Material Number | Operation | Pressure Range (psi) | Pressure Range (kPa) | Includes |
|-----------------|--|-------------------------------|--------------------------------|---|
| RP970A1008/U | Provides increased capacity of branchline pressure to final control device | Input Operating – 0 to 20 psi | Input Operating – 0 to 138 kPa | 1 1/2 in. Mounting Clip for Mounting relay to wall or panel |

RP971 Pneumatic Ratio Relay



Pneumatic relay produces a modulating pressure output, and controls pneumatic valve or damper actuators in sequence from a single thermostat. Replacements are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Adjustable pilot start point pressures.
- Two pilot pressure spans available.
- Four sharp-barb air connections.
- Molded plastic construction with neoprene.
- Mounting clip provided.

Applications: Pneumatic, Four Port Ratio Relay

Product Action: Direct Acting

Airflow Usage: 0.002 scfm (1.0 mL/s) maximum

Capacity: 0.039 scfm at 1 psi differential (18 mL/s at 5 kPa differential)

Air Connections: Barb fittings, Port 1: 1/4 in. (6 mm) O.D. plastic tubing; Other Ports: 5/32 in. (4 mm) O.D. plastic tubing

Mounting: Wall or In-line or panel

Operating Humidity Range (% RH): 5 to 95% RH

Dimensions: 2 in. diameter x 2 5/8 in. deep (52 mm dia. x 67 mm deep)

Temperature Range: 0°F to 140°F (-18°C to +60°C)

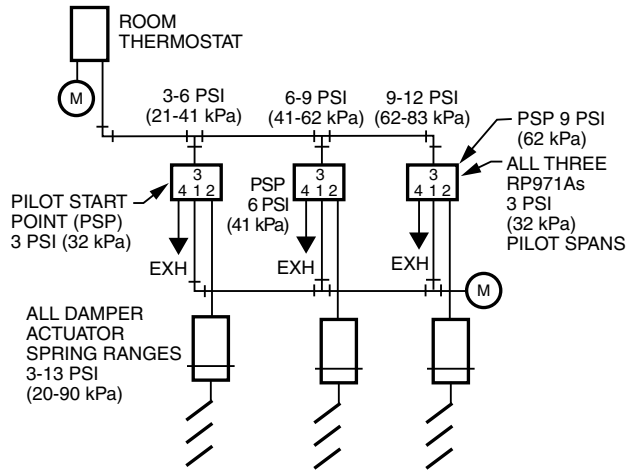
Pilot Start Pressure (psi): Adjustable 0 to 10 psi

Pilot Start Pressure (kPa): Adjustable 0 to 69 kPa

Maximum Safe Operating Pressure (psi): 30 psi, maximum

Maximum Safe Operating Pressure (kPa): 205 kPa, maximum

RP971A Typical Piping



C4478-1

| Material Number | Operation | Pressure Range (psi) | Pressure Range (kPa) | Includes |
|-----------------|--|--|---|--|
| RP971A1007/U | Produces modulating pressure output proportional to pilot pressure input changes | Output Span – 3 to 13 psi; 3 psi pilot input span | Output Span – 21 to 90 kPa; 21 kPa pilot input span | 14003030-002 Mounting Clip and scaleplate with psi markings |
| RP971A1015/U | Produces modulating pressure output proportional to pilot pressure input changes | Output Span – 3 to 13 psi; 5 psi pilot input span | Output Span – 21 to 90 kPa; 34 kPa pilot input span | 14003030-002 Mounting Clip and scaleplate with psi markings |
| RP971A1023/U | Produces modulating pressure output proportional to pilot pressure input changes | Output Span – 3 to 13 psi | Output Span – 21 to 90 kPa | 14003030-002 Mounting Clip and scaleplate with kPa markings |
| RP971A1031/U | Produces modulating pressure output proportional to pilot pressure input changes | Output Span – 3 to 13 psi | Output Span – 21 to 90 kPa | 14003030-002 Mounting Clip and scaleplate with kPa markings |

Pneumatic Relays

RP972 Pneumatic Reversing Relay



RP972 is a modulating relay suitable for all types of heating and air conditioning control systems, to reverse and increase the capacity of branchline pressure to an element. The output varies inversely with the input with an adjustable offset.

- Reverse acting.
- In-line mounting or can be wall or panel mounted with mounting clip provided.
- Molded plastic construction with neoprene diaphragms.

Applications: Pneumatic Reversing Relay

Product Action: Reverse Acting

Airflow Usage: 0.002 scfm (1.0 mL/s) maximum

Capacity: 0.039 scfm at 1 psi differential (18 mL/s at 5 kPa differential)

Air Connections: Barb fittings for three 5/32 in. (4 mm) and one 1/4 in. (6 mm) O.D. plastic tubing

Mounting: Wall or In-line or panel

Operating Humidity Range (% RH): 5 to 95% RH

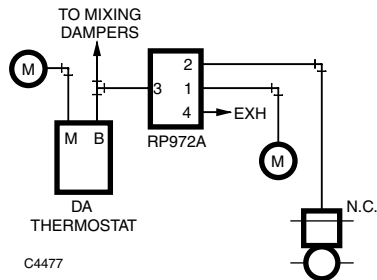
Dimensions: 1 1/2 in. diameter x 2 1/4 in. deep (38 mm diameter x 57 mm deep)

Temperature Range: 0°F to 140°F (-18°C to +60°C)

Maximum Safe Operating Pressure (psi): 30 psi, maximum

Maximum Safe Operating Pressure (kPa): 205 kPa, maximum

RP972A Typical Piping



| Material Number | Operation | Includes |
|-----------------|--|---|
| RP972A1006/U | Output varies inversely with input with an adjustable offset | 1 1/2 in. Mounting Clip for Mounting relay to wall or panel |

RP973 Pneumatic Averaging Relay



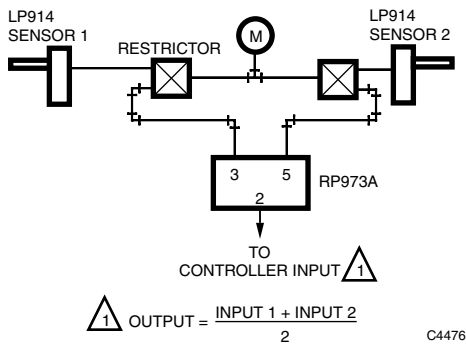
A three-port relay averages the signals from two thermostats to control a single device such as a heating coil valve for a multizone unit. Replacements available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell models.

- In-line, wall or panel mounted.
- Sharp-barb air connections.
- Molded plastic construction.

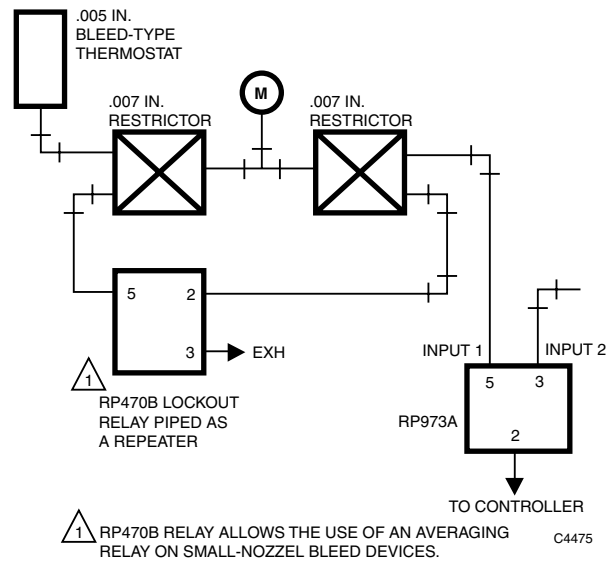
Applications: Pneumatic Three-Port Averaging Relay
Airflow Usage: 0.007 scfm (3.303 mL/s) maximum
Capacity: 0.039 scfm at 1 psi differential (18 mL/s at 5 kPa differential)
Air Connections: Barb fittings 5/32 in. (4 mm) O.D. plastic tubing
Mounting: Wall or In-line or panel
Operating Humidity Range (% RH): 5 to 95% RH

Dimensions: 1 1/2 in. high x 7/8 in. wide x 15/16 in. deep (38 mm high x 22 mm wide x 24 mm deep)
Temperature Range: 32°F to 125°F (0°C to 52°C)
Maximum Safe Operating Pressure (psi): 30 psi, maximum
Maximum Safe Operating Pressure (kPa): 205 kPa, maximum

Typical Averaging Application



RP973A Typical Piping



| Material Number | Operation | Pressure Range (psi) | Pressure Range (kPa) |
|-----------------|---|--|--|
| RP973A1005/U | Output pressure equals average of two input pressures | Input Operating – 3 to 15 psi; Output Operating – 3 to 15 psi | Input Operating – 21 to 103 kPa; Output Operating – 21 to 103 kPa |

Pneumatic Relays

RP975 Pneumatic Hesitation Relay



A three-port hesitation relay provides minimum outside air damper position plus controlled ventilation for large volume unit ventilators. Replacement devices are available for Johnson, Powers, and Barber-Colman devices.

- Manually adjustable minimum position. In-line, wall or panel mounted.
- Sharp-barb air connections.
- Molded plastic construction.

Applications: Pneumatic Three-Port Hesitation relay

Airflow Usage: 0.022 scfm (10 mL/s)

Capacity: 0.003 scfm (1.65 mL/s)

Air Connections: Barb fittings 5/32 in. (4 mm) O.D. plastic tubing

Mounting: Wall or In-line or panel

Operating Humidity Range (% RH): 5 to 95% RH

Dimensions: 2 1/4 in. high x 2 1/2 in. wide x 3 3/4 in. deep (57 mm high x 63 mm wide x 96 mm deep)

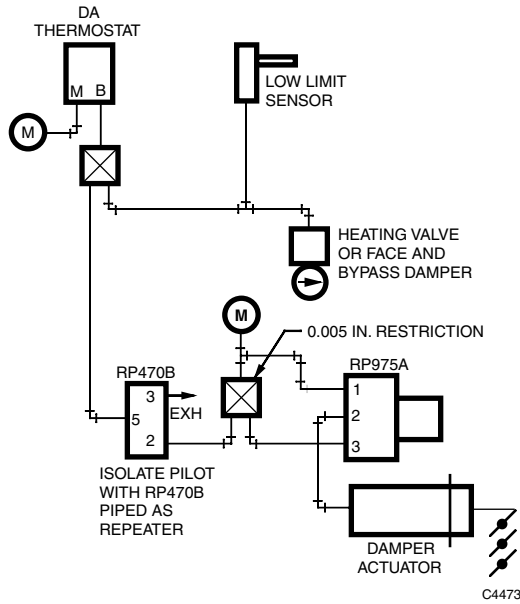
Temperature Range: 32°F to 125°F (0°C to 52°C)

Maximum Safe Operating Pressure (psi): 30 psi, maximum

Maximum Safe Operating Pressure (kPa): 205 kPa, maximum

Comments: Knob has two (2) internal breakaway stops that limit rotation to 188 degrees. Each stop, when removed, adds 56 degrees of rotation. Maximum rotation is 300 degrees.

Typical Piping With Isolation Circuit



| Material Number | Operation | Includes |
|-----------------|--|--|
| RP975A1003/U | Provides minimum outside air damper position | 1 1/2 in. Mounting Clip for mounting relay to wall or panel. Also includes scaleplate and knob, factory mounted and calibrated. Use with MP909 or MP918 Damper Actuator having a 7 to 13 psi (50 to 90 kPa) spring range |

Pneumatic Relay Accessories and Replacement Parts

| Material Number | Description | Includes | Used With |
|-----------------|---|---|-----------|
| 14001865-001/U | Filter Cartridge Assembly | | RP913 |
| 14003638-001/U | Bag Assembly, Mounting Hardware for RP418 | Mounting bracket, barb fitting, screens, tube, instructions 95-6046 | RP418 |

CLEPAS Air Pressure Switch



Senses differential air pressure in HVAC systems and provides on/off output. A typical application is sensing fan shutdown in a unit ventilator to close the outdoor air damper.

- Reliable pneumatic operation.
- Adjustable setpoint (switching pressure).
- Eliminates electrical interlock wiring.

Applications: Pneumatic Airflow Differential Pressure Switch
Air Connections: Sensing Inputs: 1/4 in. compression fittings; Control Air: Barb for 1/4 in. (6 mm) or 3/8 in. (10 mm) O.D. plastic tubing
Mounting: Vertical Mount

Dimensions: 6 1/8 in. high x 4 1/8 in. wide x 2 13/16 in. deep (156 mm high x 105 mm wide x 72 mm deep)

Temperature Range: 0°F to 135°F (-18°C to +57°C)

Switch Type: On/Off Pneumatic Airflow Switch

Switching Action: On/Off

| Material Number | Description | Pressure Range (psi) | Pressure Range (kPa) |
|-----------------|---|---|--|
| CLEPAS2100/U | Pneumatic Airflow Differential Pressure Switch, Low Setpoint Range | Switching Pressure – 0.15 to 12.0 in. w.c.; 0.15 to 2.0 in. w.c. | Switching Pressure – 0.037 to 2.99 kPa; 0.037 to 0.50 kPa |
| CLEPAS2200/U | Pneumatic Airflow Differential Pressure Switch, High Setpoint Range | Switching Pressure – 0.15 to 12.0 in. w.c. | Switching Pressure – 0.037 to 2.99 kPa |

Pneumatic Switches

P643 Pneumatic/Electric Switch



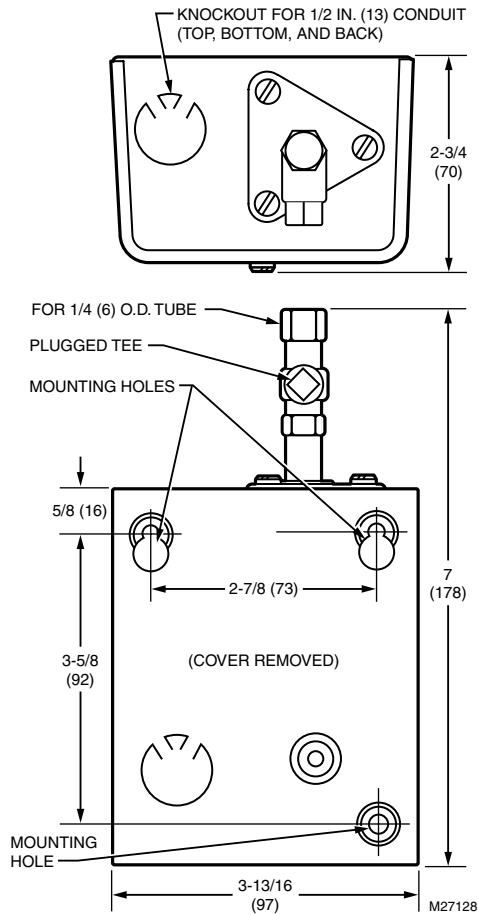
Converts a pneumatic signal from a controller to an electrical switching action to provide start and stop control. Replacement devices available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell pneumatic/electric switches.

- Adjustable differential.
- Externally visible scales.
- Heavy-duty switch.
- Integral gage connection.

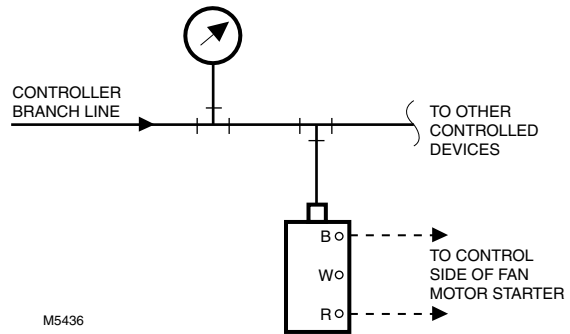
Applications: Pneumatic / Electric Switch
Air Connections: Compression fitting 1/4 in. (6 mm) O.D. tubing
Voltage: 120 Vac; 208 Vac; 240 Vac; 277 Vac; 480 Vac
Frequency: 50 Hz; 60 Hz
Mounting: Holes in back of case
Dimensions: 7 1/32 in. high x 3 13/16 in. wide x 2 3/4 in. deep
 (179 mm high x 97 mm wide x 70 mm deep)
Temperature Range: -30°F to +125°F (-34°C to +52°C)
Maximum Safe Operating Pressure (psi): 25 psi, maximum

Maximum Safe Operating Pressure (kPa): 170 kPa, maximum
Current: 120 Vac: 8.0 AFL, 48.0 LRA, 17.0 A resistive, 208/240 Vac:
 5.1 AFL, 30.6 ALR, 17.0 A resistive, 270 Vac: 17.0 A resistive, 480 Vac:
 3.5 AFL, 21.0 ALR, 10.0 A resistive
Switch Type: Pneumatic/Electric Switch
Switch Operation: Converts pneumatic signal to electrical switching action
Approvals, Underwriters Laboratories Inc: Listed SDFY
Approvals, Canadian Underwriters Laboratories Inc: Listed

Dimensions Diagram in inches (millimeters)



P643A Typical Piping



| Material Number | Electrical Connections | Pressure Range (psi) | Pressure Range (kPa) | Differential Pressure Range (psi) | Differential Pressure Range (kPa) | Includes |
|-----------------|-----------------------------------|------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------------|
| P643A1007/U | Knockouts (3) for 1/2 in. conduit | Switching Pressure – 0 to 22.5 psi | Switching Pressure – 0 to 155 kPa | 3 to 13 psi adjustable | 20 to 90 kPa adjustable | SPDT switch |

P658 Pneumatic/Electric Switch



Pneumatic-electric switches convert a controller's pneumatic signal to electrical switching, providing start and stop control. Replacements available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell pneumatic/ electric switches.

- Models available for surface or panel mounting.
- Barb protected by open cage.
- All ferrous parts plated to prevent corrosion.
- Factory calibrated setpoint field adjustable to meet job requirements.
- Neoprene diaphragm element.

Applications: Pneumatic / Electric Switch

Air Connections: Barb fitting for 1/4 in. (6 mm) O.D. plastic tubing

Electrical Connections: P658A, B: Screw terminals

P658E, F: 1/4 in. quick-connect male terminals

Frequency: 60 Hz

Operating Humidity Range (% RH): 5 to 95% RH, 80°F (27°C) max wet bulb

Operating Temperature Range: P658A: -20 to 140°F (-4 to 60°C)

P658B: -20 to 160°F (-4 to 71°C)

P658E, F: 40 to 140°F (4 to 60°C)

Maximum Safe Operating Pressure (psi): 30 psi, maximum

Maximum Safe Operating Pressure (kPa): 207 kPa, maximum

Switch Type: Pneumatic/Electric Switch

Switching Action: P658A, B: Make R-W on pressure rise to setpoint plus differential; Make R-B on pressure fall to setpoint. P658E, F:

Make COM-NC on pressure fall to setpoint; Make COM-NO on

pressure rise to setpoint plus differential

Switch Operation: Converts pneumatic signal to electrical switching action (SPDT)

Approvals: P658A:

UL Listing, Category SDYF

CSA Listing, Volume II

P658B:

UL File No. E49725, Category SDFY2

P658E, F:

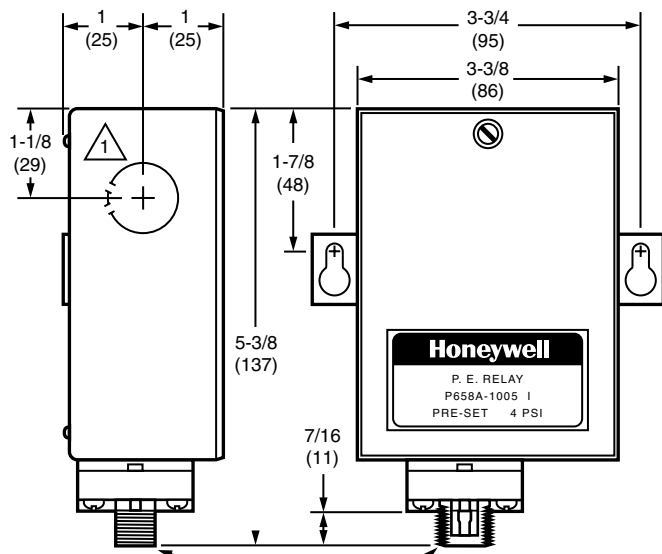
UL File No. E49725, Category SDFY2

CSA Listing, Volume I

| Material Number | Mounting | Setpoint Range | Differential Pressure Range (psi) | Differential Pressure Range (kPa) | Motor Load | Pilot Duty Ratings | Resistive Load | Includes | Comments |
|-----------------|---|--|-----------------------------------|-----------------------------------|---------------------------------------|------------------------------|--|----------|------------------------------|
| P658A1013/U | Surface (includes case) | Field Adjustable - 2 to 24 psi (14 to 165 kPa) | 2 psi | 14 kPa | 1 hp @ 125 Vac, 2 hp @ 250 or 277 Vac | 750 VA @ 125, 250 or 277 Vac | 25A @ 125, 250 or 480 Vac | Case | Factory Calibrated at 10 psi |
| P658B1012/U | Panel mount | Field Adjustable - 2 to 24 psi (14 to 165 kPa) | 2 psi | 14 kPa | 1 hp @ 125 Vac, 2 hp @ 250 or 277 Vac | 750 VA @ 125, 250 or 277 Vac | 25A @ 125, 250 or 480 Vac | | Factory Calibrated at 10 psi |
| P658E1001/U | Panel mount | Field Adjustable - 2 to 17 psi (14 to 117 kPa) | 1 psi | 7 kPa | 3/4 hp @ 125, 250 or 277 Vac | 720 VA @ 125, 250 or 277 Vac | 25A @ 125, 250 or 277 Vac; 10A @ 480 Vac | | No Factory Calibration |
| P658E1167/U | Panel mount | Field Adjustable - 2 to 25 psi (14 to 172 kPa) | 1 psi | 7 kPa | 3/4 hp @ 125, 250 or 277 Vac | 720 VA @ 125, 250 or 277 Vac | 25A @ 125, 250 or 277 Vac; 10A @ 480 Vac | | No Factory Calibration |
| P658F1000/U | Panel, through double D hole secured with hex nut | Field Adjustable - 2 to 17 psi (14 to 117 kPa) | 1 psi | 7 kPa | 3/4 hp @ 125, 250 or 277 Vac | 720 VA @ 125, 250 or 277 Vac | 25A @ 125, 250 or 277 Vac; 10A @ 480 Vac | | No Factory Calibration |

Pneumatic Switches

P658A Dimensions Diagram in inches (millimeters)

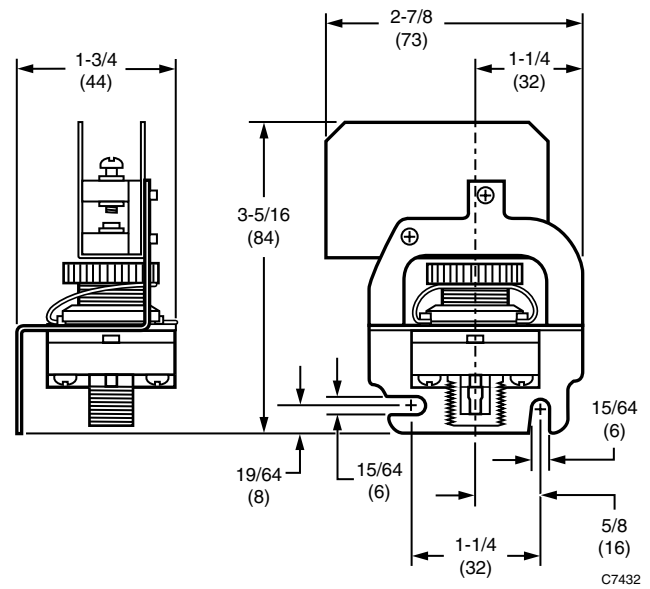


THREADED BARB PROTECTOR
5/8-18 UNF-2A MALE THREAD

1 KNOCKOUT ON ONE SIDE FOR 3/4 INCH CONDUIT. KNOCKOUTS ON OPPOSITE SIDE, TOP, AND BACK FOR 1/2 INCH CONDUIT.

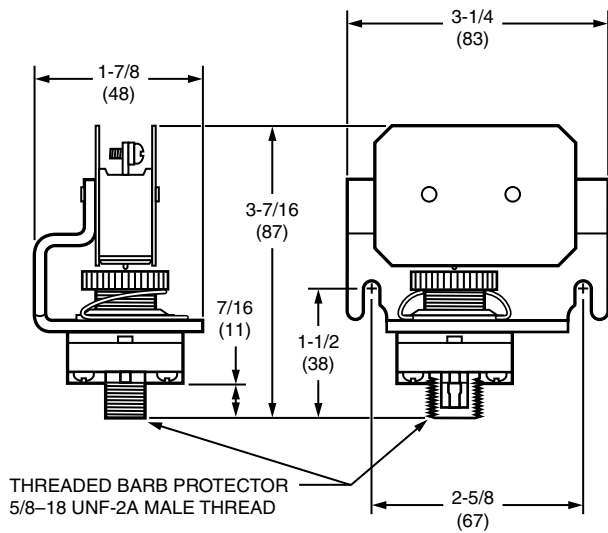
C7435

P658E Dimensions Diagram in inches (millimeters)



C7432

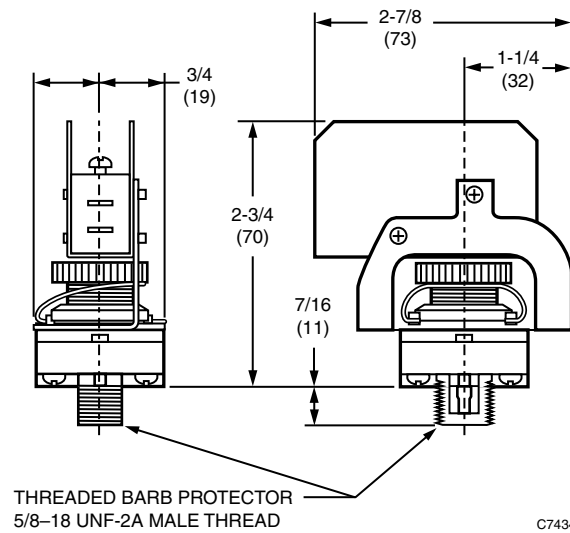
P658B Dimensions Diagram in inches (millimeters)



THREADED BARB PROTECTOR
5/8-18 UNF-2A MALE THREAD

C7431

P658F Dimensions Diagram in inches (millimeters)



THREADED BARB PROTECTOR
5/8-18 UNF-2A MALE THREAD

C7434

SP470 Pneumatic Diverting Switches



Pneumatic diverting switch used to manually divert, block, or bleed air in pneumatic air lines with a change in conditions. Replacement kits are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell switches.

- Available in two-position or three-position devices.
- Mountable on a panel up to 7/16 in. (11 mm) thick.
- Complete with knob and scaleplate.

Applications: Pneumatic Manual Switch

Airflow Usage: 0.175 scfm (82.6 mL/s) minimum at 1 psi pressure drop

Air Connections: Barb fitting for 5/32 in. (4 mm) O.D. plastic tubing

Mounting: Panel mount

Operating Humidity Range (% RH): 5 to 95% RH

Dimensions: 1 5/8 in. high x 1 9/16 in. wide x 3 in. deep (41 mm high x 40 mm wide x 76 mm deep)

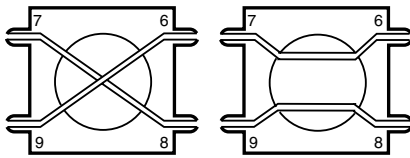
Temperature Range: 20°F to 140°F (-7°C to +60°C)

Maximum Safe Operating Pressure (psi): 30 psi, maximum

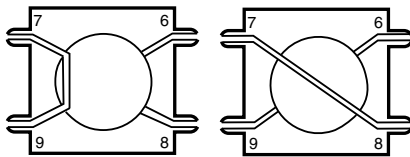
Maximum Safe Operating Pressure (kPa): 207 kPa, maximum

Switch Operation: Used to manually divert, block or bleed pneumatic air lines

SP470A Switches



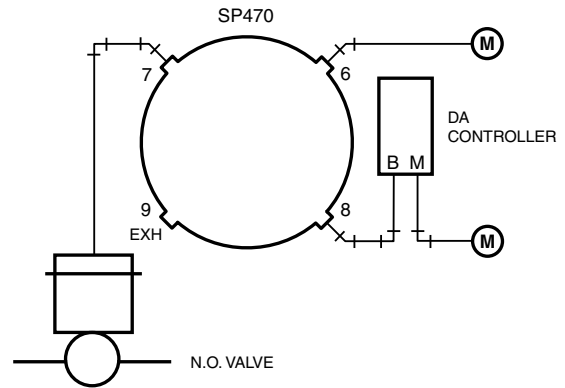
TWO-POSITION SWITCH



THREE-POSITION SWITCH

C1887

SP470A Typical three-position application

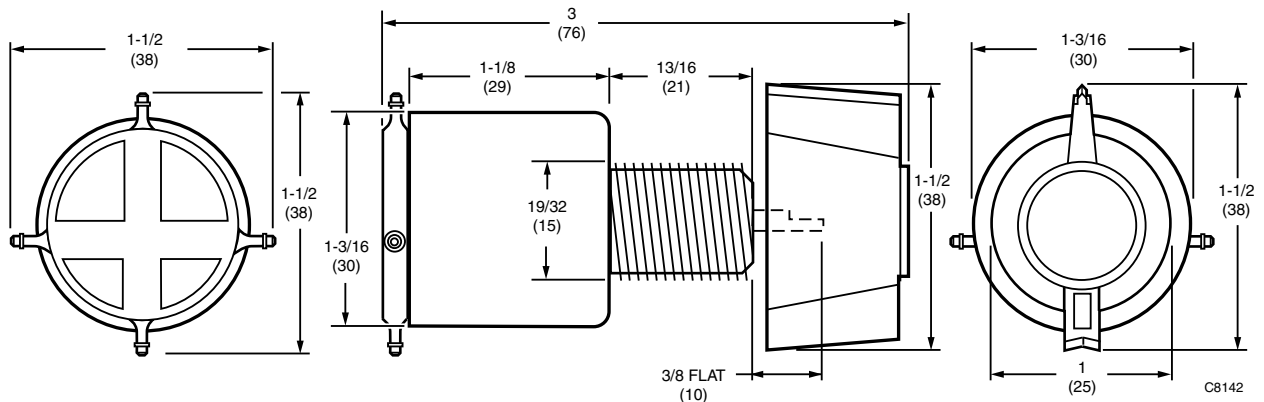


NOTES:

- POSITION 1, VALVES OPEN: PORTS 7 AND 9 CONNECTED, PORTS 6 AND 8 BLOCKED
- POSITION 2, VALVE AUTO: PORTS 7 AND 8 CONNECTED, PORTS 6 AND 9 BLOCKED
- POSITION 3, VALVE CLOSED: PORTS 7 AND 6 CONNECTED, PORTS 8 AND 9 BLOCKED

C4290

Dimensions Diagram in inches (millimeters)



C8142

| Material Number | Description | Switch Type | Includes |
|-----------------|---|--|--|
| SP470A1000/U | Pneumatic Manual Switch, 4 port, 2-position interchange | Two or Three Position Pneumatic Diverting Switch | Mounting nuts, knob, and two-position scaleplate |
| SP470A1018/U | Pneumatic Manual Switch, 4 port, 3-position, Port 7 is common | Three Position Pneumatic Diverting Switch | Mounting nuts, knob, and three-position scaleplate |

Pneumatic Switches

SP970 Pneumatic Manual or Minimum Position Switches



Manually position a remote damper actuator or reset the setpoint of a pneumatic controller. They can also provide minimum damper position. Replacement kits are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell switches.

- Two spans available as shipped. Six spans with breakaway stops on knob.
- Pilot bleed and isolated pilot models available.
- Wall or panel mounting.

Applications: Manual Pressure Regulator

Airflow Usage: 0.022 scfm (9.8 mL/s)

Air Connections: Barb fitting for 5/32 in. (4 mm) O.D. plastic tubing

Mounting: Panel or Wall

Operating Humidity Range (% RH): 5 to 95% RH

Dimensions: 1 1/2 in. diameter x 3 in. deep (38 mm diameter x 76 mm deep)

Temperature Range: 0°F to 140°F (-18°C to +60°C)

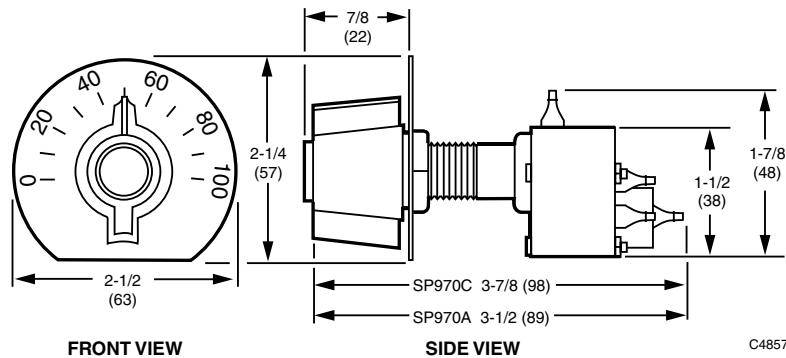
Maximum Safe Operating Pressure (psi): 30 psi, maximum

Maximum Safe Operating Pressure (kPa): 207 kPa, maximum

Switch Operation: Used to manually position a remote damper actuator or reset setpoint of pneumatic controller

Comments: The setpoint knob normally rotates 188 degrees. Two breakaway stops on the knob allow rotation of 244 degrees and 300 degrees.

Dimensions Diagram in inches (millimeters)



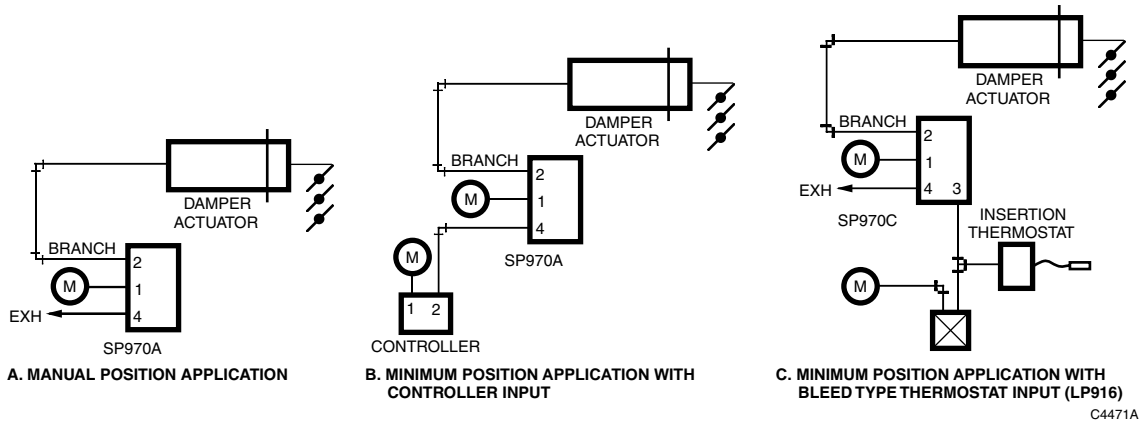
| Material Number | Capacity | Pressure Range (psi) | Pressure Range (kPa) | Switch Type | Includes |
|-----------------|--|--|---|---|--|
| SP970A1005/U | 0.021 scfm (9.4 mL/s) below minimum position. Above minimum position, device feeding pilot determines capacity | Output Span – 10 psi with 188 degree knob rotation, 13 psi with 244 degree knob rotation, and 16 psi with 300 degree knob rotation | Output Span – 69 kPa with 188 degree knob rotation, 90 kPa with 244 degree knob rotation, and 110 kPa with 300 degree knob rotation | Three-port pneumatic manual or minimum position switch | Knob, 0 to 100% scale plate and locknuts |
| SP970A1013/U | 0.021 scfm (9.4 mL/s) below minimum position. Above minimum position, device feeding pilot determines capacity | Output Span – 5 psi with 188 degree knob rotation, 6.5 psi with 244 degree knob rotation and 8 psi with 300 degree knob rotation | Output Span – 34 kPa with 188 degree knob rotation, 45 kPa with 244 degree knob rotation, and 56 kPa with 300 degree knob rotation | Three-port pneumatic manual or minimum position switch | Knob, 0 to 100% scale plate and locknuts |
| SP970C1001/U | 0.021 scfm (9.4 mL/s) | Output Span – 10 psi with 188 degree knob rotation, 13 psi with 244 degree knob rotation, 16 psi with 300 degree knob rotation | Output Span – 69 kPa with 188 degree knob rotation, 90 kPa with 244 degree knob rotation, and 110 kPa with 300 degree knob rotation | Four-port pneumatic manual switch with isolated pilot chamber | Knob, 0 to 100% scale plate and locknuts |
| SP970C1043/U | 0.021 scfm (9.4 mL/s) | Output Span – 5 psi with 188 degree knob rotation, 6.5 psi with 244 degree knob rotation and 8 psi with 300 degree knob rotation | Output Span – 34 kPa with 188 degree knob rotation, 45 kPa with 244 degree knob rotation, and 56 kPa with 300 degree knob rotation | Four-port pneumatic manual switch with isolated pilot chamber | Knob, 0 to 100% scale plate and locknuts |

Pneumatic Switch Replacement Parts

| Material Number | Description | Used With |
|-----------------|---|-----------|
| 14003199-002/U | Electric / Pneumatic Relay, Surface Mount | SP470A |

SP970 Operation

SP970 Typical Piping



Operation

SP970A Three-Port Switches

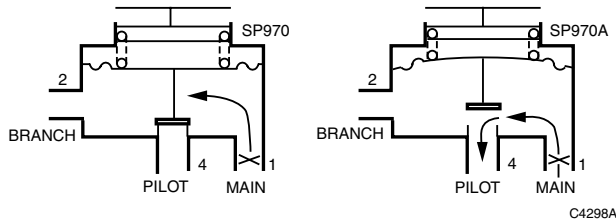
Pressure Regulator Operation

Main line airflows through the restriction into the branchline chamber and out the nozzle. Branchline pressure increases until it is strong enough to compress the spring and lift the diaphragm off the nozzle. Airflow out the nozzle is controlled by the balance between the branchline pressure and spring force. See Typical Piping Diagram A Above.

Minimum Position Operation

See Typical Piping Diagram B above. An external signal is connected to Port 4 (Exhaust Port). When the external signal is greater than the spring load, the nozzle opens and branchline pressure is the same as the external signal. When the external signal is less than the spring load, branchline pressure is controlled as described above. See Operation Diagram below.

SP970A Operation

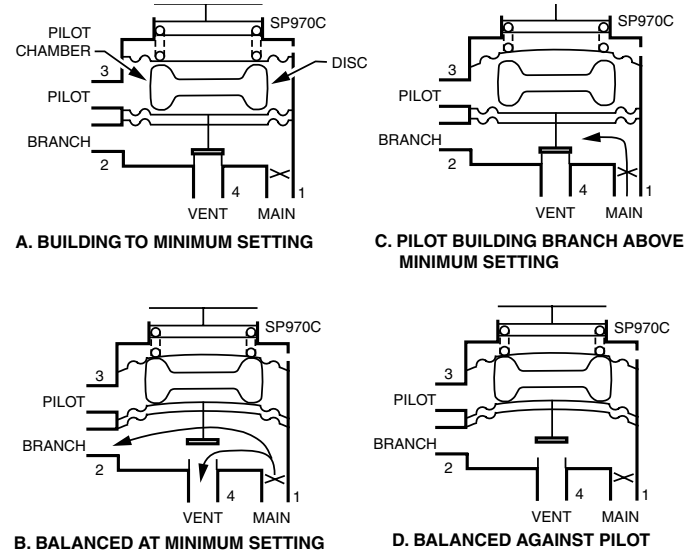


SP970C Four-Port Switches

These minimum position devices have a separate dead-ended chamber connected to Port 3 to receive an external signal. When the external signal is less than the spring load, the signal has no effect and functions similar to the SP970A as a pressure regulator. When the external signal is greater than the spring load, the spring load is isolated and the device duplicates the input signal. See Operation Diagram below.

Piping Diagram C above shows a typical four-port SP970C application. The minimum-position switch keeps the pneumatic actuator at a minimum position until the thermostat pressure is greater than the minimum position valves. The thermostat then controls the actuator.

SP970C Operation



Pneumatic Damper Actuators

Pneumatic Damper Actuator Torque Ratings

TORQUE (LB-IN.) DELIVERED TO A 90-DEGREE STROKE DAMPER SHAFT:

| Actuator | Spring Range Psi (kPa) | Stroke in. (mm) | Delivered Torque lb-in. (N•m) | | | | |
|----------|---------------------------------|--------------------|-------------------------------|------------------------|----------------------|-----------------------|-----------------------|
| | | | Shaft Retracted | Midstroke ^a | Shaft Extended | | |
| | | | | | 13 psi (90 kPa) main | 18 psi (129 kPa) main | 20 psi (138 kPa) main |
| MP913 | 10-15 (69-103) | 1 (25) | 11 (1.243) | 2 (0.226) | 0 (0) | 3 (3.339) | 5 (0.565) |
| | 5-10 (34-69) | 1 (25) | 6 (0.678) | 2 (0.226) | 3 (0.339) | 9 (1.017) | 13 (1.469) |
| MP916 | 3-12 (21-83) | 2-1/4 (57) | 41 (4.632) | 26 (2.937) | 14 (1.582) | 138 (15.6) | 109 (12.315) |
| | 4-8 (27-55) | 2-1/4 (57) | 51 (6.214) | 26 (2.937) | 69 (7.796) | 138 (15.6) | 166 (18.755) |
| | 5-12 (34-83) | 2-1/4 (57) | 69 (7.796) | 26 (2.937) | 14 (1.582) | 82 (9.264) | 109 (12.315) |
| MP909D | 3-8 (21-55) | 2-3/8 (60) | 10.7 (1.209) | 7.6 (0.859) | 17.9 (2.023) | 35.7 (4.034) | 42.8 (4.836) |
| | 5-10 (34-70) | 2-3/8 (60) | 17.9 (1.98) | 7.6 (0.859) | 10.7 (1.209) | 28.6 (3.232) | 35.7 (4.034) |
| | 8-13 (55-90) | 2-3/8 (60) | 28.6 (3.232) | 7.6 (0.859) | 0 (0) | 17.9 (2.023) | 25.0 (2.825) |
| | 5-10 (34-70) | 3 (76) | 22.5 (2.543) | 9.5 (1.974) | 13.5 (1.526) | 36 (4.008) | 45 (5.085) |
| MP909E | 2.5-6.5 (17-45) | 3.1 (79) | 25.6 (2.893) | 22 (2.486) | 66.5 (7.515) | 118 (13.33) | 138 (15.59) |
| | 3-13 (21-90) | 4 (101) | 39.6 (4.475) | 28 (3.164) | 0 (0) | 66 (7.058) | 92.4 (10.44) |
| | 5-10 (34-70) | 4 (101) | 66 (7.458) | 28 (3.164) | 39.6 (4.475) | 105.6 (11.93) | 132 (14.92) |
| | 5-10 (34-70) | 3.1 (79) | 51.2 (5.786) | 22 (2.486) | 30.7 (3.469) | 81.8 (9.243) | 102 (11.53) |
| | 9-13 (62-90) | 3.1 (79) | 92.1 (10.41) | 22 (2.486) | 0 (0) | 51.2 (5.786) | 71.7 (8.102) |
| MP909H | 9-13 (62-90) plus positioner | 3.1 (79) | 92.1 (10.41) | ^b | 0 (0) | 66 (7.1) | 92.4 (10.44) |
| MP918A | 8-13 (55-90) plus positioner | 3-1/2 (89) | 333 (37.63) | ^b | 0 (0) | 208 (23.5) | 292 (33) |
| MP918B | 3-7 (21-49) | 3-1/2 (89) | 125 (14.3) | 88 (9.944) | 250 (28.25) | 458 (51.53) | 541 (61.3) |
| | 3-13 (21-90) | 3-1/2 (89) | 125 (14.3) | 88 (9.944) | 0 (0) | 208 (23.5) | 292 (33) |
| | 5-10 (34-70) | 3-1/2 (89) | 208 (23.5) | 88 (9.944) | 125 (14.3) | 333 (37.63) | 416 (47.01) |
| | 8-13 (55-90) | 3-1/2 (89) | 333 (37.63) | 88 (9.944) | 0 (0) | 208 (23.5) | 292 (33) |
| MP920 | 7-13 (34-90) | 6 (152) | 520 (58.75) | 158 (17.85) | 0 (0) | 372 (42.03) | 521 (58.86) |

^a Torque in this column is for modulating service only.

^b The lesser of retracted or extended shaft torque.

The following reference formulas are valid for actuators mounted on fixed brackets only.

Most dampers operate through a 90-degree arc. The amount of torque that a pneumatic actuator can deliver to the damper shaft may be calculated from the net force delivered and the length of stroke of the actuator using the following equations:

$$T_R = \frac{F_R \times S}{2}$$

$$T_E = \frac{F_E \times S}{2}$$

T_m = 1.5 x A x 0.707S

T_R = Torque with actuator shaft retracted.

T_E = Torque with actuator shaft extended.

T_M = Midstroke torque.

F_R = Force exerted by actuator with shaft retracted.

F_E = Force exerted by actuator with shaft extended.

A = Effective area of actuator diaphragm.

S = Actuator stroke.

The midstroke is significant only for modulating service and is based on the premise that an input pressure change no greater than 1.5 psi (10 kPa) should cause the actuator to reposition the damper.

MP516 Pneumatic Unit Ventilator Damper Actuator

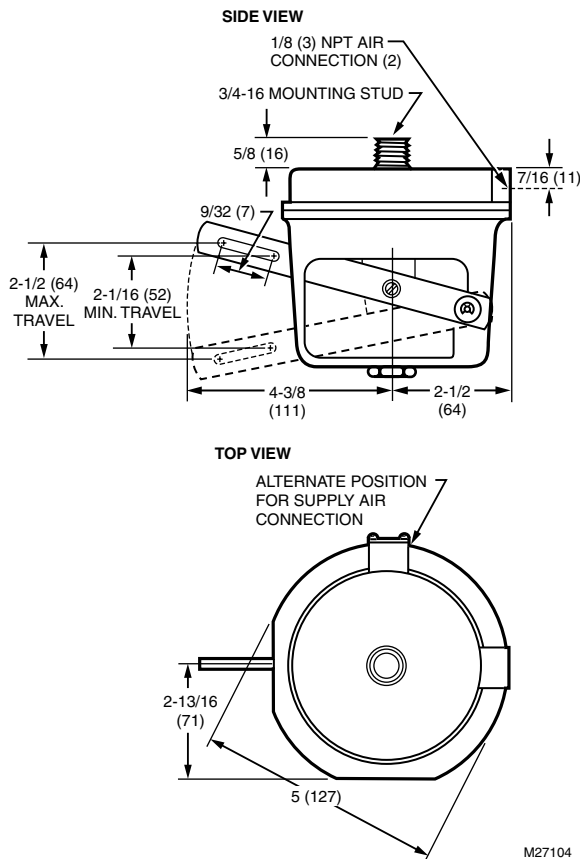


Used to control the damper on unit ventilators. Can be adapted to various unit ventilator control cycles. Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell unit ventilator damper actuators.

- Constructed of strong zinc die castings.
- Hesitation feature available for unit ventilator cycles requiring a minimum percentage of outdoor air.

Actuator Type: Damper
Actuator Force (kPa): Medium
Stroke: 2-1/8 in. to 2-1/2 in. (54 mm to 63 mm)
Diaphragm Effective Area (sq in.): 11 sq in.
Diaphragm Effective Area (sq cm): 71 sq cm
Maximum Safe Operating Pressure (psi): 25 psi
Maximum Safe Operating Pressure (kPa): 172 kPa
Temperature Range: -20°F to +160°F (-29°C to +71°C)
Fail Safe Mode: Spring Return
Air Connections: 1/8 in. NPT
Operating Humidity Range (% RH): 5 to 95% RH
Dimensions: 5 1/8 in. high x 6 7/8 in. wide (with arm) (130 mm high x 175 mm wide (with arm))

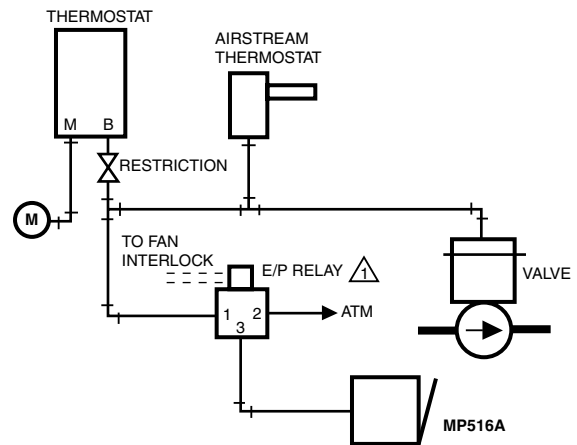
Dimensions Diagram in inches (millimeters)



Accessories

- 26025B/U** – Damper crank arm, for 3/8 in. (9.5 mm) diameter axles, includes an elongated slot, scaled at 40-50-60-75-90 degrees
- 27174B/U** – Damper crank arm, for 7/16 inch (11.1 mm) diameter axles, includes an elongated slot, scaled at 40-50-60-75-90 degrees
- 309389J/U** – Mounting bracket and linkage is used in MP516 damper actuators
- 312867C/U** – Damper crank arm, for 1/2 in. (12.7 mm) diameter axles, includes an elongated slot, scaled at 45-60-75-90 degrees
- 315321/U** – Crank arm ball joint, with 1/4 male threads, accepts 5-16 inch push rods

MP516A Typical Piping



△ MAY BE SURFACE MOUNTED OR ATTACHED TO MP516A.

M5440A

| Material Number | Spring Range (psi) | Spring Range (kPa) | Comments |
|-----------------|--------------------|--------------------|---|
| MP516A1087/U | 3 psi to 12 psi | 21 kPa to 83 kPa | The lever arm moves to the desired minimum position as air pressure increases from 0 to 3 psi, hesitates from 3 to 8 psi, and completes its stroke from 8-12 psi. |
| MP516A1095/U | 4 psi to 8 psi | 28 kPa to 55 kPa | No hesitation. |
| MP516A1103/U | 5 psi to 12 psi | 34 kPa to 83 kPa | No hesitation. |

Pneumatic Damper Actuators

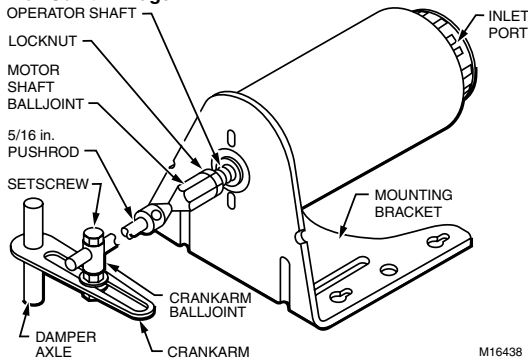
MP909D Pneumatic Damper Actuator



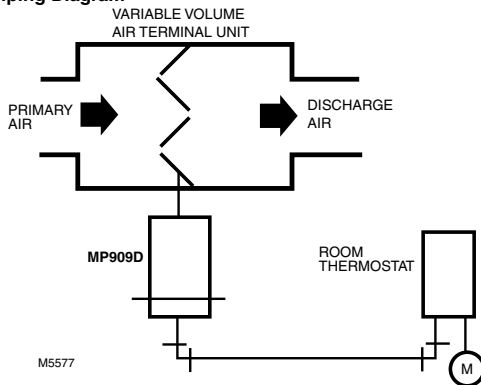
MP909D is used for pneumatic proportional control of variable volume terminal units and small dampers. Available in various operating ranges, for either individual or sequence operation with other actuators. Compatible with all competitors products.

- Rugged ribbed aluminum body.
- Low-friction shaft bearing.
- Close tolerance on operating range and stroke.
- Protected barb connector.
- Versatile mounting and connecting hardware options.
- Positive leakproof seal.

MP909D Ball Joint Linkage



MP909D Piping Diagram



Actuator Type: Damper

Actuator Force (kPa): Low

Diaphragm Effective Area (sq in.): 3 sq in.

Diaphragm Effective Area (sq cm): 19.4 sq cm

Maximum Safe Operating Pressure (psi): 30 psi

Maximum Safe Operating Pressure (kPa): 207 kPa

Temperature Range: 50°F to 140°F (10°C to 60°C)

Fail Safe Mode: Spring Return

Operating Humidity Range (% RH): 5 to 95% RH

Dimensions: 6 5/16 in. long (add 1 in. for shaft) x 2 13/32 in. diameter (160 mm long (add 25 mm for shaft) x 61 mm diameter)

Approvals, Underwriters Laboratories Inc.: Components Recognized: Report R18118

Accessories

14002850-001/U – Angle bracket, used in MP909D and E damper actuators, measures; 5-3/8 inch (137 mm) long and 5 inch (127 mm) wide

14003640-001/U – Angle bracket, used in MP909D and MP913 damper actuators, measures; 3 inch (76 mm) long, 3-3/4 inch (95 mm) wide and 2-3/4 inch (70 mm) high

26025B/U – Damper crank arm, for 3/8 in. (9.5 mm) diameter axles, includes an elongated slot, scaled at 40-50-60-75-90 degrees

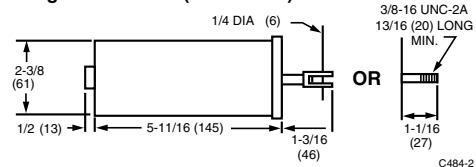
27174B/U – Damper crank arm, for 7/16 inch (11.1 mm) diameter axles, includes an elongated slot, scaled at 40-50-60-75-90 degrees

312867C/U – Damper crank arm, for 1/2 in. (12.7mm) diameter axles, includes an elongated slot, scaled at 45-60-75-90 degrees

315321/U – Crank arm ball joint, with 1/4 male threads, accepts 5-16 inch push rods

315781/U – Motor shaft ball joint, with 3/8 - 16 UNC female threads, fits 5/16 inch diameter pushrods

Dimensions Diagram in inches (millimeters)



| Material Number | Air Connections | Spring Range (psi) | Spring Range (kPa) | Stroke | Includes |
|-----------------|---|--------------------|--------------------|-----------------|---|
| MP909D1201/U | Barbed fitting for 3/32 in. O.D. tubing | 3 psi to 8 psi | 21 kPa to 55 kPa | 2.4 in. (61 mm) | Actuator only. 3/8 in.-16 Threaded Shaft. No Mounting Bracket or Ball Joint |
| MP909D1219/U | Barbed fitting for 3/32 in. O.D. tubing | 8 psi to 13 psi | 55 kPa to 90 kPa | 2.4 in. (61 mm) | Actuator only. 3/8 in.-16 Threaded Shaft. No Mounting Bracket or Ball Joint |
| MP909D1227/U | Barbed fitting for 3/32 in. O.D. tubing | 5 psi to 10 psi | 34 kPa to 69 kPa | 2.4 in. (61 mm) | Actuator only. 3/8 in.-16 Threaded Shaft. No Mounting Bracket or Ball Joint |
| MP909D1318/U | Barbed fitting for 3/32 in. O.D. tubing | 8 psi to 13 psi | 55 kPa to 90 kPa | 2.4 in. (61 mm) | 14002850-001 - External Mounting Bracket with Balljoint |
| MP909D1334/U | Barbed fitting for 3/32 in. O.D. tubing | 5 psi to 10 psi | 34 kPa to 69 kPa | 2.4 in. (61 mm) | 14003640-001 - 90 degree Angled Mounting Bracket with Ball Joint |
| MP909D1367/U | Barbed fitting for 3/32 in. O.D. tubing | 5 psi to 10 psi | 34 kPa to 69 kPa | 3 in. (76 mm) | Actuator only. 3/8 in.-16 Threaded Shaft. No Mounting Bracket or Ball Joint |
| MP909D1441/U | Barbed fitting for 3/32 in. O.D. tubing | 5 psi to 10 psi | 34 kPa to 69 kPa | 3 in. (76 mm) | Small clevis on shaft. No mounting bracket or ball joint |
| MP909D1474/U | Barbed fitting for 1/4 in. O.D. tubing | 5 psi to 10 psi | 34 kPa to 69 kPa | 2.4 in. (61 mm) | Actuator only. 3/8 in.-16 Threaded Shaft. No Mounting Bracket or Ball Joint |
| MP909D1508/U | Barbed fitting for 1/4 in. O.D. tubing | 8 psi to 13 psi | 55 kPa to 90 kPa | 2.4 in. (61 mm) | Actuator only. 3/8 in.-16 Threaded Shaft. No Mounting Bracket or Ball Joint |
| MP909D1516/U | Barbed fitting for 1/4 in. O.D. tubing | 5 psi to 10 psi | 34 kPa to 69 kPa | 2.4 in. (61 mm) | Actuator only. 3/8 in.-16 Threaded Shaft. No Mounting Bracket or Ball Joint |
| MP909D1524/U | Barbed fitting for 1/4 in. O.D. tubing | 5 psi to 10 psi | 34 kPa to 69 kPa | 3 in. (76 mm) | 31578 ball joint and 14003640-001 - 90 degree Angled Mounting Bracket |

MP909E, H Pneumatic Damper Actuators



These actuators are used for proportional control of variable volume terminal units, mixing boxes, and small to medium sized dampers. They are available in various operating ranges for either independent operation or sequence operation with other actuators. The MP909E has an optional adjustable stroke feature. The MP909H includes a positive positioner. Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell actuator models.

- Rolling diaphragm operated.
- Low friction shaft bearing.
- Close tolerance on operating range and stroke.
- Non-overlapping spring ranges for sequencing.
- Corrosion resistant
- Reliable long life

Actuator Type: Damper

Actuator Force (kPa): Medium

Diaphragm Effective Area (sq in.): 6.6 sq in.

Diaphragm Effective Area (sq cm): 43 sq cm

Temperature Range: -28°F to +160°F (-33°C to +71°C)

Fail Safe Mode: Spring Return

Operating Humidity Range (% RH): 5 to 95% RH

Approvals, Underwriters Laboratories Inc.: MP909E only:

Components Recognized: Report R18118

Accessories

14002850-001/U – Angle bracket, used in MP909D and E damper actuators, measures; 5-3/8 inch (137 mm) long and 5 inch (127 mm) wide

14003640-001/U – Angle bracket, used in MP909D and MP913 damper actuators; 3 inch (76 mm) long, 3-3/4 inch (95 mm) wide and 2-3/4 inch (70 mm) high

14004062-001/U – External trunnion mounting bracket is used for MP918A and B, or MP909E and H damper actuators

14004062-002/U – Trunnion mounting bracket, is used for internal normally closed, MP918A and B, or MP909E and H damper actuators

14004062-003/U – Trunnion mounting bracket, is used for internal normally open, MP918A and B, or MP909E and H damper actuators

14004106-001/U – 3 inch long, actuator pushrod, converts internal N.C. to external, in MP918A and B, or MP909E and H damper actuators

14004107-001/U – Crankarm assembly converts internal N.C. to external trunnion mounting, in MP918A and B, or MP909E and H damper actuators

14004210-001/U – feedback spring kit includes; 1 orange spring (3 psi [21kPa]), 1 yellow spring (5 psi [34 kPa]), and 1 blue spring (10 psi [69 kPa])

14004236-001/U – Coupler, actuator shaft to 5/16 inch (8 mm) pushrod, is used with MP918 damper actuators

14004241-002/U – Hitch pin kit, equipped with 6 sets, is used with MP918A and B or MP909E and H, damper actuators

14004242-001/U – Top mount, operator assembly, used for MP918A and B damper actuators

26025B/U – Damper crank arm, for 3/8 in. (9.5 mm) diameter axles, includes an elongated slot, scaled at 40-50-60-75-90 degrees

312867C/U – Damper crank arm, for 1/2 in. (12.7mm) diameter axles, includes an elongated slot, scaled at 45-60-75-90 degrees

312867H/U – Externally mounted, linkage kit includes; crankarm, ball joint, and 7 inch long push rod

314440A/U – Clevis, clevis pin and cotter pin assembly used for MP909 damper actuators

315321/U – Crank arm ball joint, with 1/4 male threads, accepts 5-16 inch push rods

315781/U – Motor shaft ball joint, with 3/8 - 16 UNC female threads, fits 5/16 inch diameter pushrods

Replacement Parts

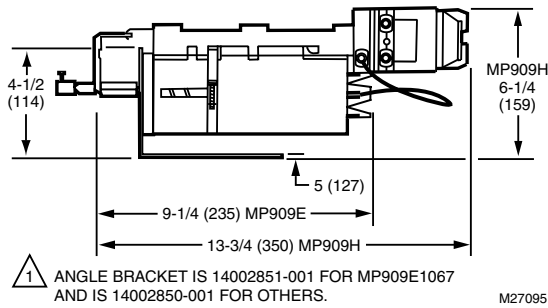
14004137-001/U – Retrofit kit used for adding positive positioner to MP909E damper actuators, or to repair MP909H damper actuators

| Material Number | Air Connections | Spring Range (psi) | Spring Range (kPa) | Stroke | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Includes |
|-----------------|---|--------------------|--------------------|-------------------|---------------------------------------|---------------------------------------|--|
| MP909E1018/U | Dual Barbed fitting for 5/32 in. or 1/4 in. O.D. tubing | 3 psi to 13 psi | 21 kPa to 90 kPa | 4 in. (102 mm) | 29 psi | 200 kPa | 315781 Balljoint, Linkage Kit 14002061-006 and 14002850-001 Fixed External Mounting Bracket with Balljoint |
| MP909E1034/U | Dual Barbed fitting for 5/32 in. or 1/4 in. O.D. tubing | 5 psi to 10 psi | 34 kPa to 69 kPa | 4 in. (102 mm) | 29 psi | 200 kPa | 315781 Balljoint, Linkage Kit 14002061-006 and 14002850-001 Fixed External Mounting Bracket with Balljoint |
| MP909E1059/U | Dual Barbed fitting for 5/32 in. or 1/4 in. O.D. tubing | 5 psi to 10 psi | 34 kPa to 69 kPa | 2 3/4 in. (70 mm) | 29 psi | 200 kPa | Actuator only, 3/8 in.-16 Threaded Shaft with stroke stops. No Mounting Bracket |
| MP909E1067/U | Dual Barbed fitting for 5/32 in. or 1/4 in. O.D. tubing | 5 psi to 10 psi | 34 kPa to 69 kPa | 3 in. (79 mm) | 29 psi | 200 kPa | Fixed external unitary mounting bracket and clevis shaft with stroke stops |
| MP909E1083/U | Dual Barbed fitting for 5/32 in. or 1/4 in. O.D. tubing | 2.5 psi to 6.5 psi | 17 kPa to 45 kPa | 3 in. (79 mm) | 29 psi | 200 kPa | 315781 Balljoint, Linkage Kit 14002061-006 and 14002850-001 Fixed External Mounting Bracket with Balljoint |
| MP909E1109/U | Dual Barbed fitting for 5/32 in. or 1/4 in. O.D. tubing | 2.5 psi to 6.5 psi | 17 kPa to 45 kPa | 2 3/4 in. (70 mm) | 29 psi | 200 kPa | Actuator only, 3/8 in.-16 Threaded Shaft with stroke stops. No Mounting Bracket |
| MP909E1158/U | Dual Barbed fitting for 5/32 in. or 1/4 in. O.D. tubing | 9 psi to 13 psi | 62 kPa to 90 kPa | 3 in. (79 mm) | 29 psi | 200 kPa | Actuator only, 3/8 in.-16 Threaded Shaft. No Mounting Bracket |
| MP909E1174/U | Dual Barbed fitting for 5/32 in. or 1/4 in. O.D. tubing | 9 psi to 13 psi | 62 kPa to 90 kPa | 3 in. (70 mm) | 29 psi | 200 kPa | 14002850-001 - Fixed External Mounting Bracket with 315781 Balljoint |
| MP909E1240/U | Dual Barbed fitting for 5/32 in. or 1/4 in. O.D. tubing | 5 psi to 10 psi | 34 kPa to 69 kPa | 3 in. (79 mm) | 29 psi | 200 kPa | Actuator only, 3/8 in.-16 Threaded Shaft. No Mounting Bracket |
| MP909E1349/U | Dual Barbed fitting for 5/32 in. or 1/4 in. O.D. tubing | 3 psi to 13 psi | 21 kPa to 90 kPa | 4 in. (102 mm) | 29 psi | 200 kPa | Internal N.C. trunnion mounting bracket |
| MP909E1356/U | Dual Barbed fitting for 5/32 in. or 1/4 in. O.D. tubing | 3 psi to 13 psi | 21 kPa to 90 kPa | 4 in. (102 mm) | 29 psi | 200 kPa | External trunnion mounting bracket |
| MP909E1364/U | Dual Barbed fitting for 5/32 in. or 1/4 in. O.D. tubing | 5 psi to 10 psi | 34 kPa to 69 kPa | 4 in. (102 mm) | 29 psi | 200 kPa | External trunnion mounting bracket |
| MP909E1372/U | Dual Barbed fitting for 5/32 in. or 1/4 in. O.D. tubing | 2.5 psi to 6.5 psi | 17 kPa to 45 kPa | 3 in. (70 mm) | 29 psi | 200 kPa | External trunnion mounting bracket |

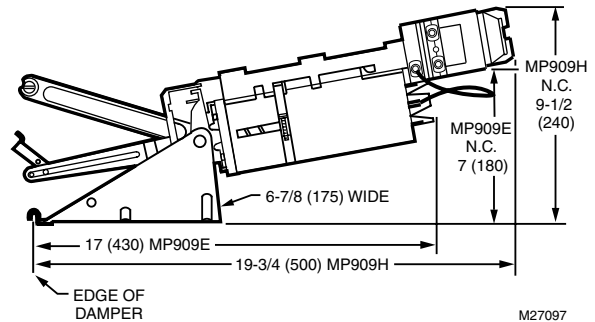
Pneumatic Damper Actuators

| Material Number | Air Connections | Spring Range (psi) | Spring Range (kPa) | Stroke | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Includes |
|-----------------|--|---|--|----------------|---------------------------------------|---------------------------------------|--|
| MP909E1380/U | Dual Barbed fitting for 5/32 in. or 1/4 in. O.D. tubing | 9 psi to 13 psi | 62 kPa to 90 kPa | 3 in. (79 mm) | 29 psi | 200 kPa | External trunnion mounting bracket |
| MP909E1398/U | Dual Barbed fitting for 5/32 in. or 1/4 in. O.D. tubing | 9 psi to 13 psi | 62 kPa to 90 kPa | 3 in. (79 mm) | 29 psi | 200 kPa | Internal N.C. trunnion mounting bracket |
| MP909E1422/U | Dual Barbed fitting for 5/32 in. or 1/4 in. O.D. tubing | 5 psi to 10 psi | 34 kPa to 69 kPa | 4 in. (102 mm) | 29 psi | 200 kPa | 14004062-003 Internal N.O. Mounting Bracket with crankarm and pushrod assembly |
| MP909E1463/U | Dual Barbed fitting for 5/32 in. or 1/4 in. O.D. tubing | 5 psi to 10 psi | 34 kPa to 69 kPa | 4 in. (102 mm) | 29 psi | 200 kPa | 14002850-001 - Fixed External Mounting Bracket |
| MP909H1331/U | Positioner: Pilot 5/32 in. barb, Main 1/4 in. barb, Branch 1/4 in. barb. Actuator: combination 5/32 in. and 1/4 in. barb | Positive positioner 10 psi span (5 psi spring included) | Positive positioner 69 kPa span (34 kPa spring included) | 4 in. (102 mm) | 25 psi | 172 kPa | 315781 Balljoint, Positive Positioner, and 14002850-001 - Fixed External Mounting Bracket with Balljoint |
| MP909H1368/U | Positioner: Pilot 5/32 in. barb, Main 1/4 in. barb, Branch 1/4 in. barb. Actuator: combination 5/32 in. and 1/4 in. barb | Positive positioner 10 psi span (5 psi spring included) | Positive positioner 69 kPa span (34 kPa spring included) | 4 in. (102 mm) | 25 psi | 172 kPa | External Trunnion Bracket, Positive Positioner |
| MP909H1392/U | Positioner: Pilot 5/32 in. barb, Main 1/4 in. barb, Branch 1/4 in. barb. Actuator: combination 5/32 in. and 1/4 in. barb | Positive positioner 10 psi span (5 psi spring included) | Positive positioner 69 kPa span (34 kPa spring included) | 4 in. (102 mm) | 25 psi | 172 kPa | Mounting bracket for internal N.C. Trunnion mounting, positive positioner |

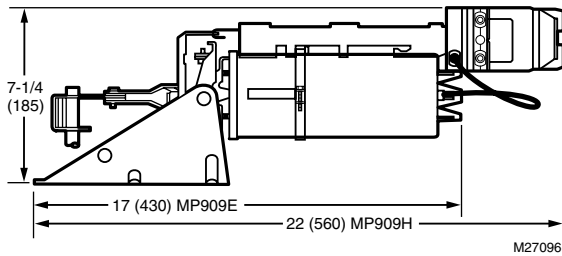
Dimensions Diagram in inches (millimeters)
Actuator with Fixed External Mounting Bracket



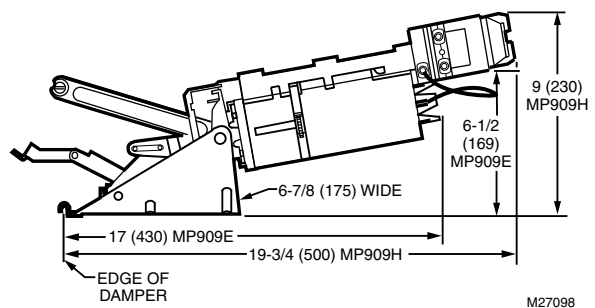
Dimensions Diagram in inches (millimeters)
Actuator with Internal N.C. Trunnion Mounting Bracket



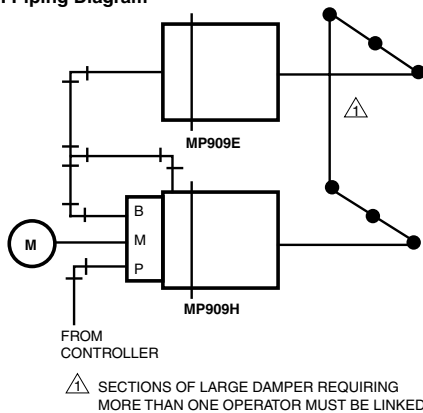
Dimensions Diagram in inches (millimeters)
Actuator with External Trunnion Mounting Bracket



Dimensions Diagram in inches (millimeters)
Actuator with Internal N. O. Trunnion Mounting Bracket



MP909E,H Piping Diagram



MP913 Pneumatic Variable Volume Damper Actuator



Gives proportional control of variable volume dampers in small high velocity mixing boxes. Replacement devices are available for Johnson and Robertshaw models. Use for direct replacement only, do not replace larger damper actuators with this unit.

- Compact in size.
- Neoprene rolling diaphragm.
- The MP913 Operator can be used with or without a crankarm.

Actuator Type: Damper

Actuator Force (kPa): Low

Stroke: 1 in. (25 mm)

Diaphragm Effective Area (sq in.): 2.2 sq in.

Diaphragm Effective Area (sq cm): 14 sq cm

Maximum Safe Operating Pressure (psi): 30 psi

Maximum Safe Operating Pressure (kPa): 207 kPa

Temperature Range: 50°F to 140°F (10°C to 60°C)

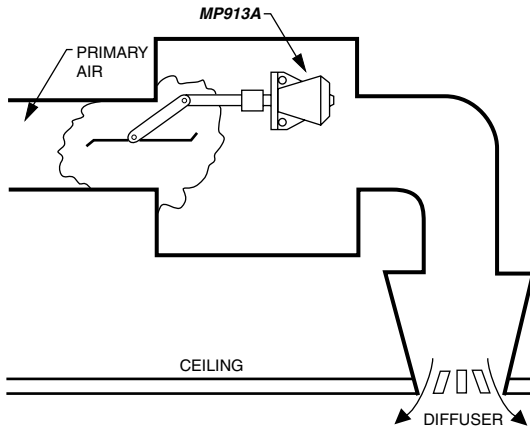
Fail Safe Mode: Spring Return

Air Connections: Barbed fitting for 1/4 in. O.D. plastic tubing

Operating Humidity Range (% RH): 5 to 95% RH

Dimensions: 2 5/8 in. high (add 3/4 in. for shaft) x 2 1/4 in. diameter (67 mm high (add 19 mm for shaft) x 57 mm diameter)

MP913A Typical Piping



Accessories

315321/U – Crank arm ball joint, with 1/4 male threads, accepts 5-16 inch push rods

315781/U – Motor shaft ball joint, with 3/8 - 16 UNC female threads, fits 5/16 inch diameter pushrods

| Material Number | Spring Range (psi) | Spring Range (kPa) | Includes |
|-----------------|--------------------|--------------------|--|
| MP913A1003/U | 10 psi to 15 psi | 69 kPa to 103 kPa | 14002808-001 - Flat Mounting Bracket. Shaft has 1/8 in. diameter hole for a roll pin. |
| MP913A1011/U | 10 psi to 15 psi | 69 kPa to 103 kPa | 14003640-001 - 90 degree Angled Mounting Bracket and 3/8 in.-16 Threaded Shaft |
| MP913A1029/U | 5 psi to 10 psi | 34 kPa to 69 kPa | 14003640-001 - 90 degree Angled Mounting Bracket and 3/8 in.-16 Threaded Shaft |
| MP913A1037/U | 5 psi to 10 psi | 34 kPa to 69 kPa | 14003640-001 - 90 degree Angled Mounting Bracket. Shaft has 1/8 in. diameter hole for a roll pin. |
| MP913A1177/U | 3 psi to 13 psi | 21 kPa to 90 kPa | 14002809-001 - 90 degree Angled Mounting Bracket (3-point attachment) and 3/8 inch - 16 threaded shaft |

Pneumatic Damper Actuators

MP918A, B Pneumatic Damper Actuators



Actuator Type: Damper
Actuator Force (kPa): High
Stroke: 3 1/2 in. (90 mm)
Diaphragm Effective Area (sq in.): 23.8 sq in.
Diaphragm Effective Area (sq cm): 154 sq cm
Fail Safe Mode: Spring Return
Operating Humidity Range (% RH): 5 to 95% RH
Approvals, Underwriters Laboratories Inc.: Components
 Recognized: Report R18118

Accessories

14004062-001/U – External trunnion mounting bracket is used for MP918A and B, or MP909E and H damper actuators
14004062-002/U – Trunnion mounting bracket, is used for internal normally closed, MP918A and B, or MP909E and H damper actuators
14004062-003/U – Trunnion mounting bracket, is used for internal normally open, MP918A and B, or MP909E and H damper actuators
14004106-001/U – 3 inch long, actuator pushrod, converts internal N.C. to external, in MP918A and B, or MP909E and H damper actuators
14004107-001/U – Crankarm assembly converts internal N.C. to external trunnion mounting, in MP918A and B, or MP909E and H damper actuators

Used for proportional control of medium- to large-size dampers in HVAC systems. The MP918A, B are rolling diaphragm, piston-type actuators. Positive Positioner available. Replacement devices for most competitors products.

- Rolling diaphragm operated.
- Low friction shaft bearing.
- Close tolerance on operating range and stroke.
- Versatile mounting and connecting hardware.
- Non-overlapping spring ranges for sequencing.
- Reliable-long life.

14004210-001/U – feedback spring kit includes; 1 orange spring (3 psi [21kPa]), 1 yellow spring (5 psi [34 kPa]), and 1 blue spring (10 psi [69 kPa])
14004236-001/U – Coupler, actuator shaft to 5/16 inch (8 mm) pushrod, is used with MP918 damper actuators
14004241-002/U – Hitch pin kit, equipped with 6 sets, is used with MP918A and B or MP909E and H, damper actuators
14004242-001/U – Top mount, operator assembly, is used for MP918A and B damper actuators
CCT2718/U – Threaded rod, for shaft extension in MP918 damper actuators
CCT2725/U – A rod coupling, for shaft extension in MP918 damper actuators

Replacement Parts

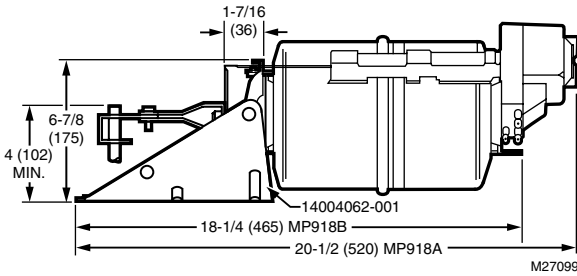
14004264-001/U – Positive positioner kit and bracket assembly used with MP918A damper actuators
14004264-002/U – Positive positioner, retrofit kit with a 10 psi feedback spring, converts damper actuator MP918B 18-13 psi

| Material Number | Air Connections | Spring Range (psi) | Spring Range (kPa) | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Dimensions | Temperature Range | Includes |
|-----------------|---|---|--|---------------------------------------|---------------------------------------|--|-------------------------------------|---|
| MP918A1024/U | 5/32 in. push-on barb (Pilot), 1/4 in. push-on barb (main.) | Positive positioner 10 psi span (5 psi spring included) | Positive positioner 69 kPa span (34 kPa spring included) | 25 psi | 172 kPa | 20 1/2 in. long x 8 in. high x 6 5/8 in. diameter (520 mm long x 205 mm high x 168 mm diameter) | -20°F to +158°F (-29°C to +70°C) | 14004062-001 - External Trunnion Mounting Bracket with crankarm assembly. Positive Positioner |
| MP918A1057/U | 5/32 in. push-on barb (Pilot), 1/4 in. push-on barb (main.) | Positive positioner 10 psi span (5 psi spring included) | Positive positioner 69 kPa span (34 kPa spring included) | 25 psi | 172 kPa | 20 1/2 in. long x 8 in. high x 6 5/8 in. diameter (520 mm long x 205 mm high x 168 mm diameter) | -20°F to +158°F (-29°C to +70°C) | 14004062-002 - Internal N.C. Trunnion Mounting Bracket with pushrod assembly. Positive Positioner |
| MP918A1081/U | 5/32 in. push-on barb (Pilot), 1/4 in. push-on barb (main.) | Positive positioner 10 psi span (5 psi spring included) | Positive positioner 69 kPa span (34 kPa spring included) | 25 psi | 172 kPa | 20 1/2 in. long x 8 in. high x 6 5/8 in. diameter (520 mm long x 205 mm high x 168 mm diameter) | -20°F to +158°F (-29°C to +70°C) | 14004062-003 - Internal N.O. Trunnion Mounting Bracket with pushrod assembly. Positive Positioner |
| MP918B1006/U | Barbed fitting for 1/4 in. O.D. plastic tubing | 3 psi to 13 psi | 20 kPa to 90 kPa | 29 psi | 200 kPa | 18 1/4 in. long x 6 7/8 in. high x 6 5/8 in. diameter (465 mm long x 175 mm high x 168 mm diameter) | -40°F to +158°F (-40°C to +70°C) | 14004062-001 - External Trunnion Mounting Bracket with crankarm assembly |
| MP918B1014/U | Barbed fitting for 1/4 in. O.D. plastic tubing | 3 psi to 13 psi | 20 kPa to 90 kPa | 29 psi | 200 kPa | 18 1/4 in. long x 6 7/8 in. high x 6 5/8 in. diameter (465 mm long x 175 mm high x 168 mm diameter) | -40°F to +158°F (-40°C to +70°C) | 14004062-002 - Internal N.C. Trunnion Mounting Bracket with pushrod assembly |
| MP918B1022/U | Barbed fitting for 1/4 in. O.D. plastic tubing | 3 psi to 13 psi | 20 kPa to 90 kPa | 29 psi | 200 kPa | 18 1/4 in. long x 6 7/8 in. high x 6 5/8 in. diameter (465 mm long x 175 mm high x 168 mm diameter) | -40°F to +158°F (-40°C to +70°C) | 14004062-003 - Internal N.O. Trunnion Mounting Bracket with pushrod assembly |
| MP918B1030/U | Barbed fitting for 1/4 in. O.D. plastic tubing | 3 psi to 13 psi | 20 kPa to 90 kPa | 29 psi | 200 kPa | 18 1/4 in. long x 6 7/8 in. high x 6 5/8 in. diameter (465 mm long x 175 mm high x 168 mm diameter) | -40°F to +158°F (-40°C to +70°C) | Actuator only. No Mounting Bracket |
| MP918B1048/U | Barbed fitting for 1/4 in. O.D. plastic tubing | 5 psi to 10 psi | 34 kPa to 69 kPa | 29 psi | 200 kPa | 18 1/4 in. long x 6 7/8 in. high x 6 5/8 in. diameter (465 mm long x 175 mm high x 168 mm diameter) | -40°F to +158°F (-40°C to +70°C) | 14004062-001 - External Trunnion Mounting Bracket with crankarm assembly |

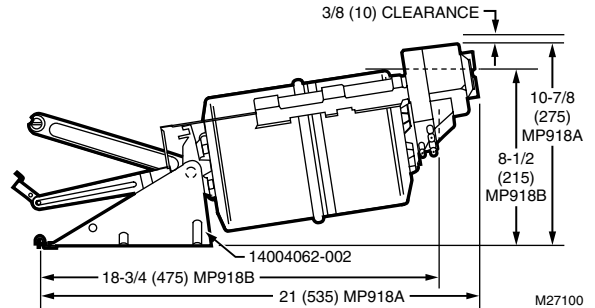
Pneumatic Damper Actuators

| Material Number | Air Connections | Spring Range (psi) | Spring Range (kPa) | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Dimensions | Temperature Range | Includes |
|-----------------|--|--------------------|--------------------|---------------------------------------|---------------------------------------|---|----------------------------------|--|
| MP918B1063/U | Barbed fitting for 1/4 in. O.D. plastic tubing | 3 psi to 7 psi | 20 kPa to 48 kPa | 29 psi | 200 kPa | 18 1/4 in. long x 6 7/8 in. high x 6 5/8 in. diameter (465 mm long x 175 mm high x 168 mm diameter) | -40°F to +158°F (-40°C to +70°C) | 14004062-001 - External Trunnion Mounting Bracket with crankarm assembly |
| MP918B1071/U | Barbed fitting for 1/4 in. O.D. plastic tubing | 3 psi to 7 psi | 20 kPa to 48 kPa | 29 psi | 200 kPa | 18 1/4 in. long x 6 7/8 in. high x 6 5/8 in. diameter (465 mm long x 175 mm high x 168 mm diameter) | -40°F to +158°F (-40°C to +70°C) | 14004062-002 Internal N.C. Trunnion Mounting Bracket with pushrod assembly |
| MP918B1089/U | Barbed fitting for 1/4 in. O.D. plastic tubing | 8 psi to 13 psi | 55 kPa to 90 kPa | 29 psi | 200 kPa | 18 1/4 in. long x 6 7/8 in. high x 6 5/8 in. diameter (465 mm long x 175 mm high x 168 mm diameter) | -40°F to +158°F (-40°C to +70°C) | 14004062-001 - External Trunnion Mounting Bracket with crankarm assembly |
| MP918B1097/U | Barbed fitting for 1/4 in. O.D. plastic tubing | 8 psi to 13 psi | 55 kPa to 90 kPa | 29 psi | 200 kPa | 18 1/4 in. long x 6 7/8 in. high x 6 5/8 in. diameter (465 mm long x 175 mm high x 168 mm diameter) | -40°F to +158°F (-40°C to +70°C) | 14004062-002 Internal N.C. Trunnion Mounting Bracket with pushrod assembly |
| MP918B1105/U | Barbed fitting for 1/4 in. O.D. plastic tubing | 8 psi to 13 psi | 55 kPa to 90 kPa | 29 psi | 200 kPa | 18 1/4 in. long x 6 7/8 in. high x 6 5/8 in. diameter (465 mm long x 175 mm high x 168 mm diameter) | -40°F to +158°F (-40°C to +70°C) | 14004062-003 Internal N.O. Trunnion Mounting Bracket with pushrod assembly |
| MP918B1113/U | Barbed fitting for 1/4 in. O.D. plastic tubing | 8 psi to 13 psi | 55 kPa to 90 kPa | 29 psi | 200 kPa | 18 1/4 in. long x 6 7/8 in. high x 6 5/8 in. diameter (465 mm long x 175 mm high x 168 mm diameter) | -40°F to +158°F (-40°C to +70°C) | Actuator only. No Mounting Bracket |
| MP918B1196/U | Barbed fitting for 1/4 in. O.D. plastic tubing | 8 psi to 13 psi | 55 kPa to 90 kPa | 29 psi | 200 kPa | 18 1/4 in. long x 6 7/8 in. high x 6 5/8 in. diameter (465 mm long x 175 mm high x 168 mm diameter) | -40°F to +158°F (-40°C to +70°C) | 14004062-001 - External Trunnion Mounting Bracket with crankarm assembly |

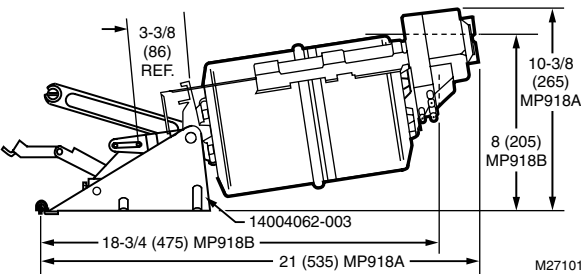
**Dimensions Diagram in inches (millimeters)
Actuator with External Trunnion Mounting Bracket**



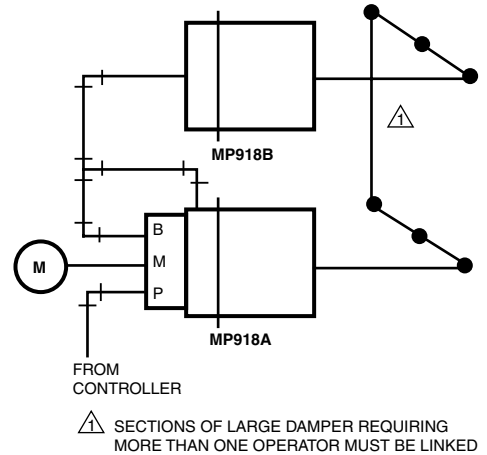
**Dimensions Diagram in inches (millimeters)
Actuator with Internal N.C. Trunnion Mounting Bracket**



**Dimensions Diagram in inches (millimeters)
Actuator with Internal N.O. Trunnion Mounting Bracket**



MP918A and B Typical Piping



M5576

Pneumatic Damper Actuators

MP920 Pneumatic Damper Actuator



Provides proportional control of large dampers in HVAC systems or inlet vanes on a VAV fan. Positive positioner available separately. Replacement devices are available for Robertshaw actuator models.

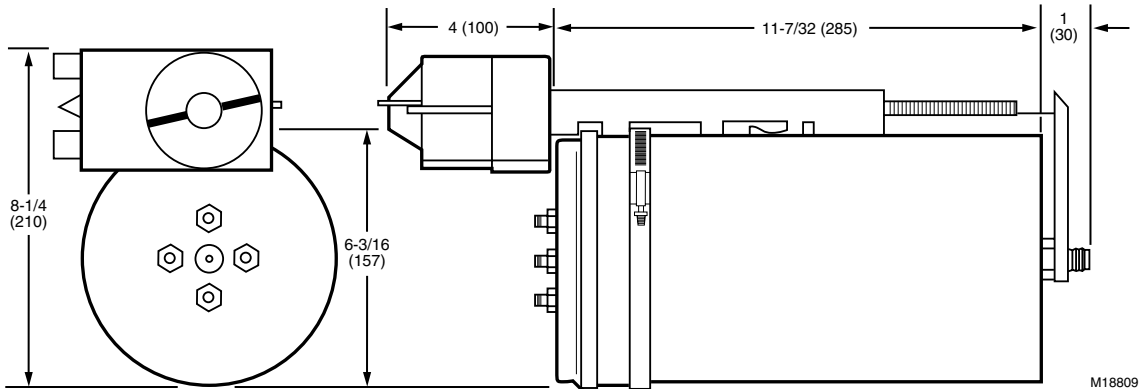
- Rolling diaphragm operated.
- Fail safe on over pressure.
- Actuator can be swivel mounted from either end to pipe, floor, or wall surface.
- Optional positive positioner provides accurate positioning under varying load conditions.

Actuator Type: Damper
Actuator Force (kPa): High
Diaphragm Effective Area (sq in.): 24.8 sq in.
Diaphragm Effective Area (sq cm): 160 sq cm
Maximum Safe Operating Pressure (psi): 29 psi
Maximum Safe Operating Pressure (kPa): 200 kPa
Temperature Range: -20°F to +158°F (-30°C to +70°C)
Fail Safe Mode: Spring Return
Operating Humidity Range (% RH): 5 to 95% RH
Dimensions: Less bracket: 12 7/32 in. long, 6 3/16 in. diameter / Less bracket with positioner: 16 7/32 in. long, 8 1/4 in. diameter (Less bracket: 315 long, 157 mm diameter / Less bracket with positioner: 415 mm long, 210 mm diameter)

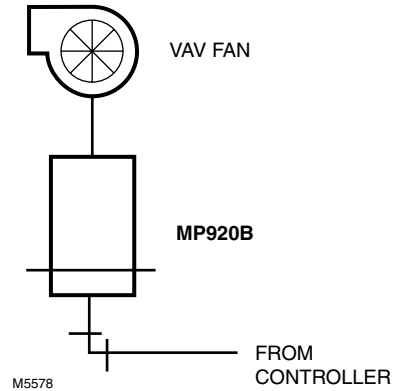
Accessories

- 14004062-001/U** – External trunnion mounting bracket
- 14004236-001/U** – Coupler, actuator shaft to 5/16 inch (8 mm) pushrod
- 14004241-002/U** – Hitch pin kit, equipped with 6 sets
- 14004345-001/U** – Positive positioner kit, with a 10 psi feedback spring, is used only on MP920B damper actuators
- AK3560/U** – Ball joint with a 3/8-24 threaded stud, and couplings for 5/8-11 threaded rod and actuator shaft, is used in MP920B damper actuators
- AK3561/U** – Ball joint with a 3/8-24 threaded stud and couplings for 3/8-16 threaded rod, is used in MP920B damper actuators

Dimensions Diagram in inches (millimeters)

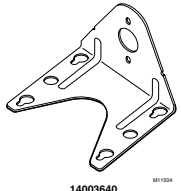
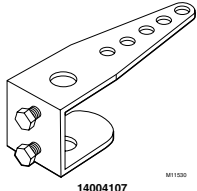
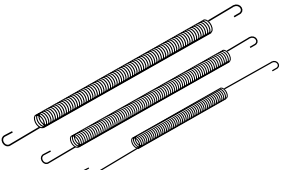
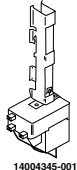


MP920B Typical Piping


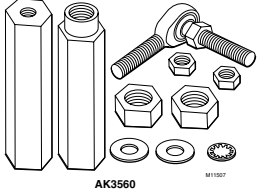
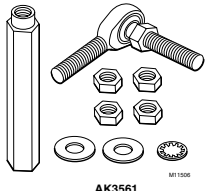


| Material Number | Air Connections | Spring Range (psi) | Spring Range (kPa) | Stroke | Includes |
|-----------------|--|--------------------|--------------------|----------------|---|
| MP920B1002/U | Barbed fitting for 1/4 in. O.D. plastic tubing | 7.25 psi to 13 psi | 50 kPa to 90 kPa | 6 in. (150 mm) | Actuator only. No Bracket. Order positive positioner, mounting and connecting hardware separately. See Installation Instructions form no. 95-6053 |

Pneumatic Damper Actuator Parts and Accessories

| Material Number | Description | Used With | |
|-----------------|---|-------------------|---|
| 14001213-001/U | This diaphragm is used in MP904A and B damper actuators (Note: 312809C includes this part) | MP904A,B | |
| 14002061-001/U | This damper linkage kit, with template, is used in MP909E and F damper actuators | MP909E,F | |
| 14002850-001/U | This angle bracket, used in MP909D and E damper actuators, measures; 5-3/8 inch (137 mm) long and 5 inch (127 mm) wide | MP909D,E | |
| 14003640-001/U | This angle bracket, used in MP909D and MP913 damper actuators, measures; 3 inch (76 mm) long, 3-3/4 inch (95 mm) wide and 2-3/4 inch (70 mm) high | MP913,MP909D |  |
| 14004062-001/U | This external trunnion mounting bracket is used for MP918A and B, or MP909E and H damper actuators | MP918A,B,MP909E,H | |
| 14004062-002/U | This trunnion mounting bracket, is used for internal normally closed, MP918A and B, or MP909E and H damper actuators | MP918A,B,MP909E,H | |
| 14004062-003/U | This trunnion mounting bracket, is used for internal normally open, MP918A and B, or MP909E and H damper actuators | MP918A,B,MP909E,H | |
| 14004106-001/U | This 3 inch long, actuator pushrod, converts internal N.C. to external, in MP918A and B, or MP909E and H damper actuators | MP918A,B,MP909E,H | |
| 14004106-002/U | This push rod assembly, for internal N.C., is used in MP918A and B, or MP909E and H damper actuators | MP918A,B,MP909E,H | |
| 14004107-001/U | This crankarm assembly converts internal N.C. to external trunnion mounting, in MP918A and B, or MP909E and H damper actuators | MP918A,B,MP909E,H |  |
| 14004136-001/U | This positive positioner retrofit kit is used for MP904 damper actuators | MP904A | |
| 14004137-001/U | This retrofit kit is used for adding positive positioner to MP909E damper actuators, or to repair MP909H damper actuators | MP909E,MP909H | |
| 14004210-001/U | This feedback spring kit, used for MP918A and MP909H damper actuators, includes; 1 orange spring (3 psi [21kPa]), 1 yellow spring (5 psi [34 kPa]), and 1 blue spring (10 psi [69 kPa]) | MP909H,MP918A |  |
| 14004236-001/U | This coupler, actuator shaft to 5/16 inch (8 mm) pushrod, is used with MP918 damper actuators | MP918 | |
| 14004237-002/U | This bag assembly, used for MP918A and B, or MP909E and H damper actuators, includes 4 hex head slotted drill point screws (14004513-001) | MP918A,B,MP909E,H | |
| 14004241-002/U | This hitch pin kit, equipped with 6 sets, is used with MP918A and B or MP909E and H, damper actuators | MP918A,B,MP909E,H | |
| 14004242-001/U | This top mount, operator assembly, is used for MP918A and B damper actuators | MP918A,B | |
| 14004264-001/U | This positive positioner kit and bracket assembly, is used with MP918A damper actuators | MP918A | |
| 14004264-002/U | This positive positioner, retrofit kit with a 10 psi feedback spring, converts damper actuator MP918B 18-13 psi | MP918B | |
| 14004324-001/U | This kit is used for, alternate external, top-mount, MP909E and H or MP918A and B, damper actuators | MP918A,B,MP909E,H | |
| 14004345-001/U | This positive positioner kit, with a 10 psi feedback spring, is used only on MP920B damper actuators | MP920B |  |
| 14004577-001/U | This direct acting, 5 inch diameter, yoke/base assembly is used in MP953A, C, and E damper actuators | MP953A,C,E | |

Pneumatic Damper Actuators

| Material Number | Description | Used With | |
|-----------------|---|------------------------|---|
| 26025B/U | This damper crank arm, for 3/8 in. (9.5 mm) diameter axles, includes an elongated slot, scaled at 40-50-60-75-90 degrees, for linkage connections in MP909E and H, MP516 or MP909D damper actuators | MP516,MP909D,MP909E, H | |
| 27174B/U | This damper crank arm, for 7/16 inch (11.1 mm) diameter axles, includes an elongated slot, scaled at 40-50-60-75-90 degrees, for linkage connection in damper actuators | MP516,MP513 | |
| 309292/U | 309292 is a diaphragm used for MP516A damper actuators | MP516 | |
| 309389J/U | This mounting bracket and linkage is used in MP516 damper actuators | MP516 | |
| 312809C/U | 312809C is a tube and diaphragm assembly, used for MP904A and B damper actuators | MP904A,B | |
| 312817/U | 312817 is a cover, used for 5 inch diameter, MP953C damper actuators | MP953C (5 in.) | |
| 312867H/U | This externally mounted, linkage kit, used in MP516, MP909D, E and H damper actuators, includes; crankarm, ball joint, and 7 inch long push rod | MP516,MP909D,E,H | |
| 314100/U | 314100 is a replacement diaphragm, for MP909A damper actuators | MP909A | |
| 314316A/U | 314316A is a crank arm assembly, used in MP516 damper actuators | MP516 | |
| 314440A/U | This clevis, clevis pin & cotter pin assembly is used for MP909 damper actuators | MP909 | |
| 315321/U | This crank arm ball joint, with 1/4 male threads, accepts 5-16 inch push rods in MP909D, E or H, MP913 and MP516 damper actuators | MP516,MP909D,E,H,MP913 | |
| 315321G/U | 315321G is a crankarm and linkage assembly, for MP909A and D damper actuators | MP909A,D | |
| 315439/0062/U | 315439/0062 is a clevis, used for MP909D damper actuators | MP909D | |
| 315781/U | This motor shaft ball joint, with 3/8 - 16 UNC female threads, fits 5/16 inch diameter pushrods in MP909D, E or H and MP913 damper actuators | MP909D,E,H,MP913 |  |
| 315782/U | This ball joint, with 9/16 -18 UNC threads, accepts 5/16 inch pushrods in MP920B damper actuators | MP920B | |
| AK3560/U | This ball joint with a 3/8-24 threaded stud, and couplings for 5/8-11 threaded rod and actuator shaft, is used in MP920B damper actuators | MP920B |  |
| AK3561/U | This ball joint with a 3/8-24 threaded stud and couplings for 3/8-16 threaded rod, is used in MP920B damper actuators | MP920B |  |
| CCT2718/U | CCT2718 is a threaded rod, for shaft extension in MP918 damper actuators | MP918 | |
| CCT2725/U | CCT2725 is a rod coupling, for shaft extension in MP918 damper actuators | MP918 | |

Pneumatic Damper Actuator Parts and Accessories Damper Actuators

| Material Number | Description | Used With |
|-----------------|---|----------------------------|
| 312867C/U | This damper crank arm, for 1/2 in. (12.7mm) diameter axles, includes an elongated slot, scaled at 45-60-75-90 degrees, for linkage connections in MP516, MP909D, MP909E and MP909H damper actuators | MP516,MP909D,MP909E,MP909H |

MP953C, D Pneumatic Coil Valve Actuators



Pneumatic actuators provide proportional control of steam or hot or cold liquids in HVAC systems by operating V5011, V5013, and VGF valve assemblies. Replacement devices are available for older Honeywell actuators.

- Rolling diaphragm for long life and low hysteresis.
- Easily attached to valve.
- Can be installed after piping valve.
- Slide lock feature permits simple engagement to valve stem.
- Direct- or reverse-action control.
- Does not include positive positioner.

Actuator Type: Valve

Maximum Safe Operating Pressure (psi): 25 psi

Maximum Safe Operating Pressure (kPa): 172 kPa

Temperature Range: 0°F to 140°F (-18°C to +60°C)

Fail Safe Mode: Spring Return

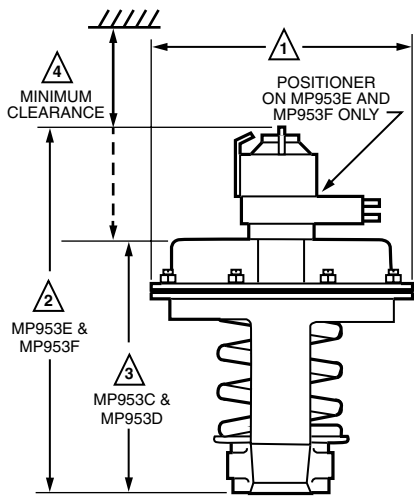
Air Connections: Dual barbed fitting for 5/32 in. O.D. and 1/4 in. O.D. plastic tubing

Operating Humidity Range (% RH): 5 to 95% RH

| Material Number | Product Action | Actuator Force (kPa) | Spring Range (psi) | Spring Range (kPa) | Stroke | Diameter (in.) | Includes | Comments | Used With |
|-----------------|----------------|----------------------|--------------------|--------------------|-------------------|----------------|--------------------------------------|---|---|
| MP953C1000/U | Direct Acting | Low | 2 psi to 7 psi | 14 kPa to 48 kPa | 3/4 in. (19 mm) | 5 in. | | | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953C1000S/U | Direct Acting | Low | 2 psi to 7 psi | 14 kPa to 48 kPa | 3/4 in. (19 mm) | 5 in. | | | |
| MP953C1018/U | Direct Acting | Low | 8 psi to 12 psi | 55 kPa to 83 kPa | 3/4 in. (19 mm) | 5 in. | | | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953C1026/U | Direct Acting | Low | 4 psi to 11 psi | 28 kPa to 76 kPa | 3/4 in. (19 mm) | 5 in. | | | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953C1067/U | Direct Acting | Medium | 2 psi to 7 psi | 14 kPa to 48 kPa | 3/4 in. (19 mm) | 8 in. | 311851-062 Stem Extension Assembly | | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953C1067S/U | Direct Acting | Medium | 2 psi to 7 psi | 14 kPa to 48 kPa | 3/4 in. (19 mm) | 8 in. | 311851-062 Stem Extension Assembly | | |
| MP953C1075/U | Direct Acting | Medium | 8 psi to 12 psi | 55 kPa to 83 kPa | 3/4 in. (19 mm) | 8 in. | 311851-062 Stem Extension Assembly | | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953C1083/U | Direct Acting | Medium | 4 psi to 11 psi | 28 kPa to 76 kPa | 3/4 in. (19 mm) | 8 in. | 311851-062 Stem Extension Assembly | | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953C1471/U | Direct Acting | High | 2 psi to 7 psi | 14 kPa to 48 kPa | 1 1/2 in. (38 mm) | 13 in. | 312466-605 Stem Extension Assembly | | Valves with bonnet size 1-7/8 in. (48 mm) |
| MP953C1489/U | Direct Acting | High | 4 psi to 11 psi | 28 kPa to 76 kPa | 1 1/2 in. (38 mm) | 13 in. | 312466-605 Stem Extension Assembly | | Valves with bonnet size 1-7/8 in. (48 mm) |
| MP953C1547/U | Direct Acting | Medium | 3 psi to 15 psi | 21 kPa to 104 kPa | 1 1/2 in. (38 mm) | 8 in. | | | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953C1554/U | Direct Acting | High | 2 psi to 7 psi | 14 kPa to 48 kPa | 3/4 in. (19 mm) | 13 in. | 14004697-001 Stem Extension Assembly | 13 in. diameter Actuator for 2-1/2 in. and 3 in. valves | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953C1562/U | Direct Acting | High | 4 psi to 11 psi | 28 kPa to 76 kPa | 3/4 in. (19 mm) | 13 in. | 14004697-001 Stem Extension Assembly | 13 in. diameter Actuator for 2-1/2 in. and 3 in. valves | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953D1107/U | Reverse Acting | Medium | 8 psi to 13 psi | 55 kPa to 90 kPa | 3/4 in. (19 mm) | 7 1/8 in. | | | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953D1131/U | Reverse Acting | Medium | 4 psi to 11 psi | 28 kPa to 76 kPa | 3/4 in. (19 mm) | 7 1/8 in. | | | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953D1172/U | Reverse Acting | Medium | 3 psi to 7 psi | 21 kPa to 48 kPa | 3/4 in. (19 mm) | 7 1/8 in. | | | Valves with bonnet size 1-3/8 in. (35 mm) |

Pneumatic Valve Actuators

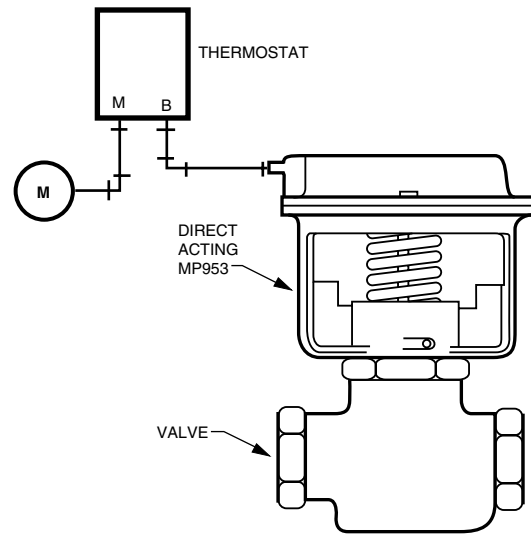
Dimensions Diagram in inches (millimeters)



| OPERATION SIZE NOMINAL DIA. | 1 | 2 | 3 | 4 |
|--------------------------------|--------------|--------------|-------------|---------------|
| 5 INCH | 5-1/8 (130) | 9-1/4 (235) | 4-5/8 (117) | 4-3/8 (111) |
| 7-1/8 INCH | 7-1/8 (181) | 10-1/2 (267) | 5-5/8 (143) | 4-3/8 (111) |
| 8 INCH | 8-1/4 (210) | 11-1/8 (283) | 6-1/2 (165) | 5-3/8 (137) |
| 13 INCH | 13-1/2 (343) | 18-1/8 (460) | 10 (254) | 7-11/16 (195) |

M13903

Typical MP953C,D Operation



MP953E, F Pneumatic Coil Valve Actuators



Pneumatic actuators provide proportional control of steam or hot or cold liquids in HVAC systems by operating V5011, V5013, and VGF valve assemblies. Replacement devices are available for older Honeywell actuators.

- Rolling diaphragm for long life and low hysteresis.
- Easily attached to valve.
- Can be installed after piping valve.
- Slide lock feature permits simple engagement to valve stem.
- Direct- or reverse-action control.
- Integral positive positioner relay provides positive positioning under varying load conditions.

Actuator Type: Valve

Maximum Safe Operating Pressure (psi): 25 psi

Maximum Safe Operating Pressure (kPa): 172 kPa

Fail Safe Mode: Spring Return

Air Connections: Pilot: Barbed fitting for 5/32 in. O.D. plastic tubing,

Main: Barbed fitting for 1/4 in. O.D. plastic tubing

Operating Humidity Range (% RH): 5 to 95% RH

Temperature Range: 0°F to 140°F (-18°C to +60°C)

Accessories

14004138-001/U – Reverse acting, positive positioner retrofit kit is used with MP953B and F valve actuators

14004139-001/U – Direct acting, 3/4 inch stroke, positive positioner retrofit kit is used with 8 inch and 13 inch diameter, MP953A and E valve actuators

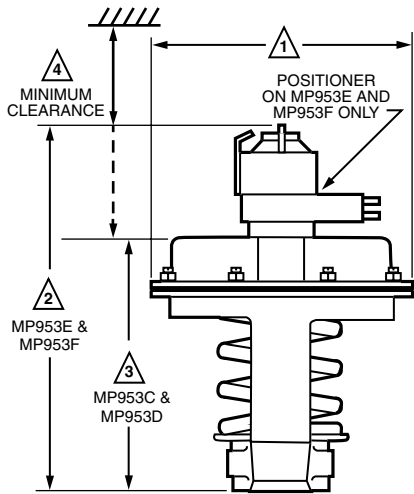
14004140-001/U – Direct acting, 1-1/2 inch stroke, positive positioner retrofit kit is used with 8 inch and 13 inch diameter, MP953A and E valve actuators

14004214-001/U – Positive positioner kit, with 3/4 inch stroke, is used for 5 inch diameter, MP953A and E valve actuators

| Material Number | Product Action | Actuator Force (kPa) | Spring Range (psi) | Spring Range (kPa) | Stroke | Diameter (in.) | Includes | Used With |
|-----------------|----------------|----------------------|--------------------|--------------------|-------------------|----------------|--|---|
| MP953E1285/U | Direct Acting | Medium | 4 psi to 11 psi | 28 kPa to 76 kPa | 1 1/2 in. (38 mm) | 8 in. | Positive Positioner with 5 psi (35 kPa) range | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953E1301/U | Direct Acting | Low | 4 psi to 11 psi | 28 kPa to 76 kPa | 3/4 in. (19 mm) | 5 in. | Positive Positioner with 3 psi range (21 kPa) | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953E1319/U | Direct Acting | Low | 4 psi to 11 psi | 28 kPa to 76 kPa | 3/4 in. (19 mm) | 5 in. | Positive Positioner with 5 psi range (35 kPa) | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953E1327/U | Direct Acting | Low | 4 psi to 11 psi | 28 kPa to 76 kPa | 3/4 in. (19 mm) | 5 in. | Positive Positioner with 10 psi range (70 kPa) | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953E1368/U | Direct Acting | Medium | 4 psi to 11 psi | 28 kPa to 76 kPa | 3/4 in. (19 mm) | 8 in. | 311851-062 Stem Extension Assembly and Positive Positioner with 3 psi range | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953E1376/U | Direct Acting | Medium | 4 psi to 11 psi | 28 kPa to 76 kPa | 3/4 in. (19 mm) | 8 in. | 311851-062 Stem Extension Assembly and Positive Positioner with 5 psi range | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953E1384/U | Direct Acting | Medium | 4 psi to 11 psi | 28 kPa to 76 kPa | 3/4 in. (19 mm) | 8 in. | 311851-062 Stem Extension Assembly and Positive Positioner with 10 psi range | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953E1400/U | Direct Acting | High | 4 psi to 11 psi | 28 kPa to 76 kPa | 1 1/2 in. (38 mm) | 13 in. | 312466-605 Stem Extension Assembly and Positive Positioner with 5 psi range | Valves with bonnet size 1-7/8 in. (48 mm) |
| MP953E1418/U | Direct Acting | High | 4 psi to 11 psi | 28 kPa to 76 kPa | 1 1/2 in. (38 mm) | 13 in. | 312466-605 Stem Extension Assembly and Positive Positioner with 10 psi range | Valves with bonnet size 1-7/8 in. (48 mm) |
| MP953E1435/U | Direct Acting | High | 4 psi to 11 psi | 28 kPa to 76 kPa | 3/4 in. (19 mm) | 13 in. | 14004697-001 Stem Extension Assembly and Positive Positioner with 5 psi range (35 kPa) | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953E1443/U | Direct Acting | High | 4 psi to 11 psi | 28 kPa to 76 kPa | 3/4 in. (19 mm) | 13 in. | Positive Positioner with 10 psi range and 14004697-001 Stem Extension Assembly | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953F1093/U | Reverse Acting | Medium | 8 psi to 13 psi | 55 kPa to 90 kPa | 3/4 in. (19 mm) | 7 1/8 in. | Positive Positioner with 3 psi range and EPDM diaphragm | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953F1101/U | Reverse Acting | Medium | 8 psi to 13 psi | 55 kPa to 90 kPa | 3/4 in. (19 mm) | 7 1/8 in. | Positive Positioner with 5 psi range and EPDM diaphragm | Valves with bonnet size 1-3/8 in. (35 mm) |
| MP953F1119/U | Reverse Acting | Medium | 8 psi to 13 psi | 55 kPa to 90 kPa | 3/4 in. (19 mm) | 7 1/8 in. | Positive Positioner with 10 psi range and EPDM diaphragm | Valves with bonnet size 1-3/8 in. (35 mm) |

Pneumatic Valve Actuators

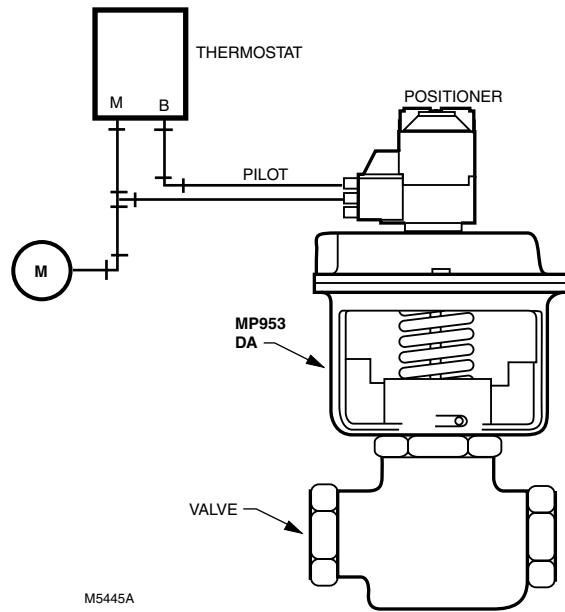
Dimensions Diagram in inches (millimeters)



| OPERATION SIZE NOMINAL DIA. | 1 | 2 | 3 | 4 |
|--------------------------------|--------------|--------------|-------------|---------------|
| 5 INCH | 5-1/8 (130) | 9-1/4 (235) | 4-5/8 (117) | 4-3/8 (111) |
| 7-1/8 INCH | 7-1/8 (181) | 10-1/2 (267) | 5-5/8 (143) | 4-3/8 (111) |
| 8 INCH | 8-1/4 (210) | 11-1/8 (283) | 6-1/2 (165) | 5-3/8 (137) |
| 13 INCH | 13-1/2 (343) | 18-1/8 (460) | 10 (254) | 7-11/16 (195) |

M13903

Typical Piping for MP953E,F Pneumatic Valve Actuator Wiring



M5445A

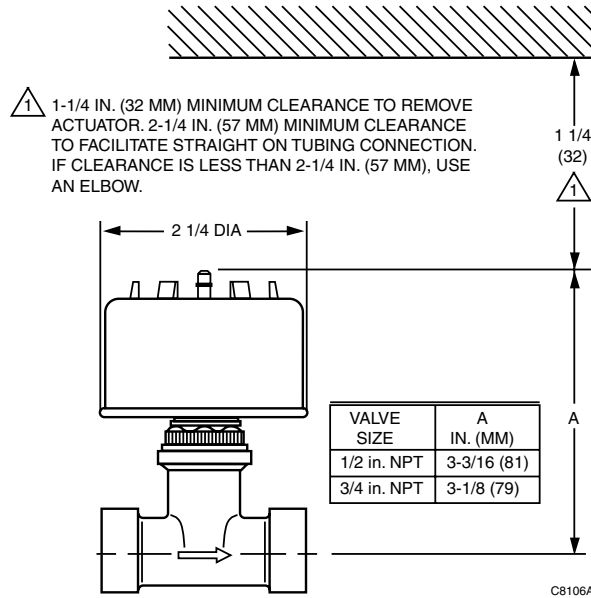
MP958 Pneumatic Valve Actuators



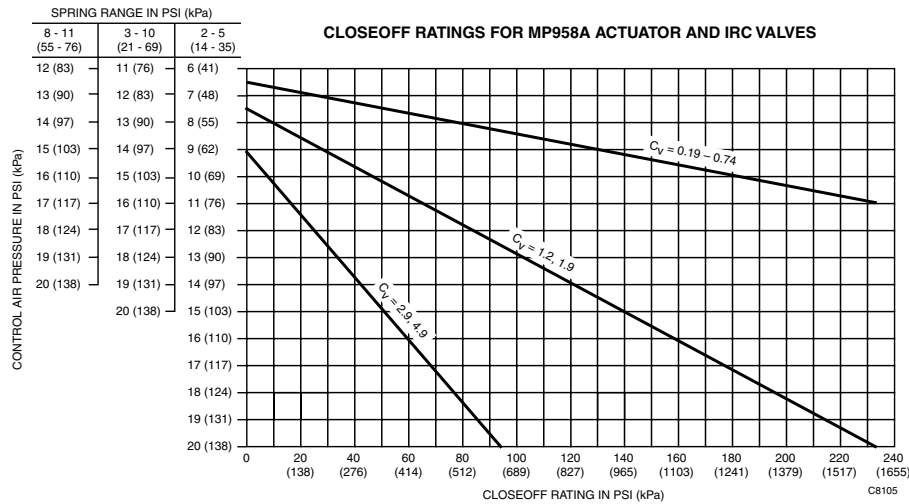
The MP958 Pneumatic Valve Actuator is direct-acting and used only with Honeywell V5852A2xx, V5862A2xx, V5853A2xx, and V5863A2xx Terminal Unit Valves to control hot and/or chilled water.

- Actuator Type:** Valve
- Actuator Force (kPa):** Low
- Product Action:** Direct Acting
- Maximum Safe Operating Pressure (psi):** 30 psi
- Fail Safe Mode:** Spring Return
- Air Connections:** Barbed fitting for 1/4 in. O.D. plastic tubing
- Dimensions:** 2 1/4 in. diameter x 3 3/16 in. maximum high (57 mm diameter x 81 mm maximum high)

Dimensions Diagram in inches (millimeters)



Close-off ratings



| Material Number | Spring Range (psi) | Spring Range (kPa) | Comments |
|-----------------|--------------------|--------------------|--|
| MP958A1009/U | 2 psi to 5 psi | 14 kPa to 35 kPa | Only works with V5852A2xx, V5862A2xx, V5853A2xx, V5863A2xx |
| MP958A1017/U | 3 psi to 10 psi | 21 kPa to 69 kPa | Only works with V5852A2xx, V5862A2xx, V5853A2xx, V5863A2xx |
| MP958A1025/U | 8 psi to 11 psi | 55 kPa to 76 kPa | Only works with V5852A2xx, V5862A2xx, V5853A2xx, V5863A2xx |

Pneumatic Controls

Pneumatic Valve Actuators

Pneumatic Valve Actuator Parts and Accessories

| Material Number | Description | Used With |
|-----------------|--|-----------------------------|
| 14002039-001/U | This diaphragm sleeve is used in MP953B, D and F valve actuators | MP953B,D,F |
| 14002040-002/U | This diaphragm is used in MP953B, D and F valve actuators | MP953B,D,F |
| 14003124-002/U | This diaphragm repair kit, used in MP953B, D or F valve actuators, includes; diaphragms 14002040-002 & 14002039-001 | MP953B,D,F |
| 14004138-001/U | This reverse acting, positive positioner retrofit kit is used with MP953B and F valve actuators | MP953B,F |
| 14004139-001/U | This direct acting, 3/4 inch stroke, positive positioner retrofit kit is used with 8 inch and 13 inch diameter, MP953A and E valve actuators | MP953A,E |
| 14004140-001/U | This direct acting, 1-1/2 inch stroke, positive positioner retrofit kit is used with 8 inch and 13 inch diameter, MP953A and E valve actuators | MP953A,E |
| 14004211-001/U | This feedback spring kit, with 3/4 inch stroke, is used for 8 inch and 13 inch, MP953E valve actuators | MP953E |
| 14004212-001/U | This feedback spring kit, with a 1-1/2 inch stroke, is used for 8 inch and 13 inch, MP953E valve actuators | MP953E |
| 14004213-001/U | This reverse acting, feedback spring kit is used for MP953F valve actuators | MP953F |
| 14004214-001/U | This positive positioner kit, with 3/4 inch stroke, is used for 5 inch diameter, MP953A and E valve actuators | MP953A,E |
| 14004298-001/U | This 4-40 thread forming screw, is used for MP953D and F valve actuators | MP953D,F |
| 14004298-003/U | This 1/4-20 actuator base screw, is used for 5 inch diameter, MP953C and E and 7-1/8 inch diameter ,MP953B, D and F valve actuators | MP953B,D,F,MP953C,E (5 in.) |
| 14004578-001/U | This reverse acting, 7-1/8 inch diameter, yoke/base assembly is used in MP953B, D, and F valve actuators | MP953B,D,F |
| 14004660-001/U | This 7-1/64 inch cup, made from aluminum die cast alloy, is used in MP953D valve actuators | MP953D |
| 310502-00767 | This retainer, for 5 inch MP953A, C and E valve actuators, latches on the stem button | MP953A,C,E (5 in.) |
| 310502-00767/U | This retainer, for 5 inch MP953A, C and E valve actuators, latches on the stem button | MP953A,C,E (5 in.) |
| 310664/U | This tension spring is used for MP953A, C and E (5 inch and 8 inch models only) valve actuators | MP953A,C,E |
| 310665/0062/U | This 5 inch spring support is used in MP953A, C and E valve actuators | MP953A,C,E (5 in.) |
| 310665-00062/U | This 5 inch spring support is used in MP953A, C and E valve actuators | MP953A,C,E (5 in.) |
| 310668/U | This old style, high temperature, silicone diaphragm, is used for 5 inch diameter, MP953A, C & E valve actuators | MP953A,C,E |
| 311393/U | This white spring, with a range of 4 psi to 11 psi, is used in MP953C and E valve actuators | MP953C,E |
| 311616/U | This brown, main spring, with a range of 2 psi to 7 psi, is used for 5 inch diameter, MP953A & C valve actuators | MP953A,C,E (5 in.) |
| 311618/U | This gray, main spring, with a range of 8 psi to 12 psi, is used for 5 inch diameter, MP953A & C valve actuators | MP953A,C,E (5 in.) |
| 311750/U | This new style, regular temperature, neoprene diaphragm, is used for 8 inch diameter, MP953A, C and E valve actuators | MP953A,C,E |
| 311851/0062/U | This 3/4 inch stroke, stem extension, is used for 8 inch diameter, MP953A, C and E valve actuators | MP953A,C,E (8 in.) |
| 311851-0062 | This 3/4 inch stroke, stem extension, is used for 8 inch diameter, MP953A, C and E valve actuators | MP953A,C,E (8 in.) |
| 311852/U | This brown spring, with a range of 2 psi to 7 psi, is used for 8 inch diameter, MP953A and C valve actuators | MP953A,C (8 in., 2-7 psi) |
| 311855/U | This gray, main spring, with a range of 8 psi to 12 psi, is used for 8 inch diameter, MP953C valve actuators | MP953C |
| 311863/U | 311863 is a stem retainer, for 8 inch diameter, MP953C or E valve actuators | MP953C,E |
| 312099/U | 312099 is a 1-1/2 inch stroke, spider for 13 inch, MP953C and E valve actuators | MP953C,E |
| 312203/U | 312203 is a black spring, with 8 psi to 13 psi range, used for MP953D or F valve actuators | MP953D,F |
| 312466/0605/U | 312466/0605 is a stem extension, for MP953C1489, MP953C1471, MP953E1392, MP953E1400, and MP953E1418 valve actuators | MP953C,E |
| 312466-0605/U | 312466/0605 is a stem extension, for MP953C1489, MP953C1471, MP953E1392, MP953E1400, and MP953E1418 valve actuators | MP953C,E |
| 312471/U | 312471 is a white spring, with a 13 inch diameter and 1/2 inch stroke, used for MP95 C or E valve actuators | MP953C,E (13 in.) |
| 312505/U | This new style, regular temperature, neoprene diaphragm, is used for 13 inch diameter, MP953A, C & E valve actuators | MP953A,C,E |
| 312760/U | This new style, regular temperature, neoprene diaphragm, is used for 5 inch diameter, MP953A, C & E valve actuators | MP953A,C,E |
| 313745/U | This new style, high temperature, silicone diaphragm, is used for 5 inch diameter, MP953A, C & E valve actuators | MP953A,C,E |
| 314153/U | This new style, high temperature, silicone diaphragm, is used for 8 inch diameter, MP953A, C & E valve actuators | MP953A,C,E |
| 314646A/0062/U | Plate, Spring for 13 in. MP953A,C,E | MP953A,C,E |
| 314650A/U | This reverse acting, support assembly, is used for MP953B, D and F valve actuators (for series-2 actuators only, use This support assembly and 316059A yoke assembly to convert series-1 MO/MP953) | MP953B,D,F |
| 314651A/U | This reverse acting, yoke assembly, with nylon insert for support assembly, is used for MP953B, D and F valve actuators | MP953B,D,F |
| 314683/0062/U | This stem retainer, for 13 inch diameter, MP953A, C and E valve actuators, latches on the stem button | MP953A,C,E (13 in.) |
| 314683-0062/U | This stem retainer, for 13 inch diameter, MP953A, C and E valve actuators, latches on the stem button | MP953A,C,E (13 in.) |
| 315020/U | 315020 is a cup, used for 13 inch diameter, MP95 C and E valve actuators | MP953C,E (13 in.) |
| 316059A/U | This reverse acting, yoke assembly, with helicoil insert for support assembly, is used in MP953B, D and F valve actuators | MP953B,D,F |

VP512 Unit Vent Pneumatic Control Valve



Normally open, single seated, straight-through or angle globe valve, for proportional control of steam/hot water in unit ventilator applications. Replacements are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Equal percentage, high lift throttling guide provides accurate control over wide load variations.
- Molded replaceable composition disc for tight shut-off.
- Replaceable brass seat.
- Self-adjusting, spring-loaded Teflon™ packing.
- Back-seating allows repacking without shutting down or draining system.
- Rotatable actuator for aligning air connection with control air piping.
- Integral union connection to simplify installation and service.

Valve Action: Proportional Normally Open

Valve Type: Globe Valve

Connection Type: Outlet - External NPT Union, Inlet - Internal NPT

Body Pressure (psi): 150 psi

Maximum Diaphragm Pressure (psi): 25 psi

Maximum Diaphragm Pressure (kPa): 172 kPa

Dimensions: 5 1/8 in. diameter x 7 15/32 high (127 mm diameter x 190 mm high)

Air Connections: Dual barbed for 5/32 in. or 1/4 in. plastic tubing

Controlled Fluid: Water, Steam

Accessories

312817AA/U – Actuator Assembly, 3 to 8 psi, 21 to 55 kPa, and 1/2 in. stroke

312817AB/U – Actuator Assembly, 6 to 11 psi, 41 to 76 kPa and 1/2 in. stroke

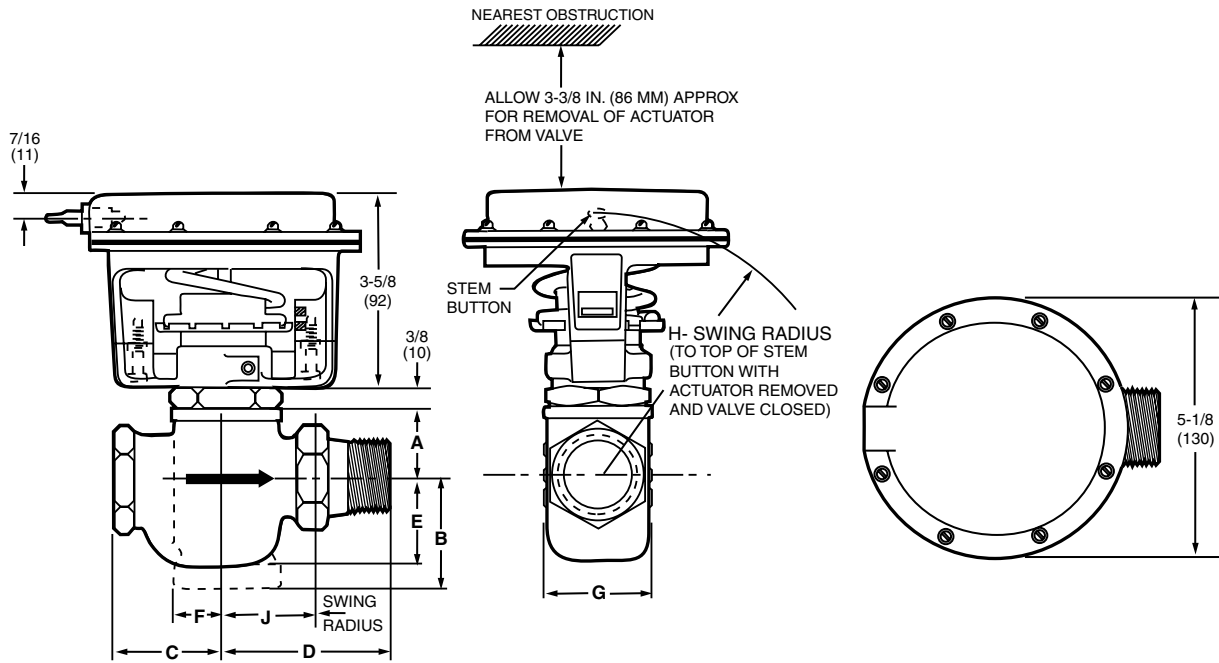
Replacement Parts

14002863-001/U – Valve Rebuild Kit for 3/4 to 1 1/4 in. valves with CV of 6.3 or 10

| Material Number | Body Pattern | Connection Size (in.) | Capacity (Cv) | Capacity (Kv) | Close-off Ratings at Branch Line Pressure | Spring Range (psi) | Spring Range (kPa) | Temperature Range | Operating Humidity Range (% RH) |
|-----------------|---------------------------|-----------------------|---------------|---------------|---|--------------------|--------------------|--|---------------------------------|
| VP512A1726/U | Two-way, Straight-through | 1 in. | 10 Cv | 8.57 Kv | 78 psi at 13 psi | 3 psi to 8 psi | 21 kPa to 55 kPa | For Water: 115°F to 240°F; For Steam: 212°F to 275°F; Maximum Actuator Temperature – 160°F; Maximum Temperature Differential 140°F for Water | 5 to 95% RH |
| VP512A1726S/U | Two-way, Straight-through | 1 in. | 10 Cv | 8.57 Kv | 78 psi at 13 psi | 3 psi to 8 psi | 21 kPa to 55 kPa | For Water: 115°F to 240°F; For Steam: 212°F to 275°F; Maximum Actuator Temperature – 160°F; Maximum Temperature Differential 140°F for Water | 5 to 95% RH |
| VP512A1742/U | Two-way, Right Angle | 1 in. | 10 Cv | 8.57 Kv | 78 psi at 13 psi | 3 psi to 8 psi | 21 kPa to 55 kPa | For Steam: 212°F to 275°F; For Water: 115°F to 240°F; Maximum Actuator Temperature – 160°F; Maximum Temperature Differential 140°F for Water | |
| VP512A1742S/U | Two-way, Right Angle | 1 in. | 10 Cv | 8.57 Kv | 78 psi at 13 psi | 3 psi to 8 psi | 21 kPa to 55 kPa | For Steam: 212°F to 275°F; For Water: 115°F to 240°F; Maximum Actuator Temperature – 160°F; Maximum Temperature Differential 140°F for Water | |
| VP512A1767/U | Two-way, Straight-through | 1 1/4 in. | 16 Cv | 13.7 Kv | 40 psi at 13 psi | 3 psi to 8 psi | 21 kPa to 55 kPa | For Steam: 212°F to 275°F; For Water: 115°F to 240°F; Maximum Actuator Temperature – 160°F; Maximum Temperature Differential 140°F for Water | |
| VP512A1783/U | Two-way, Right Angle | 1 1/4 in. | 16 Cv | 13.7 Kv | 40 psi at 13 psi | 3 psi to 8 psi | 21 kPa to 55 kPa | For Steam: 212°F to 275°F; For Water: 115°F to 240°F; Maximum Actuator Temperature – 160°F; Maximum Temperature Differential 140°F for Water | |

Pneumatic Valves

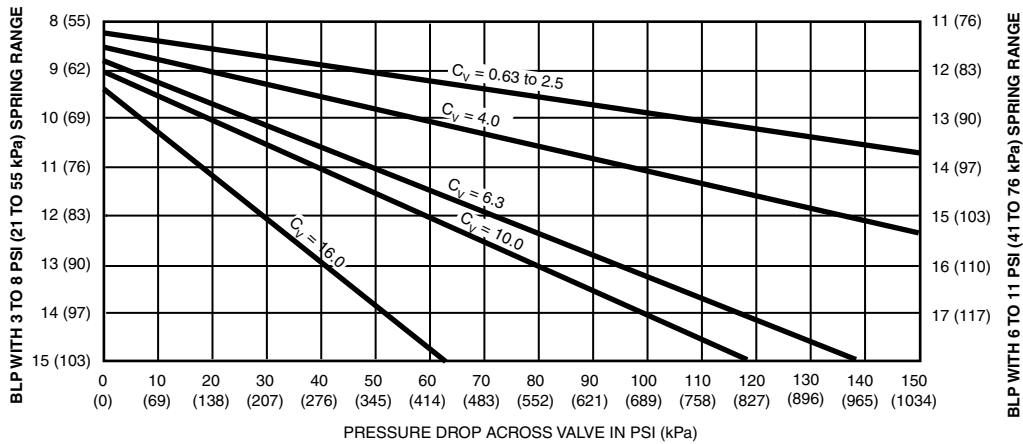
Dimensions Diagram in inches (millimeters)



| VALVE SIZE | BODY TYPE | A | B | C | D | E | F | G | H | J |
|------------|-----------|--------------|------------|------------|-------------|------------|-------------|--------------|---------------|--------------|
| 1 | STRAIGHT | 1-3/8 (35) | --- | 2-1/4 (57) | 3 (76) | 1-5/8 (41) | --- | 1-31/32 (50) | 4-1/2 (114) | --- |
| | ANGLE | 1-3/8 (35) | 2-1/8 (54) | --- | 3 (76) | --- | 1-1/16 (27) | 1-31/32 (50) | --- | 1-29/32 (48) |
| 1 1/4 | STRAIGHT | 1-9/16 (40) | --- | 2-1/2 (64) | 3-3/4 (95) | 1-1/2 (38) | --- | 2-9/16 (65) | 4-13/16 (122) | --- |
| | ANGLE | 1-9/16 (40) | 2-1/8 (54) | --- | 3-3/4 (95) | --- | 1-3/16 (30) | 2-9/16 (65) | --- | 2-15/32 (63) |
| 1 1/2 | STRAIGHT | 1-11/16 (43) | --- | 2-7/8 (73) | 4-1/4 (108) | 1-3/8 (35) | --- | 3-9/32 (83) | 5-5/32 (131) | --- |
| | ANGLE | 1-11/16 (43) | 2-1/8 (54) | --- | 4-1/4 (108) | --- | 1-3/8 (35) | 3-9/32 (83) | --- | 2-15/16 (75) |

M18805A

Close-off Ratings at various Branchline Pressures



CLOSE-OFF RATINGS AT VARIOUS BRANCH LINE PRESSURES

M18956B

VP513 Pneumatic Water Valve



Valve Type: Unitary
Connection Type: 45 deg. SAE flare
Body Pressure (psi): 250 psi
Body Pressure (kPa): 1724 kPa
Maximum Diaphragm Pressure (psi): 25 psi
Maximum Diaphragm Pressure (kPa): 172 kPa
Air Connections: 1/8 in. NPT
Controlled Fluid: Water
Operating Humidity Range (% RH): 5 to 95% RH

Single-seated, straight-through, pneumatic valves used for proportional control of unit air conditioners using hot and/or chilled water. Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Available in normally-open (A models) or normally-closed models (B models).
- Straight-through pattern.
- Rotating actuator for aligning air connection with control air piping.
- Molded replaceable composition disc for tight shut-off.
- Flare tube connections.
- Small physical size.

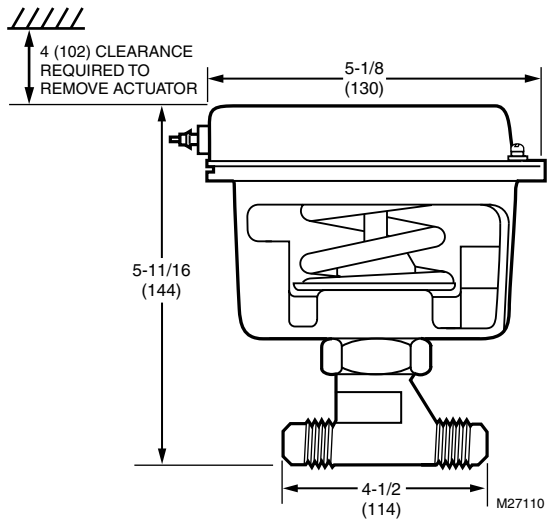
Accessories

- 310135/U** – Packing Spring, 1 Required
- 310143/U** – Black Packing, 3 required
- 312817T/U** – Actuator assembly, 3 to 10 psi, 21 to 69 kPa, and 1/2 in. stroke
- 312817U/U** – Actuator Assembly, 3 to 7 psi, 21 to 48 kPa, and 1/2 in. stroke
- 312817V/U** – Actuator Assembly, 8 to 12 psi, 55 to 83 kPa, and 1/2 in. stroke

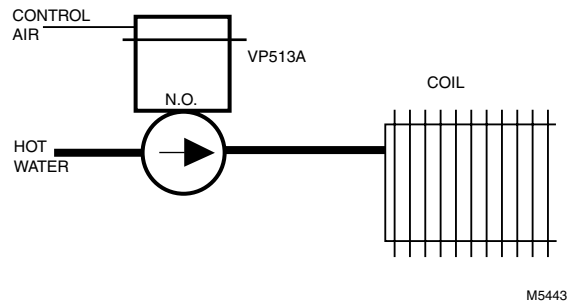
| Material Number | Valve Action | Connection Size (in.) | Capacity (Cv) | Capacity (Kv) | Close-off Ratings at Branch Line Pressure | Spring Range (psi) | Spring Range (kPa) | Temperature Range | Dimensions |
|--|------------------------------|------------------------------------|---------------|---------------|---|--------------------|--------------------|--|--|
| Two-way, Straight-through | | | | | | | | | |
| VP513A1048/U | Proportional Normally Open | O.D.: 7/8 in.; Nominal: 3/4 in. | 2.5 Cv | 2.16 Kv | 79 psid (545 kPa) at 13 psi (90 kPa) | 3 psi to 10 psi | 21 kPa to 69 kPa | 35°F to 250°F; Maximum Actuator Temperature – 160°F (2°C to 121°C); Maximum Actuator Temperature – 71°C) | 5 3/4 in. high x 5 1/8 in. diameter (146 mm high x 130 mm diameter) |
| VP513A1055/U | Proportional Normally Open | O.D.: 7/8 in.; Nominal: 3/4 in. | 4 Cv | 3.46 Kv | 79 psid (545 kPa) at 13 psi (90 kPa) | 3 psi to 10 psi | 21 kPa to 69 kPa | 35°F to 250°F; Maximum Actuator Temperature – 160°F (2°C to 121°C); Maximum Actuator Temperature – 71°C) | 5 3/4 in. high x 5 1/8 in. diameter (146 mm high x 130 mm diameter) |
| VP513A1188/U | Proportional Normally Open | O.D.: 5/8 in.; Nominal: 1/2 in. | 2.5 Cv | 2.16 Kv | 79 psid (545 kPa) at 13 psi (90 kPa) | 3 psi to 7 psi | 21 kPa to 48 kPa | 35°F to 250°F; Maximum Actuator Temperature – 160°F (2°C to 121°C); Maximum Actuator Temperature – 71°C) | 5 3/4 in. high x 5 1/8 in. diameter (146 mm high x 130 mm diameter) |
| VP513A1204/U | Proportional Normally Open | O.D.: 5/8 in.; Nominal: 1/2 in. | 2.5 Cv | 2.16 Kv | 79 psid (545 kPa) at 13 psi (90 kPa) | 3 psi to 10 psi | 21 kPa to 69 kPa | 35°F to 250°F; Maximum Actuator Temperature – 160°F (2°C to 121°C); Maximum Actuator Temperature – 71°C) | 5 3/4 in. high x 5 1/8 in. diameter (146 mm high x 130 mm diameter) |
| Two-way, Straight-through, Offset | | | | | | | | | |
| VP513B1012/U | Proportional Normally Closed | O.D.: 5/8 in.; Nominal: 1/2 in. | 1.0 Cv | 0.86 Kv | 50 psid (345 kPa) at 7 psi (48 kPa) | 9 psi to 13 psi | 62 kPa to 90 kPa | 40°F to 240°F; Maximum Actuator Temperature – 160°F (4°C to 116°C); Maximum Actuator Temperature – 71°C) | 6 7/8 in. high x 5 1/8 in. diameter (175 mm high x 130 mm diameter) |
| VP513B1038/U | Proportional Normally Closed | O.D.: 5/8 in.; Nominal: 1/2 in. | 1.6 Cv | 1.38 Kv | 50 psid (345 kPa) at 7 psi (48 kPa) | 9 psi to 13 psi | 62 kPa to 90 kPa | 40°F to 240°F; Maximum Actuator Temperature – 160°F (4°C to 116°C); Maximum Actuator Temperature – 71°C) | 6 7/8 in. high x 5 1/8 in. diameter (175 mm high x 130 mm diameter) |
| VP513B1053/U | Proportional Normally Closed | O.D.: 5/8 in.; Nominal: 1/2 in. | 2.5 Cv | 2.16 Kv | 50 psid (345 kPa) at 7 psi (48 kPa) | 9 psi to 13 psi | 62 kPa to 90 kPa | 40°F to 240°F; Maximum Actuator Temperature – 160°F (4°C to 116°C); Maximum Actuator Temperature – 71°C) | 6 7/8 in. high x 5 1/8 in. diameter (175 mm high x 130 mm diameter) |

Pneumatic Valves

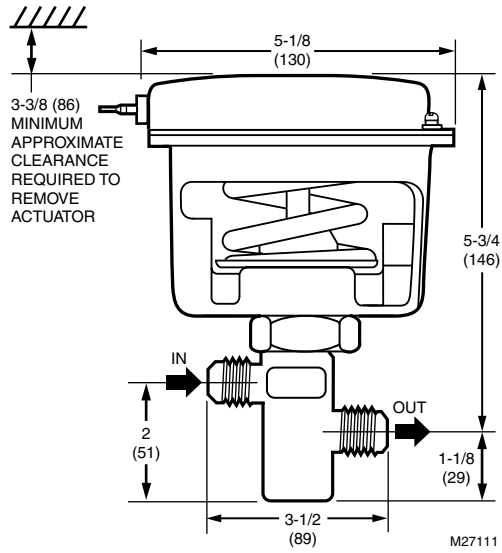
Dimensions Diagram in inches (millimeters)



VP513 Typical Piping Diagram



Dimensions Diagram in inches (millimeters)



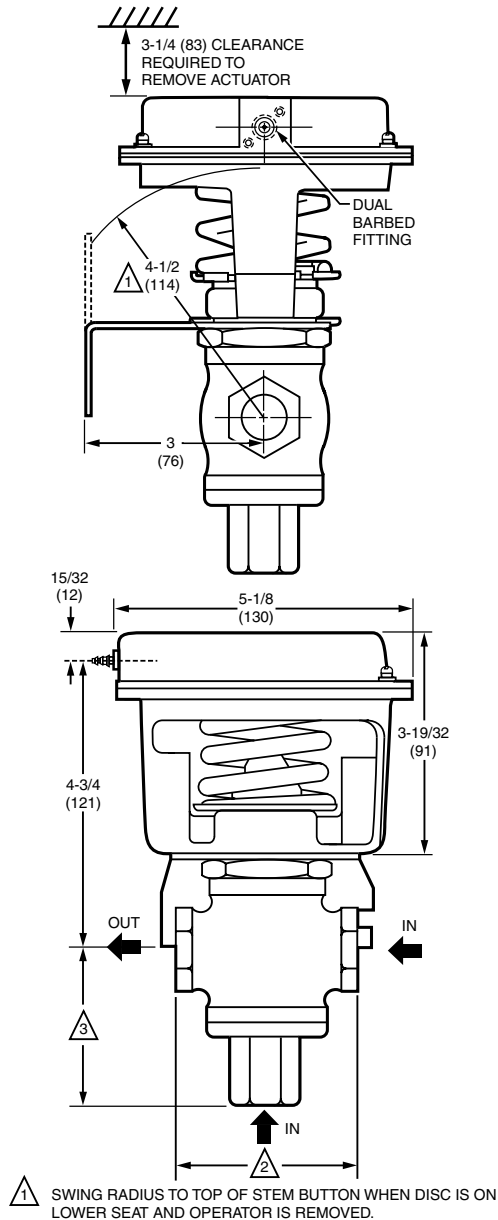
VP519 Two-Position Three-Way Air Valve



Two-position, three-way, pneumatic air valve used to control main airflow in large Day-Nite or Summer-Winter pneumatic control systems. Replacement device is available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Spring-loaded, self-adjusting Teflon™ cone packing.
- Removable composition upper and lower discs.
- Actuator can be rotated on valve bonnet for alignment with air piping.
- Right-angle mounting bracket permits mounting on a wall or panel.
- Cast bronze body, 1/4" stroke.

Dimensions Diagram in inches (millimeters)



| VALVE SIZE | 2 | 3 |
|------------|------------|--------------|
| 1/2 INCH | 3-1/8 (79) | 2-3/4 (70) |
| 3/4 INCH | 3-3/8 (86) | 2-19/32 (66) |

M27109

Valve Action: Two Position

Valve Type: Globe Valve

Connection Type: NPT

Body Pressure (psi): 150 psi

Body Pressure (kPa): 1034 kPa

Maximum Diaphragm Pressure (psi): 25 psi

Maximum Diaphragm Pressure (kPa): 172 kPa

Dimensions: 7 7/8 in. high x 5 1/8 in. diameter (200 mm high x 130 mm diameter)

Temperature Range: 35°F to 115°F; Maximum Actuator Temperature – 160°F (2°C to 46°C; Maximum Actuator Temperature – 71°C)

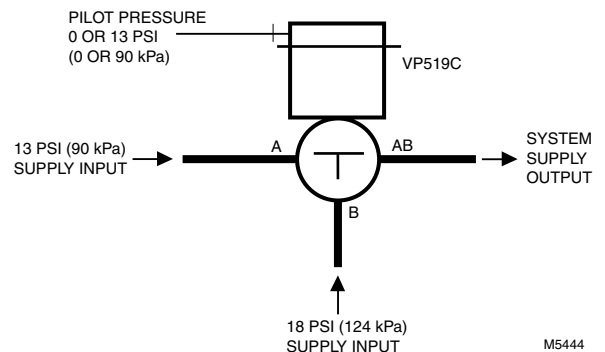
Air Connections: Dual barbed for 5/32 in. or 1/4 in. plastic tubing

Operating Humidity Range (% RH): 5 to 95% RH

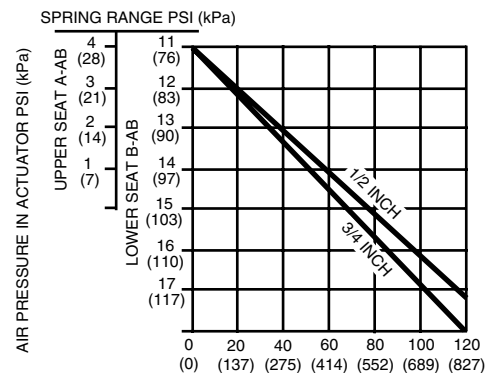
Replacement Parts

313744A/U – Actuator Replacement Assembly for the VP519 Valve

VP519 Typical Piping Diagram



Close-off Ratings for the VP519



CLOSE OFF PRESSURE RATINGS PSI (kPa)

M18958

| Material Number | Body Pattern | Connection Size (in.) | Capacity (Cv) | Capacity (Kv) | Close-off Ratings at Branch Line Pressure | Spring Range (psi) | Spring Range (kPa) |
|-----------------|--------------|-----------------------|---------------|---------------|---|--------------------|--------------------|
| VP519C1006/U | Three-way | 1/2 in. | 5.5 Cv | 4.75 Kv | 120 psid at 18 psi | 6 psi to 9 psi | 41 kPa to 62 kPa |

Pneumatic Valves

VP522 Pneumatic Sequencing Water Valve



Three-pipe, sequencing, pneumatically operated water valve for controlling both hot and cold water flow in fan-coil and induction units. Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Corrosion resistant.
- Molded-in composition discs for tight shutoff.
- Flare connections for easy installation.
- Operator rotates 360 degrees for convenient air piping alignment.

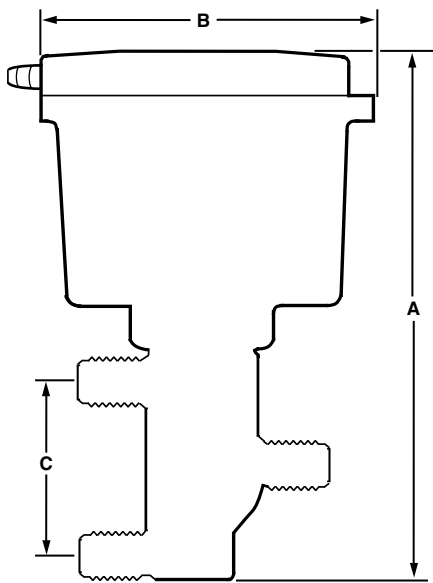
Valve Type: Unitary
Connection Type: 45 deg. SAE flare
Body Pressure (psi): 250 psi
Body Pressure (kPa): 1724 kPa
Maximum Diaphragm Pressure (psi): 25 psi
Maximum Diaphragm Pressure (kPa): 172 kPa
Dimensions: 9 7/8 in. high x 5 1/8 in. diameter (257 mm high x 130 mm diameter)
Temperature Range: 35°F to 250°F; Maximum Actuator Temperature – 160°F (2°C to 121°C; Maximum Actuator Temperature – 71°C)
Air Connections: 1/8 in. NPT
Controlled Fluid: Water
Operating Humidity Range (% RH): 5 to 95% RH

Replacement Parts

312817S/U – Actuator assembly for VP522A1237, VP522A1039, or VP522A1047
312817W/U – Actuator assembly for VP522B1003
312817Y/U – Actuator assembly for VP522B1011 or VP522B1029
313824A/U – Rebuild Kit, include Stem and Disc Holder, Button with Screw for VP522A1005
314459A/U – Rebuild Kit, include Stem and Disc Holder, Button with Screw for VP522A1039
314459B/U – Rebuild kit, includes stem and disc holder, Button with screw for VP522A1047
315407A/U – Rebuild kit, include Stem and Disc holder, button with screw for VP522B1003

| Material Number | Connection Size (in.) | Capacity (Cv) | Capacity (Kv) | Close-off Ratings at Branch Line Pressure | Spring Range (psi) | Spring Range (kPa) | Valve Action |
|--|------------------------------------|--------------------------------|--------------------------------|---|--------------------|--------------------|-------------------------|
| Three-way Diverting, Sequencing | | | | | | | |
| VP522B1003/U | O.D.: 1/2 in.; Nominal: 3/8 in. | Port A: 1.5 Cv, Port B: 1.5 Cv | Port A: 1.3 Kv, Port B: 1.3 Kv | 15 psid at 13 psi | Adjustable | Adjustable | Diverting/Sequencing |
| VP522B1011/U | O.D.: 5/8 in.; Nominal: 1/2 in. | Port A: 2.5 Cv, Port B: 2.5 Cv | Port A: 2.2 Kv, Port B: 2.2 Kv | 15 psid at 13 psi | Adjustable | Adjustable | Diverting/Sequencing |
| VP522B1029/U | O.D.: 7/8 in.; Nominal: 3/4 in. | Port A: 4 Cv, Port B: 3.5 Cv | Port A: 3.5 Kv, Port B: 3.0 Kv | 15 psid at 13 psi | Adjustable | Adjustable | Diverting/Sequencing |
| Three-way Mixing | | | | | | | |
| VP522A1005/U | O.D.: 1/2 in.; Nominal: 3/8 in. | Port A: 1.5 Cv, Port B: 1.5 Cv | Port A: 1.3 Kv, Port B: 1.3 Kv | 50 psid at 13 psi | 3 psi to 11.5 psi | 21 kPa to 79 kPa | Proportional/Sequencing |
| VP522A1039/U | O.D.: 5/8 in.; Nominal: 1/2 in. | Port A: 2.5 Cv, Port B: 1.6 Cv | Port A: 2.2 Kv, Port B: 1.4 Kv | 50 psid at 13 psi | 2 psi to 13 psi | 14 kPa to 90 kPa | Proportional/Sequencing |
| VP522A1047/U | O.D.: 7/8 in.; Nominal: 3/4 in. | Port A: 4 Cv, Port B: 2.5 Cv | Port A: 3.5 Kv, Port B: 2.2 Kv | 45 psid at 13 psi | 2 psi to 13 psi | 14 kPa to 90 kPa | Proportional/Sequencing |

Dimensions Diagram in inches (millimeters)



| VALVE SIZE | A IN INCHES (mm) | B IN INCHES (mm) | C IN INCHES (mm) |
|------------|------------------|------------------|------------------|
| 3/8 IN. | 9-13/16 (249) | 5-1/8 (130) | 3-5/8 (92) |
| 1/2 IN. | 9-15/16 (252) | 5-1/8 (130) | 3-5/32 (80) |
| 3/4 IN. | 9-15/16 (252) | 5-1/8 (130) | 3-5/32 (80) |

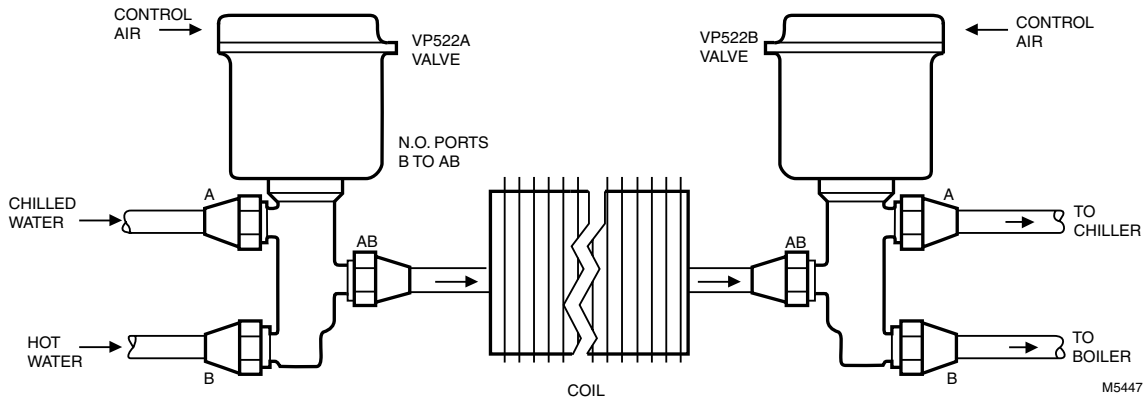
C4671A

Operating Sequence on Control Air Pressure Increase

| VP522A | | AIR PRESSURE psi (kPa) | VP522B |
|---------------------|---------------------|---------------------------|---------------------|
| 3/8 IN. | 1/2 IN. & 3/4 IN. | | ALL SIZES |
| HOT PORT OPEN 100% | HOT PORT OPEN 100% | 0 (0) | HOT PORT OPEN 100% |
| | | 1 (7) | |
| | | 2 (14) | |
| HOT PORT CLOSES | HOT PORT CLOSES | 3 (21) | HOT PORT CLOSES |
| | | 4 (28) | |
| | | 5 (34) | |
| BOTH PORTS CLOSED | BOTH PORTS CLOSED | 6 (41) | BOTH PORTS CLOSED |
| | | 7 (48) | |
| | | 8 (55) | |
| COLD PORT OPENS | COLD PORT OPENS | 9 (62) | COLD PORT OPENS |
| | | 10 (69) | |
| | | 11 (76) | |
| COLD PORT OPEN 100% | COLD PORT OPEN 100% | 12 (83) | COLD PORT OPEN 100% |
| | | 13 (90) | |
| | | 14 (97) | |
| | | 15 (103) | |

M13864

Typical VP522 Operation Diagram



M5447

Pneumatic Valves

VP525C Pneumatic Radiator Valve



Normally-open, single-seated pneumatic radiator valve, with straight through or angle body construction provides proportional control of two-pipe, hot water or steam systems. Replacement devices are available for most models.

- Available in several capacities and spring ranges for various application requirements.
- Easily replaceable actuator assembly for convenience of service.
- Compact size for installation where space is limited.
- Can be repacked without shutting down system.

Body Pattern: Two-way

Spring Range (psi): 3 psi to 10 psi

Spring Range (kPa): 21 kPa to 69 kPa

Valve Action: Proportional Normally Open

Valve Type: Unitary

Body Pressure (psi): 150 psi

Body Pressure (kPa): 1034 kPa

Maximum Diaphragm Pressure (psi): 30 psi

Maximum Diaphragm Pressure (kPa): 205 kPa

Dimensions: 4 7/8 in. high x 3 3/4 in. wide (124 mm high x 92 mm wide)

Temperature Range: 40°F to 240°F; Maximum Safe Actuator Diaphragm Temperature – 230°F (4°C to 116°C; Maximum Safe Actuator Diaphragm Temperature – 110°C)

Air Connections: Push on for 1/4 in. O.D. plastic tubing

Controlled Fluid: Water, Steam

Operating Humidity Range (% RH): 5 to 95% RH

Includes: 2-5 psi spring is packed in box

Replacement Parts

14002560-007/U – Repair stem assembly for 1/2 inch, 2.0 Cv VP525C or to Upgrade, 2.0 Cv VP525A

14002560-009/U – Repair stem assembly for 3/4 inch, 5.0 Cv VP525C or to Upgrade, 5.0 Cv VP525A

14002560-013/U – Repair stem assembly for 1/2 inch, 0.63 Cv VP525C or to Upgrade, 0.63 Cv VP525A

14003299-001/U – Repair Top & Insert for 5/8 in. OD, 1.6 Cv VP525A solder body

14003300-001/U – Repair Top & Insert for 7/8 in. OD, 2.5 Cv VP525A solder body

14004897-001/U – Repair Top & Insert for 1/2 inch NPT, 0.63 Cv VP525C or to upgrade 1/2 NPT, 0.63 Cv VP525A

14004897-002/U – Repair Top & Insert for 1/2 inch NPT, 2.0 Cv VP525C or to upgrade 1/2 NPT, 2.0 Cv VP525A

14004897-003/U – Repair Top & Insert for 3/4 inch NPT, 3.0 Cv VP525C or to upgrade 3/4 NPT, 3.0 Cv VP525A

14004897-004/U – Repair Top & Insert for 3/4 inch NPT, 5.0 Cv VP525C or to upgrade 3/4 NPT, 5.0 Cv VP525A

310208/U – White Packing (3 required per valve)

316027/0042/U – Green Spring, 2 to 5 psi

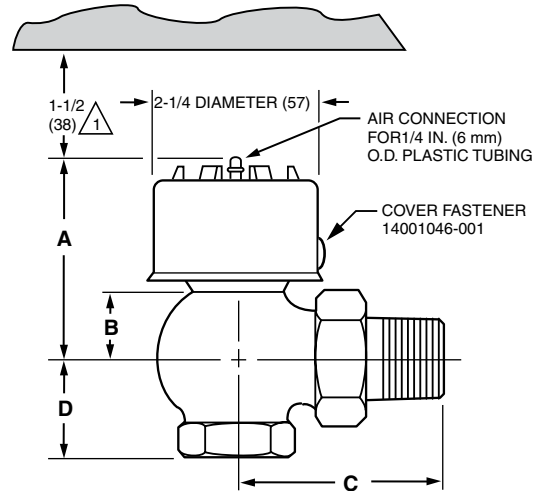
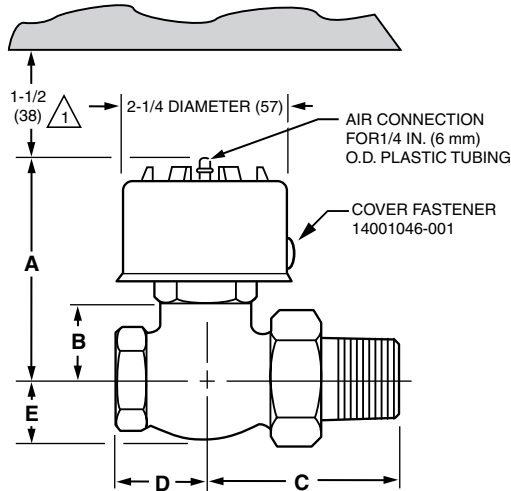
Accessories

14003648-001/U – Vandalism Resistant Assembly, Cover assembly with 1/8 in NPT air Connection and push-in retainer to replace standard Cover

14004932-001/U – Pneumatic Valve Adapter (M6410/M7410 linkage and a green main spring to allow to retrofit an electric actuator)

| Material Number | Connection Type | Connection Size (in.) | Capacity (Cv) | Capacity (Kv) | Close-off Ratings at Branch Line Pressure | Comments |
|-----------------|--------------------------|-----------------------|---------------|---------------|---|---|
| VP525C1008/U | NPT- Straight Male Union | 1/2 in. | 0.63 Cv | 0.54 Kv | 150 psid (1034 kPa) at 20 psi (138 kPa) | Replacement for VP525A1408 |
| VP525C1016/U | NPT- Straight Male Union | 1/2 in. | 2 Cv | 1.73 Kv | 110 psid (759 kPa) at 20 psi (138 kPa) | Replacement for VP525A1077 and VP525A1416 |
| VP525C1024/U | NPT- Straight Male Union | 3/4 in. | 3 Cv | 2.59 Kv | 55 psid (379 kPa) at 20 psi (138 kPa) | Replacement for VP525A1150 |
| VP525C1032/U | NPT- Straight Male Union | 3/4 in. | 5 Cv | 4.32 Kv | 42 psid (290 kPa) at 20 psi (138 kPa) | Replacement for VP525A1192 and VP525A1200 |
| VP525C1040/U | NPT- Angle Male union | 1/2 in. | 2 Cv | 1.73 Kv | 110 psid (759kPa) at 20 psi (138 kPa) | Replacement for VP525A1085 |
| VP525C1057/U | NPT- Angle Male union | 3/4 in. | 3 Cv | 2.59 Kv | 55 psid (379 kPa) at 20 psi (138 kPa) | Replacement for VP525A1168 |
| VP525C1065/U | NPT- Angle Male union | 3/4 in. | 5 Cv | 4.32 Kv | 42 psid (290 kPa) at 20 psi (138 kPa) | Replacement for VP525A1218 and VP525A1226 |
| VP525C1073/U | NPT- Straight Male Union | 1/2 in. | 3 Cv | 2.59 Kv | 55 psid (379 kPa) at 20 psi (138 kPa) | Replacement for VP525A1101 and VP525A1119 |
| VP525C1081/U | NPT- Angle Male union | 1/2 in. | 3 Cv | 2.59 Kv | 55 psid (379 kPa) at 20 psi (138 kPa) | Replacement for VP525A1127 and VP525A1135 |

Dimensions Diagram in inches (millimeters)

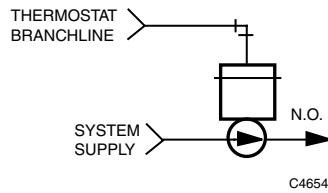


1-1/2 in. (38 mm) MINIMUM CLEARANCE TO REMOVE ACTUATOR. 2 1/2 in. (63 mm) MINIMUM CLEARANCE TO FACILITATE STRAIGHT ON TUBING CONNECTION. IF CLEARANCE IS LESS THAN 2 1/2 in. (63 mm) USE AN ELBOW.

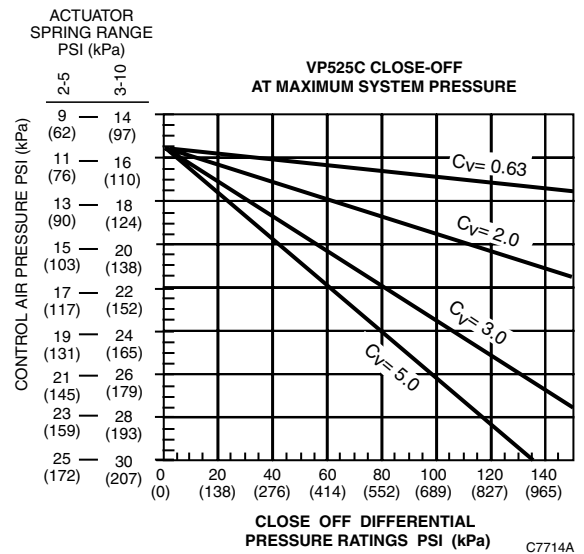
| BODY STYLE | SIZE NPT | A | B | C | D | E |
|-----------------------------------|----------|------------|------------|------------|------------|------------|
| STRAIGHT THRU - MALE UNION OUTLET | 1/2 | 3-1/2 (90) | 1-3/8 (35) | 2-1/2 (63) | 1-3/8 (35) | 3/4 (19) |
| | 3/4 | 3-1/2 (90) | 1-3/8 (35) | 3 (76) | 1-5/8 (41) | 1-1/8 (29) |
| ANGLE - MALE UNION OUTLET | 1/2 | 3-1/4 (83) | 1 (25) | 2-5/8 (66) | 1-1/8 (29) | |
| | 3/4 | 3-1/8 (80) | 1 (25) | 3 (76) | 1-1/4 (32) | |

M16449B

VP525C Pneumatic Radiator Valve



Close-off Ratings at various Control Air Pressures



Pneumatic Valves

VP526 Three-Way High Pressure Water Valve



Body Pattern: Three-way Mixing
Valve Action: Proportional Normally Open Ports B to AB
Valve Type: Unitary
Connection Type: 45 deg. SAE flare
Body Pressure (psi): 250 psi
Body Pressure (kPa): 1724 kPa
Maximum Diaphragm Pressure (psi): 29 psi
Maximum Diaphragm Pressure (kPa): 200 kPa
Dimensions: 4 7/8 in. high x 3 1/8 in. wide (124 mm high x 79 mm wide)
Temperature Range: 35°F to 250°F; Maximum Safe Actuator Diaphragm Temperature – 230°F (2°C to 121°C; Maximum Safe Actuator Diaphragm Temperature – 110°C)
Air Connections: Push on for 1/4 in. O.D. plastic tubing
Controlled Fluid: Water
Operating Humidity Range (% RH): 5 to 95% RH

Three-way pneumatic mixing valve provides proportional control of hot and/or cold water in unit air conditioners and fan coil systems. Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Small size permits installation where space is limited.
- Direct-acting, rolling diaphragm actuator with integral high temperature plastic air connector for 1/4 in. (6-mm) O.D. plastic tubing.
- Spring loaded, self-adjusting Buna-N “V”-ring packing replaceable.
- Brass seats (integral lower, removable upper) and contoured plug provide metal-to-metal seating.
- Stainless steel stem.
- Linear and constant total flow throughout full plug travel.

Accessories

14003648-001/U – Vandalism Resistant Assembly, Cover assembly with 1/8 in. NPT air Connection and push-in retainer to replace standard Cover

Replacement Parts

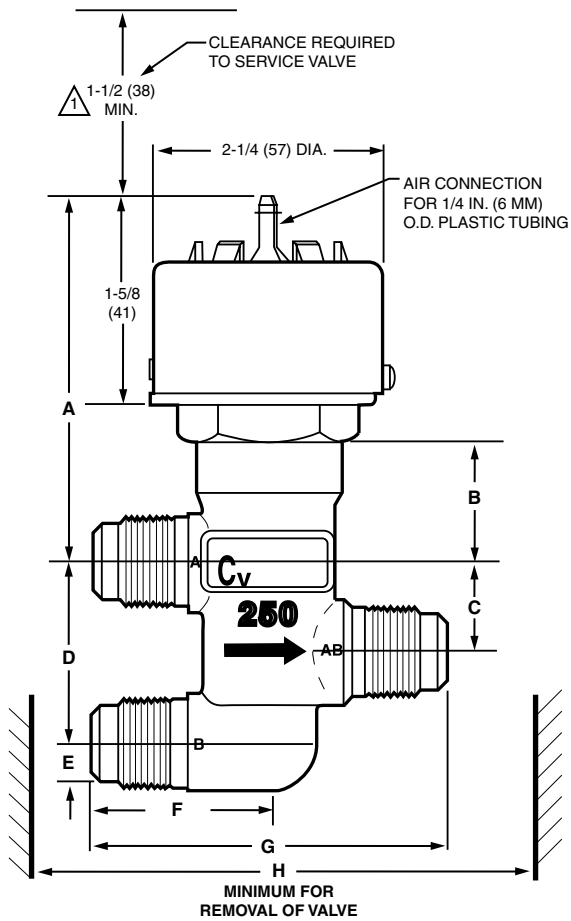
14003102-001/U – Replacement Top Assembly

14003297-001/U – Valve repack kit for VP526A, VP527A, or VP531A valves with 3/16 inch stem

315917/U – Diaphragm

| Material Number | Connection Size (in.) | Capacity (Cv) | Capacity (Kv) | Close-off Ratings at Branch Line Pressure | Spring Range (psi) | Spring Range (kPa) |
|-----------------|---------------------------------|---------------|---------------|---|--------------------|--------------------|
| VP526A1001/U | O.D.: 5/8 in.; Nominal: 1/2 in. | 1.6 Cv | 1.38 Kv | 14 psid at 0 psi for Port A, 50 psid at 17 psi for Port B | 3 psi to 10 psi | 21 kPa to 69 kPa |
| VP526A1019/U | O.D.: 5/8 in.; Nominal: 1/2 in. | 2.5 Cv | 2.16 Kv | 14 psid at 0 psi for Port A, 50 psid at 17 psi for Port B | 3 psi to 10 psi | 21 kPa to 69 kPa |
| VP526A1027/U | O.D.: 5/8 in.; Nominal: 1/2 in. | 1.6 Cv | 1.38 Kv | 5 psid at 0 psi for Port A, 50 psid at 12 psi for Port B | 2 psi to 5 psi | 14 kPa to 34 kPa |
| VP526A1035/U | O.D.: 5/8 in.; Nominal: 1/2 in. | 2.5 Cv | 2.16 Kv | 5 psid at 0 psi for Port A, 50 psid at 12 psi for Port B | 2 psi to 5 psi | 14 kPa to 34 kPa |
| VP526A1043/U | O.D.: 5/8 in.; Nominal: 1/2 in. | 1.6 Cv | 1.38 Kv | 58 psid at 0 psi for Port A, 50 psid at 18 psi for Port B | 8 psi to 11 psi | 55 kPa to 76 kPa |
| VP526A1050/U | O.D.: 5/8 in.; Nominal: 1/2 in. | 2.5 Cv | 2.16 Kv | 58 psid at 0 psi for Port A, 50 psid at 18 psi for Port B | 8 psi to 11 psi | 55 kPa to 76 kPa |
| VP526A1068/U | O.D.: 1/2 in.; Nominal: 3/8 in. | 1.0 Cv | 0.86 Kv | 14 psid at 0 psi for Port A, 50 psid at 17 psi for Port B | 3 psi to 10 psi | 21 kPa to 69 kPa |
| VP526A1076/U | O.D.: 1/2 in.; Nominal: 3/8 in. | 1.6 Cv | 1.38 Kv | 14 psid at 0 psi for Port A, 50 psid at 17 psi for Port B | 3 psi to 10 psi | 21 kPa to 69 kPa |
| VP526A1084/U | O.D.: 1/2 in.; Nominal: 3/8 in. | 1.0 Cv | 0.86 Kv | 5 psid at 0 psi for Port A, 50 psid at 12 psi for Port B | 2 psi to 5 psi | 14 kPa to 34 kPa |
| VP526A1092/U | O.D.: 1/2 in.; Nominal: 3/8 in. | 1.6 Cv | 1.38 Kv | 5 psid at 0 psi for Port A, 50 psid at 12 psi for Port B | 2 psi to 5 psi | 14 kPa to 34 kPa |
| VP526A1100/U | O.D.: 1/2 in.; Nominal: 3/8 in. | 1.0 Cv | 0.86 Kv | 58 psid at 0 psi for Port A, 50 psid at 18 psi for Port B | 8 psi to 11 psi | 55 kPa to 76 kPa |
| VP526A1118/U | O.D.: 1/2 in.; Nominal: 3/8 in. | 1.6 Cv | 1.38 Kv | 58 psid at 0 psi for Port A, 50 psid at 18 psi for Port B | 8 psi to 11 psi | 55 kPa to 76 kPa |

Dimensions Diagram in inches (millimeters)

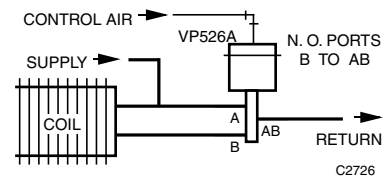


| VALVE SIZE | COPPER TUBING (O.D.) | IN. (MM) | | | | | | | |
|------------|----------------------|-------------|-------------|------------|------------|-----------|--------------|-------------|-------------|
| | | A | B | C | D | E | F | G | H |
| 3/8 | 1/2 | 3-1/16 (78) | 7/8 (22) | 13/16 (20) | 1-1/2 (38) | 3/8 (10) | 1-1/2 (38) | 3 (76) | 5-3/4 (146) |
| 1/2 | 5/8 | 3-3/8 (85) | 1-3/16 (30) | 7/8 (22) | 1-3/4 (44) | 7/16 (11) | 1-11/16 (43) | 3-7/16 (87) | 6-1/4 (159) |

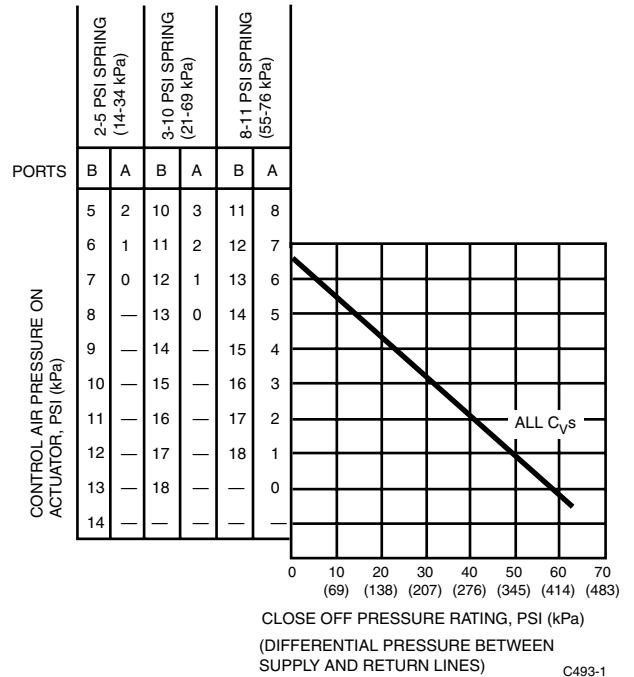
△ ALLOW 1-1/2 IN. (38 MM) MINIMUM CLEARANCE FOR REMOVING ACTUATOR. ALLOW 2-1/2 IN. (63 MM) TO FACILITATE STRAIGHT ON TUBING. IF CLEARANCE IS LESS THAN 2-1/2 IN. (63 MM), USE AN ELBOW.

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VP526 Typical Piping Diagram



Close-off Ratings for the VP526



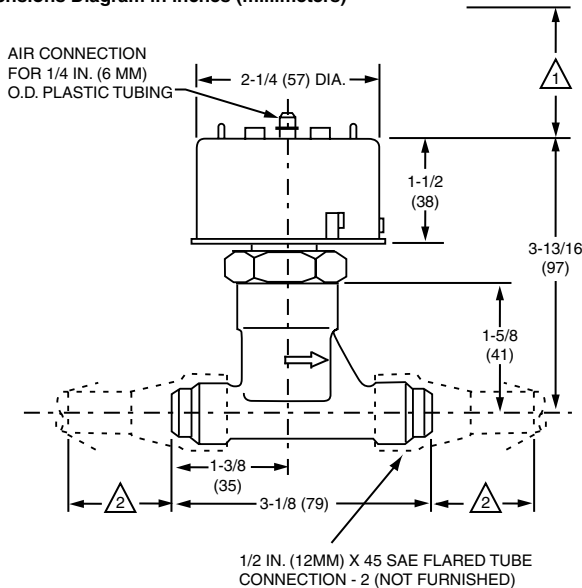
Pneumatic Valves

VP527 Pneumatic Water Valve



Body Pattern: Two-way
Valve Action: Proportional Normally Open
Valve Type: Unitary
Connection Type: 45 deg. SAE flare
Body Pressure (psi): 250 psi
Body Pressure (kPa): 1724 kPa
Maximum Diaphragm Pressure (psi): 30 psi
Maximum Diaphragm Pressure (kPa): 205 kPa
Dimensions: 4 1/8 in. high x 3 1/8 in. wide (105 mm high x 79 mm wide)
Temperature Range: 35°F to 250°F; Maximum Safe Actuator Diaphragm Temperature – 230°F (2°C to 121°C; Maximum Safe Actuator Diaphragm Temperature – 110°C)
Air Connections: Push on for 1/4 in. O.D. plastic tubing
Controlled Fluid: Water
Operating Humidity Range (% RH): 5 to 95% RH

Dimensions Diagram in inches (millimeters)



△ ALLOW 1-1/2 IN. (38 MM) MINIMUM CLEARANCE TO SERVICE VALVE, 2-1/2 IN. (63 MM) CLEARANCE TO CONNECT TUBING STRAIGHT TO CONNECTOR. IF CLEARANCE IS LESS THAN 2-1/2 IN. (63 MM), USE AN ELBOW CONNECTOR.

△ ALLOW 1-3/8 IN. (35 MM) MINIMUM CLEARANCE TO REMOVE VALVE.

M18348A

Normally open, single-seated, high pressure valve, provides proportional control of hot/cold water in air conditioner and fan coil units. Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Small size permits installation where space is limited.
- Forged brass, straight-through body with end connections threaded for 45 degrees SAE flare fitting nuts.
- Spring-loaded, self-adjusting, Buna-N "V"-ring packing is replaceable without shutting system down.
- High-temperature rolling diaphragm actuator (aluminum cover) and high-temperature plastic diaphragm retaining cup with integral air connection for 1/4 in. (6 mm) O.D. plastic tubing.
- Integral seat and brass plug with removable composition disc provides equal percentage flow.
- Stainless steel stem, 3/16 in. (5 mm) diameter.

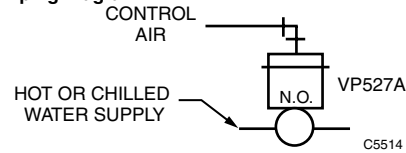
Accessories

- 14003648-001/U** – Vandalism Resistant Assembly, Cover assembly with 1/8 in. NPT air Connection and push-in retainer to replace standard Cover
14004932-001/U – Pneumatic Valve Adapter (M6410/M7410 linkage and a green main spring to allow to retrofit an electric actuator)

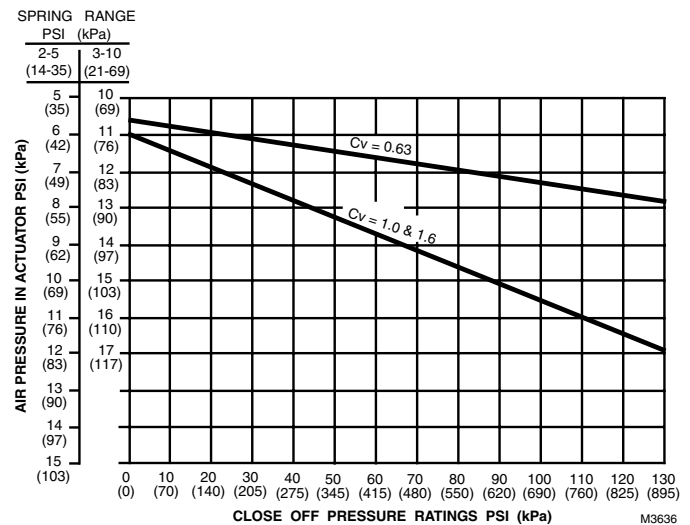
Replacement Parts

- 14003102-001/U** – Replacement Top Assembly
14003297-001/U – Valve repack kit for VP526A, VP527A, or VP531A valves with 3/16 inch stem
14003475-001/U – Valve rebuild kit for 1/2 in. valve with 0.4 or 0.63 Cv
14003476-001/U – Valve rebuild kit for 1/2 in. valve with 1 or 1.6 Cv
315917/U – Diaphragm

VP527 Typical Piping Diagram



Close-off Ratings vs. Control Air Pressure



| Material Number | Connection Size (in.) | Capacity (Cv) | Capacity (Kv) | Close-off Ratings at Branch Line Pressure | Spring Range (psi) | Spring Range (kPa) |
|-----------------|---------------------------------|---------------|---------------|---|--------------------|--------------------|
| VP527A1018/U | O.D.: 1/2 in.; Nominal: 3/8 in. | 0.63 Cv | 0.54 Kv | 130 psid at 13 psi | 3 psi to 10 psi | 21 kPa to 69 kPa |
| VP527A1026/U | O.D.: 1/2 in.; Nominal: 3/8 in. | 1.0 Cv | 0.86 Kv | 45 psid at 13 psi | 3 psi to 10 psi | 21 kPa to 69 kPa |
| VP527A1034/U | O.D.: 1/2 in.; Nominal: 3/8 in. | 1.6 Cv | 1.38 Kv | 45 psid at 13 psi | 3 psi to 10 psi | 21 kPa to 69 kPa |
| VP527A1059/U | O.D.: 1/2 in.; Nominal: 3/8 in. | 0.63 Cv | 0.54 Kv | 130 psid at 8 psi | 2 psi to 5 psi | 14 kPa to 34 kPa |
| VP527A1067/U | O.D.: 1/2 in.; Nominal: 3/8 in. | 1.0 Cv | 0.86 Kv | 45 psid at 8 psi | 2 psi to 5 psi | 14 kPa to 34 kPa |
| VP527A1075/U | O.D.: 1/2 in.; Nominal: 3/8 in. | 1.6 Cv | 1.38 Kv | 45 psid at 8 psi | 2 psi to 5 psi | 14 kPa to 34 kPa |

VP531C Pneumatic Terminal Unit Valve



Body Pattern: Two-way
Spring Range (psi): 2 psi to 5 psi
Spring Range (kPa): 14 kPa to 34 kPa
Valve Action: Proportional Normally Open
Valve Type: Unitary
Body Pressure (psi): 150 psi
Body Pressure (kPa): 1034 kPa
Maximum Diaphragm Pressure (psi): 30 psi
Maximum Diaphragm Pressure (kPa): 205 kPa
Temperature Range: 40°F to 240°F (140°F max difference, alternating hot and cold water service); Maximum Safe Actuator Diaphragm Temperature – 230°F (4°C to 116°C [78 K max difference, alternating hot and cold water service]; Maximum Safe Actuator Diaphragm Temperature – 110°C)
Air Connections: Push on for 1/4 in. O.D. plastic tubing
Controlled Fluid: Water, Steam
Operating Humidity Range (% RH): 5 to 95% RH
Includes: 3-10 psi spring is packed in box
Close-off Ratings at Branch Line Pressure: 70 psid at 20 psi (with 2 to 5 psi spring)

Normally-open, single-seated valve provides proportional control of steam or hot or cold water in terminal units. Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Available in several capacities and spring ranges for various application requirements.
- Easily replaceable actuator assembly for convenience of service.
- Compact size for use inside most unit enclosures.

Accessories

- 14003648-001/U** – Vandalism Resistant Assembly, Cover assembly with 1/8 in. NPT air Connection and push-in retainer to replace standard Cover
- 14004932-001/U** – Pneumatic Valve Adapter (M6410/M7410 linkage and a green main spring to allow to retrofit an electric actuator)

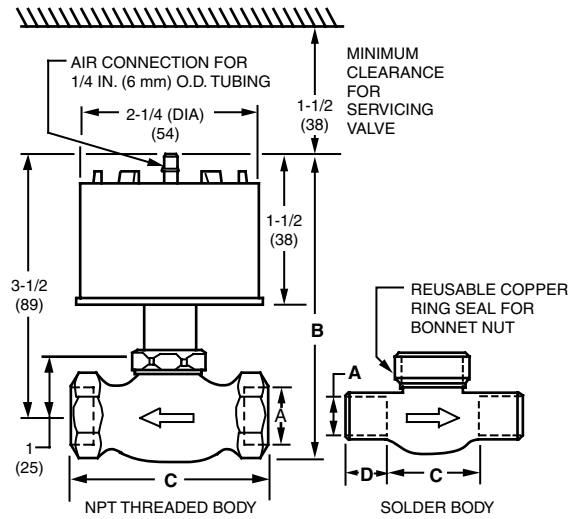
Replacement Parts

- 14002560-010/U** – Repair stem assembly, 1.6 Cv VP531C or to Upgrade, 1.6 Cv VP531A
- 14002560-011/U** – Repair stem assembly for 2.6 Cv VP531C or to Upgrade 2.6 Cv VP531A
- 14002560-012/U** – Repair stem assembly for 3.3 Cv VP531C or to Upgrade 3.3 Cv VP531A
- 14003102-001/U** – Replacement Top Assembly
- 14003297-002/U** – Teflon packing kit for VP531C or VP531A upgrade valves
- 14004898-001/U** – Repair Top & Insert for NPT and Solder body, 1.6 Cv VP531C or to upgrade NPT and solder body, 1.6 Cv VP531A
- 14004898-002/U** – Repair Top & Insert for NPT and Solder body, 2.3 and 2.6 Cv VP531C or to upgrade NPT and solder body, 2.3 and 2.6 Cv VP531A
- 14004898-003/U** – Repair Top & Insert for NPT and Solder body, 3.3 Cv VP531C or to upgrade NPT and solder body, 3.3 Cv VP531A
- 315913/0041/U** – Orange Spring, 3 to 10 psi for VP525, VP526, VP527, VP531
- 316026/U** – Yellow Spring, 8-11 psi
- 316027/0042/U** – Green Spring, 2 to 5 psi

| Material Number | Connection Type | Connection Size (in.) | Capacity (Cv) | Capacity (Kv) | Dimensions | Comments |
|-----------------|-----------------|-----------------------|---------------|---------------|--|---|
| VP531C1000/U | NPT | 1/2 in. | 1.6 Cv | 1.38 Kv | Pipe centerline to top of actuator: 3 1/2 in. Face-to-face: 2 9/32 in. (Pipe centerline to top of actuator: 89 mm; Face-to-face: 58 mm) | Replacement for VP531A1004 and VP531A1012 |
| VP531C1018/U | NPT | 3/4 in. | 2.6 Cv | 2.24 Kv | Pipe centerline to top of actuator: 3 1/2 in. Face-to-face: 2 13/32 in. (Pipe centerline to top of actuator: 89 mm; Face-to-face: 61 mm) | Replacement for VP531A1046 and VP531A1053 |
| VP531C1026/U | NPT | 3/4 in. | 3.3 Cv | 2.85 Kv | Pipe centerline to top of actuator: 3 1/2 in. Face-to-face: 2 13/32 in. (Pipe centerline to top of actuator: 89 mm; Face-to-face: 61 mm) | Replacement for VP531A1061 and VP531A1079 |
| VP531C1034/U | Solder | Nominal: 1/2 in. | 1.6 Cv | 1.38 Kv | Pipe centerline to top of actuator: 3 1/2 in. Face-to-face: 2 21/32 in. (Pipe centerline to top of actuator: 89 mm; Face-to-face: 67 mm) | Replacement for VP531A1087 and VP531A1095 |
| VP531C1042/U | Solder | Nominal: 3/4 in. | 2.6 Cv | 2.24 Kv | Pipe centerline to top of actuator: 3 1/2 in. Face-to-face: 3 1/32 in. (Pipe centerline to top of actuator: 89 mm; Face-to-face: 77 mm) | Replacement for VP531A1103 and VP531A1111 |
| VP531C1059/U | Solder | Nominal: 3/4 in. | 3.3 Cv | 2.85 Kv | Pipe centerline to top of actuator: 3 1/2 in. Face-to-face: 3 1/32 in. (Pipe centerline to top of actuator: 89 mm; Face-to-face: 77 mm) | Replacement for VP531A1129 and VP531A1137 |
| VP531C1067/U | NPT | 1/2 in. | 2.3 Cv | 1.99 Kv | Pipe centerline to top of actuator: 3 1/2 in. Face-to-face: 2 9/32 in. (Pipe centerline to top of actuator: 89 mm; Face-to-face: 58 mm) | Replacement for VP531A1020 and VP531A1038 |

Pneumatic Valves

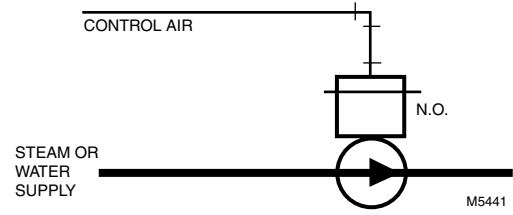
Dimensions Diagram in inches (millimeters)



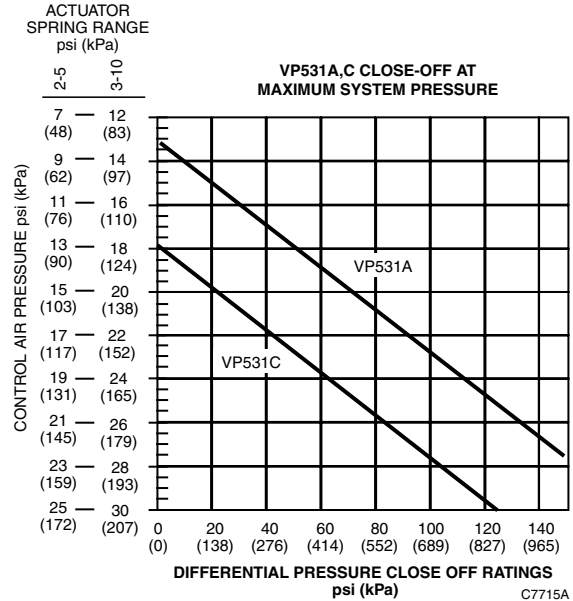
| BODY SIZE | A | B | C | D |
|-----------------------------------|---------------------------------------|------------------------|-----------------------|--------------------|
| 1/2 IN. NPT (1.6 OR 2.3 CV) | 1/2 IN. PIPE | 4-1/8 IN. (104 MM) | 2-9/32 IN. (58 MM) | - |
| 3/4 IN. NPT (2.6 OR 3.3 CV) | 3/4 IN. PIPE | 4-3/16 IN. (106 MM) | 2-7/16 IN. (61 MM) | - |
| 1/2 IN. SOLDER (1.6 CV) | 5/8 IN. (16 MM) O.D. COPPER TUBING | 4-1/8 IN. (104 MM) | 1-5/8 IN. (41 MM) | 1/2 IN. (13 MM) |
| 3/4 IN. SOLDER (2.6 OR 3.3 CV) | 7/8 IN. (22 MM) O.D. COPPER TUBING | 4-3/16 IN. (106 MM) | 1-1/2 IN. (38 MM) | 3/4 IN. (19 MM) |

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VP531C Pneumatic Terminal Unit Valve



Close-off Ratings for the VP531C



Pneumatic Valve Accessories

| Material Number | Description | Used With |
|-----------------|--|---------------------------------|
| 14002864-001/U | Valve Rebuild Kit for 1/2 to 3/4 in. valves with CV of 4 or less | VP512 |
| 14003102-001/U | Replacement Top Assembly | VP527,VP531,VP526,VP525 |
| 14003115-001/U | Valve rebuild kit for 1/2 in. valves with 2 Cv or less. Not for Solder Bodies. | VP525A |
| 14003116-001/U | Valve rebuild kit for 3/4 in. valves with 2 Cv or less valves. Not for Solder Bodies. | VP525A |
| 14003117-001/U | Valve rebuild kit for 3/4 in. valves with 3 Cv. Not for Solder Bodies. | VP525A |
| 14003118-001/U | Valve rebuild kit for 3/4 in. valves with 5 Cv. Not for solder bodies. | VP525A |
| 14003119-001/U | Valve rebuild kit for 1/2 in. valves with 3 Cv. Not for solder bodies. | VP525A |
| 14003313-001/U | Base | VP527A,VP526A,VP531A,C,VP525A,C |
| 14003315-001/U | Gland | VP527A,VP526A,VP531A,C,VP525A,C |
| 14003373-001/U | REP BONNET ASSEMBLY | VP513A |
| 14003381-001/U | Brass Hex Bonnet, 1 3/8 diameter | VP527A,VP526A |
| 14003648-001/U | Vandalism Resistant Assembly, Cover assembly with 1/8 in. NPT air Connection and push-in retainer to replace standard Cover | VP527A,VP526A,VP531A,C,VP525A,C |
| 14003873-001/U | Red Spring, 2 to 5 psi | VP526A |
| 14004932-001/U | Pneumatic Valve Adapter (M6410/M7410 linkage and a green main spring to allow to retrofit an electric actuator) | VP525,VP527,VP531 |
| 312817AA/U | Actuator Assembly, 3 to 8 psi, 21 to 55 kPa, and 1/2 in. stroke. | VP517,VP513,VP512 |
| 312817AB/U | Actuator Assembly, 6 to 11 psi, 41 to 76 kPa and 1/2 in. stroke. | VP512,VP517,VP513 |
| 312817T/U | Actuator assembly, 3 to 10 psi, 21 to 69 kPa, and 1/2 in. stroke. | VP517A,VP513A |
| 312817U/U | Actuator Assembly, 3 to 7 psi, 21 to 48 kPa, and 1/2 in. stroke. | VP517A,VP513A |
| 312817V/U | Actuator Assembly, 8 to 12 psi, 55 to 83 kPa, and 1/2 in. stroke. | VP513 |
| 312817W/U | Actuator for VP522B1003 | VP522B1003 |
| 312817Y/U | Actuator assembly for VP522B1011 and VP522B1029 | VP522B1011,VP522B1029 |
| 313241A/U | Disc holder for VP513A | VP513A |
| 313824A/U | Rebuild Kit, include Stem and Disc Holder, Button with Screw, Packing and instruction, VP522A1005 | VP522A1005 |
| 314459A/U | Rebuild Kit, include Stem and Disc Holder, Button with Screw, Packing and instruction, VP522A1039 | VP522A1039 |
| 314459B/U | Rebuild kit, includes stem and disc holder, Button with screw, packing and instructions, VP522A1047 | VP522A1047 |
| 315407A/U | Rebuild kit, include Stem and Disc holder, button with screw, packing and instruction, VP522B1003 | VP522B1003 |
| 316027/0042/U | Green Spring, 2 to 5 psi | VP525 VP527 VP531 |
| 316027-00042 | Green Spring, 2 to 5 psi | VP525 VP527 VP531 |
| CCT3833/U | Valve Seat Removal Wrench for 5/8 in. OD (1/2 in. nominal) and 7/8 in. OD (3/4 in.nominal) VP513B; VP517A; VP522A, B; VP526 Valves | VP522A, B,VP517A,VP513B,VP526 |
| CCT3843/U | Valve Seat Removal Wrench for 1/2 in. OD (3/8 in. nominal) VP522; VP526 Valves | VP526,VP522 |

Pneumatic Valves

Pneumatic Valve Replacement Parts


| Material Number | Description | Used With |
|-----------------|---|------------------------------------|
| 14000639-001/U | WASHER | VP526 |
| 14001046-004/U | Fastener | VP527A,VP526A,VP531A,C,VP525A,C |
| 14002560-002/U | Stem and Disk Assembly | VP527A1018,VP527A1059 |
| 14002560-004/U | Stem and Disk Assembly | VP527A1034,VP527A1075 |
| 14002560-006/U | Stem and Disk Holder Assembly. For 0.63 Cv VP525 Valve | VP525 |
| 14002560-007/U | Repair stem assembly for 1/2 inch, 2.0 Cv VP525C or to Upgrade, 2.0 Cv VP525A | VP525A,VP525C |
| 14002560-008/U | Repair stem assembly for 1/2 and 3/4 inch, 3.0 Cv VP525C or to Upgrade 1/2 and 3/4 inch, 3.0 Cv VP525A | VP525C,VP525A |
| 14002560-009/U | Repair stem assembly for 3/4 inch, 5.0 Cv VP525C or to Upgrade, 5.0 Cv VP525A | VP525C,VP525A |
| 14002560-010/U | Repair stem assembly, 1.6 Cv VP531C or to Upgrade, 1.6 Cv VP531A | VP531A,VP531C |
| 14002560-011/U | Repair stem assembly for 2.6 Cv VP531C or to Upgrade 2.6 Cv VP531A | VP531C,VP531A |
| 14002560-012/U | Repair stem assembly for 3.3 Cv VP531C or to Upgrade 3.3 Cv VP531A | VP531C,VP531A |
| 14002560-013/U | Repair stem assembly for 1/2 inch, 0.63 Cv VP525C or to Upgrade, 0.63 Cv VP525A | VP525C,VP525A |
| 14002863-001/U | Valve Rebuild Kit for 3/4 to 1 1/4 in valves with CV of 6.3 or 10 | VP512 |
| 14003297-001/U | Valve repack kit for VP526A, VP527A, or VP531A valves with 3/16 inch stem | VP527A,VP526A,VP531A |
| 14003297-002/U | Teflon packing kit for VP531C or VP531A upgrade valves | VP531C,VP531A |
| 14003299-001/U | Repair Top & Insert for 5/8 in. OD, 1.6 Cv VP525A solder body | VP525A |
| 14003300-001/U | Repair Top & Insert for 7/8 in. OD, 2.5 Cv VP525A solder body | VP525A |
| 14003308-001/U | Valve Bonnet | VP531C,VP531A |
| 14003314-001/U | 1 1/4 inch hex stainless steel Bonnet nut, Finish zinc plate with Dichromate treatment. | VP531C,VP531A |
| 14003352-001/U | Seal washer, 1 1/64 outside diameter X 7/8 inside diameter | VP531C,VP531A |
| 14003382-001/U | Brass Hex Bonnet 1-1/2 in. diameter | VP525C,VP526A |
| 14003475-001/U | Valve rebuild kit for 1/2 in. valve with 0.4 or 0.63 Cv | VP527A |
| 14003476-001/U | Valve rebuild kit for 1/2 in. valve with 1 or 1.6 Cv | VP527A |
| 14004897-001/U | Repair Top & Insert for 1/2 inch NPT, 0.63 Cv VP525C or to upgrade 1/2 NPT, 0.63 Cv VP525A | VP525C,VP525A |
| 14004897-002/U | Repair Top & Insert for 1/2 inch NPT, 2.0 Cv VP525C or to upgrade 1/2 NPT, 2.0 Cv VP525A | VP525C,VP525A |
| 14004897-003/U | Repair Top & Insert for 3/4 inch NPT, 3.0 Cv VP525C or to upgrade 3/4 NPT, 3.0 Cv VP525A | VP525C,VP525A |
| 14004897-004/U | Repair Top & Insert for 3/4 inch NPT, 5.0 Cv VP525C or to upgrade 3/4 NPT, 5.0 Cv VP525A | VP525C,VP525A |
| 14004898-001/U | Repair Top & Insert for NPT and Solder body, 1.6 Cv VP531C or to upgrade NPT and solder body, 1.6 Cv VP531A | VP531C,VP531A |
| 14004898-002/U | Repair Top & Insert for NPT and Solder body, 2.3 and 2.6 Cv VP531C or to upgrade NPT and solder body, 2.3 and 2.6 Cv VP531A | VP531C,VP531A |
| 14004898-003/U | Repair Top & Insert for NPT and Solder body, 3.3 Cv VP531C or to upgrade NPT and solder body, 3.3 Cv VP531A | VP531C,VP531A |
| 310135/U | Packing Spring, 1 Required | VP513A,B,VP522A,B |
| 310137/U | Spacer for VP513 or VP517 Valves | VP513A,B,VP522A,B |
| 310143/U | Black Packing, 3 required | VP513A,B,VP522A,B |
| 310208/U | White Packing (3 required per valve) | VP531C, VP525C |
| 312826/U | O-RING | |
| 313102/U | Disc for VP513A Valves | VP513A |
| 313744A/U | Actuator Replacement Assembly for the VP519 Valve | VP519C |
| 314526/U | Orange Spring with Blue stripe, 3 to 10 psi, 1/2 in. stroke | 312817T,VP513A,VP517A |
| 315911/0021/U | Cup with keyhole for VP525, VP526, VP527, VP531 | VP527A VP526A VP531A,C VP525A,C |
| 315911-00021 | Cup for VP525 | VP525 |
| 315913/0041/U | Orange Spring, 3 to 10 psi for VP525, VP526, VP527, VP531 | VP527A VP526A VP531A,C VP525A,C |
| 315917/U | Diaphragm | VP527A,VP526A,VP531A,C,VP525A,C |
| 315939/U | Spring | VP513B |
| 316026/U | Yellow Spring, 8-11 psi | VP526A |
| 316207/U | Stem for VP526A | VP526A |
| 316208/U | VALVE SEAT | VP526A |
| 316209/U | Plug 1.0 Cv | VP526A |
| 316210/U | Plug for VP526 | VP526A1118, VP526A1076, VP526A1092 |
| 316336/U | DISC | VP527A1026,VP527A1067 |
| 320047/U | RETAINING RING | VP526A |

Gauges for Pneumatics

| Material Number | Description |
|-----------------|--|
| 14004904-001/U | 2-1/2 in. diameter, typical panel mount Pneumatic Receiver gauge (-40 to 160°F), +/- 2% accuracy. Replaces 14506495-001 (gauge) + 14505846-001 |
| 14004904-002/U | 2-1/2 in. diameter, typical panel mount Pneumatic Receiver gauge (0 to 200°F), +/- 2% accuracy. Replaces 4506495-001 (gauge) + 14505846-002 |
| 14004904-003/U | 2-1/2 in. diameter, typical panel mount Pneumatic Receiver gauge (40 to 240°F), +/- 2% accuracy. Replaces 14506495-001 (gauge) + 14505846-003 |
| 14004904-004/U | 2-1/2 in. diameter, typical panel mount Pneumatic Receiver gauge (3 to 15 psi), +/- 2% accuracy. Replaces 14506495-001 (gauge) + 14505846-022 |
| 14004904-005/U | 2-1/2 in. diameter, typical panel mount Pneumatic Receiver gauge (0 to 20 psi), +/- 2% accuracy. Replaces 14506495-001 (gauge) + 14505846-023 |
| 14004904-006/U | 2-1/2 in. diameter, typical panel mount Pneumatic Receiver gauge (25 to 125°F), +/- 2% accuracy. Replaces 14506495-001 (gauge) + 14505846-004 |
| 14004904-007/U | 2-1/2 in. diameter, typical panel mount Pneumatic Receiver gauge (50 to 100°F), +/- 2% accuracy. Replaces 14506495-001 (gauge) + 14505846-005 |
| 14004904-008/U | 2-1/2 in. diameter, Pneumatic Receiver gauge (-20 to 80°F), +/- 2% accuracy |
| 14004904-011/U | 2-1/2 in. diameter, Pneumatic Receiver gauge (15 to 75% RH), +/- 2% accuracy |
| 14004904-101/U | 2-1/2 in. diameter, Pneumatic Receiver gauge (-40 to 160°F), +/- 1% accuracy. Replaces 14506495-101 (gauge) + 14505846-001 |
| 14004904-102/U | 2-1/2 in. diameter, Pneumatic Receiver gauge (0 to 200°F), +/- 1% accuracy. Replaces 14506495-101 (gauge) + 14505846-002 |
| 14004904-103/U | 2-1/2 in. diameter, Pneumatic Receiver gauge (40 to 240°F), +/- 1% accuracy. Replaces 14506495-101 (gauge) + 14505846-003 |
| 14004904-104/U | 2-1/2 in. diameter, Pneumatic Receiver gauge (3 to 15 psi), +/- 1% accuracy. Replaces 14506495-101 (gauge) + 14505846-022 |
| 14004904-105/U | 2-1/2 in. diameter, Pneumatic Receiver gauge (0 to 20 psi), +/- 1% accuracy. Replaces 14506495-101 (gauge) + 14505846-023 |
| 14004905-001/U | 3-1/2 in. diameter, Pneumatic Receiver gauge (-40 to 160°F), +/- 2% accuracy |
| 14004905-002/U | 3-1/2 in. diameter, Pneumatic Receiver gauge (0 to 200°F), +/- 2% accuracy. Replaces 14506496-001 (gauge) + 14505846-102 |
| 14004905-003/U | 3-1/2 in. diameter, Pneumatic Receiver gauge (40 to 240°F), +/- 2% accuracy. Replaces 14506496-001 (gauge) + 14505846-103 |
| 14004905-006/U | 3-1/2 in. diameter, Pneumatic Receiver gauge (25 to 125°F), +/- 2% accuracy. Replaces 14506496-001 (gauge) + 14505846-104 |
| 14004905-007/U | 3-1/2 in. diameter, Pneumatic Receiver gauge (50 to 100°F), +/- 2% accuracy. Replaces 14506496-001 (gauge) + 14505846-105 |
| 14004905-009/U | 3-1/2 in. diameter, Pneumatic Receiver gauge (0 to 2 in. wc), +/- 2% accuracy |
| 14004905-010/U | 3-1/2 in. diameter, Pneumatic Receiver gauge (15 to 85% RH), +/- 2% accuracy |
| 14004905-011/U | 3-1/2 in. diameter, Pneumatic Receiver gauge (15 to 75% RH), +/- 2% accuracy |
| 14004905-101/U | 3-1/2 in. diameter, Pneumatic Receiver gauge (-40 to 160°F), +/- 1% accuracy. Replaces 14506496-101 (gauge) + 14505846-101 |
| 14004905-102/U | 3-1/2 in. diameter, Pneumatic Receiver gauge (0 to 200°F), +/- 1% accuracy. Replaces 14506496-101 (gauge) + 14505846-102 |
| 14004905-103/U | 3-1/2 in. diameter, Pneumatic Receiver gauge (40 to 240°F), +/- 1% accuracy. Replaces 14506496-101 (gauge) + 14505846-103 |
| 14004905-104/U | 3-1/2 in. diameter, Pneumatic Receiver gauge (3 to 15 psi), +/- 1% accuracy. Replaces 14506496-101 (gauge) + 14505846-122 |
| 14004905-105/U | 3-1/2 in. diameter, Pneumatic Receiver gauge (0 to 20 psi), +/- 1% accuracy. Replaces 14506496-101 (gauge) + 14505846-123 |
| 14004905-106/U | 3-1/2 in. diameter, Pneumatic Receiver gauge (25 to 125°F), +/- 1% accuracy. Replaces 14506496-101 (gauge) + 14505846-104 |
| 14004905-107/U | 3-1/2 in. diameter, Pneumatic Receiver gauge (50 to 100°F), +/- 1% accuracy. Replaces 14506496-101 (gauge) + 14505846-105 |
| 305914/U | 2 in. diameter, 1/8 NPT center stem back mount Pressure Indicating gauge (0 to 30 psi scale) with +/- 3% accuracy |
| 305917/U | 2 in. diameter, 1/4 NPT center stem back mount Pressure Indicating gauge (0 to 160 psi scale) with +/- 3% accuracy |
| 305923/U | 1-1/2 in. diameter, 1/8 NPT stem on bottom mount Pressure Indicating gauge (0 to 30 psi scale) with +/- 4% accuracy |
| 305925/U | Gauge, 0-30 PSI, 2 in., 1/8 in. NPT |
| 305935/U | 3-1/2 in. diameter, surface mounted 1/8 NPT stem on bottom Receiver gauge (-40 to +160°F scale) with +/- 2% accuracy |
| 804191B/U | 2-1/2 in. diameter, panel-mounted Pneumatic Pressure Indicating Gauge (0 to 30 psi), 1/4 in. barbed connection, +/-3% accuracy |
| 804191C/U | 2-1/2 in. diameter, panel-mounted Pneumatic Pressure Indicating Gauge (0 to 60 psi), 1/8 in. NPT connection, +/-3% accuracy |
| 804191E/U | 2-1/2 in. diameter, panel-mounted Pneumatic Pressure Indicating Gauge (0 to 160 psi), 1/8 in. NPT connection, +/-3% accuracy |

Pneumatic Accessories










Pneumatic Accessories

| Material Number | Description | Used With | |
|-----------------|--|--------------------|---|
| 104998064 | Internal Restriction Assembly, 0.008 in. Restriction, Red | | |
| 14002913-003/U | External Restriction Assembly. 0.007 in. Restriction, Red, Inlet 1/4 in; Outlet 1/4 in. and 5/32 in. | LP907 | |
| 14002913-004/U | External Restriction Assembly. 0.005 in. Restriction, Blue Inlet 1/4 in; Outlet 5/32 in. and 5/32 in. | | |
| 14002913-005/U | External Restriction Assembly. 0.007 in. Restriction, Red Inlet 1/4 in; Outlet 5/32 in. and 5/32 in. | | |
| 14002913-007/B | External Restriction Assembly. 0.013 in. Restriction, Gray and Red, Inlet 1/4 in; Outlet 1/4 in. and 1/4 in. | | |
| 14002914-001/B | Internal Restriction Assembly, 0.005 in. Restriction, Blue | RP975; SP970 | |
| 14003349-001/U | Body assembly., Includes: plate - 14003346-001, gasket - 314862, body assembly - 14003342-001, bellows assembly - 314446A, gasket - 314921, gasket - 14003343-001, plate - 14003344-001, 2 washers - 304570, plate (nozzle) - 314501, 2 screws - 304897, cover | PP905 | |
| 14003428-001/U | Amber tint filter bowl 4 1/64 inch long x 2 59/64 inch diameter including Bushing (313003) | WP251A | |
| 14003519-001/U | 0-30 psi Gauge Kit with Fittings for Copper or Poly Tubing | | |
| 14003567-001/U | Barbed cap with liner of low density polyethylene | 14002913 | |
| 14004239-001/U | Total air flow pick-up Tube assembly | PP904A | |
| 14004536-001/U | Music wire Spring with inside diameter .385 inch and initial load at length - 2.9 +/- 0.3 lbs. Maximum operating temperature 150°F. | PP901 | |
| 14004559-001/B | Adaptor assemblies consisting of 5/32 in. tube and 5/32 to 1/4 barb fitting for TP970 connections | Pneumatic Fittings | |
| 14004596-004/U | 1 1/4 in. Bonnet for V5011/V5013 | V5011; V5013 | |
| 14501547-001/U | ISD Central relay panel | | |
| 14501600-001/U | Resistor Assembly PPK, End of Line Resistor, 1.91K Ohms Single Zone Fire Alarm Panels | | |
| 14501600-003/U | | | |
| 14502412-005/U | Lightning Suppressor for Lighting Products | | |
| 14502412-006/U | | | |
| 14502412-009/U | | | |
| 14502412-010/U | | | |
| 14502412-011/U | | | |
| 14502412-012/U | | | |
| 14502412-014/U | | | |
| 14505159-001/U | Tamper Switch for Cabinet | | |
| 14505393-001/U | Isolation Transformer, 24V / 50-60 Hz | | |
| 14505928-001/U | Lock & Key for Cabinet | | |
| 14506587-004/U | Base for TC804, TC805 Smoke Detector | | |
| 14506635-001/U | Rough-in Ring, for Half-sized (18 in. x 18 in.) Standard Cabinet (19 in. X 24 in. X 9 in.). | | |
| 14506635-002/U | Rough-in Ring for Full-sized (36 in. x 36 in.) Standard Cabinet (38 in. x 24 in. x 9 in.). | | |
| 14506636-001/U | Door with Lock for Half-sized (18 in. x 18 in.) Standard Cabinet. | | |
| 14506636-002/U | Door with Lock for Full-sized (36 in. x 36 in.) Standard Cabinet. | | |
| 15753207-004/U | Back Coverplate for Half-sized (18 in. x 18 in.) Standard Cabinet. | | |
| 176112024 | Three position switch, same as SP470A1018 without the scaleplate | SP470A1018 | |
| 186115138 | Internal Restriction Assembly, 0.013 in. Restriction, Gray | | |
| 200813A/U | Motor Plate assembly for F57 | F57 | |
| 301572A/0767/U | Thermostat Key | | |
| 301572A-0767 | | | |
| 310418A/U | Pneumatic External Adjustable Restrictor | |  |
| 310543/U | Seat, Valve, Removable, V5005 | | |
| 311680/U | Plug, Orifice, Rubber, TP, LP thermostats | | |
| 314963/U | Spring | | |
| 315559E/U | Pneumatic "Tee" Restrictor | | |
| 316134B/U | PP901A & B Diaphragm Repair Kit | PP901A,B | |
| 40889086-003/U | Half Size Door Assembly | | |
| 40889096-002/U | Universal Cabinet with Locking Device | | |
| 802550/U | Toggle Switch | | |











Pneumatic Accessories

| Material Number | Description | Used With | |
|-----------------|---|-----------|---|
| AK3052W1C/U | Pneumatic Tubing, Polyethylene Flame Retardant Plastic (5/32 in. O.D. x 0.030 in. wall thickness), Minimum order quantity is 1000 ft.; ships in 4 rolls of 250 ft. per roll. | | |
| AK3053W1C/U | Pneumatic Tubing, Polyethylene Flame Retardant Plastic (1/4 in. O.D. x 0.040 in. wall thickness), Black with Colored Markings, without Fittings, Minimum order quantity is 1000 ft.; ships in 4 rolls of 250 ft. per roll | | |
| AK3056C/U | Pneumatic Tubing, Polyethylene Flame Retardant Plastic (3/8 in. O.D. x 0.062 in. wall thickness), Black with 1 through 2 White Markings, without Fittings, Carton qty = 1000 ft | | |
| AK3061C/U | Pneumatic Tubing, Polyethylene Flame Retardant Plastic (1/2 in. O.D. x 0.062 in. wall thickness), Black with 1 through 2 White Markings, without Fittings, Carton qty = 500 ft | | |
| AK3325A/U | Repair Kit Miscellaneous Cable | | |
| AK3470B/U | Condensate Trap, 1/2 in., for 1 h.p. or larger compressors | |  |
| AK3470C/U | Condensate Trap, 3/8 in., for 3/4 h.p. or smaller compressors | | |
| AK3486/U | Coalescing In-line Pneumatic Filter Kit includes Two Filters with integral barbed fitting for individual devices | | |
| ARR262/U | Miniature Pressure Regulator (0-125 psi Range), no gauge | |  |
| ARR262I/U | Miniature Pressure Regulator (0-20 psi Range), no gauge | | |
| ARR262-S31/U | Miniature Pressure Regulator (0-125 psi Range), includes 0-160 psi gauge | | |
| ARR262-S32/U | Miniature Pressure Regulator (0-60 psi Range), includes 0-60 psi gauge | | |
| ARR262-S34/U | Arrow PRV 0-60 | | |
| ARRBK1611/U | Arrow PRV | | |
| CCT1421/U | 1/4 in. Brass Compression Union | | |
| CCT1435T/U | Pneumatic Fitting - 1/4 in. x 1/8 in. NPT Brass Compression Adapter to NPT | |  |
| CCT1529/U | Pneumatic Fitting - 1/4 in. Brass Compression Tee | |  |
| CCT1531/U | Pneumatic Fitting - 3/8 in. Brass Compression Tee | | |
| CCT1532/U | Pneumatic Fitting - 1/2 in. Brass Compression Tee | | |
| CCT1571/U | Pneumatic Fitting - 1/4 in. Plastic Ferrule (white) for use with plastic tubing and standard compression fittings | |  |
| CCT1572/U | Pneumatic Fitting - 3/8 in. Plastic Ferrule (white) for use with plastic tubing and standard compression fittings | | |
| CCT1573/U | Pneumatic Fitting - 1/2 in. Plastic Ferrule (white) for use with plastic tubing and standard compression fittings | | |
| CCT1575/U | Pneumatic Fitting - 1/4 in. Brass Insert for Plastic Tubing | |  |
| CCT1576/U | Pneumatic Fitting - 3/8 in. Brass Insert for Plastic Tubing | | |
| CCT1577/U | Pneumatic Fitting - 1/2 in. Brass Insert for Plastic Tubing | | |
| CCT1589B/U | Pneumatic Fitting - 1/4 in. x 1/8 in. FPT 90 Barbed Female Street Ells | |  |

Pneumatic Accessories

| Material Number | Description | Used With | |
|-----------------|--|-----------|---|
| CCT1590BT/U | Pneumatic Fitting - 1/4 in. Barbed x 1/8 in. NPT Male Adapter, Taped | |  |
| CCT1594B/U | Pneumatic Fitting - 1/4 in. Barbed x 1/8 in. FPT Female Adapter | |  |
| CCT1595BT/U | Pneumatic Fitting - 1/4 in. barbed x 1/8 in. NPT 90 Barbed Male Street Ells | |  |
| CCT1598B/U | Pneumatic Fitting - 3/8 in. barbed x 3/8 in. barbed 90 Elbow | |  |
| CCT1599BT/U | Pneumatic Fitting - combination 5/32 in. and 1/4 in. Barbed x 1/8 in. NPT Male Adapter | |  |
| CCT1602/U | Pneumatic Fitting - In-line gauge Tee (5/32 in. barbed x 5/32 in. barbed x 1/8 in. FPT) | |  |
| CCT1606B/U | Pneumatic Fitting - 5/32 in. barbed x 1/4 in. barbed (brass) plastic tubing coupling, reducing | |  |
| CCT1607B/U | Pneumatic Fitting - 1/4 in. barbed x 1/4 in. barbed (brass) plastic tubing coupling | | |
| CCT1608B/U | Pneumatic Fitting - 3/8 in. barbed x 3/8 in. barbed (brass) plastic tubing coupling | | |
| CCT1610B/U | Pneumatic Fitting - 3/8 in. barbed x 1/4 in. barbed (brass) plastic tubing coupling | | |
| CCT1611B/U | Pneumatic Fitting - 1/2 in. barbed x 3/8 in. barbed (brass) plastic tubing coupling | | |
| CCT1612B/U | Pneumatic Fitting - 1/4 in. barbed x 1/4 in. barbed x 1/4 in. barbed (brass) Straight Tee | |  |
| CCT1613B/U | Pneumatic Fitting - 3/8 in. barbed x 3/8 in. barbed x 3/8 in. barbed (brass) Straight Tee | | |
| CCT1614B/U | Pneumatic Fitting - 1/4 in. barbed x 1/4 in. barbed x 1/8 in. FPT In-line gauge Tee | |  |

Pneumatic Accessories

| Material Number | Description | Used With | |
|-----------------|--|-----------|---|
| CCT1615B/U | Pneumatic Fitting - 3/8 in. barbed x 3/8 in. barbed x 1/4 in. barbed Reducing Tee | |  |
| CCT1616B/U | Pneumatic Fitting - 1/2 in. barbed x 1/2 in. barbed x 1/4 in. barbed Reducing Tee | | |
| CCT1617B/U | Pneumatic Fitting - 1/2 in. barbed x 1/2 in. barbed (brass) plastic tubing coupling | |  |
| CCT1618B/U | Pneumatic Fitting - 1/2 in. barbed x 1/2 in. barbed x 3/8 in. barbed Reducing Tee | |  |
| CCT1619B/U | Pneumatic Fitting - Bulkhead Barb, 1/4 in. barbed x 1/4 in. Compression Nuts (for panels 5/16 in. thick) | |  |
| CCT1620B/U | Pneumatic Fitting - 1/2 in. barbed x 1/2 in. barbed x 1/2 in. barbed (brass) Straight Tee | |  |
| CCT1622/U | Pneumatic Fitting - 1/4 in. barbed x 1/4 in. barbed x 1/8 in. FPT In-line gauge Tee with mounting tabs | |  |
| CCT1623/U | Pneumatic Fitting - 1/4 in. Spring Clamp for Pneumatic Tubing | |  |
| CCT1628B/U | Pneumatic Fitting - 5/32 in. barbed x 5/32 in. barbed (brass) plastic tubing coupling | |  |
| CCT1629B/U | Pneumatic Fitting - 1/2 in. barbed x 1/4 in. barbed (brass) plastic tubing coupling | | |
| CCT1630B/U | Pneumatic Fitting - 1/4 in. barbed x 1/4 in. barbed x 5/32 in. barbed Reducing Tee | |  |
| CCT1631B/U | Pneumatic Fitting - 3/8 in. barbed x 3/8 in. barbed x 5/32 in. barbed Reducing Tee | | |
| CCT1633BT/U | Pneumatic Fitting - 1/4 in. Barbed x 1/4 in. NPT Male Adapter | |  |








Pneumatic Accessories

| Material Number | Description | Used With | |
|-----------------|---|-----------|---|
| CCT1635B/U | Pneumatic Fitting - 1/4 in. barbed x 1/4 in. Compression Adapter | |  |
| CCT1637B/U | Pneumatic Fitting - 5/32 in. barbed x 5/32 in. barbed x 5/32 in. barbed (brass) Straight Tee | |  |
| CCT1640/U | Pneumatic Fitting - 1/4 in. Tubing Plug | |  |
| CCT1641/U | Pneumatic Fitting - 5/32 in. barbed x 5/32 in. Brass barbed 90 Elbow | |  |
| CCT1642/U | Pneumatic Fitting - 1/4 in. barbed x 1/4 in. barbed 90 Elbow | | |
| CCT1643/U | Pneumatic Fitting - 1/4 in. barbed x 5/32 in. barbed 90 Elbow | | |
| CCT1692T/U | Pneumatic Fitting - 1/4 in. NPT x 1/8 in. FPT (brass) Pipe Bushing, Taped | | |
| CCT1694T/U | Pneumatic Fitting - 3/8 in. NPT x 1/4 in. FPT Brass Reducing Pipe Bushing, Taped | |  |
| CCT1696T/U | Pneumatic Fitting - 1/2 in. NPT x 1/4 in. FPT Brass Reducing Pipe Bushing, Taped | | |
| CCT1801/U | Pneumatic Fitting - Rubber Cap for 1/4 in. O.D. Pneumatic Tubing | |  |
| CCT1802/U | Pneumatic Fitting - Rubber Grommet for 1/4 in. hole used to install capillary in duct | |  |
| CCT1807A/U | Plastic Cap for 3/8 in. Tubing | |  |
| CCT1815/U | Pneumatic Fitting - Aluminum Barb Plug for 5/32 in. x 5/32 in. O.D. Pneumatic Tubing (no air passage) | | |
| CCT1820/U | Plastic Bushing for 1/2 in. EMP or K.O. | |  |

Pneumatic Accessories

| Material Number | Description | Used With | |
|-----------------|---|-----------|---|
| CCT2083T/U | Pneumatic Fitting - Tank Valve with CCT2084 Cap, 1/8 in. NPT | |  |
| CCT2085/U | Pneumatic Fitting - Gauge Adapter fits any standard 1/8 in. NPT gauge | LP907 |  |
| CCT2090A/U | Air Check Diode Valve 1/4 in. O.D. Brass, 1.2 SCFM. | |  |
| CCT2091/U | Pneumatic Fitting - Air Check Diode Valve FPT for 1/4 in. O.D. Pneumatic Tubing (4.4 scfm) | |  |
| CCT2092/U | Pneumatic Fitting - Air Check Diode Valve FPT for 3/8 in. O.D. Pneumatic Tubing (7.5 scfm) | | |
| CCT2127B/U | Pneumatic Fittings - 1/4 in. barbed x 1/4 in. barbed Pneumatic Needle Valve | |  |
| CCT2564/U | Pneumatic Fittings - Plated Single Straps for 1/4 in. O.D. Copper Tubing | |  |
| CCT2565/U | Pneumatic Fittings - Plated Single Straps for 3/8 in. O.D. Copper Tubing | | |
| CCT2566/U | Pneumatic Fittings - Plated Single Straps for 1/2 in. O.D. Copper Tubing | | |
| CCT2626/U | Pneumatic Fittings - Copper Gang Straps (6 in. wide) for 1/4 in. or 3/8 in. O.D. Copper Tubing | |  |
| CCT2627/U | Pneumatic Fittings - Copper Gang Straps (36 in. wide) for 1/4 in. or 3/8 in. O.D. Copper Tubing | | |
| CCT2628/U | Pneumatic Fittings - Zinc-plated Steel Universal Gang Straps (24 in. wide) for 1/8 in. through 3/4 in. O.D. Copper Tubing | |  |
| CCT2630/U | Pneumatic Fittings - Aluminum Universal Gang Straps (24 in. wide) for 1/8 in. through 3/4 in. O.D. Copper Tubing | | |
| CCT2762/U | Pneumatic Fittings - Adhesive Straps (1 in. wide) for 3/8 in. O.D. Tubing | |  |
| CCT720B/U | Tubing Bender for 1/4 in. O.D. Pneumatic Tubing | |  |
| CCT722B/U | Tubing Bender for 3/8 in. O.D. Pneumatic Tubing | | |
| CCT814/U | Slide Rule for Calculating Pneumatic Valve and Main Air Sizing | | |
| CCT817C/U | Replacement gauge for the DSP3356 Pneumatic Control Calibration Kit | | |
| CCT819/U | Proportional Band and Authority Setting Adjustment Tool for all RP920's | | |

Pneumatic Accessories

| Material Number | Description | Used With | |
|-----------------|--|---|---|
| CCT852/U | Pressure Bulb Assembly | |  |
| CCT853/U | Pneumatic Tubing for Test Equipment, 11/32 in. O.D. x 5/32 in. Latex Tubing (10 ft lengths) | | |
| CCT948/U | Valve Seat Removal Wrench, 2 5/8 in. for V5011 and V5013 (2-1/2 in. Valves) | | |
| CCT950/U | Tubing holder. This tubing holder is used in combination with CCT951 to insert 5/32 in. and 1/4 in. fittings in plastic tubing | |  |
| CCT951/U | Fitting holder: This fitting holder is used in combination with CCT950 to insert 5/32 in. and 1/4 in. fittings in plastic tubing | |  |
| CCT970/U | Thermometer Calibration Tool for Pneumatic Thermostats (TP970-family) | |  |
| DSP3356/U | Calibration Training Kit | |  |
| HKN05417007/U | Drain Snap-Trap #05.4170-07 | | |
| HKN07132/U | Filter Cartridge for HKN13023 Oil Removal Filter | | |
| HKN07444101/U | Separator/Drain. Cartridge (for HKN8005, HKN8010 & HKN8210) | HKN8210; HKN8010; HKN8005 | |
| HKN44604363/U | Filter Element, 40 microns with gaskets (for HKN8010, HKN8210, HKN8015, HKN8025 & HKN8210) | HKN8025; HKN8015; HKN8010; HKN8210 | |
| MJK100/U | Pneumatic Fittings Kit - Includes an assortment of fittings most often required for replacement or repair of pneumatic devices. | |  |
| MQP800/U | Pneumatic Calibration Kit with two 0-30 psi gauges | |  |
| P246A1009/U | Static Pressure Regulator | | |

Definitions and Abbreviations

Actuator (Damper) — A mechanical device that operates a final control element (e.g., valve, damper). **Actuator (Valve)** — The part of an automatic control valve that moves the stem up and down based on an electric, electronic, or pneumatic signal from a controller. For butterfly or other rotary valves, the actuator rotates the stem. The actuator and valve can be two separate devices or together they can be one device.

BLP — See Branchline pressure.

Body rating (actual) — The correlation between safe, permissible flowing fluid pressure and flowing fluid temperature of the valve body (exclusive of the packing, disc, etc.). The nominal valve body rating is the permissible pressure at a specific temperature.

EXAMPLE:

A cast iron, screwed-end valve has a 125 psi nominal body rating. The actual valve body ratings may be 125 psi at 380°F and 175 psi at 175°F.

Body rating (nominal) — The theoretical pressure rating, expressed in psi, of the valve body exclusive of packing, disc, etc. The nominal rating is often cast on the valve body and provides a way to classify the valve by pressure. A valve of specified body material and nominal body rating often has characteristics such as pressure-temperature ratings, wall thickness, and end connections which are determined by a society such as ANSI (American National Standards Institute). Note that the nominal body rating is not the same as the actual body rating.

Body — The valve casting through which the controlled fluid flows.

Bonnet — The part that screws to the top of the valve body and contains the packing that seals and guides the valve stem.

Branch line — The air line from a controller to the controlled device.

Branchline pressure (BLP) — A varying air pressure signal from a controller to an actuator, carried by the branch line. Can go from zero to full main line pressure.

British thermal unit (Btu) — The amount of heat required to raise one pound of water one degree Fahrenheit.

Btu — See British thermal unit.

Close-off rating of three-way valves — The maximum pressure difference between either of the two inlet ports and the outlet port for mixing valves, or the pressure difference between the inlet port and either of the two outlet ports for diverting valves.

Close-off rating — The maximum pressure drop that a valve can withstand without leakage while in the full closed position. The close-off rating is a function of actuator power to hold the valve closed against pressure drop, but structural parts such as the stem can be the limiting factor.

EXAMPLE:

A valve with a close-off rating of 10 psi could have 40 psi upstream pressure and 30 psi downstream pressure. Note that in applications where failure of the valve to close is hazardous, the maximum upstream pressure must not exceed the valve close-off rating, regardless of the downstream pressure.

The valve close-off rating is independent of the actual valve body rating. See definition of BODY RATING (ACTUAL) in this section.

Control point — The actual value of the controlled variable (setpoint plus or minus offset).

Control valve — A device used to control the flow of fluids such as steam, water, or air.

Controlled variable — The quantity or condition that is measured and controlled (e.g., temperature, relative humidity, pressure).

Controller — A device that senses the controlled variable (or receives an input signal from a remote sensing element), compares the signal with the setpoint, and outputs a control signal (branchline pressure) to an actuator.

Cv — See Flow coefficient.

DA — See Direct acting or Discharge air.

Damper — A device used to control the flow of air in a duct or through a wall louver.

Dew-point temperature — The temperature at which water vapor from the air begins to form droplets and settles or condenses on surfaces that are colder than the air. The more moisture the air contains, the higher its dew-point temperature. When dry-bulb and wet-bulb temperatures of the air are known, the dew-point temperature can be plotted on the psychrometric chart.

Differential — A term that applies to two-position devices. The range through which the controlled variable must pass in order to move the final control element from one to the other of its two possible positions. The difference between cut-in and cut-out temperatures, pressures, etc.

Direct acting (DA) — A direct-acting thermostat or controller increases the branchline pressure on an increase in the measured variable and decreases the branchline pressure on a decrease in the variable. A direct-acting actuator extends on an increase in branchline pressure and retracts on a decrease in pressure.

Direction of flow — The correct flow of the controlled fluid through the valve is usually indicated on the valve body. If the flow of the fluid goes against the indicated direction, the disc can slam into the seat as it approaches the closed position. The result is excessive valve wear, hammering, and oscillations. In addition, the actuator must work harder to reopen the closed valve since it must overcome the pressure exerted by the fluid on top of the disc rather than have the fluid assist in opening the valve by exerting pressure under the disc.

Discharge air (DA) — Conditioned air that has passed through a coil. Also, air discharged from a supply duct outlet into a space.

Disc — The part of the plug assembly that contacts the valve seat to close off flow of the controlled fluid. Certain valve plug assemblies are built so the part of the assembly contacting the seat is replaceable. This type of plug is called a renewable disc plug assembly. Renewable discs are usually made of a composition material softer than metal. Valves with all metal or nonrenewable discs may have to be "ground in" to restore a damaged seating surface. Note that the term disc can mean both the plug and disc together.

Dry-bulb temperature — The temperature read directly on an ordinary thermometer as degrees Fahrenheit (F) or degrees Celsius (C).

Equal percentage — A valve which changes the existing flow an equal percentage (regardless of flow rate) for similar movements in stem travel (at any point in the flow range).

Final control element — A device such as a valve or damper that acts to change the value of the manipulated variable. Positioned by an actuator.

Pneumatic Definitions and Abbreviations

Flow coefficient (capacity index) — Used to state the flow capacity of a control valve for specified conditions. Currently, in this catalog, two flow coefficients K_v , or C_v are used. The flow coefficients have the following relationships:

$$A_v = 0.0000240 C_v$$

$$K_v = 0.865 C_v$$

The flow coefficient K_v is water flow in cubic meters per hour with a static pressure loss across the valve of 10^5 pascals (1 bar) within the temperature range of 5 to 40°C and can be determined from the formula:

$$K_v = Q \sqrt{\frac{\Delta p_{K_v}}{\Delta p} \cdot \frac{\rho}{\rho_w}} \quad M2807$$

Where:

Q = volumetric flow in cubic meters per hour.

ρ = fluid density in kilograms per cubic meter.

ρ_w = density of water in kilograms per cubic meter.

Δp_{K_v} = static pressure loss of 10^5 pascals.

Δp = static pressure loss across the valve in pascals.

The flow coefficient C_v is water flow in gallons per minute with a pressure loss across the valve of one pound per square inch within the temperature range of 40 to 100°F and can be determined for other conditions from the formula:

$$C_v = Q \sqrt{\frac{1}{\Delta P} \cdot \frac{\rho}{\rho_w}} \quad M2810$$

Where:

Q = volumetric flow in US gallons per minute.

ρ = fluid density in pounds per cubic foot.

ρ_w = density of water in pounds per cubic foot within the temperature range of 40 to 100°F.

Δp = static pressure loss across the valve in pounds per square inch.

K — Kelvin used in Standard International Units (SI) to express a temperature range.

K_v — See Flow coefficient.

Linear — A valve which provides a flow-to-lift relationship that is directly proportional. It provides equal flow changes for equal lift changes, regardless of percentage of valve opening. When plotted on rectilinear coordinates, the relationship approximates a straight diagonal line.

Linkage — A device which connects an actuator to a damper or control valve. To open and close a damper, the typical linkage consists of an actuator crankarm, balljoints, pushrod, and damper crank arm. In a valve application, the linkage connects the actuator to the valve and translates the rotary output of the actuator to the linear action of the valve stem.

M — See Main line.

MA — See Mixed air.

Main line (M) — The air line from the air supply system to controllers and other devices. Usually plastic or copper tubing.

Maximum pressure and temperature — The maximum pressure and temperature limitations of fluid flow that a valve can withstand. These ratings may be due to valve packing, body, or disc material or actuator limitations. The actual valve body ratings are exclusively for the valve body and the maximum pressure and temperature ratings are for the complete valve (body and trim). Note that the maximum pressure and temperature ratings may be less than the actual valve body ratings.

EXAMPLE:

The body of a valve, exclusive of packing, disc, etc., has a pressure and temperature rating of 125 psi at 380°F. If the valve contains a composition disc that can withstand a temperature of only 115°C, then the temperature limit of the disc becomes the maximum temperature rating for the valve.

Measuring element — Same as sensing element.

Mixed air (MA) — Typically a mixture of outdoor air and return air from the space.

mL/s — milliliters per second.

Modulating — Varying or adjusting by small increments. Also called "proportioning".

Offset — A sustained deviation between the actual system control point and its controller setpoint under stable operating conditions. Usually applies to proportional (modulating) control.

Plug — The part that varies the opening for the fluid to flow through the valve body. The following describes the three most common types of plugs:

— A contoured plug has a shaped end that is usually end-guided at the top or bottom (or both) of the valve body. The shaped end controls fluid flow through the valve.

— A quick-opening plug is flat and is either end-guided or guided by wings riding in the valve seat ring. The flat plug provides maximum flow soon after it lifts from the valve seat.

— A V-port plug has a cylinder, called a skirt, that rides up and down in the valve seat ring. The skirt guides the plug and varies the flow area via its shaped openings.

Port — The opening in the valve seat.

Pressure drop (critical) — The flow of a gaseous controlled fluid through the valve increases as the pressure drop increases until reaching a critical point. This point is the critical pressure drop, denoted $\Delta P_{Critical}$.

$$\Delta P_{Critical} = 50\% \times P_1 \text{ (Absolute upstream pressure)}$$

When critical pressure is reached, any increase in pressure is dissipated in noise and cavitation rather than increase in flow. The noise and cavitation can destroy valve and adjacent piping components.

Pressure drop — The difference in upstream and downstream pressures of the fluid flowing through the valve. Pressure drop is denoted ΔP .

Proportional band — As applied to pneumatic control systems, the change in the controlled variable required to change the controller output pressure from 3 to 13 psi. Usually expressed as a percentage of sensor span.

Quick-opening — A valve which provides maximum possible flow as soon as the stem starts to lift the disc from the valve seat.

RA — See Reverse acting and Return air.

Relative humidity — The ratio of the measured amount of moisture in the air to the maximum amount of moisture the air can hold at the same temperature and pressure. Relative humidity is expressed in percent of saturation. Air with a relative humidity of 35, for example, is holding 35 percent of the moisture that it is capable of holding at that temperature and pressure.

Restrictor — A device in an air line that limits the flow of air.

Pneumatic Definitions and Abbreviations

Return air (RA) — Air from the conditioned space which is passed through the air handling unit and returned to the conditioned space.

Reverse acting (RA) — A reverse-acting thermostat or controller decreases the branchline pressure on an increase in the measured variable and increases the branchline pressure on a decrease in the variable. A reverse-acting valve actuator retracts on an increase in branchline pressure and extends on a decrease in pressure.

scfm — standard cubic feet per minute.

Seat — The stationary part of the valve body that has a raised lip to contact the valve disc when closing off flow of the controlled fluid.

Sensing element — A device that detects and measures the controlled variable (e.g., temperature, humidity).

Setpoint — The value on the controller scale at which the controller is set (e.g., the desired room temperature set on a thermostat). The desired control point.

Sling psychrometer — A device commonly used to measure the wet-bulb temperature. It consists of two identical thermometers mounted on a common base. The base is pivoted on a handle so it can be whirled through the air. One thermometer measures dry-bulb temperature. The bulb of the other thermometer is encased in a water-soaked wick. This thermometer measures wet-bulb temperature. Some models provide slide rule construction which allows converting the dry-bulb and wet-bulb readings to relative humidity.

Although commonly used, sling psychrometers can cause inaccurate readings, especially at low relative humidities, because of factors such as inadequate air flow past the wet-bulb wick, too much wick wetting from a continuous water feed, thermometer calibration error, and human error. To take more accurate readings, especially in low relative humidity conditions, motorized psychrometers are recommended.

Stem — The shaft that runs through the valve bonnet and connects an actuator to the valve plug.

Thermostat — A device that responds to changes in temperature and outputs a control signal (branchline pressure). Usually mounted on a wall in the controlled space.

Throttling range — Same as proportional band, except expressed in values of the controlled variable (e.g., degrees, percent relative humidity, pounds per square inch) rather than in percent.

Tight shut-off/close-off — A valve condition in which virtually no leakage of the controlled fluid occurs in the closed position. Generally, only single-seated valves provide tight shut-off. Double-seated valves typically have a one to three percent leakage in the closed position.

Trim — All parts of the valve that contact the controlled fluid. Trim includes the stem, packing, plug, disc, and seat; it does not include the valve body.

Wet-bulb temperature — The temperature read on a thermometer with the mercury bulb encased in a wet wick (stocking or sock) and with an air flow of 900 feet per minute across the wick. Water evaporation causes the temperature reading to be lower than the ambient dry-bulb temperature by an amount proportional to the moisture content of the air. The temperature reduction is sometimes called the evaporative effect. When the reading stops falling, the value read is the wet-bulb temperature.

The wet-bulb and dry-bulb temperatures are the easiest air properties to measure. When they are known, they can be used to determine other air properties on a psychrometric chart.

Product Selection Matrix for CE Sequence Primary/Programmer Relay Modules:

For 230 Vac nominal applications —

| Fuel | Burner Type | Relay Module Type |
|-----------------------|--------------------------------|-------------------|
| Single | Atmospheric with fan | EC7820 |
| Combination or single | On/Off Controlled Power Burner | EC7830 |
| Combination or single | Full Modulation Power Burner | EC7850 |

For 120 Vac nominal applications —

| Fuel | Burner Type | Relay Module Type |
|-----------------------|--------------------------------|-------------------|
| Combination or single | On/Off Controlled Power Burner | RM7830 |
| Combination or single | Full Modulation Power Burner | RM7850 |

Use the following pages to select the following required devices:

- Relay Module, 1 per burner
- Subbase, 1 per relay module
- Purge Timer Card, 1 per relay module
- Flame Amplifier, 1 per relay module

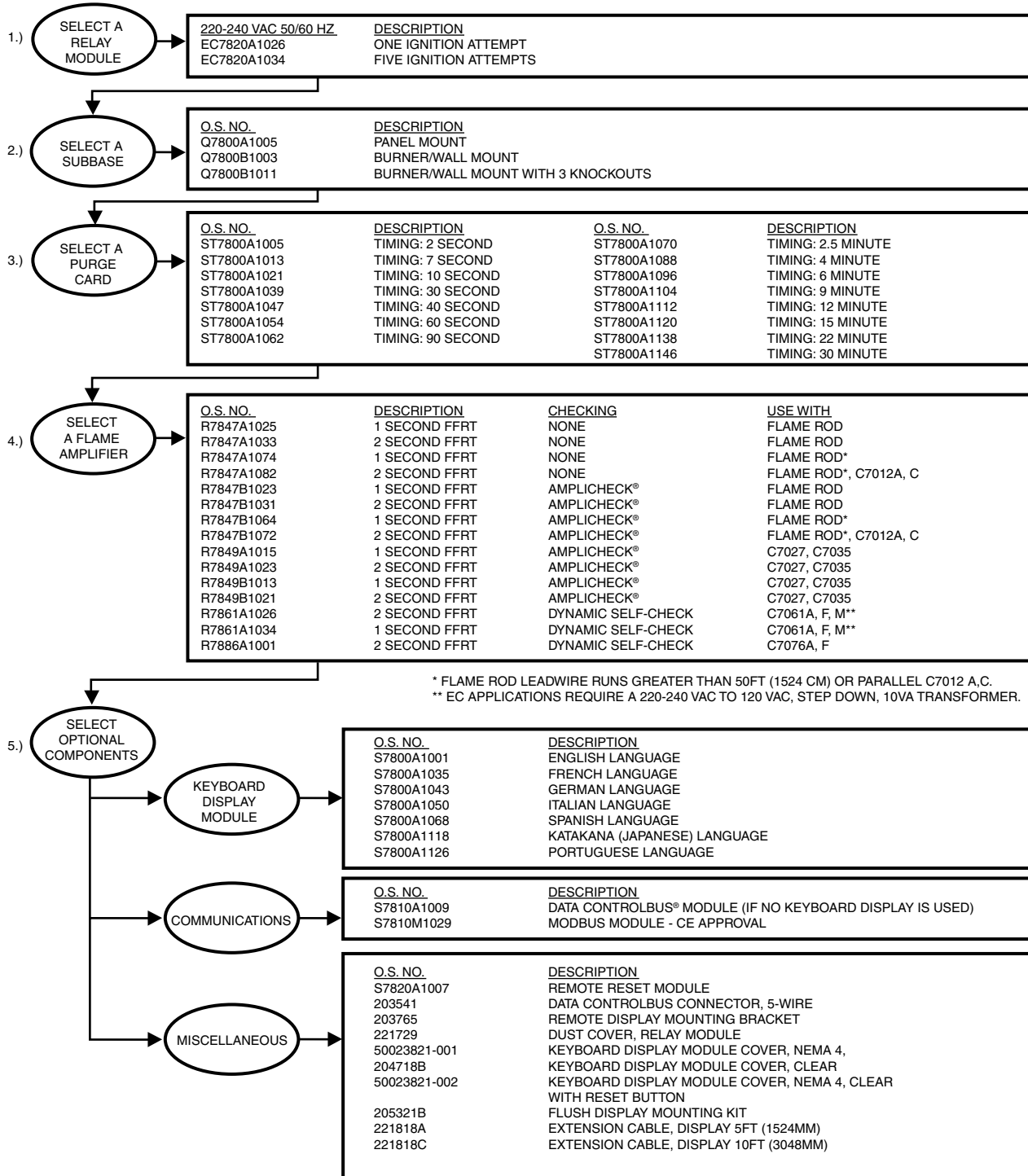
Some products are available only through Authorized Flame Safeguard Wholesalers and/or Distributors.

Use the following pages to select the following optional devices:

- Keyboard Display module, up to 1 mounted to relay module, remote as desired network and ControlBus™ modules to service selected relays
- Miscellaneous, as required to complete installation.

Product Selection Matrix

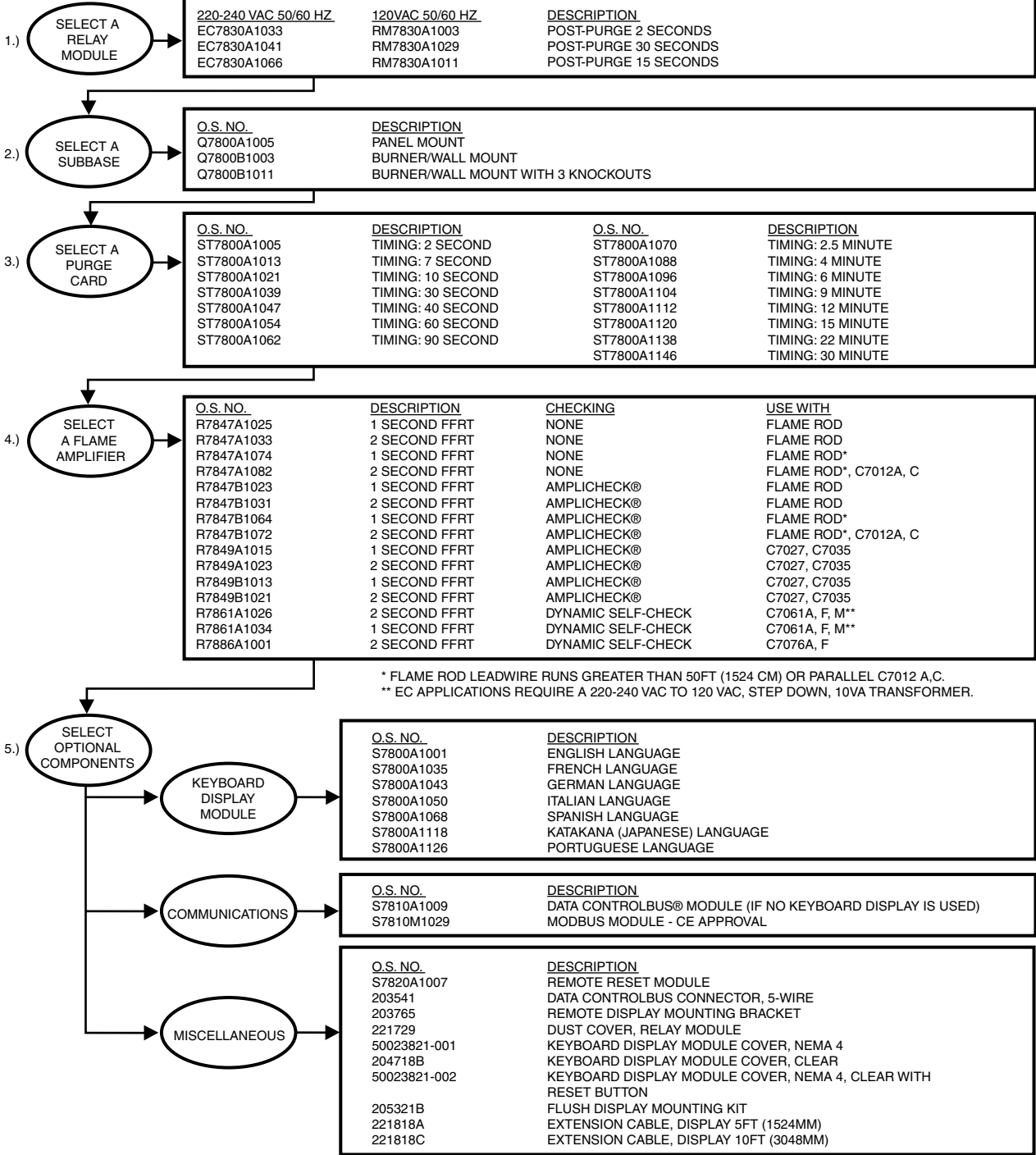
PRODUCT SELECTION MATRIX FOR EC7820 PROGRAMMER RELAY MODULES:



M15516G

Product Selection Matrix

PRODUCT SELECTION MATRIX FOR EC/RM7830 PROGRAMMER RELAY MODULES:

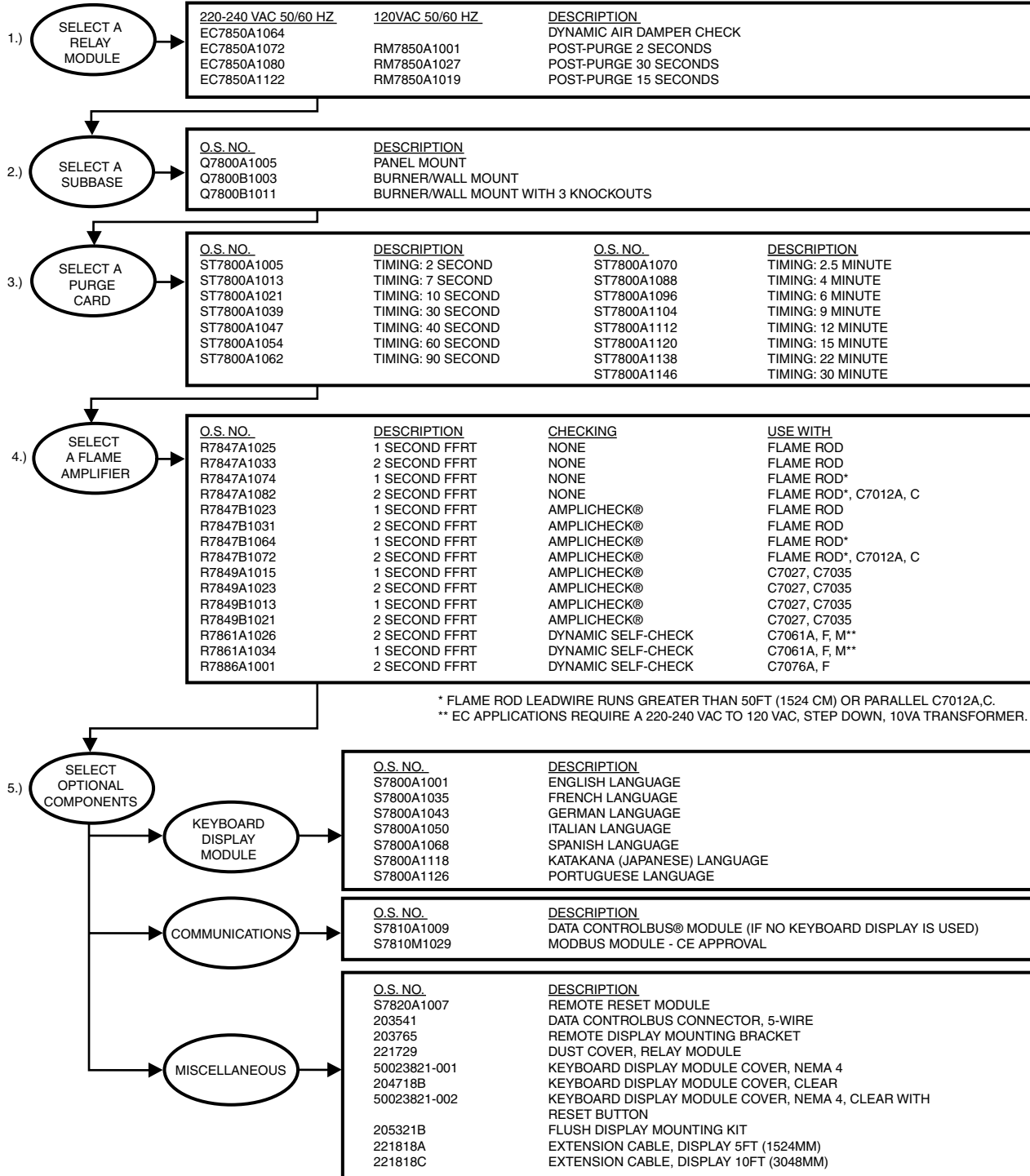


Commercial/Industrial
Combustion Controls

M15517H

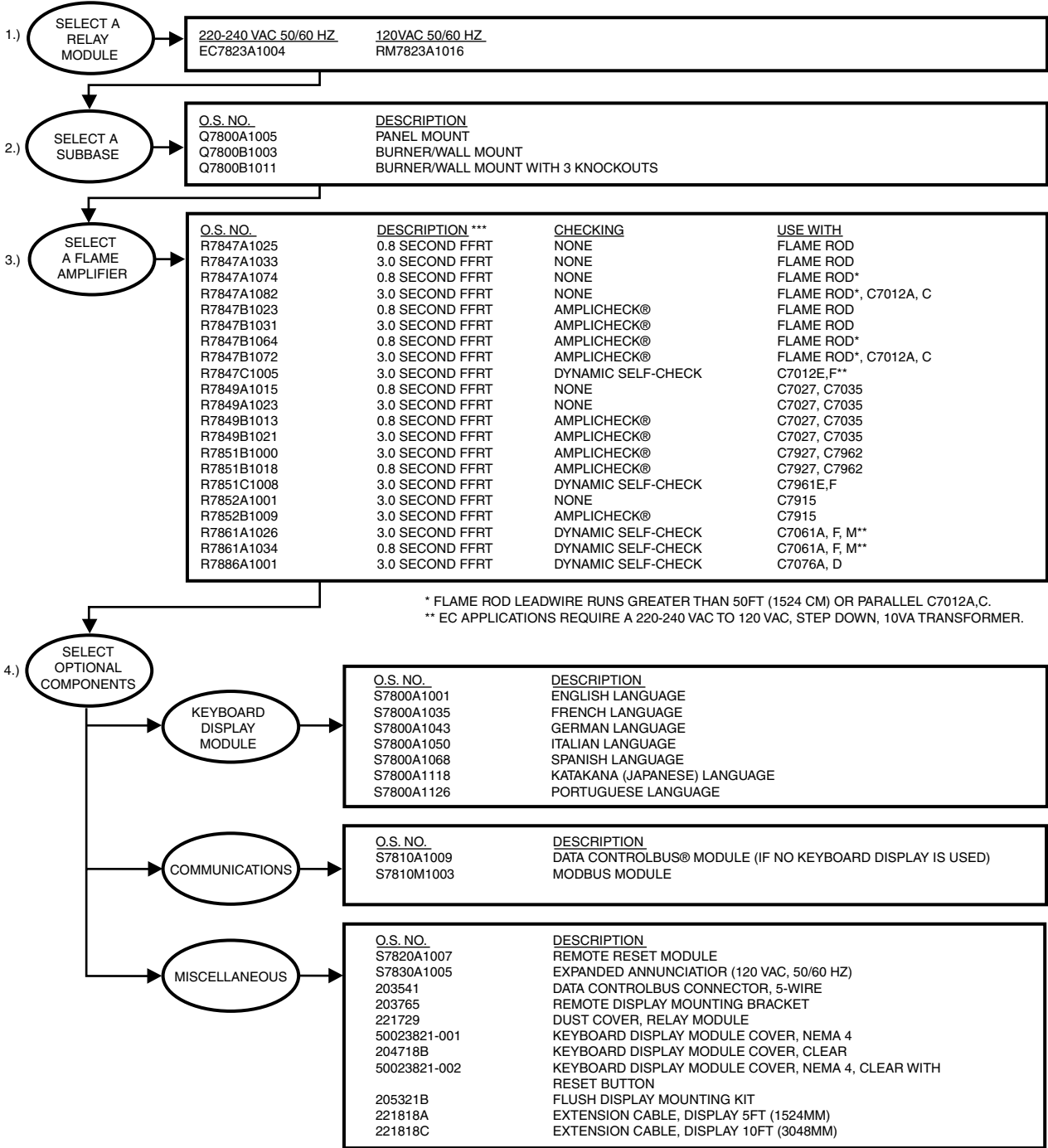
Product Selection Matrix

PRODUCT SELECTION MATRIX FOR EC/RM7850 PROGRAMMER RELAY MODULES:



M15519G

PRODUCT SELECTION MATRIX FOR EC/RM7823 FLAME SWITCH RELAY MODULES:

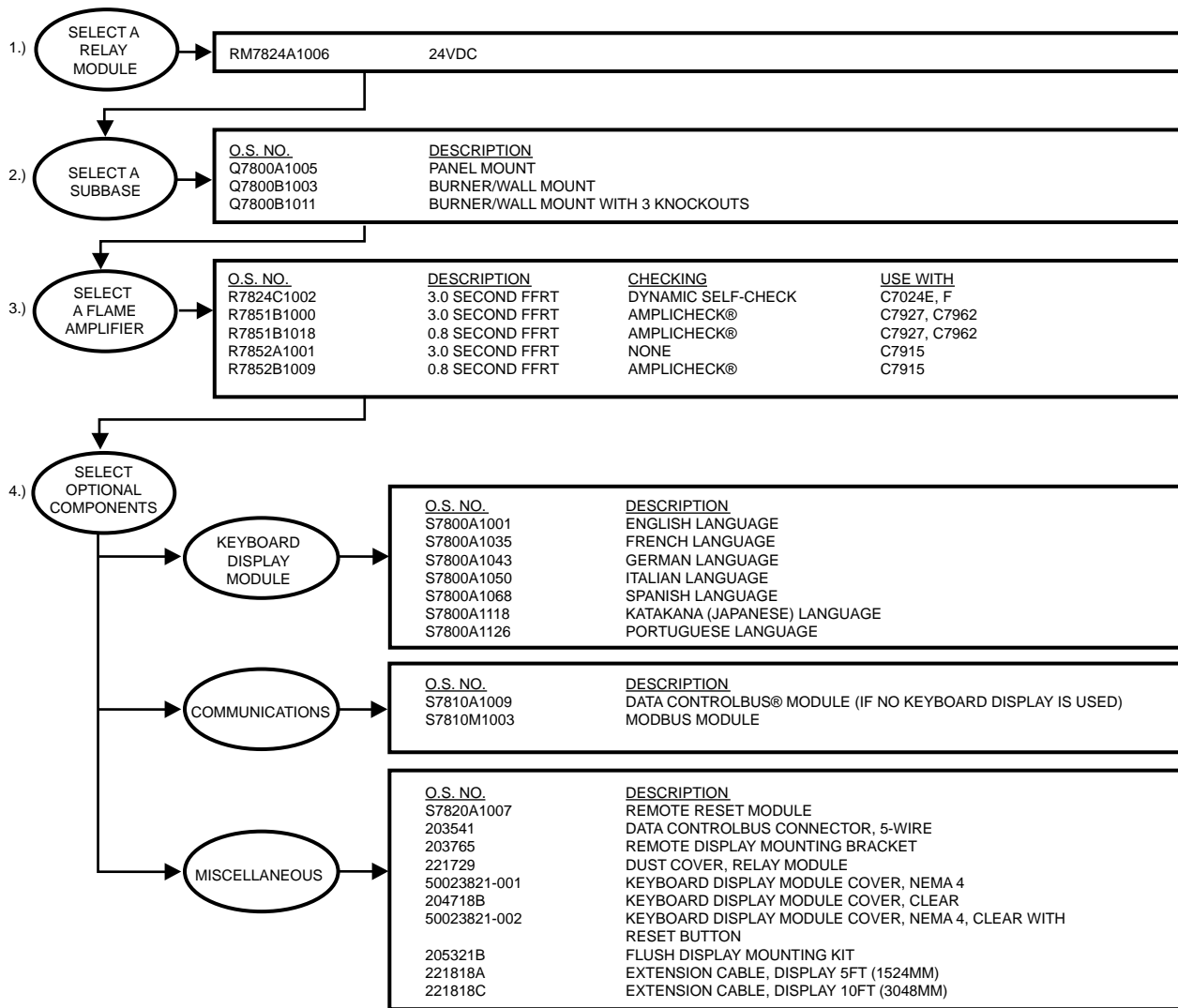


Commercial/Industrial
Combustion Controls

M15520F

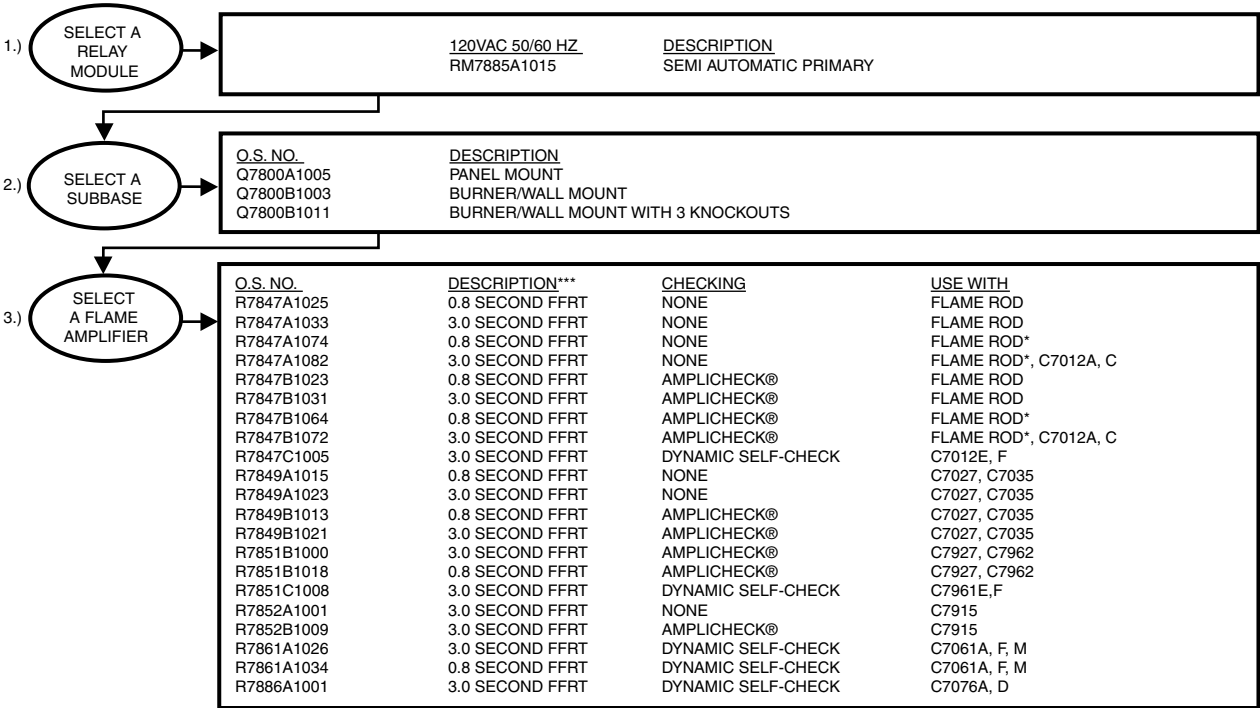
Product Selection Matrix

PRODUCT SELECTION MATRIX FOR RM7824A 24VDC PRIMARY CONTROL RELAY MODULES:

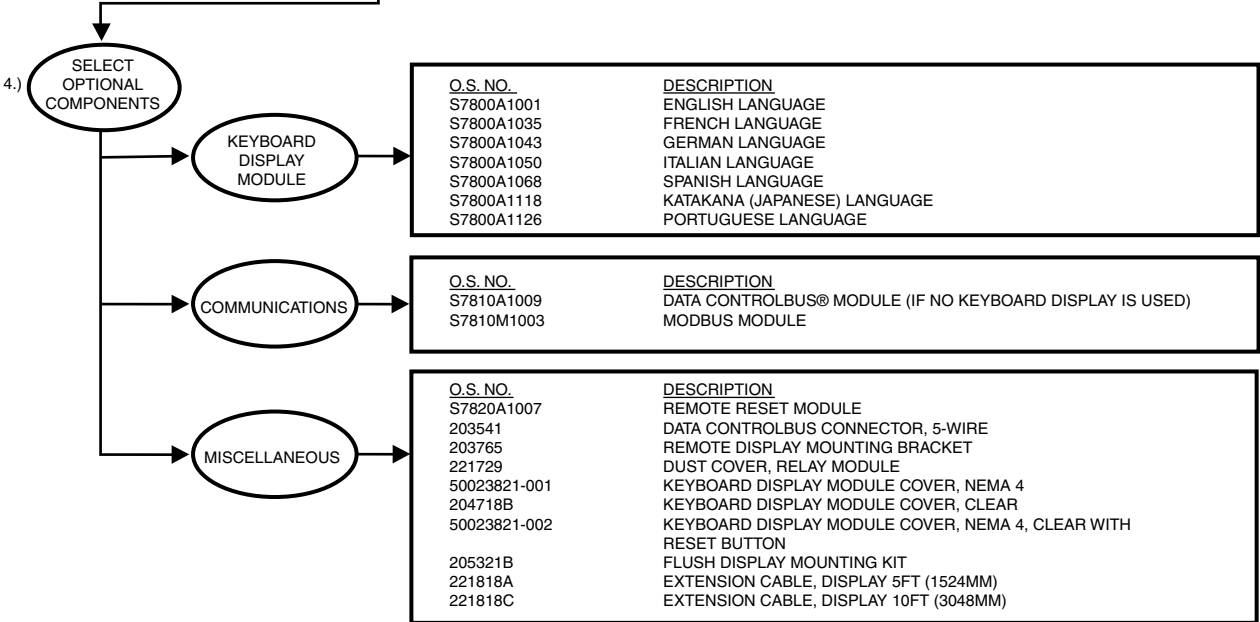


M15521D

PRODUCT SELECTION MATRIX FOR RM7885 MANUAL START PRIMARY RELAY MODULES:



* FLAME ROD LEADWIRE RUNS GREATER THAN 50FT (1524 CM) OR PARALLEL C7012A,C.

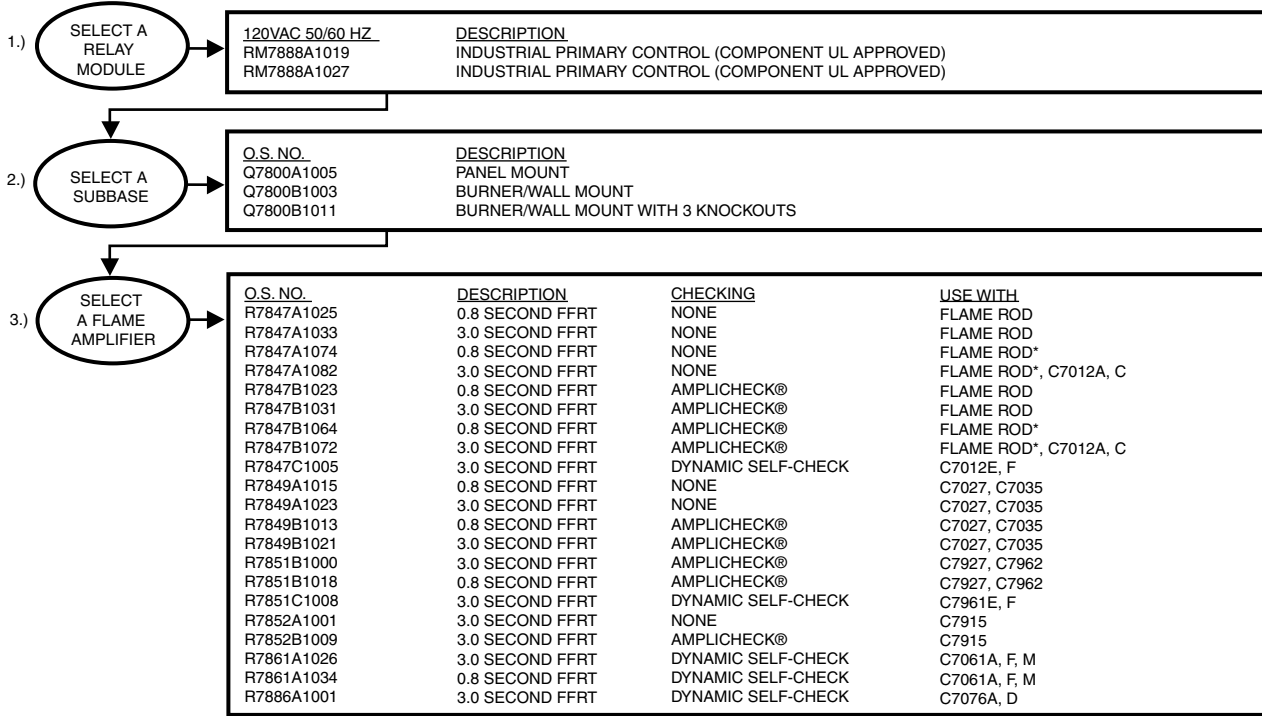


M15522F

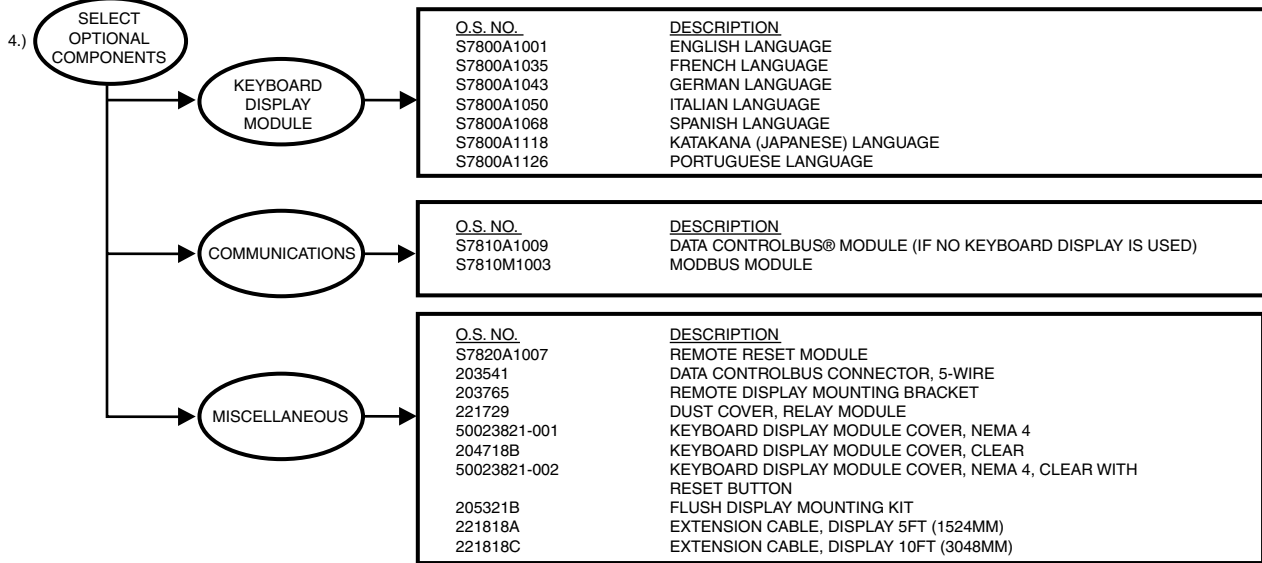
Commercial/Industrial
Combustion Controls

Product Selection Matrix

PRODUCT SELECTION MATRIX FOR RM7888A SPECIAL FUNCTION PRIMARY CONTROL RELAY MODULES:



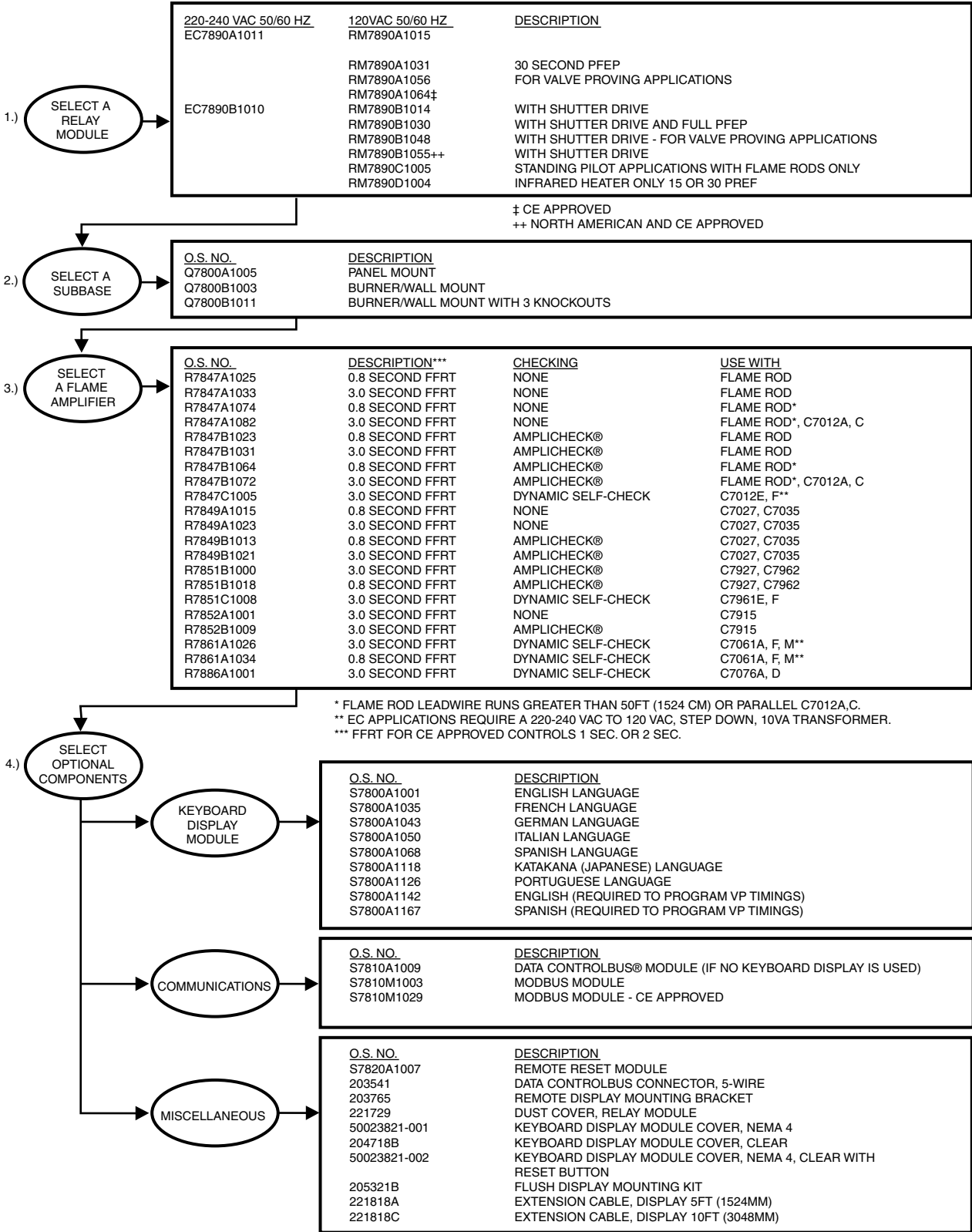
* FLAME ROD LEADWIRE RUNS GREATER THAN 50FT (1524 CM) OR PARALLEL C7012A,C.



M15523F

Product Selection Matrix

PRODUCT SELECTION MATRIX FOR EC/RM7890 ON/OFF PRIMARY CONTROL RELAY MODULES:

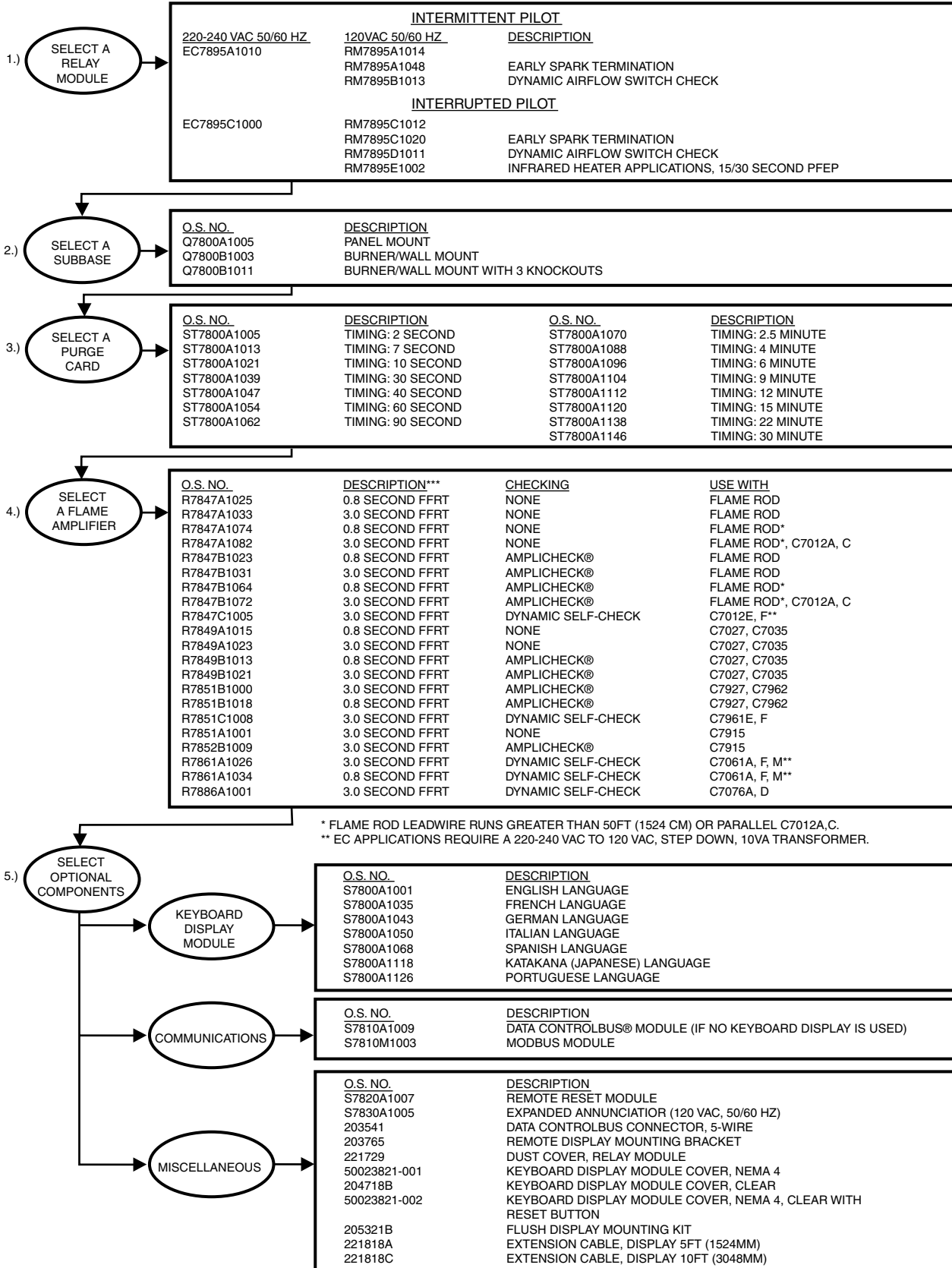


Commercial/Industrial
Combustion Controls

M15524G

Product Selection Matrix

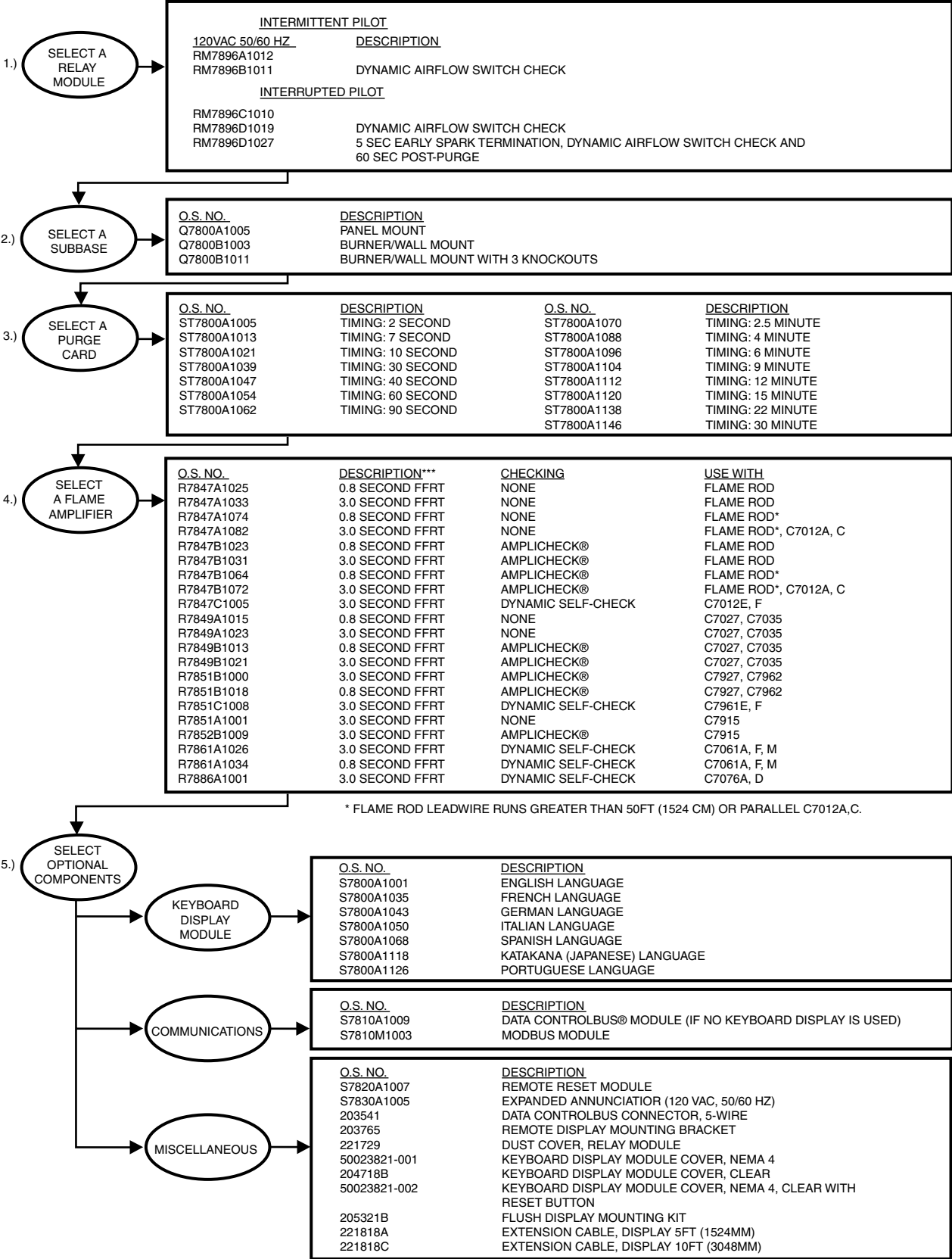
PRODUCT SELECTION MATRIX FOR EC/RM7895 ON/OFF WITH PURGE PRIMARY RELAY MODULES:



M15525F

Product Selection Matrix

PRODUCT SELECTION MATRIX FOR RM7896 ON/OFF WITH PRE- AND POST-PURGE PRIMARY RELAY MODULES:

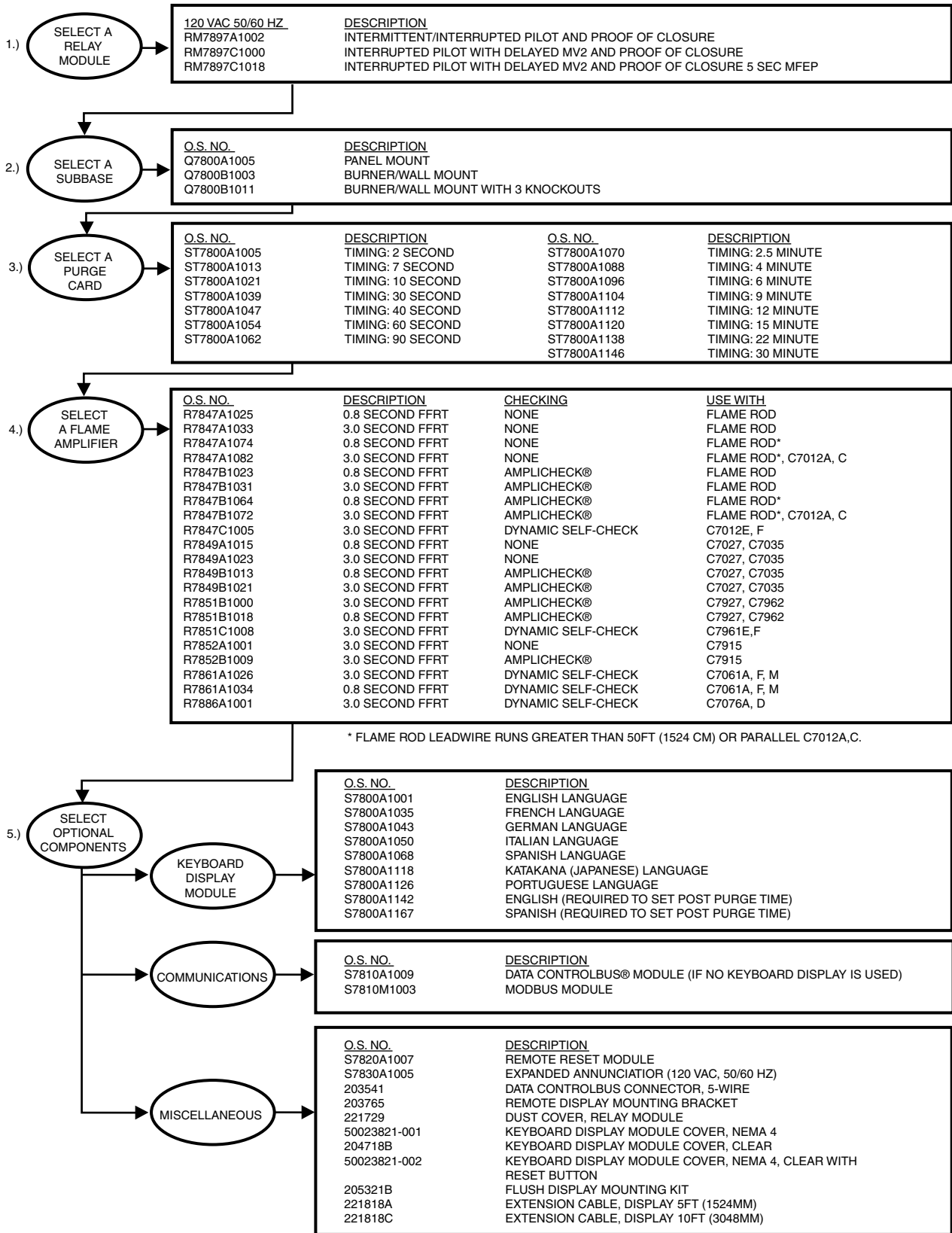


Commercial/Industrial
Combustion Controls

M13908B

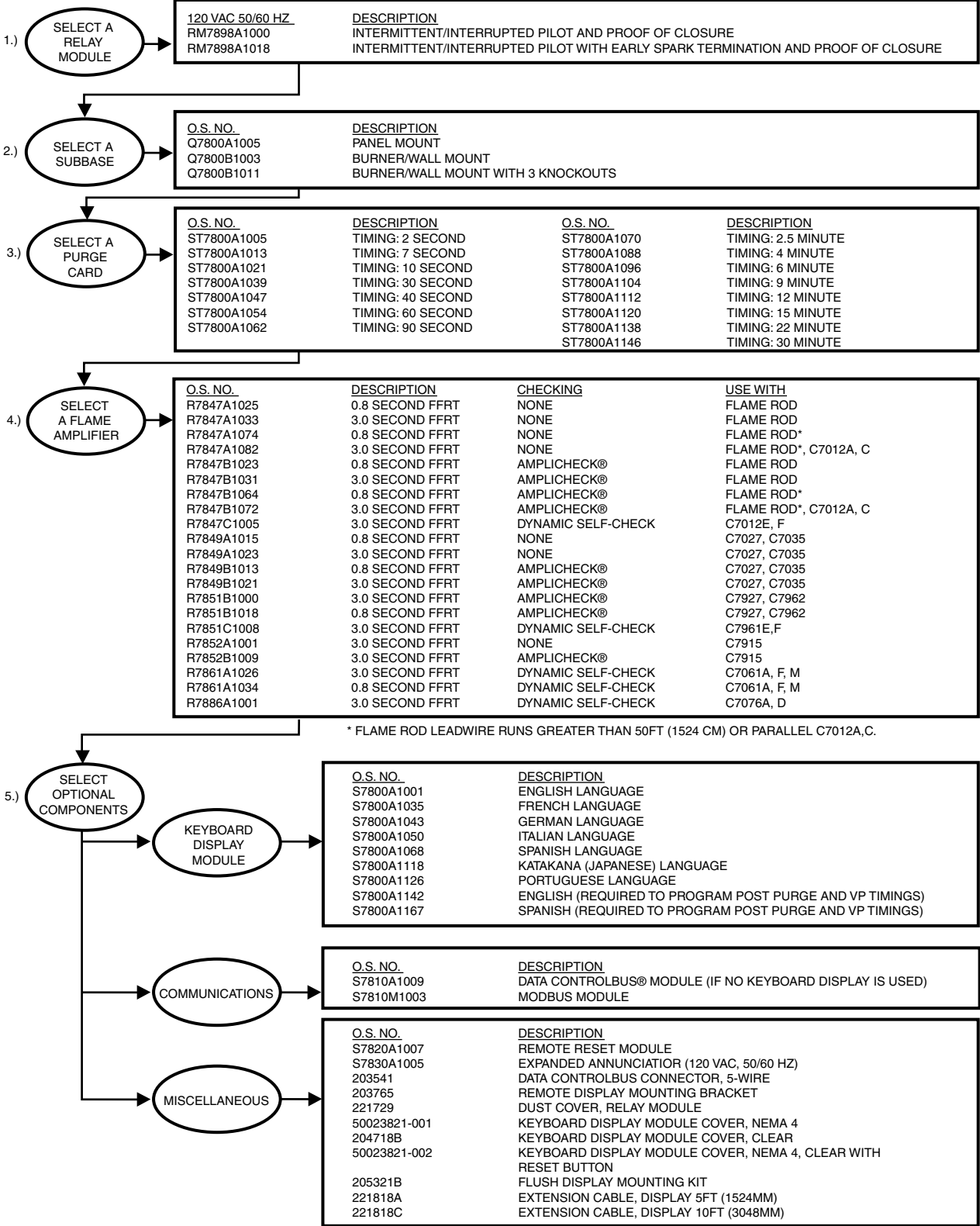
Product Selection Matrix

PRODUCT SELECTION MATRIX FOR RM7897 ON/OFF WITH PRE- AND PROGRAMMABLE POST-PURGE PRIMARY RELAY MODULES:



M15526H

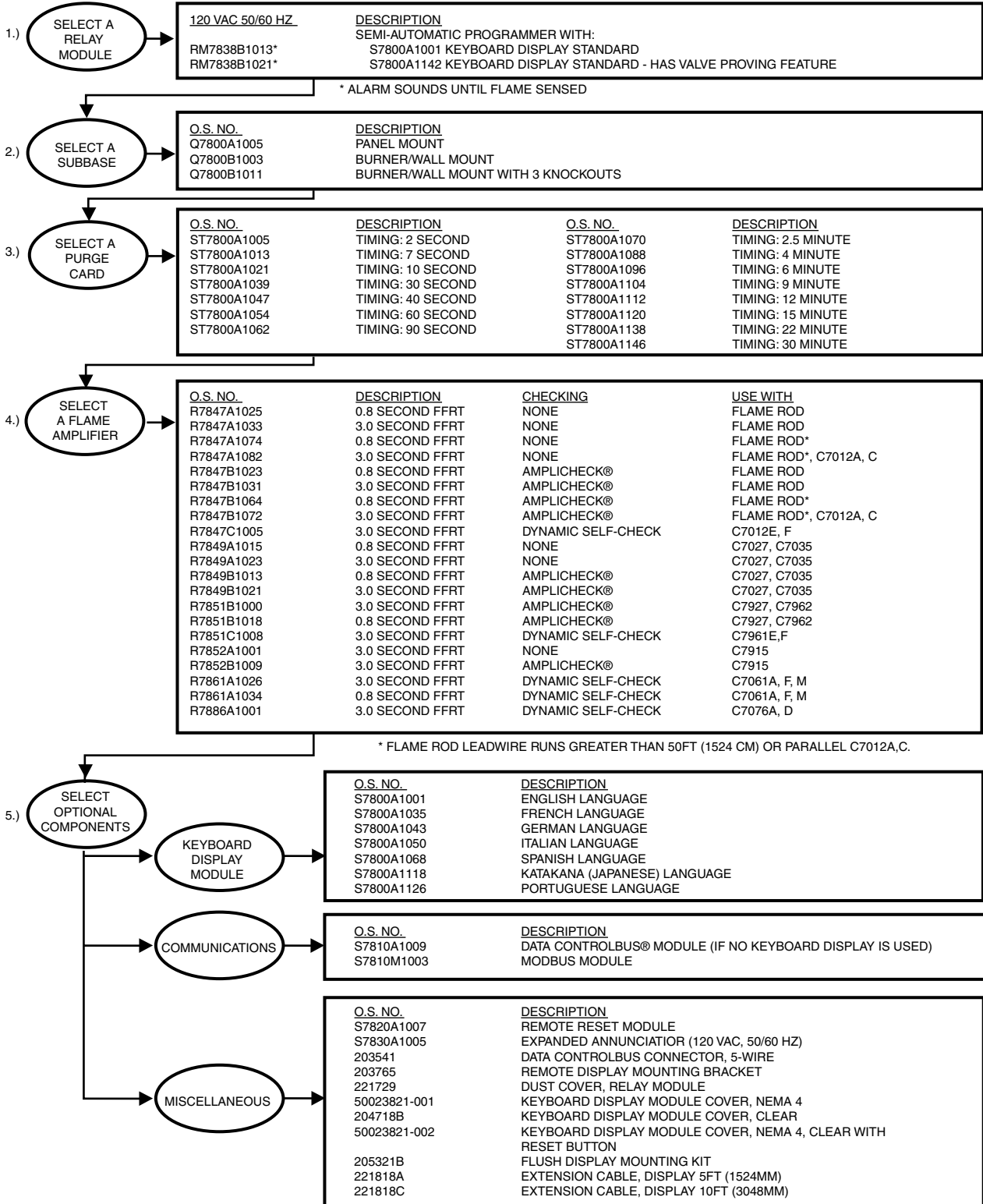
PRODUCT SELECTION MATRIX FOR RM7898 ON/OFF WITH PRE- AND PROGRAMMABLE POST-PURGE PRIMARY RELAY MODULES FOR VALVE PROVING APPLICATIONS:



M23254C

Product Selection Matrix

PRODUCT SELECTION MATRIX FOR RM7838B MANUAL START INDUSTRIAL PROGRAMMER RELAY MODULE:



M15528F

Commercial/Industrial
Combustion Controls

Product Selection Matrix

PRODUCT SELECTION MATRIX FOR RM7838C MANUAL START INDUSTRIAL PROGRAMMER RELAY MODULE:

1.) SELECT A RELAY MODULE

| <u>120 VAC 50/60 HZ</u> | <u>DESCRIPTION</u> |
|-------------------------|---|
| RM7838C1004* | SEMI-AUTOMATIC PROGRAMMER WITH: |
| RM7838C1012* | S7800A1001 KEYBOARD DISPLAY STANDARD |
| RM7838C1020*+ | S7800A1142 KEYBOARD DISPLAY STANDARD - DEVICE HAS VALVE PROVING FEATURE |
| | S7800A1001 KEYBOARD DISPLAY STANDARD |

* ALARM OUTPUT - LOCKOUT ONLY
+NORTH AMERICAN AND CE APPROVED

2.) SELECT A SUBBASE

| <u>Q.S. NO.</u> | <u>DESCRIPTION</u> |
|-----------------|------------------------------------|
| Q7800A1005 | PANEL MOUNT |
| Q7800B1003 | BURNER/WALL MOUNT |
| Q7800B1011 | BURNER/WALL MOUNT WITH 3 KNOCKOUTS |

3.) SELECT A PURGE CARD

| <u>Q.S. NO.</u> | <u>DESCRIPTION</u> | <u>Q.S. NO.</u> | <u>DESCRIPTION</u> |
|-----------------|--------------------|-----------------|--------------------|
| ST7800C1003 | TIMING: 7 SECOND | ST7800C1086 | TIMING: 16 MINUTE |
| ST7800C1011 | TIMING: 20 SECOND | ST7800C1102 | TIMING: 20 MINUTE |
| ST7800C1029 | TIMING: 4 MINUTE | ST7800C1128 | TIMING: 24 MINUTE |
| ST7800C1037 | TIMING: 6 MINUTE | ST7800C1136 | TIMING: 30 MINUTE |
| ST7800C1045 | TIMING: 8 MINUTE | ST7800C1144 | TIMING: 45 MINUTE |
| ST7800C1052 | TIMING: 10 MINUTE | | |

4.) SELECT A FLAME AMPLIFIER

| <u>Q.S. NO.</u> | <u>DESCRIPTION</u> | <u>CHECKING</u> | <u>USE WITH</u> |
|-----------------|--------------------|--------------------|-----------------------|
| R7847A1025 | 0.8 SECOND FFRT | NONE | FLAME ROD |
| R7847A1033 | 3.0 SECOND FFRT | NONE | FLAME ROD |
| R7847A1074 | 0.8 SECOND FFRT | NONE | FLAME ROD* |
| R7847A1082 | 3.0 SECOND FFRT | NONE | FLAME ROD*, C7012A, C |
| R7847B1023 | 0.8 SECOND FFRT | AMPLICHECK® | FLAME ROD |
| R7847B1031 | 3.0 SECOND FFRT | AMPLICHECK® | FLAME ROD |
| R7847B1064 | 0.8 SECOND FFRT | AMPLICHECK® | FLAME ROD* |
| R7847B1072 | 3.0 SECOND FFRT | AMPLICHECK® | FLAME ROD*, C7012A, C |
| R7847C1005 | 3.0 SECOND FFRT | DYNAMIC SELF-CHECK | C7012E, E |
| R7849A1015 | 0.8 SECOND FFRT | NONE | C7027, C7035 |
| R7849A1023 | 3.0 SECOND FFRT | NONE | C7027, C7035 |
| R7849B1013 | 0.8 SECOND FFRT | AMPLICHECK® | C7027, C7035 |
| R7849B1021 | 3.0 SECOND FFRT | AMPLICHECK® | C7027, C7035 |
| R7851B1000 | 3.0 SECOND FFRT | AMPLICHECK® | C7927, C7962 |
| R7851B1018 | 0.8 SECOND FFRT | AMPLICHECK® | C7927, C7962 |
| R7851C1008 | 3.0 SECOND FFRT | DYNAMIC SELF-CHECK | C7961E, F |
| R7852A1001 | 3.0 SECOND FFRT | NONE | C7915 |
| R7852B1009 | 3.0 SECOND FFRT | AMPLICHECK® | C7915 |
| R7861A1026 | 3.0 SECOND FFRT | DYNAMIC SELF-CHECK | C7061A, F, M |
| R7861A1034 | 0.8 SECOND FFRT | DYNAMIC SELF-CHECK | C7061A, F, M |
| R7886A1001 | 3.0 SECOND FFRT | DYNAMIC SELF-CHECK | C7076A, D |

* FLAME ROD LEADWIRE RUNS GREATER THAN 50FT (1524 CM) OR PARALLEL C7012A, C.

5.) SELECT OPTIONAL COMPONENTS

KEYBOARD DISPLAY MODULE

| <u>Q.S. NO.</u> | <u>DESCRIPTION</u> |
|-----------------|---|
| S7800A1001 | ENGLISH LANGUAGE |
| S7800A1035 | FRENCH LANGUAGE |
| S7800A1043 | GERMAN LANGUAGE |
| S7800A1050 | ITALIAN LANGUAGE |
| S7800A1068 | SPANISH LANGUAGE |
| S7800A1118 | KATAKANA (JAPANESE) LANGUAGE |
| S7800A1126 | PORTUGUESE LANGUAGE |
| S7800A1142 | ENGLISH (REQUIRED TO PROGRAM POST PURGE AND VP TIMINGS) |
| S7800A1167 | SPANISH (REQUIRED TO PROGRAM POST PURGE AND VP TIMINGS) |

COMMUNICATIONS

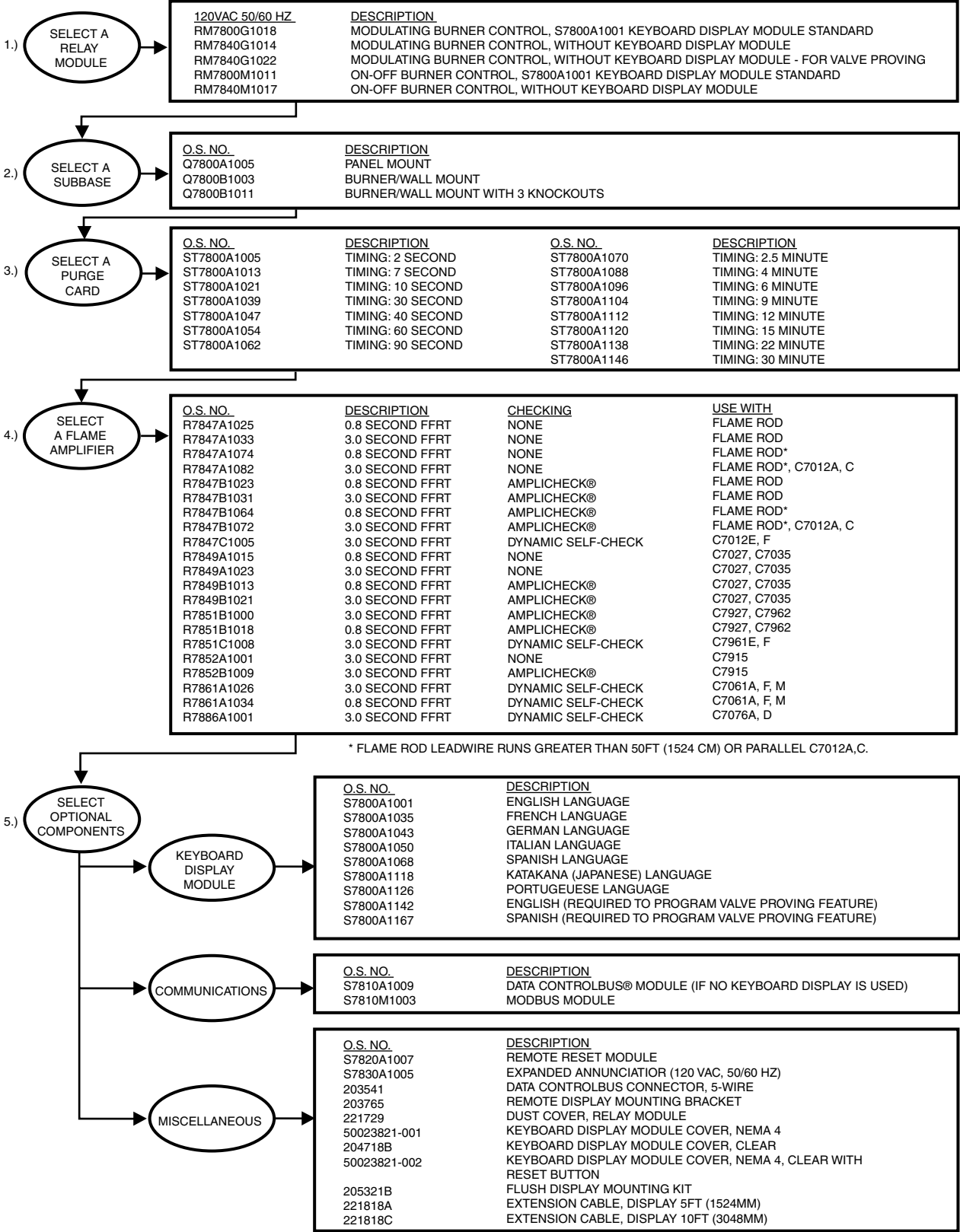
| <u>Q.S. NO.</u> | <u>DESCRIPTION</u> |
|-----------------|--|
| S7810A1009 | DATA CONTROLBUS® MODULE (IF NO KEYBOARD DISPLAY IS USED) |
| S7810M1003 | MODBUS MODULE |

MISCELLANEOUS

| <u>Q.S. NO.</u> | <u>DESCRIPTION</u> |
|-----------------|--|
| S7820A1007 | REMOTE RESET MODULE |
| S7830A1005 | EXPANDED ANNUNCIATOR (120 VAC, 50/60 HZ) |
| 203541 | DATA CONTROLBUS CONNECTOR, 5-WIRE |
| 203765 | REMOTE DISPLAY MOUNTING BRACKET |
| 221729 | DUST COVER, RELAY MODULE |
| 50023821-001 | KEYBOARD DISPLAY MODULE COVER, NEMA 4 |
| 204718B | KEYBOARD DISPLAY MODULE COVER, CLEAR |
| 50023821-002 | KEYBOARD DISPLAY MODULE COVER, NEMA 4, CLEAR WITH RESET BUTTON |
| 205321B | FLUSH DISPLAY MOUNTING KIT |
| 221818A | EXTENSION CABLE, DISPLAY 5FT (1524MM) |
| 221818C | EXTENSION CABLE, DISPLAY 10FT (3048MM) |

M18830F

PRODUCT SELECTION MATRIX FOR UL/CSA RM78XXG,M PROGRAMMER RELAY MODULE:

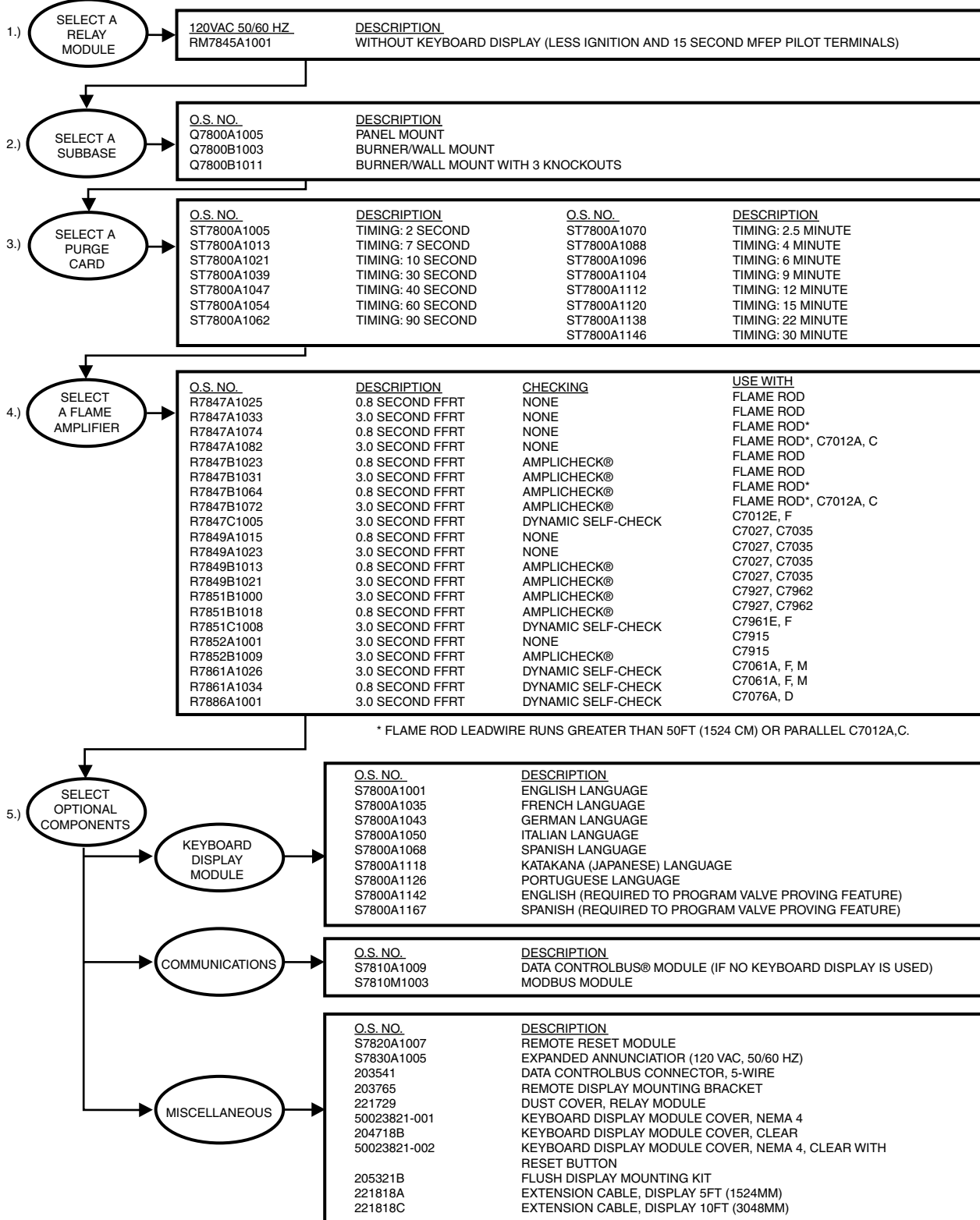


Commercial/Industrial
Combustion Controls

M15529F

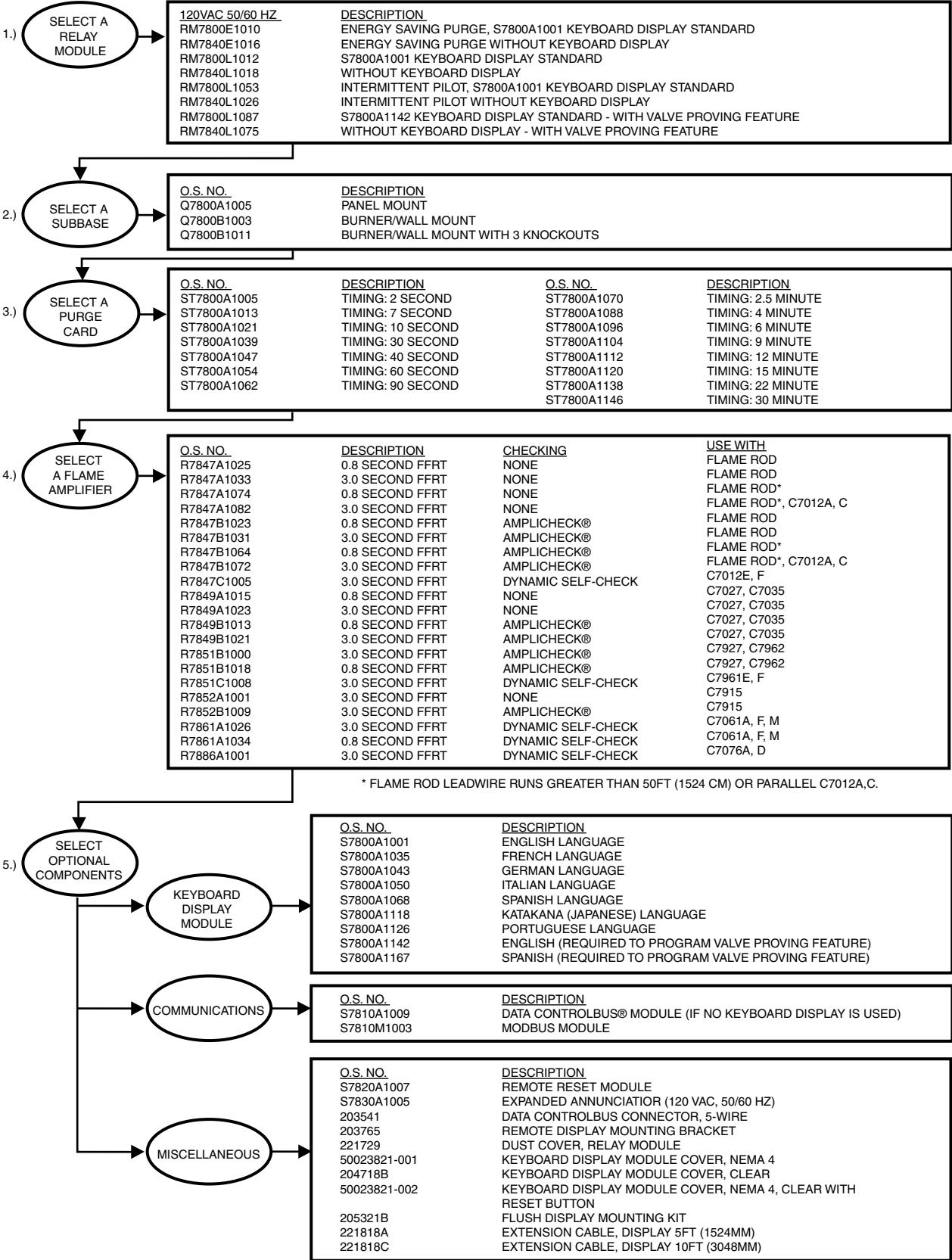
Product Selection Matrix

PRODUCT SELECTION MATRIX FOR FM/IRI RM78XXE, L PROGRAMMER RELAY MODULE:



M34645

PRODUCT SELECTION MATRIX FOR FM/IRI RM78XXE, L PROGRAMMER RELAY MODULE:



Commercial/Industrial
Combustion Controls

M15530G

Microprocessor Burner Controls

EC7820 Primary Control Meeting European Community Timings



Integrated burner control for automatically fired gas, oil, or combination, single burner atmospheric with fan applications. Has automatic burner sequencing, flame supervising system status indication, system or self-diagnostics, and troubleshooting.

- Access for external electrical voltage checks.
- Application flexibility and communication interface capability.
- Five LEDs provide sequence information.
- Five function Run/Test Switch. Interchangeable plug-in amplifiers.
- Local or remote annunciation of operation and fault information (optional).
- Non-volatile memory retains history files and lockout status after loss of power.
- Compatible with existing Honeywell flame detectors.

Application: Primary Control

Interlocks: Lockout

Preignition: Yes

PrePurge: Determined by ST7800A Purge Timer Card

PostPurge: 5 sec

Early Spark Termination: Yes, 5 sec

Required Components: Q7800A, B Universal Wiring Subbases.

R7847, R7849, R7861, or R7886 Flame Signal Amplifier. ST7800A Plug-in Purge Timer Card.

Frequency: 60 Hz ($\pm 10\%$), 50 Hz

AirFlow Check: User selectable

Second Stage Pilot Valve: Intermittent

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Approximate, Dimensions: 5 in. wide x 5 in. high x 5 1/4 in. deep

with Q7800A Subbase x 6 3/32 in. deep with Q7800B Subbase

(127 mm wide x 127 mm high x 133 mm deep with Q7800A Subbase x 155 mm deep with Q7800B Subbase)

Weight lb. (kg): 1 lb 10 oz (0.7 kg)

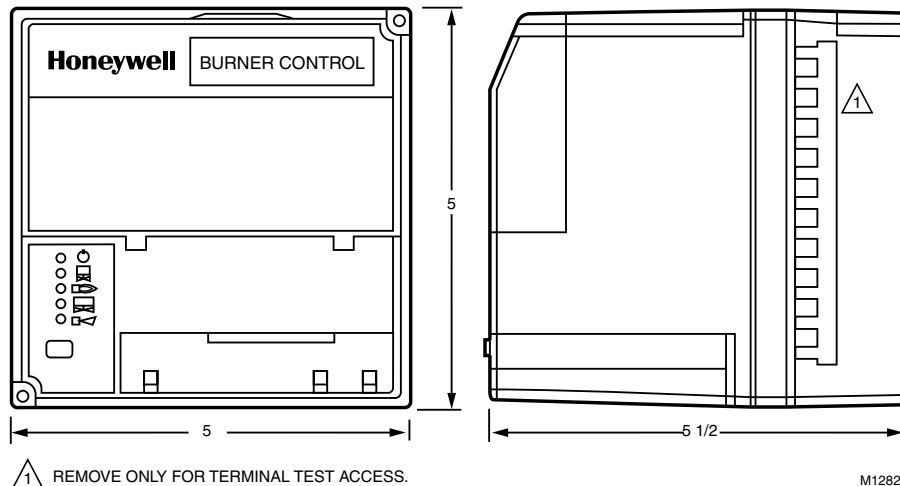
Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: Report No. 1V9AO.AF.

Approvals, Gastec/European: GASTEC: CE-63AP3070/1, Approved to EN298.



Dimensions in inches (millimeters)



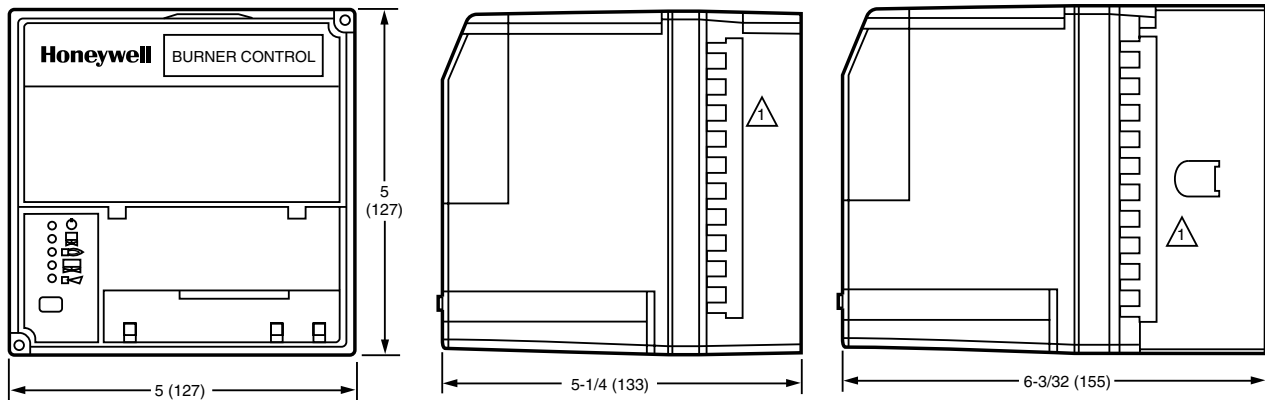
| Material Number | Voltage | Pilot Type | Flame Establishing Period - Main | Flame Establishing Period - Pilot | Comments |
|-----------------|----------------------------|-------------|----------------------------------|-----------------------------------|--|
| EC7820A1026/U | 220 to 240 Vac (+10, -15%) | interrupted | 5 sec, or 8 sec, or Intermittent | 5 sec or 10 sec | 1 ignition attempt, Includes Modulation w/ Fan Output |
| EC7820A1034/U | 220 to 240 Vac (+10, -15%) | interrupted | 5 sec, or 8 sec, or Intermittent | 5 sec or 10 sec | 5 ignition attempts, Includes Modulation w/ Fan Output |

EC7830; EC7850; RM7830; RM7850 Programming Control Meeting European Community Timings



Application: Programming Control
Flame Establishing Period - Main: 3 sec, or 5 sec, or Intermittent
Flame Establishing Period - Pilot: 3 sec or 5 sec
Interlocks: Lockout
Preignition: Yes
PrePurge: Determined by ST7800A Purge Timer Card
Early Spark Termination: Yes, 5 sec
Required Components: Q7800A,B Universal Wiring Subbases. R7847, R7849, R7861, or R7886 Flame Signal Amplifier. ST7800A Plug-in Purge Timer Card.
AirFlow Check: User selectable
Second Stage Pilot Valve: Intermittent
Pilot Type: interrupted
Vibration: 0.5 G environment
Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Dimensions in inches (millimeters)



REMOVE ONLY FOR TERMINAL TEST ACCESS.

M15532A

Microprocessor-based integrated burner control for full modulation applications. Provides automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics, and troubleshooting.

- Access for external electrical voltage checks.
- Application flexibility and communication interface capability.
- Five LEDs provide sequence information.
- Five function Run/Test Switch.
- Interchangeable plug-in amplifiers.
- Local or remote annunciation of operation and fault information (optional).
- Non-volatile memory retains history files and lockout status after loss of power.
- Compatible with existing Honeywell flame detectors.

Approximate, Dimensions: 5 in. wide x 5 in. high x 5 1/4 in. deep with Q7800A Subbase x 6 3/32 in. deep with Q7800B Subbase (127 mm wide x 127 mm high x 133 mm deep with Q7800A Subbase x 155 mm deep with Q7800B Subbase)

Weight lb. (kg): 1 lb 10 oz (0.7 kg)

Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: EC7830, EC7850, RM7830-Report No. 1V9AO.AF; RM7850-Report No. J.I. OYOA9.AF

Approvals, Gastec/European: GASTEC: CE-63AP3070/1, Approved to EN298.



| Material Number | Voltage | Frequency | PostPurge | Comments |
|-----------------|----------------------------|---------------------|-----------|--|
| EC7830A1033/U | 220 to 240 Vac (+10, -15%) | 60 Hz (±10%), 50 Hz | 2 sec | On/Off Power Burner |
| EC7830A1041/U | 220 to 240 Vac (+10, -15%) | 60 Hz (±10%), 50 Hz | 30 sec | On/Off Power Burner |
| EC7830A1066/U | 220 to 240 Vac (+10, -15%) | 60 Hz (±10%), 50 Hz | 15 sec | On/Off Power Burner |
| EC7850A1064/U | 220 to 240 Vac (+10, -15%) | 60 Hz (±10%), 50 Hz | 30 sec | LHL-LF & HF Proven; Dynamic damper check |
| EC7850A1072/U | 220 to 240 Vac (+10, -15%) | 60 Hz (±10%), 50 Hz | 2 sec | LHL-LF & HF Proven |
| EC7850A1080/U | 220 to 240 Vac (+10, -15%) | 60 Hz (±10%), 50 Hz | 30 sec | LHL-LF & HF Proven |
| EC7850A1122/U | 220 to 240 Vac (+10, -15%) | 60 Hz (±10%), 50 Hz | 15 sec | LHL-LF & HF Proven |
| EC7850A1148/U | 220 to 240 Vac (+10, -15%) | 60 Hz (±10%), 50 Hz | 2 sec | LHL-LF & HF Proven |
| RM7830A1003/U | 120 Vac (+10, -15%) | 50 Hz; 60 Hz (±10%) | 2 sec | On/Off Power Burner |
| RM7830A1011/U | 120 Vac (+10, -15%) | 50 Hz; 60 Hz (±10%) | 15 sec | On/Off Power Burner |
| RM7830A1029/U | 120 Vac (+10, -15%) | 50 Hz; 60 Hz (±10%) | 30 sec | On/Off Power Burner |
| RM7850A1001/U | 120 Vac (+10, -15%) | 50 Hz; 60 Hz (±10%) | 2 sec | LHL-LF & HF Proven; Complies with Gas Appliance Directive (90/396/EEC). Low Voltage Directive (73/23/EEC). EMC Directive (89/336/EEC). |
| RM7850A1019/U | 120 Vac (+10, -15%) | 50 Hz; 60 Hz (±10%) | 15 sec | LHL-LF & HF Proven; Complies with Gas Appliance Directive (90/396/EEC). Low Voltage Directive (73/23/EEC). EMC Directive (89/336/EEC). |
| RM7850A1027/U | 120 Vac (+10, -15%) | 50 Hz; 60 Hz (±10%) | 30 sec | LHL-LF & HF Proven; Complies with Gas Appliance Directive (90/396/EEC). Low Voltage Directive (73/23/EEC). EMC Directive (89/336/EEC). |

Microprocessor Burner Controls

RM7800 Programmers



Microprocessor-based integrated burner control for automatically fired gas, oil, coal or combination fuel single burner applications. Provides safety, functional capability and features beyond conventional controls.

- Functions include automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics and trouble shooting.
- Access for external electrical voltage checks.
- Application flexibility and communication interface capability.
- Five LEDs provide sequence information.
- Five function Run/Test Switch.
- Interchangeable plug-in flame amplifiers.
- Local or remote annunciation of operation and fault information (optional).
- Nonvolatile memory retains history files and lockout status after loss of power.
- Compatible with existing Honeywell flame detectors.
- Includes Keyboard Display Module.

Application: Programming Control

Preignition: Yes

PrePurge: Determined by ST7800A Purge Timer Card

PostPurge: 15 sec

Early Spark Termination: Yes, 5 sec

Required Components: Q7800A, B Universal Wiring Subbases.

R7847, R7848, R7849, R7851, R7852, R7861, or R7886 Flame Signal Amplifier. ST7800A Plug-in Purge Timer Card.

Frequency: 50 Hz; 60 Hz ($\pm 10\%$)

AirFlow Check: User selectable

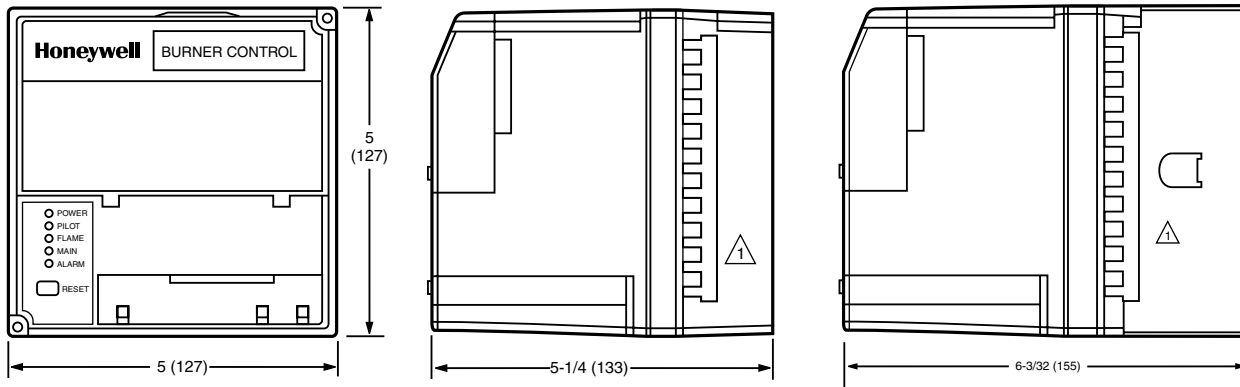
Pilot Type: interrupted

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Approximate, Dimensions: 5 in. wide x 5 in. high x 5 1/4 in. deep with Q7800A Subbase x 6 3/32 in. deep with Q7800B Subbase (127 mm wide x 127 mm high x 133 mm deep with Q7800A Subbase x 155 mm deep with Q7800B Subbase)

Dimensions in inches (millimeters)



REMOVE ONLY FOR TERMINAL TEST ACCESS.

M15518B

| Material Number | Voltage | Flame Establishing Period - Main | Flame Establishing Period - Pilot | Second Stage Pilot Valve | Interlocks | Comments |
|-----------------|---------------------|---|-----------------------------------|--------------------------|------------|--|
| RM7800E1010/U | 120 Vac (+10, -15%) | 10 sec or 15 sec | 4 sec or 10 sec | Interrupted | Lockout | Includes S7800 Display, LHL-LF & HF Proven |
| RM7800G1018/U | 120 Vac (+10, -15%) | 10 sec, or 15 sec, or 30 sec, or Intermittent | 4 sec or 10 sec | selectable | Running | Includes S7800 Display, LHL-LF Proven |
| RM7800L1012/U | 120 Vac (+10, -15%) | 10 sec or 15 sec | 4 sec or 10 sec | Interrupted | Lockout | Includes S7800 Display, LHL-LF & HF Proven |
| RM7800L1053/U | 120 Vac (+10, -15%) | 10 sec or Intermittent | 4 sec or 10 sec | Intermittent | Lockout | Includes S7800 Display, LHL-LF & HF Proven |
| RM7800M1011/U | 120 Vac (+10, -15%) | 10 sec or Intermittent | 4 sec or 10 sec | Intermittent | Running | Includes S7800 Display, On/Off-LF proven |

RM7800 Programmings with VPS



Integrated burner control for gas, oil, coal or combination fuel single burner uses. With Valve Proving Feature. RM7800L comes standard with S7800A1142 Keyboard Display.

- Functions include automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics and trouble shooting.
- Access for external electrical voltage checks.
- Application flexibility and communication interface capability.
- Five LEDs provide sequence information. Power LED blinks fault code on Lockout.
- Five function Run/Test Switch.
- Interchangeable plug-in flame amplifiers.
- Local or remote annunciation of operation and fault information (optional).
- Nonvolatile memory retains history files and lockout status after loss of power.
- Compatible with existing Honeywell flame detectors.
- RM7800 comes with S7800A1142 Keyboard Display Module.
- Keyboard required to setup Valve Proving Feature and change post purge time.

Application: Programming Control w/VPS

Preignition: Yes

PostPurge: Determined by ST7800A Purge Timer Card

PostPurge: programmed with S7800A1142 display

Early Spark Termination: Yes, 5 sec

Required Components: Q7800A, B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7852, R7861, or R7886 Flame Signal Amplifier. ST7800A Plug-in Purge Timer Card.

Frequency: 50 Hz; 60 Hz ($\pm 10\%$)

AirFlow Check: User selectable

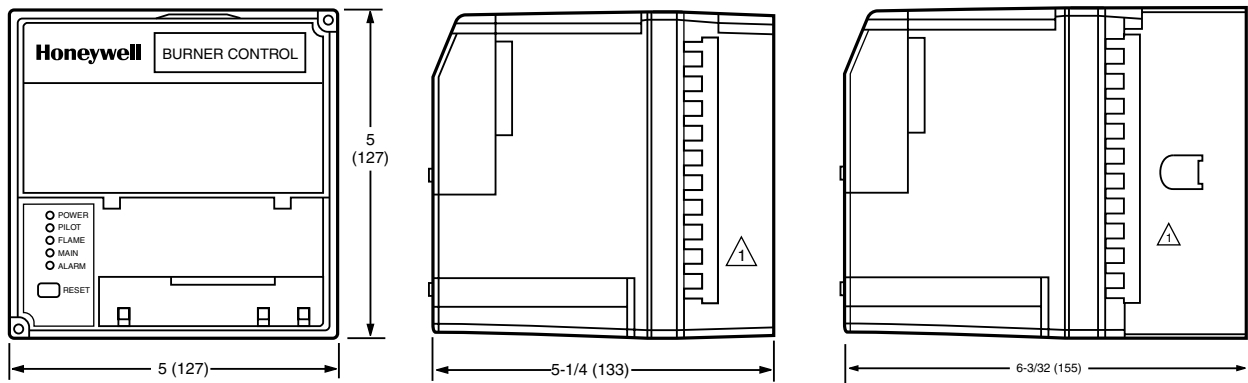
Pilot Type: interrupted

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Approximate, Dimensions: 5 in. wide x 5 in. high x 5 1/4 in. deep with Q7800A Subbase x 6 3/32 in. deep with Q7800B Subbase (127 mm wide x 127 mm high x 133 mm deep with Q7800A Subbase x 155 mm deep with Q7800B Subbase)

Dimensions in inches (millimeters)



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M15518B

| Material Number | Voltage | Flame Establishing Period - Main | Flame Establishing Period - Pilot | Second Stage Pilot Valve | Interlocks | Comments |
|-----------------|---------------------|----------------------------------|-----------------------------------|--------------------------|------------|---|
| RM7800L1087/U | 120 Vac (+10, -15%) | 10 sec or 15 sec | 4 sec or 10 sec | Interrupted | Lockout | Includes S7800A1142 Display, LHL-LF & HF Proven |

Weight lb. (kg): 1 lb 10 oz (0.7 kg)

Approvals, Underwriters Laboratories Inc.: Component Recognized, File No. MP268; Guide No. MCCZ.

Approvals, FCC: FCC Part 15, Class B, Emissions.

Approvals, Factory Mutual: Report No. 1V9AO.AF.



Microprocessor Burner Controls

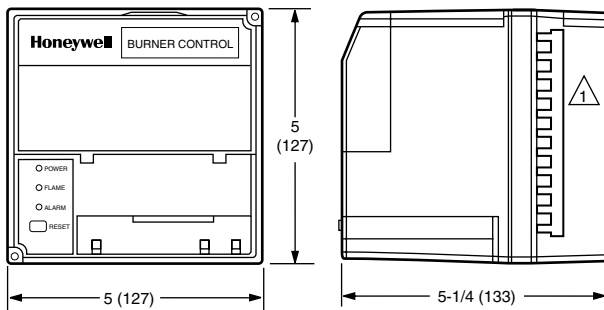
RM7823; EC7823 Flame Switch



Microprocessor-based integrated flame switch for detecting a flame using rectification, ultraviolet (UV) or infrared (IR) source. Provides level of safety, functional capability and features beyond conventional controls.

- Can be fitted with any 7800 Series Amplifier to provide relay action from two single pole, double throw (SPDT) relays when flame is present or not present. RM7823A and EC7823 are a flame detector relays only.
- Suitable primary control must be used to provide safe-start check, safety lockout, load switching and other functions required in flame safeguard systems.
- Three LEDs to indicate power, flame and alarm.
- Access for external electrical voltage checks.
- Nonvolatile memory.
- Shutter drive output.
- Compatible with existing Honeywell flame detectors.

Dimensions in inches (millimeters)



1 REMOVE ONLY FOR TERMINAL TEST ACCESS.

M2649

Application: Flame Switch

Required Components: Q7800A, B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7852, R7861, or R7886 Flame Signal Amplifier.

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Approximate, Dimensions: 5 in. wide x 5 in. high x 5 1/4 in. deep with Q7800A Subbase x 6 3/32 in. deep with Q7800B Subbase (127 mm wide x 127 mm high x 133 mm deep with Q7800A Subbase x 155 mm deep with Q7800B Subbase)

Weight lb. (kg): 1 lb 13 oz (0.8 kg)

Approvals, Swiss RE: Acceptable

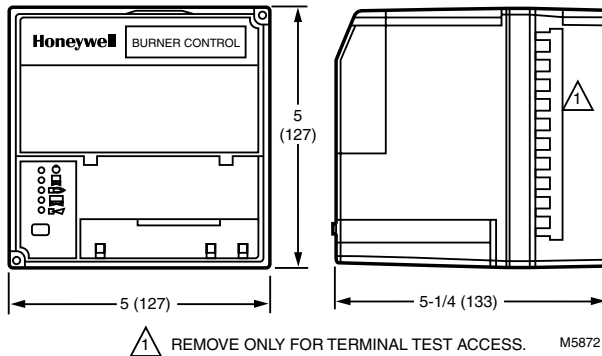
Comments: two SPDT outputs

| Material Number | Voltage | Frequency | Approvals, Underwriters Laboratories Inc. | Approvals, CSA | Approvals, FCC | Approvals, Factory Mutual |
|-----------------|----------------------------|---------------------|---|--------------------------------|----------------------------------|---------------------------|
| EC7823A1004/U | 220 to 240 Vac (+10, -15%) | 60 Hz (±10%), 50 Hz | | | | Report No. OY0A9.AF. |
| RM7823A1016/U | 120 Vac (+10, -15%) | 50 Hz; 60 Hz (±10%) | Component Recognized, File No. MP268; Guide No. MCCZ. | Certified, File No. LR95329-3. | FCC Part 15, Class B, Emissions. | Report No. OX4A5.AF. |

RM7824 On-Off Primary Control



Dimensions in inches (millimeters)



24 Vdc microprocessor-based integrated burner control for automatically fired gas, oil or combination fuel single burner applications. Provides level of safety, functional capability and features beyond the capacity of conventional controls.

- For use with R7824C Amplifier with C7024E, F Flame Detectors; R7848A, B with C7015A Flame Detectors; R7851B with C7927, C7962 Flame Detectors; or R7852A, B with C7915 Flame Detectors.
- Functions include automatic burner sequencing, flame supervision, system status indication, system or self diagnostics and troubleshooting.
- Five LEDs provide sequence information.
- Selectable recycle or lockout on loss of flame.
- Shutter drive output for use with dynamic self-check flame detectors.
- Access for external electrical voltage checks.
- Plug-in flame amplifier.
- Nonvolatile memory retains history files and lockout status after loss of power.

Application: Primary Control 24 Vdc

Required Components: Q7800A, B Universal Wiring Subbases. R7824 or R7848 Flame Signal Amplifier.

Pilot Type: intermittent

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Approximate Dimensions: 5 in. wide x 5 in. high x 5 1/4 in. deep with Q7800A Subbase x 6 3/32 in. deep with Q7800B Subbase (127 mm wide x 127 mm high x 133 mm deep with Q7800A Subbase x 155 mm deep with Q7800B Subbase)

Weight lb. (kg): 1 lb 13 oz (0.8 kg)

Approvals, Underwriters Laboratories Inc.: Component Recognized, File No. MP268; Guide No. MCCZ.

Approvals, CSA: Certified, File No. LR95329-3.

Approvals, FCC: FCC Part 15, Class B, Emissions.

Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: Report No. OX4A5.AF.

| Material Number | Voltage | Flame Establishing Period - Main | Flame Establishing Period - Pilot |
|-----------------|--------------------|----------------------------------|-----------------------------------|
| RM7824A1006/U | 24 Vdc (+10, -15%) | Intermittent | 4 sec or 10 sec |

Microprocessor Burner Controls

RM7838A Manual Start Industrial Primary Control with Purge



Microprocessor-based integrated burner control for industrial semi-automatically fired gas, oil, coal or combination fuel single burner applications. Provides level of safety, functional capability and features beyond conventional controls.

- Functions include purge, burner pilot startup, flame supervision, system status indication, system or self diagnosis and troubleshooting.
- Delays admission of fuel to combustion chamber until pilot flame has been proven and then monitors the flame through the run period while providing system status indication.
- Includes Keyboard Display Module.
- Five LEDs provide sequence information.
- Intermittent pilot valve.
- Interchangeable plug-in flame amplifier.
- Access for external electrical voltage checks.
- Nonvolatile memory retains history files and lockout status after loss of power.
- Selectable pilot flame establishing period.
- Provides application flexibility and optional communication interface capability.
- Compatible with existing Honeywell flame detectors.

Application: Semi Automatic Primary Control with Purge

Interlocks: Running

PrePurge: Determined by ST7800A Purge Timer Card

Required Components: Q7800A, B Universal Wiring Subbases.

R7847, R7848, R7849, R7851, R7852, R7861, or R7886 Flame Signal Amplifier. ST7800A Plug-in Purge Timer Card.

Frequency: 50 Hz; 60 Hz ($\pm 10\%$)

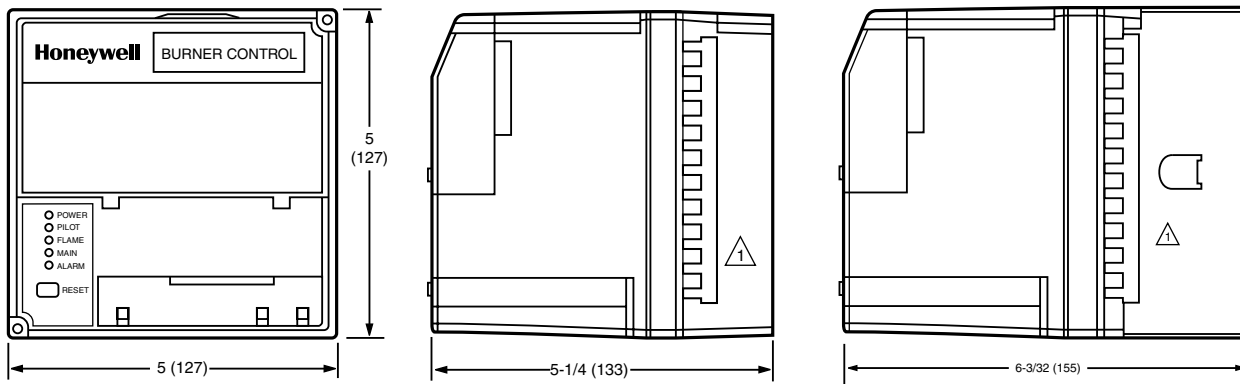
Pilot Type: intermittent

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to $+140^{\circ}\text{F}$ (-40°C to $+60^{\circ}\text{C}$)

Approximate, Dimensions: 5 in. wide x 5 in. high x 5 1/4 in. deep with Q7800A Subbase x 6 3/32 in. deep with Q7800B Subbase (127 mm wide x 127 mm high x 133 mm deep with Q7800A Subbase x 155 mm deep with Q7800B Subbase)

Dimensions in inches (millimeters)



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M15518B



Weight lb. (kg): 1 lb 10 oz (0.7 kg)

Approvals, Underwriters Laboratories Inc.: Component Recognized, File No. MP268; Guide No. MCCZ.

Approvals, CSA: Certified, File No. LR95329-3.

Approvals, Control Safety Devices: Acceptable: CSD-1

Approvals, FCC: FCC Part 15, Class B, Emissions.

Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: Report No. OX4A5.AF.

| Material Number | Voltage | Flame Establishing Period - Main | Flame Establishing Period - Pilot | Comments |
|-----------------|---------------------|----------------------------------|-----------------------------------|------------------------|
| RM7838A1014/U | 120 Vac (+10, -15%) | Intermittent | 4 sec or 10 sec | Includes S7800 Display |

RM7838B, C Manual Start Industrial Programmers



Microprocessor-based integrated burner control for industrial semi-automatically fired gas, oil, coal or combination fuel single burner applications. Provides level of safety, functional capability and features beyond conventional controls.

- Functions include purge, burner pilot startup, flame supervision, system status indication, system or self diagnosis and troubleshooting.
- Delays admission of fuel to combustion chamber until pilot flame has been proven and then monitors the flame through the run period while providing system status indication.
- Includes Keyboard Display Module.
- Five LEDs provide sequence information.
- Intermittent pilot valve.
- Interchangeable plug-in flame amplifier.
- Access for external electrical voltage checks.
- Nonvolatile memory retains history files and lockout status after loss of power.
- Selectable pilot flame establishing period.
- Provides application flexibility and optional communication interface capability.
- Compatible with existing Honeywell flame detectors.

Application: Semi Automatic Programming Control

Interlocks: Lockout

Preignition: Yes

Early Spark Termination: Yes, 5 sec

Frequency: 50 Hz; 60 Hz ($\pm 10\%$)

Pilot Type: interrupted

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to $+140^{\circ}\text{F}$ (-40°C to $+60^{\circ}\text{C}$)

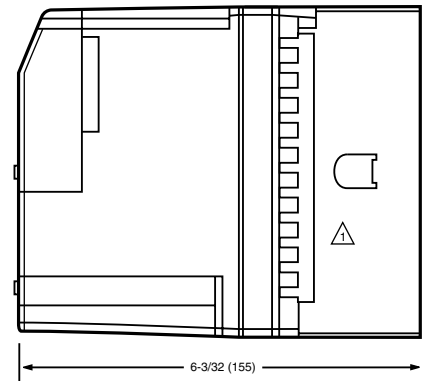
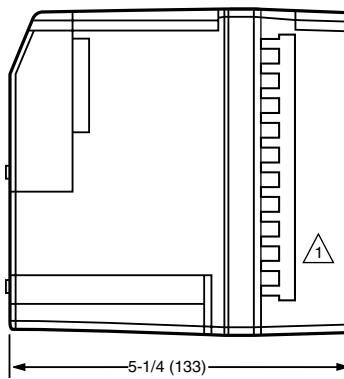
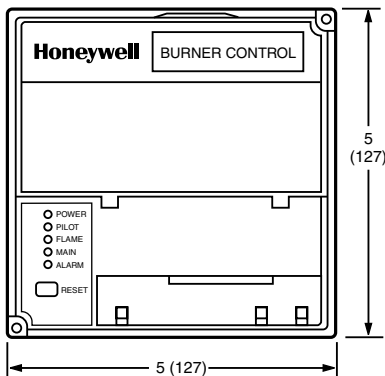
Approximate, Dimensions: 5 in. wide x 5 in. high x 5 1/4 in. deep with Q7800A Subbase x 6 3/32 in. deep with Q7800B Subbase (127 mm wide x 127 mm high x 133 mm deep with Q7800A Subbase x 155 mm deep with Q7800B Subbase)

Weight lb. (kg): 1 lb 10 oz (0.7 kg)

Dimensions in inches (millimeters)



Commercial/Industrial
Combustion Controls



MODULE WITH SUBBASE

M15518B

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| Material Number | Voltage | Flame Establishing Period - Main | Flame Establishing Period - Pilot | PrePurge | Required Components | Approvals, Gastec/European | Comments |
|-----------------|---------------------|----------------------------------|-----------------------------------|--|---|-----------------------------|------------------------|
| RM7838B1013/U | 120 Vac (+10, -15%) | 10 sec or Intermittent | 4 sec or 10 sec | Determined by ST7800A Purge Timer Card | Q7800A, B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7852, R7861, or R7886 Flame Signal Amplifier. ST7800A Plug-in Purge Timer Card. | | Includes S7800 Display |
| RM7838C1004/U | 120 Vac (+10, -15%) | 10 sec or Intermittent | 4 sec or 10 sec | Determined by ST7800C Purge Timer Card | Q7800A, B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7852, R7861, or R7886 Flame Signal Amplifier. ST7800C Plug-in Purge Timer Card. | | Includes S7800 Display |
| RM7838C1020/U | 120 Vac (+10, -15%) | 10 sec or Intermittent | 4 sec or 10 sec | Determined by ST7800C Purge Timer Card | Q7800A, B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7852, R7861, or R7886 Flame Signal Amplifier. ST7800C Plug-in Purge Timer Card. | Gastec EN268 Report 1156791 | Includes S7800 Display |

Microprocessor Burner Controls

RM7838B, C Manual Start Industrial Programmers with VPS



Integrated burner control for industrial semi-automatically fired gas, oil, coal or combination fuel single burner applications. Includes Valve Proving Feature with S7800A1142 Keyboard Display.

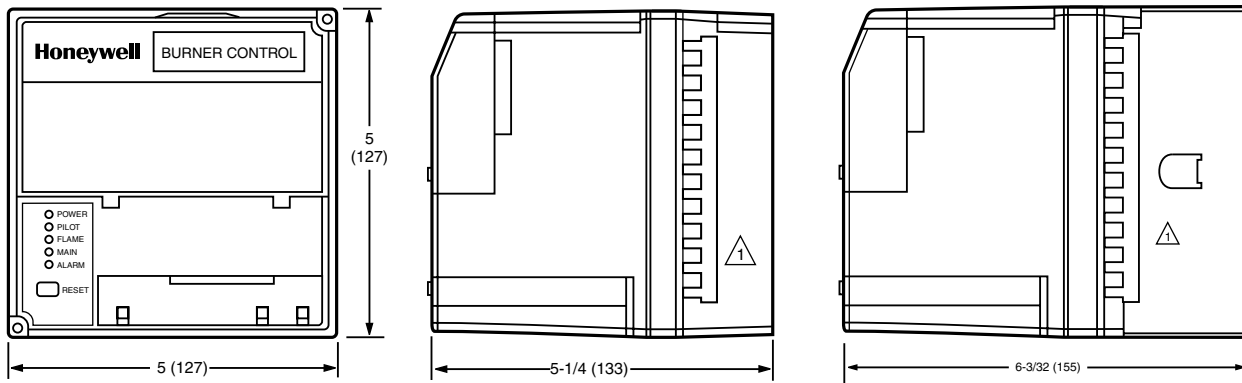
- Functions include purge, burner pilot startup, flame supervision, system status indication, system or self diagnosis and troubleshooting.
- Delays admission of fuel to combustion chamber until pilot flame has been proven and then monitors the flame through the run period while providing system status indication.
- Includes S7800A1142 Keyboard Display Module.
- Five LEDs provide sequence information.
- Intermittent pilot valve.
- Interchangeable plug-in flame amplifier.
- Access for external electrical voltage checks.
- Nonvolatile memory retains history files and lockout status after loss of power.
- Selectable pilot flame establishing period.
- Provides application flexibility and optional communication interface capability.
- Compatible with existing Honeywell flame detectors.
- With Valve Proving Feature and Programmable Post Purge Time.
- Power LED blinks a fault code on system lockout.

Application: Semi Automatic Programming Control w/VPS
Interlocks: Lockout
Preignition: Yes
PostPurge: programmed with S7800A1142 display
Early Spark Termination: Yes, 5 sec
Frequency: 50 Hz; 60 Hz ($\pm 10\%$)
Pilot Type: interrupted
Vibration: 0.5 G environment
Shipping and Storage Temperature Range: -40°F to $+140^{\circ}\text{F}$ (-40°C to $+60^{\circ}\text{C}$)
Approximate, Dimensions: 5 in. wide x 5 in. high x 5 1/4 in. deep with Q7800A Subbase x 6 3/32 in. deep with Q7800B Subbase (127 mm wide x 127 mm high x 133 mm deep with Q7800A Subbase x 155 mm deep with Q7800B Subbase)

Weight lb. (kg): 1 lb 10 oz (0.7 kg)
Approvals, Underwriters Laboratories Inc.: Component Recognized, File No. MP268; Guide No. MCCZ.
Approvals, Control Safety Devices: Acceptable: CSD-1
Approvals, FCC: FCC Part 15, Class B, Emissions.
Approvals, Swiss RE: Acceptable
Approvals, Factory Mutual: Report No. OX4A5.AF.



Dimensions in inches (millimeters)



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MODULE WITH SUBBASE

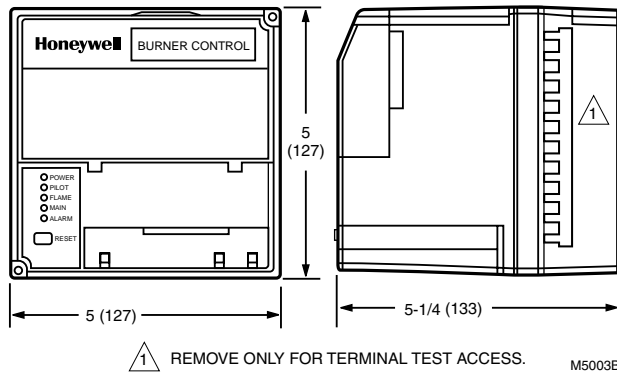
M15518B

| Material Number | Voltage | Flame Establishing Period - Main | Flame Establishing Period - Pilot | PrePurge | Required Components | Comments |
|-----------------|---------------------|----------------------------------|-----------------------------------|--|---|--|
| RM7838B1021/U | 120 Vac (+10, -15%) | 10 sec or Intermittent | 4 sec or 10 sec | Determined by ST7800A Purge Timer Card | Q7800A, B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7852, R7861, or R7886 Flame Signal Amplifier. ST7800A Plug-in Purge Timer Card. | Includes programmable VPS (Valve Proving Switch) check feature and blinking LED fault annunciation |
| RM7838C1012/U | 120 Vac (+10, -15%) | 10 sec or Intermittent | 4 sec or 10 sec | Determined by ST7800C Purge Timer Card | Q7800A, B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7852, R7861, or R7886 Flame Signal Amplifier. ST7800C Plug-in Purge Timer Card. | Includes programmable VPS (Valve Proving Switch) check feature and blinking LED fault annunciation |

RM7840 Programmers



Dimensions in inches (millimeters)



Microprocessor-based integrated burner control for automatically fired gas, oil, coal or combination fuel single burner applications. Provides safety, functional capability and features beyond conventional controls.

- Functions include automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics and troubleshooting.
- Access for external electrical voltage checks.
- Application flexibility and communication interface capability.
- Five LEDs provide sequence information.
- Five function Run/Test Switch.
- Interchangeable plug-in flame amplifiers.
- Local or remote annunciation of RM7840 operation and fault information.
- Nonvolatile memory retains history files and lockout status after loss of power.
- Compatible with existing Honeywell flame detectors.

Application: Programming Control

Preignition: Yes

PrePurge: Determined by ST7800A Purge Timer Card

PostPurge: 15 sec

Early Spark Termination: Yes, 5 sec

Required Components: Q7800A, B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7852, R7861, or R7886 Flame Signal Amplifier. ST7800A Plug-in Purge Timer Card.

Voltage: 120 Vac (+10, -15%)

Frequency: 50 Hz; 60 Hz ($\pm 10\%$)

AirFlow Check: User selectable

Pilot Type: interrupted

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Approximate, Dimensions: 5 in. wide x 5 in. high x 5 1/4 in. deep with Q7800A Subbase x 6 3/32 in. deep with Q7800B Subbase (127 mm wide x 127 mm high x 133 mm deep with Q7800A Subbase x 155 mm deep with Q7800B Subbase)

Weight lb. (kg): 1 lb 13 oz (0.8 kg)

Approvals, Underwriters Laboratories Inc.: Component Recognized, File No. MP268; Guide No. MCCZ.

Approvals, CSA: Certified, File No. LR95329-3.

Approvals, Control Safety Devices: Acceptable: CSD-1

Approvals, FCC: FCC Part 15, Class B, Emissions.

Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: Report No. OX4A5.AF.



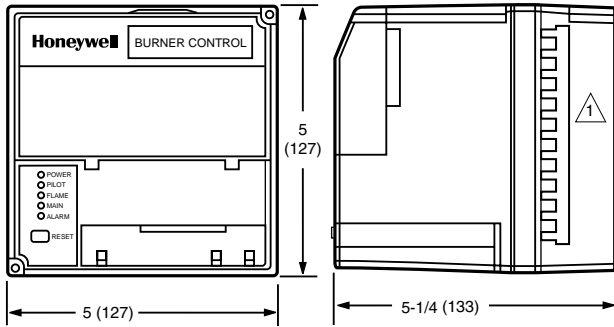
| Material Number | Interlocks | Second Stage Pilot Valve | Flame Establishing Period - Main | Flame Establishing Period - Pilot | Comments |
|-----------------|------------|--------------------------|---|-----------------------------------|--------------------|
| RM7840E1016/U | Lockout | Interrupted | 10 sec or 15 sec | 4 sec or 10 sec | LHL-LF & HF Proven |
| RM7840G1014/U | Running | selectable | 10 sec, or 15 sec, or 30 sec, or Intermittent | 4 sec or 10 sec | LHL-LF Proven |
| RM7840L1018/U | Lockout | Interrupted | 10 sec or 15 sec | 4 sec or 10 sec | LHL-LF & HF Proven |
| RM7840L1026/U | Lockout | Intermittent | 10 sec or Intermittent | 4 sec or 10 sec | LHL-LF & HF Proven |
| RM7840M1017/U | Running | Intermittent | 10 sec or Intermittent | 4 sec or 10 sec | On/Off-LF Proven |

Microprocessor Burner Controls

RM7840 Programmings with VPS



Dimensions in inches (millimeters)



REMOVE ONLY FOR TERMINAL TEST ACCESS. M5003B

Integrated burner control for gas, oil, coal or combination fuel single burner uses. Provides safety, functional capability and features beyond normal controls. With Valve Proving Feature. Requires S7800A1142 Keyboard Display.

- Functions include automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics and trouble shooting.
- Access for external electrical voltage checks.
- Application flexibility and communication interface capability.
- Five LEDs provide sequence information. Power LED blinks fault code on Lockout.
- Five function Run/Test Switch.
- Interchangeable plug-in flame amplifiers.
- Local or remote annunciation of operation and fault information (optional).
- Nonvolatile memory retains history files and lockout status after loss of power.
- Compatible with existing Honeywell flame detectors.
- RM7800 comes with S7800A1142 Keyboard Display Module.
- Keyboard required to setup Valve Proving Feature and change post purge time.

Application: Programming Control w/VPS

Preignition: Yes

PrePurge: Determined by ST7800A Purge Timer Card

PostPurge: programmed with S7800A1142 display

Early Spark Termination: Yes, 5 sec

Required Components: Q7800A, B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7852, R7861, or R7886 Flame Signal Amplifier. ST7800A Plug-in Purge Timer Card.

Frequency: 50 Hz; 60 Hz ($\pm 10\%$)

AirFlow Check: User selectable

Second Stage Pilot Valve: selectable

Pilot Type: interrupted

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to $+140^{\circ}\text{F}$ (-40°C to $+60^{\circ}\text{C}$)

Approximate, Dimensions: 5 in. wide x 5 in. high x 5 1/4 in. deep with Q7800A Subbase x 6 3/32 in. deep with Q7800B Subbase (127 mm wide x 127 mm high x 133 mm deep with Q7800A Subbase x 155 mm deep with Q7800B Subbase)

Weight lb. (kg): 1 lb 10 oz (0.7 kg)

Approvals, FCC: FCC Part 15, Class B, Emissions.

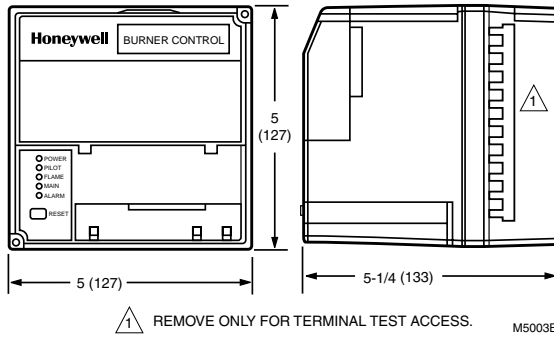


| Material Number | Voltage | Flame Establishing Period - Main | Flame Establishing Period - Pilot | Interlocks | Comments | Approvals, Underwriters Laboratories Inc. | Approvals, Factory Mutual |
|-----------------|----------------------------|---|-----------------------------------|------------|---|---|---------------------------|
| EC7840L1014/U | 220 to 240 Vac (+10, -15%) | 10 sec or 15 sec | 4 sec or 10 sec | Lockout | Requires S7800A1142 Display, LHL-LF & HF Proven | | |
| RM7840G1022/U | 120 Vac (+10, -15%) | 10 sec, 15 sec, 30 sec, or Intermittent | 4 sec or 10 sec | Running | Requires S7800A1142 Display, LHL-LF Proven | Component Recognized, File No. MP268; Guide No. MCCZ. | Report No. 1V9AO.AF. |
| RM7840L1075/U | 120 Vac (+10, -15%) | 10 sec or 15 sec | 4 sec or 10 sec | Lockout | Requires S7800A1142 Display, LHL-LF & HF Proven | Component Recognized, File No. MP268; Guide No. MCCZ. | Report No. 1V9AO.AF. |

RM7845 Programmiers



Dimensions in inches (millimeters)



Microprocessor-based integrated burner control for automatically fired gas, oil, coal or combination fuel single burner applications. Provides safety, functional capability and features beyond conventional controls.

- Functions include automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics and troubleshooting.

- Access for external electrical voltage checks.
- Application flexibility and communication interface capability.
- Five LEDs provide sequence information.
- Five function Run/Test Switch.
- Interchangeable plug-in flame amplifiers.
- Local or remote annunciation of RM7840 operation and fault information.
- Nonvolatile memory retains history files and lockout status after loss of power.
- Compatible with existing Honeywell flame detectors.

Application: Programming Control

Interlocks: Lockout

Preignition: Yes

PrePurge: Determined by ST7800A Purge Timer Card

PostPurge: 15 sec

Required Components: Q7800A, B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7852, R7861, or R7886 Flame Signal Amplifier. ST7800A Plug-in Purge Timer Card.

Voltage: 120 Vac (+10, -15%)

Frequency: 50 Hz; 60 Hz ($\pm 10\%$)

AirFlow Check: User selectable

Pilot Type: interrupted

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Weight lb. (kg): 1 lb 13 oz (0.8 kg)

Approvals, Underwriters Laboratories Inc.: Component Recognized, File No. MP268; Guide No. MCCZ.

Approvals, CSA: Certified, File No. LR95329-3.

Approvals, Control Safety Devices: Acceptable: CSD-1

Approvals, FCC: FCC Part 15, Class B, Emissions.

Approvals, Swiss RE: Acceptable

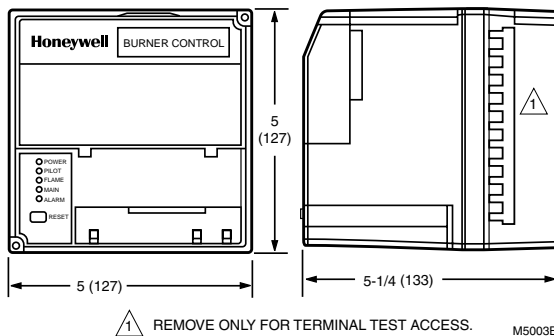
Approvals, Factory Mutual: Report No. 1V9AO.AF.

| Material Number | Flame Establishing Period - Main | Flame Establishing Period - Pilot | Comments |
|-----------------|----------------------------------|-----------------------------------|--------------------|
| RM7845A1001/U | 10 sec | 4 sec or 10 sec | LHL-LF & HF Proven |

RM7885; EC7885 Manual Start Industrial Primary Control



Dimensions in inches (millimeters)



Microprocessor-based integrated burner control for industrial semi-automatically fired gas, oil, coal, or combination fuel single burner applications. Provides level of safety, functional capability and features beyond conventional controls.

- Functions include flame supervision, system status indication, system or self-diagnostics and troubleshooting.
- Adaptable to continuous firing, high-low or modulating firing rate for semi-automatic burner sequencing.
- Operates with the following: Torch-ignited main burner or torch-ignited pilot using S445A Start-Stop Station, or conventional knee or foot operated station.
- Direct-ignition oil burner or electrically ignited pilot, using S445A Start-Stop Station.
- Five LEDs provide sequence information.
- Nonvolatile memory.
- Flame signal check during standby.
- Shutter drive output.
- Compatible with existing Honeywell flame detectors.
- Terminal provided for external alarm to sound on flame failure.

Application: Semi Automatic Primary Control

Required Components: Q7800A, B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7852, R7861, or R7886 Flame Signal Amplifier.

Frequency: 50 Hz; 60 Hz ($\pm 10\%$)

Pilot Type: intermittent

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Weight lb. (kg): 1 lb 13 oz (0.8 kg)

Approvals, Underwriters Laboratories Inc.: Component Recognized, File No. MP268; Guide No. MCCZ.

Approvals, CSA: Certified, File No. LR95329-3.

Approvals, FCC: FCC Part 15, Class B, Emissions.

Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: Report No. OX4A5.AF.

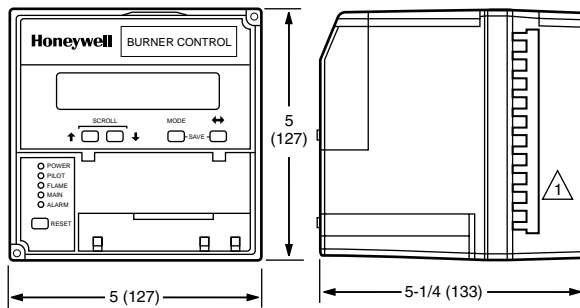
| Material Number | Voltage | Flame Establishing Period - Main | Flame Establishing Period - Pilot |
|-----------------|---------------------|----------------------------------|-----------------------------------|
| RM7885A1015/U | 120 Vac (+10, -15%) | Intermittent | 15 min |

Microprocessor Burner Controls

RM7888 PLC Adaptable Primary Control



Dimensions in inches (millimeters)



REMOVE ONLY FOR TERMINAL TEST ACCESS.

M9494

Integrated burner control for industrial process semi-automatically fired gas, oil, coal, or combination fuels for single and multiple burner applications. PLC Adaptable.

- Functions include automatic burner startup sequencing, five user selectable run sequences, four line-voltage sequence control inputs, flame supervision, system status indication, system or self-diagnostics and troubleshooting.
- Requires a relay module, subbase, and amplifier for operation.
- Options include PC interface, keyboard display module, DATA CONTROLBUST™ MODULE, remote display mounting, first-out expanded annunciator, and COMBUSTION SYSTEM MANAGER™ software.
- Use with master system control which determines purge timing and confirms air supply and air flow.
- Nonvolatile memory retains history files and sequencing status after power loss.
- Optional remote reset capability.
- Five LEDs provide sequence information.
- Interchangeable plug-in flame amplifiers.
- Local or remote annunciation of operation and fault information.

Application: Primary Control - PLC Adaptable

Required Components: Q7800A, B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7852, R7861, or R7886 Flame Signal Amplifier.

Voltage: 120 Vac (+10, -15%)

Frequency: 50 Hz; 60 Hz (±10%)

Pilot Type: selectable

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Approximate, Dimensions: 5 in. wide x 5 in. high x 5 1/4 in. deep with Q7800A Subbase x 6 3/32 in. deep with Q7800B Subbase (127 mm wide x 127 mm high x 133 mm deep with Q7800A Subbase x 155 mm deep with Q7800B Subbase)

Weight lb. (kg): 1 lb 10 oz (0.7 kg)

Approvals, CSA: Certified

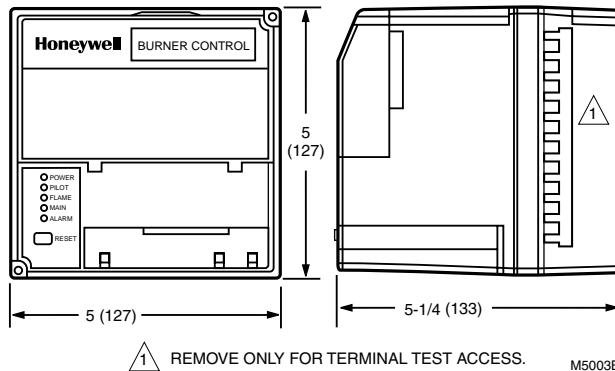
Approvals, Factory Mutual: Approved.

| Material Number | Flame Establishing Period - Main | Flame Establishing Period - Pilot | Comments |
|-----------------|----------------------------------|-----------------------------------|---|
| RM7888A1019/U | 15 sec | 4 sec | Selectable sequences |
| RM7888A1027/U | 15 sec | 10 sec | For 10 sec DSI applications, selectable sequences |

RM7890 On-Off Primary Control with VPS



Dimensions in inches (millimeters)



Integrated on/off primary burner control for automatically fired gas, oil or combination fuel single burner applications. Contains Valve Proving Feature. Requires S7800A1142 Display to program VPS feature.

- Functions include automatic burner sequencing, flame supervision, system status indication, system or self diagnostics and troubleshooting.
- Subbase and amplifier are required for operation.
- Power LED blinks Fault Code on lockout.
- Options include PC interface, keyboard display module, DATA CONTROLBUS™ MODULE, remote display module, first-out expanded annunciator, and COMBUSTION SYSTEM MANAGER™ software.
- Five LEDs provide sequence information.
- Interchangeable plug-in flame amplifiers.
- Optional local or remote annunciation of operation and fault information.
- Nonvolatile memory retains history files and sequencing status after power loss.
- Optional remote reset capability.
- Optional report generation.
- Selectable relight or lockout on loss of flame.
- Contains Valve Proving Feature - require S7800A1142 Keyboard Display (not provided) to set up.

Application: On-Off Primary Control w/VPS

Preignition: Yes

Required Components: Q7800A, B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7852, R7861, or R7886 Flame Signal Amplifier.

Voltage: 120 Vac (+10, -15%)

Frequency: 50 Hz; 60 Hz (±10%)

Pilot Type: intermittent

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Approximate, Dimensions: 5 in. wide x 5 in. high x 5 1/4 in. deep with Q7800A Subbase x 6 3/32 in. deep with Q7800B Subbase (127 mm wide x 127 mm high x 133 mm deep with Q7800A Subbase x 155 mm deep with Q7800B Subbase)

Weight lb. (kg): 1 lb 13 oz (0.8 kg)

Approvals, Underwriters Laboratories Inc.: Component Recognized, File No. MP268; Guide No. MCCZ.

Approvals, CSA: Certified, File No. LR95329-3.

Approvals, FCC: FCC Part 15, Class B, Emissions.

Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: Report No. OX4A5.AF.



| Material Number | Flame Establishing Period - Main | Flame Establishing Period - Pilot | Comments |
|-----------------|----------------------------------|-----------------------------------|---|
| RM7890A1056/U | Intermittent | 4 sec or 10 sec | Includes programmable VPS (Valve Proving Switch) check feature and blinking LED fault annunciation |
| RM7890B1048/U | Intermittent | 4 sec or 10 sec | Includes Shutter Drive Capability, VPS (Valve Proving Switch) check and blinking LED fault annunciation |

Commercial/Industrial
Combustion Controls

Microprocessor Burner Controls

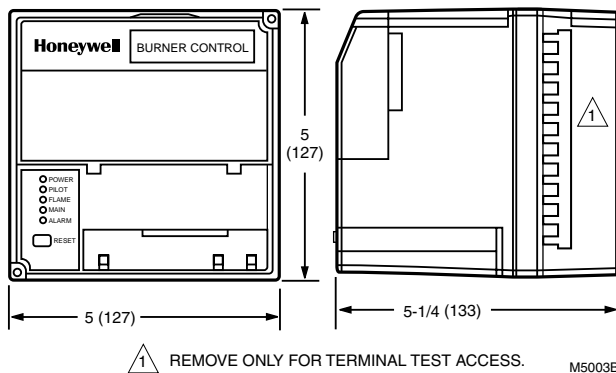
RM7890; EC7890 On-Off Primary Controls



Microprocessor-based integrated primary burner control for automatically fired gas, oil or combination fuel single burner applications. Provides level of safety, functional capability and features beyond conventional controls.

- Functions include automatic burner sequencing, flame supervision, system status indication, system or self diagnostics and troubleshooting.
- Subbase and amplifier are required for operation.
- Options include PC interface, keyboard display module, DATA CONTROLBUS™ MODULE, remote display module, first-out expanded annunciator, and COMBUSTION SYSTEM MANAGER™ software.
- Five LEDs provide sequence information.
- Interchangeable plug-in flame amplifiers.
- Optional local or remote annunciation of operation and fault information.
- Nonvolatile memory retains history files and sequencing status after power loss.
- Optional remote reset capability.
- Optional report generation.
- Selectable relight or lockout on loss of flame.

Dimensions in inches (millimeters)



Application: On-Off Primary Control

Flames Establishing Period - Main: Intermittent

Required Components: Q7800A, B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7852, R7861, or R7886 Flame Signal Amplifier.

Frequency: 50 Hz; 60 Hz ($\pm 10\%$)

Pilot Type: intermittent

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to $+140^{\circ}\text{F}$ (-40°C to $+60^{\circ}\text{C}$)

Approximate Dimensions: 5 in. wide x 5 in. high x 5 1/4 in. deep with Q7800A Subbase x 6 3/32 in. deep with Q7800B Subbase (127 mm wide x 127 mm high x 133 mm deep with Q7800A Subbase x 155 mm deep with Q7800B Subbase)

Weight lb. (kg): 1 lb 13 oz (0.8 kg)

Approvals, Swiss RE: Acceptable

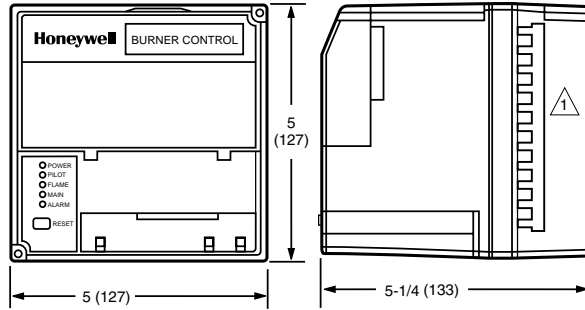


| Material Number | Voltage | Flame Establishing Period - Pilot | Approvals, Underwriters Laboratories Inc. | Approvals, CSA | Approvals, Factory Mutual | Approvals, Gastec/European | Comments |
|-----------------|----------------------------|-----------------------------------|---|--------------------------------|---------------------------|---|--|
| EC7890A1011/U | 220 to 240 Vac (+10, -15%) | 4 sec or 10 sec | | | Report No. 1D0A1.AF | | |
| EC7890B1010/U | 220 to 240 Vac (+10, -15%) | 4 sec or 10 sec | | | Report No. 1D0A1.AF | | Includes Shutter Drive Capability |
| EC7890B1028/U | 220 to 240 Vac (+10, -15%) | 4 sec or 10 sec | | | Report No. 1V9A0.AF | | Includes Shutter Drive Capability |
| RM7890A1015/U | 120 Vac (+10, -15%) | 4 sec or 10 sec | Component Recognized, File No. MP268; Guide No. MCCZ. | Certified, File No. LR95329-3. | Report No. OX4A5.AF. | | |
| RM7890A1031/U | 120 Vac (+10, -15%) | 30 sec fixed | Component Recognized, File No. MP268; Guide No. MCCZ. | Certified, File No. LR95329-3. | Report No. OX4A5.AF. | | |
| RM7890A1064/U | 120 Vac (+10, -15%) | 4 sec or 10 sec | | | Report No. 1D0A1.AF | GASTEC: CE-63AP3070/1, Approved to EN298. | |
| RM7890B1014/U | 120 Vac (+10, -15%) | 4 sec or 10 sec | Component Recognized, File No. MP268; Guide No. MCCZ. | Certified, File No. LR95329-3. | Report No. OX4A5.AF. | | Includes Shutter Drive Capability |
| RM7890B1030/U | 120 Vac (+10, -15%) | Fixed 4 sec or 10 sec PFEP | Component Recognized, File No. MP268; Guide No. MCCZ. | Certified, File No. LR95329-3. | Report No. OX4A5.AF. | | Includes Shutter Drive Capability, Alarm sounds when Reset pushed. |
| RM7890B1055/U | 120 Vac (+10, -15%) | 4 sec or 10 sec | Component Recognized, File No. MP268; Guide No. MCCZ. | Certified, File No. LR95329-3. | Report No. OX4A5.AF. | Gastec EN268 Report 1156791 | Includes Shutter Drive Capability |
| RM7890D1004/U | 120 Vac (+10, -15%) | 15 sec or 30 sec | Component Recognized, File No. MP268; Guide No. MCCZ. | Certified, File No. LR95329-3. | Report No. OX4A5.AF. | | Higher Flame Sensor Voltage for Infra Red Heater Applications |

RM7895; EC7895 On-Off Primary Control with Prepurge



Dimensions in inches (millimeters)



REMOVE ONLY FOR TERMINAL TEST ACCESS. M5003B

Microprocessor-based integrated primary burner control for automatically fired gas, oil, or combination fuel single burner applications. Provides level of safety, functional capability and features beyond conventional controls.

- Functions include automatic burner sequencing, flame supervision, system status indication, system or self diagnostics and troubleshooting.

- Subbase, amplifier, and prepurge timer are required for operation.
- Options include PC interface, keyboard display module, DATA CONTROLBUS™ MODULE, remote display module, first-out expanded annunciator, and COMBUSTION SYSTEM MANAGER™ software.
- Five LEDs provide sequence information.
- Interchangeable plug-in flame amplifiers.
- Optional local or remote annunciation of operation and fault information.
- Nonvolatile memory retains history files and sequencing status after power loss.
- Optional remote reset capability.
- Optional report generation. Selectable relight or lockout on loss of flame.
- Airflow switch check.

Application: On-Off Primary Control with Prepurge

Interlocks: Selectable

PrePurge: Determined by ST7800A Purge Timer Card

Required Components: Q7800 Universal Wiring Subbases, Flame Signal Amplifier and ST7800A Plug-in Purge Timer Card

Frequency: 50 Hz; 60 Hz (±10%)

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Approximate, Dimensions: 5 in. wide x 5 in. high x 5 1/4 in. deep with Q7800A Subbase x 6 3/32 in. deep with Q7800B Subbase (127 mm wide x 127 mm high x 133 mm deep with Q7800A Subbase x 155 mm deep with Q7800B Subbase)

Weight lb. (kg): 1 lb 15 oz (0.9 kg)

Approvals, Swiss RE: Acceptable

Used With: 7800 Series Amplifiers (Except RM7895E1002/U uses R7847 ONLY)

| Material Number | Voltage | Pilot Type | AirFlow Check | Delayed Main Valve | Flame Establishing Period - Main | Flame Establishing Period - Pilot | Approvals, Underwriters Laboratories Inc. | Approvals, CSA | Approvals, Control Safety Devices | Approvals, Factory Mutual | Comments |
|-----------------|----------------------------|--------------|---------------|--------------------|----------------------------------|-----------------------------------|---|--------------------------------|-----------------------------------|---------------------------|--|
| EC7895A1010/U | 220 to 240 Vac (+10, -15%) | intermittent | | No | Intermittent | 4 sec or 10 sec | | | | Report No. 1D0A1.AF | |
| EC7895C1000/U | 220 to 240 Vac (+10, -15%) | interrupted | | Yes | 10 sec | 4 sec or 10 sec | | | | Report No. 1D0A1.AF | |
| RM7895A1014/U | 120 Vac (+10, -15%) | intermittent | | No | Intermittent | 4 sec or 10 sec | Component Recognized, File No. MP268; Guide No. MCCZ. | Certified, File No. LR95329-3. | Acceptable: CSD-1 | Report No. OX4A5.AF | |
| RM7895A1048/U | 120 Vac (+10, -15%) | intermittent | | No | Intermittent | 4 sec or 10 sec | Component Recognized, File No. MP268; Guide No. MCCZ. | Certified, File No. LR95329-3. | Acceptable: CSD-1 | Report No. OX4A5.AF | Includes ignition cut-out during PFEP and special sequence for early spark termination |
| RM7895B1013/U | 120 Vac (+10, -15%) | intermittent | Dynamic | No | Intermittent | 4 sec to 10 sec | Component Recognized, File No. MP268; Guide No. MCCZ. | Certified, File No. LR95329-3. | Acceptable: CSD-1 | Report No. OX4A5.AF | |
| RM7895C1012/U | 120 Vac (+10, -15%) | interrupted | | Yes | 10 sec | 4 sec or 10 sec | Component Recognized, File No. MP268; Guide No. MCCZ. | Certified, File No. LR95329-3. | Acceptable: CSD-1 | Report No. OX4A5.AF | |
| RM7895C1020/U | 120 Vac (+10, -15%) | interrupted | | Yes | 10 sec | 10 sec | Component Recognized, File No. MP268; Guide No. MCCZ. | Certified, File No. LR95329-3. | Acceptable: CSD-1 | Report No. OX4A5.AF | Includes ignition cut-out during PFEP and special sequence for early spark termination |
| RM7895D1011/U | 120 Vac (+10, -15%) | interrupted | Dynamic | Yes | 10 sec | 4 sec or 10 sec | Component Recognized, File No. MP268; Guide No. MCCZ. | Certified, File No. LR95329-3. | Acceptable: CSD-1 | Report No. OX4A5.AF | |
| RM7895E1002/U | 120 Vac (+10, -15%) | intermittent | | No | Intermittent | 15 sec or 30 sec | Component Recognized, File No. MP268; Guide No. MCCZ. | Certified, File No. LR95329-3. | Acceptable: CSD-1 | Report No. OX4A5.AF | Higher Flame Sensor Voltage for Infra Red Heater Applications |

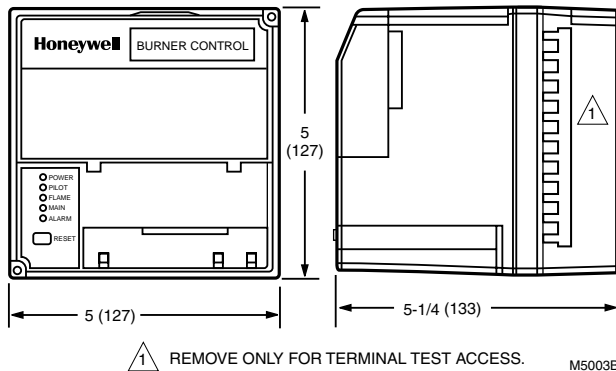
Commercial/Industrial Combustion Controls

Microprocessor Burner Controls

RM7896 On-Off Primary Control with Pre- and Post-Purge



Dimensions in inches (millimeters)



Microprocessor-based integrated full-function primary burner control for automatically fired gas, oil, or combination fuel single burner applications. Provides level of safety, functional capability and features beyond conventional controls.

- Functions include automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics and troubleshooting.
- Subbase, amplifier and purge card are required for operation.
- Options include PC interface, keyboard display module, DATA CONTROLBUST™ MODULE, remote display module, first-out expanded annunciator, and COMBUSTION SYSTEM MANAGER™ software.
- 15 second postpurge.
- Five LEDs provide sequence information.
- Interchangeable plug-in flame amplifiers.
- Local or remote annunciation of operation and fault information.
- Nonvolatile memory retains history files and sequencing status after power loss.
- Optional remote reset capability.
- Optional report generation.
- Selectable recycle or lockout on loss of airflow or flame.
- Shutter drive output.
- Airflow switch check.
- Delayed main valve.

Application: On-Off Primary Control with Pre- and Post-purge

Interlocks: Selectable

PrePurge: Determined by ST7800A Purge Timer Card

Required Components: Q7800A, B Universal Wiring Subbases.

R7847, R7848, R7849, R7851, R7852, R7861, or R7886 Flame Signal Amplifier. ST7800A Plug-in Purge Timer Card.

Voltage: 120 Vac (+10, -15%)

Frequency: 50 Hz; 60 Hz (±10%)

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Approximate, Dimensions: 5 in. wide x 5 in. high x 5 1/4 in. deep with Q7800A Subbase x 6 3/32 in. deep with Q7800B Subbase (127 mm wide x 127 mm high x 133 mm deep with Q7800A Subbase x 155 mm deep with Q7800B Subbase)

Weight lb. (kg): 1 lb 15 oz (0.9 kg)

Approvals, Underwriters Laboratories Inc.: Component Recognized, File No. MP268; Guide No. MCCZ.

Approvals, CSA: Certified, File No. LR95329-3.

Approvals, FCC: FCC Part 15, Class B, Emissions.

Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: Report No. OX4A5.AF.

| Material Number | Pilot Type | AirFlow Check | Flame Establishing Period - Main | Flame Establishing Period - Pilot | Delayed Main Valve | PostPurge | Comments |
|-----------------|--------------|---------------|----------------------------------|-----------------------------------|--------------------|-----------|---|
| RM7896A1012/U | intermittent | | Intermittent | 4 sec or 10 sec | No | 15 sec | Includes Pre- and Post-Purge. |
| RM7896C1010/U | interrupted | | 10 sec | 4 sec or 10 sec | Yes | 15 sec | Includes Pre- and Post-Purge. |
| RM7896D1019/U | interrupted | Dynamic | 10 sec | 4 sec or 10 sec | Yes | 15 sec | Includes Pre- and Post-Purge. |
| RM7896D1027/U | interrupted | Dynamic | 10 sec | 4 sec or 10 sec | Yes | 60 sec | Blinking Fault code LED, early spark termination when flame sensed, pre- and post-purge |

RM7897 Automatic Primary Control with Programmable Post-Purge



Microprocessor-based integrated full-function primary burner control for automatically fired gas, oil, or combination fuel single burner applications. Programmable Post-Purge. Requires S7800A1142 Display to program post-purge feature.

- Functions include automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics and troubleshooting.
- Subbase, amplifier and purge card are required for operation.
- Options include PC interface, keyboard display module, DATA CONTROLBUS™ MODULE, remote display module, first-out expanded annunciator, and COMBUSTION SYSTEM MANAGER™ software.
- Five LEDs provide sequence information. Power LED blinks fault code on Safety Shutdown.
- Interchangeable plug-in flame amplifiers.
- Local or remote annunciation of operation and fault information.
- Nonvolatile memory retains history files and sequencing status after power loss.
- Optional remote reset capability.
- Optional report generation.
- Selectable recycle or lockout on loss of airflow or flame.
- Shutter drive output.
- Airflow switch check.
- Delayed main valve.
- Programmable post-purge using S7800A1142 Keyboard Display (not provided).

Application: On-Off Primary Control with Pre- and Programmable Post-purge

Flame Establishing Period - Pilot: 4 sec or 10 sec

Interlocks: Selectable

Preignition: Yes

PrePurge: Determined by ST7800A Purge Timer Card

PostPurge: programmed with S7800A1142 display

Required Components: Q7800A, B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7852, R7861, or R7886 Flame Signal Amplifier. ST7800A Plug-in Purge Timer Card.

Frequency: 50 Hz; 60 Hz (±10%)

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Approximate, Dimensions: 5 in. wide x 5 in. high x 5 1/4 in. deep with Q7800A Subbase x 6 3/32 in. deep with Q7800B Subbase (127 mm wide x 127 mm high x 133 mm deep with Q7800A Subbase x 155 mm deep with Q7800B Subbase)

Weight lb. (kg): 1 lb 15 oz (0.9 kg)

Approvals, Underwriters Laboratories Inc.: Component Recognized, File No. MP268; Guide No. MCCZ.

Approvals, CSA: Certified, File No. LR95329-3.

Approvals, Control Safety Devices: Acceptable: CSD-1

Approvals, FCC: FCC Part 15, Class B, Emissions.

Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: Report No. OX4A5.AF.



| Material Number | Voltage | Pilot Type | Delayed Main Valve | Comments | Used With |
|-----------------|---------------------|------------|--------------------|--|------------------------|
| RM7897A1002/U | 120 Vac (+10, -15%) | selectable | | Includes blinking LED fault annunciation feature | 7800 Series Amplifiers |
| RM7897C1000/U | 120 Vac (+10, -15%) | selectable | Yes | Includes blinking LED fault annunciation feature | 7800 Series Amplifiers |

Microprocessor Burner Controls

RM7898 On-Off Primary Control with VPS



Integrated full-function primary burner control for gas, oil, or combination fuel single burner applications. Include Programmable Post-Purge and Valve Proving Feature. Requires S7800A1142 Display to program VPS and post-purge features.

- Functions include automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics and troubleshooting.
- Subbase, amplifier and purge card are required for operation.
- Options include PC interface, keyboard display module, DATA CONTROLBUST™ MODULE, remote display module, first-out expanded annunciator, and COMBUSTION SYSTEM MANAGER™ software.
- Programmable post-purge.
- Five LEDs provide sequence information. Power LED Blinks Fault code on safety shutdown.
- Interchangeable plug-in flame amplifiers.
- Local or remote annunciation of operation and fault information.
- Nonvolatile memory retains history files and sequencing status after power loss.
- Optional remote reset capability.
- Optional report generation.
- Selectable recycle or lockout on loss of airflow or flame.
- Shutter drive output.
- Airflow switch check.
- Programmable post-purge and Valve Proving feature with S7800A1142 Keyboard Display (not supplied).

Application: On-Off Primary Control w/VPS

Flame Establishing Period - Pilot: 4 sec or 10 sec

Interlocks: Selectable

Preignition: Yes

PrePurge: Determined by ST7800A Purge Timer Card

PostPurge: programmed with S7800A1142 display

Required Components: Q7800A, B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7852, R7861, or R7886 Flame Signal Amplifier. ST7800A Plug-in Purge Timer Card.

Frequency: 50 Hz; 60 Hz (±10%)

Pilot Type: selectable

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Approximate, Dimensions: 5 in. wide x 5 in. high x 5 1/4 in. deep with Q7800A Subbase x 6 3/32 in. deep with Q7800B Subbase (127 mm wide x 127 mm high x 133 mm deep with Q7800A Subbase x 155 mm deep with Q7800B Subbase)

Weight lb. (kg): 1 lb 15 oz (0.9 kg)

Approvals, Underwriters Laboratories Inc.: Component Recognized, File No. MP268; Guide No. MCCZ.

Approvals, CSA: Pending

Approvals, FCC: FCC Part 15, Class B, Emissions.

Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: Report No. OX4A5.AF.



| Material Number | Voltage | Early Spark Terminations | Comments | Used With |
|-----------------|---------------------|--------------------------|--|------------------------|
| RM7898A1000/U | 120 Vac (+10, -15%) | | Includes blinking LED fault annunciation feature | 7800 Series Amplifiers |
| RM7898A1018/U | 120 Vac (+10, -15%) | Special Sequence | Includes blinking LED fault annunciation feature, with early spark termination | 7800 Series Amplifiers |

R7120M Fireye M Series Replacement Control



Application: Replacement Primary Control for Fireye M Series - Intermittent Pilot

Interlocks: Running

PrePurge: Determined by ST7800A Purge Timer Card

PostPurge: programmed with S7800A1142 display

Required Components: R7847, R7848, R7849, R7851, R7852, R7861, or R7886 Flame Signal Amplifier. ST7800 Plug-in Purge Timer Card.

Frequency: 50 Hz; 60 Hz

Vibration: 0.5 G environment

The Honeywell R7120M Burner Control Modules are microprocessor-based integrated burner controls. It is a plug in replacement of Fireye M series controls for automatically fired gas, oil or combination fuel on/off single burner applications.

- Functions provided by the R7120M include automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics and troubleshooting.
- Plug in replacement for Fireye M series controls using the existing Fireye wiring subbase.
- Require ST7800 Purge Timer and appropriate R78XX Amplifier to complete the replacement.

Shipping and Storage Temperature Range: -40°F to +135°F (-40°C to +57°C)

Approximate, Dimensions: 7 in. wide x 6 5/32 in. high x 5 3/4 in. deep (177 mm wide x 156 mm high x 146 mm deep)

Weight lb. (kg): 3 lb 1 oz (1.4 kg)

Approvals, Underwriters Laboratories Inc.: Component Recognized, File No. MP268; Guide No. MCCZ.

Approvals, FCC: FCC Part 15, Class B, Emissions.

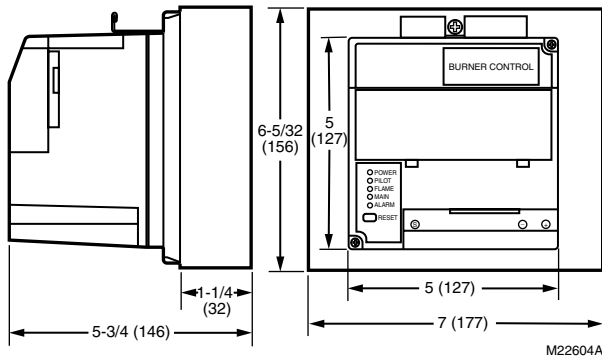
| Material Number | Voltage | Pilot Type | AirFlow Check | Flame Establishing Period - Main | Flame Establishing Period - Pilot | Comments |
|-----------------|---------------------|--------------|-----------------|----------------------------------|-----------------------------------|----------|
| R7120M1001/U | 120 Vac (+10, -15%) | intermittent | User selectable | Intermittent | 4 sec or 10 sec | On/Off |
| R7120M1019/U | 120 Vac (+10, -15%) | interrupted | User selectable | 10 sec | 4 sec or 10 sec | On/Off |

Microprocessor Burner Controls

R7140 Programmers



Dimensions in inches (millimeters)



The Honeywell R7140G, L, M Burner Control Modules are microprocessor-based integrated burner control for automatically fired gas, oil or combination fuel single burner applications.

- Functions provided by the R7140G, L, M include automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics and troubleshooting.
- Upgrade replacement for BC7000 or R4140 legacy Programmer controls.
- Require ST7800 Purge Timer and appropriate R78XX Amplifier to complete the replacement.

Application: Upgrade Replacement Programming Control for R4140 or BC7000

Preignition: Yes

PrePurge: Determined by ST7800A Purge Timer Card

PostPurge: 15 sec

Early Spark Termination: Yes, 5 sec

Required Components: R7847, R7848, R7849, R7851, R7852, R7861, or R7886 Flame Signal Amplifier. ST7800 Plug-in Purge Timer Card.

Voltage: 120 Vac (+10, -15%)

Frequency: 50 Hz; 60 Hz ($\pm 10\%$)

AirFlow Check: User selectable

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Approximate, Dimensions: 7 in. wide x 6 5/32 in. high x 5 3/4 in. deep (177 mm wide x 156 mm high x 146 mm deep)

Weight lb. (kg): 3 lb 1 oz (1.4 kg)

Approvals, Underwriters Laboratories Inc.: Component Recognized, File No. MP268; Guide No. MCCZ.

Approvals, FCC: FCC Part 15, Class B, Emissions.

| Material Number | Pilot Type | Flame Establishing Period - Main | Flame Establishing Period - Pilot | Second Stage Pilot Valve | Interlocks | Comments |
|-----------------|-----------------------------|---|-----------------------------------|--------------------------|------------|--------------------|
| R7140G1000/U | Interrupted or Intermittent | 10 sec, or 15 sec, or 30 sec, or Intermittent | 4 sec or 10 sec | selectable | Running | LHL-LF Proven |
| R7140G2008/U | Interrupted or Intermittent | 10 sec, or 15 sec, or 30 sec, or Intermittent | 4 sec or 10 sec | | Running | LHL-LF Proven |
| R7140L1009/U | interrupted | 10 sec or 15 sec | 4 sec or 10 sec | Interrupted | Lockout | LHL-LF & HF Proven |
| R7140L2007/U | interrupted | 10 sec or 15 sec | 4 sec or 10 sec | Interrupted | Lockout | LHL-LF & HF Proven |
| R7140M1007/U | Interrupted or Intermittent | 10 sec or Intermittent | 4 sec or 10 sec | Intermittent | Running | On/Off-LF Proven |

Q7800 22 Terminal Universal Wiring Subbases



Burner, panel or wall mount subbases for 7800 SERIES relay modules and S7830A Expanded Annunciator.

- Makes electrical connections for 7800 SERIES relay modules or S7830A Expanded Annunciator through bifurcated contacts.
- Provides terminals for field wiring.
- Twenty-two terminals.

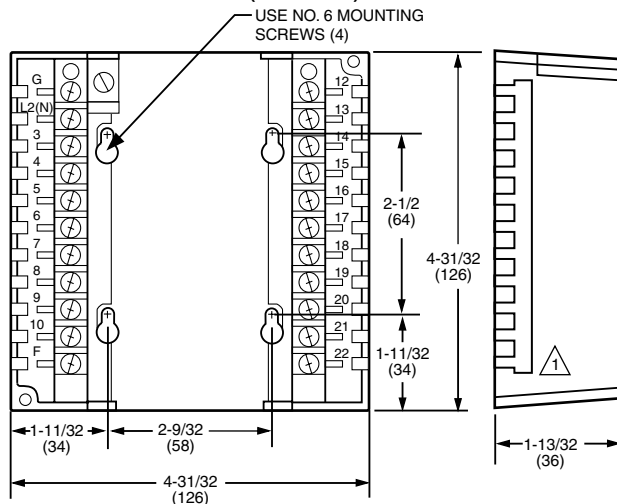
Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Approvals, CSA: Certified, File No. LR95329-3.

| Material Number | Application | Approximate, Dimensions | Weight lb. (kg) | Approvals, Underwriters Laboratories Inc. | Comments | Used With |
|-----------------|------------------------|---|---------------------|--|---|-----------|
| Q7800A1005/U | Wiring Subbase | 4 31/32 in. wide x 4 31/32 in. high x 1 13/32 in. deep (126 mm wide x 126 mm high x 36 mm deep) | 7 oz (0.20 kg) | Component Recognized, File No. MP268; Guide No. MCCZ2. | Panel mount | |
| Q7800B1003/U | Wiring Subbase | 4 31/32 in. wide x 4 31/32 in. high x 1 13/32 in. deep (126 mm wide x 126 mm high x 36 mm deep) | 1 lb 3 oz (0.54 kg) | Component Recognized, File No. MP268; Guide No. MCCZ. | Burner/wall mount 2 knockouts each end | |
| Q7800B1011/U | Wiring Subbase | 4 31/32 in. wide x 4 31/32 in. high x 3 in. deep (126 mm wide x 126 mm high x 76 mm deep) | 1 lb 3 oz (0.54 kg) | Component Recognized, File No. MP268; Guide No. MCCZ. | Burner/wall mount 3 knockouts each end | |
| Q7800F1004/U | Wiring Adapter Subbase | 5 in. high x 5 in. wide x 1 3/4 in. deep (127 mm high x 127 mm wide x 44 mm deep) | 15 oz (0.43 kg) | Component Recognized, File No. MP268; Guide No. MCCZ2. | Burner/wall mount adapter subbase for RA890 | RM7890 |
| Q7800F1012/U | Wiring Adapter Subbase | 5 in. high x 5 in. wide x 1 3/4 in. deep (127 mm high x 127 mm wide x 44 mm deep) | 15 oz (0.43 kg) | Component Recognized, File No. MP268; Guide No. MCCZ2. | Burner/wall mount adapter subbase for R4795 | RM7895 |

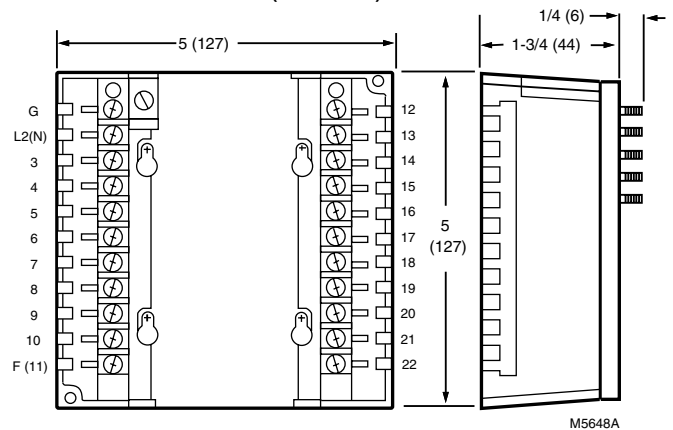
Q7800A dimensions in inches (millimeters)



△ OPTIONAL TERMINAL TEST ACCESS COVER.

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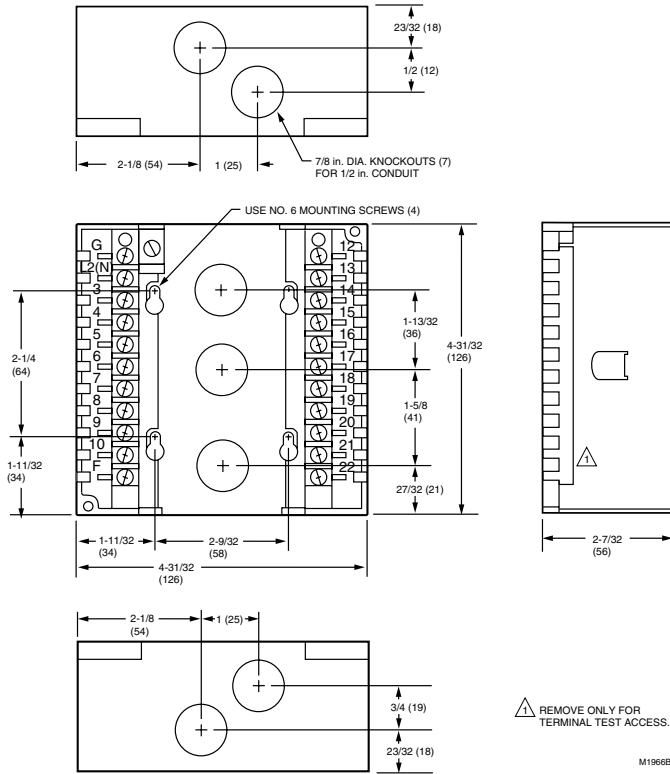
Q7800F dimensions in inches (millimeters)



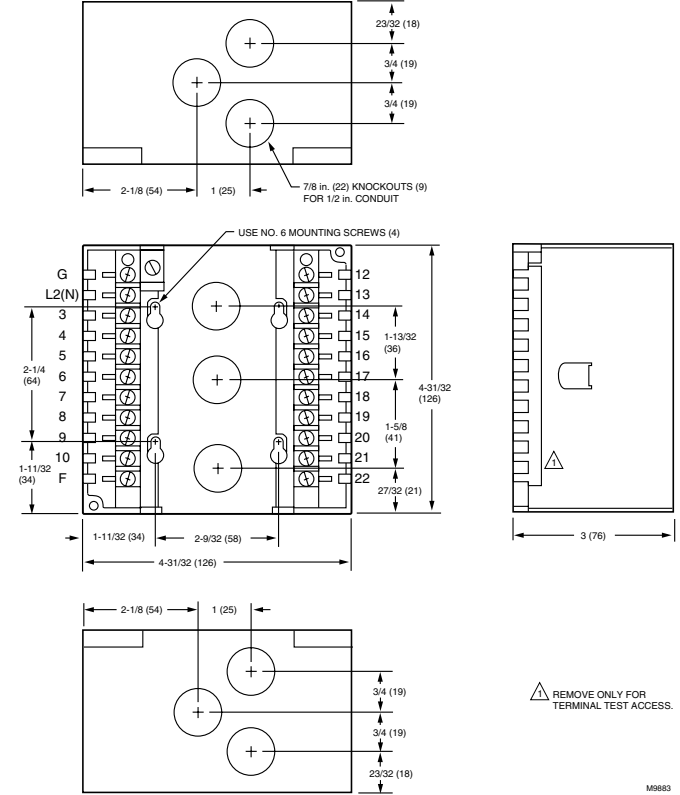
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Microprocessor Burner Controls

Q7800B1003 dimensions in inches (millimeters)



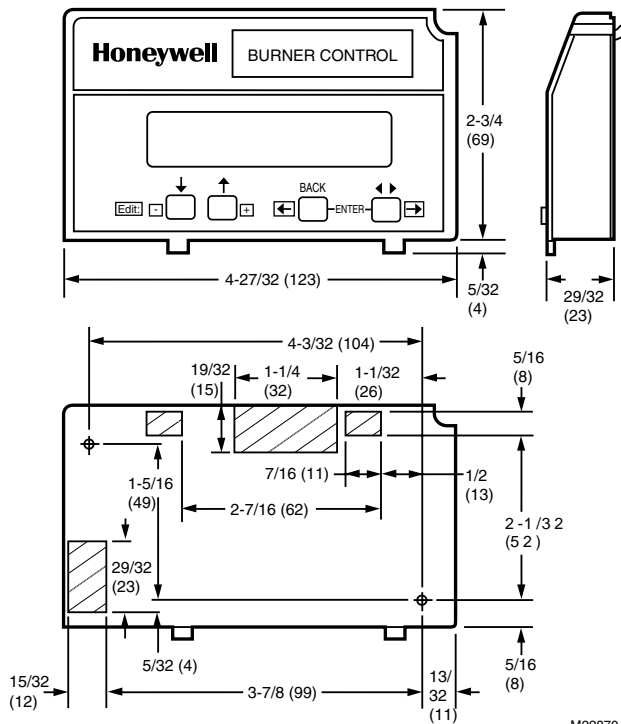
Q7800B1011 dimensions in inches (millimeters)



S7800 Keyboard Display Module



Dimensions in inches (millimeters)



M22670

Provides current status of burner sequence, timing information, hold information and lockout information, as well as selectable or preemptive messages.

- Application flexibility.
- First-out annunciation and system diagnostics provided by 2 row by 20 column Vacuum Fluorescent Display (VFD).
- S7800A1001 offers "Call Service" (Business Card) programmable message displayed when system lockout occurs.
- S7800A1001 series 5 and greater has selectable ModBus Feature.
- Local or remote annunciation of operation and fault information.
- First out expanded annunciation with 24 limit and interlock LEDs enhances keyboard display module information.
- Remote reset.

Application: Keyboard Display

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Approximate, Dimensions: 4 27/32 in. wide x 2 29/32 in. high x 29/32 in. deep (123 mm wide x 73 mm high x 23 mm deep)

Weight lb. (kg): 4 oz (0.11 kg)

Approvals, Underwriters Laboratories Inc.: Component Recognized, File No. MP268; Guide No. MCCZ.

Approvals, CSA: Certified, File No. LR95329-3.

Approvals, FCC: FCC Part 15, Class B, Emissions.

Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: Report No. 1V9AO.AF.

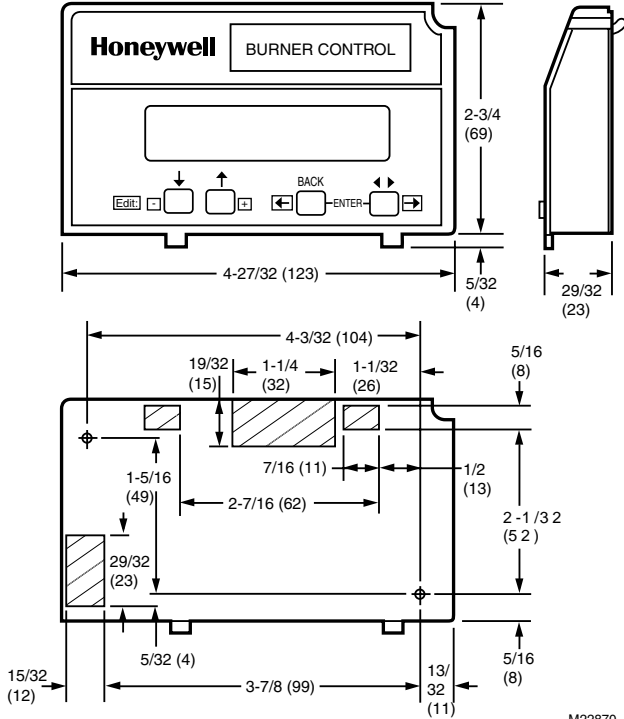
| Material Number | Voltage | Comments |
|-----------------|--|---------------------|
| S7800A1001/U | 13 Vdc peak fullwave rectified (+20/-15%). | English Language |
| S7800A1035/U | 13 Vdc peak fullwave rectified (+20/-15%). | French Language |
| S7800A1043/U | 13 Vdc peak fullwave rectified (+20/-15%). | German Language |
| S7800A1050/U | 13 Vdc peak fullwave rectified (+20/-15%). | Italian Language |
| S7800A1068/U | 13 Vdc peak fullwave rectified (+20/-15%). | Spanish Language |
| S7800A1118/U | 13 Vdc peak fullwave rectified (+20/-15%). | Japanese Language |
| S7800A1126/U | 13 Vdc peak fullwave rectified (+20/-15%). | Portuguese Language |

Microprocessor Burner Controls

S7800 Keyboard Display Module for VP Programming



Dimensions in inches (millimeters)



M22870

Provides current status of burner sequence, timing information, hold information and lockout information, as well as selectable or preemptive messages.

- Application flexibility.
- First-out annunciation and system diagnostics provided by 2 row by 20 column Vacuum Fluorescent Display (VFD).
- “Call Service” (Business Card) programmable message displayed when system lockout occurs.
- Local or remote annunciation of operation and fault information.
- First out expanded annunciation with 24 limit and interlock LEDs enhances keyboard display module information. Display can be Programmed to customize the expanded annunciator messages to the system.
- Required to program Valve Proving and Post Purge feature on selected 7800 Series devices.
- Can be setup for ModBus Communication.
- Provides burner controller data.
- Remote reset.

Application: Keyboard Display for VP setup

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Approximate, Dimensions: 4 27/32 in. wide x 2 29/32 in. high x 29/32 in. deep (123 mm wide x 73 mm high x 23 mm deep)

Weight lb. (kg): 4 oz (0.11 kg)

Approvals, Underwriters Laboratories Inc.: Component Recognized, File No. MP268; Guide No. MCCZ.

Approvals, CSA: Certified, File No. LR95329-3.

Approvals, FCC: FCC Part 15, Class B, Emissions.

Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: Report No. 1V9AO.AF.

| Material Number | Voltage | Comments |
|-----------------|--|--|
| S7800A1142/U | 13 Vdc peak fullwave rectified (+20/-15%). | English Language, Capable of displaying special “Call Service” messages, allows setup of S7830A1005 Expanded Annunciator messages, used for VPS programming, and programming Post Purge on select 7800 Devices |
| S7800A1167/U | 13 Vdc peak fullwave rectified (+20/-15%). | Spanish Language with Valve Proving, Post-purge, “Call Service”, and Expanded Annunciator programming ability |

S7810A Data ControlBus™ Module



Supports remote mounting of S7800 Keyboard Display Module, personal computer communications interface and remote reset.

- Use with remotely mounted S7800 Keyboard Display Module.
- Installs directly on the front of 7800 SERIES Relay Modules.
- Provides communications bus interface and remote reset.

Application: ControlBus™ Module

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Approximate, Dimensions: 4 27/32 in. wide x 3 11/32 in. high x 29/32 in. deep (123 mm wide x 84 mm high x 23 mm deep)

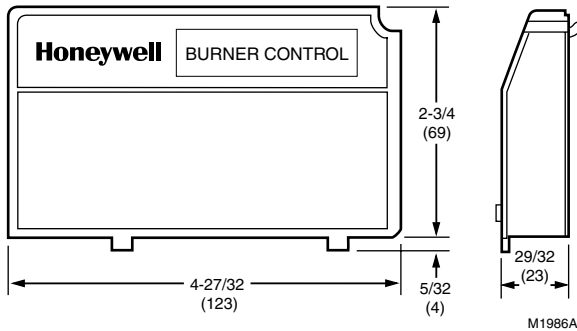
Weight lb. (kg): 4 oz (0.11 kg)

Approvals, Underwriters Laboratories Inc.: Component Recognized, File No. MP268; Guide No. MCCZ2.

Approvals, CSA: Certified, File No. LR95329-3.

Approvals, Factory Mutual: Report No. 1V9AO.AF.

Dimensions in inches (millimeters)



| Material Number | Voltage | Comments |
|-----------------|--|----------------------------------|
| S7810A1009/U | 13 Vdc peak fullwave rectified (+20/-15%). | Includes 203541 5-wire Connector |

S7810M ModBus Module



S7810M ModBus Module operates as ModBus RTU slave device.

- Provides ability to remotely mount the S7800 Keyboard Display Module.
- Installs directly on the front of 7800 SERIES Relay Modules.
- Provides ModBus communications bus interface.
- Remote reset.

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Approximate, Dimensions: 4 27/32 in. wide x 2 29/32 in. high x 29/32 in. deep (123 mm wide x 73 mm high x 23 mm deep)

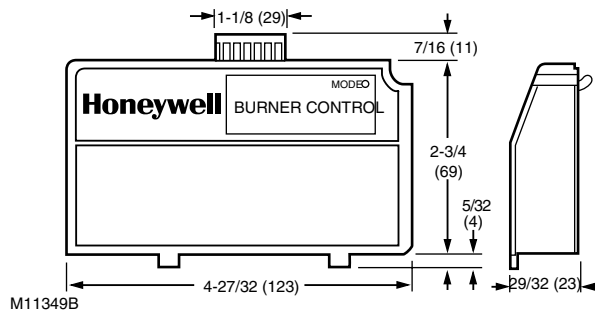
Weight lb. (kg): 4 oz (0.11 kg)

Approvals, Underwriters Laboratories Inc.: Component Recognized, File No. MP268; Guide No. MCCZ2.

Approvals, CSA: Certified, File No. LR95329-3.

Approvals, Factory Mutual: Report No. 1V9AO.AF.

Dimensions in inches (millimeters)



| Material Number | Voltage | Application | Comments | Approvals, Gastec/European |
|-----------------|--|---|--|-----------------------------|
| S7810M1003/U | 13 Vdc peak fullwave rectified (+20/-15%). | ControlBus™ Module-MODBUS | Includes 208727 8 pin electrical connector | |
| S7810M1029/U | 13 Vdc peak fullwave rectified (+20/-15%). | ControlBus™ Module-MODBUS - CE Certified (no reset allowed) | Includes 208727 8 pin electrical connector | Gastec EN268 Report 1156791 |

Commercial/Industrial
Combustion Controls

Microprocessor Burner Controls

S7820 Remote Reset Module



Serves as link between remote reset pushbutton and relay module. Allows 7800 SERIES relay module to be reset from a remote location.

- Reset button can be installed up to 1000 feet away.
- Installs directly on the front of 7800 SERIES relay module.

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Approximate, Dimensions: 4 27/32 in. wide x 2 29/32 in. high x 29/32 in. deep (123 mm wide x 73 mm high x 23 mm deep)

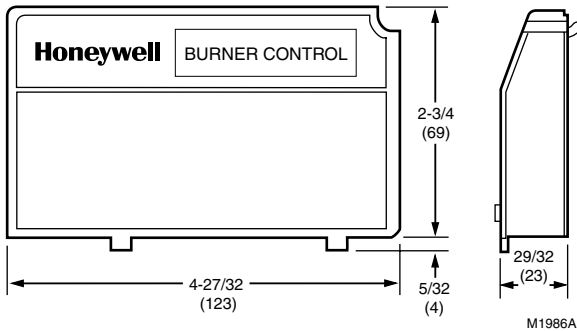
Weight lb. (kg): 3 oz (0.09 kg)

Approvals, Underwriters Laboratories Inc.: Component Recognized, File No. MP268; Guide No. MCCZ2.

Approvals, CSA: Certified, File No. LR95329-3.

Approvals, Factory Mutual: Report No. 1V9AO.AF.

Dimensions in inches (millimeters)



| Material Number | Application | Comments |
|-----------------|---------------------|----------------------------------|
| S7820A1007/U | Remote Reset Module | Includes 203541 5-wire Connector |

S7830 First Out Expanded Annunciator



Microprocessor-based expanded annunciator to support the 7800 SERIES relay modules for first-out annunciation, sequencing, system or self-diagnostics and troubleshooting.

- Twenty-six status LEDs.
- Front panel LED array—arranged to indicate flow of line-voltage through string of limits, controls and interlocks.
- Selectable current and first-out LED array display status.
- Twenty-one monitored contact points.
- Access for external electrical voltage checks.

Required Components: 7800 Series Relay Modules and Q7800A, B Subbases

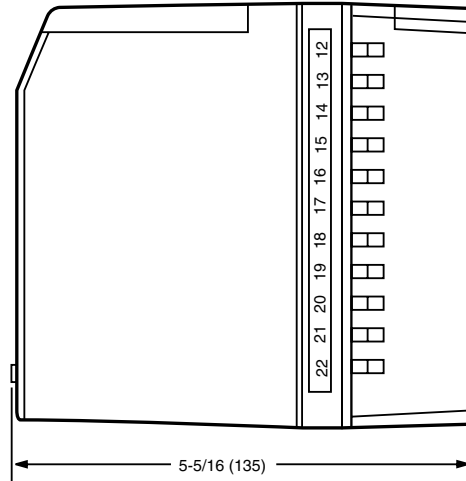
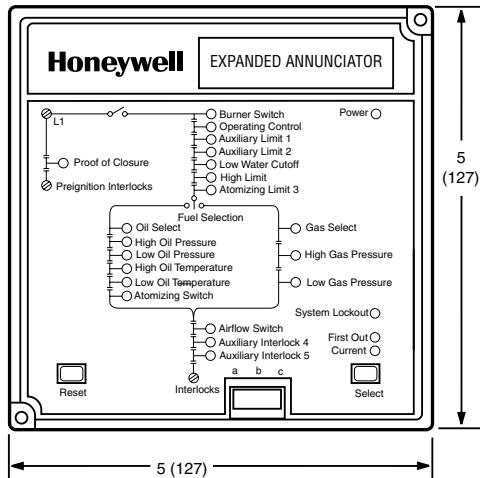
Frequency: 50 Hz; 60 Hz ($\pm 10\%$)

Vibration: 0.5 G environment

Shipping and Storage Temperature Range: -40°F to $+140^{\circ}\text{F}$ (-40°C to $+60^{\circ}\text{C}$)

Approximate, Dimensions: 5 in. wide x 5 in. high x 5 1/4 in. deep with Q7800A Subbase x 6 3/32 in. deep with Q7800B Subbase (127 mm wide x 127 mm high x 133 mm deep with Q7800A Subbase x 155 mm deep with Q7800B Subbase)

Dimensions in inches (millimeters)



M5182

| Material Number | Voltage | Application |
|-----------------|---------------------|----------------------|
| S7830A1005/U | 120 Vac (+10, -15%) | Expanded Annunciator |

Microprocessor Burner Controls

ST7800 Plug In Purge Timer



Provides the prepurge timing for select 7800 SERIES relay modules. ST7800C used with the RM7838C only.

Approvals, Underwriters Laboratories Inc.: Component Recognized, File No. MP268; Guide No. MCCZ2.

Approvals, CSA: Certified, File No. LR95329-3.






Approvals, Factory Mutual: Approved: Report No. 2X0A1.AF.

| Material Number | PrePurge | Application |
|-----------------|--------------|------------------------------|
| ST7800A1005/U | 2 seconds | Purge Timer |
| ST7800A1013/U | 7 seconds | Purge Timer |
| ST7800A1021/U | 10 seconds | Purge Timer |
| ST7800A1039/U | 30 seconds | Purge Timer |
| ST7800A1047/U | 40 seconds | Purge Timer |
| ST7800A1054/U | 60 seconds | Purge Timer |
| ST7800A1062/U | 90 seconds | Purge Timer |
| ST7800A1070/U | 2.5 minutes | Purge Timer |
| ST7800A1088/U | 4.0 minutes | Purge Timer |
| ST7800A1096/U | 6.0 minutes | Purge Timer |
| ST7800A1104/U | 9.0 minutes | Purge Timer |
| ST7800A1112/U | 12.0 minutes | Purge Timer |
| ST7800A1120/U | 15.0 minutes | Purge Timer |
| ST7800A1138/U | 22.0 minutes | Purge Timer |
| ST7800A1146/U | 30.0 minutes | Purge Timer |
| ST7800C1003/U | 7 seconds | Purge Timer for RM7838C Only |
| ST7800C1011/U | 20 seconds | Purge Timer for RM7838C Only |
| ST7800C1029/U | 4.0 minutes | Purge Timer for RM7838C Only |
| ST7800C1037/U | 6.0 minutes | Purge Timer for RM7838C Only |
| ST7800C1045/U | 8.0 minutes | Purge Timer for RM7838C Only |
| ST7800C1052/U | 10.0 minutes | Purge Timer for RM7838C Only |
| ST7800C1086/U | 16.0 minutes | Purge Timer for RM7838C Only |
| ST7800C1102/U | 20.0 minutes | Purge Timer for RM7838C Only |
| ST7800C1128/U | 24.0 minutes | Purge Timer for RM7838C Only |
| ST7800C1136/U | 30.0 minutes | Purge Timer for RM7838C Only |

Microprocessor Burner Controls

7800 Series Accessories or Parts

Application: Accessory or Replacement Part

| Material Number | Comments | Used With | |
|-----------------|----------------------------------|--------------------|---|
| 203541/U | | S7800 Display | |
| 203765/U | Includes 203541 5-wire Connector | S7800 Display | |
| 204718A/U | Includes 203541 5-wire Connector | S7800 Display |  |
| 204718B/U | Includes 203541 5-wire Connector | S7800 Display | |
| 204718C/U | Includes 203541 5-wire Connector | S7800 Display | |
| 205321B/U | Includes 203541 5-wire Connector | S7800 Display |  |
| 206311/U | Carrying Case for S7800 Display | S7800 Display |  |
| 208727/U | | S7810B, S7810M | |
| 221729A/U | | 7800 Relay Modules | |
| 221818A/U | | S7800 Display |  |
| 221818C/U | | S7800 Display | |
| 50023821-001/U | Includes 203541 5-wire Connector | S7800 Display | |
| 50023821-002/U | Includes 203541 5-wire Connector | S7800 Display |  |

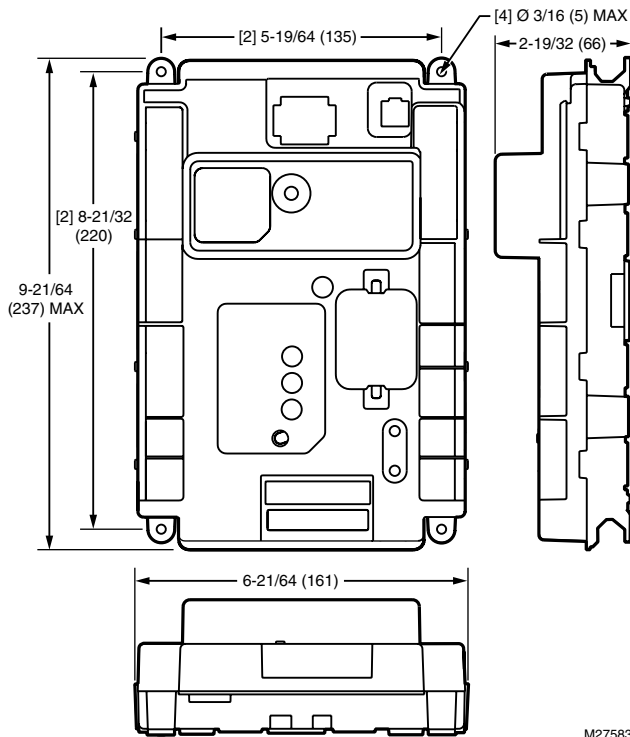
Commercial/Industrial
Combustion Controls

SOLA Controllers

SOLA™ Hydronic Control



Dimensions in inches (millimeters)



M27583

The R7910A SOLA HC is a hydronic boiler control system that provides heat control, flame supervision, circulation pump control, fan control, boiler control, and electric ignition function. It will also provide boiler status and error reporting.

- Frost Protection, Slow Start, Anti-condensate, Boiler Delta-T, Stack Limit, Boiler Limit, DHW Limit, Outlet T-Rise Limit
- Primary Flame Safeguard Control
- Internal or external spark generator.
- Analog NTC Sensor Inputs (10 kohm or 12 kohm).
- Other Analog Inputs
- PID Load Control
- Digital Inputs
- Digital Outputs
- Analog Outputs
- Algorithm Prioritization
- Two Temperature Loops of Control (CH and DHW)
- High Limit Control-CH, DHW, & Stack (Meets UL 353) using dual 10 kohm NTC sensors.
- Fifteen Item Fault Code History including equipment status at time of lockout
- Fifteen Item Alert Code Status including equipment status at time of internal alerts
- 24 Vac Device Power
- 24 or 120 Vac Digital I/O models available.
- Flame Signal test jacks (Vdc)
- Three Status LEDs.
- UV or Flame rod Flame Sensing.

Application: Hydronic

Frequency: 50-60 Hz ± 5%

Approximate, Dimensions: 9 21/64 in. x 6 21/64 in. x 2 19/32 in. (237 mm x 161 mm x 66 mm)

Comments: Includes Programmable features

Approvals, Control Safety Devices: Acceptable

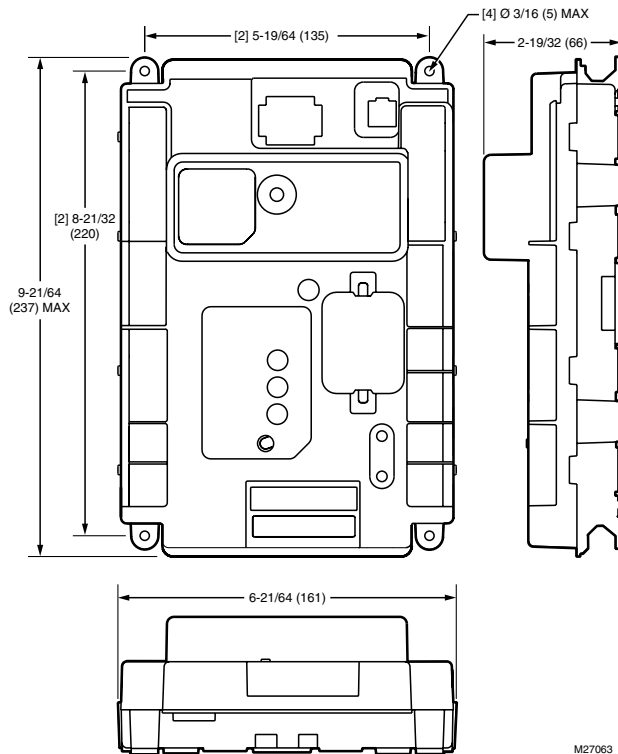
Approvals, FCC: Part 15, Class B Emissions

| Material Number | Enclosure Rating | Firing Rate Switch | Flame Sensor Type | Modulation Output | Voltage | Approvals, Underwriters Laboratories Inc. |
|-----------------|------------------|-----------------------------------|-----------------------|--|--------------------------------|---|
| R7910A1001/U | NEMA 1/IP 40 | | FR/UV | Yes (PWM); Yes (4-20 mA); Yes (0-10 Vdc) | 24 Vac Operating; 24 Vac Load | UL, cUL: Component Recognized: File Number MH20613 (MCCZ) |
| R7910A1019/U | NEMA 1/IP 40 | High Fire Switch; Low Fire Switch | FR/UV | Yes (PWM); Yes (4-20 mA); Yes (0-10 Vdc) | 24 Vac Operating; 120 Vac Load | UL, cUL: Component Recognized: File Number MH20613 (MCCZ) |
| R7910A1027/U | NEMA 1/IP 40 | | FR/UV | Yes (PWM); Yes (4-20 mA); Yes (0-10 Vdc) | 24 Vac Operating; 120 Vac Load | UL, cUL: Component Recognized: File Number MH20613 (MCCZ) |
| R7910A1084/U | NEMA 1/IP 40 | | FR | Yes (PWM); Yes (4-20 mA); Yes (0-10 Vdc) | 24 Vac Operating; 24 Vac Load | UL, cUL: Component Recognized: File Number MH20613 (MCCZ) |
| R7910A1118/U | NEMA 1/IP 40 | | FR, High Energy Spark | Yes (PWM) | 24 Vac Operating; 24 Vac Load | UL, cUL Component File No. MH20613 (MCCZ) |

SOLA™ Steam Control



Dimensions in inches (millimeters)



M27063

The R7911A SOLA SC is a steam boiler control system that provides heat control, flame supervision, fan control, boiler control, and electric ignition function. It will also provide boiler status and error reporting.

- Slow Start, Stack Limit, Boiler Limit
- Primary Flame Safeguard Control
- Internal or external spark generator.
- Analog Stack Temp NTC Sensor Inputs (10kohm or 12kohm).
- Other Analog Inputs
- PID Load Control
- Digital Inputs
- Digital Outputs
- Analog Outputs
- Algorithm Prioritization
- High Limit Control - Stack (Meets UL 353) using dual 10 kohm NTC sensors.
- Fifteen Item Fault Code History including equipment status at time of lockout
- Fifteen Item Alert Code Status including equipment status at time of internal alerts
- 24 Vac Device Power
- 24 or 120 Vac Digital I/O models available.
- Flame Signal test jacks (Vdc)
- Three Status LEDs.
- UV or Flame rod Flame Sensing.

Application: Steam

Frequency: 50-60 Hz ± 5%

Approximate, Dimensions: 9 21/64 in. x 6 21/64 in. x 2 19/32 in.
(237 mm x 161 mm x 66 mm)

Comments: Includes Programmable features

Approvals, FCC: Part 15, Class B Emissions

Approvals, Underwriters Laboratories Inc.: UL, cUL: Component
Recognized: File Number MH20613 (MCCZ)

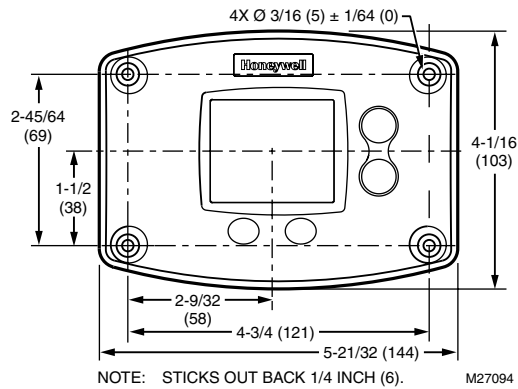
| Material Number | Enclosure Rating | Firing Rate Switch | Flame Sensor Type | Modulation Output | Voltage |
|-----------------|------------------|-----------------------------------|-------------------|--|--------------------------------|
| R7911A1000/U | NEMA 1/IP 40 | | FR/UV | Yes (PWM); Yes (4-20 mA); Yes (0-10 Vdc) | 24 Vac Operating; 120 Vac Load |
| R7911A1026/U | NEMA 1/IP 40 | High Fire Switch; Low Fire Switch | FR/UV | No (PWM); Yes (4-20 mA); Yes (0-10 Vdc) | 24 Vac Operating; 120 Vac Load |

SOLA Controllers

S7910 SOLA™ Keyboard Display



Dimensions in inches (millimeters)



The S7910 Local Keyboard display interface provides setpoint and control adjustments to parameters of the R7910 SOLA Hydronic Control. The S7910 includes four function buttons, and all data is displayed on an LCD with backlight.

- Burner control state, sequence
- Rate control manual adjustment
- Lockout code
- Alert and Hold Reason
- CH, CH TOD, DHW, and DHW TOD setpoints
- Communication interface with R7910.
- First out and system status and diagnostics provided through the LCD.
- Local communication of operation and fault information.
- Control DHW, Inlet, Outlet, Delta T (Outlet-Inlet), and Stack Temperatures
- Set-up
- Diagnostics
- Blue, includes (future feature: TOD), only "talks" to Commercial R7910A, Flame Signal Vdc, pilot hold function, screw mounting

Ambient Temperature Range: 32°F to 120°F (0°C to 49°C)

Shipping and Storage Temperature Range: -60°F to +150°F (-51°C to +66°C)

Approximate, Dimensions: 4-1/6 in. high x 5-21/32 in. wide (103 mm high x 144 mm wide)

Operating Humidity Range (% RH): 85% relative humidity continuous, noncondensing

Weight: 4 oz (124 g)

Approvals, FCC: Part 15, Class B emissions.

Approvals, Underwriters Laboratories Inc.: UL, cUL: Component Recognized: File Number MH20613 (MCCZ)

| Material Number | Electrical Ratings | Vibration | Description | Used With |
|-----------------|----------------------------|-------------------|-------------------------|-----------|
| S7910A1008/U | 24 VAC powered from R7910A | 0.5 G environment | Keyboard Display Module | R7910 |

S7999D SOLA™ System Operator Interface



The S7999D can be used to monitor an individual boiler and also used for multiple boiler applications in a lead/lag arrangement. It consists of 2 RS485 ports and a USB port. The S7999D display can be flush front or mounted behind in a panel cutout. Wiring connections are through a removable 8-pin wiring connector.

- Individual boiler status, configuration, history and diagnostics
- Allows configuration and monitoring of the Sola Controls (R7910 Hydronic Controls or R7911 Steam Control) burner control sequence, flame signal, diagnostics, historical files, and faults
- Allows switching view between multiple boilers and lead-lag master/slaves
- Real-time data trending analysis and transferring saved trend data to Excel spreadsheet
- 7" 800 x 480, 24 bit high resolution color LCD touch screen for clarity
- Audio output with integral speaker for sound output.
- Adjustable backlight control
- Real time clock with coin-cell battery back-up (CR2032)
- Volume control
- Screen Capture function to capture screen images
- USB port for file transfers and software updates
- 2 RS-485 (COM1 & 2) ports for Modbus™ interface to Sola controls and BAS Gateway.
- Windows® CE 6.0 Operating System
- 8-pin connector, back-up battery and mounting hardware are provided

Application: Interface Display

Frequency: 50-60 Hz ± 5%

Ambient Temperature Range: 14°F to 122°F (-10°C to 50°C)

Shipping and Storage Temperature Range: -13°F to 155°F (-25°C to 60°C)

Approximate, Dimensions: 9-13/32 in. wide x 6-21/32 in. high x 1-9/16 in. deep (239 mm wide x 169 mm high x 40 mm deep)

Operating Humidity Range (% RH): 85% RH continuous, non-condensing

Comments: Black Plastic Border

Approvals, FCC: FCC Part 15, Class A digital device

Approvals, Canadian Underwriters Inc.: Component Recognized: File Number MH20613 (MCCZ)

Approvals, Underwriters Laboratories Inc.: Component Recognized: File Number MH20613 (MCCZ)

| Material Number | Voltage | Description | Used With |
|-----------------|---------|---|-------------|
| S7999D1006/U | 24 Vac | System Operator Interface with Black Plastic Border | R7910/R7911 |

SOLA Controllers

PM7910 Program Module



The PM7910 Program Module is an optional plug-in for the R7910 SOLA HC and R7911 Sola SC. From the system level the S7999 System Operator Interface can direct the R7910/R7911 to transfer or retrieve parameter information with the Program Module.

- Can be removed or installed while the R7910 or R7911 is powered.
- Facilitate multiple controller setups.
- Backup and restore the R7910 programmable data including:
 - Non-safety parameter values — Parameter Control Blocks (information on how the parameter values may be modified.)

| Material Number | Application | Comments |
|-----------------|----------------------------|---|
| PM7910A1013/U | Support backup and restore | Indicator LEDs - One (Status LED) Blinking LED indicated the Program Module is properly seated and powered from the R7910/R7911 |

SOLA™ Accessories or Parts

Application: Single element sensor with 6" leadwire with socket.

| Material Number | Application |
|-----------------|---|
| 32003971-002/U | 10K Ohm Single element sensor with 6" Leadwire with Socket |
| 32003971-003/U | 10K Ohm Single element sensor with 42" leadwires, includes wire nuts (2), #8 mounting screws (3), anchors (2), sensor clip (1), tie strap (2) |
| 50001464-006/U | 10K Ohm Dual Element Sensor with 6" leadwires with Female Socket |
| 50001464-007/U | 10K Ohm Dual Element Sensor with 42" leadwires without connector |
| 50032893-001/U | Bag of connectors for R7910 and R7911 Controllers |

R7999A ControlLinks™ Fuel Air Controller



Uses microprocessor-based technology to control the ML7999 Universal Parallel Positioning Actuators. This represents a value added replacement of mechanical cam and linkage assembly controlling the relationship between fuel, airflow and flue gas recirculation (if used) on a power burner. The ControlLinks Fuel Air Control System consists of the R7999 Fuel Air Controller, Q7999 Wiring Subbase, ML7999 Universal Parallel Positioning Actuator and ZM7999 Configuration Software. The R7999, with one communications port, provides communications capabilities similar to those found in the 7800 SERIES controls.

- Fast burner setup via PC or laptop
- Fuel, air, FGR profile download capability
- Two independent fuel profiles with or without FGR
- 7 to 24 point profiles
- Programmable behaviors of all actuators during Purge and Standby
- Programmable behavior of non-selected fuel actuator
- Independent light off and minimum modulation positions
- Wide power voltage input range (100 to 120 Vac, 50/60 Hz Auto/Manual input)
- Manual mode firing rate input
- Pluggable controller to wiring subbase
- Multipurpose communications port
- Field-configurable device
- Integrated boiler shock protection algorithms: Water temperature low fire hold
- Stack temperature low fire hold. FGR and low fire hold
- Selectable FGR hold based on stack temperature
- Programmable behavior of FGR actuator during purge
- Maximum modulation limit capability
- Remote reset input
- Automated actuator endpoint seeking process
- CSD-1 and NFPA acceptable

Voltage: 100 to 120 Vac

Vibration: 0.0 to 0.5g continuous

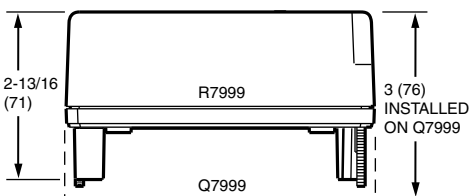
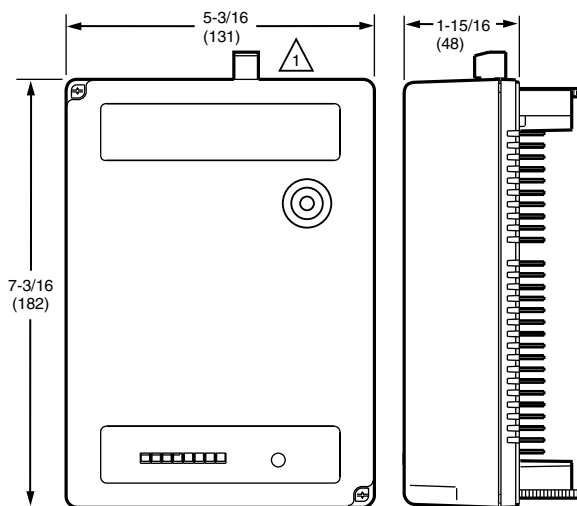
Shipping and Storage Temperature Range: -40°F to +140°F (-40°C to +60°C)

Approvals, Underwriters Laboratories Inc.: Listed: Report No. MH17367

Operating Humidity Range (% RH): 90% RH maximum, non-condensing

Replacement Parts:

32002515-001/U – 3 pin electrical connector, for R7999



1 DDL PORT (RS485).

M16548C

Commercial/Industrial
Combustion Controls

| Material Number | Frequency | Description |
|-----------------|--------------|--|
| R7999A1005/U | 50 Hz; 60 Hz | Fuel Air Ratio Controller, 100 to 120 Vac, 50/60 Hz. |

ControlLinks Fuel Air Control System

S7999 ControlLinks™ System Display



Application: Interface Display

Temperature Range: Ambient - 14°F to 122°F (Ambient - -10°C to 50°C)

Shipping and Storage Temperature Range: -13°F to 155°F (-25°C to 60°C)

With the S7999. Each burner control, fuel/air ratio control, expanded annunciator other Modbus devices present on the burner system can be viewed individually to determine its status.

- Color (7" diagonal). Touch Screen User Interface
- Flush Mounting
- Allows setup and monitoring of R7999 ControlLinks
- Two RS485 and one USB communication ports
- Screen saver, contrast control and volume control
- Modbus communication allows monitoring up to 99 different controls
- Allows Programmable Expanded Annunciator terminal naming
- Allows R7999 ControlLinks EEPROM backup and restore
- Battery backup prevents losing date and time

Approvals, Underwriters Laboratories Inc.: Component Listed

Approvals, FCC: FCC Part 15, Class A digital device

Used With: R7999

Operating Humidity Range (% RH): 85% RH continuous, non-condensing

| Material Number | Voltage | Description |
|-----------------|---------|--|
| S7999D1048/U | 24 Vac | S7999D System Display for R7999 ControlLinks Configuration and System Monitoring |

Q7999A ControlLinks™ Fuel Air Control Wiring Subbase



Provides terminals for field wiring for the R7999A ControlLinks™ Fuel Air Controller. Terminals on the R7999A, B Controller engage the Q7999 contacts to make electrical connections. The Q7999A Subbase is panel-mounted.

- Quick-mount wiring subbase for R7999A, B Fuel Air Ratio Controllers.
- Allows wiring of control system before installation of controller.
- Panel-mounted.
- NEMA 1 enclosure.

Vibration: 0.0 to 0.5g continuous

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approvals, Underwriters Laboratories Inc.: Listed: Report No. MH17367

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Weight oz. (k): 10 oz (0.28 kg)

| Material Number | Voltage | Frequency | Description |
|-----------------|----------------|--------------|--|
| Q7999A1006/U | 100 to 120 Vac | 50 Hz; 60 Hz | Fuel Air Ratio Controller Wiring Subbase |
| Q7999A1014/U | 100 to 120 Vac | 50 Hz; 60 Hz | Fuel Air Ratio Controller Wiring Subbase |

ML7999A Universal Parallel-Positioning Actuator



ML7294 Non-Spring Return Direct Coupled Actuators control dampers or valves in HVAC applications. The ML7294 Non-Spring Return DCA accepts a current or voltage signal from an electronic controller to position a damper or valve.

- Password protected using eight-digit hexadecimal identification signal
- Separate wiring compartment between line voltage power wiring and low voltage control
- Couples directly to a 1/2-in. shaft with no additional parts required; couples directly to 5/16-in. and 3/8-in. shafts using self-centering shaft reduction accessories
- Shaft coupler assembly available for shafts larger than 1/2-in.
- Bracket accessory kit available for mounting to Honeywell V51 butterfly gas valves
- Visual indication of actuator position
- NEMA 2
- IF54 with weatherproof kit

Vibration: 0.0 to 0.5g continuous

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approvals, Underwriters Laboratories Inc.: Meets UL873

Approvals, CSA: Certified

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Approvals, CE: Certified

| Material Number | Voltage | Frequency | Description |
|-----------------|-----------------------|--------------|---|
| ML7999A2001/U | 15 VA, 100 to 240 Vac | 50 Hz; 60 Hz | Universal Parallel-Positioning Actuator. Medium torque electronic actuator with a precision feedback potentiometer and integral power supply capable of direct line voltage connection. Must be used with a Series 2 R7999. |

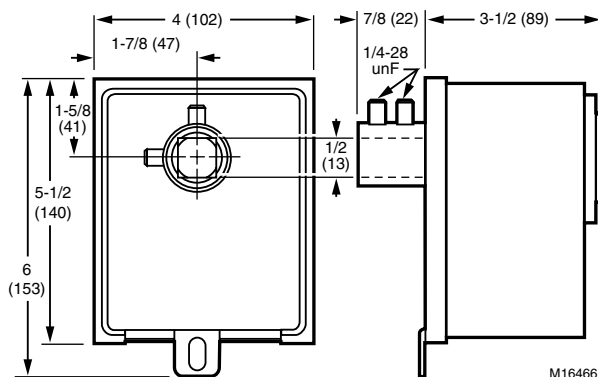
ML7999B Universal Direct Coupled Actuator



Honeywell ML7999B universal direct coupled actuator provides 100 lb-in. torque, 4 to 20 mA control input to control combustion air dampers and modulation valves. Includes precision drive shaft control and integral power supply.

- Separate wiring compartment between line voltage power wiring and low voltage control
- Programmable actuator stroke against 4-20 mA input
- Couples directly to 1/2-in. shaft with no additional parts required; couples directly to 5/16- and 3/8-in. shafts using available self-centering shaft reduction accessories
- Shaft coupler assembly available for shafts larger than 1/2-in.
- Bracket accessory kit available for mounting to Honeywell V51 butterfly gas valves
- Visual indication of actuator position
- NEMA 2
- IF54 with weatherproof kit

Dimensions in inches (millimeters)



Vibration: 0.0 to 0.5g continuous

Shipping and Storage Temperature Range: -40°F to +150°F (-40°C to +65°C)

Approvals, Underwriters Laboratories Inc.: Meets UL873

Approvals, CSA: Certified

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Approvals, CE: Certified

Accessories:

32002935-001/U – Weatherproofing kit for actuator, ML7999 ControlLinks (NEMA 3).

| Material Number | Voltage | Frequency | Description |
|-----------------|-----------------------|--------------|---|
| ML7999B1002/U | 15 VA, 100 to 240 Vac | 50 Hz; 60 Hz | Universal Parallel-Positioning Actuator. Medium torque electronic actuator with a precision feedback potentiometer and integral power supply capable of direct line voltage connection. |

ControlLinks Fuel Air Control System

ML7999 Accessories

| Material Number | Description |
|-----------------|--|
| 201391/U | Shaft Adapter for 3/8 in. round or square valve shaft |
| 32002935-001/U | Weatherproofing kit for actuator, ML7999 ControlLinks (NEMA 3). |
| 32003167-001/U | Shaft Adapter for 5/16 in. round or square shaft |
| 32003168-001/U | Shaft Adapter for 3/4 in. round shaft only |
| 32003168-002/U | Shaft Adapter for 5/8 in. round shaft only |
| 32003168-003/U | Shaft Adapter for 9/16 in. round shaft only |
| 32003396-002/U | V51E Mounting Kit for ML7999 Actuator (2-1/2, 3 & 4 in. valves). Includes angle bracket, mounting bracket, screws, nuts and washers, and instructions. |
| 50036542-001/U | Auxiliary Switch Mounting Plate for ML7999B for 201052A or 201052B Auxiliary switch assembly |

ZM7999A ControlLinks Fuel Air Control System Configuration Software

The ZM7999 Software Configuration Tool reduces burner setup time by letting you create an R7999 Controllinks burner modulation curve. The software assists you through the commissioning process and when it's complete, you can monitor the system real-time.

- Minimum Hardware Requirements: PC or laptop with a Pentium® processor.
- Windows® 95 or Windows® 98.
- 16 MB of RAM.
- 1G hard drive with 100 MB of free memory.
- 4X (or higher) CD-ROM drive.
- Mouse.
- Super VGA color monitor (800 x 600 resolution suggested).

| Material Number | Description | Used With |
|-----------------|------------------------|-----------|
| ZM7999A1006/U | Configuration Software | R7999 |

ControlLinks Accessories

| Material Number | Description | Used With |
|-----------------|--|-----------|
| 32002515-001/U | 3 pin electrical connector, for R7999 | R7999 |
| 50020034-001/U | 9 pin electrical connector, for S7999B | S7999B |

QM4520A Data Acquisition Module



The QM4520A RS-232 to RS485 Converter allows a PC to communicate with multiple devices on a single bus, over greater distances.

- Mount on DIN rail, panel or in a piggyback stack.
- Uses unregulated power between +10 Vdc and +30 Vdc.
- Transmit data on single twisted pair (RS-485).
- Plug-in screw terminal blocks assure simple installation, maintenance and modification.
- Clean and reliable communications assured by noise-suppressing special circuitry.
- RS-485 communications reduce the number of required cables, connectors and conditioners.
- Modules can be remotely mounted up to 4,000 ft (1.2 km) away.

Electrical Connections: Plug-in screw terminal block.

Ambient Temperature Range: 32°F to 158°F (0°C to 70°C)

Voltage: Unregulated +10 Vdc to +30 Vdc - Power supply not provided.

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Approximate, Dimensions: 2 11/32 in. x 4 13/16 in. x 1 3/16 in.
(60 mm x 122 mm x 30 mm)

| Material Number | Connection Type | Description | Used With |
|-----------------|---|----------------------------|---------------------------|
| QM4520A1004/U | RS-232 (4-wire: TX, RX, RTS, GND) (Null modem may be required.) | RS-232 to RS-485 Converter | ZM7850 or ZM7999 software |

Flame Amplifiers

7800 SERIES and R7140 Flame Signal Amplifiers



Solid state plug-in amplifiers that respond to flame detector inputs to indicate the presence of flame when used with 7800 SERIES relay modules.

- Flame failure response time of 0.8 or 3.0 seconds (1.0 or 2.0 for CE approved devices).
- Flame signal strength ranges from 0.0 to 5.0 Vdc.
- Plug into 7800 relay module through printed circuit board edge connector keyed for proper orientation.
- Flame signal test jacks to measure amplifier flame signal voltage.
- Color-coded labels identify flame detection type.
- Dynamic Self-Check Amplifier test the detectors and all electronic components in the flame detection system.
- Ampli-check tests the amplifier and 7800 SERIES Relay.
- None (standard) is just tested at normal system startup.
- 7800 SERIES relay module locks out on safety shutdown with flame detection system failure.
- Compatible with existing Honeywell flame detectors (order separately).

Approvals, Underwriters Laboratories Inc.: Listed: File No. MP268, Guide No. MCCZ

Approvals, CSA: Certified: File No. LR95329-3

Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: Approved: Report No. 1V9A0.AF

| Material Number | Type | Flame Failure Response Time (sec) | Self Checking | Use With Primary Safety Control | Use With Flame Sensor | Comments |
|-----------------|---------------|-----------------------------------|--------------------|---------------------------------|--|------------------|
| R7824C1002/U | Ultraviolet | 3.0 sec | Dynamic Self-Check | RM7824 | C7024E, F Flame Detector | Color: Green |
| R7847A1025/U | Rectification | 0.8 sec or 1.0 sec | None (standard) | 7800 SERIES Relay Modules | Gas: Rectifying Flame Rods C7004, C7005, C7007, C7008, C7009, Q179 | Color: Green |
| R7847A1033/U | Rectification | 2.0 sec or 3.0 sec | None (standard) | 7800 SERIES Relay Modules | Gas: Rectifying Flame Rods C7004, C7005, C7007, C7008, C7009, Q179; Gas, oil, coal: Ultraviolet Flame Sensor C7012A, C | Color: Green |
| R7847A1074/U | Rectification | 0.8 sec or 1.0 sec | None (standard) | 7800 SERIES Relay Modules | Gas: Rectifying Flame Rods C7004, 5, 7, 8, or 9, Q179 for impedance matching for leadwire runs > 50' or Ultraviolet Flame Sensor C7012A, C | Color: Green |
| R7847A1082/U | Rectification | 2.0 sec or 3.0 sec | None (standard) | 7800 SERIES Relay Modules | Gas: Rectifying Flame Rods C7004, 5, 7, 8, or 9, Q179 for impedance matching for leadwire runs > 50' or Ultraviolet Flame Sensor C7012A, C | Color: Green |
| R7847B1023/U | Rectification | 0.8 sec or 1.0 sec | Ampli-Check | 7800 SERIES Relay Modules | Gas: Rectifying Flame Rods C7004, C7005, C7007, C7008, C7009, Q179 | Color: Green |
| R7847B1031/U | Rectification | 2.0 sec or 3.0 sec | Ampli-Check | 7800 SERIES Relay Modules | Gas: Rectifying Flame Rods C7004, C7005, C7007, C7008, C7009, Q179; Gas, oil, coal: Ultraviolet Flame Sensor C7012A, C | Color: Green |
| R7847B1064/U | Rectification | 0.8 sec or 1.0 sec | Ampli-Check | 7800 SERIES Relay Modules | Gas: Rectifying Flame Rods C7004, 5, 7, 8, or 9, Q179 for impedance matching for leadwire runs > 50' or Ultraviolet Flame Sensor C7012A, C | Color: Green |
| R7847B1072/U | Rectification | 2.0 sec or 3.0 sec | Ampli-Check | 7800 SERIES Relay Modules | Gas: Rectifying Flame Rods C7004, 5, 7, 8, or 9, Q179 for impedance matching for leadwire runs > 50' or Ultraviolet Flame Sensor C7012A, C | Color: Green |
| R7847C1005/U | Rectification | 2.0 sec or 3.0 sec | Dynamic Self-Check | 7800 SERIES Relay Modules | Gas, oil, coal: Ultraviolet Flame Sensor C7012E, F | Color: Green |
| R7848A1008/U | Infrared | 2.0 sec or 3.0 sec | None (standard) | 7800 SERIES Relay Modules | Gas, oil, coal: Infrared (lead sulfide) C7015 | Color: Red |
| R7848B1006/U | Infrared | 2.0 sec or 3.0 sec | Ampli-Check | 7800 SERIES Relay Modules | Gas, oil, coal: Infrared (lead sulfide) C7015 | Color: Red |
| R7849A1015/U | Ultraviolet | 0.8 sec or 1.0 sec | None (standard) | 7800 SERIES Relay Modules | Gas, Oil: Minipeeper C7027A, C7035A, C7044 | Color: Purple |
| R7849A1023/U | Ultraviolet | 2.0 sec or 3.0 sec | None (standard) | 7800 SERIES Relay Modules | Gas, Oil: Minipeeper C7027A, C7035A, C7044 | Color: Purple |
| R7849B1013/U | Ultraviolet | 0.8 sec or 1.0 sec | Ampli-Check | 7800 SERIES Relay Modules | Gas, Oil: Minipeeper C7027A, C7035A, C7044 | Color: Purple |
| R7849B1021/U | Ultraviolet | 2.0 sec or 3.0 sec | Ampli-Check | 7800 SERIES Relay Modules | Gas, Oil: Minipeeper C7027A, C7035A, C7044 | Color: Purple |
| R7851B1000/U | Optical | 2.0 sec or 3.0 sec | Ampli-Check | 7800 SERIES Relay Modules | Gas, Oil, Coal: Optical (UV, Visible Light) C7927, C7962 | Color: White |
| R7851B1018/U | Optical | 0.8 sec or 1.0 sec | Ampli-Check | 7800 SERIES Relay Modules | Gas, Oil, Coal: Optical (UV, Visible Light) C7927, C7962 | Color: White |
| R7851C1008/U | Optical | 2.0 sec or 3.0 sec | Dynamic Self-Check | 7800 SERIES Relay Modules | Gas, oil, coal: Optical (UV only) C7961E, F | Color: White |
| R7852A1001/U | Infrared | 2.0 sec or 3.0 sec | None (standard) | 7800 SERIES Relay Modules | Gas, oil, coal: Infrared (lead sulfide) C7915 | Color: Red/White |
| R7852B1009/U | Infrared | 2.0 sec or 3.0 sec | Ampli-Check | 7800 SERIES Relay Modules | Gas, oil, coal: Infrared (lead sulfide) C7915 | Color: Red/White |
| R7861A1026/U | Ultraviolet | 2.0 sec or 3.0 sec | Dynamic Self-Check | 7800 SERIES Relay Modules | Gas, oil, coal: Ultraviolet Flame Sensor C7061 | Color: Purple |
| R7861A1034/U | Ultraviolet | 0.8 sec or 1.0 sec | Dynamic Self-Check | 7800 SERIES Relay Modules | Gas, oil, coal: Ultraviolet Flame Sensor C7061 | Color: Purple |
| R7886A1001/U | Ultraviolet | 2.0 sec or 3.0 sec | Dynamic Self-Check | 7800 SERIES Relay Modules | Gas, oil, coal: Adjustable Sensitivity Ultraviolet Flame Sensor C7076 | Color: Blue |

R7247; R7248; R7249; R7476 Flame Amplifiers



Solid state plug-in units respond to flame detector signal and indicate presence of flame.

- Use with BC7000; R4140; R4075C, D, E; R4138C, D Flame Safeguard controls and appropriate flame detector and FSP5075A1, FSP5075A3 Flame Amplifier Modules.

Use With Primary Safety Control: R4140; BC7000; R4075C, D, E; R4138C, D; FSP5075

Approvals, Factory Mutual: Approved: Report No. 2418101

| Material Number | Type | Flame Failure Response Time (sec) | Self Checking | Use With Flame Sensor | Approvals, Underwriters Laboratories Inc. | Approvals, CSA | Approvals, Control Safety Devices | Approvals, Swiss RE | Comments |
|-----------------|---------------|-----------------------------------|--------------------|--|---|--|-----------------------------------|---------------------|---------------|
| R7247B1003/U | Rectification | 2 to 4 sec | Ampli-Check | Gas: Rectifying Flame Rods C7004, C7005, C7007, C7008, C7009, Q179; Gas, oil, coal: Ultraviolet Flame Sensor C7012A, C | Listed: File No. MP268, Guide No. MCCZ2 | Certified: File No. LR1620, Guide No. 140-A-2 | Acceptable (CSD-1) | Acceptable | Color: Green |
| R7247C1001/U | Rectification | 2 to 4 sec | Dynamic Self-Check | Gas, oil, coal: Ultraviolet Flame Sensor C7012E, F | Listed: File No. MP268, Guide No. MCCZ2 | Certified: File No. LR1620, Guide No. 140-A-2 | Acceptable (CSD-1) | Acceptable | Color: Green |
| R7248A1004/U | Infrared | 2 to 4 sec | None (standard) | Gas, oil, coal: Infrared (lead sulfide) C7015 | Listed: File No. MP268, Guide No. MCCZ | Certified: File No. LR1620, Guide No. 140-A-2 (gas), 300-I-0.2 (oil) | Acceptable (CSD-1) | Acceptable | Color: Red |
| R7249A1003/U | Ultraviolet | 2 to 4 sec | None (standard) | Gas, oil, coal: Ultraviolet (Minipeeper) C7027, C7035 | Listed: File No. MP268, Guide No. MCCZ2 | Certified: File No. LR1620, Guide No. 140-A-2 | Acceptable (CSD-1) | Acceptable | Color: Purple |
| R7476A1007/U | Ultraviolet | 2 to 4 sec | Dynamic Self-Check | Gas, oil, coal: Adjustable Sensitivity Ultraviolet Flame Sensor C7076 | Listed: File No. MP268, Guide No. MCCZ | Certified: File No. LR1620, Guide No. 140-A-2 (gas), 300-I-0.2 (oil) | | | Color: Blue |
| R7476A1015/U | Ultraviolet | 2 sec max. | Dynamic Self-Check | Gas, oil, coal: Adjustable Sensitivity Ultraviolet Flame Sensor C7076 | Listed: File No. MP268, Guide No. MCCZ | Certified: File No. LR1620, Guide No. 140-A-2 (gas), 300-I-0.2 (oil) | | | Color: Blue |

Commercial/Industrial Combustion Controls

Flame Amplifier Accessories

| Material Number | Description | Used With |
|-----------------|---|--------------|
| 32005301-001/U | T Filter for Rectification Applications | R7847, R7247 |

Flame Rods and Flame Rod Holders

C7007 Flame Rod Holder



Used to apply flame rod in gas-fired system controlled by rectification type flame safeguard control.

- Use with pressurized fire boxes.
- Hold flame rods firmly over the pilot or burner with a chuck and setscrew arrangement.
- Provide electrical connection through a terminal screw.
- Allow ventilation to cool the unit or to minimize soot deposit through a 1/2 in.
- NPT tapping.
- Mount easily with sleeve or thread type mounting adapters, and a straight or angle body.

Type: Flame Rod

Application: Gas fired pilot or gas fired system.

Approximate, Dimensions: 1 15/16 in. high x 2 3/16 in. diameter x 3 3/16 in. long (49 mm high x 56 mm diameter x 81 mm long)

Approvals, Underwriters Laboratories Inc.: Listed: File No. MP268, Guide No. MCCZ

Approvals, CSA: Certified: File No. L95329-1

Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: Approved: Report No. 24181.03

| Material Number | Electrical Connections | Mounting | Required Components | Comments | Used With |
|-----------------|------------------------|---------------------|--|--|--|
| C7007A1001/U | Terminal screw | 1/2 in.-14 NPT male | 102709A -12 in. Flame Rod; 102709B -18 in. Flame Rod; 102709C -24 in. Flame Rod; 102709D -36 in. Flame Rod; or 102709E -48 in. Flame Rod | Holder only, order Kanthal flame rod separately. | Flame Amplifiers: R7247A, B, R7847A, B, R7257, R7289 |

C7008 Flame Rod Holder



Miniature “spark plug” type flame rod holder with threaded base, snap-on cover and Kanthal A-1 Flame Rod.

- Use with Honeywell Flame Safeguard controls requiring rectification-type flame detection.
- Use only with gas.
- Install with or without cover.
- Comes in several different lengths and can be cut to exact desired length.
- Uses Rajah electrical connector.

Type: Flame Rod

Application: Gas fired pilot or gas fired system.

Approximate, Dimensions: Holder: 7/8 in. diameter x 3 3/4 in. long (Holder: 22 mm diameter x 95 mm long)

Approvals, Underwriters Laboratories Inc.: Listed: File No. MP268, Guide No. MCCZ

Approvals, CSA: Certified: File No. L95329-1

Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: Approved: Report No. 24181.03

| Material Number | Electrical Connections | Mounting | Includes | Used With |
|-----------------|----------------------------|------------------|--------------------------|--|
| C7008A1000/U | Rajah electrical connector | 1/4 in. NPT male | 6" Flame rod and holder | Flame Amplifiers: R7247A, B, R7847A, B, R7257, R7289 |
| C7008A1018/U | Rajah electrical connector | 1/4 in. NPT male | 12" Flame rod and holder | Flame Amplifiers: R7247A, B, R7847A, B, R7257, R7289 |
| C7008A1026/U | Rajah electrical connector | 1/4 in. NPT male | 18" Flame rod and holder | Flame Amplifiers: R7247A, B, R7847A, B, R7257, R7289 |
| C7008A1034/U | Rajah electrical connector | 1/4 in. NPT male | 24" Flame rod and holder | Flame Amplifiers: R7247A, B, R7847A, B, R7257, R7289 |
| C7008A1174/U | Rajah electrical connector | 1/4 in. NPT male | 12" Flame rod and holder | Flame Amplifiers: R7247A, B, R7847A, B, R7257, R7289 |
| C7008A1182/U | Rajah electrical connector | 1/4 in. NPT male | 24" Flame rod and holder | Flame Amplifiers: R7247A, B, R7847A, B, R7257, R7289 |

Flame Rods and Flame Rod Holders

C7009 Flame Rod Holder



Subminiature “spark plug” type flame rod holder with flame rod.

- Use on industrial flame-retention gas burner nozzles.
- Works with Honeywell Flame Safeguard controls requiring rectification type flame detector.
- Mounts in areas with limited space because flame rod can be cut to desired length.
- Uses Rajah electrical connector.

Type: Flame Rod

Application: Gas fired pilot or gas fired system.

Approximate, Dimensions: Holder: 3/8 in. diameter x 2 3/8 in. long
(Holder: 10 mm diameter x 60 mm long)

Approvals, Underwriters Laboratories Inc.: Listed: File No. MP268,
Guide No. MCCZ

Approvals, CSA: Certified: File No. L95329-1

Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: Approved: Report No. 24181.03

| Material Number | Electrical Connections | Mounting | Includes | Comments | Used With |
|-----------------|----------------------------|------------------|----------------------|---------------------------|--|
| C7009A1009/U | Rajah electrical connector | 1/8 in. NPT male | Flame rod and holder | 4 in. (102 mm) flame rod | Flame Amplifiers: R7247A, B, R7847A, B, R7257, R7289 |
| C7009A1025/U | Rajah electrical connector | 1/8 in. NPT male | Flame rod and holder | 12 in. (305 mm) flame rod | Flame Amplifiers: R7247A, B, R7847A, B, R7257, R7289 |

Flame Rod Detector Accessories or Parts

| Material Number | Description |
|-----------------|--|
| 102709B/U | Kanthal Flame Rod - 18 in. (.182" diameter) for C7004B, C7007A, C7011A |
| 102709C/U | Kanthal Flame Rod - 24 in. (.182" diameter) for C7004B, C7007A, C7011A |
| 102709D/U | Kanthal Flame Rod - 36 in. (.182" diameter) for C7004B, C7007A, C7011A |
| 105478A/U | Kanthal Flame Rod - 6 in. (.182" diameter-threaded 6-32) for C7008 |
| 105478B/U | Kanthal Flame Rod - 12 in. (.182" diameter-threaded 6-32) for C7008 |
| 105478C/U | Kanthal Flame Rod - 18 in. (.182" diameter-threaded 6-32) for C7008 |
| 105478D/U | Kanthal Flame Rod - 24 in. (.182" diameter-threaded 6-32) for C7008 |

Flame Detectors

C7012 Solid State Purple Peeper® Ultraviolet Flame Detector



Solid state electronic flame detectors for use with Honeywell Flame Safeguard controls and amplifiers. Sense ultraviolet radiation produced by combustion of gas, oil, coal or other fuels.

- Mount horizontally, vertically or at any angle in between.
- Provide quick electrical hookup with threaded conduit fitting and color-coded leadwires.
- Reduced nuisance shutdowns by wiring two in parallel.
- C7012E1278 5 pin Brad Harrison type (formally 41307N) mating connector not supplied nor available through Honeywell.
- C7012A, E meets NEMA 4 standards with viewing window rated to 20 psi.
- C7012C, F has an explosion-proof housing for use in hazardous atmospheres with a viewing window rated to 100 psi.

Type: Ultraviolet, Purple Peeper

Application: Gas, Oil or Coal fired burners

Lead Length: 96 in. (2438 mm)

Power Consumption: 2.5 W

Approvals, CSA: Certified: Master Report LR95329-1

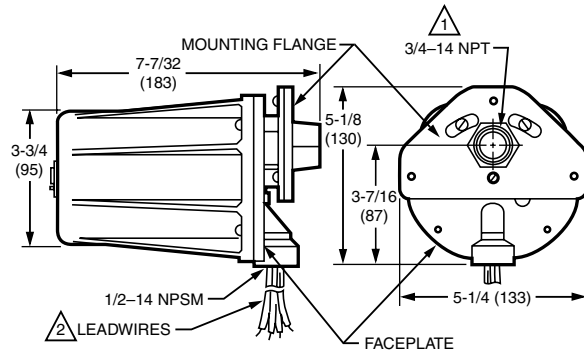
Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: Approved: Report No. 14740.01

| Material Number | Frequency | Weight | NEMA Rating | Electrical Connections | Mounting | Electrical Ratings | Ambient Temperature Range | Approvals, Underwriters Laboratories Inc. | Approvals, Others | Includes | Used With |
|-----------------|-----------------|---------------------|--------------------|---|-------------|--------------------|---|---|------------------------|---------------------------|--|
| C7012A1145/U | 50 Hz; 60 Hz | 4.25 lb (1.9 kg) | NEMA 4 | 4 NEC Class 1 Color- coded lead wires. | 3/4 in. NPT | 120 Vac | 25°F to 175°F (-4°C to +79°C) | Listed: File No. MP268, Guide No. MCCZ | | Cast case and cover | Flame Amplifiers: R7247A, R7847A, R7257; Flame Amplifiers: R7247A, B; R7847A, B; R7257 |
| C7012A1152/U | 50 Hz; 60 Hz | 4.25 lb (1.9 kg) | NEMA 4 | 4 NEC Class 1 Color- coded lead wires. | 1 in. NPT | 120 Vac | 25°F to 175°F (-4°C to +79°C) | Listed: File No. MP268, Guide No. MCCZ | | Cast case and cover | Flame Amplifiers: R7247A, B; R7847A, B; R7257 |
| C7012A1160/U | 50 Hz; 60 Hz | 4.25 lb (1.9 kg) | NEMA 4 | 4 NEC Class 1 Color- coded lead wires. | 1 in. NPT | 120 Vac | -40°F to +175°F (-40°C to +79°C) | Listed: File No. MP268, Guide No. MCCZ | | Cast case and cover | Flame Amplifiers: R7247A, B; R7847A, B; R7257 |
| C7012A1186/U | 50 Hz; 60 Hz | 4.25 lb (1.9 kg) | NEMA 4 | 4 NEC Class 1 Color- coded lead wires. | 3/4 in. NPT | 208 Vac | 25°F to 175°F (-4°C to +79°C) | Listed: File No. MP268, Guide No. MCCZ | | Cast case and cover | Flame Amplifiers: R7247A, B; R7847A, B; R7257 |
| C7012A1194/U | 50 Hz; 60 Hz | 4.25 lb (1.9 kg) | NEMA 4 | 4 NEC Class 1 Color- coded lead wires. | 3/4 in. NPT | 240 Vac | 25°F to 175°F (-4°C to +79°C) | Listed: File No. MP268, Guide No. MCCZ | | Cast case and cover | Flame Amplifiers: R7247A, B; R7847A, B; R7257 |
| C7012A1202/U | 50 Hz; 60 Hz | 4.25 lb (1.9 kg) | NEMA 4 | 4 NEC Class 1 Color- coded lead wires. | 3/4 in. NPT | 100 Vac | 25°F to 175°F (-4°C to +79°C) | Listed: File No. MP268, Guide No. MCCZ | | Cast case and cover | Flame Amplifiers: R7247A, R7847A, R7257 |
| C7012A1210/U | 50 Hz; 60 Hz | 4.25 lb (1.9 kg) | NEMA 4 | 4 NEC Class 1 Color- coded lead wires. | 3/4 in. NPT | 120 Vac | 25°F to 175°F (-4°C to +79°C) | Listed: File No. MP268, Guide No. MCCZ | | Cast case and cover | Flame Amplifiers: R7247A, R7847A, R7257 |
| C7012C1042/U | 50 Hz; 60 Hz | 14.5 lb (6.6 kg) | Explosion Proof | 4 NEC Class 1 Color- coded lead wires. | 1 in. NPT | 120 Vac | 25°F to 175°F (-4°C to +79°C) | Listed: File No. E34649, Guide No. ZTSZ | | | Flame Amplifiers: R7247A, B; R7847A, B; R7257 |
| C7012G1019/U | 50 Hz | 4.25 lb (1.9 kg) | NEMA 4 | 5 NEC Class 1 Color- coded lead wires. | 3/4 in. NPT | 220 Vac | 25°F to 175°F (-4°C to +79°C) | Listed: File No. MP268, Guide No. MCCZ | Meets DIN Standards | Cast case and cover | Flame Amplifiers: R7247C, R7847C |

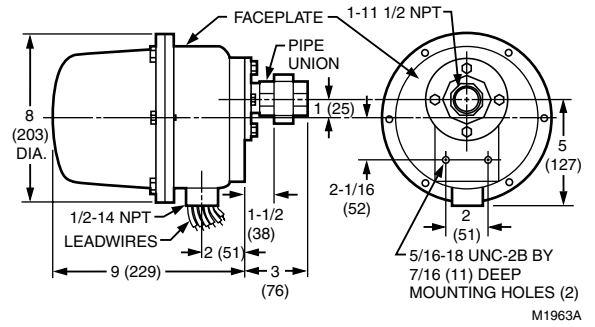
Flame Detectors

Dimensions in inches (millimeters)



- 1 C7061A1046, C7061A1053: INCH NPT
- 2 C7061A1038 AND C7061A1046: TYPE CONNECTOR.

M10167D



M1963A

Flame Detectors

C7012 Solid State Purple Peeper® Ultraviolet Flame Detector (Self-Checking)



Solid state electronic flame detectors for use with Honeywell Flame Safeguard controls and amplifiers. Sense ultraviolet radiation produced by combustion of gas, oil, coal or other fuels.

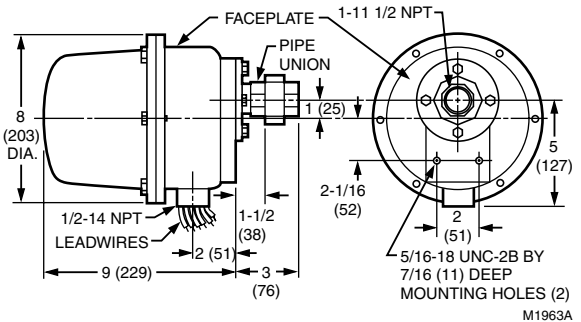
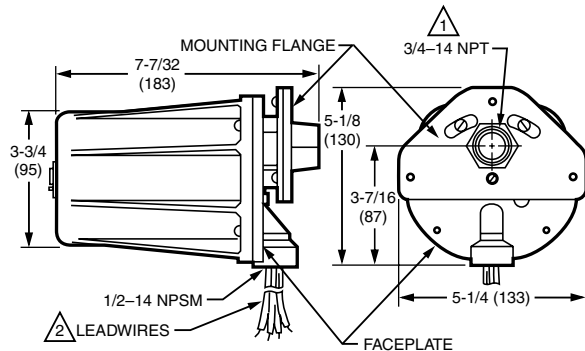
- Mount horizontally, vertically or at any angle in between.
- Provide quick electrical hookup with threaded conduit fitting and color-coded leadwires.

- Reduced nuisance shutdowns by wiring two in parallel.
- C7012E1278 5 pin Brad Harrison type (formally 41307N) mating connector not supplied nor available through Honeywell.
- C7012A, E meets NEMA 4 standards with viewing window rated to 20 psi.
- C7012C, F has an explosion-proof housing for use in hazardous atmospheres with a viewing window rated to 100 psi.

Type: Ultraviolet, Purple Peeper, Self-Checking
Application: Gas, Oil or Coal fired burners
Lead Length: 96 in. (2438 mm)
Power Consumption: 7.0 W
Approvals, CSA: Certified: Master Report LR95329-1
Approvals, Swiss RE: Acceptable
Approvals, Factory Mutual: Approved: Report No. 14740.01
Used With: Flame Amplifiers: R7247C, R7847C

| Material Number | Frequency | Weight | NEMA Rating | Electrical Connections | Mounting | Electrical Ratings | Ambient Temperature Range | Approvals, Underwriters Laboratories Inc. | Approvals, Others | Includes |
|-----------------|--------------|------------------|-----------------|---|-------------|--------------------|----------------------------------|---|-------------------|---|
| C7012E1104/U | 50 Hz; 60 Hz | 4.25 lb (1.9 kg) | NEMA 4 | 6 NEC Class 1 Color-coded lead wires. | 3/4 in. NPT | 120 Vac | -20°F to +175°F (-20°C to +79°C) | Listed: File No. MP268, Guide No. MCCZ | | Cast case and cover |
| C7012E1112/U | 50 Hz; 60 Hz | 4.25 lb (1.9 kg) | NEMA 4 | 6 NEC Class 1 Color-coded lead wires. | 1 in. NPT | 120 Vac | -20°F to +175°F (-20°C to +79°C) | Listed: File No. MP268, Guide No. MCCZ | | Cast case and cover |
| C7012E1120/U | 50 Hz; 60 Hz | 4.25 lb (1.9 kg) | NEMA 4 | 6 NEC Class 1 Color-coded lead wires. | 1 in. NPT | 120 Vac | -40°F to +175°F (-40°C to +79°C) | Listed: File No. MP268, Guide No. MCCZ | | Cast case and cover |
| C7012E1146/U | 50 Hz; 60 Hz | 4.25 lb (1.9 kg) | NEMA 4 | 6 NEC Class 1 Color-coded lead wires. | 3/4 in. NPT | 208 Vac | -20°F to +175°F (-20°C to +79°C) | Listed: File No. MP268, Guide No. MCCZ | | Cast case and cover, with Hot refractory tube |
| C7012E1153/U | 50 Hz; 60 Hz | 4.25 lb (1.9 kg) | NEMA 4 | 6 NEC Class 1 Color-coded lead wires. | 3/4 in. NPT | 240 Vac | -20°F to +175°F (-20°C to +79°C) | Listed: File No. MP268, Guide No. MCCZ | | Cast case and cover |
| C7012E1187/U | 50 Hz | 4.25 lb (1.9 kg) | NEMA 4 | 6 NEC Class 1 Color-coded lead wires. | 3/4 in. NPT | 220 Vac | -20°F to +175°F (-20°C to +79°C) | Listed: File No. MP268, Guide No. MCCZ | DIN (Europe) | Cast case and cover |
| C7012E1195/U | 50 Hz | 4.25 lb (1.9 kg) | NEMA 4 | 6 NEC Class 1 Color-coded lead wires. | 3/4 in. NPT | 110 Vac | -20°F to +175°F (-20°C to +79°C) | Listed: File No. MP268, Guide No. MCCZ | BGC (Europe) | Cast case and cover |
| C7012E1203/U | 50 Hz; 60 Hz | 4.25 lb (1.9 kg) | NEMA 4 | 6 NEC Class 1 Color-coded lead wires. | 3/4 in. NPT | 240 Vac | -20°F to +175°F (-20°C to +79°C) | Listed: File No. MP268, Guide No. MCCZ | BGC (Europe) | Cast case and cover |
| C7012E1278/U | 50 Hz; 60 Hz | 4.25 lb (1.9 kg) | NEMA 4 | Brad Harrison type number 41310 connector | 1 in. NPT | 120 Vac | -20°F to +175°F (-20°C to +79°C) | Listed: File No. MP268, Guide No. MCCZ | | Cast case and cover |
| C7012F1052/U | 50 Hz; 60 Hz | 14.5 lb (6.6 kg) | Explosion Proof | 6 NEC Class 1 Color-coded lead wires. | 1 in. NPT | 120 Vac | -20°F to +175°F (-20°C to +79°C) | Listed: File No. E34649, Guide No. ZTSZ | | Explosion-proof, two piece, violet, cast aluminum enclosure |

Dimensions in inches (millimeters)



1 C7061A1046, C7061A1053: INCH NPT

2 C7061A1038 AND C7061A1046: TYPE CONNECTOR.

M10167D

M1963A

C7024 Solid State Purple Peeper® Ultraviolet Flame Detector



24 Vdc solid state electronic flame detectors for sensing the ultraviolet radiation emitted by the combustion of most carbon containing fuels, such as natural gas, LP gases, and oil.

- Use with R7824C Dynamic Self-Check Flame Signal Amplifier.
- Circuitry provides low power consumption and high reliability.
- Mount horizontally, vertically or at any angle in between.
- Field-replaceable UV radiation sensing tube and quartz viewing window.
- Quick electrical installation with threaded conduit fitting and color-coded leadwires.
- Reduce nuisance shutdowns by wiring two in parallel.
- Oscillating shutter interrupts UV radiation using the R7824C amplifier.
- C7024E meets NEMA 4 standards with viewing window rated to 20 psi.
- C7024F has an explosion-proof housing for use in hazardous atmospheres with a viewing window rated to 100 psi.

Type: Ultraviolet, Purple Peeper, Self-Checking

Application: Coal fired burners; Gas fired burners; Oil fired burners

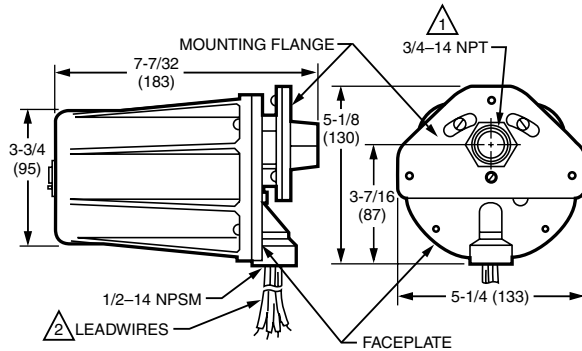
Lead Length: 96 in. (2438 mm)

Electrical Connections: Six NEC CLASS 1 color-coded leaders

Electrical Ratings: 24 Vdc

Power Consumption: 7.8 W maximum.

Dimensions in inches (millimeters)



1 C7061A1046, C7061A1053: INCH NPT

2 C7061A1038 AND C7061A1046: TYPE CONNECTOR.

M10167D

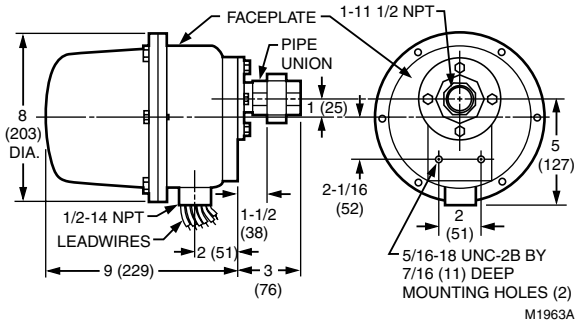
Ambient Temperature Range: -20°F to +175°F (-20°C to +79°C)

Approvals, CSA: Certified: Master Report LR95329-3

Used With: Flame Amplifiers: R7824C

Accessories:

190971G/U – 24 Vdc Coil and Shutter Assembly for C7024E, F; C7961



| Material Number | NEMA Rating | Mounting | Approximate, Dimensions | Weight | Approvals, Underwriters Laboratories Inc. | Includes | Comments |
|-----------------|-----------------|-------------|--|------------------|---|---------------------|--------------------------|
| C7024E1001/U | NEMA 4 | 3/4 in. NPT | 5 1/4 in. diameter (includes mounting flange) x 7 7/32 in. long (133 mm diameter (includes mounting flange) x 183 mm long) | 4.25 lb (1.9 kg) | Component Recognized: File No. MP268 | Cast case and cover | Flame Amplifiers: R7824C |
| C7024F1009/U | Explosion Proof | 1 in. NPT | 8 in. diameter x 12 in. long (203 mm diameter x 305 mm long) | 14.5 lb (6.6 kg) | Component Recognized: For use in hazardous locations; Class 1 Groups C and D; Class 2, Groups E, F and G; File no. E34649 | | Flame Amplifiers: R7824C |

Flame Detectors

C7027; C7044 Minipeeper Ultraviolet Flame Detector



Compact Flame Detector for use with flame safeguard controls with ultraviolet amplifiers.

- Use with Honeywell Flame Safeguard primary safety controls and burners requiring ultraviolet flame detection.
- C7027 mounts on a 1/2 in. sighting pipe by using an integral collar.
- Detectors can be wired in parallel for difficult sighting applications.
- C7027 seals against pressures up to 5 psi (34.5 kPa) when correctly installed.
- Allows for blast tube mounting due to compact size.
- C7044 mounts with a two screw bracket.
- The C7044 UV sensor tube is enclosed in a stainless steel housing.
- C7044 has the capability of side or end viewing in flame monitoring applications.

Type: Ultraviolet, Minipeeper

Electrical Connections: 2 NEC Class 1 leadwires

Vibration: 0.5 G max

Approvals, Underwriters Laboratories Inc.: Listed: File No. MP268, Guide No. MCCZ

Approvals, CSA: Certified: Master Report LR95329-1

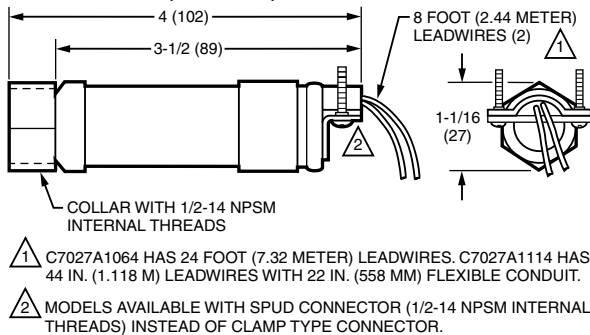
Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: Approved: Report No. 2418103

Used With: Flame Amplifiers: R7249A, B, R7849A, B, R7749B, R7259, R7290

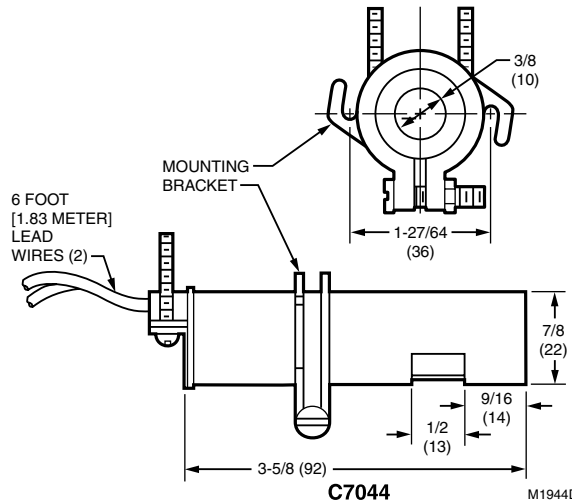
| Material Number | Application | Lead Length | Mounting | Ambient Temperature Range | Approvals, Others | Includes | Comments |
|-----------------|--|-------------------|---|-----------------------------------|-------------------|---------------------------------------|--|
| C7027A1023/U | Coal fired burners; Gas fired burners; Oil fired burners | 96 in. (2438 mm) | Integral nut for 1/2 in. sighting pipe. | 0°F to 215°F (-18°C to +102°C) | | | Detects ultraviolet radiation in flames |
| C7027A1031/U | Coal fired burners; Gas fired burners; Oil fired burners | 96 in. (2438 mm) | Integral nut for 1/2 in. sighting pipe. | -40°F to 215°F (-40°C to 102°C) | | | Detects ultraviolet radiation in flames |
| C7027A1049/U | Coal fired burners; Gas fired burners; Oil fired burners | 96 in. (2438 mm) | Integral nut for 1/2 in. sighting pipe. | 0°F to 215°F (-18°C to +102°C) | | 1/2 in. NPT threaded spud connector. | Detects ultraviolet radiation in flames |
| C7027A1056/U | Coal fired burners; Gas fired burners; Oil fired burners | 96 in. (2438 mm) | Integral nut for 1/2 in. sighting pipe. | 0°F to 215°F (-18°C to +102°C) | DIN (Europe) | | Detects ultraviolet radiation in flames |
| C7027A1064/U | Coal fired burners; Gas fired burners; Oil fired burners | 288 in. (7315 mm) | Integral nut for 1/2 in. sighting pipe. | -40°F to 215°F (-40°C to 102°C) | | 1/2 in. NPT threaded spud connector. | Detects ultraviolet radiation in flames |
| C7027A1072/U | Coal fired burners; Gas fired burners; Oil fired burners | 96 in. (2438 mm) | Integral nut for 1/2 in. sighting pipe. | -40°F to 215°F (-40°C to 102°C) | | 1/2 in. NPT threaded spud connector. | Detects ultraviolet radiation in flames |
| C7027A1080/U | Coal fired burners; Gas fired burners; Oil fired burners | 96 in. (2438 mm) | Integral nut for 1/2 in. sighting pipe. | 0°F to 215°F (-18°C to +102°C) | | 136733 Heat Block and 390427B bushing | Detects ultraviolet radiation in flames |
| C7027A1114/U | Coal fired burners; Gas fired burners; Oil fired burners | 44 in. (1118 mm) | Integral nut for 1/2 in. sighting pipe. | 0°F to 215°F (-18°C to +102°C) | | installed 22" flexible conduit | Detects ultraviolet radiation in flames |
| C7027A1122/U | Oil fired burners; Gas fired burners; Coal fired burners | 96 in. (2438 mm) | Integral nut for 1/2 in. sighting pipe. | -40°F to 215°F (-40°C to 102°C) | | 1/2 in. NPT threaded spud connector. | Detects ultraviolet radiation in flames |
| C7027A1130/U | Gas fired burners; Oil fired burners; Coal fired burners | 96 in. (2438 mm) | Integral nut for 1/2 in. sighting pipe. | -40°F to +215°F (-40°C to +102°C) | | | Detects ultraviolet radiation in flames |
| C7044A1006/U | Coal fired burners; Gas fired burners; Oil fired burners | 72 in. (1829 mm) | Mounting Bracket provided | 0°F to 215°F (-18°C to +102°C) | | Mounting bracket | Detects ultraviolet radiation in flames - Side Viewing |

Dimensions in inches (millimeters)



C7027

M1943G



C7044

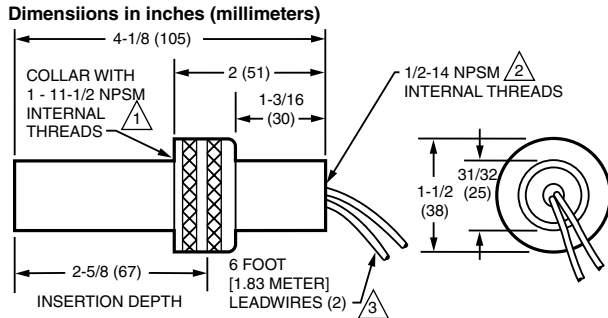
M1944D

C7035 Minipeeper Ultraviolet Flame Detector



Compact flame detector for use with flame safeguard controls with ultraviolet amplifiers.

- Use with Honeywell Flame Safeguard primary safety controls and burners requiring ultraviolet flame detection.
- Mounts on a 1 in. sighting pipe by using an integral collar.
- Protects the sensing tube with a shield.
- Meets outdoor rain tight requirements of Underwriters Laboratories Inc., NEMA 4 and NEMA 4X.
- Wires in parallel for difficult sighting applications.
- Seals against pressures as high as 5 psi (34.5 kPa) when correctly installed.
- Field-replaceable ultraviolet sensing tube.



- △1 DIN APPROVED C7035A1064 HAS 1-11 BSP.P1 INTERNAL MOUNTING THREADS.
- △2 DIN APPROVED C7035A1064 HAS 1/2-14 BSP-F INTERNAL MOUNTING THREADS.
- △3 C7035A1056 HAS 12 FOOT (3.66 METER) LEADWIRES.

C7035

M1945E

Type: Ultraviolet, Minipeeper

NEMA Ratings: NEMA 3 and NEMA 4

Electrical Connections: 2 NEC Class 1 leadwires

Vibration: 0.5 G max

Mounting: Integral nut for 1 in. sighting pipe.

Approximate, Dimensions: 1 1/2 in. diameter x 4 1/8 in. long (38 mm diameter x 105 mm long)

Weight: 6 oz (0.17 kg)

Approvals, Underwriters Laboratories Inc.: Listed: File No. MP268, Guide No. MCCZ

Approvals, CSA: Certified: Master Report LR95329-1

Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: Approved: Report No. 24181.03

Comments: Detects ultraviolet radiation in flames

Used With: Flame Amplifiers: R7249A, B, R7849A, B, R7749B, R7259, R7290

| Material Number | Application | Lead Length | Ambient Temperature Range | Approvals, Others | Includes |
|-----------------|--|-------------------|-----------------------------------|-------------------|------------|
| C7035A1023/U | Coal fired burners; Gas fired burners; Oil fired burners | 72 in. (1829 mm) | 0°F to 250°F (-18°C to +121°C) | | |
| C7035A1031/U | Coal fired burners; Gas fired burners; Oil fired burners | 72 in. (1829 mm) | -40°F to +250°F (-40°C to +121°C) | | |
| C7035A1049/U | Coal fired burners; Gas fired burners; Oil fired burners | 72 in. (1829 mm) | 0°F to 250°F (-18°C to +121°C) | DIN (Europe) | |
| C7035A1056/U | Coal fired burners; Gas fired burners; Oil fired burners | 144 in. (3658 mm) | -40°F to +250°F (-40°C to +121°C) | | |
| C7035A1064/U | Coal fired burners; Gas fired burners; Oil fired burners | 72 in. (1829 mm) | -40°F to +250°F (-40°C to +121°C) | | |
| C7035A1080/U | Coal fired burners; Gas fired burners; Oil fired burners | 72 in. (1829 mm) | 0°F to 250°F (-18°C to +121°C) | | 600F leads |
| C7035A1098/U | Oil fired burners; Gas fired burners; Coal fired burners | 72 in. (1829 mm) | -40°F to +250°F (-40°C to +121°C) | | |

Flame Detectors

C7061 Dynamic Self-Check Ultraviolet Flame Detector



- The detector requires faceplate alignment and has integral locating reference points to assure proper operation of the shutter mechanism.
- Field replaceable ultraviolet sensing tube and quartz viewing window.
- Models with threaded conduit fitting and color-coded leadwires allow rapid electrical installation.
- C7061A1038 or A1046 5 pin Brad Harrison type (formally 41307N) mating connector not supplied nor available through Honeywell.
- Two detectors can be wired in parallel to reduce nuisance shutdowns in difficult flame sighting applications.
- Protective heat block built into mounting flange.
- -40°F (-40°C) rated ultraviolet sensing tube is supplied.
- C7061E meets NEMA 4 standards with viewing window rated to 20 psi.
- C7061F has an explosion-proof housing for use in hazardous atmospheres with a viewing window rated to 100 psi.

Type: Ultraviolet, Purple Peeper, Self-Checking

Application: Gas fired burners; Oil fired burners

Comments: Dynamic self-checking flame detector

Used With: Flame Amplifiers: R7861

Approvals, Underwriters Laboratories Inc.: C7061A, M-Listed:

File No. MP268, Guide No. MCCZ; C7061F-Recognized: For use in hazardous locations, Class 1 Groups C and D; class 2, Groups E, F and G; File no. E34649

Approvals, CSA: Certified: Master Report LR95329-1

Approvals, Swiss RE: Acceptable

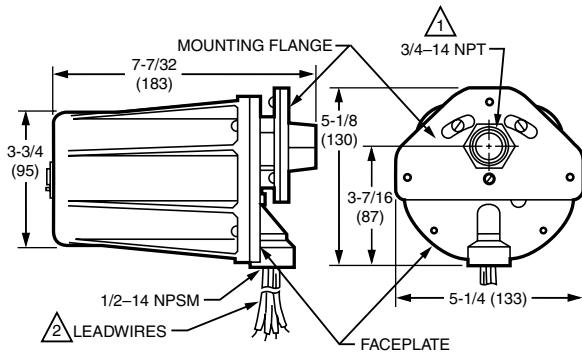
Approvals, Factory Mutual: Approved: Report No. 14740.01

Dynamic self-checking flame detector used with R7861 Dynamic Self-check Amplifiers for sensing the ultraviolet radiation generated by the combustion of gas, oil, or other fuels.

- Oscillating shutter interrupts ultraviolet radiation reaching the UV sensor to provide the UV sensor tube checking function.
- Can be mounted horizontally, vertically or at any angle in between.

| Material Number | NEMA Rating | Lead Length | Electrical Connections | Mounting | Electrical Ratings | Frequency | Ambient Temperature Range | Approvals, Others |
|-----------------|-----------------|------------------|---|-------------|--------------------|--------------|----------------------------------|-----------------------------|
| C7061A1004/U | NEMA 4 | 77 in. (1981 mm) | PVC jacketed cable | 3/4 in. NPT | 120 Vac | 50 Hz; 60 Hz | -40°F to +175°F (-40°C to +79°C) | |
| C7061A1012/U | NEMA 4 | 96 in. (2438 mm) | Color-coded leadwires | 3/4 in. NPT | 120 Vac | 51 Hz; 60 Hz | -40°F to +175°F (-40°C to +79°C) | |
| C7061A1020/U | NEMA 4 | | Terminal block | 3/4 in. NPT | 120 or 230 Vac | 52 Hz; 60 Hz | -40°F to +175°F (-40°C to +79°C) | |
| C7061A1038/U | NEMA 4 | | Brad Harrison type number 41310 connector | 3/4 in. NPT | 120 Vac | 53 Hz; 60 Hz | -40°F to +175°F (-40°C to +79°C) | |
| C7061A1046/U | NEMA 4 | | Brad Harrison type number 41310 connector | 1 in. NPT | 120 Vac | 54 Hz; 60 Hz | -40°F to +175°F (-40°C to +79°C) | |
| C7061A1053/U | NEMA 4 | 96 in. (2438 mm) | Color-coded leadwires | 1 in. NPT | 120 Vac | 55 Hz; 60 Hz | -40°F to +175°F (-40°C to +79°C) | |
| C7061F1003 | Explosion Proof | | Terminal block | 1 in. NPT | 120 or 230 Vac | 56 Hz; 60 Hz | -40°F to +175°F (-40°C to +79°C) | CE and conforms to EEXD IIc |
| C7061F2001/U | Explosion Proof | 96 in. (2438 mm) | Color-coded leadwires | 1 in. NPT | 120 Vac | 57 Hz; 60 Hz | -40°F to +175°F (-40°C to +79°C) | |
| C7061M1008/U | NEMA 4 | 96 in. (2438 mm) | Color-coded leadwires | 1 in. NPT | 120 Vac | 58 Hz; 60 Hz | -4°F to +175°F (-20°C to +79°C) | |
| C7061M1016/U | NEMA 4 | | Brad Harrison type number 41310 connector | 1 in. NPT | 120 Vac | 59 Hz; 60 Hz | -4°F to +175°F (-20°C to +79°C) | |

Dimensions for C7061A in inches (millimeters)

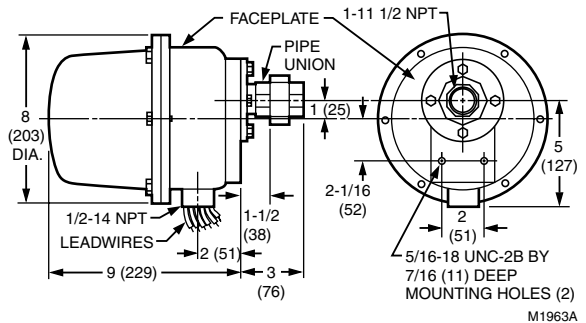


1 C7061A1046, C7061A1053: INCH NPT

2 C7061A1038 AND C7061A1046: TYPE CONNECTOR.

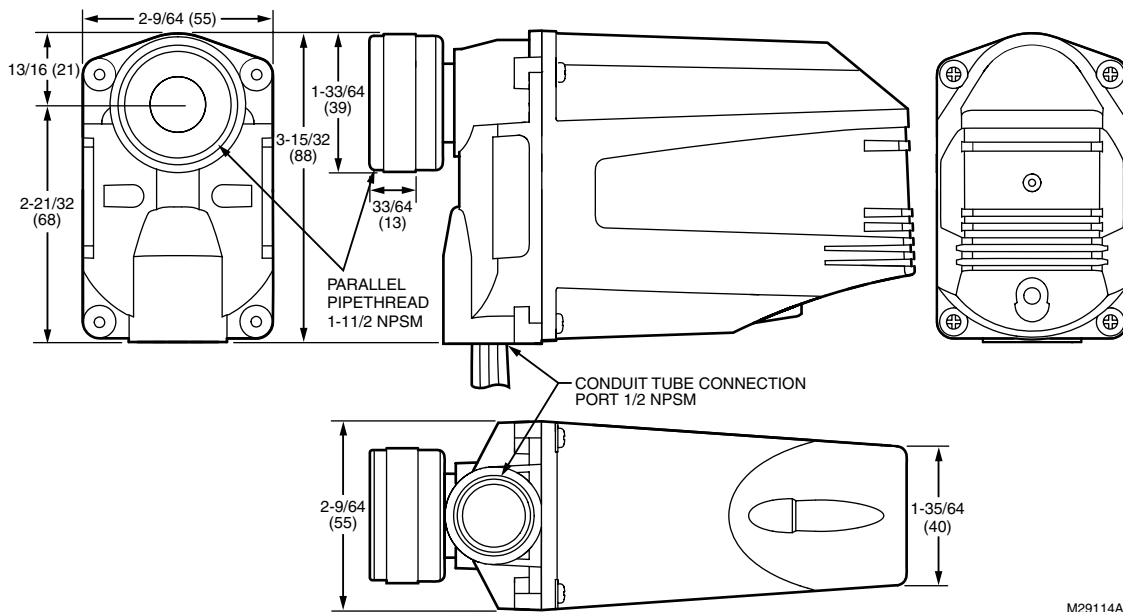
M10167D

Dimensions for C7061F in inches (millimeters)



M1963A

Dimensions for C7061M in inches (millimeters)



M29114A

Flame Detectors

C7076 Adjustable Sensitivity Ultraviolet Flame Detector



Solid state dynamic self check flame detectors for use with BC7000, R4140 or FSP5075 with R7476 Amplifier and 7800 SERIES with R7886 Amplifier.

- Use Honeywell Flame Safeguard primary safety controls requiring adjustable sensitivity ultraviolet flame detection.
- Detect ultraviolet radiation from flames.
- Include dual sensitivity adjustment.
- C7076A meets NEMA 4 standards with viewing window rated to 20 psi.
- C7076D has an explosion-proof housing for use in hazardous atmospheres with a viewing window rated to 100 psi.

Used With: Flame Amplifiers: R7476, R7886

Type: Ultraviolet, Adjustable Sensitivity

Application: Gas fired burners; Oil fired burners

Electrical Connections: Terminal block

Vibration: 0.5 G max

Mounting: 1 in. NPT

Power Consumption: 7.0 W

Ambient Temperature Range: -40°F to +160°F (-40°C to +71°C)

Approvals, CSA: Certified: Master Report LR1620

Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: Approved: Report No. FM26980

Comments: Dynamic self-checking flame detector with adjustable sensitivity

Replacement Parts:

190971F/U – 100 Vac Coil and Shutter Assembly for C7076A, D

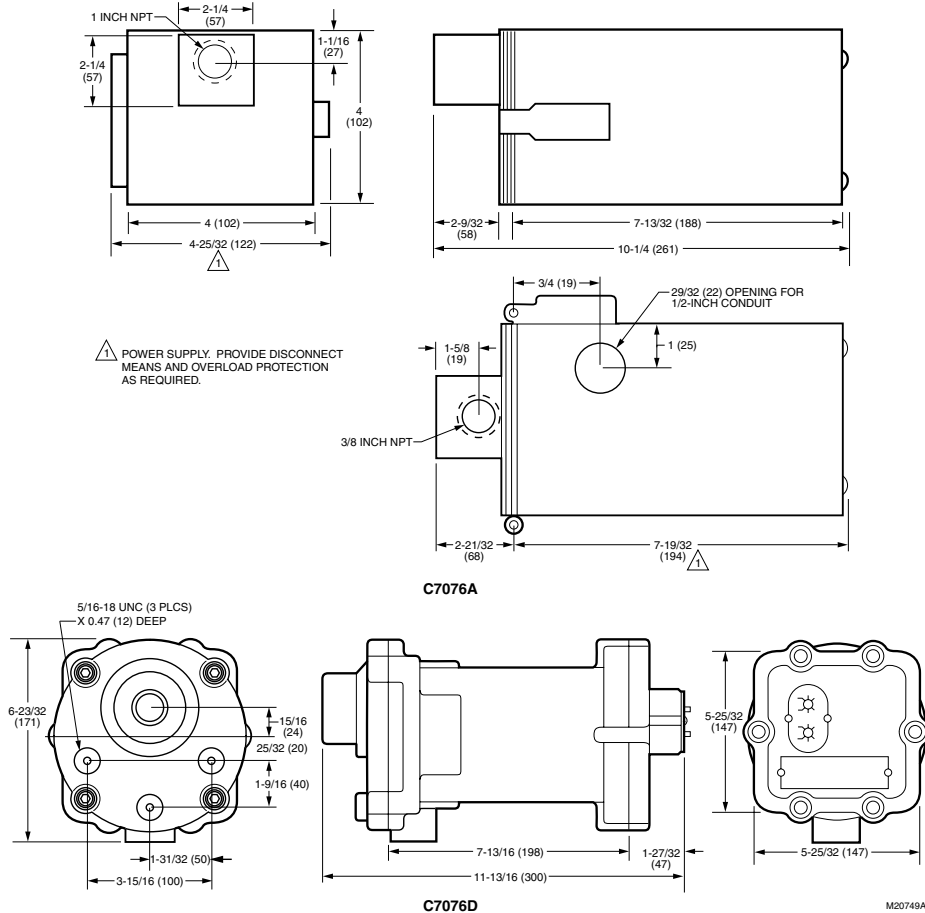
190998A/U – Aspiration assembly for C7076A

191002R/U – 120 Vac Plug in Electronics less UV Sensing Tube for C7076D

191050/U – Quartz Viewing Window for C7076

191053/U – UV Sensing Tube for C7076

Dimensions in inches (millimeters)

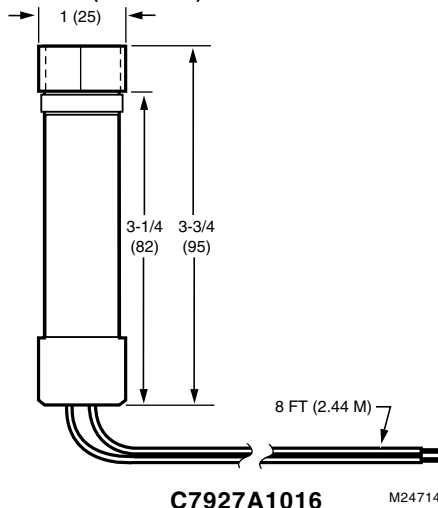


| Material Number | NEMA Rating | Electrical Ratings | Frequency | Approximate, Dimensions | Weight | Approvals, Underwriters Laboratories Inc. | Approvals, Others |
|-----------------|-------------|---------------------|--------------|---|-------------------|---|-------------------|
| C7076A1007/U | NEMA 4 | 120 Vac | 60 Hz | 4 in. high x 4 in. wide x 10 1/4 in. deep (102 mm high x 102 mm wide x 261 mm deep) | 6.6 lb (3 kg) | Listed: File No. MP268, Guide No. MCCZ | |
| C7076A1015/U | NEMA 4 | 100 Vac | 50 Hz; 60 Hz | 4 in. high x 4 in. wide x 10 1/4 in. deep (102 mm high x 102 mm wide x 261 mm deep) | 6.6 lb (3 kg) | Listed: File No. MP268, Guide No. MCCZ | |
| C7076A1031/U | NEMA 4 | 220 Vac; 240 Vac | 50 Hz; 60 Hz | 4 in. high x 4 in. wide x 10 1/4 in. deep (102 mm high x 102 mm wide x 261 mm deep) | 6.6 lb (3 kg) | Listed: File No. MP268, Guide No. MCCZ | |
| C7076D1027/U | NEMA 7 | 120 Vac | 60 Hz | 6 5/8 in. high x 6 3/16 in. wide x 11 3/4 in. deep (168 mm high x 158 mm wide x 300 mm deep) | 17.6 lb (8 kg) | Listed: File No. E34649, Guide No. ZTSZ | Explosion Proof |

C7927 Solid State Ultraviolet Flame Detector



Dimensions in inches (millimeters)



The Solid State Ultraviolet Flame Detectors, sense ultraviolet radiation emitted by combustion flames. The flame detectors are used with Honeywell flame safeguard controls to provide flame supervision for gas, oil, or combination gas-oil burners.

- Properly installed the flame detectors are pressure rated for 5 psi.
- Flame detector is used with only the R7851B Flame Amplifier and the 7800 SERIES controls.
- Has an integral collar threaded (internal 1/2-14 NPSM) for mounting on a one-half inch sight pipe.

Type: Ultraviolet, Minipeeper

Application: Gas, Oil, or combination burners-intermittent operation only (burner cycled at least once each 24 hours).

NEMA Rating: NEMA 1

Electrical Connections: 2 NEC Class 1 leadwires

Mounting: 1/2 in. NPT pipe mounting

Approximate, Dimensions: 1 in. diameter x 3 3/4 in. long (25 mm diameter x 95 mm long)

Approvals, Underwriters Laboratories Inc.: Component Recognized: File No. MP268

Approvals, CSA: Report 158158

Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: Approved: Report No. 3011020

Comments: Detects ultraviolet radiation in flames

| Material Number | Lead Length | Ambient Temperature Range | Used With |
|-----------------|------------------|----------------------------------|--------------------------|
| C7927A1016/U | 96 in. (2438 mm) | -40°F to +200°F (-40°C to +93°C) | Flame Amplifiers: R7851B |

Flame Detectors

C7961 Dynamic Self-checking Solid State Ultraviolet Flame Detector



A self-checking flame detector using a solid state UV sensor to detect ultraviolet radiation in flames for supervision of gas, oil or combination gas-oil burners.

- Designed for use with 7800 series controls with the R7851C flame amp.
- Oscillating shutter interrupts ultraviolet radiation reaching the UV sensor to provide the solid state UV sensor checking function.
- Can be mounted horizontally, vertically or at any angle in between.
- The detector requires faceplate alignment and has integral locating reference points to assure proper operation of the shutter mechanism.
- Models available with threaded conduit fitting and color-coded leadwires allow rapid electrical installation.
- C7961E1022 or E1030 5 pin Brad Harrison type (formally 41307N) mating connector not supplied nor available through Honeywell.
- Incorporates UV sensor tube checking feature; used with R7851C1008 Dynamic Self-check Amplifiers.
- Protective heat block built into mounting flange.
- -40°F (-40°C) rated ultraviolet sensing cell is supplied.
- C7961E meets NEMA 4 standards with viewing window rated to 20 psi.
- C7961F has an explosion-proof housing for use in hazardous atmospheres with a viewing window rated to 100 psi.

Type: Ultraviolet, Self-Checking

Application: Gas, Oil or other fuels

Electrical Ratings: 120 Vac (-15% +10%)

Frequency: 50 Hz; 60 Hz

Ambient Temperature Range: -40°F to +175°F (-40°C to +80°C)

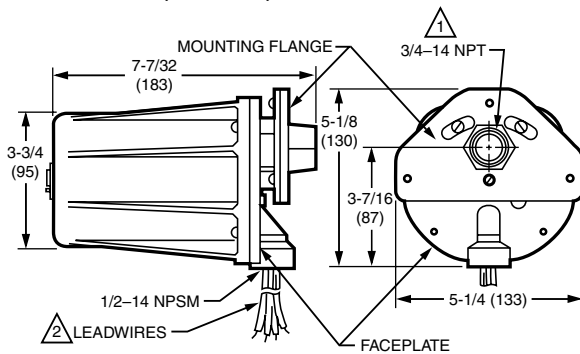
Approvals, Underwriters Laboratories Inc.: Component Recognized: File No. MP268

Comments: Detects ultraviolet radiation generated by combustion of gas, oil, or other fuels

Approvals, Swiss RE: Acceptable

Used With: R7851C Dynamic Self-Check Amplifier

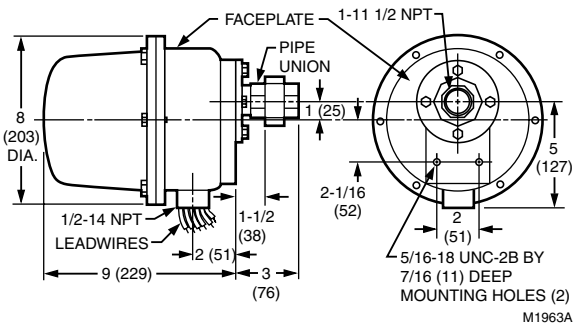
Dimensions in inches (millimeters)



1 C7061A1046, C7061A1053: INCH NPT

2 C7061A1038 AND C7061A1046: TYPE CONNECTOR.

M10167D



| Material Number | NEMA Rating | Lead Length | Electrical Connections | Mounting | Approximate, Dimensions | Weight | Approvals, CSA | Approvals, Factory Mutual | Includes |
|-----------------|-----------------|------------------|------------------------------------|-------------|--|------------------|--------------------|-------------------------------|--|
| C7961E1006/U | NEMA 4 | 96 in. (2438 mm) | NEC Class 1 color-coded | 3/4 in. NPT | 3 3/4 in. diameter (5 1/4 in. diameter including mounting flange) x 7 7/32 in. long (95 mm diameter (133 mm diameter including mounting flange) x 183 mm long) | 2.6 lb (1.2 kg) | Certified: Pending | Pending | Quartz Viewing Window rated for 20 psi (138 kPa) |
| C7961E1014/U | NEMA 4 | 96 in. (2438 mm) | NEC Class 1 color-coded | 1 in. NPT | 3 3/4 in. diameter (5 1/4 in. diameter including mounting flange) x 7 7/32 in. long (95 mm diameter (133 mm diameter including mounting flange) x 183 mm long) | 2.6 lb (1.2 kg) | Certified: Pending | Pending | Quartz Viewing Window rated for 20 psi (138 kPa) |
| C7961E1022/U | NEMA 4 | | 5 pin Brad Harrison Type Connector | 1 in. NPT | 3 3/4 in. diameter (5 1/4 in. diameter including mounting flange) x 7 7/32 in. long (95 mm diameter (133 mm diameter including mounting flange) x 183 mm long) | 2.6 lb (1.2 kg) | Certified: Pending | Pending | Quartz Viewing Window rated for 20 psi (138 kPa) |
| C7961E1030/U | NEMA 4 | | 5 pin Brad Harrison Type Connector | 3/4 in. NPT | 3 3/4 in. diameter (5 1/4 in. diameter including mounting flange) x 7 7/32 in. long (95 mm diameter (133 mm diameter including mounting flange) x 183 mm long) | 2.6 lb (1.2 kg) | Certified: Pending | Pending | Quartz Viewing Window rated for 20 psi (138 kPa) |
| C7961F1004/U | Explosion Proof | 96 in. (2438 mm) | NEC Class 1 color-coded | 1 in. NPT | 8 in. diameter x 12 in. long (203 mm diameter x 305 mm long) | 14.5 lb (6.6 kg) | | Approved: Report No. 14740.01 | Quartz Viewing Window rated for 100 psi |

C7915 Infrared Flame Detector



The C7915 Combination mount Lead Sulfide cell senses infrared radiation from gas, oil, and coal or dual-fuel flames.

- Used for combination or dual-fuel applications.
- Detects pilot and main flame.
- Mounts quickly and easily on a standard 3/4 in. sighting pipe.
- Works where flame rod or rectifying photocell mounts are difficult to apply.

Type: Infrared (Lead Sulfide)

Application: Used for combination or dual-fuel applications

Electrical Connections: Two no. 18 AWG wires

Mounting: 3/4 in. NPT

Approvals, Underwriters Laboratories Inc.: Listed: File No. MP268, Guide No. MCCZ

Approvals, CSA: Certified: Master Report LR95329-1

Approvals, Swiss RE: Acceptable

Approvals, Factory Mutual: Approved: Report No. 24181.03

Comments: Infrared (Lead Sulfide) Flame Detector

Replacement Parts:

32007255-001/U – Lead Sulfide Cell for C7915

50019469-001/U – Magnifying Lens Assembly for C7915A

| Material Number | Lead Length | Approximate, Dimensions | Ambient Temperature Range | Includes | Used With |
|-----------------|------------------|---|--|---|-------------------------|
| C7915A1010/U | 30 in. (762 mm) | 1 1/4 in. diameter x 2 1/4 in. long (32 mm diameter x 58 mm long) | -20°F to 125°F operating range (-18°C to 52°C operating range) | With magnifying lens, 32007255-001 Cell | Flame Amplifiers: R7852 |
| C7915A1028/U | 48 in. (1219 mm) | 1 1/4 in. diameter x 2 1/4 in. long (32 mm diameter x 58 mm long) | -20°F to 125°F operating range (-18°C to 52°C operating range) | With magnifying lens, 32007255-001 Cell, Orifice, heat block, and reducer bushing | Flame Amplifiers: R7852 |
| C7915A1036/U | 96 in. (2438 mm) | 1 1/4 in. diameter x 2 1/4 in. long (32 mm diameter x 58 mm long) | -20°F to 125°F operating range (-18°C to 52°C operating range) | With magnifying lens, 32007255-001 Cell | Flame Amplifiers: R7852 |

C7962 Visible Light Flame Detector



The C7962B Visible Light Flame Detector detects the visible light emitted by fuel oil combustion flames. The C7962B Detector is used with Honeywell Flame Safeguard controls to provide fuel oil flame supervision in commercial and industrial burners.

- Used with 7800 SERIES Flame Safeguard controls.
- Used with R7851B Flame Amplifier.
- Has an integral collar threaded (internal 1/2-14 NPSM) for mounting on 1/2 inch sight pipe.

Type: Visible Light Flame Detector

Application: Commercial, industrial oil burners

NEMA Ratings: NEMA 1

Electrical Connections: 2 NEC Class 1 leadwires

Vibration: 0.5 G max

Mounting: 1/2 in NPT pipe mounting

Approvals, Underwriters Laboratories Inc.: Component Recognized: File No. MP268

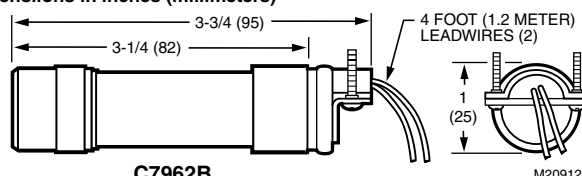
Approvals, CSA: Report 158158

Approvals, Swiss RE: Acceptable

Accessories:

32007439-001/U – Mounting Bracket and screws for C7962B (3/8 in. NPT to 1/2 in. NPT)

Dimensions in inches (millimeters)



C7962B

M20912

| Material Number | Lead Length | Approximate, Dimensions | Ambient Temperature Range | Includes | Used With |
|-----------------|------------------|---|----------------------------------|--|--------------------------|
| C7962B1002/U | 96 in. (2438 mm) | 1 in. diameter x 3 3/4 in. long (25 mm diameter x 95 mm long) | -40°F to +160°F (-40°C to +71°C) | | Flame Amplifiers: R7851B |
| C7962B1010/U | 96 in. (2438 mm) | 1 in. diameter x 3 3/4 in. long (25 mm diameter x 95 mm long) | -40°F to +160°F (-40°C to +71°C) | 32007439-001 Mounting Bracket and screws | Flame Amplifiers: R7851B |

Flame Detectors

Optical Flame Detector Accessories or Parts

| Material Number | Description | Used With |
|-----------------|---|--|
| 105172C/U | Pressure Seal-off Adapter (3/4 NPT) w/UV Quartz window for C7012, C7024, C7027, C7061 | C7012, C7024, C7027, C7061; C7024; C7012; C7061 |
| 110634A/U | Magnifying Lens Assembly for C7015A | C7015 |
| 113228/U | UV Sensing Tube (-20°F to 175°F) for C7012; C7024 | C7012; C7024 |
| 114372/U | Bulk Pack -20 PSI window for C7012E, F; C7024; C7061 | C7024; C7012; C7061 |
| 114638/U | Rubber Washer (Red) for C7012A, E; C7024A; C7061A; C7961A | C7012; C7061; C7024 |
| 120739/U | Flange Gasket for C7012, C7024, C7061 | C7024; C7012; C7061 |
| 120930/1662/F | Cover for C7012A,G, C7024E, C7061A, C7961E | C7012A,G, C7024E, C7061A, C7961E; C7012 |
| 120934-520/U | Mounting Flange (3/4") for C7012A, E; C7024A; C7061A; C7961E | C7012A,G, C7024E, C7061A, C7961E |
| 122748/U | 50 PSI Quartz Window for C7012, C7061 | C7012; C7061; C7024 |
| 124198/U | Mounting Flange (1") for C7012A, E; C7024A; C7061A; C7961E | C7012A,G, C7024E, C7061A, C7961E |
| 129464M/U | UV Power Tube (0°F to 250°F) for C7035 | C7035 |
| 129464N/U | UV Power Tube (-40°F to 250°F) for C7035, C7061 | C7061; C7035 |
| 129811B/U | Socket Assembly w/NPT threads | C7035 |
| 190971B/U | 120 Vac Coil and Shutter Assembly for C7012E, F, C7061A, F | C7012E, F; C7061A, F |
| 190971D/F | 110 Vac 50 Hz Coil and Shutter Assembly for C7012E1187, 1195 | C7012E |
| 190971D/U | 110 Vac 50 Hz Coil and Shutter Assembly for C7012E1187, 1195 | C7012E |
| 190971F/U | 100 Vac Coil and Shutter Assembly for C7076A, D | C7076A, D |
| 190971G/U | 24 Vdc Coil and Shutter Assembly for C7024E, F; C7961 | C7024;C7961 |
| 190998A/U | Aspiration assembly for C7076A | C7076A |
| 190999/U | Grommet for C7076 Sensors | C7076 |
| 191002D/U | 220/240 Vac Plug in Electronics less UV Sensing Tube for C7076A | C7076A |
| 191002R/U | 120 Vac Plug in Electronics less UV Sensing Tube for C7076D | C7076D |
| 191050/U | Quartz Viewing Window for C7076 | C7076 |
| 191053/U | UV Sensing Tube for C7076 | C7076 |
| 191054/U | Housing Gasket for C7076 | C7076 |
| 191203/0767/U | Hinge for C7076A | C7076 |
| 191284/U | Aluminum Shield for C7035 | C7035 |
| 191702/U | Electronics less UV sensing tube for C7012F (120 Vac) | C7012F |
| 32004080-001/U | 120 Vac Electronics less UV Sensing Tube and Shutter for C7012C | C7012C |
| 32004080-002/U | 24 Vdc Plug in Electronics less UV Sensing Tube for C7024F | C7024F |
| 32007255-001/U | Lead Sulfide Cell for C7915 | C7915 |
| 32007439-001/U | Mounting Bracket and screws for C7962B (3/8 in. NPT to 1/2 in. NPT) | C7962B |
| 390427B/U | Envelope with Reducer bushing (1/2" to 3/8" NPT) | C7027; C7015 |
| 50019469-001/U | Magnifying Lens Assembly for C7915A | C7915; C7015 |

Q179A, B Flame Rectifier Gas Pilots



Type of Gas: Natural gas; Gas consumption – 2.0 cfh (0.06 m3/hr)
Aeration: Primary
Compression Fitting Size: 1/4 in. compression coupling, 6.4 mm compression coupling
Mounting: side or end mount
Approximate, Dimensions: 4 5/8 in. high x 1 11/16 in. wide x 3 in. deep (118 mm high x 43 mm wide x 76 mm deep)

Q179A, B Gas Pilot Burner Assemblies use the flame rectification principle to prove the flame. Q179A, B are used in conjunction with a suitable electronic flame safeguard control on industrial or commercial gas and gas pilot ignited oil burners.

- Q179A is a gas pilot assembly (with a flame electrode rod) and ignition electrode, making it suitable for applications requiring an interrupted or intermittent electrically ignited gas pilot burner.
- Q179B has only the flame electrode and is suitable for use in continuous pilot applications.
- Primary aerated type burner is equipped with stainless steel fins that provide the proper flame rod area to ground area ratio for maximum flame signal and flame stabilization.
- Stainless steel electrode(s) are mounted in ceramic insulators, which permit electrode adjustment.
- Rajah connectors facilitate disconnecting (A1126 has terminal screws).
- Bracket permits side or end mounting.

Approvals, Underwriters Laboratories Inc.: Listed: File No. MP268, Guide No. MCCZ

Approvals, CSA: Certified: File No. LR1620, Guide No. 140-A-2

Approvals, Factory Mutual: Approved: Report No. 22961

| Material Number | Application | Orifice | Wiring Terminal Type | Tip Style | Includes | Used With |
|-----------------|--|--------------------------------|----------------------|----------------------|--|--|
| Q179A1001/U | For Intermittent or Interrupted Ignition | 0.025 in. dia. (0.635 mm dia.) | Rajah | I | Flame electrode and ignition electrode | Q624 or other suitable ignition transformer. |
| Q179A1035/U | For Intermittent or Interrupted Ignition | 0.025 in. dia. (0.635 mm dia.) | Rajah | 45 degree right hand | Flame electrode and ignition electrode | Q624 or other suitable ignition transformer. |
| Q179A1050/U | For Intermittent or Interrupted Ignition | 0.028 in. dia. (0.711 mm dia.) | Rajah | T | Flame electrode and ignition electrode | Q624 or other suitable ignition transformer. |
| Q179A1076/U | For Intermittent or Interrupted Ignition | 0.028 in. dia. (0.711 mm dia.) | Rajah | 45 degree Y | Flame electrode and ignition electrode | Q624 or other suitable ignition transformer. |
| Q179A1092/U | For Intermittent or Interrupted Ignition | 0.028 in. dia. (0.711 mm dia.) | Rajah | 45 degree T | Flame electrode and ignition electrode | Q624 or other suitable ignition transformer. |
| Q179A1118/U | For Intermittent or Interrupted Ignition | 0.025 in. dia. (0.635 mm dia.) | Rajah | 45 degree left hand | Flame electrode and ignition electrode | Q624 or other suitable ignition transformer. |
| Q179A1126/U | For Intermittent or Interrupted Ignition | 0.025 in. dia. (0.635 mm dia.) | Screw Terminal | I | Flame electrode and ignition electrode with screw terminal connections | Q624 or other suitable ignition transformer. |
| Q179A1183/U | For Intermittent or Interrupted Ignition | 0.025 in. dia. (0.635 mm dia.) | Rajah | I | Ignition Electrode Only | Q624 or other suitable ignition transformer. |
| Q179B1042/U | For Continuous (Standing) pilot | 0.025 in. dia. (0.635 mm dia.) | Rajah | T | Flame electrode | |
| Q179B1109/U | For Continuous (Standing) pilot | 0.025 in. dia. (0.635 mm dia.) | Rajah | 45 degree left hand | Flame electrode | |
| Q179B1117/U | For Continuous (Standing) pilot | 0.025 in. dia. (0.635 mm dia.) | Rajah | 45 degree I | Flame electrode | |

Pilot Burners

Q179C, D Miniature Rectifier Pilots



Q179C, D Gas Pilot Burner Assemblies use the flame rectification principle to prove the flame. Q179C, D are used in conjunction with a suitable electronic flame safeguard control on industrial or commercial gas and gas pilot ignited oil burners.

- Q179C is a gas pilot assembly (with a flame electrode rod) and ignition electrode, making it suitable for applications requiring an interrupted or intermittent electrically ignited gas pilot burner.
- Q179D has only the flame electrode and is suitable for use in continuous pilot applications.
- Primary aerated type burner is equipped with stainless steel fins that provide the proper flame rod area to ground area ratio for maximum flame signal and flame stabilization.
- Stainless steel electrode(s) are mounted in ceramic insulators, which permit electrode adjustment.
- Rajah connectors facilitate disconnecting.

Aeration: Primary

Compression Fitting Size: 1/4 in. compression coupling, 6.4 mm compression coupling

Wiring Terminal Type: Rajah

Approvals, Underwriters Laboratories Inc.: Component Recognized: File No. MH9928, Guide No. MCUR2

Approvals, CSA: Certified: Master Report LR95329-1

| Material Number | Application | Mounting | Tip Style | Orifice | Approximate, Dimensions | Includes | Used With | Type of Gas |
|-----------------|--|------------------------|-----------|-------------------------------|--|--|--|-------------|
| Q179C1009/U | For Intermittent or Interrupted Ignition | Dual Wing-Rear | D | 0.026 in. dia. (0.66 mm dia.) | 3 1/8 in. high x 2 7/16 in. wide x 1 in. deep (79 mm high x 62 mm wide x 25 mm deep) | Flame electrode and ignition electrode | Q624 or other suitable ignition transformer. | Natural |
| Q179C1025/U | For Intermittent or Interrupted Ignition | Single Wing-Rear | L | 0.024 in. dia. (0.60 mm dia.) | 3 1/8 in. high x 2 7/16 in. wide x 1 in. deep (79 mm high x 62 mm wide x 25 mm deep) | Flame electrode and ignition electrode | Q624 or other suitable ignition transformer. | Natural |
| Q179C1033/U | For Intermittent or Interrupted Ignition | Dual Wing-Left Side | D | 0.026 in. dia. (0.66 mm dia.) | 3 1/8 in. high x 3 1/32 in. wide x 1 in. deep (79 mm high x 77 mm wide x 25 mm deep) | Flame electrode and ignition electrode | Q624 or other suitable ignition transformer. | Natural |
| Q179C1041/U | For Intermittent or Interrupted Ignition | Dual Wing-Right Side | D | 0.026 in. dia. (0.66 mm dia.) | 3 1/8 in. high x 3 1/32 in. wide x 1 in. deep (79 mm high x 77 mm wide x 25 mm deep) | Flame electrode and ignition electrode | Q624 or other suitable ignition transformer. | Natural |
| Q179C1058/U | For Intermittent or Interrupted Ignition | Single Wing-Left Side | L | 0.024 in. dia. (0.60 mm dia.) | 3 1/8 in. high x 3 1/32 in. wide x 1 in. deep (79 mm high x 77 mm wide x 25 mm deep) | Flame electrode and ignition electrode | Q624 or other suitable ignition transformer. | Natural |
| Q179C1066/U | For Intermittent or Interrupted Ignition | Single Wing-Right Side | K | 0.024 in. dia. (0.60 mm dia.) | 3 1/8 in. high x 2 7/16 in. wide x 1 in. deep (79 mm high x 62 mm wide x 25 mm deep) | Flame electrode and ignition electrode | Q624 or other suitable ignition transformer. | Natural |
| Q179C1090/U | For Intermittent or Interrupted Ignition | Dual Wing-Rear | D | 0.016 in. dia. (0.40 mm dia.) | 3 1/8 in. high x 2 7/16 in. wide x 1 in. deep (79 mm high x 62 mm wide x 25 mm deep) | Flame electrode and ignition electrode | Q624 or other suitable ignition transformer. | LP |
| Q179D1008/U | For Continuous (Standing) pilot | Dual Wing-Rear | D | 0.026 in. dia. (0.66 mm dia.) | 3 1/8 in. high x 2 7/16 in. wide x 1 in. deep (79 mm high x 62 mm wide x 25 mm deep) | Flame electrode and thermocouple adapter | Q340 Thermocouple or Q313A Thermopile Generator. | Natural |
| Q179D1016/U | For Continuous (Standing) pilot | Dual Wing-Left Side | D | 0.026 in. dia. (0.66 mm dia.) | 3 1/8 in. high x 3 1/32 in. wide x 1 in. deep (79 mm high x 77 mm wide x 25 mm deep) | Flame electrode and thermocouple adapter | Q340 Thermocouple or Q313A Thermopile Generator. | Natural |
| Q179D1024/U | For Continuous (Standing) pilot | Dual Wing-Right Side | D | 0.026 in. dia. (0.66 mm dia.) | 3 1/8 in. high x 3 1/32 in. wide x 1 in. deep (79 mm high x 77 mm wide x 25 mm deep) | Flame electrode and thermocouple adapter | Q340 Thermocouple or Q313A Thermopile Generator. | Natural |
| Q179D1057/U | For Continuous (Standing) pilot | Single Wing-Left Side | L | 0.024 in. dia. (0.60 mm dia.) | 3 1/8 in. high x 3 1/32 in. wide x 1 in. deep (79 mm high x 77 mm wide x 25 mm deep) | Flame electrode and thermocouple adapter | Q340 Thermocouple or Q313A Thermopile Generator. | Natural |

C7005 Flame Rectifier Pilots



Connection Type: 1/2 in. NPT male thread Gas Fitting

Wiring Terminal Type: Rajah

Approximate, Dimensions: 3 in. diameter x 3 1/2 in. deep (76 mm diameter x 343 mm deep)

Approvals, Underwriters Laboratories Inc.: Listed: File No. MP268, Guide No. MCCZ

Gas Pilot Burner Assemblies include a flame rod to prove the pilot flame. The assemblies are used with a suitable flame safeguard control on industrial or commercial gas burners or oil burners with gas pilots.

- Used with Honeywell controls using the flame rectification principle.
- C7005A is for continuous pilot applications.
- It includes an insulated flame rod, properly positioned relative to the flame retention type nozzle. C7005B is similar to C7005A, but includes an ignition electrode suitable for automatic, electric-spark ignition, gas pilot applications.
- Individually mounted flame rod and ignition electrode in ceramic insulators allow the head assembly to fit inside a 3-inch pipe.
- Stainless steel fins on the flame retention type pilot head provide the correct ratio of flame rod area to ground area for maximum flame signal, and are beneficial in stabilizing the pilot flame.
- Pilot flame retention nozzle and mixing tube are threaded internally, 1/2-14 NPT and 3/8-18 NPT, respectively, and can be assembled with standard pipe fittings.
- Pilot can be installed in vertical, horizontal, or inclined position.
- Rajah connectors facilitate electrical connections.

Approvals, CSA: Certified: File No. LR1620, Guide No. 140-A-2

Approvals, Factory Mutual: Approved: Report No. 24181.04

Approvals, Swiss RE: Acceptable

| Material Number | Application | Orifice | Includes | Used With | Type of Gas |
|-----------------|--|--------------------------------|--------------------|--|-------------|
| C7005A1037/U | For Continuous (Standing) pilot | 0.052 in. dia. | | | Natural |
| C7005B1035/U | For automatic electrically ignited pilot | 0.052 in. dia. | Ignition electrode | Q624 or other suitable ignition transformer. | Natural |
| C7005B1050/U | For automatic electrically ignited pilot | 0.028 in. dia. (0.711 mm dia.) | Ignition electrode | Q624 or other suitable ignition transformer. | LP |

Commercial Pilot Burners Parts or Accessories

| Material Number | Description | Used With |
|-----------------|---|----------------------------|
| 100204B/U | This Natural Gas Venturi Mixing Tube is used for C7005A and B | C7005A, C7005B |
| 101738/U | This Insulator for Flame rod or Igniter is used with C7005A and B | C7005A, C7005B |
| 101738A/U | This Ignition Assembly, including; electrode, bracket and Rajah Connector, is used for C7005A and B | C7005A, C7005B |
| 101738B/U | This Flame Rod Assembly, including; Kanthal Electrode, Bracket and Rajah Connector, is used for C7005A and B | C7005A, C7005B |
| 101739/U | This 4 in. Kanthal Ignition Electrode is used for C7005A and B | C7005A, C7005B |
| 101741/0020/U | This 7/8 in. long Rajah Connector, with plug end, is used for C7005A and B | C7005A, C7005B |
| 101742/0021/U | This Electrode Mounting Clip is used for C7005A and B | C7005A, C7005B |
| 101743/U | This Mounting Bracket is used for C7005A and B | C7005A, C7005B |
| 103534/U | This 8 in. Kanthal flame electrode is used with C7005A and C7005B | C7005A, C7005B |
| 104312/U | This Rajah Connector for Flame Electrode is used with Q179A and B | Q179A, Q179B |
| 131065/U | 131065 Adapts Q340 Thermal Couple to Q179B with 102462. Sold in custom packs | Q179A, Q179B |
| 133451A/U | This T Port or LH 90 degree Flame Rod and Insulator, is used for Q179A and B | Q179A, Q179B |
| 37356/520/U | This Rajah connector for ignition electrodes is used with Q179A, Q179B, Q179C, or Q179D | Q179A, Q179B, Q179C, Q179D |
| 388146KD/U | This 0.016 in. diameter, LP Gas Spud Orifice, is used for Q179C and D. Sold in bulk packs | Q179C, Q179D |
| 395390-13/U | This LP gas, 0.013 in. diameter Orifice, is used for Q179A and B | Q179A, Q179B |
| 395390-28/U | This Natural gas, 0.028 in. diameter Orifice, is used for Q179A and B | Q179A, Q179B |
| R1061012/U | This Ignition cable or Flame Rod Cable is rated at 350°F, 20,000 volts R.M.S. and used with C7005B, Q179A and Q179C | C7005B, Q179A, Q179C |
| R1298020/U | This Cable Flame Rod Lead, is rated at 400°F, 600 volts R.M.S., and used with Q179 | Q179 |

Ignition Transformers

Q624 Solid State Ignition Transformer



Used to ignite pilots on commercial or industrial gas burners.

- Ignite gas pilots with spark gaps up to 1/4 in. (6.5 mm).
- Reliable light off with 15,000 peak voltage.
- Prevent detection of the ignition spark when properly applied in a flame detection system with the C7027, C7035 or C7044 Minipeeper Ultraviolet Flame Detector.
- For use only in interrupted ignition applications.
- Mount in same space used by conventional ignition transformer.
- Light weight, 3 lbs. (1.4 kg) versus 8-1/2 lbs. (3.9 kg) for standard transformers.

Temperature Range: -40°F to +125°F

Approximate, Dimensions: 6 3/4 in. high x 4 1/4 in. wide x 3 in. deep
(171.5 mm high x 108 mm wide x 76 mm deep)

Weight lb. (kg): 3 lb (1.4 kg)

Approvals, Underwriters Laboratories Inc.: Component Recognized

Approvals, CSA: Certified: File No. LR95329

Operating Humidity Range (% RH): 95% RH

Accessories:

32004766-001/U – 24 inch Ignition Cable for Q624 and Q652

32004766-002/U – 120 inch Ignition Cable used with Q624 and Q652

32004766-003/U – Ignition Cable for Q624 and Q652 (order by foot – enter the number of feet in the Quantity box)

32004766-004/U – 60 inch Ignition Cable with straight boots

32004766-005/U – 8 inch Ignition Cable w/90 degree and straight boot

32004766-006/U – 36 inch Ignition Cable w/90 degree and straight boot

50060793-001/U – 24 inch Ignition Cable for Q624 and Q652

50060793-002/U – 120 inch Ignition Cable used with Q624 and Q652

50060793-003/U – Ignition Cable for Q624 and Q652 (order by foot – enter the number of feet in the Quantity box)

50060793-004/U – 60 inch Ignition Cable with straight boots

50060793-005/U – 8 inch Ignition Cable w/90 degree and straight boot

50060793-006/U – 36 inch Ignition Cable w/90 degree and straight boot

50060793-007/U – 36 inch ignition cable w/90 degree boot on one end only

50060793-008/U – Ignition Cable w/90 degree boot on one end only

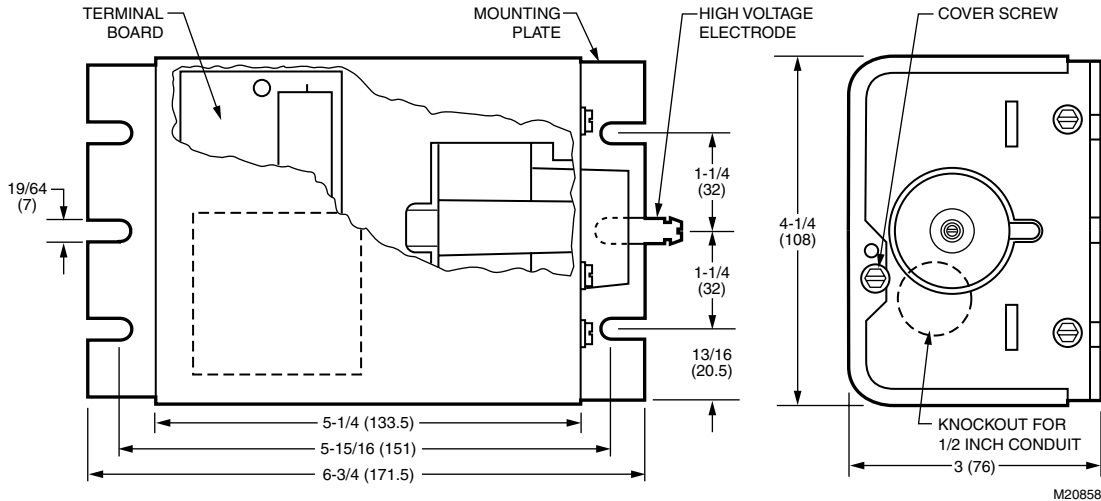
50060793-009/U – Ignition Cable w/90 degree boot on one end only

50060793-010/U – Ignition Cable w/90 degree boot on one end only

50060793-011/U – 19 inch Ignition Cable w/90 degree and ring end used with Q624 and Q652

50060793-012/U – 36 inch Ignition Cable with 90 degree boot and 1/4 in. spad terminal used with Q624 and Q652

Dimensions in inches (millimeters)



| Material Number | Application | Voltage | Frequency |
|-----------------|--------------------------|---------|--------------|
| Q624A1014/U | Gas Ignition Transformer | 120 Vac | 50 Hz; 60 Hz |

Q652 Solid State Spark Generator



Used to ignite gas burners in commercial and industrial applications.

- Lightweight, 1 lb. (0.4 kg).
- Include single high voltage electrode for gas applications.
- For use with gas pilots with electrode spacings between 0.029 and 0.125 in.
- Secondary Peak Voltage: 14Kv rms at 21Khz.
- Mount in same space used by conventional ignition transformer.
- For use only in interrupted ignition applications.
- Prevent detection of the ignition spark when properly applied in a flame detection system with the C7027, C7035 or C7044 Minipeeper Ultraviolet Flame Detector.

Temperature Range: 14°F to 113°F

Approximate, Dimensions: 4 15/32 in. high x 2 15/16 in. wide x 2 9/32 in. deep (101.6 mm high x 77.5 mm wide x 58.4 mm deep)

Weight lb. (kg): 1 lb (0.45 kg)

Approvals, Underwriters Laboratories Inc.: Component Recognized File MH14381

Approvals, CSA: LA66894

Operating Humidity Range (% RH): 90% RH

Accessories:

32004766-001/U – 24 inch Ignition Cable for Q624 and Q652

32004766-002/U – 120 inch Ignition Cable used with Q624 and Q652

32004766-003/U – Ignition Cable for Q624 and Q652 (order by foot – enter the number of feet in the Quantity box)

32004766-004/U – 60 inch Ignition Cable with straight boots

32004766-005/U – 8 inch Ignition Cable w/90 degree and straight boot

32004766-006/U – 36 inch Ignition Cable w/90 degree and straight boot

50060793-001/U – 24 inch Ignition Cable for Q624 and Q652

50060793-002/U – 120 inch Ignition Cable used with Q624 and Q652

50060793-003/U – Ignition Cable for Q624 and Q652 (order by foot – enter the number of feet in the Quantity box)

50060793-004/U – 60 inch Ignition Cable with straight boots

50060793-005/U – 8 inch Ignition Cable w/90 degree and straight boot

50060793-006/U – 36 inch Ignition Cable w/90 degree and straight boot

50060793-007/U – 36 inch ignition cable w/90 degree boot on one end only

50060793-008/U – Ignition Cable w/90 degree boot on one end only

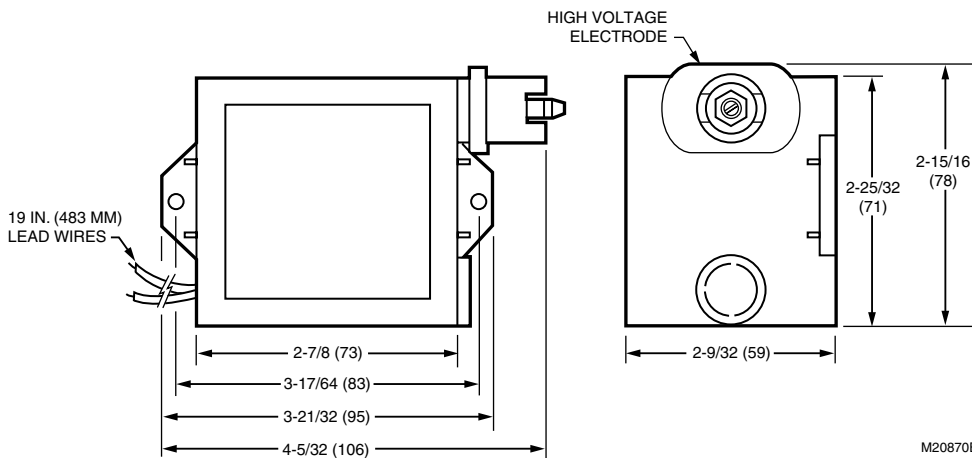
50060793-009/U – Ignition Cable w/90 degree boot on one end only

50060793-010/U – Ignition Cable w/90 degree boot on one end only

50060793-011/U – 19 inch Ignition Cable w/90 degree and ring end used with Q624 and Q652

50060793-012/U – 36 inch Ignition Cable with 90 degree boot and 1/4 in. spad terminal used with Q624 and Q652

Dimensions in inches (millimeters)



| Material Number | Application | Voltage | Frequency |
|-----------------|--|---------|-----------|
| Q652B1006/U | Gas Ignition Transformer | 120 Vac | 60 Hz |
| Q652B1014/U | Solid State Ignitor Spark Generator-Gas Applications; 220V 60 Hz | 220 Vac | 60 Hz |

Ignition Transformers

Ignition Transformer Accessories or Parts

| Material Number | Description | Used With |
|-----------------|---|------------|
| 134666/510/U | High voltage terminal insulator for Q652 and Q624 | Q652; Q624 |
| 32004766-001/U | 24 inch Ignition Cable for Q624 and Q652 | Q652; Q624 |
| 32004766-002/U | 120 inch Ignition Cable used with Q624 and Q652 | Q652; Q624 |
| 32004766-003/U | Ignition Cable for Q624 and Q652 (order by foot – enter the number of feet in the Quantity box) | Q652; Q624 |
| 32004766-004/U | 60 inch Ignition Cable with straight boots | Q652; Q624 |
| 32004766-005/U | 8 inch Ignition Cable w/90 degree and straight boot | Q652; Q624 |
| 32004766-006/U | 36 inch Ignition Cable w/90 degree and straight boot | Q652; Q624 |
| 32004766-007/U | 36 inch ignition cable w/90 degree boot on one end only | Q652; Q624 |
| 32004766-008/U | Ignition Cable w/90 degree boot on one end only | Q652; Q624 |
| 32004766-009/U | Ignition Cable w/90 degree boot on one end only | Q652; Q624 |
| 32004766-010/U | Ignition Cable w/90 degree boot on one end only | Q652; Q624 |
| 32004766-011/U | 19 inch Ignition Cable w/90 degree and ring end used with Q624 and Q652 | Q652; Q624 |
| 32004766-012/U | 36 inch ignition cable w/90 degree boot on one end only | Q652; Q624 |
| 4074BTN/U | Bag assembly consisting of washer (103218), cap terminal (135793) and ferrule (37356) for Q624 | Q624A |
| 50060793-001/U | 24 inch Ignition Cable for Q624 and Q652 | Q652; Q624 |
| 50060793-002/U | 120 inch Ignition Cable used with Q624 and Q652 | Q652; Q624 |
| 50060793-003/U | Ignition Cable for Q624 and Q652 (order by foot – enter the number of feet in the Quantity box) | Q652; Q624 |
| 50060793-004/U | 60 inch Ignition Cable with straight boots | Q652; Q624 |
| 50060793-005/U | 8 inch Ignition Cable w/90 degree and straight boot | Q652; Q624 |
| 50060793-006/U | 36 inch Ignition Cable w/90 degree and straight boot | Q652; Q624 |
| 50060793-007/U | 36 inch ignition cable w/90 degree boot on one end only | Q652; Q624 |
| 50060793-008/U | Ignition Cable w/90 degree boot on one end only | Q652; Q624 |
| 50060793-009/U | Ignition Cable w/90 degree boot on one end only | Q652; Q624 |
| 50060793-010/U | Ignition Cable w/90 degree boot on one end only | Q652; Q624 |
| 50060793-011/U | 19 inch Ignition Cable w/90 degree and ring end used with Q624 and Q652 | Q652; Q624 |
| 50060793-012/U | 36 inch Ignition Cable with 90 degree boot and 1/4 in. spad terminal used with Q624 and Q652 | Q652; Q624 |
| 50060793-013/U | 48 inch Ignition Cable with 90 degree boot and 1/4 in. spad terminal used with Q624 and Q652 | Q652; Q624 |

Firing Rate Motors and Linkages

M9484D, E, F; M9494D, F Modutrol® IV Motors



Reversing, proportional motors used to drive burner firing rate valves, dampers or auxiliary equipment. Replaces M941A, C, D motors.

- Designed for flame safeguard applications in commercial/industrial oil or gas burner system.
- Vibration resistant electronic drive circuit.
- Regulated by three-wire proportional controller.
- Stroke is field-adjustable to 90 or 160 degrees.

Frequency: 50 Hz; 60 Hz

Stroke: Adjustable; 90 to 160 degrees, Symmetrical

Power Consumption: 15 W

Input Signal: 135 ohm

Shaft Dimensions: double-ended, 3/8 in. square (double-ended, 9.5 mm square)

Deadweight Load on Shaft: Either End – 200 lb (300 lb combined power and auxiliary shafts); 90.8 kg (136 kg combined power and auxiliary shafts)

Approximate, Dimensions: 6.45 in high x 5.5 in wide x 7.3 in deep (164 mm high x 140 mm wide x 185 mm deep)

Ambient Temperature Range: -40°F to +150°F (-40°C to +66°C)

Approvals, Underwriters Laboratories Inc.: Listed: File No. E4436, Guide No. XAPX for USA and Canada

Supply Voltage: 24 Vac

Accessories:

Q100B1006/U – Linkage to connect Modutrol motor to V51E Butterfly Valve. Includes 10 3/4 inch Linkage Rod.

| Material Number | Torque Rating (lb-in.) | Torque Rating (Nm) | Additional Torque Ratings (lb-in.) | Additional Torque Ratings (Nm) | Internal Auxiliary Switch | Auxiliary Switch Setting | Auxiliary Switch Ratings | Switch Ratings | Timing | Factory Stroke Setting |
|-----------------|------------------------|--------------------|------------------------------------|--------------------------------|---------------------------|--------------------------|---|--|---|------------------------|
| M9484D1010/U | 150 lb-in. | 17 Nm | Breakaway – 300 lb-in. | Breakaway – 34.0 Nm | | | | At 120 Vac – 7.2 AFL, 43.2 ALR, 40 VA pilot duty opposite contact; At 240 Vac – 3.6 AFL, 21.6 ALR, 40 VA pilot duty opposite contact | 90 degree stroke – 30 seconds, 160 degree stroke – 60 seconds | 160 degrees |
| M9484E1009/U | 75 lb-in. | 8.5 Nm | Breakaway – 150 lb-in. | Breakaway – 17.0 Nm | 1 | 11 degrees | 120 Vac – 7.2 AFL, 43.2 ALR, 40 VA pilot duty opposite contact; At 240 Vac – 3.6 AFL, 21.6 ALR, 40 VA pilot duty opposite contact | | 90 degree stroke – 15 seconds, 160 degree stroke – 30 seconds | 90 degrees |
| M9484E1017/U | 150 lb-in. | 17 Nm | Breakaway – 300 lb-in. | Breakaway – 34.0 Nm | 1 | 1 degree | 120 Vac – 7.2 AFL, 43.2 ALR, 40 VA pilot duty opposite contact; At 240 Vac – 3.6 AFL, 21.6 ALR, 40 VA pilot duty opposite contact | | 90 degree stroke – 30 seconds, 160 degree stroke – 60 seconds | 90 degrees |
| M9484E1033/U | 150 lb-in. | 17 Nm | Breakaway – 300 lb-in. | Breakaway – 34.0 Nm | 1 | 7 degrees | 120 Vac – 7.2 AFL, 43.2 ALR, 40 VA pilot duty opposite contact; At 240 Vac – 3.6 AFL, 21.6 ALR, 40 VA pilot duty opposite contact | | 90 degree stroke – 30 seconds, 160 degree stroke – 60 seconds | 90 degrees |
| M9484F1007/U | 150 lb-in. | 17 Nm | Breakaway – 300 lb-in. | Breakaway – 34.0 Nm | 2 | 7 and 80 degrees | 120 Vac – 7.2 AFL, 43.2 ALR, 40 VA pilot duty opposite contact; At 240 Vac – 3.6 AFL, 21.6 ALR, 40 VA pilot duty opposite contact | | 90 degree stroke – 30 seconds, 160 degree stroke – 60 seconds | 90 degrees |
| M9484F1023/U | 75 lb-in. | 8.5 Nm | Breakaway – 150 lb-in. | Breakaway – 17.0 Nm | 2 | | | At 120 Vac – 7.2 AFL, 43.2 ALR, 40 VA pilot duty opposite contact; At 240 Vac – 3.6 AFL, 21.6 ALR, 40 VA pilot duty opposite contact | 90 degree stroke – 15 seconds, 160 degree stroke – 30 seconds | 90 degrees |

Firing Rate Motors and Linkages

| Material Number | Torque Rating (lb-in.) | Torque Rating (Nm) | Additional Torque Ratings (lb-in.) | Additional Torque Ratings (Nm) | Internal Auxiliary Switch | Auxiliary Switch Setting | Auxiliary Switch Ratings | Switch Ratings | Timing | Factory Stroke Setting |
|-----------------|------------------------|--------------------|------------------------------------|--------------------------------|---------------------------|--------------------------|---|--|--|------------------------|
| M9484F1031/U | 150 lb-in. | 17 Nm | Breakaway – 300 lb-in. | Breakaway – 34.0 Nm | 2 | 7 and 80 degrees | 120 Vac – 7.2 AFL, 43.2 ALR, 40 VA pilot duty opposite contact; At 240 Vac – 3.6 AFL, 21.6 ALR, 40 VA pilot duty opposite contact | | 90 degree stroke – 30 seconds, 160 degree stroke – 60 seconds | 90 degrees |
| M9484F1049/U | 150 lb-in. | 17 Nm | Breakaway – 300 lb-in. | Breakaway – 34.0 Nm | 2 | 35 and 120 degrees | 120 Vac – 7.2 AFL, 43.2 ALR, 40 VA pilot duty opposite contact; At 240 Vac – 3.6 AFL, 21.6 ALR, 40 VA pilot duty opposite contact | | 90 degree stroke – 30 seconds, 160 degree stroke – 60 seconds | 160 degrees |
| M9484F1057/U | 150 lb-in. | 17 Nm | Breakaway – 300 lb-in. | Breakaway – 34.0 Nm | 2 | | | At 120 Vac – 7.2 AFL, 43.2 ALR, 40 VA pilot duty opposite contact; At 240 Vac – 3.6 AFL, 21.6 ALR, 40 VA pilot duty opposite contact | 90 degree stroke – 30 seconds, 160 degree stroke – 53 seconds | |
| M9494D1000/U | 300 lb-in. | 34 Nm | Breakaway – 600 lb-in. | Breakaway – 68.0 Nm | | | | At 120 Vac – 7.2 AFL, 43.2 ALR, 40 VA pilot duty opposite contact; At 240 Vac – 3.6 AFL, 21.6 ALR, 40 VA pilot duty opposite contact | 90 degree stroke – 60 seconds, 160 degree stroke – 120 seconds | 90 degrees |
| M9494F1003/U | 300 lb-in. | 34 Nm | Breakaway – 600 lb-in. | Breakaway – 68.0 Nm | 2 | | | At 120 Vac – 7.2 AFL, 43.2 ALR, 40 VA pilot duty opposite contact; At 240 Vac – 3.6 AFL, 21.6 ALR, 40 VA pilot duty opposite contact | 90 degree stroke – 60 seconds, 160 degree stroke – 107 seconds | 90 degrees |

Q100 Butterfly Valve Linkages



Connects V51E valve to M9484 and M9494 Modutrol IV Motors with adapter plate.

- Fits all sizes of V51E Valves. Mounts easily.

| Material Number | Linkage Type | Used with Actuator | Includes | Used With |
|-----------------|---------------------|--------------------|------------------------|--------------------------|
| Q100B1006/U | Butterfly Gas Valve | Modutrol Motor | 10 3/4 in. Linkage Rod | all sizes V51E Gas Valve |

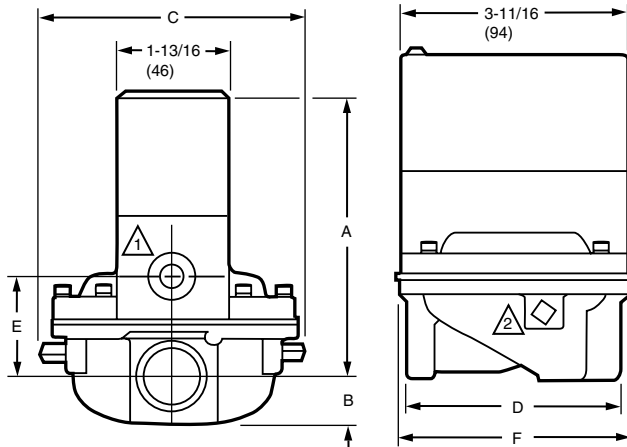
V48A; V88A Diaphragm Gas Valves



Solenoid-operated diaphragm valves provide slow opening and fast closing suitable for controlling natural, LP or manufactured gases. They are normally used on atmospheric boilers, commercial water heaters, and rooftop heaters.

- V48 for line voltage service; V88 for 24 Vac service.
- Close firmly with diaphragm that is both weight and spring loaded.
- Two second maximum closing time.
- Valve closes on power failure; recommended for final shutoff service.
- Set opening time with various sized bleed orifices or adjustable bleed valve.
- Use with LP, natural or manufactured gases.
- Made with cast aluminum in straight-through valve pattern.
- Valve position indicator available for 1-1/4 in. V48A2227.

Dimensions in inches (millimeters)



Type of Fuel: Natural; LP; Manufactured

Bleed Tapping: 1/8-27 NPT

Body Pattern: Straight-through

Valve Opening Time: 5 sec max

Valve Closing Time: 2 sec max

Mounting: Upright (horizontal)

Materials: Body – Aluminum

Frequency: 60 Hz

Power Consumption: 9 W; 15 VA max

Electrical Connections: 6 in. Leadwires

Operating Temperature Range: 32°F to 125°F (0°C to 52°C)

Approvals, Underwriters Laboratories Inc.: File No. MH1639, Guide No. YIOZ

Approvals, CSA: Certificate No. 158158-2500005576 (Z21.21-CSA 6.5)

| VALVE SIZE (IN.) | APPROXIMATE DIMENSIONS | | | | | | | | | | | |
|------------------|------------------------|-------|-------|------|-------|-------|---------|-------|--------|------|---------|-------|
| | A | | B | | C | | D | | E | | F | |
| | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM |
| 3/4 | 4-11/16 | 119.1 | 3/4 | 19.1 | 4-5/8 | 117.5 | 3-1/2 | 88.9 | 1-5/8 | 41.3 | 3-13/16 | 96.8 |
| 1 | 5-1/16 | 128.6 | 1 | 25.4 | 5 | 127.0 | 3-11/16 | 93.7 | 2-1/16 | 52.4 | 4-5/16 | 109.5 |
| 1-1/4 | 5-9/16 | 141.3 | 1-1/4 | 31.8 | 5-7/8 | 149.2 | 5-5/16 | 134.9 | 2-3/8 | 60.3 | 5-5/16 | 134.9 |
| 1-1/2 | 5-9/16 | 141.3 | 1-1/4 | 31.8 | 5-7/8 | 149.2 | 5-5/16 | 134.9 | 2-3/8 | 60.3 | 5-5/16 | 134.9 |
| 2 | 6-15/16 | 176.2 | 2-1/4 | 57.2 | 9-1/2 | 241.3 | 8-3/8 | 212.7 | 3-9/16 | 90.5 | 9-5/16 | 236.5 |
| 2-1/2 | 6-15/16 | 176.2 | 2-1/4 | 57.2 | 9-1/2 | 241.3 | 8-3/8 | 212.7 | 3-9/16 | 90.5 | 9-5/16 | 236.5 |
| 3 | 6-15/16 | 176.2 | 2-1/4 | 57.2 | 9-1/2 | 241.3 | 8-3/8 | 212.7 | 3-9/16 | 90.5 | 9-5/16 | 236.5 |

1 BLEED TAPPING: 1/8-27 NPT.

2 PILOT TAPPING (2): 1/8-27 NPT FOR 3/4 THROUGH 1-1/2 IN. SIZES, 1/4-18 NPT FOR 2 THROUGH 3 IN. SIZES.

M8487A

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Pilot Tapping | Voltage | Approximate, Dimensions | Pressure Rating (psi) | Pressure Rating (kPa) | Current Ratings | Comments | Includes |
|-----------------|------------------|----------------|---------------|---------|---|-----------------------|-----------------------|-------------------------------|-----------------------------|-----------------|
| V48A2151/U | 3/4 in. | DN20 | 1/8-27 NPT | 120 Vac | 5 7/16 in. high x 3 13/16 in. wide x 4 5/8 in. deep (138 mm high x 97 mm wide x 118 mm deep) | 1/2 psi | 3.4 kPa | 0.13 max amps at rated Vac/Hz | | Ground terminal |
| V48A2169/U | 1 in. | DN25 | 1/8-27 NPT | 120 Vac | 6 1/16 in. high x 4 5/16 in. wide x 5 in. deep (154 mm high x 127 mm wide x 109 mm deep) | 1/2 psi | 3.4 kPa | 0.13 max amps at rated Vac/Hz | | Ground terminal |
| V48A2177/U | 1 1/4 in. | DN32 | 1/8-27 NPT | 120 Vac | 6 13/16 in. high x 5 5/16 in. wide x 5 7/8 in. deep (173 mm high x 135 mm wide x 149 mm deep) | 1/2 psi | 3.4 kPa | 0.13 max amps at rated Vac/Hz | | Ground terminal |
| V48A2185/U | 1 1/2 in. | DN40 | 1/8-27 NPT | 120 Vac | 6 13/16 in. high x 5 5/16 in. wide x 5 7/8 in. deep (173 mm high x 135 mm wide x 149 mm deep) | 1/2 psi | 3.4 kPa | 0.13 max amps at rated Vac/Hz | | Ground terminal |
| V48A2227/U | 1 1/4 in. | DN32 | 1/8-27 NPT | 120 Vac | 6 13/16 in. high x 5 5/16 in. wide x 5 7/8 in. deep (173 mm high x 135 mm wide x 149 mm deep) | 1 psi | 6.9 kPa | 0.13 max amps at rated Vac/Hz | Includes position indicator | Ground terminal |
| V48A2243/U | 2 in. | DN50 | 1/4-18 NPT | 120 Vac | 9 3/16 in. high x 9 5/16 in. wide x 9 1/2 in. deep (233 mm high x 237 mm wide x 241 mm deep) | 1 psi | 6.9 kPa | 0.13 max amps at rated Vac/Hz | | Ground terminal |
| V48A2250/U | 2 1/2 in. | DN65 | 1/4-18 NPT | 120 Vac | 9 3/16 in. high x 9 5/16 in. wide x 9 1/2 in. deep (233 mm high x 237 mm wide x 241 mm deep) | 1 psi | 6.9 kPa | 0.13 max amps at rated Vac/Hz | | Ground terminal |

Commercial/Industrial
Combustion Controls

Diaphragm Gas Valves

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Pilot Tapping | Voltage | Approximate, Dimensions | Pressure Rating (psi) | Pressure Rating (kPa) | Current Ratings | Comments | Includes |
|-----------------|------------------|----------------|---------------|---------|---|-----------------------|-----------------------|-------------------------------|----------|-----------------|
| V48A2268/U | 3 in. | DN80 | 1/4-18 NPT | 120 Vac | 9 3/16 in. high x 9 5/16 in. wide x 9 1/2 in. deep (233 mm high x 237 mm wide x 241 mm deep) | 1 psi | 6.9 kPa | 0.13 max amps at rated Vac/Hz | | Ground terminal |
| V48A2276/U | 1 1/2 in. | DN40 | 1/8-27 NPT | 120 Vac | 6 13/16 in. high x 5 5/16 in. wide x 5 7/8 in. deep (173 mm high x 135 mm wide x 149 mm deep) | 1 psi | 6.9 kPa | 0.13 max amps at rated Vac/Hz | | Ground terminal |
| V48A2334/U | 1 in. | DN25 | 1/8-27 NPT | 120 Vac | 6 1/16 in. high x 4 5/16 in. wide x 5 in. deep (154 mm high x 127 mm wide x 109 mm deep) | 1 psi | 6.9 kPa | 0.13 max amps at rated Vac/Hz | | Ground terminal |
| V48A2342/U | 1 1/4 in. | DN32 | 1/8-27 NPT | 120 Vac | 6 13/16 in. high x 5 5/16 in. wide x 5 7/8 in. deep (173 mm high x 135 mm wide x 149 mm deep) | 1 psi | 6.9 kPa | 0.13 max amps at rated Vac/Hz | | Ground terminal |
| V88A1618/U | 1 in. | DN25 | 1/8-27 NPT | 24 Vac | 6 1/16 in. high x 4 5/16 in. wide x 5 in. deep (154 mm high x 127 mm wide x 109 mm deep) | 1/2 psi | 3.4 kPa | 0.62 max amps at rated Vac/Hz | | |
| V88A1626/U | 1 1/4 in. | DN32 | 1/8-27 NPT | 24 Vac | 6 13/16 in. high x 5 5/16 in. wide x 5 7/8 in. deep (173 mm high x 135 mm wide x 149 mm deep) | 1/2 psi | 3.4 kPa | 0.62 max amps at rated Vac/Hz | | |
| V88A1634/U | 1 1/2 in. | DN40 | 1/8-27 NPT | 24 Vac | 6 13/16 in. high x 5 5/16 in. wide x 5 7/8 in. deep (173 mm high x 135 mm wide x 149 mm deep) | 1/2 psi | 3.4 kPa | 0.62 max amps at rated Vac/Hz | | |
| V88A1659/U | 3/4 in. | DN20 | 1/8-27 NPT | 24 Vac | 5 7/16 in. high x 3 13/16 in. wide x 4 5/8 in. deep (138 mm high x 97 mm wide x 118 mm deep) | 1/2 psi | 3.4 kPa | 0.62 max amps at rated Vac/Hz | | |
| V88A1667/U | 3/4 in. | DN20 | 1/8-27 NPT | 24 Vac | 5 7/16 in. high x 3 13/16 in. wide x 4 5/8 in. deep (138 mm high x 97 mm wide x 118 mm deep) | 1 psi | 6.9 kPa | 0.62 max amps at rated Vac/Hz | | |
| V88A1675/U | 1 in. | DN25 | 1/8-27 NPT | 24 Vac | 6 1/16 in. high x 4 5/16 in. wide x 5 in. deep (154 mm high x 127 mm wide x 109 mm deep) | 1 psi | 6.9 kPa | 0.62 max amps at rated Vac/Hz | | |
| V88A1683/U | 1 1/4 in. | DN32 | 1/8-27 NPT | 24 Vac | 6 13/16 in. high x 5 5/16 in. wide x 5 7/8 in. deep (173 mm high x 135 mm wide x 149 mm deep) | 1 psi | 6.9 kPa | 0.62 max amps at rated Vac/Hz | | |
| V88A1691/U | 1 1/2 in. | DN40 | 1/8-27 NPT | 24 Vac | 6 13/16 in. high x 5 5/16 in. wide x 5 7/8 in. deep (173 mm high x 135 mm wide x 149 mm deep) | 1 psi | 6.9 kPa | 0.62 max amps at rated Vac/Hz | | |
| V88A1709/U | 2 in. | DN50 | 1/4-18 NPT | 24 Vac | 9 3/16 in. high x 9 5/16 in. wide x 9 1/2 in. deep (233 mm high x 237 mm wide x 241 mm deep) | 1 psi | 6.9 kPa | 0.62 max amps at rated Vac/Hz | | |
| V88A1717/U | 2 1/2 in. | DN65 | 1/4-18 NPT | 24 Vac | 9 3/16 in. high x 9 5/16 in. wide x 9 1/2 in. deep (233 mm high x 237 mm wide x 241 mm deep) | 1 psi | 6.9 kPa | 0.62 max amps at rated Vac/Hz | | |

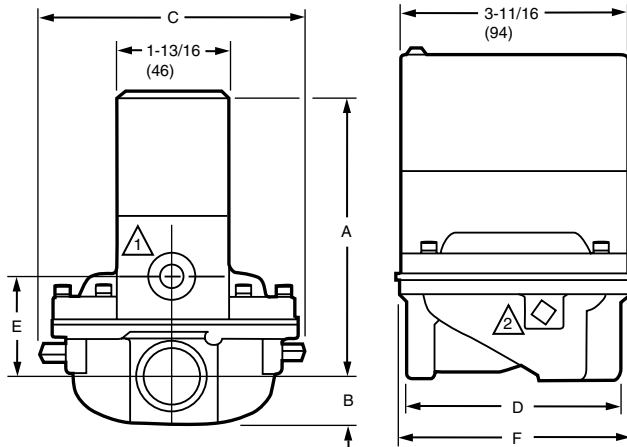
V48J; V88J High Temperature Diaphragm Gas Valves



Solenoid-operated diaphragm valves provide slow opening and fast closing suitable for controlling natural, LP or manufactured gases. They are normally used on atmospheric boilers, commercial water heaters, and rooftop heaters.

- Rated for 150°F (66°C) maximum temperature applications.
- V48 for line voltage service; V88 for 24 Vac service.
- Close firmly with diaphragm that is both weight and spring loaded.
- Two second maximum closing time.
- Valve closes on power failure; recommended for final shutoff service.
- Set opening time with various sized bleed orifices or adjustable bleed valve.
- Use with LP, natural or manufactured gases.
- Made with cast aluminum in straight-through valve pattern.

Dimensions in inches (millimeters)



Type of Fuel: Natural; LP; Manufactured

Bleed Tapping: 1/8-27 NPT

Pilot Tapping: 1/8-27 NPT

Body Pattern: Straight-through

Valve Opening Time: 5 sec max

Valve Closing Time: 2 sec max

Mounting: Upright (horizontal)

Materials: Body – Aluminum

Frequency: 60 Hz

Electrical Connections: 6 in. Leadwires

Operating Temperature Range: 32°F to 150°F (0°C to 66°C)

Approvals, Underwriters Laboratories Inc.: File No. MH1639, Guide No. YIOZ

Approvals, CSA: Certificate No. 158158-2500005576 (Z21.21-CSA 6.5)

Pressure Ratings (psi): 1 psi

Pressure Ratings (kPa): 6.9 kPa

Current Ratings: 0.62 max amps at rated Vac/Hz

| VALVE SIZE (IN.) | APPROXIMATE DIMENSIONS | | | | | | | | | | | |
|------------------|------------------------|-------|-------|------|-------|-------|---------|-------|--------|------|---------|-------|
| | A | | B | | C | | D | | E | | F | |
| | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM |
| 3/4 | 4-11/16 | 119.1 | 3/4 | 19.1 | 4-5/8 | 117.5 | 3-1/2 | 88.9 | 1-5/8 | 41.3 | 3-13/16 | 96.8 |
| 1 | 5-1/16 | 128.6 | 1 | 25.4 | 5 | 127.0 | 3-11/16 | 93.7 | 2-1/16 | 52.4 | 4-5/16 | 109.5 |
| 1-1/4 | 5-9/16 | 141.3 | 1-1/4 | 31.8 | 5-7/8 | 149.2 | 5-5/16 | 134.9 | 2-3/8 | 60.3 | 5-5/16 | 134.9 |
| 1-1/2 | 5-9/16 | 141.3 | 1-1/4 | 31.8 | 5-7/8 | 149.2 | 5-5/16 | 134.9 | 2-3/8 | 60.3 | 5-5/16 | 134.9 |
| 2 | 6-15/16 | 176.2 | 2-1/4 | 57.2 | 9-1/2 | 241.3 | 8-3/8 | 212.7 | 3-9/16 | 90.5 | 5-5/16 | 236.5 |
| 2-1/2 | 6-15/16 | 176.2 | 2-1/4 | 57.2 | 9-1/2 | 241.3 | 8-3/8 | 212.7 | 3-9/16 | 90.5 | 9-5/16 | 236.5 |
| 3 | 6-15/16 | 176.2 | 2-1/4 | 57.2 | 9-1/2 | 241.3 | 8-3/8 | 212.7 | 3-9/16 | 90.5 | 9-5/16 | 236.5 |

BLEED TAPPING: 1/8-27 NPT.

PILOT TAPPING (2): 1/8-27 NPT FOR 3/4 THROUGH 1-1/2 IN. SIZES, 1/4-18 NPT FOR 2 THROUGH 3 IN. SIZES.

M8487A

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Voltage | Approximate, Dimensions | Power Consumption |
|-----------------|------------------|----------------|---------|---|-------------------|
| V88J1006/U | 1 in. | DN25 | 24 Vac | 6 1/16 in. high x 4 5/16 in. wide x 5 in. deep (154 mm high x 127 mm wide x 109 mm deep) | 9 W; 15 VA max |
| V88J1022/U | 1 1/4 in. | DN32 | 24 Vac | 6 13/16 in. high x 5 5/16 in. wide x 5 7/8 in. deep (173 mm high x 135 mm wide x 149 mm deep) | 9 W; 15 VA max |

Diaphragm Gas Valves

V4943/V8943A On/Off Diaphragm Gas Valves



V4943A/V8943A are on/off diaphragm gas valve used on boilers, unit heaters, duct furnaces, makeup air and rooftop heaters.

- Designed for replacement for V4843A/V8843A Gas Valves.
- Suitable for use on atmospheric boilers, commercial water heaters, and rooftop heaters.
- V8943A/V4943A models are solenoid-operated diaphragm valves for on/off flow control of natural or LP gas.
- Valve body of die-cast aluminum with a straight-through pattern.
- V4943 are used with line voltage, on/off controllers; V8943A are used with 24 Vac thermostats or controllers.
- Valve closes on power failure; recommended for final shutoff service.

Type of Fuel: Natural; LP

Bleed Tapping: Internal Bleed

Pilot Tapping: 1/8-27 NPT

Body Pattern: Straight-through, non-offset

Opening Characteristics: Rapid Opening On-Off

Valve Opening Time: 6 sec max

Valve Closing Time: 3 sec max

Mounting: Upright (horizontal)

Materials: Body – Aluminum

Frequency: 60 Hz

Electrical Connections: 1/4 in. (6 mm) spade terminals (quick connects). 30 in. (762 mm) leadwires and cover for electrical conduit connection provided.

Operating Temperature Range: -40°F to +150°F (-40°C to +66°C)

Approvals, Underwriters Laboratories Inc.: File No. MH1639, Guide No. YIOZ (60 Hz only)

Approvals, CSA: Certificate No. 158158-1042930, Guide No. 3371-03, 83 (Z21.21, Z21.78)

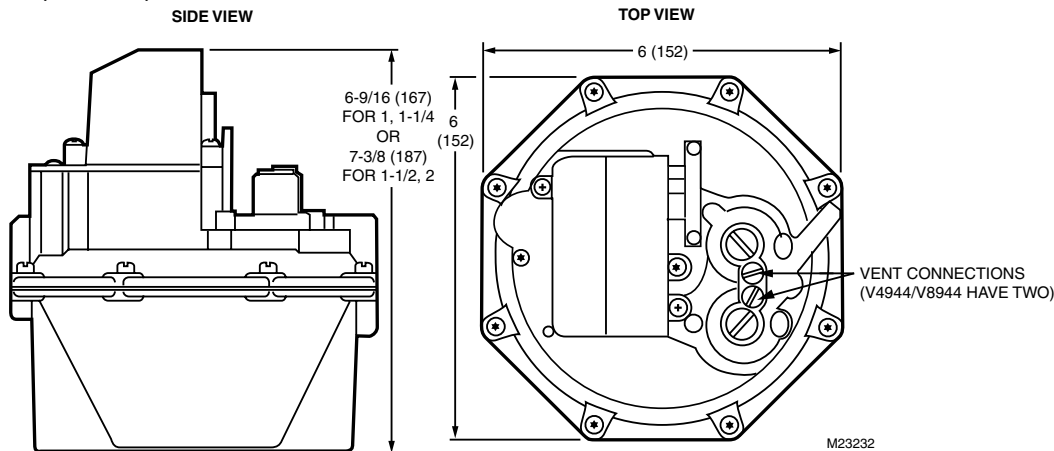
Pressure Ratings (psi): 1/2 psi

Pressure Ratings (kPa): 3.4 kPa

Comments: (2) 30" leadwires

Current Ratings: 0.055 max amps at rated Vac/Hz

Dimensions in inches (millimeters)



| Material Number | Pipe Size (inch) | Pipe Size (DN) | Voltage | Approximate, Dimensions | Power Consumption |
|-----------------|------------------|----------------|---------|---|-------------------|
| V4943A1011/U | 1 in. | DN25 | 120 Vac | 6 9/16 in. high x 6 in. wide x 6 in. deep (167 mm high x 152 mm wide x 152 mm deep) | 6 VA max |
| V4943A1029/U | 1 1/4 in. | DN32 | 120 Vac | 6 9/16 in. high x 6 in. wide x 6 in. deep (167 mm high x 152 mm wide x 152 mm deep) | 6 VA max |
| V4943A1037/U | 1 1/2 in. | DN40 | 120 Vac | 7 3/8 in. high x 6 in. wide x 6 in. deep (187 mm high x 152 mm wide x 152 mm deep) | 6 VA max |
| V4943A1045/U | 2 in. | DN50 | 120 Vac | 7 3/8 in. high x 6 in. wide x 6 in. deep (187 mm high x 152 mm wide x 152 mm deep) | 6 VA max |
| V8943A1012/U | 1 in. | DN25 | 24 Vac | 6 9/16 in. high x 6 in. wide x 6 in. deep (167 mm high x 152 mm wide x 152 mm deep) | 8 VA max |
| V8943A1020/U | 1 1/4 in. | DN32 | 24 Vac | 6 9/16 in. high x 6 in. wide x 6 in. deep (167 mm high x 152 mm wide x 152 mm deep) | 8 VA max |
| V8943A1038/U | 1 1/2 in. | DN40 | 24 Vac | 7 3/8 in. high x 6 in. wide x 6 in. deep (187 mm high x 152 mm wide x 152 mm deep) | 8 VA max |
| V8943A1046/U | 2 in. | DN50 | 24 Vac | 7 3/8 in. high x 6 in. wide x 6 in. deep (187 mm high x 152 mm wide x 152 mm deep) | 8 VA max |

V4943/V8943B, C, N Single Stage Pressure Regulating Valves



V4943B, N/8943B, C, N are Single-stage Pressure Regulating Valves. These valves are used on boilers, unit heaters, duct furnaces, makeup air and rooftop heaters.

- Designed for replacement for V4843/V8843 Gas Valves.
- Suitable for use on atmospheric boilers, commercial water heaters, and rooftop heaters.
- V4943/V8943B, C, N models are solenoid-operated diaphragm valves that combine the functions of safety shutoff and pressure regulation in a single unit.
- V4943/V8943B, N are for use with natural gas.
- V4943/V8943C are for use with LP gas.
- Valve body of die-cast aluminum with a straight-through pattern.
- V4943 are used with line voltage, on/off controllers; V8943 are used with 24 Vac thermostats or controllers.
- Valve closes on power failure; recommended for final shutoff service.

Bleed Tapping: 5/16-24 UNF

Pilot Tapping: 1/8-27 NPT

Body Pattern: Straight-through, non-offset

Valve Closing Time: 2 sec max

Mounting: Upright (horizontal)

Materials: Body – Aluminum

Frequency: 60 Hz

Electrical Connections: 1/4 in. (6 mm) spade terminals (quick connects). 30 in. (762 mm) leadwires and cover for electrical conduit connection provided.

Operating Temperature Range: -40°F to +150°F (-40°C to +66°C)

Approvals, Underwriters Laboratories Inc.: File No. MH1639, Guide No. YIOZ (60 Hz only)

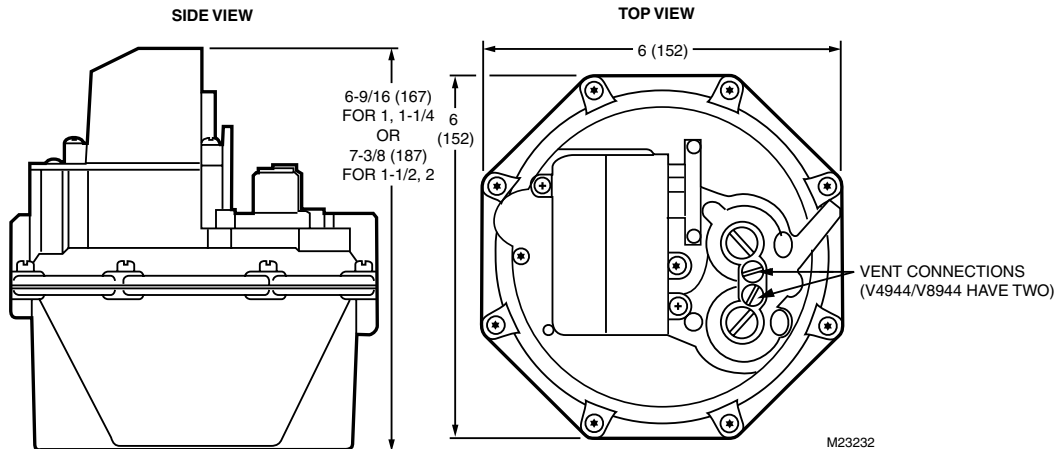
Approvals, CSA: Certificate No. 158158-1042930, Guide No. 3302-01, 81 (Z21.21, Z21.78)

Pressure Ratings (psi): 1/2 psi

Pressure Ratings (kPa): 3.4 kPa

Comments: (2) 30" leadwires

Dimensions in inches (millimeter)



| Material Number | Type of Fuel | Pipe Size (inch) | Pipe Size (DN) | Opening Characteristics | Voltage | Approximate, Dimensions | Valve Opening Time | Current Ratings | Pressure Regulator Setpoint (in. wc) | Power Consumption |
|-----------------|--------------|------------------|----------------|-------------------------|---------|---|--------------------|--------------------------------|---|--------------------|
| V4943B1019/U | Natural | 1 in. | DN25 | Slow Opening 1-stage | 120 Vac | 6 9/16 in. high x 6 in. wide x 6 in. deep (167 mm high x 152 mm wide x 152 mm deep) | 3 to 25 sec | 0.055 max amps at rated Vac/Hz | Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, High Fire – 3.5 in. wc | 6.6 VA max; 6.6 VA |
| V4943B1027/U | Natural | 1 1/4 in. | DN32 | Slow Opening 1-stage | 120 Vac | 6 9/16 in. high x 6 in. wide x 6 in. deep (167 mm high x 152 mm wide x 152 mm deep) | 3 to 25 sec | 0.055 max amps at rated Vac/Hz | Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, High Fire – 3.5 in. wc | 6.6 VA max |
| V4943B1035/U | Natural | 1 1/2 in. | DN40 | Slow Opening 1-stage | 120 Vac | 7 3/8 in. high x 6 in. wide x 6 in. deep (187 mm high x 152 mm wide x 152 mm deep) | 3 to 25 sec | 0.055 max amps at rated Vac/Hz | Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, High Fire – 3.5 in. wc | 6.6 VA max |
| V4943B1043/U | Natural | 2 in. | DN50 | Slow Opening 1-stage | 120 Vac | 7 3/8 in. high x 6 in. wide x 6 in. deep (187 mm high x 152 mm wide x 152 mm deep) | 3 to 25 sec | 0.055 max amps at rated Vac/Hz | Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, High Fire – 3.5 in. wc | 6.6 VA max |
| V4943N1012/U | Natural | 1 in. | DN25 | Rapid Opening 1-stage | 120 Vac | 6 9/16 in. high x 6 in. wide x 6 in. deep (167 mm high x 152 mm wide x 152 mm deep) | 6 sec max | 0.055 max amps at rated Vac/Hz | Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, High Fire – 3.5 in. wc | 6.6 VA max |
| V4943N1020/U | Natural | 1 1/4 in. | DN32 | Rapid Opening 1-stage | 120 Vac | 6 9/16 in. high x 6 in. wide x 6 in. deep (167 mm high x 152 mm wide x 152 mm deep) | 6 sec max | 0.055 max amps at rated Vac/Hz | Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, High Fire – 3.5 in. wc | 6.6 VA max |

Commercial/Industrial
Combustion Controls

Diaphragm Gas Valves

| Material Number | Type of Fuel | Pipe Size (inch) | Pipe Size (DN) | Opening Characteristics | Voltage | Approximate, Dimensions | Valve Opening Time | Current Ratings | Pressure Regulator Setpoint (in. wc) | Power Consumption |
|-----------------|--------------|------------------|----------------|-------------------------|---------|---|--------------------|--------------------------------|---|-------------------|
| V4943N1038/U | Natural | 1 1/2 in. | DN40 | Rapid Opening 1-stage | 120 Vac | 7 3/8 in. high x 6 in. wide x 6 in. deep (187 mm high x 152 mm wide x 152 mm deep) | 6 sec max | 0.055 max amps at rated Vac/Hz | Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, High Fire – 3.5 in. wc | 6.6 VA max |
| V4943N1046/U | Natural | 2 in. | DN50 | Rapid Opening 1-stage | 120 Vac | 7 3/8 in. high x 6 in. wide x 6 in. deep (187 mm high x 152 mm wide x 152 mm deep) | 6 sec max | 0.055 max amps at rated Vac/Hz | Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, High Fire – 3.5 in. wc | 6.6 VA max |
| V8943B1010/U | Natural | 1 in. | DN25 | Slow Opening 1-stage | 24 Vac | 6 9/16 in. high x 6 in. wide x 6 in. deep (167 mm high x 152 mm wide x 152 mm deep) | 3 to 25 sec | 0.363 max amps at rated Vac/Hz | Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, High Fire – 3.5 in. wc | 9 VA max |
| V8943B1028/U | Natural | 1 1/4 in. | DN32 | Slow Opening 1-stage | 24 Vac | 6 9/16 in. high x 6 in. wide x 6 in. deep (167 mm high x 152 mm wide x 152 mm deep) | 3 to 25 sec | 0.363 max amps at rated Vac/Hz | Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, High Fire – 3.5 in. wc | 9 VA max |
| V8943B1036/U | Natural | 1 1/2 in. | DN40 | Slow Opening 1-stage | 24 Vac | 7 3/8 in. high x 6 in. wide x 6 in. deep (187 mm high x 152 mm wide x 152 mm deep) | 3 to 25 sec | 0.363 max amps at rated Vac/Hz | Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, High Fire – 3.5 in. wc | 9 VA max |
| V8943B1044/U | Natural | 2 in. | DN50 | Slow Opening 1-stage | 24 Vac | 7 3/8 in. high x 6 in. wide x 6 in. deep (187 mm high x 152 mm wide x 152 mm deep) | 3 to 25 sec | 0.363 max amps at rated Vac/Hz | Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, High Fire – 3.5 in. wc | 9 VA max |
| V8943C1018/U | LP | 1 in. | DN25 | Slow Opening 1-stage | 24 Vac | 6 9/16 in. high x 6 in. wide x 6 in. deep (167 mm high x 152 mm wide x 152 mm deep) | 3 to 25 sec | 0.363 max amps at rated Vac/Hz | Adj. Range, High Fire – 8.8 in. wc to 11.5 in. wc; Factory Setting, High Fire – 10.0 in. wc | 9 VA max |
| V8943C1026/U | LP | 1 1/4 in. | DN32 | Slow Opening 1-stage | 24 Vac | 6 9/16 in. high x 6 in. wide x 6 in. deep (167 mm high x 152 mm wide x 152 mm deep) | 3 to 25 sec | 0.363 max amps at rated Vac/Hz | Adj. Range, High Fire – 8.8 in. wc to 11.5 in. wc; Factory Setting, High Fire – 10.0 in. wc | 9 VA max |
| V8943N1013/U | Natural | 1 in. | DN25 | Rapid Opening 1-stage | 24 Vac | 6 9/16 in. high x 6 in. wide x 6 in. deep (167 mm high x 152 mm wide x 152 mm deep) | 6 sec max | 0.363 max amps at rated Vac/Hz | Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, High Fire – 3.5 in. wc | 9 VA max |
| V8943N1021/U | Natural | 1 1/4 in. | DN32 | Rapid Opening 1-stage | 24 Vac | 6 9/16 in. high x 6 in. wide x 6 in. deep (167 mm high x 152 mm wide x 152 mm deep) | 6 sec max | 0.363 max amps at rated Vac/Hz | Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, High Fire – 3.5 in. wc | 9 VA max |
| V8943N1039/U | Natural | 1 1/2 in. | DN40 | Rapid Opening 1-stage | 24 Vac | 7 3/8 in. high x 6 in. wide x 6 in. deep (187 mm high x 152 mm wide x 152 mm deep) | 6 sec max | 0.363 max amps at rated Vac/Hz | Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, High Fire – 3.5 in. wc | 9 VA max |

V4944/V8944B, C, L, N Two Stage Pressure Regulating Gas Valves



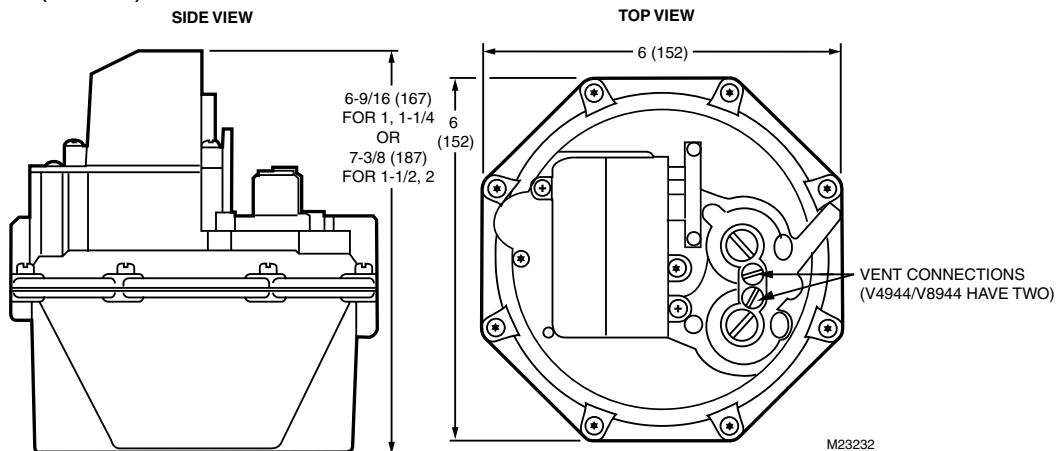
V4944B, L, N/8944B, C, L, N are Two-stage Pressure Regulating Gas Valves. These valves are used on boilers, unit heaters, duct furnaces, makeup air and rooftop heaters.

- Designed for replacement for V4844/V8844 Gas Valves.
- Suitable for use on atmospheric boilers, commercial water heaters, and rooftop heaters.
- V4944/V8944B, C, L, N models are solenoid-operated diaphragm valves that combine the functions of safety shutoff and pressure regulation in a single unit.
- V4944/V8944B, N are for use with natural gas.
- V4944/V8944C, L are for use with LP gas.
- Valve body of die-cast aluminum with a straight-through pattern.
- V4944 are used with line voltage, dual-stage controllers; V8944 are used with 24 Vac dual-stage thermostats or controllers.
- Valve closes on power failure; recommended for final shutoff service.

Bleed Tapping: Two 5/16-24 UNF
Pilot Tapping: 1/8-27 NPT
Body Pattern: Straight-through, non-offset
Valve Closing Time: 2 sec max
Mounting: Upright (horizontal)
Materials: Body – Aluminum
Voltage: V4944-120 Vac; V8944-24 Vac
Frequency: 60 Hz
Power Consumption: V4944-9 VA max; V8944-12.4 VA max
Electrical Connections: 1/4 in. (6 mm) spade terminals (quick connects), leadwires and cover for electrical conduit connection provided.

Operating Temperature Range: -40°F to +150°F (-40°C to +66°C)
Approvals, Underwriters Laboratories Inc.: File No. MH1639, Guide No. YIOZ (60 Hz only)
Approvals, CSA: Certificate No. 158158-1042930, Guide No. 3302-01, 81 (Z21.21, Z21.78)
Pressure Ratings (psi): 1/2 psi
Pressure Ratings (kPa): 3.4 kPa
Current Ratings: V4944-0.077 max amps at rated Vac/Hz;
 V8944-0.516 max amps at rated Vac/Hz

Dimensions in inches (millimeter)



| Material Number | Type of Fuel | Pipe Size (inch) | Pipe Size (DN) | Opening Characteristics | Valve Opening Time | Pressure Regulator Setpoint (in. wc) | Comments |
|-----------------|--------------|------------------|----------------|-------------------------|--------------------|---|-------------------|
| V4944B1018/U | Natural | 1 in. | DN25 | Slow Opening 2-stage | 3 to 25 sec | Adj. Range, Low Fire – 0.8 in. wc to 2 in. wc; Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, Low Fire – 0.8 in. wc; Factory Setting, High Fire – 3.5 in. wc | (3) 30" leadwires |
| V4944B1026/U | Natural | 1 1/4 in. | DN32 | Slow Opening 2-stage | 3 to 25 sec | Adj. Range, Low Fire – 0.8 in. wc to 2 in. wc; Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, Low Fire – 0.8 in. wc; Factory Setting, High Fire – 3.5 in. wc | (3) 30" leadwires |
| V4944B1059/U | Natural | 1 in. | DN25 | Slow Opening 2-stage | 3 to 25 sec | Adj. Range, Low Fire – 0.8 in. wc to 2 in. wc; Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, Low Fire – 0.7 in. wc; Factory Setting, High Fire – 3.0 in. wc | (3) 30" leadwires |
| V4944B1075/U | Natural | 1 in. | DN25 | Slow Opening 2-stage | 3 to 25 sec | Adj. Range, Low Fire – 1.6 in. wc to 4 in. wc; Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, Low Fire – 1.6 in. wc; Factory Setting, High Fire – 3.5 in. wc | |
| V4944B1091/U | Natural | 1 1/2 in. | DN40 | Slow Opening 2-stage | 3 to 25 sec | Adj. Range, Low Fire – 1.6 in. wc to 4 in. wc; Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, Low Fire – 1.6 in. wc; Factory Setting, High Fire – 3.5 in. wc | |
| V4944L1024/U | LP | 1 1/4 in. | DN32 | Rapid Opening 2-stage | 6 sec max | Adj. Range, Low Fire – 1.4 in. wc to 4.2 in. wc; Adj. Range, High Fire – 8.8 in. wc to 11.5 in. wc; Factory Setting, Low Fire – 1.4 in. wc; Factory Setting, High Fire – 10.0 in. wc | (3) 30" leadwires |

Commercial/Industrial
Combustion Controls

Diaphragm Gas Valves

| Material Number | Type of Fuel | Pipe Size (inch) | Pipe Size (DN) | Opening Characteristics | Valve Opening Time | Pressure Regulator Setpoint (in. wc) | Comments |
|-----------------|--------------|------------------|----------------|-------------------------|--------------------|--|-------------------|
| V4944N1011/U | Natural | 1 in. | DN25 | Rapid Opening 2-stage | 6 sec max | Adj. Range, Low Fire – 0.8 in. wc to 2 in. wc; Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, Low Fire – 0.8 in. wc; Factory Setting, High Fire – 3.5 in. wc | (3) 30" leadwires |
| V4944N1029/U | Natural | 1 1/4 in. | DN32 | Rapid Opening 2-stage | 6 sec max | Adj. Range, Low Fire – 0.8 in. wc to 2 in. wc; Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, Low Fire – 0.8 in. wc; Factory Setting, High Fire – 3.5 in. wc | (3) 30" leadwires |
| V4944N1037/U | Natural | 1 1/2 in. | DN40 | Rapid Opening 2-stage | 6 sec max | Adj. Range, Low Fire – 0.8 in. wc to 2 in. wc; Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, Low Fire – 0.8 in. wc; Factory Setting, High Fire – 3.5 in. wc | (3) 30" leadwires |
| V4944N1045/U | Natural | 2 in. | DN50 | Rapid Opening 2-stage | 6 sec max | Adj. Range, Low Fire – 0.8 in. wc to 2 in. wc; Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, Low Fire – 0.8 in. wc; Factory Setting, High Fire – 3.5 in. wc | (3) 30" leadwires |
| V4944N1060/U | Natural | 1 1/4 in. | DN32 | Rapid Opening 2-stage | 6 sec max | Adj. Range, Low Fire – 0.8 in. wc to 2 in. wc; Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, Low Fire – 1.0 in. wc; Factory Setting, High Fire – 3.0 in. wc | (3) 85" leadwires |
| V8944B1019/U | Natural | 1 in. | DN25 | Slow Opening 2-stage | 3 to 25 sec | Adj. Range, Low Fire – 0.8 in. wc to 2 in. wc; Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, Low Fire – 0.8 in. wc; Factory Setting, High Fire – 3.5 in. wc | (3) 30" leadwires |
| V8944B1027/U | Natural | 1 1/4 in. | DN32 | Slow Opening 2-stage | 3 to 25 sec | Adj. Range, Low Fire – 0.8 in. wc to 2 in. wc; Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, Low Fire – 0.8 in. wc; Factory Setting, High Fire – 3.5 in. wc | (3) 30" leadwires |
| V8944B1035/U | Natural | 1 1/2 in. | DN40 | Slow Opening 2-stage | 3 to 25 sec | Adj. Range, Low Fire – 0.8 in. wc to 2 in. wc; Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, Low Fire – 0.8 in. wc; Factory Setting, High Fire – 3.5 in. wc | (3) 30" leadwires |
| V8944B1043/U | Natural | 2 in. | DN50 | Slow Opening 2-stage | 3 to 25 sec | Adj. Range, Low Fire – 0.8 in. wc to 2 in. wc; Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, Low Fire – 0.8 in. wc; Factory Setting, High Fire – 3.5 in. wc | (3) 30" leadwires |
| V8944C1017/U | LP | 1 in. | DN25 | Slow Opening 2-stage | 3 to 25 sec | Adj. Range, Low Fire – 1.4 in. wc to 4.2 in. wc; Adj. Range, High Fire – 8.8 in. wc to 11.5 in. wc; Factory Setting, Low Fire – 1.4 in. wc; Factory Setting, High Fire – 10.0 in. wc | (3) 30" leadwires |
| V8944C1025/U | LP | 1 1/4 in. | DN32 | Slow Opening 2-stage | 3 to 25 sec | Adj. Range, Low Fire – 1.4 in. wc to 4.2 in. wc; Adj. Range, High Fire – 8.8 in. wc to 11.5 in. wc; Factory Setting, Low Fire – 1.4 in. wc; Factory Setting, High Fire – 10.0 in. wc | (3) 30" leadwires |
| V8944C1033/U | LP | 1 1/2 in. | DN40 | Slow Opening 2-stage | 3 to 25 sec | Adj. Range, Low Fire – 1.4 in. wc to 4.2 in. wc; Adj. Range, High Fire – 8.8 in. wc to 11.5 in. wc; Factory Setting, Low Fire – 1.4 in. wc; Factory Setting, High Fire – 10.0 in. wc | (3) 30" leadwires |
| V8944N1012/U | Natural | 1 in. | DN25 | Rapid Opening 2-stage | 6 sec max | Adj. Range, Low Fire – 0.8 in. wc to 2 in. wc; Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, Low Fire – 0.8 in. wc; Factory Setting, High Fire – 3.5 in. wc | (3) 30" leadwires |
| V8944N1020/U | Natural | 1 1/4 in. | DN32 | Rapid Opening 2-stage | 6 sec max | Adj. Range, Low Fire – 0.8 in. wc to 2 in. wc; Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, Low Fire – 0.8 in. wc; Factory Setting, High Fire – 3.5 in. wc | (3) 30" leadwires |
| V8944N1038/U | Natural | 1 1/2 in. | DN40 | Rapid Opening 2-stage | 6 sec max | Adj. Range, Low Fire – 0.8 in. wc to 2 in. wc; Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, Low Fire – 0.8 in. wc; Factory Setting, High Fire – 3.5 in. wc | (3) 30" leadwires |
| V8944N1046/U | Natural | 2 in. | DN50 | Rapid Opening 2-stage | 6 sec max | Adj. Range, Low Fire – 0.8 in. wc to 2 in. wc; Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, Low Fire – 0.8 in. wc; Factory Setting, High Fire – 3.5 in. wc | (3) 30" leadwires |
| V8944N1053/U | Natural | 1 in. | DN25 | Rapid Opening 2-stage | 6 sec max | Adj. Range, Low Fire – 0.8 in. wc to 2 in. wc; Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, Low Fire – 1.2 in. wc; Factory Setting, High Fire – 3.5 in. wc | (3) 30" leadwires |
| V8944N1061/U | Natural | 1 1/4 in. | DN32 | Rapid Opening 2-stage | 6 sec max | Adj. Range, Low Fire – 0.8 in. wc to 2 in. wc; Adj. Range, High Fire – 3 in. wc to 4.5 in. wc; Factory Setting, Low Fire – 1.2 in. wc; Factory Setting, High Fire – 3.5 in. wc | (3) 30" leadwires |

Diaphragm Gas Valve Replacement Parts or Accessories

| Material Number | Description | Used With |
|-----------------|--|--|
| 116930/U | 24 Vac, 60 Hz Replacement Coil for V88A Solenoid Operated Valve | V88A |
| 116931/U | 120 V/60 Hz Replacement Coil for V48A Solenoid Operated Valve | V48; V48A |
| 116932/U | 220-240 V/50-60 Hz Replacement Coil for V48A Solenoid Operated Valve | V48A |
| 118888/U | 24V 60 Hz Replacement Coil for V88J | V88J |
| 122160/U | Orifice - .018" for V48, V88 | V48, V88 |
| 124674/U | Orifice - .011" for V48, V88 | V48, V88 |
| 126590/U | Adjustable Bleed Valve Assembly for V48, V88, V4004, V8004. 1/8 in. NPT to 1/4 in. compression fitting | V48, V88 |
| 204480/U | Regulator vent pipe fitting to be used with V4843/V8843B, C, L, N and V4844/V8844B, C, L, N and V4943/V8943, V4944/V8944 | V4843B; V4843C; V4843L; V4843N; V8843B; V8843C; V8843L; V8843N; V4844B; V4844C; V4844L; V4844N; V8844B; V8844C; V8844L; V8844N; V4943; V8943; V4944; V8944 |

Butterfly Gas Valves

V51 Butterfly Gas/Air Valve



Provides modulating control of natural, manufactured, LP gases or air.

- Use in commercial and industrial installations where large amounts of gas must be closely controlled.
- NOT for use as safety shutoff valve.
- Adaptable to most modulating jobs.
- Modutrol motor, such as the M9484 or M9494, may be mounted directly on valve or close to it.
- Valve mechanism has strain release.
- Adjustable stroke over low fire-high fire range.
- Straight-through valve pattern.
- Rugged cast aluminum body provides durability and maintenance-free operation.

Type of Fuel: Air; natural; manufactured; LP

Body Pattern: Straight-through

Mounting: Motor shaft horizontal

Materials: Body – Aluminum

Operating Temperature Range: 32°F to 140°F (0°C to 60°C)

Approvals, Underwriters Laboratories Inc.: File No. MH5968 Vol. 1

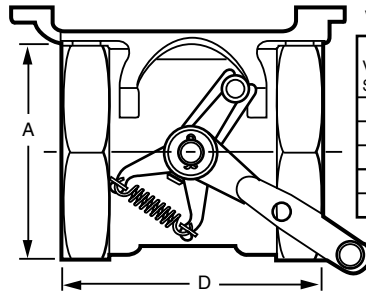
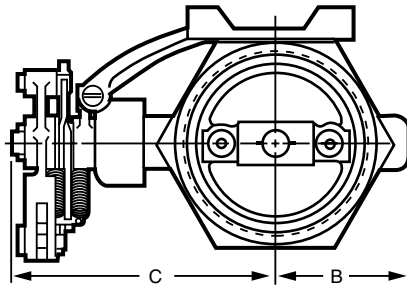
Sec. 1, Guide no. MHKZ

Pressure Ratings (psi): 5 psi

Pressure Ratings (kPa): 34.5 kPa

Used With: Mod Motor with Q100 Linkage

Dimensions in inches (millimeter)



V51E DIMENSIONS

| VALVE SIZE (in.) | A ¹ | | B ¹ | | C ² | | D ¹ | |
|------------------|----------------|-------|----------------|------|----------------|-------|----------------|-------|
| | in. | mm | in. | mm | in. | mm | in. | mm |
| 1 1/2 | 2 21/32 | 67.5 | 1 9/16 | 39.7 | 4 1/4 | 108.0 | 3 1/32 | 77.0 |
| 2 | 3 5/32 | 80.2 | 1 13/16 | 46.0 | 4 1/4 | 108.0 | 3 17/32 | 89.7 |
| 2 1/2 | 3 27/32 | 97.6 | 2 5/16 | 58.7 | 4 13/16 | 122.2 | 4 23/32 | 119.9 |
| 3 | 4 1/32 | 102.4 | 2 25/64 | 60.7 | 5 | 127.0 | 4 23/32 | 119.9 |
| 4 | 5 21/64 | 135.3 | 3 5/32 | 80.2 | 5 3/8 | 136.5 | 5 17/64 | 133.8 |

¹ MAXIMUM DIMENSIONS.

² NOMINAL DIMENSIONS.

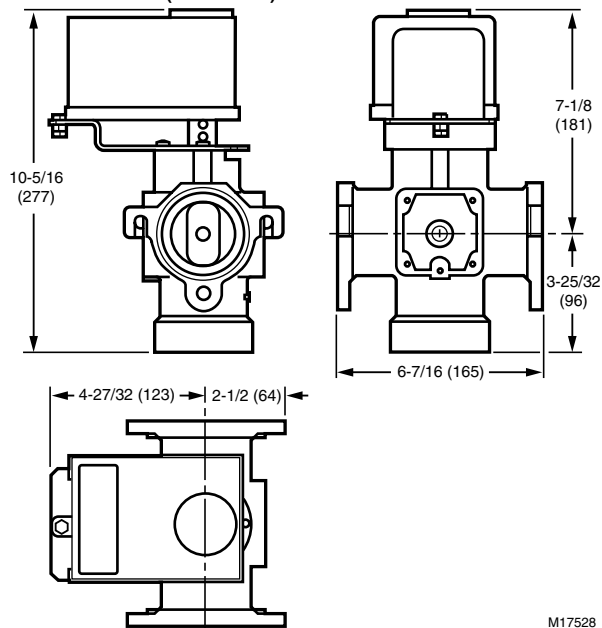
M9532A

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (cfh) | Capacity (m ³ /hr) | Pressure Tapping | Approximate, Dimensions |
|-----------------|------------------|----------------|----------------|-------------------------------|--|---|
| V51E1000/U | 1 1/2 in. | DN40 | 4200 cfh | 118.9 m ³ /hr | Inlet and outlet pressure taps – Two downstream 1/4 in. NPT taps | 2 11/16 in. high x 3 1/16 in. wide x 5 13/16 in. deep (68 mm high x 77 mm wide x 148 mm deep) |
| V51E1018/U | 2 in. | DN50 | 9210 cfh | 260.7 m ³ /hr | | 3 3/16 in. high x 3 9/16 in. wide x 6 1/16 in. deep (80 mm high x 90 mm wide x 154 mm deep) |
| V51E1034/U | 2 1/2 in. | DN65 | 8390 cfh | 199.8 m ³ /hr | | 3 7/8 in. high x 4 3/4 in. wide x 7 1/8 in. deep (98 mm high x 120 mm wide x 181 mm deep) |
| V51E1059/U | 3 in. | DN80 | 14640 cfh | 414.5 m ³ /hr | | 4 1/16 in. high x 4 3/4 in. wide x 7 3/8 in. deep (102 mm high x 120 mm wide x 188 mm deep) |
| V51E1075/U | 4 in. | DN100 | 33000 cfh | 934.2 m ³ /hr | | 5 3/8 in. high x 5 1/4 in. wide x 8 9/16 in. deep (135 mm high x 134 mm wide x 217 mm deep) |

V5197 Integrated Valve Train Butterfly Gas Valve



Dimensions in inches (millimeters)



M17528

The V5197A valve provides flow control of air, natural gas, liquid petroleum, & manufactured gases which require a high turn down ratio. The adjustment screw controls the maximum flow of gas, but keeps the linear modulating characteristics & stroke.

- Used with air, natural, manufactured or liquefied petroleum (LP) gases.
- For modulating applications that do not require final shutoff service of firing rate valve.
- Two valve body types (small and large) applicable to seven pipe sizes: Small body type for 3/4 in. (19 mm), 1 in. (25 mm), 1-1/4 in. (32 mm), 1-1/2 in. (38 mm) and 2 in. (51 mm) pipes, NPT or ISO 7 threads. Large body type for 2 in. (51 mm), 2-1/2 in. (64 mm) and 3 in. (76 mm) pipes, NPT or ISO 7 threads.
- Two downstream 1/4 in. NPT threaded pressure taps available.
- Accepts C6097 Pressure Switch mounted directly to flange (downstream pressure tap only).
- Unpainted cast aluminum body.
- Suitable for electric or pneumatic operators with the appropriate linkage.
- May be used with manufacturers own linkage and drive motor.
- Flow adjustment screw on bottom of valve controls maximum flow.
- Visual position indicator.

Type of Fuel: Air; natural; manufactured; LP

Pressure Tapping: Inlet and outlet pressure taps – Two downstream 1/4 in. NPT taps

Mounting: Directly bolted to Integrated Valve Train (IVT) components or IVT adapters

Materials: Body – Die-cast aluminum

Operating Temperature Range: -40°F to +150°F (-40°C to +66°C)

Approvals, Underwriters Laboratories Inc.: Component Listed

Approvals, CSA: Design Certified

Approvals, Swiss RE: Acceptable

Pressure Ratings (psi): 15 psi max

Pressure Ratings (kPa): 1 Bar

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (cfh) | Capacity (m ³ /hr) | Approximate, Dimensions |
|-----------------|--|---------------------------------|--|--|--|
| V5197A1003 | 3/4 in.; 1 in.; 1 1/4 in.; 1 1/2 in.; 2 in. | DN20; DN25; DN32; DN40; DN50 | 2450 cfh for 3/4 in.; 3080 cfh for 1 in.; 4430 cfh for 1 1/4 in.; 5010 cfh for 1 1/2 in.; 5480 cfh for 2 in. | 51 mm is 155/ 38 mm is 142/ 32 mm is 125/ 25 mm is 87/ 19 mm is 69 | 10 5/16 in. high x 6 7/16 in. wide x 7 11/32 in. deep (277 mm high x 165 mm wide x 187 mm deep) |
| V5197A1011 | 2 in.; 2 1/2 in.; 3 in. | DN65; DN80; DN50 | 12,600 cfh for 2 in.; 14,800 cfh for 2 1/2 in.; 16,900 cfh for 3 in. | 76 mm is 478/ 64 mm is 419/ 51 mm is 356 | 12 11/16 in. high x 9 1/4 in. wide x 8 13/16 in. deep (322 mm high x 235 mm wide x 224 mm deep) |

Firing Rate Gas Valve Parts

| Material Number | Description | Used With |
|-----------------|-------------------------|-----------|
| 49084/0021/U | Adjusting arm for V51E. | V51E |
| 49085B/U | Strain Release Assembly | V51E |

Gas Valve Actuators

Selection Chart: V5055 and V5097 Industrial Gas Valves with V4055, V4062 or V9055 Fluid Power Actuators

The chart below describes every model of V5055 or V5097 Valve in the left column, and every model of Fluid Power Actuator across the top. While it's possible to combine any valve with any actuator, we've marked the recommended valve/actuator combinations which cover most applications with a •.

Each valve described in the left column is available:

- In these sizes: 3/4 to 3 in. (NPT or parallel BSP). V5055A, B, C are also available in 4 in. size (flange connection only).
- With upstream and/or downstream tap.

Options available on some Fluid Power Actuators include:

- Damper arm shaft, with or without spring return.
- NEMA 4 enclosure.
- Fast or slow open time (13 or 26 seconds).
- Auxiliary switch.
- Valve seal overtravel interlock switch.

For complete specifications and ordering information on V5055 and V5097 Valves and V4055, V4062 and V9055 Fluid Power Actuators, refer to Index for specific page numbers.

| Fluid Power Actuators/ Industrial Gas Valves | | | Standard pressure ^a | | | High Pressure ^a | |
|--|---------------------------------|------------------------------|---------------------------------|----------------------------------|-------------------|----------------------------|-------------------|
| | | | V5055A, F ^b , V5097A | V5055B, V5097B | V5055C, V5097C | V5055D, V5097D | V5055E, V5097E |
| Type | Model | Pressure Rating ^a | On-Off | Characterized Guide ^c | VS01 ^d | On-Off | VS01 ^d |
| V4055 On-Off | A, G ^e | Standard | • | • | | • | |
| | B | High | • ^f | • ^f | | • | |
| | D ^d F ^{d,e} | Standard | | | • | | • |
| | E ^d | High | | | • ^f | | • |
| V4062 Hi-Lo-Off | A | Standard | | • | • | | |
| | B | High | | • ^f | • ^f | | • |
| | D ^d | Standard | | | • | | |
| V9055 Modulating | A | Standard | | • | | | |
| | D ^d | Standard | | | • | | |

^a Refer to the table below for actual pressure ratings of the various combinations of valves and actuators.

^b V5055F models meet EN161 leakage requirements.

^c Characterized guide provides a more linear relationship between stem travel and gas flow. Check Honeywell form 70-8311 to verify that flow curve characteristics match application requirements.

^d Valve Seal Overtravel Interlock. Valve has two shutoff seals, actuator has a proof-of-closure switch.

^e V4055F, G models include switch for manual control.

^f These combinations have higher pressure ratings; see the table below.

The following combinations of V5055 and V5097 Valves, and V4055, V4062 and V9055 Fluid Power Actuators are approved by these agencies.

Underwriters Laboratories, Inc: Listed: MH1639

- V4055A/V5055A-E (3/4-4 in.) or V5097A-E (3/4-3 in.).
- V4055B/V5055A-E (3/4-4 in.) or V5097A-E (3/4-3 in.).
- V4055D/V5055A-E (3/4-4 in.) or V5097A-E (3/4-3 in.).
- V4055E/V5055A-E (3/4-4 in.) or V5097A-E (3/4-3 in.).
- V4055F/V5055A-E (3/4-4 in.^a) or V5097A-E (3/4-3 in.).
- V4055G/V5055A-E (3/4-4 in.^a) or V5097A-E (3/4-3 in.).
- V4062A, D/V5055A-E (3/4-4 in.) or V5097A-E (3/4-3 in.).
- V9055A, D/V5055A, B, C, E (3/4-4 in.) or V5097A-E (3/4-3 in.).

Factory Mutual Approved: Report No. 20698, 20835, 21172 and 24061:

Valve Actuator Approvals:

- V4055A/V5055A and V5097A.
- V4055D/V5055C and V5097C.
- V4055A/V5055B and V5097B.
- V4055B/V5055D and V5097D.
- V4055E/V5055E and V5097E.
- V4055F/V5055C^a and V5097C.
- V4055G/V5055A, B^a and V5097A, B.
- V9055A/V5055B, C and V5097B, C.

^a Manual reset safety shut-off valves.

Pressure Ratings of Valve-Actuator Combinations

| Model | Pipe Size | Standard Pressure Actuators V4055A, D, F, G, V4062A, D, V9055A, D | | | | High Pressure Actuators V4055B, E, V4062B | | | |
|--|-----------------------------|--|----------|----------------------------------|---------|--|-----------|----------------------------------|---------|
| | | M.O.P.D. ^a | | Max. Rated Pressure ^b | | M.O.P.D. ^a | | Max. Rated Pressure ^b | |
| Standard Pressure Valves V5055A, B, C, F, V5097A, B, C | 3/4" to 1-1/2" ^c | 5 PSI | 340 mbar | 15 PSI | 1.0 Bar | 15 PSI | 1030 mbar | 15 PSI | 1.0 Bar |
| | 2" to 3" ^d | 5 PSI | 340 mbar | 15 PSI | 1.0 Bar | 15 PSI | 1030 mbar | 15 PSI | 1.0 Bar |
| | 4" flanged ^e | 3 PSI | 207 mbar | 15 PSI | 1.0 Bar | 5 PSI | 340 mbar | 15 PSI | 1.0 Bar |
| High Pressure Valves V5055D, E, V5097D, E | 3/4" to 1-1/2" ^c | 5 PSI | 340 mbar | 75 PSI | 5.0 Bar | 25 PSI | 1720 mbar | 75 PSI | 5.0 Bar |
| | 2" to 3" ^d | 5 PSI | 340 mbar | 45 PSI | 3.0 Bar | 15 PSI | 1030 mbar | 45 PSI | 3.0 Bar |

^a Max Operating Pressure Differential (UL) or Max Operating Pressure (CSA); maximum allowable pressure drop from inlet to outlet for proper operation.

^b Max Rated Pressure (UL) or Max Close-off Pressure (CSA); maximum pressure that the valve can be exposed to without leakage or damage to the valve.

^c Applies for small-body V5097 valves 3/4" up to 2" pipe size.

^d Applies for large-body V5097 valves 2" up to 3" pipe size.

^e V5055A, B, C only.

V4055A, B, D, E On-Off Fluid Power Gas Valve Actuator



Use in combination with V5055 or V5097 Gas Valves to control gas supply to commercial and industrial burners.

- Use where smooth light off is important.
- One-second maximum closing time.
- Continuously displays the valve position with a red indicator when open and a yellow indicator when closed.
- Mount in any position directly to valve bonnet with three setscrews.
- Provide final safety shutoff service when used with V5055 or V5097 Gas Valves.

Operating Temperature Ratings: 60 Hz Models: -40°F to +150°F (-40°C to +66°C). 50 Hz, 50/60 Hz Models: -10°F to +158°F (-23°C to +70°C).

Contact Ratings: V4055D, E ONLY-Proof of Closure (Factory Mutual) Switch – 9.8 AFL, 58.8 ALR, 1/2 hp; 4.9 AFL, 29.4 ALR, 1/2 hp

Used With: V5055; V5097 Gas Valves

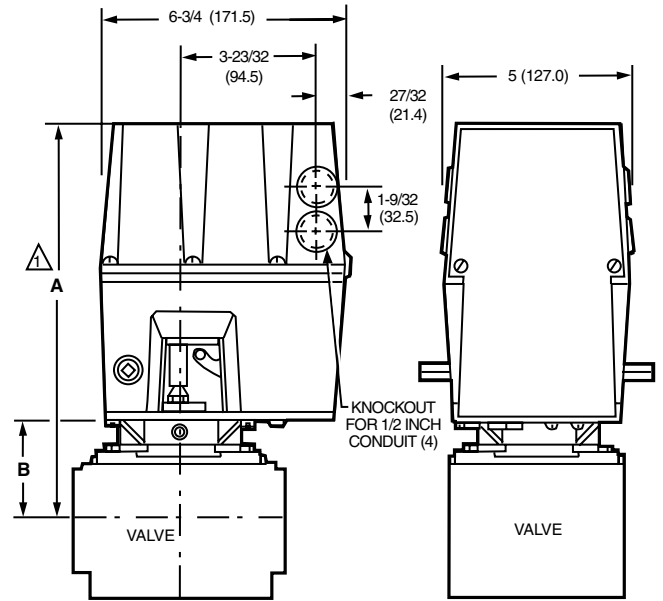
Approvals, CSA: When used with V5055 and V5097: Certified General listed File No. 158158, Class 3371 for USA and Canada

Approvals, Underwriters Laboratories Inc.: When used with V5055A-E (3/4 to 4 in.) or V5097A-E (3/4 to 3 in.): Listed, File No. MH1639 Guide No. YIOZ

Approvals, Factory Mutual: V4055A-When used with the V5055A, B or V5097A, B: Approved, Report Nos. 20698, 20835, 21172, and 24061; V4055B, D, E-When used with the V5055D or V5097D: Approved, Report Nos. 20698, 20835, 21172, and 24061

Approvals, Swiss RE: When used with V5055 or V5097: Acceptable

Dimensions in inches (millimeters)



△ ALLOW 4 IN. (101.6 MM) CLEARANCE FOR ACTUATOR REMOVAL.

| VALVE SIZE INCH | V5055 | | | | V5097 | | | |
|--------------------|--------|-------|---------|-------|--------|-----|-------|----|
| | DIM A | | DIM B | | DIM A | | DIM B | |
| | IN. | MM | IN. | MM | IN. | MM | IN. | MM |
| 3/4 | 11-1/8 | 282.6 | 2-3/4 | 69.9 | 11-1/8 | 283 | 2-3/4 | 70 |
| 1 | 11-1/8 | 282.6 | 2-3/4 | 69.9 | 11-1/8 | 283 | 2-3/4 | 70 |
| 1-1/4 | 11-1/8 | 282.6 | 2-3/4 | 69.9 | 11-1/8 | 283 | 2-3/4 | 70 |
| 1-1/2 | 11-1/8 | 282.6 | 2-3/4 | 69.9 | 11-1/8 | 283 | 2-3/4 | 70 |
| 2 | 11-1/4 | 285.8 | 2-7/8 | 73.0 | 11-3/4 | 298 | 3-3/8 | 86 |
| 2-1/2 | 11-3/4 | 298.5 | 3-3/8 | 85.7 | 11-3/4 | 298 | 3-3/8 | 86 |
| 3 | 11-3/4 | 298.5 | 3-3/8 | 85.7 | 11-3/4 | 298 | 3-3/8 | 86 |
| 4 | 14-1/8 | 358.8 | 5-13/16 | 147.6 | — | — | — | — |

M10981A

| Material Number | Electrical Ratings | Frequency | Timing | Internal Auxiliary Switch | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Auxiliary Switch Ratings | Comments | Includes |
|-----------------|--------------------|--------------|--|------------------------------|---------------------------------------|---------------------------------------|---|------------------|---|
| V4055A1007/U | 120 Vac | 60 Hz | Opening – 26 sec; Closing – < 1 sec | No | 5 psi | 34 kPa | | | |
| V4055A1031/U | 120 Vac | 50 Hz; 60 Hz | Opening – 13 sec; Closing – < 1 sec | No | 5 psi | 34 kPa | | | |
| V4055A1064/U | 120 Vac | 50 Hz; 60 Hz | Opening – 26 sec; Closing – < 1 sec | No | 5 psi | 34 kPa | | | Damper Shaft |
| V4055A1080/U | 240 Vac | 50 Hz; 60 Hz | Opening – 26 sec; Closing – < 1 sec | No | 5 psi | 34 kPa | | | Damper Shaft |
| V4055A1098/U | 120 Vac | 50 Hz; 60 Hz | Opening – 13 sec; Closing – < 1 sec | No | 5 psi | 34 kPa | | | Damper Shaft |
| V4055A1114/U | 240 Vac | 50 Hz; 60 Hz | Opening – 13 sec; Closing – < 1 sec | No | 5 psi | 34 kPa | | | Damper Shaft |
| V4055A1296/U | 120 Vac | 60 Hz | Opening – 13 sec; Closing – < 1 sec | Yes - adjusted to 90% stroke | 5 psi | 34 kPa | 120 Vac – 9.8 AFL, 58.8 ALR, 1/2 hp; 240 Vac – 4.9 AFL, 29.4 ALR, 1/2 hp | | |
| V4055A1304/U | 120 Vac | 60 Hz | Opening – 26 sec; Closing – < 1 sec | No | 5 psi | 34 kPa | | | Damper Shaft with return spring installed |
| V4055A1312/U | 120 Vac | 60 Hz | Opening – 26 sec; Closing – < 1 sec | No | 5 psi | 34 kPa | | Nema 4 Enclosure | |
| V4055B1021/U | 120 Vac | 60 Hz | Opening – 26 sec; Closing – < 1 sec | No | 15 or 25 psi | 103 or 172 kPa | | | Damper Shaft |
| V4055B1039/U | 120 Vac | 60 Hz | Opening – 13 sec; Closing – < 1 sec | No | 15 or 25 psi | 103 or 172 kPa | | | Damper Shaft |

Gas Valve Actuators

| Material Number | Electrical Ratings | Frequency | Timing | Internal Auxiliary Switch | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Auxiliary Switch Ratings | Comments | Includes |
|-----------------|--------------------|-----------|--|---------------------------|---------------------------------------|---------------------------------------|---|---------------------|--------------|
| V4055B1088/U | 220 Vac | 50 Hz | Opening – 13 sec; Closing – < 1 sec | No | 15 or 25 psi | 103 or 172 kPa | | | |
| V4055D1001/U | 120 Vac | 60 Hz | Opening – 26 sec; Closing – < 1 sec | No | 5 psi | 34 kPa | | | Damper Shaft |
| V4055D1019/U | 120 Vac | 60 Hz | Opening – 13 sec; Closing – < 1 sec | No | 5 psi | 34 kPa | | | Damper Shaft |
| V4055D1027/U | 120 Vac | 60 Hz | Opening – 13 sec; Closing – < 1 sec | Yes | 5 psi | 34 kPa | 120 Vac – 9.8 AFL, 58.8 ALR, 1/2 hp; 240 Vac – 4.9 AFL, 29.4 ALR, 1/2 hp | Nema 4 Enclosure | |
| V4055D1035/U | 120 Vac | 60 Hz | Opening – 13 sec; Closing – < 1 sec | Yes | 5 psi | 34 kPa | 120 Vac – 9.8 AFL, 58.8 ALR, 1/2 hp; 240 Vac – 4.9 AFL, 29.4 ALR, 1/2 hp | | |
| V4055D1043/U | 120 Vac | 60 Hz | Opening – 13 sec; Closing – < 1 sec | No | 5 psi | 34 kPa | | | |
| V4055E1016/U | 120 Vac | 60 Hz | Opening – 13 sec; Closing – < 1 sec | No | 15 or 25 psi | 103 or 172 kPa | | | Damper Shaft |
| V4055E1024/U | 120 Vac | 60 Hz | Opening – 26 sec; Closing – < 1 sec | Yes | 15 or 25 psi | 103 or 172 kPa | 120 Vac – 9.8 AFL, 58.8 ALR, 1/2 hp; 240 Vac – 4.9 AFL, 29.4 ALR, 1/2 hp | Nema 4 Enclosure | Damper Shaft |
| V4055E1040/U | 120 Vac | 60 Hz | Opening – 13 sec; Closing – < 1 sec | No | 15 or 25 psi | 103 or 172 kPa | | Nema 4 Enclosure | Damper Shaft |

V4055F, G Manual Reset Safety Shut-off Gas Valve Actuators



Provide manual reset, safety shut-off functions as required on FM, IHEA-IRI and NFPA 86A,B,C industrial furnaces, ovens and kilns. Use with V5055 or V5097 Gas Valves to control gas supply.

- Close in one second maximum.
- Continuously displays the valve position with a red indicator when closed.
- Mount directly to valve bonnet with three setscrews.
- Provide final safety shutoff service when used with V5055 or V5097 Gas Valves.

Frequency: 60 Hz

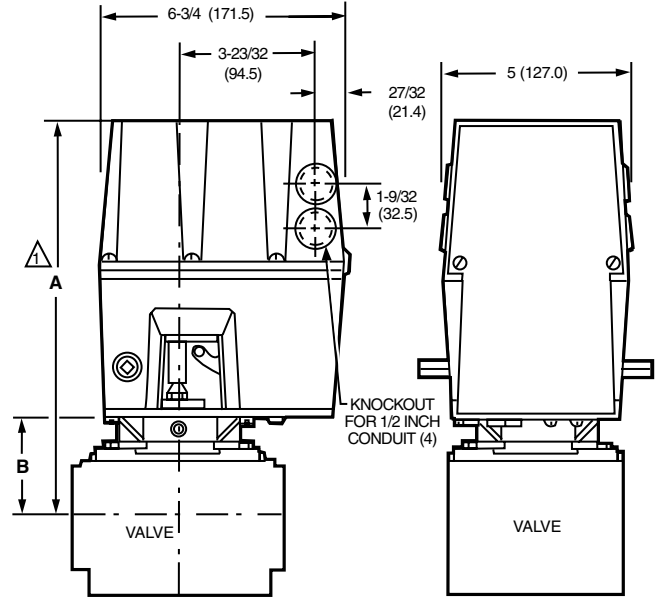
Temperature Range: -40°F to +150°F (-40°C to +66°C)

Approvals, CSA: When used with V5055 and V5097: Certified General listed File No. 158158, Class 3371 for USA and Canada

Approvals, Underwriters Laboratories Inc.: When used with V5055A-E (3/4 to 4 in.) or V5097A-E (3/4 to 3 in.): Listed, File No. MH1639 Guide No. YIOZ

Approvals, Swiss RE: When used with V5055 or V5097: Acceptable

Dimensions in inches (millimeters)



△ ALLOW 4 IN. (101.6 MM) CLEARANCE FOR ACTUATOR REMOVAL.

| VALVE SIZE INCH | V5055 | | | | V5097 | | | |
|--------------------|--------|-------|---------|-------|--------|-----|-------|----|
| | DIM A | | DIM B | | DIM A | | DIM B | |
| | IN. | MM | IN. | MM | IN. | MM | IN. | MM |
| 3/4 | 11-1/8 | 282.6 | 2-3/4 | 69.9 | 11-1/8 | 283 | 2-3/4 | 70 |
| 1 | 11-1/8 | 282.6 | 2-3/4 | 69.9 | 11-1/8 | 283 | 2-3/4 | 70 |
| 1-1/4 | 11-1/8 | 282.6 | 2-3/4 | 69.9 | 11-1/8 | 283 | 2-3/4 | 70 |
| 1-1/2 | 11-1/8 | 282.6 | 2-3/4 | 69.9 | 11-1/8 | 283 | 2-3/4 | 70 |
| 2 | 11-1/4 | 285.8 | 2-7/8 | 73.0 | 11-3/4 | 298 | 3-3/8 | 86 |
| 2-1/2 | 11-3/4 | 298.5 | 3-3/8 | 85.7 | 11-3/4 | 298 | 3-3/8 | 86 |
| 3 | 11-3/4 | 298.5 | 3-3/8 | 85.7 | 11-3/4 | 298 | 3-3/8 | 86 |
| 4 | 14-1/8 | 358.8 | 5-13/16 | 147.6 | — | — | — | — |

M10981A

| Material Number | Electrical Ratings | Internal Auxiliary Switch | Timing | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Contact Ratings | Description | Approvals, Factory Mutual | Used With |
|-----------------|--------------------|---------------------------|--|---------------------------------------|---------------------------------------|---|---|---|-----------------------------|
| V4055F1006/U | 120 Vac | No | Opening – 13 sec; Closing – < 1 sec | 5 psi | 34 kPa | Proof of Closure (Factory Mutual) Switch – 9.8 AFL, 58.8 ALR, 1/2 hp; 4.9 AFL, 29.4 ALR, 1/2 hp | Manual reset safety shutoff valve with proof of closure switch. | When used with the V5055D or V5097D: Approved, Report Nos. 20698, 20835, 21172, and 24061 | V5034; V5055; V5097; VE5000 |
| V4055G1004/U | 120 Vac | No | Opening – 13 sec; Closing – < 1 sec | 5 psi | 34 kPa | | Manual ON-OFF actuator normally used with V5055/V5907A, B valve bodies. Low pressure. | When used with the V5055A, B or V5097A, B: Approved, Report Nos. 20698, 20835, 21172, and 24061 | V5034; V5055; V5097; VE5000 |

Commercial/Industrial
Combustion Controls

Gas Valve Actuators

V4062 Off-Lo-Hi Fluid Power Gas Valve Actuators



Use with V5055 or V5097 Gas Valves to control gas supply for commercial and industrial burners. Valve opens to low fire position when power is applied; valve opens all the way on demand.

- Provide final safety shutoff service when used with V5055 or V5097 gas valve.
- One-second maximum closing time.
- Continuously displays the valve position with a red indicator when open and a yellow indicator when closed.
- Mount in any position directly to valve bonnet with three setscrews.
- Provide final safety shutoff service when used with V5055 or V5097 Gas Valves.

Electrical Ratings: 120 Vac

Frequency: 60 Hz

Maximum Safe Operating Pressure (psi): 5 psi

Maximum Safe Operating Pressure (kPa): 34 kPa

Temperature Range: -40°F to +150°F (-40°C to +66°C)

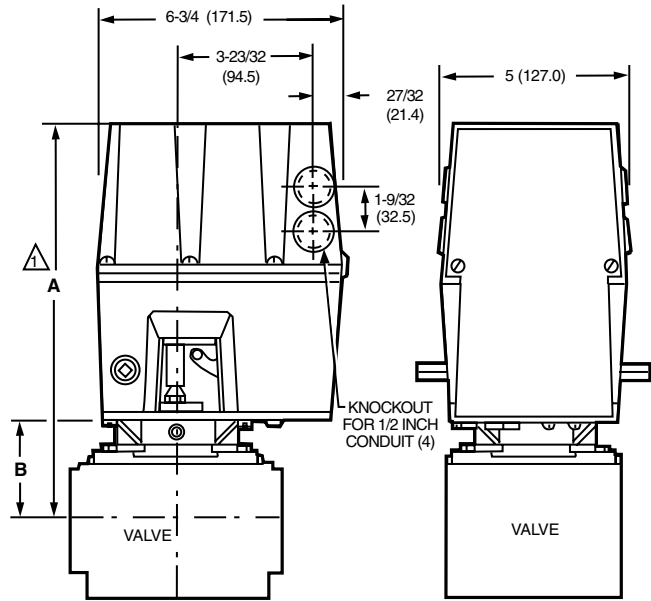
Used With: V5034; V5055; V5097; VE5000

Approvals, CSA: When used with V5055 and V5097: Certified General listed File No. 158158, Class 3371 for USA and Canada

Approvals, Underwriters Laboratories Inc.: When used with V5055A-E (3/4 to 4 in.) or V5097A-E (3/4 to 3 in.): Listed, File No. MH1639 Guide No. YIOZ

Approvals, Swiss RE: When used with V5055 or V5097: Acceptable

Dimensions in inches (millimeters)



△ ALLOW 4 IN. (101.6 MM) CLEARANCE FOR ACTUATOR REMOVAL.

| VALVE SIZE INCH | V5055 | | | | V5097 | | | |
|--------------------|--------|-------|---------|-------|--------|-----|-------|----|
| | DIM A | | DIM B | | DIM A | | DIM B | |
| | IN. | MM | IN. | MM | IN. | MM | IN. | MM |
| 3/4 | 11-1/8 | 282.6 | 2-3/4 | 69.9 | 11-1/8 | 283 | 2-3/4 | 70 |
| 1 | 11-1/8 | 282.6 | 2-3/4 | 69.9 | 11-1/8 | 283 | 2-3/4 | 70 |
| 1-1/4 | 11-1/8 | 282.6 | 2-3/4 | 69.9 | 11-1/8 | 283 | 2-3/4 | 70 |
| 1-1/2 | 11-1/8 | 282.6 | 2-3/4 | 69.9 | 11-1/8 | 283 | 2-3/4 | 70 |
| 2 | 11-1/4 | 285.8 | 2-7/8 | 73.0 | 11-3/4 | 298 | 3-3/8 | 86 |
| 2-1/2 | 11-3/4 | 298.5 | 3-3/8 | 85.7 | 11-3/4 | 298 | 3-3/8 | 86 |
| 3 | 11-3/4 | 298.5 | 3-3/8 | 85.7 | 11-3/4 | 298 | 3-3/8 | 86 |
| 4 | 14-1/8 | 358.8 | 5-13/16 | 147.6 | — | — | — | — |

M10981A

| Material Number | Internal Auxiliary Switch | Timing | Contact Ratings | Auxiliary Switch Range | Description | Comments | Includes |
|-----------------|------------------------------------|--|---|--|---|--------------------------------|---|
| V4062A1008/U | No | Opening – 26 sec; Closing – < 1 sec | | | Low pressure HI-LO-OFF actuator for use with V5055B and V5097B valve bodies | | Damper Shaft |
| V4062A1123/U | Yes | Opening – 26 sec; Closing – < 1 sec | | 120 Vac – 9.8 AFL, 58.8 ALR, 1/2 hp; 240 Vac – 4.9 AFL, 29.4 ALR, 1/2 hp | Low pressure HI-LO-OFF actuator for use with V5055B and V5097B valve bodies | | Damper Shaft with return spring installed |
| V4062A1131/U | No | Opening – 13 sec; Closing – < 1 sec | | | Low pressure HI-LO-OFF actuator for use with V5055B and V5097B valve bodies | | Damper Shaft |
| V4062A1156/U | No | Opening – 26 sec; Closing – < 1 sec | | | Low pressure HI-LO-OFF actuator for use with V5055B and V5097B valve bodies | For Series 60 Floating Control | |
| V4062A1198/U | Yes - adjusted to 90 degree stroke | Opening – 13 sec; Closing – < 1 sec | | 120 Vac – 9.8 AFL, 58.8 ALR, 1/2 hp; 240 Vac – 4.9 AFL, 29.4 ALR, 1/2 hp | Low pressure HI-LO-OFF actuator for use with V5055B and V5097B valve bodies | | Damper Shaft with return spring installed |
| V4062D1002/U | No | Opening – 26 sec; Closing – < 1 sec | Proof of Closure (Factory Mutual) Switch – 9.8 AFL, 58.8 ALR, 1/2 hp; 4.9 AFL, 29.4 ALR, 1/2 hp | | HI-LO-OFF actuator with Proof of Closure normally used on V5055C, E/V5907C, E valve bodies (Low Pressure) | | Damper Shaft |
| V4062D1010/U | No | Opening – 13 sec; Closing – < 1 sec | Proof of Closure (Factory Mutual) Switch – 9.8 AFL, 58.8 ALR, 1/2 hp; 4.9 AFL, 29.4 ALR, 1/2 hp | | HI-LO-OFF actuator with Proof of Closure normally used on V5055C, E/V5907C, E valve bodies (Low Pressure) | | Damper Shaft |

V9055 Modulating Fluid Power Gas Valve Actuators



Use with V5055 or V5097 Gas Valves to control gas supply for commercial and industrial burners. Valve opens to low fire position when power is applied; valve opens all the way on demand.

- Include integral shaft to drive combustion air damper in unison with valve.
- One-second maximum closing time.
- Continuously displays the valve position with a red indicator when open and a yellow indicator when closed.
- Mount in any position directly to valve bonnet with three setscrews.
- Provide final safety shutoff service when used with V5055 or V5097 Gas Valves.

Frequency: 60 Hz

Temperature Range: -40°F to +125°F (-40°C to +52°C)

Internal Auxiliary Switch: No

Includes: Damper Shaft

Approvals, CSA: When used with V5055 and V5097: Certified General listed File No. 158158, Class 3371 for USA and Canada

Approvals, Underwriters Laboratories Inc.: When used with V5055A, B, C, E (3/4 to 4 in.) or V5097A-E (3/4 to 3 in.) Listed MH1696

Approvals, Swiss RE: When used with V5055 or V5097: Acceptable

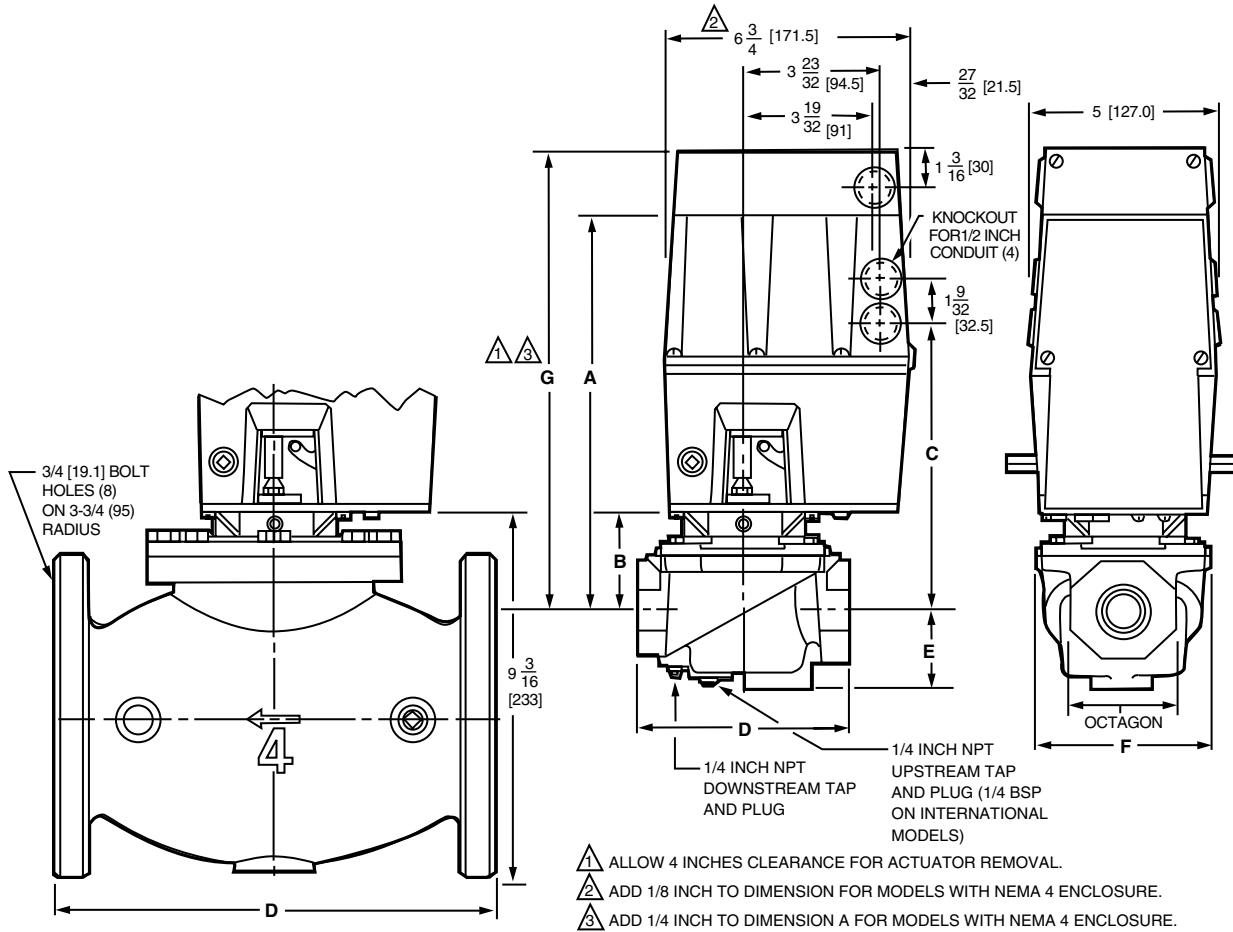
Accessories:

203422C/U – 4-20 ma Adapter for V9055

| Material Number | Electrical Ratings | Comments | Timing | Maximum Safe Operating Pressure (psi) | Maximum Safe Operating Pressure (kPa) | Contact Ratings | Description | Approvals, Factory Mutual | Used With |
|-----------------|--------------------|------------------|--|---------------------------------------|---------------------------------------|---|---|---|-----------------------------|
| V9055A1055/U | 120 Vac | | Opening – 26 sec; Closing – < 1 sec | 5 psi | 34 kPa | | Low pressure Modulating-OFF actuator for use with V5055B valve bodies | When used with the V5055B, C or V5097B, C: Approved, Report Nos. 20698, 20835, 21172, and 24061 | V5034; V5055; V5097; VE5000 |
| V9055A1063/U | 120 Vac | Nema 4 Enclosure | Opening – 26 sec; Closing – < 1 sec | 5 psi | 34 kPa | | Low pressure Modulating-OFF actuator for use with V5055B valve bodies | When used with the V5055B, C or V5097B, C: Approved, Report Nos. 20698, 20835, 21172, and 24061 | V5034; V5055; V5097; VE5000 |
| V9055D1000/U | 120 Vac | | Opening – 26 sec; Closing – < 1 sec | 5 psi | 34 kPa | Proof of Closure (Factory Mutual) Switch – 9.8 AFL, 58.8 ALR, 1/2 hp; 4.9 AFL, 29.4 ALR, 1/2 hp | Low pressure Modulating-OFF actuator with Proof of Closure normally used on V5055C, E/V5907C, E valve bodies. | | V5034; V5055; V5097; VE5000 |

Gas Valve Actuators

Dimensions in inches (millimeters)



| VALVE SIZE INCH | DIM A | | DIM B | | DIM C | | DIM D | | DIM E | | DIM F | | DIM G | | OCTAGON | |
|--------------------|--------|-------|---------|-------|---------|-------|--------|-------|-------|-------|---------|-------|---------|-------|---------|-------|
| | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM |
| 3/4 | 11-1/8 | 282.6 | 2-3/4 | 69.9 | 8-3/16 | 208.0 | 5-3/4 | 146.1 | 2-1/4 | 57.2 | 4-13/16 | 122.2 | 13-1/8 | 333.4 | 2-13/16 | 71.4 |
| 1 | 11-1/8 | 282.6 | 2-3/4 | 69.9 | 8-3/16 | 208.0 | 5-3/4 | 146.1 | 2-1/4 | 57.2 | 4-13/16 | 122.2 | 13-1/8 | 333.4 | 2-13/16 | 71.4 |
| 1-1/4 | 11-1/8 | 282.6 | 2-3/4 | 69.9 | 8-3/16 | 208.0 | 5-3/4 | 146.1 | 2-1/4 | 57.2 | 4-13/16 | 122.2 | 13-1/8 | 333.4 | 2-13/16 | 71.4 |
| 1-1/2 | 11-1/8 | 282.6 | 2-3/4 | 69.9 | 8-3/16 | 208.0 | 5-3/4 | 146.1 | 2-1/4 | 57.2 | 4-13/16 | 122.2 | 13-1/8 | 333.4 | 2-13/16 | 71.4 |
| 2 | 11-1/4 | 285.8 | 2-7/8 | 73.0 | 8-5/16 | 211.1 | 8-3/8 | 212.7 | 2-3/4 | 69.9 | 7-19/32 | 192.9 | 13-1/4 | 336.5 | 3-1/2 | 88.9 |
| 2-1/2 | 11-3/4 | 298.5 | 3-3/8 | 85.7 | 8-13/16 | 223.8 | 9-1/4 | 235.0 | 2-3/4 | 69.9 | 7-19/32 | 192.9 | 13-3/4 | 349.3 | 4-1/2 | 114.3 |
| 3 | 11-3/4 | 298.5 | 3-3/8 | 85.7 | 8-13/16 | 223.8 | 9-1/4 | 235.0 | 2-3/4 | 69.9 | 7-19/32 | 192.9 | 13-3/4 | 349.3 | 4-1/2 | 114.3 |
| 4 | 14-1/8 | 358.8 | 5-13/16 | 147.6 | 11-7/32 | 285.0 | 12-1/2 | 317.5 | 4-5/8 | 117.5 | — | — | 16-3/16 | 411.0 | — | — |

M7321

Fluid Actuator Accessories and Parts

| Material Number | Description | Used With |
|-----------------|--|---------------------|
| 133568/U | Auxiliary Switch (Adjustable Valve Position) for V4055, V4062 or V9055 | V4055; V4062; V9055 |
| 133569/U | Replacement Pre-ignition Interlock (Proof of Closure) Switch for V4055D, E; V4062D or V9055D | V4055; V4062; V9055 |
| 203422C/U | 4-20 ma Adapter for V9055 | V9055 |
| 7616BR/U | Crank Arm assembly with clip for Damper Arm of V4055, V4062 or V9055 | V4055; V4062; V9055 |

V5055 Industrial Gas Valves



Safety shutoff valves used with V4055, V4062 and V9055 fluid power actuators to control gas flow to commercial and industrial burners.

- Use with natural or LP gases.
- Mount directly in gas supply line.
- Include 1/4 in. NPT upstream and downstream taps and plug.
- 4 in. models have only flanged connections.
- V5055 normally closed valves are rated for final shutoff service safety shutoff.

- V5055A, C, D, E Valves are for On-Off service.
- V5055B Valve has a characterized guide and in combination with the V4055, V4062, and V9055 Fluid Power Actuators, provides slow-opening, hi-lo-off, and modulating functions respectively.
- V5055C, E, F Valves have a double seal and are used with V4055D, E Actuators to provide proof-of-closure switch and valve seal over-travel interlock.
- V5055D, E, F Valves are for high pressure applications.

Operating Temperature Range: -40°F to +150°F; When used with V9055 – -40°F to +125°F (-40°C to +66°C; When used with V9055 – -40°C to +52°C)

Approvals, Underwriters Laboratories Inc.: When used with V4055A, B, D, E, V4062, V9055: Listed, File No. MH1639 Guide No. YIOZ

Approvals, CSA: When used with V4055, V4062, and V5097: Certified General listed File No. 158158, Class 3371 for USA and Canada

Approvals, Swiss RE: When used with the V4055A, G and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061

Used With: V9055; V4055; V4062

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (cfh) | Capacity (m³/hr) | Connection Type | Maximum Operating Differential Pressure | Approvals, Factory Mutual | Comments | Includes |
|-----------------|------------------|----------------|----------------|------------------|-----------------|---|---|----------|--|
| V5055A1004/U | 1 in. | DN25 | 960 cfh | 27.2 m³/hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055A, G and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055A1012/U | 1 1/4 in. | DN32 | 1406 cfh | 39.8 m³/hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055A, G and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT downstream tap and plug, 1/4 in. -18 NPT upstream tap and plug |
| V5055A1020/U | 1 1/2 in. | DN40 | 1717 cfh | 48.6 m³/hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055A, G and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT downstream tap and plug, 1/4 in. -18 NPT upstream tap and plug |
| V5055A1038/U | 2 in. | DN50 | 3620 cfh | 102.5 m³/hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055A, G and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055A1046/U | 2 1/2 in. | DN65 | 4250 cfh | 120 m³/hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055A, G and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055A1053/U | 3 in. | DN80 | 5230 cfh | 148 m³/hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055A, G and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055A1228/U | 4 in. | DN100 | 10200 cfh | 288.8 m³/hr | Flanged | With V4055A, D or V4062 – 3 psi (20.7 kPa); With V4055B or E – 5 psi (340 mbar) | When used with the V4055A, G and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055A1343/U | 3/4 in. | DN20 | 665 cfh | | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055A, G and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |

Industrial Gas Valves

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (cfh) | Capacity (m ³ /hr) | Connection Type | Maximum Operating Differential Pressure | Approvals, Factory Mutual | Comments | Includes |
|-----------------|------------------|----------------|----------------|-------------------------------|-----------------|---|---|----------|--|
| V5055B1002/U | 1 in. | DN25 | 960 cfh | 27.2 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055A, G and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055B1010/U | 1 1/4 in. | DN32 | 1406 cfh | 39.8 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055A, G and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT downstream tap and plug, 1/4 in. -18 NPT upstream tap and plug |
| V5055B1028/U | 1 1/2 in. | DN40 | 1717 cfh | 48.6 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055A, G and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT downstream tap and plug, 1/4 in. -18 NPT upstream tap and plug |
| V5055B1069/U | 2 in. | DN50 | 3620 cfh | 102.5 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055A, G and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055B1077/U | 2 1/2 in. | DN65 | 4250 cfh | 120 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055A, G and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055B1085/U | 3 in. | DN80 | 5230 cfh | 148 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055A, G and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055B1150/U | 4 in. | DN100 | 9180 cfh | 259.9 m ³ /hr | Flanged | With V4055A, D or V4062 – 3 psi (20.7 kPa); With V4055B or E – 5 psi (340 mbar) | When used with the V4055A, G and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055C1000/U | 2 in. | DN50 | 3620 cfh | 102.5 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055D, F and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055C1018/U | 2 1/2 in. | DN65 | 4250 cfh | 120 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055D, F and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055C1026/U | 3 in. | DN80 | 5230 cfh | 148 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055D, F and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT downstream tap and plug, 1/4 in. -18 NPT upstream tap and plug |
| V5055C1034/U | 1 in. | DN25 | 960 cfh | 27.2 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055D, F and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055C1042/U | 1 1/4 in. | DN32 | 1406 cfh | 39.8 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055D, F and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT downstream tap and plug, 1/4 in. -18 NPT upstream tap and plug |

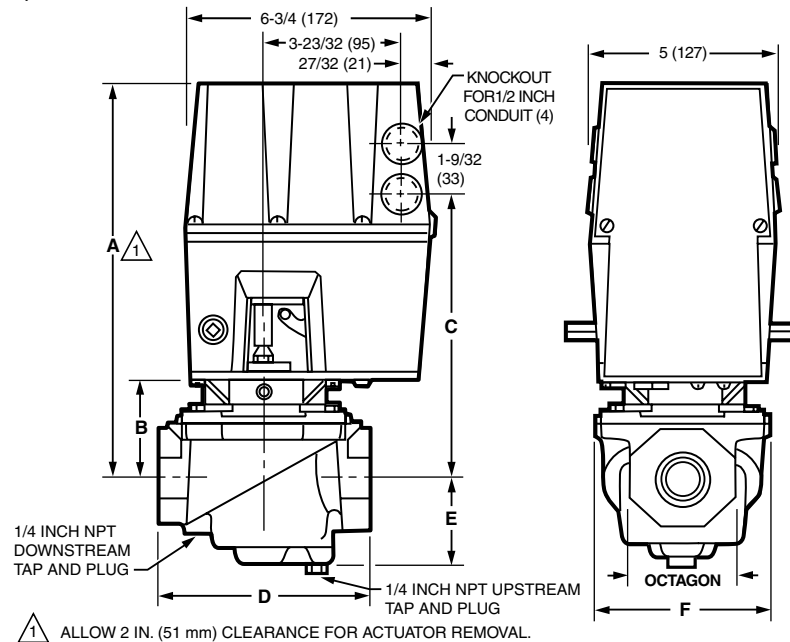
Industrial Gas Valves

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (cfh) | Capacity (m ³ /hr) | Connection Type | Maximum Operating Differential Pressure | Approvals, Factory Mutual | Comments | Includes |
|-----------------|------------------|----------------|----------------|-------------------------------|-----------------|---|---|----------|--|
| V5055C1059/U | 1 1/2 in. | DN40 | 1717 cfh | 48.6 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055D, F and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055C1109/U | 4 in. | DN100 | 9180 cfh | 259.9 m ³ /hr | Flanged | With V4055A, D or V4062 – 3 psi (20.7 kPa); With V4055B or E – 5 psi (340 mbar) | When used with the V4055D, F and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055C1182/U | 3/4 in. | DN20 | 665 cfh | | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055D, F and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 | | 1/4 in. -18 NPT downstream tap and plug, 1/4 in. -18 NPT upstream tap and plug |
| V5055D1008/U | 1 in. | DN25 | 960 cfh | 27.2 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 25 psi (1.6 bar) | When used with the V4055B: Approved, Report Nos. 20698, 20835, 21172, and 24068 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055D1016/U | 1 1/4 in. | DN32 | 1406 cfh | 39.8 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 25 psi (1.6 bar) | When used with the V4055B: Approved, Report Nos. 20698, 20835, 21172, and 24068 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055D1024/U | 1 1/2 in. | DN40 | 1717 cfh | 48.6 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 25 psi (1.6 bar) | When used with the V4055B: Approved, Report Nos. 20698, 20835, 21172, and 24068 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055D1032/U | 2 in. | DN50 | 3620 cfh | 102.5 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055B: Approved, Report Nos. 20698, 20835, 21172, and 24068 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055D1040/U | 2 1/2 in. | DN65 | 4250 cfh | 120 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055B: Approved, Report Nos. 20698, 20835, 21172, and 24068 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055D1057/U | 3 in. | DN80 | 5230 cfh | | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055B: Approved, Report Nos. 20698, 20835, 21172, and 24068 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055D1065/U | 3/4 in. | DN20 | 665 cfh | | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 25 psi (1.6 bar) | When used with the V4055B: Approved, Report Nos. 20698, 20835, 21172, and 24068 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055E1005/U | 2 in. | DN50 | 3620 cfh | 102.5 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055E: Approved, Report Nos. 20698, 20835, 21172, and 24068 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055E1013/U | 2 1/2 in. | DN65 | 4250 cfh | 120 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055E: Approved, Report Nos. 20698, 20835, 21172, and 24068 | | 1/4 in. -18 NPT downstream tap and plug, 1/4 in. -18 NPT upstream tap and plug |
| V5055E1021/U | 3 in. | DN80 | 5230 cfh | 148 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | When used with the V4055E: Approved, Report Nos. 20698, 20835, 21172, and 24068 | | 1/4 in. -18 NPT downstream tap and plug, 1/4 in. -18 NPT upstream tap and plug |
| V5055E1039/U | 1 in. | DN25 | 960 cfh | 27.2 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 25 psi (1.6 bar) | When used with the V4055E: Approved, Report Nos. 20698, 20835, 21172, and 24068 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |

Industrial Gas Valves

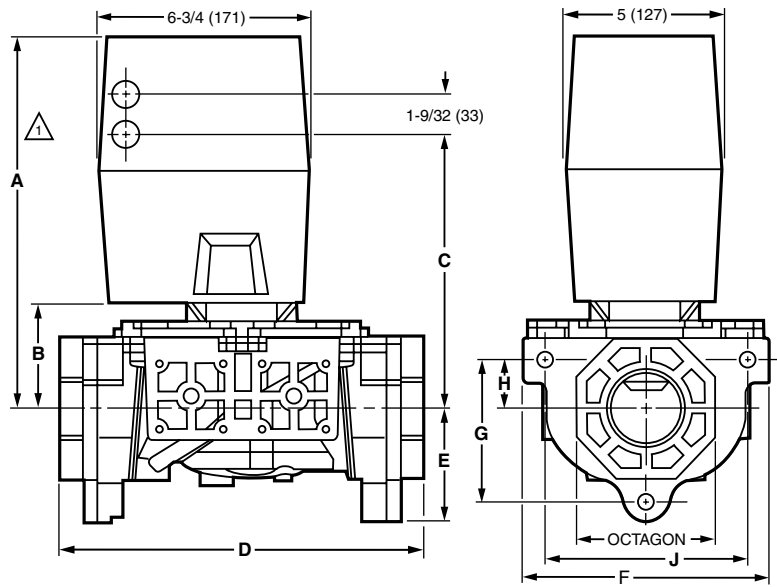
| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (cfh) | Capacity (m ³ /hr) | Connection Type | Maximum Operating Differential Pressure | Approvals, Factory Mutual | Comments | Includes |
|-----------------|------------------|----------------|----------------|-------------------------------|-----------------|---|---|---|--|
| V5055E1047/U | 1 1/4 in. | DN32 | 1406 cfh | 39.8 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 25 psi (1.6 bar) | When used with the V4055E: Approved, Report Nos. 20698, 20835, 21172, and 24068 | | 1/4 in. -18 NPT downstream tap and plug, 1/4 in. -18 NPT upstream tap and plug |
| V5055E1054/U | 1 1/2 in. | DN40 | 1717 cfh | 48.6 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 25 psi (1.6 bar) | When used with the V4055E: Approved, Report Nos. 20698, 20835, 21172, and 24068 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055E1062/U | 3/4 in. | DN20 | 665 cfh | | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 25 psi (1.6 bar) | When used with the V4055E: Approved, Report Nos. 20698, 20835, 21172, and 24068 | | 1/4 in. -18 NPT upstream tap and plug, 1/4 in. -18 NPT downstream tap and plug |
| V5055F1003/U | 1 in. | DN25 | 960 cfh | 27.2 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 25 psi (1.6 bar) | | Meets Intent of DIN Seat Leakage Requirements | 1/4 in. -18 NPT downstream tap and plug, 1/4 in. -18 NPT upstream tap and plug |
| V5055F1011/U | 1 1/2 in. | DN40 | 1717 cfh | 48.6 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 25 psi (1.6 bar) | | Meets Intent of DIN Seat Leakage Requirements | 1/4 in. -18 NPT downstream tap and plug, 1/4 in. -18 NPT upstream tap and plug |
| V5055F1037/U | 1 1/4 in. | DN32 | 1406 cfh | 39.8 m ³ /hr | NPT | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 25 psi (1.6 bar) | | Meets Intent of DIN Seat Leakage Requirements | 1/4 in. -18 NPT downstream tap and plug, 1/4 in. -18 NPT upstream tap and plug |

Dimensions in inches (millimeters)



| VALVE SIZE INCH | DIM A | | DIM B | | DIM C | | DIM D | | DIM E | | DIM F | | OCTAGON | |
|-----------------|--------|-----|-------|----|---------|-----|-------|-----|-------|----|---------|-----|---------|-----|
| | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM |
| 3/4 | 11-1/8 | 283 | 2-3/4 | 70 | 8-3/16 | 208 | 5-3/4 | 146 | 2-1/4 | 57 | 4-7/8 | 124 | 2-13/16 | 71 |
| 1 | 11-1/8 | 283 | 2-3/4 | 70 | 8-3/16 | 208 | 5-3/4 | 146 | 2-1/4 | 57 | 4-7/8 | 124 | 2-13/16 | 71 |
| 1-1/4 | 11-1/8 | 283 | 2-3/4 | 70 | 8-3/16 | 208 | 5-3/4 | 146 | 2-1/4 | 57 | 4-7/8 | 124 | 2-13/16 | 71 |
| 1-1/2 | 11-1/8 | 283 | 2-3/4 | 70 | 8-3/16 | 208 | 5-3/4 | 146 | 2-1/4 | 57 | 4-7/8 | 124 | 2-13/16 | 71 |
| 2 | 11-1/4 | 286 | 2-7/8 | 73 | 8-5/16 | 211 | 8-3/8 | 213 | 2-3/4 | 70 | 7-19/32 | 193 | 3-1/2 | 89 |
| 2-1/2 | 11-3/4 | 299 | 3-3/8 | 86 | 8-13/16 | 224 | 9-1/4 | 235 | 2-3/4 | 70 | 7-19/32 | 193 | 4-1/2 | 114 |
| 3 | 11-3/4 | 299 | 3-3/8 | 86 | 8-13/16 | 224 | 9-1/4 | 235 | 2-3/4 | 70 | 7-19/32 | 193 | 4-1/2 | 114 |

M27268A



△1 ALLOW 2 IN. (51 MM) CLEARANCE FOR ACTUATOR REMOVAL.

| VALVE SIZE (IN.) | DIM. A | | DIM. B | | DIM. C | | DIM. D | | DIM. E | | DIM. F | | DIM. G | | DIM. H | | DIM. J | | OCTAGON | |
|------------------|--------|-----|--------|----|--------|-----|--------|-----|--------|----|--------|-----|--------|-----|--------|----|---------|-----|---------|-----|
| | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM |
| 3/4 | 11-1/8 | 283 | 2-3/4 | 70 | 8-3/16 | 208 | 8-1/4 | 210 | 2-7/16 | 62 | 5 | 127 | 2-5/16 | 58 | 7/8 | 23 | 3-15/16 | 100 | 2-13/16 | 71 |
| 1 | 11-1/8 | 283 | 2-3/4 | 70 | 8-3/16 | 208 | 8-1/4 | 210 | 2-7/16 | 62 | 5 | 127 | 2-5/16 | 58 | 7/8 | 23 | 3-15/16 | 100 | 2-13/16 | 71 |
| 1-1/4 | 11-1/8 | 283 | 2-3/4 | 70 | 8-3/16 | 208 | 8-1/4 | 210 | 2-7/16 | 62 | 5 | 127 | 2-5/16 | 58 | 7/8 | 23 | 3-15/16 | 100 | 2-13/16 | 71 |
| 1-1/2 | 11-1/8 | 283 | 2-3/4 | 70 | 8-3/16 | 208 | 8-1/4 | 210 | 2-7/16 | 62 | 5 | 127 | 2-5/16 | 58 | 7/8 | 23 | 3-15/16 | 100 | 2-13/16 | 71 |
| 2 | 11-3/4 | 298 | 3-3/8 | 86 | 8-5/16 | 211 | 11-3/4 | 298 | 3-5/8 | 91 | 8 | 203 | 4-7/16 | 113 | 1-1/2 | 38 | 6-1/2 | 165 | 4-1/2 | 114 |
| 2-1/2 | 11-3/4 | 298 | 3-3/8 | 86 | 8-5/16 | 211 | 11-3/4 | 298 | 3-5/8 | 91 | 8 | 203 | 4-7/16 | 113 | 1-1/2 | 38 | 6-1/2 | 165 | 4-1/2 | 114 |
| 3 | 11-3/4 | 298 | 3-3/8 | 86 | 8-5/16 | 211 | 11-3/4 | 298 | 3-5/8 | 91 | 8 | 203 | 4-7/16 | 113 | 1-1/2 | 38 | 6-1/2 | 165 | 4-1/2 | 114 |

M27581

Industrial Gas Valves

V5097 Integrated Valve Train



Safety shutoff valves used with V4055, V4062 and V9055 fluid power actuators to control gas flow to commercial and industrial burners.

- Use with natural or LP gases.
- Mount directly in gas supply line.
- Two Valve body types. Small body type for 3/4 in., 1 in., 1-1/4 in., 1-1/2 in., 2 in. pipes. Large body types for 2 in., 2-1/2 in. and 3 in. pipes.
- Seven pipe adapter sizes from 3/4 in. to 3 in. have NPT or BSP threaded connections.
- Provides three 1/4 in. upstream and two 1/4 in. downstream tap and plug.
- CE version provides an additional downstream tap and plug.
- Yellow SHUT indicator attached to the valve stem provides an indication of the valve closed position.

- V5097A, C, D, E Valves are for on-off service.
- V5097B Valve has a characterized guide and in combination with the V4055, V4062 and V9055 Fluid Power Actuators, provides slow-opening, HI-LO-OFF, and modulating functions, respectively.
- V5097C, E Valves have a double seal and are used with V4055D, E Actuators to provide proof-of-closure switch and valve seal over-travel interlock.
- Actuators to provide proof-of-closure switch and valve seal over-travel interlock.
- V5097D, E Valves are for high pressure applications.
- Two valve body types (small and large) applicable to server pipe size.

Operating Temperature Range: -40°F to +150°F; When used with V9055 – -40°F to +125°F (-40°C to +66°C; When used with V9055 – -40°C to +52°C)

Approvals, Underwriters Laboratories Inc.: When used with V4055A, B, D, E, V4062, V9055: Listed, File No. MH1639 Guide No. YIOZ

Approvals, CSA: When used with V4055, V4062, and V5097: Certified General listed File No. 158158, Class 3371 for USA and Canada

Approvals, Swiss RE: When used with the V4055A, G: Approved, Report Nos. 20698, 20835, 21172, and 24061

Approvals, CE: CE #E3070 (Gastec)

Comments: Select Proper Pipe Adapter

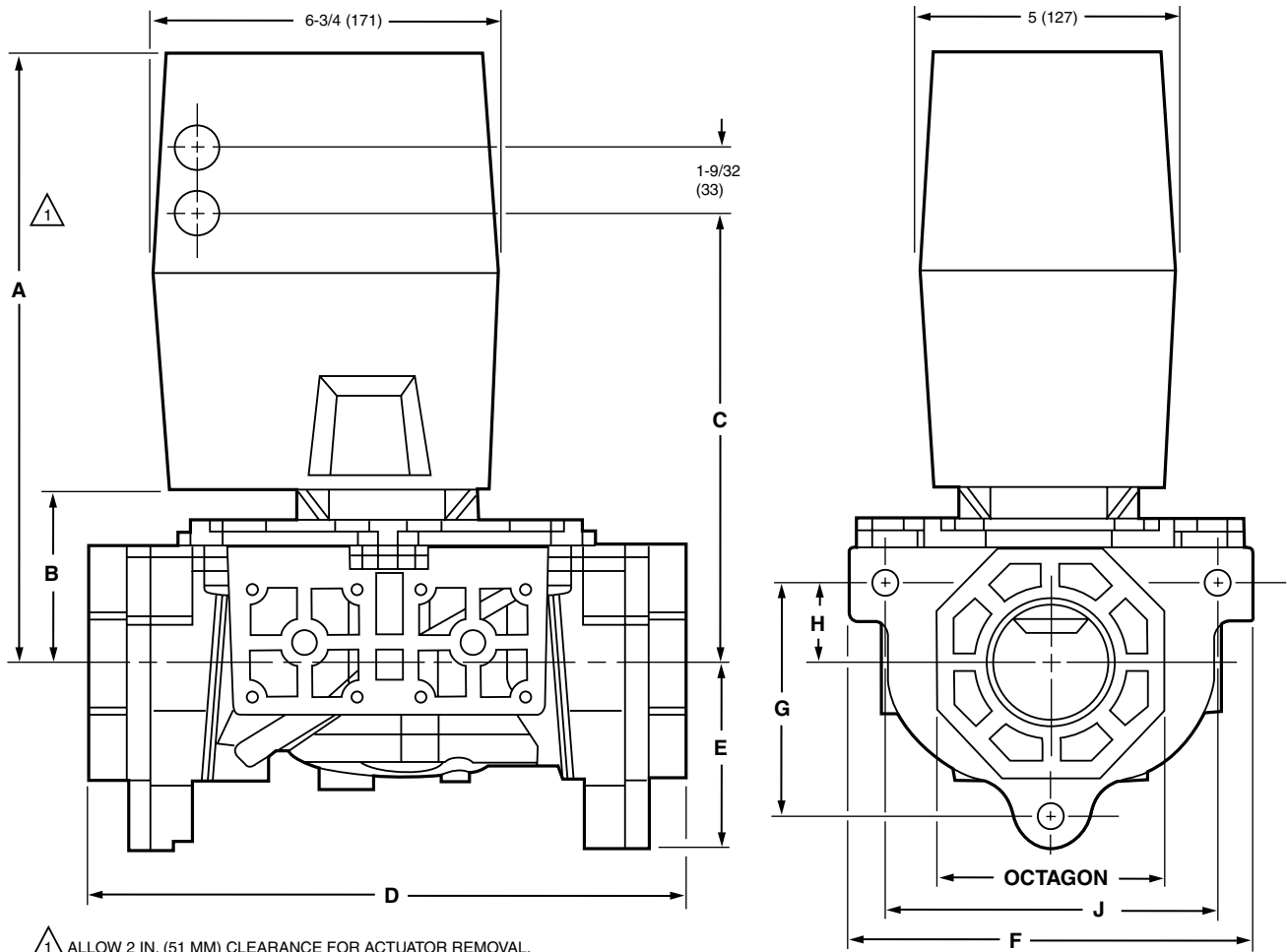
Includes: Three 1/4 in. -18 NPT upstream and two 1/4 in. -18 NPT downstream taps

Used With: V9055; V4055; V4062

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (cfh) | Capacity (m ³ /hr) | Maximum Operating Differential Pressure | Integrated Valve Train Body Size | Approvals, Factory Mutual |
|-----------------|--|------------------------------|----------------------|-----------------------------------|---|----------------------------------|---|
| V5097A1004/U | 3/4 in. or 1 in. or 1 1/4 in. or 2 in. | DN20 or DN25 or DN32 or DN50 | 665 cfh to 3620 cfh | 18.8 to 102.5 m ³ /hr | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | Small body | When used with the V4055A, G: Approved, Report Nos. 20698, 20835, 21172, and 24061 |
| V5097A1012/U | 2 in. or 2 1/2 in. or 3 in. | DN50 or DN65 or DN80 | 3620 cfh to 5230 cfh | 102.5 to 148.0 m ³ /hr | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | Large body | When used with the V4055A, G: Approved, Report Nos. 20698, 20835, 21172, and 24061 |
| V5097B1002/U | 3/4 in. or 1 in. or 1 1/4 in. or 2 in. | DN20 or DN25 or DN32 or DN50 | 665 cfh to 3620 cfh | | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | Small body | When used with the V4055A, G and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 |
| V5097B1010/U | 2 in. or 2 1/2 in. or 3 in. | DN50 or DN65 or DN80 | 3620 cfh to 5230 cfh | 102.5 to 148.0 m ³ /hr | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | Large body | When used with the V4055A, G and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24061 |
| V5097C1000/U | 3/4 in. or 1 in. or 1 1/4 in. or 2 in. | DN20 or DN25 or DN32 or DN50 | 665 cfh to 3620 cfh | 18.8 to 102.5 m ³ /hr | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | Small body | When used with the V4055D, F and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24066 |
| V5097C1018/U | 2 in. or 2 1/2 in. or 3 in. | DN50 or DN65 or DN80 | 3620 cfh to 5230 cfh | 102.5 to 148.0 m ³ /hr | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | Large body | When used with the V4055D, F and V9055A: Approved, Report Nos. 20698, 20835, 21172, and 24066 |
| V5097D1008/U | 3/4 in. or 1 in. or 1 1/4 in. or 2 in. | DN20 or DN25 or DN32 or DN50 | 665 cfh to 3620 cfh | 18.8 to 102.5 m ³ /hr | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 25 psi (1.6 bar) | Small body | When used with the V4055B: Approved, Report Nos. 20698, 20835, 21172, and 24068 |
| V5097D1016/U | 2 in. or 2 1/2 in. or 3 in. | DN50 or DN65 or DN80 | 3620 cfh to 5230 cfh | 102.5 to 148.0 m ³ /hr | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | Large body | When used with the V4055B: Approved, Report Nos. 20698, 20835, 21172, and 24068 |
| V5097E1005/U | 3/4 in. or 1 in. or 1 1/4 in. or 2 in. | DN20 or DN25 or DN32 or DN50 | 665 cfh to 3620 cfh | 18.8 to 102.5 m ³ /hr | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 25 psi (1.6 bar) | Small body | When used with the V4055E: Approved, Report Nos. 20698, 20835, 21172, and 24068 |
| V5097E1013/U | 2 in. or 2 1/2 in. or 3 in. | DN50 or DN65 or DN80 | 3620 cfh to 5230 cfh | 102.5 to 148.0 m ³ /hr | With V4055A, D or V4062 – 5 psi (340 mbar); With V4055B or E – 15 psi (1 bar) | Large body | When used with the V4055E: Approved, Report Nos. 20698, 20835, 21172, and 24068 |

Industrial Gas Valves

Dimensions in inches (millimeters)



| VALVE SIZE (IN.) | DIM. A | | DIM. B | | DIM. C | | DIM. D | | DIM. E | | DIM. F | | DIM. G | | DIM. H | | DIM. J | | OCTAGON | |
|------------------|--------|-----|--------|----|--------|-----|--------|-----|--------|----|--------|-----|--------|-----|--------|----|---------|-----|---------|-----|
| | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM | IN. | MM |
| 3/4 | 11-1/8 | 283 | 2-3/4 | 70 | 8-3/16 | 208 | 8-1/4 | 210 | 2-7/16 | 62 | 5 | 127 | 2-5/16 | 58 | 7/8 | 23 | 3-15/16 | 100 | 2-13/16 | 71 |
| 1 | 11-1/8 | 283 | 2-3/4 | 70 | 8-3/16 | 208 | 8-1/4 | 210 | 2-7/16 | 62 | 5 | 127 | 2-5/16 | 58 | 7/8 | 23 | 3-15/16 | 100 | 2-13/16 | 71 |
| 1-1/4 | 11-1/8 | 283 | 2-3/4 | 70 | 8-3/16 | 208 | 8-1/4 | 210 | 2-7/16 | 62 | 5 | 127 | 2-5/16 | 58 | 7/8 | 23 | 3-15/16 | 100 | 2-13/16 | 71 |
| 1-1/2 | 11-1/8 | 283 | 2-3/4 | 70 | 8-3/16 | 208 | 8-1/4 | 210 | 2-7/16 | 62 | 5 | 127 | 2-5/16 | 58 | 7/8 | 23 | 3-15/16 | 100 | 2-13/16 | 71 |
| 2 | 11-3/4 | 298 | 3-3/8 | 86 | 8-5/16 | 211 | 11-3/4 | 298 | 3-5/8 | 91 | 8 | 203 | 4-7/16 | 113 | 1-1/2 | 38 | 6-1/2 | 165 | 4-1/2 | 114 |
| 2-1/2 | 11-3/4 | 298 | 3-3/8 | 86 | 8-5/16 | 211 | 11-3/4 | 298 | 3-5/8 | 91 | 8 | 203 | 4-7/16 | 113 | 1-1/2 | 38 | 6-1/2 | 165 | 4-1/2 | 114 |
| 3 | 11-3/4 | 298 | 3-3/8 | 86 | 8-5/16 | 211 | 11-3/4 | 298 | 3-5/8 | 91 | 8 | 203 | 4-7/16 | 113 | 1-1/2 | 38 | 6-1/2 | 165 | 4-1/2 | 114 |

M11682B

Commercial/Industrial
Combustion Controls

Industrial Gas Valves

Integrated Valve Train Pipe Adapters

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Connection Type | Integrated Valve Train Body Size | Description | Used With |
|-----------------|------------------|----------------|-----------------|----------------------------------|--|---------------------|
| 32000109-001/U | 3/4 in. | DN20 | NPT | Small body | 3/4 in. NPT Pipe Adapter Small Body Integrated Valve Train. Required for Valve Train Assembly. | V5097; V4297; V5197 |
| 32000109-002/U | 1 in. | DN25 | NPT | Small body | 1 in. NPT Pipe Adapter Small Body Integrated Valve Train. Required for Valve Train Assembly. | V5097; V4297; V5197 |
| 32000109-003/U | 1 1/4 in. | DN32 | NPT | Small body | 1 1/4 in. NPT Pipe Adapter Small Body Integrated Valve Train. Required for Valve Train Assembly. | V5097; V4297; V5197 |
| 32000109-004/U | 1 1/2 in. | DN40 | NPT | Small body | 1 1/2 in. NPT Pipe Adapter Small Body Integrated Valve Train. Required for Valve Train Assembly. | V5097; V4297; V5197 |
| 32000109-005/U | 2 in. | DN50 | NPT | Small body | 2 in. NPT Pipe Adapter Small Body Integrated Valve Train. Required for Valve Train Assembly. | V5097; V4297; V5197 |
| 32000109-006/U | 3/4 in. | DN20 | BSP | Small body | 3/4 in. BSP Pipe Adapter Small Body Integrated Valve Train. Required for Valve Train Assembly. | V5097; V4297; V5197 |
| 32000109-007/U | 1 in. | DN25 | BSP | Small body | 1 in. BSP Pipe Adapter Small Body Integrated Valve Train. Required for Valve Train Assembly. | V5097; V4297; V5197 |
| 32001605-001/U | 2 in. | DN50 | NPT | Large body | 2 in. NPT Pipe Adapter Large Body Integrated Valve Train. Required for Valve Train Assembly. | V5097; V4297; V5197 |
| 32001605-002/U | 2 1/2 in. | DN65 | NPT | Large body | 2 1/2 in. NPT Pipe Adapter Large Body Integrated Valve Train. Required for Valve Train Assembly. | V5097; V4297; V5197 |
| 32001605-003/U | 3 in. | DN80 | NPT | Large body | 3 in. NPT Pipe Adapter Large Body Integrated Valve Train. Required for Valve Train Assembly. | V5097; V4297; V5197 |
| 32001605-004/U | 2 in. | DN50 | BSP | Large body | 2 in. BSP Pipe Adapter Large Body Integrated Valve Train. Required for Valve Train Assembly. | V5097; V4297; V5197 |
| 32001605-005/U | 2 1/2 in. | DN65 | BSP | Large body | 2 1/2 in. BSP Pipe Adapter Large Body Integrated Valve Train. Required for Valve Train Assembly. | V5097; V4297; V5197 |
| 32001605-006/U | 3 in. | DN80 | BSP | Large body | 3 in. BSP Pipe Adapter Large Body Integrated Valve Train. Required for Valve Train Assembly. | V5097; V4297; V5197 |

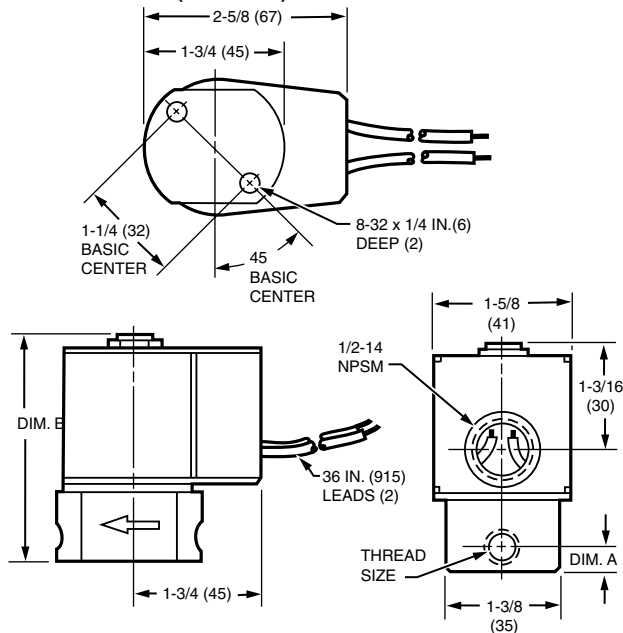
V5055/5097 Replacement Parts or Accessories

| Material Number | Description | Used With |
|-----------------|--|----------------------|
| 133392A/U | O-Ring Assembly for 2 in., 2 1/2 in., and 3 in. V5055 valves | V5055/V5097 valves |
| 133393A/U | O-Ring Assembly for 1 in., 1 1/4 in., and 1 1/2 in. V5055 valves | V5055/V5097 valves |
| 133398AA/U | Replacement Bonnet Assembly with 133393A Seal Assembly for 3/4, 1, 1-1/4, 1-1/2 in. V5055A valves | V5055/V5097 valves |
| 133398BA/U | Replacement Bonnet Assembly with 133393A Seal Assembly for 3/4, 1, 1-1/4, 1-1/2 in. V5055B valves | V5055/V5097 valves |
| 133398CA/U | Replacement Bonnet Assembly, with 137253A replacement Seal Assembly for small body (3/4, 1, 1 1/2 in.) V5055/V5097C. | V5055/V5097 valves |
| 133417AA/U | Replacement Bonnet Assembly with 133392A Seal Assembly for 2, 2 1/2, and 3 in. V5055A valves | V5055/V5097 valves |
| 133417BA/U | Replacement Bonnet Assembly with 133392A Seal Assembly for 2, 2 1/2, and 3 in. V5055B valves | V5055/V5097 valves |
| 133417CA/U | Bonnet Assembly for 2, 2 1/2, or 3 in. V5055C or V5097C valves | V5055C/V5097C valves |
| 137253A/U | Replacement seal assembly. For 4 inch V5055. | V5055 |
| 4074EYE/U | Bag assembly for V5097 (large body) includes 6 ea bolts, nuts and washers. | Large Body V5097 |
| 4074EYF/U | Bag assembly for V5097 (small body) includes 6 ea bolts, nuts and washers. | Small Body V5097 |
| 4074EYK/U | Bag assembly for V5097 (small body) includes (2) O-rings, (1) grease capsule. | Small Body V5097 |
| 4074EYL/U | Bag assembly for V5097 (large body) includes (2) O-rings, (1) grease capsule. | Large Body V5097 |

V4046C; V8046C Pilot Gas Valves



Dimensions in inches (millimeters)



| MODEL | BODY SIZE | THREAD SIZE | DIM. A | | DIM. B | |
|-------------------|-----------|-------------|--------|----|--------|----|
| | | | IN | MM | IN | MM |
| V4046C, V8046C | SMALL | 1/8-27 NPT | 5/16 | 8 | 2-3/4 | 70 |
| | SMALL | 1/4-18 NPT | 3/8 | 10 | 3 | 76 |
| | LARGE | 1/4-18 NPT | 1/2 | 13 | 3-1/4 | 83 |
| | LARGE | 3/8-18 NPT | 1/2 | 13 | 3-1/4 | 83 |

M16595A

Provide on-off control of natural, LP and manufactured gases to pilot burners in industrial and commercial applications.

- Magnetically operated, normally closed.
- Provide instantaneous action when energized.
- On power failure, valve closes in one second maximum.
- Use in any position, directly in pipe line or on support bracket.
- Replace the solenoid coil without removing the valve body from the piping connections.
- Straight-through valve pattern.
- Available in line voltage or low voltage models.

Type of Fuel: Air; natural; manufactured; LP

Body Pattern: Straight-through

Valve Opening Time: 1 sec max

Valve Closing Time: 1 sec max

Mounting: Directly in pipe or on support bracket

Materials: Body – Aluminum

Power Consumption: 8 W

Operating Temperature Range: -40°F to +125°F (-40°C to +52°C)

Approvals, Underwriters Laboratories Inc.: Listed: File No. MH1639, V3, S3 - Guide No. YIOZ

Approvals, CSA: Certificate No. 158158-2500006058, Guide No. C3371-03, 83

Approvals, Factory Mutual: Approved: Report No. 17450

Pressure Ratings (psi): 10 psi

Pressure Ratings (kPa): 68.9 kPa

| Material Number | Pipe Size (inch) | Capacity (cfh) | Capacity (m³/hr) | Voltage | Frequency | Electrical Connections | Approvals, Swiss RE |
|-----------------|------------------|----------------|------------------|------------------|--------------|--|---------------------|
| V4046C1005/U | 1/8 in. | 20 cfh | 0.57 m³/hr | 110 Vac; 120 Vac | 50 Hz; 60 Hz | Two 36-in. leadwires and 1/2 in. conduit bushing | Acceptable |
| V4046C1021/U | 1/4 in. | 20 cfh | 0.57 m³/hr | 110 Vac; 120 Vac | 50 Hz; 60 Hz | Two 36-in. leadwires and 1/2 in. conduit bushing | Acceptable |
| V4046C1047/U | 1/4 in. | 55 cfh | 1.56 m³/hr | 110 Vac; 120 Vac | 50 Hz; 60 Hz | Two 36-in. leadwires and 1/2 in. conduit bushing | Acceptable |
| V4046C1054/U | 3/8 in. | 67 cfh | 1.90 m³/hr | 110 Vac; 120 Vac | 50 Hz; 60 Hz | Two 36-in. leadwires and 1/2 in. conduit bushing | Acceptable |
| V4046C1120/U | 3/8 in. | 67 cfh | 1.90 m³/hr | 120 Vac | 60 Hz | Two 10 ft. leadwires and 1/2 in. conduit bushing | Acceptable |
| V8046C1006/U | 1/8 in. | 20 cfh | 0.57 m³/hr | 24 Vac | 60 Hz | Two 36-in. leadwires and 1/2 in. conduit bushing | |
| V8046C1014/U | 1/4 in. | 20 cfh | 0.57 m³/hr | 24 Vac | 60 Hz | Two 36-in. leadwires and 1/2 in. conduit bushing | |
| V8046C1022/U | 1/4 in. | 55 cfh | 1.56 m³/hr | 24 Vac | 60 Hz | Two 36-in. leadwires and 1/2 in. conduit bushing | |
| V8046C1030/U | 3/8 in. | 67 cfh | 1.90 m³/hr | 24 Vac | 60 Hz | Two 36-in. leadwires and 1/2 in. conduit bushing | |

Solenoid Gas Valves

V4295; V8295 Solenoid Gas Valves



V4295A/V8295A normally closed and V4295S/V8295S normally open (vent) solenoid gas valves, are suitable for furnaces, ovens, atmospheric burners, commercial water heaters, rooftop make-up air units, power burners, and commercial/industrial boilers.

- V8295A, S are used with 24 Vac controllers.
- V4295A, S are used with 120 Vac controllers.
- Positive close off of gas flow when de-energized.
- High valve spring force allows up to 0.7 psi back pressure at valve seat.
- No inlet pressure influence at valve seat.
- Inlet pressure changes do not affect ability to close valve.
- Low operating noise.
- Low rush-in current.
- Upstream and downstream taps allows tapping and testing pressure points.

Type of Fuel: Air; natural; manufactured; mixed; LP
Pressure Tapping: Inlet and outlet pressure taps – 1/4 in. NPT
Body Pattern: Straight-through, non-offset
Valve Opening Time: less than 1 sec
Valve Closing Time: less than 1 sec
Mounting: Vertical to 90 degrees from vertical

Materials: Body – Die-cast aluminum
Frequency: 50 Hz; 60 Hz
Electrical Connections: Screw terminals
Operating Temperature Range: -40°F to +140°F (-40°C to +60°C)
Approvals, Swiss RE: Acceptable
Approvals, Control Safety Devices: Acceptable

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (cfh) | Capacity (m³/hr) | Voltage | Approximate, Dimensions | Current Ratings | Pressure Ratings (psi) | Pressure Ratings (kPa) | Approvals, Underwriters Laboratories Inc. | Approvals, CSA | Approvals, Factory Mutual |
|-----------------|------------------|----------------|----------------|------------------|---------|--|--------------------------------|------------------------|------------------------|---|--|------------------------------------|
| V4295A1015 | 1/2 in. | DN15 | 250 cfh | 7.1 m³/hr | 120 Vac | 4 7/16 in. high x 2 7/8 in. wide x 2 3/16 deep (113 mm high x 73 mm wide x 56 mm deep) | 0.16 max amps at rated Vac/Hz | 2 psi | 13.8 kPa | Listed: File No. MH18476, V1, S1 - Guide No. YIOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 04, 83 | Approved: Report No. J.I.OD6A2. AF |
| V4295A1023 | 3/4 in. | DN20 | 645 cfh | 18.3 m³/hr | 120 Vac | 5 1/4 in. high x 3 7/16 in. wide x 2 3/4 in. deep (133 mm high x 87 mm wide x 70 mm deep) | 0.16 max amps at rated Vac/Hz | 2 psi | 13.8 kPa | Listed: File No. MH18476, V1, S1 - Guide No. YIOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 04, 83 | Approved: Report No. J.I.OD6A2. AF |
| V4295A1031 | 1 in. | DN25 | 790 cfh | 22.4 m³/hr | 120 Vac | 5 1/4 in. high x 3 15/16 in. wide x 3 in. deep (133 mm high x 100 mm wide x 76 mm deep) | 0.16 max amps at rated Vac/Hz | 2 psi | 13.8 kPa | Listed: File No. MH18476, V1, S1 - Guide No. YIOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 04, 83 | Approved: Report No. J.I.OD6A2. AF |
| V4295A1049 | 1 1/4 in. | DN32 | 1450 cfh | 41.0 m³/hr | 120 Vac | 8 in. high x 5 15/16 in. wide x 4 3/8 in. deep (203 mm high x 151 mm wide x 111 mm deep) | 0.34 max amps at rated Vac/Hz | 2 psi | 13.8 kPa | Listed: File No. MH18476, V1, S1 - Guide No. YIOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 04, 83 | Approved: Report No. J.I.OD6A2. AF |
| V4295A1056 | 1 1/2 in. | DN40 | 2190 cfh | 62.0 m³/hr | 120 Vac | 8 3/8 in. high x 5 15/16 in. wide x 4 3/8 in. deep (213 mm high x 151 mm wide x 111 mm deep) | 0.3 max amps at rated Vac/Hz | 2 psi | 13.8 kPa | Listed: File No. MH18476, V1, S1 - Guide No. YIOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 04, 83 | Approved: Report No. J.I.OD6A2. AF |
| V4295A1064 | 2 in. | DN50 | 3465 cfh | 98.1 m³/hr | 120 Vac | 8 3/8 in. high x 6 11/16 in. wide x 5 3/8 in. deep (213 mm high x 170 mm wide x 137 mm deep) | 0.525 max amps at rated Vac/Hz | 2 psi | 13.8 kPa | Listed: File No. MH18476, V1, S1 - Guide No. YIOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 04, 83 | Approved: Report No. J.I.OD6A2. AF |
| V4295A1072 | 2 1/2 in. | DN65 | 5070 cfh | 143.5 m³/hr | 120 Vac | 12 3/4 in. high x 9 1/2 in. wide x 7 7/8 in. deep (324 mm high x 241 mm wide x 200 mm deep) | 0.575 max amps at rated Vac/Hz | 2 psi | 13.8 kPa | Listed: File No. MH18476, V1, S1 - Guide No. YIOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 04, 83 | Approved: Report No. J.I.OD6A2. AF |
| V4295A1080 | 3 in. | DN80 | 6100 cfh | 172.7 m³/hr | 120 Vac | 12 3/4 in. high x 9 1/2 in. wide x 7 7/8 in. deep (324 mm high x 241 mm wide x 200 mm deep) | 0.675 max amps at rated Vac/Hz | 2 psi | 13.8 kPa | Listed: File No. MH18476, V1, S1 - Guide No. YIOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 04, 83 | Approved: Report No. J.I.OD6A2. AF |

Solenoid Gas Valves

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (cfh) | Capacity (m ³ /hr) | Voltage | Approximate, Dimensions | Current Ratings | Pressure Ratings (psi) | Pressure Ratings (kPa) | Approvals, Underwriters Laboratories Inc. | Approvals, CSA | Approvals, Factory Mutual |
|-----------------|------------------|----------------|----------------|-------------------------------|---------|---|-------------------------------|------------------------|------------------------|---|--|--|
| V4295A1098 | 3/8 in. | | 210 cfh | 5.9 m ³ /hr | 120 Vac | 4 7/16 in. high x 2 7/8 in. wide x 2 3/16 deep (113 mm high x 73 mm wide x 56 mm deep) | 0.16 max amps at rated Vac/Hz | 5 psi | 34.5 kPa | Listed: File No. MH18476, V1, S1 - Guide No. YIOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 04, 83 | Approved: Report No. J.I.0D6A2. AF |
| V4295A1106 | 1/2 in. | DN15 | 290 cfh | 8.2 m ³ /hr | 120 Vac | 4 7/16 in. high x 2 7/8 in. wide x 2 3/16 deep (113 mm high x 73 mm wide x 56 mm deep) | 0.16 max amps at rated Vac/Hz | 5 psi | 34.5 kPa | Listed: File No. MH18476, V1, S1 - Guide No. YIOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 04, 83 | Approved: Report No. J.I.0D6A2. AF |
| V4295A1114 | 3/4 in. | DN20 | 610 cfh | 17.3 m ³ /hr | 120 Vac | 3 3/16 in. high x 3 7/16 in. wide x 2 3/4 in. deep (81 mm high x 87 mm wide x 70 mm deep) | 0.2 max amps at rated Vac/Hz | 5 psi | 34.5 kPa | Listed: File No. MH18476, V1, S1 - Guide No. YIOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 04, 83 | Approved: Report No. J.I.0D6A2. AF |
| V4295A1122 | 1 in. | DN25 | 825 cfh | 23.4 m ³ /hr | 120 Vac | 6 5/16 in. high x 3 15/16 in. wide x 3 in. deep (160 mm high x 100 mm wide x 76 mm deep) | 0.2 max amps at rated Vac/Hz | 5 psi | 34.5 kPa | Listed: File No. MH18476, V1, S1 - Guide No. YIOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 04, 83 | Approved: Report No. J.I.0D6A2. AF |
| V4295A1130 | 1 1/4 in. | DN32 | 1950 cfh | 55.2 m ³ /hr | 120 Vac | 8 9/16 in. high x 5 15/16 in. wide x 4 3/8 in. deep (217 mm high x 151 mm wide x 111 mm deep) | 0.55 max amps at rated Vac/Hz | 5 psi | 34.5 kPa | Listed: File No. MH18476, V1, S1 - Guide No. YIOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 04, 83 | Approved: Report No. J.I.0D6A2. AF |
| V4295A1148/U | 1 1/2 in. | DN40 | 2270 cfh | 64.3 m ³ /hr | 120 Vac | 8 9/16 in. high x 5 15/16 in. wide x 4 3/8 in. deep (217 mm high x 151 mm wide x 111 mm deep) | 0.55 max amps at rated Vac/Hz | 5 psi | 34.5 kPa | Listed: File No. MH18476, V1, S1 - Guide No. YIOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 04, 83 | Approved: Report No. J.I.0D6A2. AF |
| V4295A1155 | 2 in. | DN50 | 3740 cfh | 105.9 m ³ /hr | 120 Vac | 9 3/16 in. high x 6 11/16 in. wide x 5 3/8 in. deep (233 mm high x 170 mm wide x 137 mm deep) | 0.54 max amps at rated Vac/Hz | 5 psi | 34.5 kPa | Listed: File No. MH18476, V1, S1 - Guide No. YIOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 04, 83 | Approved: Report No. J.I.0D6A2. AF |
| V4295S1005 | 3/4 in. | DN20 | 350 cfh | 9.9 m ³ /hr | 120 Vac | 5 1/2 in. high x 3 7/16 in. wide x 2 3/4 in. deep (140 mm high x 87 mm wide x 70 mm deep) | 0.16 max amps at rated Vac/Hz | 2 psi | 13.8 kPa | Listed: File No. MH18476, V1, S1 - Guide No. YIOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 83 | Approved: Report No. J.I.0D6A2. AF |
| V4295S1013 | 1 in. | DN25 | 420 cfh | 11.9 m ³ /hr | 120 Vac | 5 1/2 in. high x 3 15/16 in. wide x 3 in. deep (140 mm high x 100 mm wide x 76 mm deep) | 0.16 max amps at rated Vac/Hz | 2 psi | 13.8 kPa | Listed: File No. MH18476, V1, S1 - Guide No. YIOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 83 | Approved: Report No. J.I.0D6A2. AF |
| V4295S1021 | 1 1/4 in. | DN32 | 1100 cfh | 31.1 m ³ /hr | 120 Vac | 8 3/4 in. high x 5 15/16 in. wide x 4 3/8 in. deep (222 mm high x 151 mm wide x 111 mm deep) | 0.34 max amps at rated Vac/Hz | 2 psi | 13.8 kPa | Listed: File No. MH18476, V1, S1 - Guide No. YIOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 83 | Approved: Report No. J.I.0D6A2. AF |
| V8295A1016 | 1/2 in. | DN15 | 250 cfh | 7.1 m ³ /hr | 24 Vac | 4 7/16 in. high x 2 7/8 in. wide x 2 3/16 deep (113 mm high x 73 mm wide x 56 mm deep) | 0.8 max amps at rated Vac/Hz | 2 psi | 13.8 kPa | Component Recognized; File No. YLOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 85 | Approved: 3/8 in., 1/2 in., 3/4 in. only |
| V8295A1024 | 3/4 in. | DN20 | 645 cfh | 18.3 m ³ /hr | 24 Vac | 5 1/4 in. high x 3 7/16 in. wide x 2 3/4 in. deep (133 mm high x 87 mm wide x 70 mm deep) | 0.8 max amps at rated Vac/Hz | 2 psi | 13.8 kPa | Component Recognized; File No. YLOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 85 | Approved: 3/8 in., 1/2 in., 3/4 in. only |
| V8295A1032 | 1 in. | DN25 | 790 cfh | 22.4 m ³ /hr | 24 Vac | 5 1/4 in. high x 3 15/16 in. wide x 3 in. deep (133 mm high x 100 mm wide x 76 mm deep) | 0.8 max amps at rated Vac/Hz | 2 psi | 13.8 kPa | Component Recognized; File No. YLOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 85 | Approved: 3/8 in., 1/2 in., 3/4 in. only |

Commercial/Industrial
Combustion Controls

Solenoid Gas Valves

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (cfh) | Capacity (m ³ /hr) | Voltage | Approximate, Dimensions | Current Ratings | Pressure Ratings (psi) | Pressure Ratings (kPa) | Approvals, Underwriters Laboratories Inc. | Approvals, CSA | Approvals, Factory Mutual |
|-----------------|------------------|----------------|----------------|-------------------------------|---------|--|------------------------------|------------------------|------------------------|---|--|--|
| V8295A1040 | 1 1/4 in. | DN32 | 1450 cfh | 41.0 m ³ /hr | 24 Vac | 8 in. high x 5 15/16 in. wide x 4 3/8 in. deep (203 mm high x 151 mm wide x 111 mm deep) | 1.6 max amps at rated Vac/Hz | 2 psi | 13.8 kPa | Component Recognized; File No. YLOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 85 | Approved: 3/8 in., 1/2 in., 3/4 in. only |
| V8295A1057 | 1 1/2 in. | DN40 | 2190 cfh | 62.0 m ³ /hr | 24 Vac | 8 3/8 in. high x 5 15/16 in. wide x 4 3/8 in. deep (213 mm high x 151 mm wide x 111 mm deep) | 1.7 max amps at rated Vac/Hz | 2 psi | 13.8 kPa | Component Recognized; File No. YLOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 85 | Approved: 3/8 in., 1/2 in., 3/4 in. only |
| V8295A1065 | 2 in. | DN50 | 3465 cfh | 98.1 m ³ /hr | 24 Vac | 8 3/8 in. high x 6 11/16 in. wide x 5 3/8 in. deep (213 mm high x 170 mm wide x 137 mm deep) | 2.8 max amps at rated Vac/Hz | 2 psi | 13.8 kPa | Component Recognized; File No. YLOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 85 | Approved: 3/8 in., 1/2 in., 3/4 in. only |
| V8295S1006 | 3/4 in. | DN20 | 350 cfh | 9.9 m ³ /hr | 24 Vac | 5 1/2 in. high x 3 7/16 in. wide x 2 3/4 in. deep (140 mm high x 87 mm wide x 70 mm deep) | 0.8 max amps at rated Vac/Hz | 2 psi | 13.8 kPa | Component Recognized; File No. YLOZ | Certificate No. 158158-1154280, Guide No. C3371-03, 85 | Approved: 3/8 in., 1/2 in., 3/4 in. only |

V4297A Solenoid Safety Shut-off Valve for IVT



V4297A are normally closed solenoid gas valve. Suitable for use on furnaces, ovens, atmospheric burners, commercial water heaters, rooftop make-up air units, power burners, and commercial/industrial boilers.

- V4297A are used with 120 Vac controllers.
- Positive close off of gas flow when de-energized.
- High valve spring force allows up to 0.7 psi back pressure at valve seat.
- No inlet pressure influence at valve seat.
- Inlet pressure changes do not affect ability to close valve.
- Low operating noise.
- Low rush-in current.
- Upstream and downstream taps allows tapping and testing pressure points.
- For use with the Integrated Valve Train.
- Accepts C6097 Pressure Switch mounted directly to flange (upstream pressure tap only).

Type of Fuel: Air; natural; manufactured; mixed; LP
Pressure Tapping: Inlet and outlet pressure taps – 1/4 in. NPT
Body Pattern: Straight-through, non-offset
Valve Opening Time: less than 1 sec
Valve Closing Time: less than 1 sec
Flanges: Required, Order Separately
Mounting: Directly bolted to Integrated Valve Train Components
Materials: Body – Die-cast aluminum
Voltage: 110 Vac; 120 Vac
Frequency: 50 Hz; 60 Hz
Electrical Connections: Screw terminals
Operating Temperature Range: -40°F to +130°F (-40°C to +54°C)
Approvals, Underwriters Laboratories Inc.: Listed: File No. MH18476, V1, S1 - Guide No. YIOZ

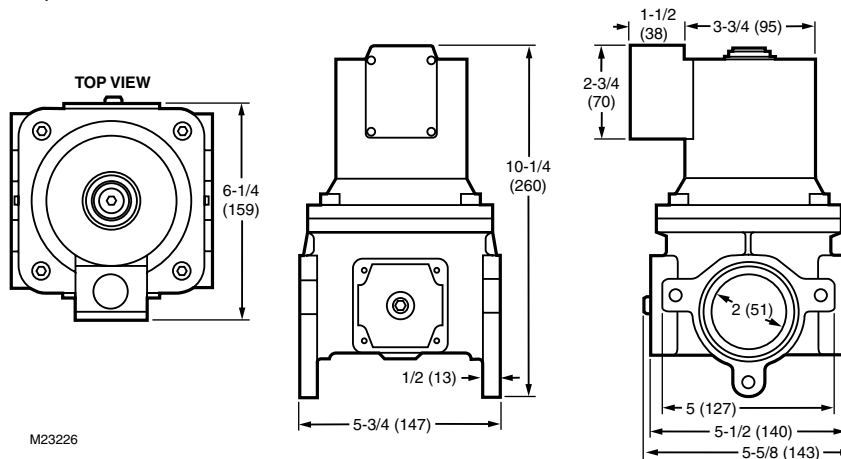
Approvals, CSA: Certificate No. 158158-1154280, Guide No. C3371-03, 04, 83

Approvals, Swiss RE: Acceptable
Pressure Ratings (psi): 5 psi
Pressure Ratings (kPa): 34.5 kPa

Replacement Parts:

- 4074EYF/U** – Bag assembly for V5097 (small body) includes 6 ea bolts, nuts and washers.
- 4074EYK/U** – Bag assembly for V5097 (small body) includes (2) O-rings, (1) grease capsule.

Dimensions in inches (millimeters)



M23226

| Material Number | Pipe Size (inch) | Pipe Size (DN) | Capacity (cfh) | Capacity (m ³ /hr) | Approximate, Dimensions | Integrated Valve Train Body Size | Current Ratings |
|-----------------|----------------------|--------------------------------------|--|-------------------------------|---|----------------------------------|------------------------------|
| V4297A1005 | 3/4 in. to 1 1/4 in. | DN20 or DN25 or DN32 | 650 cfh; 700 cfh; 780 cfh | 19.8 m ³ /hr | 9 in. high x 5 3/4 in. wide x 5 5/8 in. deep (229 mm high x 147 mm wide x 143 mm deep) | Small body, small flow | 0.2 max amps at rated Vac/Hz |
| V4297A1013 | 3/4 in. to 2 in. | DN20 or DN25 or DN32 or DN40 or DN50 | 1190 cfh; 1460 cfh; 2260 cfh; 2735 cfh; 3060 cfh | | 10 1/4 in. high x 5 3/4 in. wide x 5 5/8 in. deep (260 mm high x 147 mm wide x 143 mm deep) | Small body, large flow | 0.5 max amps at rated Vac/Hz |

Solenoid Gas Valves

V4297S Normally Open Vent Valve for IVT



V4297S are normally open (vent) solenoid gas valves. Suitable for use on furnaces, ovens, atmospheric burners, commercial water heaters, rooftop make-up air units, power burners, and commercial/industrial boilers.

- V4297S is used with 120 Vac controllers.
- Low operating noise.
- Low rush-in current.
- Upstream and downstream taps allows tapping and testing pressure points.
- For use with the Integrated Valve Train.

Type of Fuel: Air; natural; manufactured; mixed; LP

Pressure Tapping: Inlet and outlet pressure taps – 1/4 in. NPT

Body Pattern: Straight-through, non-offset

Valve Opening Time: less than 1 sec

Valve Closing Time: less than 1 sec

Flanges: Required for Stand Alone

Mounting: Directly bolted to Integrated Valve Train Components

Materials: Body – Die-cast aluminum

Voltage: 110 Vac; 120 Vac

Frequency: 50 Hz; 60 Hz

Electrical Connections: Screw terminals

Operating Temperature Range: -40°F to +145°F (-40°C to +63°C)

Approvals, Underwriters Laboratories Inc.: Listed: File No.

MH18476, V1, S1 - Guide No. YIOZ

Approvals, CSA: Certificate No. 158158-1154280, Guide No. C3371-03, 04, 83

Approvals, Swiss RE: Acceptable

Pressure Ratings (psi): 5 psi

Pressure Ratings (kPa): 34.5 kPa

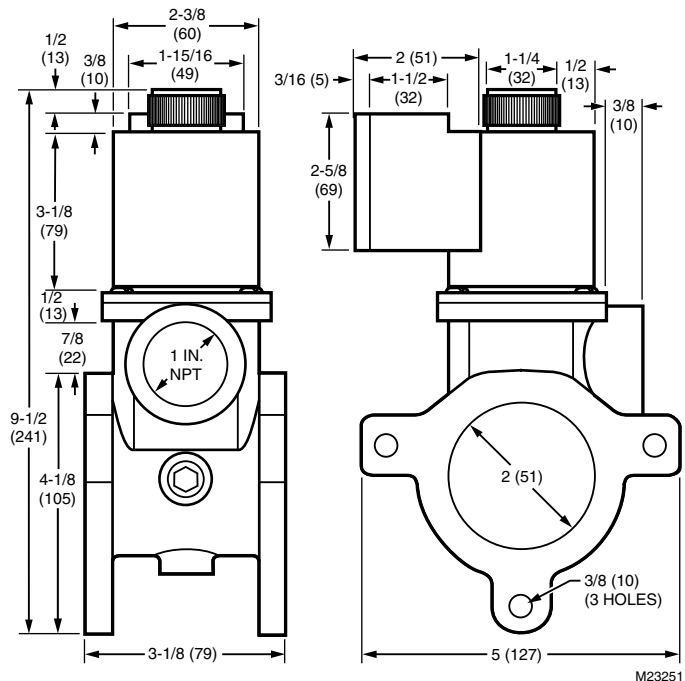
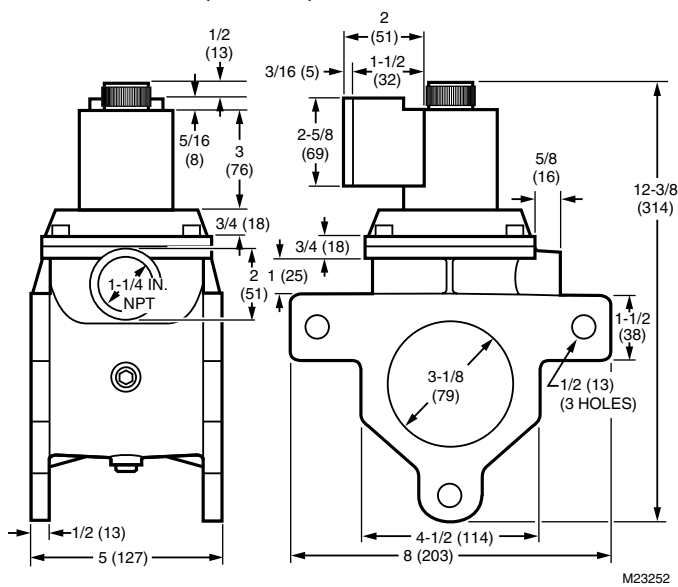
Replacement Parts:

4074EYF/U – Bag assembly for V5097 (small body) includes 6 ea bolts, nuts and washers.

4074EYK/U – Bag assembly for V5097 (small body) includes (2) O-rings, (1) grease capsule.

4074EYL/U – Bag assembly for V5097 (large body) includes (2) O-rings, (1) grease capsule.

Dimensions in inches (millimeters)



| Material Number | Pipe Size (DN) | Capacity (cfh) | Capacity (m³/hr) | Approximate, Dimensions | Integrated Valve Train Body Size | Current Ratings |
|-----------------|----------------|----------------|------------------|---|----------------------------------|-------------------------------|
| V4297S1003 | DN25 | 714 cfh | 20.2 m³/hr | 9 1/2 in. high x 3 1/8 in. wide x 5 in. deep (241 mm high x 79 mm wide x 127 mm deep) | Small body | 0.2 max amps at rated Vac/Hz |
| V4297S1011 | DN32 | 1115 cfh | 31.6 m³/hr | 12 3/8 in. high x 5 in. wide x 8 in. deep (314 mm high x 127 mm wide x 203 mm deep) | Large body | 0.34 max amps at rated Vac/Hz |

V4730C; V4734C; V8730C Gas/Air Servo Regulated Gas Valves



Body Pattern: Straight flange
Valve Opening Time: Dead time maximum: 1 second; First valve – < 1 second; Second valve – reaches 50% of the adjustable outlet pressure within 5 seconds

Materials: Body: Aluminum alloy, die-cast

Frequency: 50 Hz; 60 Hz

Ambient Temperature Range: 5°F to 140°F (-15°C to +60°C)

Approvals, Underwriters Laboratories Inc.: File No. MH18476

Approvals, CSA: File: Certificate No: 158158-1227192

Approvals, Others: Gas Appliance Directive: 90.396/EEC, PIN: 0063AT1198, Low Voltage Directive: 73/23/EEC, Electro Magnetic Compatibility Directive: 89/336/EEC

Maximum Safe Operating Pressure (psi): 0.5 psi (CSA approved), 1.45 psi for 120V; 1 psi for 24V (UL approved)

Maximum Operating Pressure (mbar): 200 mbar (UL approved) 100 mbar for 120V; 69 mbar for 24V (UL approved), 35 mbar (CSA approved)

Comments: The minimum load for which the system can be used is 14-17% of the reference load, which equals a minimum pressure differential of 0.2 in. wc (50 Pa) of the 1:1 venturi/servo regulator gas control.

Coil Insulation Solenoid Valves: Class H insulation system

Current Ratings: V1 Current Rating – 0.16A; V2 Current Rating – 0.16A; V1 + V2 Current Rating – 0.32A

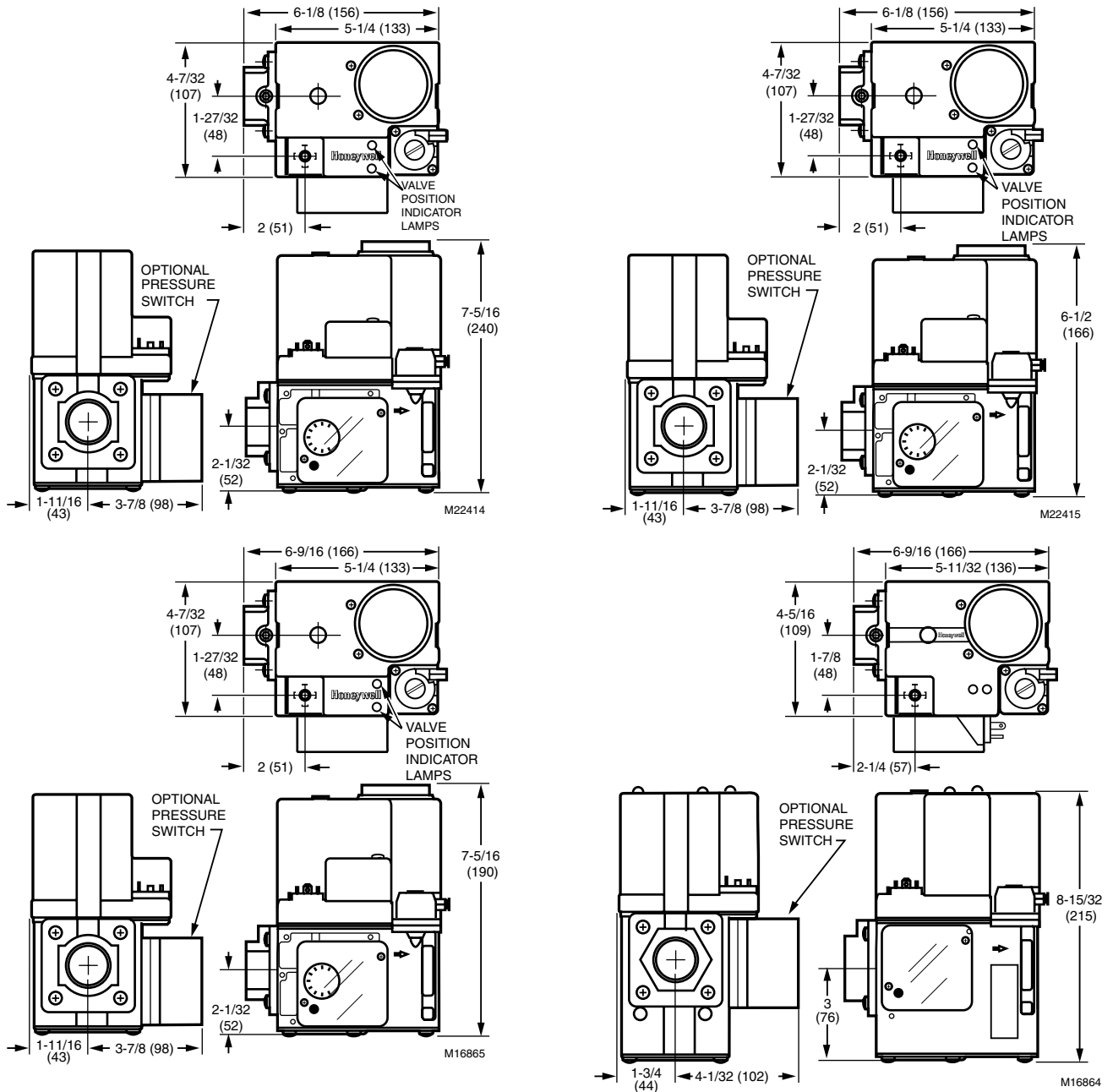
| Material Number | Pipe Size (inch) | Capacity (kW) | Capacity (kBtuh) | Voltage | Electrical Connections | Pipe Connection | Includes | Max. Capacity with Strainer (cfh) |
|-----------------|------------------|--|---|----------------------|---|--|---|---|
| V4730C1006-0000 | 1/2 in. | Natural Gas 0.64 sp.gr – 22-150 KW | Natural Gas 0.64 sp.gr – 73-512 kBtuh | 120 Vac (+10%, -15%) | Standard DIN plug connector with 36 in. (914 mm) leadwires, included. | 1/8 in. (3mm) NPT pressure taps at inlet and outlet flanges. Six flange pressure taps connections are provided at the main body to mount either a pressure switch (low or high) or a Valve Proving System (VPS). | Mesh screen filter and 32006652-001 Flange kit. (Kit includes 1 pipe adapter, 1 O-ring, 4 mounting screws, 1 DIN connector and wiring harness kit.) | Nat. Gas (Delta P= 1 in. w.c.) – 221 cfh |
| V4730C1014-0000 | 3/4 in. | Natural Gas 0.64 sp.gr – 43-300 KW | Natural Gas 0.64 sp.gr – 146-1024 kBtuh | 120 Vac (+10%, -15%) | Standard DIN plug connector with 36 in. (914 mm) leadwires, included. | 1/8 in. (3mm) NPT pressure taps at inlet and outlet flanges. Six flange pressure taps connections are provided at the main body to mount either a pressure switch (low or high) or a Valve Proving System (VPS). | Mesh screen filter and 32006652-002 Flange kit. (Kit includes 1 pipe adapter, 1 O-ring, 4 mounting screws, 1 DIN connector and wiring harness kit.) | Nat. Gas (Delta P= 1 in. w.c.) – 1024 cfh |
| V4730C1022-0000 | 1 in. | Natural Gas 0.64 sp.gr – 43-300 KW | Natural Gas 0.64 sp.gr – 146-1024 kBtuh | 120 Vac (+10%, -15%) | Standard DIN plug connector with 36 in. (914 mm) leadwires, included. | 1/8 in. (3mm) NPT pressure taps at inlet and outlet flanges. Six flange pressure taps connections are provided at the main body to mount either a pressure switch (low or high) or a Valve Proving System (VPS). | Mesh screen filter and 32006652-003 Flange kit. (Kit includes 1 pipe adapter, 1 O-ring, 4 mounting screws, 1 DIN connector and wiring harness kit.) | Nat. Gas (Delta P= 1 in. w.c.) – 1024 cfh |
| V4730C1030-0000 | 1 1/4 in. | Natural Gas 0.64 sp.gr – 55-382 KW when used with VMU335, 71-500KW | Natural Gas 0.64 sp.gr – 185-1300 kBtuh when used with VMU335, 245-1710 kBtuh | 120 Vac (+10%, -15%) | Standard DIN plug connector with 36 in. (914 mm) leadwires, included. | 1/8 in. (3mm) NPT pressure taps at inlet and outlet flanges. Six flange pressure taps connections are provided at the main body to mount either a pressure switch (low or high) or a Valve Proving System (VPS). | Mesh screen filter and 32006652-004 Flange kit. (Kit includes 1 pipe adapter, 1 O-ring, 4 mounting screws, 1 DIN connector and wiring harness kit.) | Nat. Gas (Delta P= 1 in. w.c.) – 1300 cfh |

Servo Regulated Gas Valves

| Material Number | Pipe Size (inch) | Capacity (kW) | Capacity (kBtuh) | Voltage | Electrical Connections | Pipe Connection | Includes | Max. Capacity with Strainer (cfh) |
|-----------------|------------------|---|---|----------------------|---|--|---|---|
| V4734C1002-0000 | 1 1/4 in. | Natural Gas 0.64 sp.gr – 97-680 KW when used with VMU680 | Natural Gas 0.64 sp.gr – 326-2287 kBtuh when used with VMU680 | 120 Vac (+10%, -15%) | | | Mesh screen filter and 32006652-004 Flange kit. (Kit includes 1 pipe adapter, 1 O-ring, 4 mounting screws, 1 DIN connector and wiring harness kit.) | |
| V8730C1007-0000 | 1/2 in. | Natural Gas 0.64 sp.gr – 22-150 KW | Natural Gas 0.64 sp.gr – 73-512 kBtuh | 24 Vac (+10%, -15%) | Standard DIN plug connector with 36 in. (914 mm) leadwires, included. | 1/8 in. (3mm) NPT pressure taps at inlet and outlet flanges. Six flange pressure taps connections are provided at the main body to mount either a pressure switch (low or high) or a Valve Proving System (VPS). | Mesh screen filter and 32006652-001 Flange kit. (Kit includes 1 pipe adapter, 1 O-ring, 4 mounting screws, 1 DIN connector and wiring harness kit.) | Nat. Gas (Delta P= 1 in. w.c.) – 221 cfh |
| V8730C1015-0000 | 3/4 in. | Natural Gas 0.64 sp.gr – 43-300 KW | Natural Gas 0.64 sp.gr – 146-1024 kBtuh | 24 Vac (+10%, -15%) | Standard DIN plug connector with 36 in. (914 mm) leadwires, included. | 1/8 in. (3mm) NPT pressure taps at inlet and outlet flanges. Six flange pressure taps connections are provided at the main body to mount either a pressure switch (low or high) or a Valve Proving System (VPS). | Mesh screen filter and 32006652-002 Flange kit. (Kit includes 1 pipe adapter, 1 O-ring, 4 mounting screws, 1 DIN connector and wiring harness kit.) | Nat. Gas (Delta P= 1 in. w.c.) – 1024 cfh |
| V8730C1023-0000 | 1 in. | Natural Gas 0.64 sp.gr – 43-300 KW | Natural Gas 0.64 sp.gr – 146-1024 kBtuh | 24 Vac (+10%, -15%) | Standard DIN plug connector with 36 in. (914 mm) leadwires, included. | 1/8 in. (3mm) NPT pressure taps at inlet and outlet flanges. Six flange pressure taps connections are provided at the main body to mount either a pressure switch (low or high) or a Valve Proving System (VPS). | Mesh screen filter and 32006652-003 Flange kit. (Kit includes 1 pipe adapter, 1 O-ring, 4 mounting screws, 1 DIN connector and wiring harness kit.) | Nat. Gas (Delta P= 1 in. w.c.) – 1024 cfh |
| V8730C1031-0000 | 1 1/4 in. | Natural Gas 0.64 sp.gr – 55-382 KW when used with VMU335, 71-500 KW | Natural Gas 0.64 sp.gr – 185-1300 kBtuh when used with VMU335, 245-1710 kBtuh | 24 Vac (+10%, -15%) | Standard DIN plug connector with 36 in. (914 mm) leadwires, included. | 1/8 in. (3mm) NPT pressure taps at inlet and outlet flanges. Six flange pressure taps connections are provided at the main body to mount either a pressure switch (low or high) or a Valve Proving System (VPS). | Mesh screen filter and 32006652-004 Flange kit. (Kit includes 1 pipe adapter, 1 O-ring, 4 mounting screws, 1 DIN connector and wiring harness kit.) | Nat. Gas (Delta P= 1 in. w.c.) – 1300 cfh |

Servo Regulated Gas Valves

Dimensions in inches (millimeters)



V4730C; V4734C; V8730C Accessories and Parts

| Material Number | Description |
|-----------------|---|
| 50002653-001/U | Manual Shut-Off Valve Kit (1 in. NPT or smaller valves) |

Commercial/Industrial
Combustion Controls

Venturi Mixing Unit

Venturi Mixing Unit



The venturi mixing unit (VMU), combined with the V4730C/V8730C gas valves and specific direct current (dc) fan, has been developed for modulating premix appliances like gas burners and gas boilers.

- All adjustment and test points are accessible from one side.
- Has a wide modulation band (14 to 100% of the boiler load).
- Flexible mounting positions of gas control to venturi manifold and venturi manifold to fan.
- Two stainless steel sensing tubes are provided for use with or without manual safety shutoff valve.

Materials: Housing: Aluminum, Venturi: Statically dissipative statcon PF, Seals: Rubber (NBR).

Ambient Temperature Range: 32°F to 212°F (0°C to 100°C)

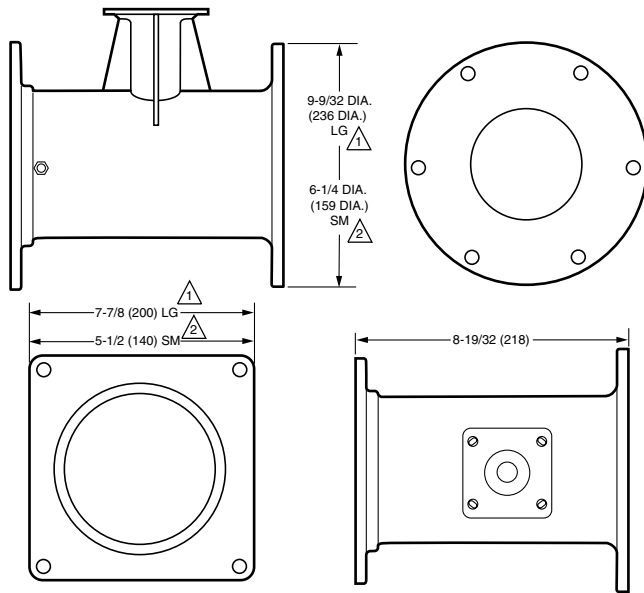
Approvals, Underwriters Laboratories Inc.: File No. MH18476

Approvals, CSA: File: Certificate No: 158158-1227192

Pipe Connection: Four M5 screws and a rubber O-ring are provided with the venturi to assemble it to the V4730C/V8730C gas valve. The stainless steel tube provided with the venturi has to be connected between the venturi inlet (connection provided) and the gas valve regulator. Longer sensing tube for use with manual safety shutoff valve (KTTBA002). Shorter sensing tube for use without manual safety shutoff valve (KTTBA001).

Current Ratings: V1 Current Rating – 0.16A; V2 Current Rating – 0.16A; V1 + V2 Current Rating – 0.32A

Dimensions in inches (millimeters)



△ LG (LARGE) IS VENTURI MIXING UNIT VMU500.

△ SM (SMALL) ARE VENTURI MIXING UNITS VMU150/300/335.

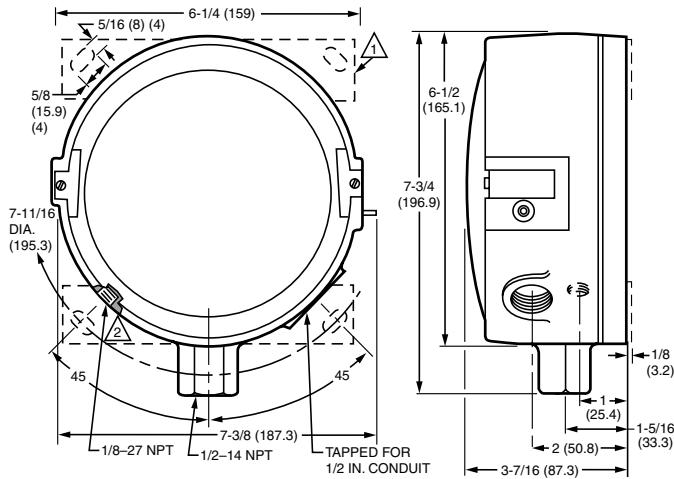
M22417D

| Material Number | Body Pattern | Maximum Safe Operating Pressure (psi) | Maximum Operating Pressure (mbar) | Comments | Reference Load |
|-----------------|-----------------|--|---|--|-------------------------|
| VMU150A1011 | Straight flange | 2.9 psi (UL approved), 1/2 psi (CSA approved) | 200 mbar (UL approved), 35 mbar (CSA approved) | Pressure Drop: Approximately 3.2 in. wc (800 Pa) across the venturi at reference load. The minimum load for which the system can be used is 14-17% of the reference load, which equals a minimum pressure differential of 0.2 in. wc (50 Pa) of the 1:1 venturi/servo regulator gas control. | 150 kW (512,000 Btuh) |
| VMU185A1084 | | 1/2 psi (CSA approved); 2.9 psi (UL approved) | 35 mbar (CSA approved), 200 mbar (UL approved) | Pressure Drop: Approximately 3.2 in. wc (800 Pa) across the venturi at reference load. The minimum load for which the system can be used is 14-17% of the reference load, which equals a minimum pressure differential of 0.2 in. wc (50 Pa) of the 1:1 venturi/servo regulator gas control. | 185 kW (632,000 Btuh) |
| VMU300A1046 | Straight flange | 2.9 psi (UL approved), 1/2 psi (CSA approved) | 200 mbar (UL approved), 35 mbar (CSA approved) | Pressure Drop: Approximately 3.2 in. wc (800 Pa) across the venturi at reference load. The minimum load for which the system can be used is 14-17% of the reference load, which equals a minimum pressure differential of 0.2 in. wc (50 Pa) of the 1:1 venturi/servo regulator gas control. | 300 kW (1,024,000 Btuh) |
| VMU335A1018 | Straight flange | 2.9 psi (UL approved), 1/2 psi (CSA approved) | 200 mbar (UL approved), 35 mbar (CSA approved) | Pressure Drop: Approximately 3.2 in. wc (800 Pa) across the venturi at reference load. The minimum load for which the system can be used is 14-17% of the reference load, which equals a minimum pressure differential of 0.2 in. wc (50 Pa) of the 1:1 venturi/servo regulator gas control. | 335 kW (1,143,000 Btuh) |

C437D, E 2000 Series Gas Pressure Switches



Dimensions in inches (millimeters)



- 1 137755 MOUNTING BRACKET (2), IN 4074BWK BAG ASSEMBLY – OPTIONAL.
- 2 VENT TAPPING. REMOVE DUST-SEAL LABEL BEFORE MOUNTING.

M27582

C437D, E Series 2000 Gas Pressure Switches are pressure-actuated devices used in industrial gas systems for safety shutoff. Series 2000 models have snap acting MicroSwitch™ snap switches to open a circuit on pressure rise or drop.

- C437 models have direct- and reverse-acting SPST (non-mercury) switching.
- Models intended for lockout applications must be manually reset before resuming operation.
- Models with pressure range of 1 to 26 in. wc (0.25 to 6.5 kPa) compensate for momentary surges in gas pressure with a restrictive orifice in inlet pressure channel.
- Impede tampering and provide dust-resistant operation with enclosed setting.
- Increase strength of control diaphragm with Buna N fiber-reinforced material.
- Two Buna-N fiber-reinforced seal-off diaphragms for added reliability.
- Clear glass cover allows observation of interior mechanism to aid in setting and checkout.

Application: Industrial gas system applications for safety shutoff, pressure control, or differential-pressure control.

Switch Operation: Manual Reset

Sensor Element: BUNA N Diaphragm

Materials: Case: Die-cast aluminum

Approximate, Dimensions: 7 3/4 in. high x 6 1/4 in. wide x 3 7/16 in. deep (197 mm high x 159 mm wide x 87 mm deep)

Operating Temperature Range: 32°F to 125°F (0°C to 52°C)

Temperature Ratings: 125°F - Maximum Ambient (52°C - Maximum Ambient)

Electrical Connections: Screw terminals

Contact Ratings: 120 Vac Switch Contact – 8.0 AFL, 48.0 ALR, 10.0 A resistive; 240 Vac Switch Contact – 5.1 AFL, 30.6 ALR, 5.0 A resistive

Pipe Connection: Main or High Pressure – 1/2 in. NPT internal thread; Vent or Low pressure – 1/8 in. NPT internal thread

Approvals, Underwriters Laboratories Inc.: Listed: File No. MP2168, Guide No. MFHX

Approvals, CSA: Certified: File No. LR1620, Guide No. 380-W-1.16

Approvals, Factory Mutual: Approved: Report No. 22018, 24127, J.I.IF4A3.AF

Approvals, Swiss RE: Acceptable

| Material Number | Operating Range (psi) | Operating Range (kPa) | Differential Pressure Range (psi) | Differential Pressure Range (kPa) | Differential Type | Switching Action |
|-----------------|--|--|-----------------------------------|-----------------------------------|-------------------|----------------------------------|
| C437D2003/U | 1 to 26 in. wc; 5.0 psi - Maximum Sustained | 0.5 to 7.0 kPa; 34.5 kPa - Maximum Sustained | 1 3/4 in. wc | 0.44 kPa | Subtractive | SPST, break on rise, non-mercury |
| C437D2011/U | 1/2 to 5 psi; 15.0 psi - Maximum Sustained | 3.0 to 35 kPa; 103.4 kPa - Maximum Sustained | 1/2 psi | 3.45 kPa | Subtractive | SPST, break on rise, non-mercury |
| C437D2029/U | 1 to 10 psi; 30.0 psi - Maximum Sustained | 5.0 to 70.0 kPa; 206.8 kPa - Maximum Sustained | 1 psi | 6.89 kPa | Subtractive | SPST, break on rise, non-mercury |
| C437E2002/U | 1 to 26 in. wc; 5.0 psi - Maximum Sustained | 0.5 to 7.0 kPa; 34.5 kPa - Maximum Sustained | 1 3/4 in. wc | 0.44 kPa | Additive | SPST, Break on Fall, non-mercury |
| C437E2010/U | 1/2 to 5 psi; 15.0 psi - Maximum Sustained | 3.0 to 35 kPa; 103.4 kPa - Maximum Sustained | 1/2 psi | 3.45 kPa | Additive | SPST, Break on Fall, non-mercury |
| C437E2028/U | 1 to 10 psi; 30.0 psi - Maximum Sustained | 5.0 to 70.0 kPa; 206.8 kPa - Maximum Sustained | 1 psi | 6.89 kPa | Additive | SPST, Break on Fall, non-mercury |
| C437E2036/U | 0.5 to 5.5 in. wc; 3.0 psi - Maximum Sustained | 0.1 to 1.4 kPa; 20.7 kPa - Maximum Sustained | 0.25 in. wc | 0.06 kPa | Additive | SPST, Break on Fall, non-mercury |

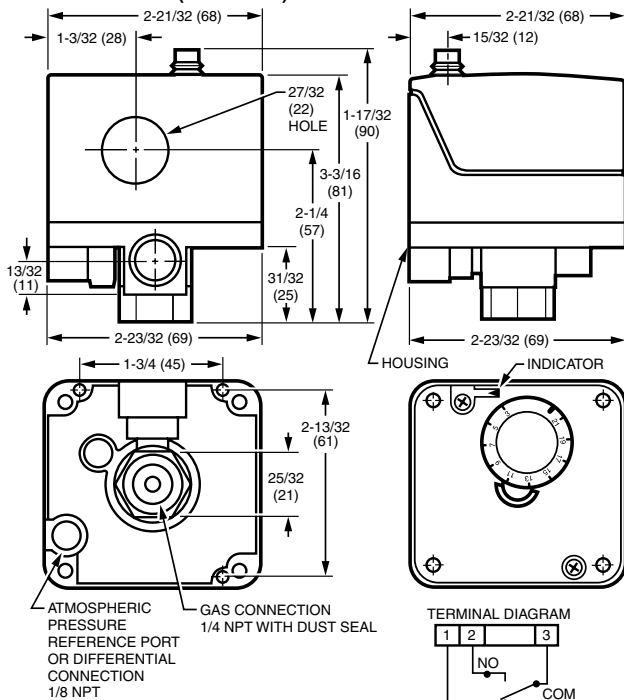
Commercial/Industrial Combustion Controls

Pressure Switches

C6097 Pressure Switch



Dimensions in inches (millimeters)



Pressure Switches are safety devices used in positive-pressure or differential-pressure systems to sense gas or air pressure systems.

- For use with natural gas, liquid propane (LP) gas, or air.
- Diaphragm-actuated safety-limit switch.
- Switch can be wired to turn on alarm.
- C6097A models break control circuit at setpoint on pressure fall.
- C6097B models break control circuit at setpoint on pressure rise.
- Lockout with manual reset and recycle options.
- Lockout models have external manual reset button.
- Removable transparent cover protects scaleplate and adjusting knob.
- Pipe tapings allow selection of positive pressure (air only) or venting connections (NPT mount only).
- 1/4 in. NPT or flange mount models for direct mounting to Honeywell Integrated Valve Train.
- Optional switch position indicator lamp available.
- IP54 enclosure standard.
- Ranges: 0.4 to 5 in. wc, 3 to 21 in. wc, 12 to 60 in. wc or 1.5 to 7 psi.
- Surge orifice.
- Integral vent limiter on all models.

Application: Safety devices used in positive-pressure or differential-pressure systems to sense gas or air pressure changes

Operating Temperature Range: -40°F to +140°F (-40°C to +60°C)

Electrical Connections: Screw terminals

Electrical Ratings: Ignition Transformer: 540 VA, Pilot Valve: 50 VA. Main Valve: 400 VA with 2-1/2 times inrush

Contact Ratings: 120 Vac Switch Contact – 3.0 AFL, 18.0 ALR, 5.0 A resistive; 240 Vac Switch Contact – 3.0 AFL, 18.0 ALR, 5.0 A resistive

Approvals, Underwriters Laboratories Inc.: Component Listed, MP 2168-8-1

Approvals, CSA: File # 95329 Certificate 2632-01

Approvals, Factory Mutual: JI 2D4A1.AF

Approvals, Swiss RE: Acceptable

Approvals, Others: CSD-1 AFB: Acceptable

| Material Number | Operating Range (psi) | Operating Range (kPa) | Differential Pressure Range (psi) | Differential Pressure Range (kPa) | Differential Type | Switch Operation | Switching Action | Approximate, Dimensions | Pipe Connection | Mounting |
|-----------------|-----------------------|-----------------------|---|---|-------------------|------------------|------------------------|--|--|-----------------------------|
| C6097A1004/U | 0.4 to 5 in. wc | 0.10 to 1.25 kPa | 0.16 in. wc Nominal; 0.24 in. wc Maximum | 0.04 kPa Nominal; 0.06 kPa Maximum | Additive | Auto recycle | Break on pressure fall | 3 3/16 in. high x 2 23/32 in. wide x 2 23/32 in. deep (81 mm high x 69 mm wide x 69 mm deep) | Vent or Low pressure – 1/8 in. NPT internal thread | 1/4 in. NPT internal thread |
| C6097A1012/U | 3 to 21 in. wc | 0.7 to 5.2 kPa | max. 2.4 in. wc @ min. setpoint; max. 4.2 in. wc @ max. setpoint | max. 0.60 kPa @ min. setpoint; max. 1.05 kPa @ max. setpoint | Additive | Manual Reset | Break on pressure fall | 3 17/32 in. high x 2 23/32 in. wide x 2 23/32 in. deep (90 mm high x 69 mm wide x 69 mm deep) | Vent or Low pressure – 1/8 in. NPT internal thread | 1/4 in. NPT internal thread |
| C6097A1020/U | 3 to 21 in. wc | 0.7 to 5.2 kPa | max. 2.4 in. wc @ min. setpoint; max. 4.2 in. wc @ max. setpoint | max. 0.60 kPa @ min. setpoint; max. 1.05 kPa @ max. setpoint | Additive | Manual Reset | Break on pressure fall | 2 19/32 in. high x 2 23/32 in. wide x 2 23/32 in. deep (66 mm high x 69 mm wide x 69 mm deep) | | Flange Mount |
| C6097A1038/U | 12 to 60 in. wc | 3.0 to 15 kPa | max. 10 in. wc @ min. setpoint; max. 12 in. wc @ max. setpoint | max. 2.5 kPa @ min. setpoint; max. 3.0 kPa @ max. setpoint | Additive | Manual Reset | Break on pressure fall | 3 17/32 in. high x 2 23/32 in. wide x 2 23/32 in. deep (90 mm high x 69 mm wide x 69 mm deep) | Vent or Low pressure – 1/8 in. NPT internal thread | 1/4 in. NPT internal thread |

Pressure Switches

| Material Number | Operating Range (psi) | Operating Range (kPa) | Differential Pressure Range (psi) | Differential Pressure Range (kPa) | Differential Type | Switch Operation | Switching Action | Approximate, Dimensions | Pipe Connection | Mounting |
|-----------------|-----------------------|-----------------------|---|--|-------------------|------------------|------------------------|---|--|-----------------------------|
| C6097A1046/U | 12 to 60 in. wc | 3.0 to 15 kPa | max. 10 in. wc @ min. setpoint; max. 12 in. wc @ max. setpoint | max. 2.5 kPa @ min. setpoint; max. 3.0 kPa @ max. setpoint | Additive | Manual Reset | Break on pressure fall | 2 19/32 in. high x 2 23/32 in. wide x 2 23/32 in. deep (66 mm high x 69 mm wide x 69 mm deep) | | Flange Mount |
| C6097A1053/U | 3 to 21 in. wc | 0.7 to 5.2 kPa | 0.24 in. wc Nominal; 0.48 in. wc Maximum | 0.06 kPa Nominal; 0.12 kPa Maximum | Additive | Auto recycle | Break on pressure fall | 3 3/16 in. high x 2 23/32 in. wide x 2 23/32 in. deep (81 mm high x 69 mm wide x 69 mm deep) | Vent or Low pressure – 1/8 in. NPT internal thread | 1/4 in. NPT internal thread |
| C6097A1061/U | 3 to 21 in. wc | 0.7 to 5.2 kPa | 0.24 in. wc Nominal; 0.48 in. wc Maximum | 0.06 kPa Nominal; 0.12 kPa Maximum | Additive | Auto recycle | Break on pressure fall | 2 1/4 in. high x 2 23/32 in. wide x 2 23/32 in. deep (57 mm high x 69 mm wide x 69 mm deep) | | Flange Mount |
| C6097A1079/U | 12 to 60 in. wc | 3.0 to 15 kPa | 1.1 in. wc Nominal; 2.4 in. wc Maximum | 0.27 kPa Nominal; 0.60 kPa Maximum | Additive | Auto recycle | Break on pressure fall | 3 3/16 in. high x 2 23/32 in. wide x 2 23/32 in. deep (81 mm high x 69 mm wide x 69 mm deep) | Vent or Low pressure – 1/8 in. NPT internal thread | 1/4 in. NPT internal thread |
| C6097A1087/U | 12 to 60 in. wc | 3.0 to 15 kPa | 1.1 in. wc Nominal; 2.4 in. wc Maximum | 0.27 kPa Nominal; 0.60 kPa Maximum | Additive | Auto recycle | Break on pressure fall | 2 1/4 in. high x 2 23/32 in. wide x 2 23/32 in. deep (57 mm high x 69 mm wide x 69 mm deep) | | Flange Mount |
| C6097A1095/U | 0.4 to 5 in. wc | 0.10 to 1.25 kPa | max. 0.6 in. wc @ min. setpoint; max. 0.25 in. wc @ max. setpoint | max. 0.15 kPa @ min. setpoint; max. 0.25 kPa @ max. setpoint | Additive | Manual Reset | Break on pressure fall | 3 17/32 in. high x 2 23/32 in. wide x 2 23/32 in. deep (90 mm high x 69 mm wide x 69 mm deep) | Vent or Low pressure – 1/8 in. NPT internal thread | 1/4 in. NPT internal thread |
| C6097A1103/U | 1.5 to 7 psi | 10.3 to 48 kPa | max. 1.1 psi @ min. setpoint; max. 1.4 psi @ max. setpoint | max. 7.6 kPa @ min. setpoint; max. 9.6 kPa @ max. setpoint | Additive | Manual Reset | Break on pressure fall | 2 19/32 in. high x 2 23/32 in. wide x 2 23/32 in. deep (66 mm high x 69 mm wide x 69 mm deep) | | Flange Mount |
| C6097A1111/U | 1.5 to 7 psi | 10.3 to 48 kPa | max. 1.1 psi @ min. setpoint; max. 1.4 psi @ max. setpoint | max. 7.6 kPa @ min. setpoint; max. 9.6 kPa @ max. setpoint | Additive | Manual Reset | Break on pressure fall | 3 17/32 in. high x 2 23/32 in. wide x 2 23/32 in. deep (90 mm high x 69 mm wide x 69 mm deep) | Vent or Low pressure – 1/8 in. NPT internal thread | 1/4 in. NPT internal thread |
| C6097A1129/U | 1.5 to 7 psi | 10.3 to 48 kPa | 0.1 psi Nominal; 0.3 psi Maximum | 0.69 kPa Nominal; 2.07 kPa Maximum | Additive | Auto recycle | Break on pressure fall | 2 1/4 in. high x 2 23/32 in. wide x 2 23/32 in. deep (57 mm high x 69 mm wide x 69 mm deep) | | Flange Mount |
| C6097A1137/U | 1.5 to 7 psi | 10.3 to 48 kPa | 0.1 psi Nominal; 0.3 psi Maximum | 0.69 kPa Nominal; 2.07 kPa Maximum | Additive | Auto recycle | Break on pressure fall | 3 3/16 in. high x 2 23/32 in. wide x 2 23/32 in. deep (81 mm high x 69 mm wide x 69 mm deep) | Vent or Low pressure – 1/8 in. NPT internal thread | 1/4 in. NPT internal thread |
| C6097A1210/U | 0.4 to 5 in. wc | 0.10 to 1.25 kPa | 0.16 in. wc Nominal; 0.24 in. wc Maximum | 0.04 kPa Nominal; 0.06 kPa Maximum | Additive | Auto recycle | Break on pressure fall | 2 1/4 in. high x 2 23/32 in. wide x 2 23/32 in. deep (57 mm high x 69 mm wide x 69 mm deep) | | Flange Mount |
| C6097A1228/U | 0.4 to 5 in. wc | 0.10 to 1.25 kPa | max. 0.6 in. wc @ min. setpoint; max. 0.25 in. wc @ max. setpoint | max. 0.15 kPa @ min. setpoint; max. 0.25 kPa @ max. setpoint | Additive | Manual Reset | Break on pressure fall | 3 17/32 in. high x 2 23/32 in. wide x 2 23/32 in. deep (90 mm high x 69 mm wide x 69 mm deep) | Vent or Low pressure – 1/8 in. NPT internal thread | Flange Mount |

Pressure Switches

| Material Number | Operating Range (psi) | Operating Range (kPa) | Differential Pressure Range (psi) | Differential Pressure Range (kPa) | Differential Type | Switch Operation | Switching Action | Approximate, Dimensions | Pipe Connection | Mounting |
|-----------------|-----------------------|-----------------------|--|--|-------------------|------------------|------------------------|---|--|-----------------------------|
| C6097B1002/U | 12 to 60 in. wc | 3.0 to 15 kPa | max. 10 in. wc @ min. setpoint; max. 12 in. wc @ max. setpoint | max. 2.5 kPa @ min. setpoint; max. 3.0 kPa @ max. setpoint | Subtractive | Manual Reset | Break on pressure rise | 3 17/32 in. high x 2 23/32 in. wide x 2 23/32 in. deep (90 mm high x 69 mm wide x 69 mm deep) | Vent or Low pressure – 1/8 in. NPT internal thread | 1/4 in. NPT internal thread |
| C6097B1010/U | 12 to 60 in. wc | 3.0 to 15 kPa | max. 10 in. wc @ min. setpoint; max. 12 in. wc @ max. setpoint | max. 2.5 kPa @ min. setpoint; max. 3.0 kPa @ max. setpoint | Subtractive | Manual Reset | Break on pressure rise | 2 19/32 in. high x 2 23/32 in. wide x 2 23/32 in. deep (66 mm high x 69 mm wide x 69 mm deep) | | Flange Mount |
| C6097B1028/U | 3 to 21 in. wc | 0.7 to 5.2 kPa | max. 2.4 in. wc @ min. setpoint; max. 4.2 in. wc @ max. setpoint | max. 0.60 kPa @ min. setpoint; max. 1.05 kPa @ max. setpoint | Subtractive | Manual Reset | Break on pressure rise | 3 17/32 in. high x 2 23/32 in. wide x 2 23/32 in. deep (90 mm high x 69 mm wide x 69 mm deep) | Vent or Low pressure – 1/8 in. NPT internal thread | 1/4 in. NPT internal thread |
| C6097B1036/U | 3 to 21 in. wc | 0.7 to 5.2 kPa | max. 2.4 in. wc @ min. setpoint; max. 4.2 in. wc @ max. setpoint | max. 0.60 kPa @ min. setpoint; max. 1.05 kPa @ max. setpoint | Subtractive | Manual Reset | Break on pressure rise | 2 19/32 in. high x 2 23/32 in. wide x 2 23/32 in. deep (66 mm high x 69 mm wide x 69 mm deep) | | Flange Mount |
| C6097B1044/U | 1.5 to 7 psi | 10.3 to 48 kPa | max. 1.1 in. wc @ min. setpoint; max. 1.4 in. wc @ max. setpoint | max. 7.6 kPa @ min. setpoint; max. 9.6 kPa @ max. setpoint | Subtractive | Manual Reset | Break on pressure rise | 2 19/32 in. high x 2 23/32 in. wide x 2 23/32 in. deep (66 mm high x 69 mm wide x 69 mm deep) | | Flange Mount |
| C6097B1051/U | 1.5 to 7 psi | 10.3 to 48 kPa | max. 1.1 in. wc @ min. setpoint; max. 1.4 in. wc @ max. setpoint | max. 7.6 kPa @ min. setpoint; max. 9.6 kPa @ max. setpoint | Subtractive | Manual Reset | Break on pressure rise | 3 3/16 in. high x 2 23/32 in. wide x 2 23/32 in. deep (81 mm high x 69 mm wide x 69 mm deep) | Vent or Low pressure – 1/8 in. NPT internal thread | 1/4 in. NPT internal thread |
| C6097B1069/U | 3 to 21 in. wc | 0.7 to 5.2 kPa | 0.24 in. wc Nominal; 0.48 in. wc Maximum | 0.06 kPa Nominal; 0.12 kPa Maximum | Subtractive | Auto recycle | Break on pressure rise | 2 1/4 in. high x 2 23/32 in. wide x 2 23/32 in. deep (57 mm high x 69 mm wide x 69 mm deep) | | Flange Mount |
| C6097B1077/U | 12 to 60 in. wc | 3.0 to 15 kPa | 1.1 in. wc Nominal; 2.4 in. wc Maximum | 0.27 kPa Nominal; 0.60 kPa Maximum | Subtractive | Auto recycle | Break on pressure rise | 2 1/4 in. high x 2 23/32 in. wide x 2 23/32 in. deep (57 mm high x 69 mm wide x 69 mm deep) | | Flange Mount |
| C6097B1085/U | 12 to 60 in. wc | 3.0 to 15 kPa | 1.1 in. wc Nominal; 2.4 in. wc Maximum | 0.27 kPa Nominal; 0.60 kPa Maximum | Subtractive | Auto recycle | Break on pressure rise | 3 3/16 in. high x 2 23/32 in. wide x 2 23/32 in. deep (81 mm high x 69 mm wide x 69 mm deep) | Vent or Low pressure – 1/8 in. NPT internal thread | 1/4 in. NPT internal thread |
| C6097B1093/U | 1.5 to 7 psi | 10.3 to 48 kPa | 0.1 psi Nominal; 0.3 psi Maximum | 0.69 kPa Nominal; 2.07 kPa Maximum | Subtractive | Auto recycle | Break on pressure rise | 2 1/4 in. high x 2 23/32 in. wide x 2 23/32 in. deep (57 mm high x 69 mm wide x 69 mm deep) | | Flange Mount |
| C6097B1101/U | 1.5 to 7 psi | 10.3 to 48 kPa | 0.1 psi Nominal; 0.3 psi Maximum | 0.69 kPa Nominal; 2.07 kPa Maximum | Subtractive | Auto recycle | Break on pressure rise | 3 3/16 in. high x 2 23/32 in. wide x 2 23/32 in. deep (81 mm high x 69 mm wide x 69 mm deep) | Vent or Low pressure – 1/8 in. NPT internal thread | 1/4 in. NPT internal thread |
| C6097B1119/U | 3 to 21 in. wc | 0.7 to 5.2 kPa | 0.24 in. wc Nominal; 0.48 in. wc Maximum | 0.06 kPa Nominal; 0.12 kPa Maximum | Subtractive | Auto recycle | Break on pressure rise | 3 3/16 in. high x 2 23/32 in. wide x 2 23/32 in. deep (81 mm high x 69 mm wide x 69 mm deep) | Vent or Low pressure – 1/8 in. NPT internal thread | 1/4 in. NPT internal thread |

L404F Pressuretrol® Controllers



Application: Provide control of steam, air, non-combustible gases or non-corrosive fluids

Differential Type: Subtractive

Mounting: 1/4 inch-18 NPT internal thread connection on diaphragm assembly, 1/4 -19 BSPT internal thread on models with BSPT ground screw; or surface mount through back of case

Switch Operation: Auto recycle

Sensor Element: Stainless steel diaphragm standard; Brass Bellows on models with 20 to 300 psi

Operating Temperature Range: -35°F to +150°F (-37°C to +66°C)

Electrical Connections: Screw terminals

Provide operating control with automatic limit protection for pressure systems up to 300 psi (2068 kPa).

- Use with steam, air, noncombustible gases, or fluids non-corrosive to pressure sensing element.
- Models have snap-acting switching to open or close a circuit on pressure rise.
- Have adjustable differentials.
- Adjustments are made by screws on top of case.
- Mount using 1/4 inch -18 NPT internal pipe threads or surface mount through base of case.
- Ground screw terminal.

Contact Ratings: 120 Vac Switch Contact – 8.0 AFL, 48.0 ALR, 10.0 A resistive; 240 Vac Switch Contact – 5.1 AFL, 30.6 ALR, 5.0 A resistive

Pipe Connection - Main or High Pressure: 1/4 inch-18 NPT internal thread standard; 1/4 -19 BSPT internal thread on models with BSPT ground screw

Approvals, Underwriters Laboratories Inc.: Listed: File No. MP466, Guide No. MBPR

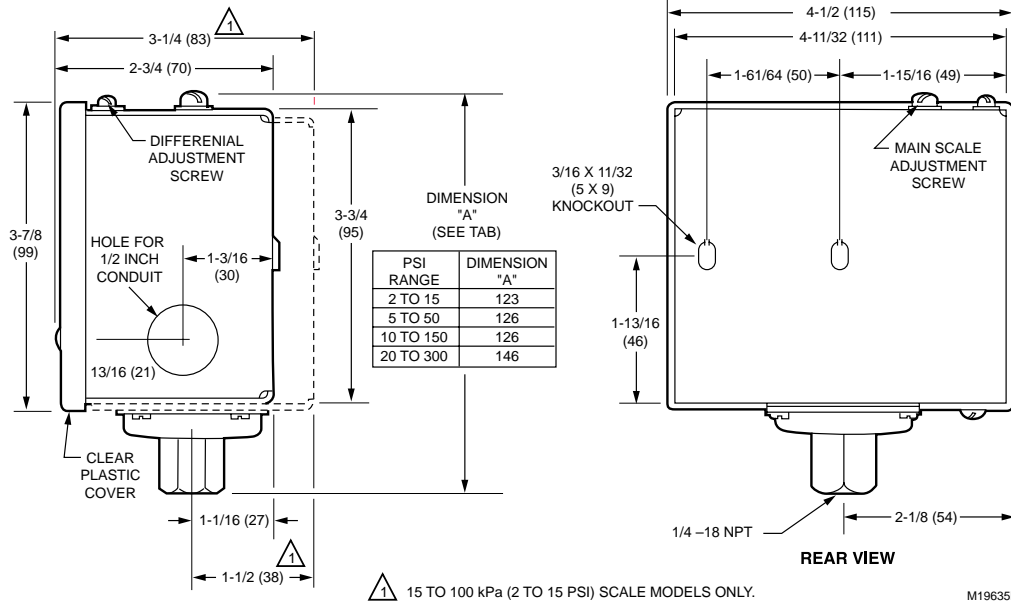
Approvals, CSA: Certified: File No. LR1620, Guide No. 400-E-O; or Certified: File No. LR95329 for Miss-wiring Compliant models

Approvals, Swiss RE: Acceptable

| Material Number | Operating Range (psi) | Operating Range (kPa) | Maximum Sustained Pressure (psi) | Maximum Sustained Pressure (kPa) | Differential Pressure Range (psi) | Differential Pressure Range (kPa) | Switching Action | Includes | Comments |
|-----------------|-----------------------|-----------------------|----------------------------------|----------------------------------|-----------------------------------|-----------------------------------|--|--|-------------------------------|
| L404F1060/U | 2 to 15 psi | 14 to 103 kPa | 25 psi | 172 kPa | 2 to 6 psi | 14 to 41 kPa | SPDT snap action, make R-W, break R-B on pressure rise | | |
| L404F1078/U | 5 to 50 psi | 35 to 345 kPa | 85 psi | 586 kPa | 6 to 14 psi | 41 to 97 kPa | SPDT snap action, make R-W, break R-B on pressure rise | | |
| L404F1094/U | 20 to 300 psi | 138 to 2068 kPa | 350 psi | 2413 kPa | 20 to 50 psi | 138 to 345 kPa | SPDT snap action, make R-W, break R-B on pressure rise | | |
| L404F1102/U | 10 to 150 psi | 69 to 1034 kPa | 225 psi | 1151 kPa | 10 to 22 psi | 60 to 152 kPa | SPDT snap action, make R-W, break R-B on pressure rise | | |
| L404F1219/U | 2 to 15 psi | 14 to 103 kPa | 25 psi | 172 kPa | 2 to 6 psi | 14 to 41 kPa | SPDT snap action, make R-W, break R-B on pressure rise | BSPT ground screw and European Enclosure | |
| L404F1227/U | 10 to 150 psi | 69 to 1034 kPa | 225 psi | 1151 kPa | 10 to 22 psi | 60 to 152 kPa | SPDT snap action, make R-W, break R-B on pressure rise | BSPT ground screw and European Enclosure | |
| L404F1235/U | 20 to 300 psi | 138 to 2068 kPa | 350 psi | 2413 kPa | 20 to 50 psi | 138 to 345 kPa | SPDT snap action, make R-W, break R-B on pressure rise | BSPT ground screw and European Enclosure | |
| L404F1243/U | 5 to 50 psi | 35 to 345 kPa | 85 psi | 586 kPa | 6 to 14 psi | 41 to 97 kPa | SPDT snap action, make R-W, break R-B on pressure rise | BSPT ground screw and European Enclosure | |
| L404F1367/U | 1 to 8 psi | 7 to 55 kPa | 25 psi | 172 kPa | 0.75 to 2 psi | 5 to 14 kPa | Snap switch breaks R-B (closes R-W) on pressure rise. Make-on devices omit terminal B. | | Range Stop installed at 8 PSI |
| L404F1375/U | 5 to 50 psi | 35 to 350 kPa | 85 psi | 586 kPa | 6 to 14 psi | 40 to 100 kPa | Snap switch makes R-W on pressure rise | Miss-wiring Compliant (less B terminal) | |
| L404F1383/U | 10 to 150 psi | 70 to 1035 kPa | 225 psi | 1151 kPa | 10 to 22 psi | 70 to 150 kPa | Snap switch makes R-W on pressure rise | Miss-wiring Compliant (less B terminal) | |
| L404F1391/U | 20 to 300 psi | 140 to 2070 kPa | 350 psi | 2413 kPa | 20 to 50 psi | 140 to 345 kPa | Snap switch makes R-W on pressure rise | Miss-wiring Compliant (less B terminal) | |
| L404F1409/U | 2 to 15 psi | 14 to 103 kPa | 25 psi | 172 kPa | 2 to 6 psi | 15 to 40 kPa | Snap switch makes R-W on pressure rise | Miss-wiring Compliant (less B terminal) | |

Pressure and Limit Controllers

Dimensions in inches (millimeters)



M19635B

L404T, V Oil Pressuretrol® Limit Controllers



Oil pressure sensing devices for use on oil burner systems using any type of fuel oil, including heavy pretreated oils.

- Clear plastic cover allows observation of the pressure settings.
- Models have snap-acting switching to open or close a circuit on pressure rise.
- L404T High pressure limit, break a circuit on oil pressure rise above setpoint.
- L404V Low Pressure limit, makes a circuit on oil pressure rise above setpoint.
- Adjustments are made by screws on top of case.
- Mount using 1/4 inch -18 NPT internal pipe threads or surface mount through base of case.
- Ground screw terminal.

Application: Oil pressure limit switch for fuel oil, including heavy oil applications

Differential Type: Subtractive

Mounting: 1/4 in. NPT internal thread or surface mount through back of case

Switch Operation: Auto recycle

Sensor Element: Stainless Steel diaphragm

Approximate, Dimensions: 4 31/32 in. high x 4 1/2 in. wide x 2 3/4 in. deep (126 mm high x 114 mm wide x 70 mm deep)

Operating Temperature Range: -35°F to +150°F (-37°C to +66°C)

Electrical Connections: Screw terminals

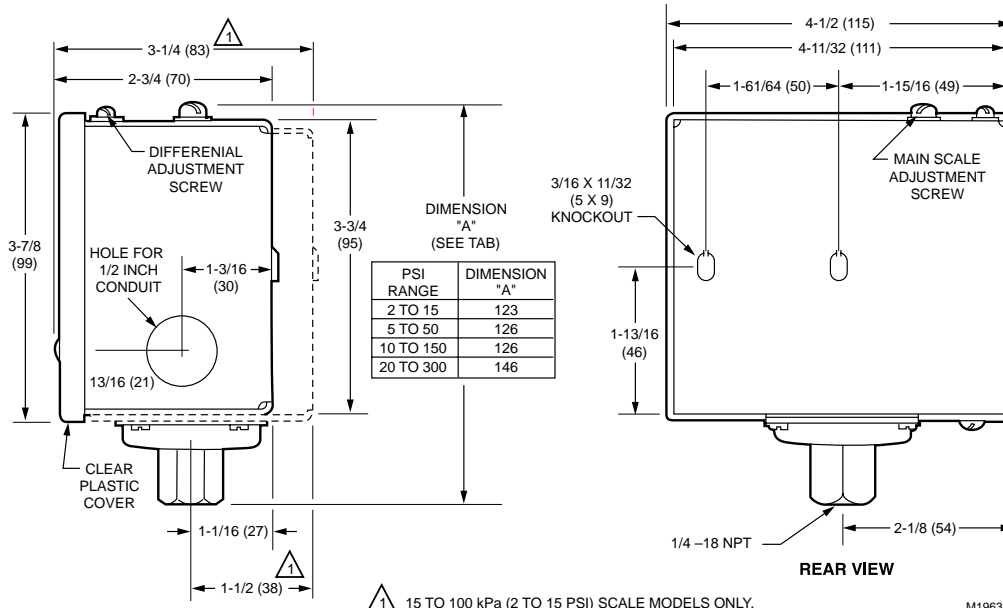
Contact Ratings: 120 Vac Switch Contact – 8.0 AFL, 48.0 ALR, 10.0 A resistive; 240 Vac Switch Contact – 5.1 AFL, 30.6 ALR, 5.0 A resistive;

Pipe Connection: Main or High Pressure – 1/4 in. NPT internal thread

Approvals, Underwriters Laboratories Inc.: Listed: File No. MP2168, Guide No. MFHX

Approvals, CSA: Certified: File No. LR95329

Dimensions in inches (millimeters)



Commercial/Industrial
Combustion Controls

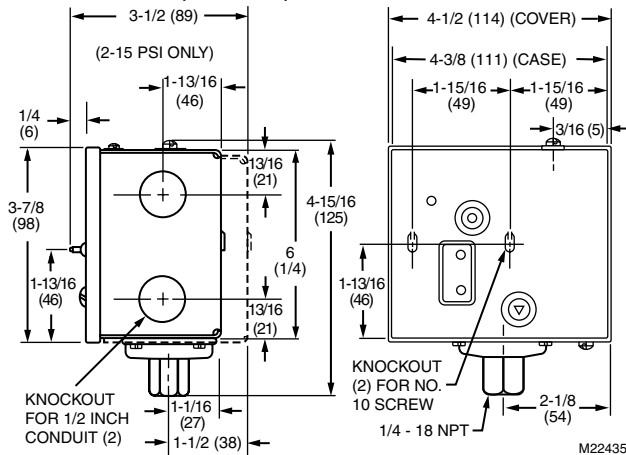
| Material Number | Operating Range (psi) | Operating Range (kPa) | Differential Pressure Range (psi) | Differential Pressure Range (kPa) | Switching Action | Includes |
|-----------------|--|--|-----------------------------------|-----------------------------------|---|---|
| L404T1055/U | 5 to 50 psi; 85 psi - Maximum Sustained | 35 to 350 kPa; 586 kPa - Maximum Sustained | 6 to 14 psi | 40 to 100 kPa | SPST snap-acting break on pressure rise | |
| L404T1063/U | 10 to 150 psi; 225 psi - Maximum Sustained | 70 to 1035 kPa; 1151 kPa - Maximum Sustained | 10 to 22 psi | 70 to 150 kPa | SPST snap-acting break on pressure rise | |
| L404V1087/U | 10 to 150 psi; 225 psi - Maximum Sustained | 70 to 1035 kPa; 1151 kPa - Maximum Sustained | 10 to 22 psi | 70 to 150 kPa | Snap switch makes R-W on pressure rise | Miss-wiring Compliant (less B terminal) |
| L404V1095/U | 5 to 50 psi; 85 psi - Maximum Sustained | 35 to 350 kPa; 586 kPa - Maximum Sustained | 6 to 14 psi | 40 to 100 kPa | Snap switch makes R-W on pressure rise | Miss-wiring Compliant (less B terminal) |

Pressure and Limit Controllers

L4079 Pressuretrol® Limit Controllers



Dimensions in inches (millimeters)



High pressure limit switches.

- Stainless steel diaphragm for use with steam, air, noncombustible gases and fluids non-corrosive to stainless steel.
- L4079W is for Oil Applications.
- Micro Switch™ snap-acting switches open automatically on pressure rise; must be manually reset.
- Mount using 1/4 in. NPT female fitting on diaphragm assembly or surface mount through back of case.

Mounting: 1/4 in. NPT internal thread or surface mount through back of case

Sensor Element: Stainless Steel diaphragm

Approximate, Dimensions: 5 in. high x 4 1/2 in. wide x 3 1/2 in. deep. (127 mm high x 114 mm wide x 89 mm deep.)

Temperature Ratings: 150°F - Maximum Ambient (66°C - Maximum Ambient)

Electrical Connections: Screw terminals

Contact Ratings: 120 Vac Switch Contact – 9.8 AFL, 58.8 ALR; 240 Vac Switch Contact – 4.9 AFL, 29.4 ALR

Pipe Connection: Main or High Pressure – 1/4 in. NPT internal thread

Approvals, Underwriters Laboratories Inc.: Listed: File No. MP466, Guide No. MBPR

Approvals, Swiss RE: Acceptable

| Material Number | Application | Operating Range (psi) | Operating Range (kPa) | Switch Operation | Switching Action |
|-----------------|--|--|---|------------------|--|
| L4079A1035/U | Provide limit control of steam, air, non-combustible gases or non-corrosive fluids | 2 to 15 psi; 25 psi - Maximum Sustained | 14 to 103 kPa; 172 kPa - Maximum Sustained | Manual Reset | SPST (two) break simultaneously on pressure rise |
| L4079A1050/U | Provide limit control of steam, air, non-combustible gases or non-corrosive fluids | 10 to 150 psi; 225 psi - Maximum Sustained | 69 to 1034 kPa; 1151 kPa - Maximum Sustained | Manual Reset | SPST (two) break simultaneously on pressure rise |
| L4079B1033/U | Provide limit control of steam, air, non-combustible gases or non-corrosive fluids | 2 to 15 psi; 25 psi - Maximum Sustained | 14 to 103 kPa; 172 kPa - Maximum Sustained | Manual Reset | SPST break on pressure rise |
| L4079B1041/U | Provide limit control of steam, air, non-combustible gases or non-corrosive fluids | 10 to 150 psi; 225 psi - Maximum Sustained | 70 to 1035 kPa; 1151 kPa - Maximum Sustained | Manual Reset | SPST break on pressure rise |
| L4079B1058/U | Provide limit control of steam, air, non-combustible gases or non-corrosive fluids | 5 to 50 psi; 85 psi - Maximum Sustained | 35 to 350 kPa; 586 kPa - Maximum Sustained | Manual Reset | SPST break on pressure rise |
| L4079B1066/U | Provide limit control of steam, air, non-combustible gases or non-corrosive fluids | 20 to 300 psi; 350 psi - Maximum Sustained | 140 to 2070 kPa; 2413 kPa - Maximum Sustained | Manual Reset | SPST break on pressure rise |
| L4079W1000/U | High oil pressure limit switch for heavy oil applications. | 10 to 150 psi; 225 psi - Maximum Sustained | 35 to 350 kPa; 1151 kPa - Maximum Sustained | Manual Reset | SPST break on pressure rise - Oil Applications |

L408J Vaporstat® Controllers



Application: Provide operating control and automatic limit protection for pressure systems with pressures up to 4 psi (8 kPa)

Differential Type: Subtractive

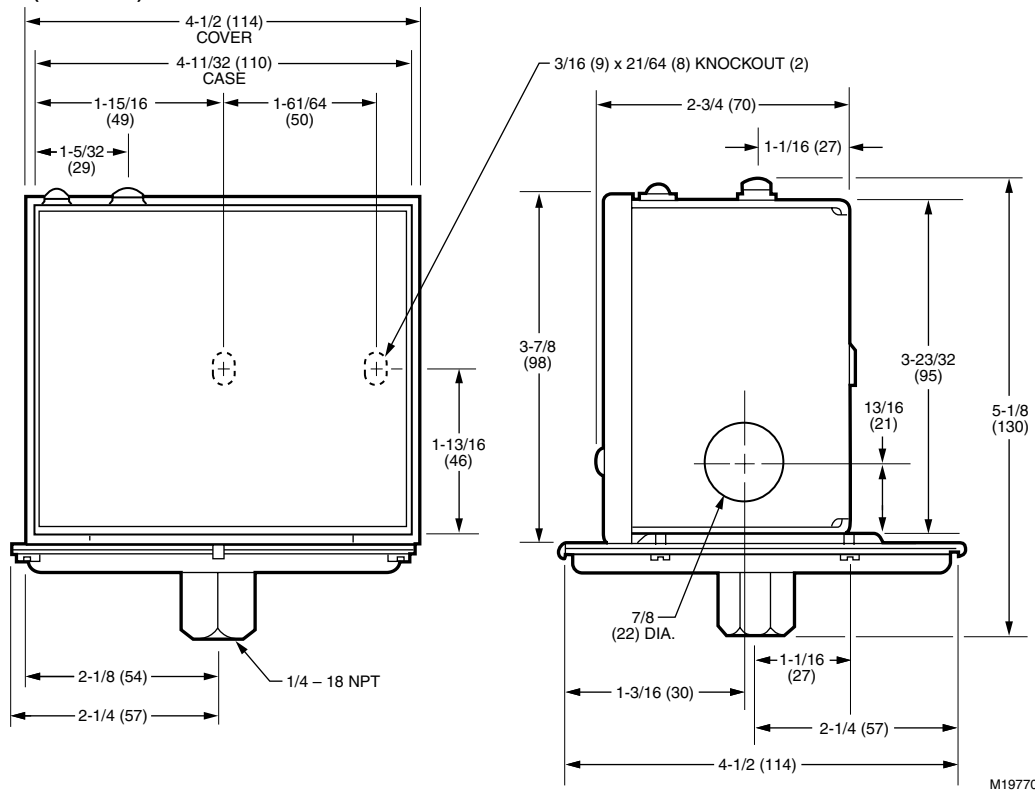
Mounting: 1/4 in. NPT internal thread or surface mount through back of case

Sensor Element: Stainless Steel diaphragm

Approximate, Dimensions: 5 1/8 in. high x 4 1/2 in. wide x 4 1/2 in. deep. (130 mm high x 114 mm wide x 114 mm deep.)

Operating Temperature Range: -35°F to +150°F (-37°C to +66°C)

Dimensions in inches (millimeters)



Provide operating control and automatic high limit protection for vapor heating systems with pressures up to 4 psi (8 kPa). All models have Microswitch snap switches to open or close a circuit on a pressure rise.

- Stainless steel diaphragm for use with liquids, air, noncombustible gases, ammonia, oxygen, distilled water and similar media.
- Provide SPDT switching.
- Clear plastic cover allows observation of the pressure settings.
- Mount using hexagonal fitting with 1/4 in. NPT internal threads for direct mounting to the 14026 (steel) or 50024585-001 (brass) Steam Trap (siphon loop).
- Ground Screw terminal.

Electrical Connections: Screw terminals

Contact Ratings: 120 Vac Switch Contact – 8.0 AFL, 48.0 ALR, 10.0 A resistive; 240 Vac Switch Contact – 5.1 AFL, 30.6 ALR, 5.0 A resistive

Pipe Connection: Main or High Pressure – 1/4 in. NPT internal thread

Approvals, Underwriters Laboratories Inc.: Listed: File No. MP466, Guide No. MBPR

Approvals, CSA: Certified: File No. LR1620, Guide No. 400-E-O

Approvals, Swiss RE: Acceptable

| Material Number | Operating Range (psi) | Operating Range (kPa) | Differential Pressure Range (psi) | Differential Pressure Range (kPa) | Switch Operation | Switching Action | Comments |
|-----------------|----------------------------|-----------------------|-----------------------------------|-----------------------------------|------------------|---|-----------------------|
| L408J1009/U | 0 to 16 oz/in ² | 0 to 6.9 kPa | 2 to 16 oz/in ² | 0.9 to 6.9 kPa | Auto recycle | SPDT make R-W, break R-B on pressure rise | |
| L408J1017/U | 0 to 4 psi | 0 to 28 kPa | 2 to 16 oz/in ² | 0.9 to 6.9 kPa | Auto recycle | SPDT make R-W, break R-B on pressure rise | |
| L408J1025/U | 0 to 16 oz/in ² | 0 to 6.9 kPa | 2 to 16 oz/in ² | 0.9 to 6.9 kPa | Auto recycle | SPST make on pressure rise Only | Miss-wiring Compliant |
| L408J1033/U | 0 to 4 psi | 0 to 28 kPa | 2 to 16 oz/in ² | 0.9 to 6.9 kPa | Auto recycle | SPST make on pressure rise Only | Miss-wiring Compliant |

Commercial/Industrial
Combustion Controls

Pressure and Limit Controllers

L91 Proportional Pressuretrol® Controllers



Modulating pressure operating control for regulation of liquid or air and other non-corrosive gases.

- Use with steam, air, noncombustible gases, or other fluids non-corrosive to the brass or phos-bronze (300 psi models) bellows.
- Do NOT use with combustible mediums or any medium chemically harmful to phos-bronze bellows (10-300 psi models) or brass bellows (all other pressure range models).

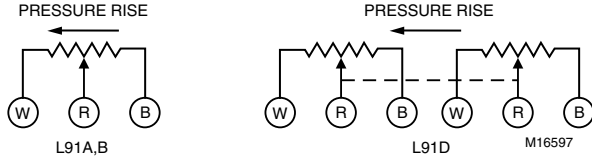
Application: Modulating pressure control for regulation of liquid, air, or other non-corrosive gases.

Switch Operation: Modulating

Operating Temperature Range: 32°F to 150°F (0°C to 66°C)

Electrical Connections: Screw terminals

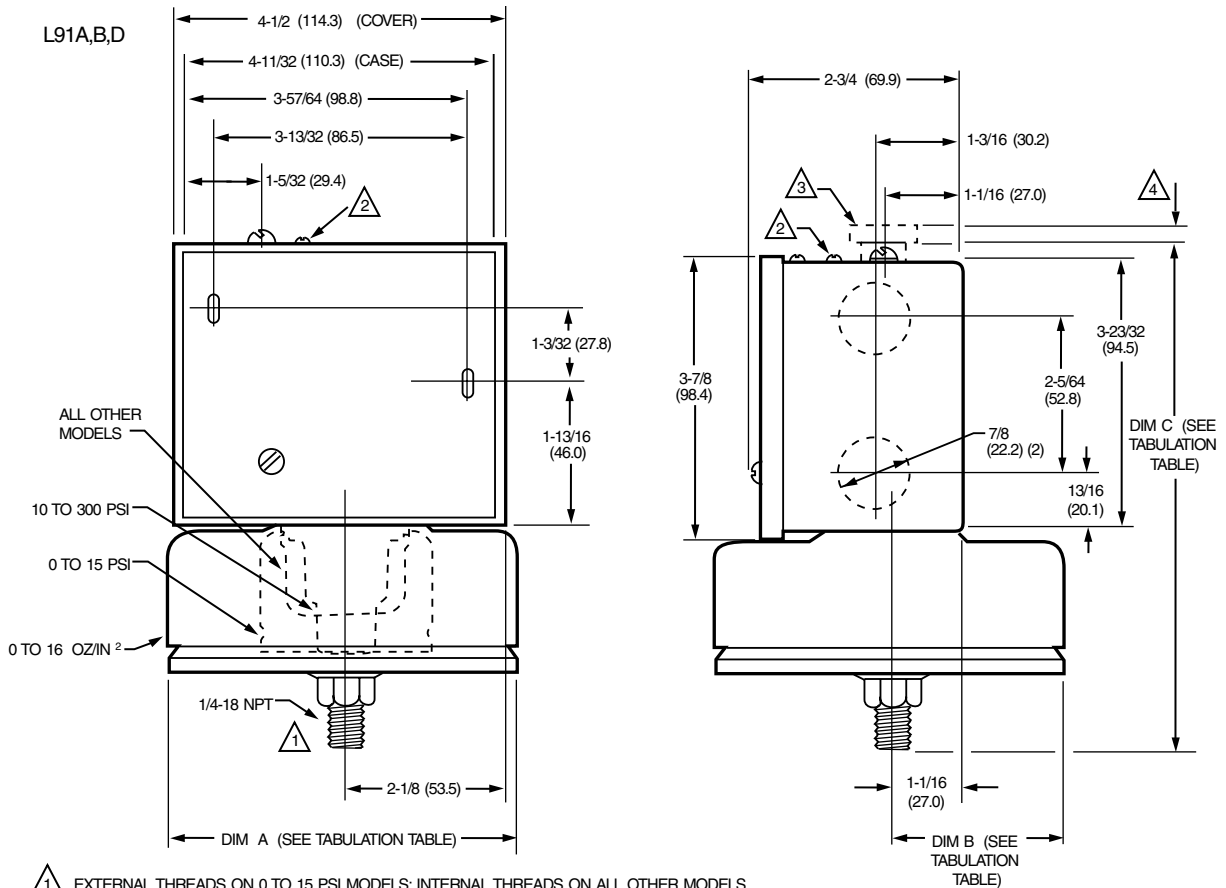
Pipe Connection: Main or High Pressure – 1/4 in. NPT external thread



| Material Number | Operating Range (psi) | Operating Range (kPa) | Differential Pressure Range (psi) | Differential Pressure Range (kPa) | Mounting | Sensor Element | Approximate, Dimensions | Modulation Output |
|-----------------|---|---|-----------------------------------|-----------------------------------|---|---------------------|--|--------------------------------|
| L91A1037/U | 0 to 15 psi; 25 psi - Maximum Sustained | 0 to 103 kPa; 172 kPa - Maximum Sustained | 0.5 psi | 3.4 kPa | optional surface mount through back of case | Brass bellows | 6 7/8 in. high x 4 1/2 in. wide x 2 7/8 in. deep (175 mm high x 114 mm wide x 73 mm deep) | Single potentiometer, 140 ohms |
| L91A1052/U | 5 to 150 psi; 225 psi - Maximum Sustained | 34 to 1034 kPa; 1151 kPa - Maximum Sustained | 5 psi | 34 kPa | optional surface mount through back of case | Brass bellows | 5 3/4 in. high x 4 1/2 in. wide x 2 3/4 in. deep (146 mm high x 114 mm wide x 70 mm deep) | Single potentiometer, 140 ohms |
| L91A1078/U | 10 to 300 psi; 325 psi - Maximum Sustained | 69 to 2068 kPa; 2241 kPa - Maximum Sustained | 12 psi | 83 kPa | optional surface mount through back of case | Phos-bronze bellows | 6 1/16 in. high x 4 1/2 in. wide x 2 3/4 in. deep (154 mm high x 114 mm wide x 70 mm deep) | Single potentiometer, 140 ohms |
| L91A1136/U | 10 to 300 psi; 325 psi - Maximum Sustained | 69 to 2068 kPa; 2241 kPa - Maximum Sustained | 12 psi | 83 kPa | optional surface mount through back of case | Phos-bronze bellows | 6 1/16 in. high x 4 1/2 in. wide x 2 3/4 in. deep (154 mm high x 114 mm wide x 70 mm deep) | Single potentiometer, 140 ohms |
| L91B1035/U | 0 to 15 psi; 25 psi - Maximum Sustained | 0 to 103 kPa; 172 kPa - Maximum Sustained | 1.5 to 12 psi | 10 to 83 kPa | optional surface mount through back of case | Brass bellows | 6 7/8 in. high x 4 1/2 in. wide x 2 7/8 in. deep (175 mm high x 114 mm wide x 73 mm deep) | Single potentiometer, 140 ohms |
| L91B1050/U | 5 to 150 psi; 225 psi - Maximum Sustained | 34 to 1034 kPa; 1151 kPa - Maximum Sustained | 5 to 23 psi | 35 to 160 kPa | optional surface mount through back of case | Brass bellows | 5 3/4 in. high x 4 1/2 in. wide x 2 3/4 in. deep (146 mm high x 114 mm wide x 70 mm deep) | Single potentiometer, 140 ohms |
| L91B1068/U | 10 to 300 psi; 325 psi - Maximum Sustained | 69 to 2068 kPa; 2241 kPa - Maximum Sustained | 28 to 110 psi | 193 to 758 kPa | optional surface mount through back of case | Phos-bronze bellows | 6 1/16 in. high x 4 1/2 in. wide x 2 3/4 in. deep (154 mm high x 114 mm wide x 70 mm deep) | Single potentiometer, 140 ohms |
| L91B1100/U | 5 to 150 psi; 225 psi - Maximum Sustained | 0 - 1 MPa; 1151 kPa - Maximum Sustained | 5 to 23 psi | 35 to 160 kPa | 1/4 in BSP-TR thread Mounting | Brass bellows | 5 3/4 in. high x 4 1/2 in. wide x 2 3/4 in. deep (146 mm high x 114 mm wide x 70 mm deep) | Single potentiometer, 135 ohms |
| L91B1118/U | 10 to 300 psi; 325 psi - Maximum Sustained | 0 - 2 MPa; 2241 kPa - Maximum Sustained | 28 to 110 psi | 193 to 758 kPa | 1/4 in BSP-TR thread Mounting | Phos-bronze bellows | 6 1/16 in. high x 4 1/2 in. wide x 2 3/4 in. deep (154 mm high x 114 mm wide x 70 mm deep) | Single potentiometer, 140 ohms |
| L91B1241/U | 10 to 300 psi; 325 psi - Maximum Sustained | 69 to 2068 kPa; 2241 kPa - Maximum Sustained | 12 to 48 psi | 85 to 330 kPa | optional surface mount through back of case | Phos-bronze bellows | 6 1/16 in. high x 4 1/2 in. wide x 2 3/4 in. deep (154 mm high x 114 mm wide x 70 mm deep) | Single potentiometer, 140 ohms |
| L91D1015/U | 0 to 15 psi; 25 psi - Maximum Sustained | 0 to 103 kPa; 172 kPa - Maximum Sustained | 1.5 to 12 psi | 10 to 83 kPa | optional surface mount through back of case | Brass bellows | 6 7/8 in. high x 4 1/2 in. wide x 2 7/8 in. deep (175 mm high x 114 mm wide x 73 mm deep) | Dual potentiometer, 140 ohms |
| L91D1031/U | 5 to 150 psi; 225 psi - Maximum Sustained | 34 to 1034 kPa; 1151 kPa - Maximum Sustained | 11 to 52 psi | 76 to 359 kPa | optional surface mount through back of case | Brass bellows | 5 3/4 in. high x 4 1/2 in. wide x 2 3/4 in. deep (146 mm high x 114 mm wide x 70 mm deep) | Dual potentiometer, 140 ohms |

Pressure and Limit Controllers

Dimensions in inches (millimeters)



- 1 EXTERNAL THREADS ON 0 TO 15 PSI MODELS; INTERNAL THREADS ON ALL OTHER MODELS. SOME MODELS ARE ALSO AVAILABLE WITH 1/4-19 BSP-TR INTERNAL THREADS; SEE TABLE 1.
- 2 PROPORTIONING RANGE ADJUSTING SCREW ON L91B,D MODELS ONLY.
- 3 33312B KNURLED ADJUSTMENT SCREW KNOB, 7/8 IN. [22.2 MM] DIAMETER. KNOB IS INCLUDED WITH 10 TO 300 PSI [0.07 TO .07 MPa] MODELS; OPTIONAL ACCESSORY FOR OTHER MODELS.
- 4 FOR 10 TO 300 PSI [0.07 TO 2.07 MPa] MODELS. DIM C INCLUDES THE KNURLED ADJUSTMENT KNOB.

TABULATION OF DIMENSIONS A, B, AND C

| OPERATING RANGE | | DIM A | | DIM B | | DIM C | |
|-----------------|------------------|--------|------|--------|------|---------------------|--------------------|
| CUSTOMARY UNITS | METRIC UNITS | IN. | MM | IN. | MM | IN. | MM |
| 0 TO 15 PSI | 0 TO 103 kPa | 2-7/16 | 61.9 | 1-7/32 | 31.0 | 6-7/8 | 174.6 |
| 5 TO 150 PSI | 0.03 TO 1.03 MPa | 1-5/8 | 41.3 | 13/16 | 20.6 | 5-3/4 | 146.1 |
| 10 TO 300 PSI | 0.07 TO 2.07 MPa | 1-1/4 | 31.8 | 5/8 | 15.9 | 6-1/16 ⁴ | 154.0 ⁴ |

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Pressure and Limit Controllers

P7810 Pressure Control



Line voltage pressure controller that provides automatic operating control, automatic limit protection, manual reset limit protection, and 4-20 mA modulating firing rate control for pressure systems up to 300 psi.

- May be used with steam, air, non-combustible gases or fluids that will not corrode the pressure sensing element.
- Models available in 15, 150, 300 psi maximum setpoints.
- LED indicators show limit function/lockout.
- Reset function easily accessible under cover.
- Clear cover allows setpoint and differentials to be read (but not adjusted) without opening the cover.

Application: On-off, Modulate and Limit Control

Sensor Element: Stainless Steel, solid state sensor

Materials: Case: Plastic

Approximate, Dimensions: 5 1/4 in. high x 4 21/32 in. wide x 3 3/8 in. deep (133 mm high x 119 mm wide x 86 mm deep)

Voltage: 120 Vac

Frequency: 50 Hz; 60 Hz

Power Consumption: 3.6 W, 4.7 VA @ 50Hz; 3.3 W, 4.0 VA @ 60 Hz

Operating Temperature Range: 32°F to 140°F (0°C to +60°C)

Operating Humidity Range (% RH): 5 to 95% RH, non-condensing

Electrical Connections: Screw terminals

Contact Ratings: 120 Vac Switch Contact – 9.8 AFL, 58.8 ALR, 10.0 A resistive

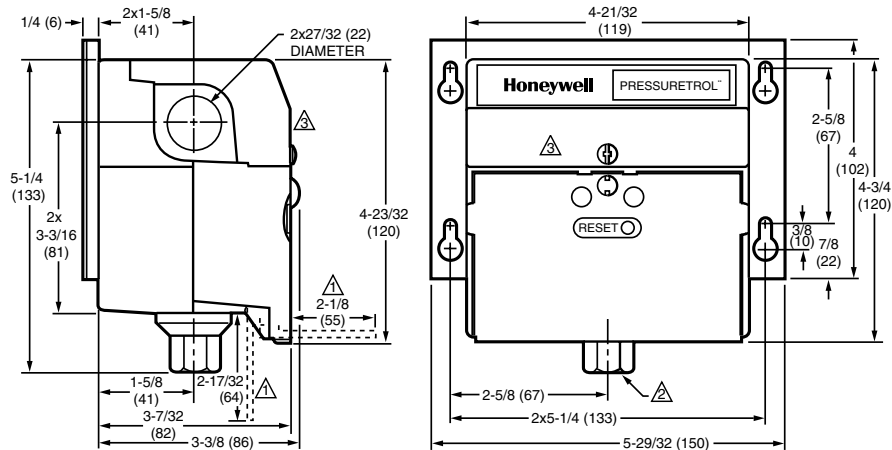
Pipe Connection: Main or High Pressure – 1/2 in. NPT internal thread
Approvals, Underwriters Laboratories Inc.: Listed: File No. MP268, Guide No. MCCZ

Approvals, CSA: Certified: File No. LR95329-6

Approvals, Factory Mutual: Approved: Report No. J.I.2D3A6AF

Modulation Output: 4 mA to 20 mA

Dimensions in inches (millimeters)



▲ DIMENSIONS WITH DOOR IN OPEN POSITION.

▲ PIPE THREAD IS 1/4 INCH NATIONAL PIPE THREAD FOR P7810A,B; 1/2 INCH NATIONAL PIPE THREAD FOR P7810C,D.

▲ WIRING COMPARTMENT ACCESS COVER.

M23225

| Material Number | Operating Range (psi) | Operating Range (kPa) | Differential Pressure Range (psi) | Differential Pressure Range (kPa) | Switching Action |
|-----------------|---|---|-----------------------------------|-----------------------------------|------------------------|
| P7810C1000/U | 0 to 15 psi; 22.5 psi - Maximum Sustained | 0 to 103 kPa; 155 kPa - Maximum Sustained | 2 to 10 psi | 14 to 69 kPa | Break on pressure rise |
| P7810C1018/U | 0 to 150 psi; 225 psi - Maximum Sustained | 0 to 1034 kPa; 1151 kPa - Maximum Sustained | 5 to 20 psi | 35 to 135 kPa | Break on pressure rise |
| P7810C1026/U | 0 to 300 psi; 450 psi - Maximum Sustained | 0 to 2068 kPa; 3103 kPa - Maximum Sustained | 15 to 50 psi | 103 to 340 kPa | Break on pressure rise |

Pressure Controls and Limits Accessories

| Material Number | Description | Used With |
|-----------------|---|------------------------|
| 106729/U | C437, C637 Glass Lens, 6" diameter | C437, C637 |
| 129178E/U | Cover Assembly | L404, L604 |
| 137632/U | C437, C637 Paper Lens Gasket | C437, C637 |
| 139870/U | C437, C637 Lens Gasket for Rainproof Models | C437, C637 |
| 139870A/U | Glass lens with rubber gasket for NEMA 3 C437 and C637. | C437, C637 |
| 14026/U | Steam Trap "Black Iron Siphon Loop" for L404, L408, L91 or P7810A, B | L404, L91, L604 |
| 209731A/U | 1/2 in. NPT Brass Siphon Loop for P7810C, D | P7810C, P7810D |
| 23176CB/U | L91 Potentiometer - 135 ohm | L91 |
| 23176CF/U | L91 Potentiometer - 135 ohm | L91 |
| 32003039-001/U | C6097 Lamp Kit, Position Indication | C6097 |
| 32003040-001/U | C6097 Cover, Recycle Model | C6097 |
| 32003041-001/U | C6097 Cover, Manual Reset Model | C6097 |
| 4074BWJ/U | Pressure Control/Limits, Limit Stop Assembly - to limit setpoint. Includes 129564 Range Stop, 107194 Range Stop Screw and 23466 Wrench. | L404, L604, L91, L4079 |
| 50024585-001/U | Steam Trap "1/4 in. NPT Brass Siphon Loop" for L404, L408, or L91 | L404, L91, L604 |

Modernization and Replacement

RM7895 On-Off Primary Control with Prepurge



Microprocessor-based integrated primary burner control for automatically fired gas, oil, or combination fuel single burner applications. Provides level of safety, functional capability and features beyond conventional controls.

- Functions include automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics and troubleshooting
- Subbase, amplifier, and prepurge timer are required for operation
- Options include PC interface using ModBus™, keyboard display module, Data ControlBus™ Module, remote display module and first-out expanded annunciator
- Five LEDs provide sequence information
- Interchangeable plug-in flame amplifiers
- Optional local or remote annunciation of operation and fault information
- Nonvolatile memory retains history files and sequencing status after power loss
- Optional remote reset capability
- Optional report generation using Modbus™
- Selectable relight or lockout on loss of flame
- Airflow switch check

| | | |
|-----------|---------------------|-------------------|
| Honeywell | RA890, R4795, R7795 | All 120 V models. |
| Fireye | M-Series | |

IMPORTANT: For on-off, gas-fired systems, some authorities having jurisdiction prohibit the wiring of any limit or operating contacts in series with the main fuel valve(s).

DIRECTIONS:

1. Disconnect all power to programmer.
2. Remove old programmer from subbase (trade-in to Honeywell Authorized Flame Safeguard Distributor).
3. Mark all wires on subbase; i.e., wires connected to terminal "1" should be marked "1." Disconnect wires as they are marked.
4. Remove old subbase.
5. Mount Q7800A Subbase.
6. Connect wires to subbase per attached cross reference. Pay close attention to footnotes. For example: to convert a Fireye UVM-2 to a RM7895, the wire marked "A" would connect to terminal #9 on the Q7800. The wire marked "8" would connect to Q7800 terminal #8.
7. A superscript letter, such as "a" designates a footnote. Study these footnotes carefully.
8. Plug in the RM7895. Make sure you select the proper ST7800A Purge Timer and Detector for the application.
9. There are 2 wires on the amplifier section of the RM7895, which are used to select the desired trial for ignition timing and mode (lock-out or recycle). Refer to the RM7895 instruction sheet (form 66-1090) for assistance with proper selection.
10. If a low voltage controller is used on the RA890 or UVM-1, remove it and replace it with a line voltage controller. The line voltage controller should be connected in series with the limits.
11. If a low voltage airflow switch is used on the RM7895, it must be replaced with a line voltage airflow switch.
12. The following models are recommended for replacements:

| Honeywell Device to be Replaced | Replace With | Amplifier |
|---------------------------------|--------------|------------------|
| RA890E, F | RM7895A | R7847A |
| RA890G | RM7895A | R7849A |
| R4795A, D/W-R7290 AMP | RM7895A | |
| R4795A, D/W-R7289 AMP | RM7895B | R7847A |
| R7795A | RM7895A | R7849 |
| R7795B | RM7895A | R7847 |
| R7795C | RM7895C | R7849 |
| R7796D | RM7895C | R7847 |
| R4140P | RM7895C | R7847A or R7849A |
| R4140Y | RM7895A | |
| Fireye Device to be Replaced | Replace With | Amplifier |
| TFM1, 2, 3H | RM7895A | R7847A |
| UVM1, 2, 3, 3H | | R7849A |
| UVM5 | RM7895C | R7849A |

CONVERSION CHART FOR RM7895 120 VOLT ONLY

| Q7800 TERMINAL | L1 | L2 | 3 | 4 | 6 | 7 | 8 | 9 | 10 | 21 | F | G |
|-----------------------------------|----------------|----|---|------|----|----------------|----------------|---|----|----|-----------------|----|
| Programmer to be Converted | | | | | | | | | | | | |
| RA890 (All) | 1 ^a | 2 | c | b, d | 6 | b | 3 ^d | 5 | 4 | — | F | G |
| R4795 (All) | a | 2 | c | 8, 7 | 1 | 6 ^b | 3 | 5 | 4 | — | F | G |
| R7795A, B | L1 | L2 | 9 | 8 | 16 | 3 | 5 | 6 | 18 | — | F | G |
| R7795C, D | L1 | L2 | 9 | 8 | 16 | 3 | 5 | 6 | 18 | 7 | F | G |
| R4140P | L1 | L2 | A | M | 3 | P | 5 | 7 | — | 6 | S1 | S2 |
| R4140Y | L1 | L2 | 9 | 8 | 4 | 3 | 6 | 7 | 5 | — | F ^e | G |
| Fireye: UVM/TFM (All models)/MII | 1 | 1 | A | 8 | 7 | 6 | 3 | 5 | 4 | — | S2 ^f | S1 |
| UVM-1 (Prior to 1968) | a | 2 | A | b, d | 1 | b | 3 | 5 | 4 | — | S ^f | S |
| UVM-2 (Prior to 1968), All others | a | 2 | A | 8 | 1 | 6 | 3 | 5 | 4 | — | S ^f | S |

^a Connect power to terminal L1.

^b If no airflow switch is used, jumper Q7800 terminal 6 to 7.

^c Replace low voltage alarm (if used) with line voltage alarm. Connect alarm directly to Q7800 terminal 3.

^d On power burners, identify burner motor wire on terminal 3 and connect it to Q7800 terminal 4.

^e Select amplifier to match detector being used.

^f On UVM models, the detector must be changed to a Honeywell C7027 or C7035.

RA890F Protectorelay™ Primary Control



Primary control provides solid state, electronic flame safeguard protection for industrial and commercial single or dual fuel burners for rectification type flame detection.

- Uses rectification principle of electronic flame detection.
- Replaces RA890E in most applications and mounts on same Q270A1024 Subbase.
- Recycles if flame signal lost while in Run. Failure to establish pilot results in a lockout.
- Safe-start check prevents start-up if flame-simulating failure occurs in flame detector circuit.

- Includes built-in protection against ignition crossover in flame rod systems.
- Includes SPDT alarm contacts.
- Solid state circuitry.
- Mounts and removes easily through use of captive mounting screws.
- Mounting base is made of strong thermoplastic.

Application: Primary control for rectification application (Flame Rod for example)

Frequency: 50 Hz; 60 Hz

Temperature Range: 60 Hz models -20°F to +115°F, 50 Hz models -20°F to +105°F (50 Hz Models -29°C to +41°C, 60 Hz Models -29°C to +46°C)

Approximate, Dimensions: 5 in. high x 5 in. wide x 4 3/4 in. deep (including subbase) (127 mm high x 127 mm wide x 121 mm deep (including subbase))

Approvals, Underwriters Laboratories Inc.: UL Listed: 120V models only; File No. MP268, Guide No. MCCZ

Approvals, CSA: CSA Certified: 120V models only; File No. LR1620

Approvals, Factory Mutual: Approved: Report No. 17678, 19417, 19784

| Material Number | Voltage | Flame Failure Response Time (sec) | Alarm Relay Switching | Safety Switch Timing | Description |
|-----------------|---------|-----------------------------------|-----------------------|----------------------|--|
| RA890F1270/U | 120 Vac | 0.8 sec | SPDT | 15 seconds | Rectification, with alarm contacts |
| RA890F1288/U | 120 Vac | 3.0 sec | SPDT | 15 seconds | Rectification, with alarm contacts |
| RA890F1296/U | 208 Vac | 3.0 sec | SPDT | 15 seconds | Rectification, with alarm contacts |
| RA890F1304/U | 220 Vac | 0.8 sec | SPDT | 15 seconds | Rectification, with alarm contacts |
| RA890F1338/U | 120 Vac | 0.8 sec | SPDT | 30 seconds | Rectification, with alarm contacts |
| RA890F1346/U | 120 Vac | 3.0 sec | SPDT | 30 seconds | Rectification, with alarm contacts |
| RA890F1387/U | 240 Vac | 3.0 sec | SPDT | 15 seconds | Rectification, with alarm contacts |
| RA890F1478/U | 120 Vac | 0.8 sec | SPDT | 15 seconds | Rectification, with alarm contacts, fast safe start check. |

RA890G Protectorelay™ Primary Control



Primary control provides solid state, electronic flame safeguard protection for industrial and commercial single or dual fuel burners applications using Ultraviolet flame detectors.

- Design for interrupted ignition with intermittent pilot on gas burners, and interrupted or intermittent ignition on oil burners.
- Use with a C7027, C7035 or C7044 Minipeeper Ultraviolet Flame Detector for flame sensing.
- Recycles if flame signal lost while in Run. Failure to establish pilot results in a lockout.

- Safe-start check prevents start-up if flame-simulating failure occurs in flame detector circuit.
- Includes SPDT alarm contacts.
- Solid state circuitry, eliminates warm-up and increases resistance to vibration.
- Mounts and removes easily through use of captive mounting screws.
- Mounting base is made of strong thermoplastic.

Application: Either a line or low voltage controller can be used

Frequency: 50 Hz; 60 Hz

Temperature Range: 60 Hz models -20°F to +115°F, 50 Hz models -20°F to +105°F (50 Hz Models -29°C to +41°C, 60 Hz Models -29°C to +46°C)

Approximate, Dimensions: 5 in. high x 5 in. wide x 4 3/4 in. deep (including subbase) (127 mm high x 127 mm wide x 121 mm deep (including subbase))

Approvals, Underwriters Laboratories Inc.: UL Listed: 120V models only; File No. MP268, Guide No. MCCZ

Approvals, CSA: CSA Certified: 120V models only; File No. LR9S329

Approvals, Factory Mutual: Approved: Report No. 22013

| Material Number | Voltage | Flame Failure Response Time (sec) | Alarm Relay Switching | Safety Switch Timing | Description |
|-----------------|---------|-----------------------------------|-----------------------|----------------------|----------------------------------|
| RA890G1229/U | 120 Vac | 0.8 sec | SPDT | 15 seconds | Ultraviolet, with alarm contacts |
| RA890G1245/U | 220 Vac | 0.8 sec | SPDT | 15 seconds | Ultraviolet, with alarm contacts |
| RA890G1260/U | 120 Vac | 3.0 sec | SPDT | 15 seconds | Ultraviolet, with alarm contacts |
| RA890G1286/U | 240 Vac | 3.0 sec | SPDT | 15 seconds | Ultraviolet, with alarm contacts |

Q270 Wiring Mount Base

Application: Wiring Mounting Base for RA890, R4795

| Material Number | Description | Used With |
|-----------------|---------------------------------------|--------------|
| Q270A1024/U | Wiring Mounting Base for RA890, R4795 | RA890, R4795 |

Testers and Demonstrators

A7800 Tester



Provides quick operational check of the 7800 SERIES System components.

- Allows testing different 7800 SERIES devices using configuration plugs and functional switches to simulate interlocks and control functions.
- Indicator lamps represent outputs as activated.

Application: Tester

Voltage: 120 Vac

Frequency: 50 Hz; 60 Hz

Temperature Range: -30°F to +150°F (-34.5°C to +65°C)

| Material Number | Required Components | Includes | Used With |
|-----------------|-------------------------------|---------------------|--|
| A7800A1010/U | Configuration Plugs, Included | Configuration Plugs | 7800 SERIES Relay Modules with Valve Proving System or New Optical Detector Amplifiers |

A7800 and DSP2672 Replacement Parts

| Material Number | Application | Used With | Comments |
|-----------------|--|-------------------|------------------------------|
| 203579A/U | Tester; DSP2672 RM7800/40/45 (non VPS side) Configuration Plug | RM7800; RM7840 | Configures A7800 and DSP2672 |
| 203579B/U | Tester; DSP2672 RM7838A Configuration Plug | | Configures A7800 and DSP2672 |
| 203579C/U | Tester; DSP2672 RM7838B, C Configuration Plug | | Configures A7800 and DSP2672 |
| 203579D/U | Tester; DSP2672 RM7885A Configuration Plug | | Configures A7800 and DSP2672 |
| 203579E/U | Tester; DSP2672 RM7890 (non VPS models) Configuration Plug | | Configures A7800 and DSP2672 |
| 203579F/U | Tester; DSP2672 RM7895, 96, 97, 98 (non VPS side) Configuration Plug | | Configures A7800 and DSP2672 |
| 203579G/U | Tester; DSP2672 RM7823 Configuration Plug | | Configures A7800 and DSP2672 |
| 203579H | Tester; DSP2672 RM7865 Configuration Plug | | Configures A7800 and DSP2672 |
| 203579J/U | Tester; DSP2672 RM7838B, C (VPS) Configuration Plug | A7800A1010 Tester | Configures A7800 and DSP2672 |
| 203579K/U | Tester; DSP2672 RM7890 (VPS) Configuration Plug | A7800A1010 Tester | |
| 203579L/U | Tester; DSP2672 RM7800/40G,L (VPS side) Configuration Plug | A7800A1010 Tester | |
| 203579M/U | Tester; DSP2672 RM7898 (VPS Side) Configuration Plug | A7800A1010 Tester | |

Demonstrators or Trainers



DSP3452



DSP3956



DSP3981



DSP3564U

The DSP3452 is designed for training and demonstration of Honeywell Burner and Boiler Controls with auxiliary devices that are typically used with commercial and industrial burners. It demonstrates the wiring and operation of primary safety controls.

- The trainer can be used with Honeywell primary controls or programming controls (not included with the trainer).
- The nine trouble switches simulate a range of faults from a burned out pilot valve to a faulty flame detector to an inoperative firing rate motor.
- The trainer measures 20 1/2 in. x 32 in. x 12 1/2 in. It weighs approximately 30 lbs.

Color: Black

| Material Number | Application | Voltage | Frequency | Approximate, Dimensions | Required Components | Includes | Used With | Comments |
|-----------------|---|---------|--------------|----------------------------------|---------------------------------|--|--|---|
| DSP3452/U | Primaries, Programmers or 7800 Series Trainer | 120 Vac | 50 Hz; 60 Hz | 20 1/2 in. x 32 in. x 12 1/2 in. | Devices for wiring and training | jumper wires, propane gas hose with regulator, detector mounting adapters | Primaries, Programmers and 7800 SERIES Relay Modules | Complete Flame Safeguard Training Package |
| DSP3564/U | ControlLink FAR Trainer/Demonstrator | 120 Vac | 50 Hz; 60 Hz | | | Relay Module, R7999 Control and 3 ML Motors; Relay Module, R7999 Control and 4 ML Motors | ControlLinks Fuel Air Ratio controls | |
| DSP3956/U | ControlLink FAR Configuration Toolkit | | | | | ZM Software; USB-485 Converter with cable and Connector for Controllinks | ControlLinks Fuel Air Ratio controls | |
| DSP3981/U | For Controllinks Configuration and Monitoring | 120 Vac | 50 Hz; 60 Hz | | | | ControlLinks Fuel Air Ratio controls | With S7999D Touchscreen for FAR Monitoring or Programming |

SOLA Demonstrators



The DSP3943 is used as a SOLA commissioning or monitoring tool when a System or Local Operator Interface is not required for operation. The DSP contains the S7999B1026 touchscreen display which uses a wizardlike process to assist you through the commissioning process.

The DSP3980 contains an S7999D1006 Touchscreen Display to commission or monitor the SOLA system when a System or Local Operator Interface is not required for operation. The DSP3980 includes the power supply for operation and cable with connector for the SOLA system. A USB storage drive is provided to save display screen snapshots or trending information.

Voltage: 120 Vac
Color: Black

| Material Number | Application | Frequency | Includes | Used With | Comments |
|-----------------|--------------------|--------------|--|---------------|--|
| DSP3943/U | Demonstrator, SOLA | 60 Hz | S7910A1001 SOLA HC; S7999 Touchscreen Display; S7910 Keyboard display, system switches and ports | | |
| DSP3980/U | Demonstrator | 50 Hz; 60 Hz | | SOLA Controls | Touchscreen for R7910/R7911 SOLA Monitoring or Programming |

Testers and Demonstrators

Flame Simulator



Flame simulators simplify the troubleshooting of flame safeguard controls by providing a quick method to check the flame detection function.

| Material Number | Application | Color | Comments | Used With |
|-----------------|--|--------|--|---|
| 123514A/U | Flame Simulator, Rectification Flame Amplifiers | Brown | Applications with test jack in G circuit | R4075B; R4181A; R4138A, B; R7253A; R8169B; R7257A; R7247A; R7847A |
| 203659/U | Simulates C7027, C7035, C7044 Flame Simulators for 7800 SERIES | Purple | Simulates Minipeeper Flame Detectors | 7800 SERIES Relay modules |

FSP1535 Tester



Provides quick operational check of Honeywell RA890 or R4795 nonprogramming primary controls.

- Includes indicator lights that visually represent functions of ignition, pilot and main valve as unit simulates system operation.
- Eliminates need to operate entire system.
- Tests units with rated voltage from 100 to 240, 50/60 Hz by connecting line cord to the rated voltage.

Voltage: 120 Vac or 240 Vac

Frequency: 50 Hz; 60 Hz

| Material Number | Application | Used With |
|-----------------|-------------|--------------|
| FSP1535/U | Tester | RA890; R4795 |

FSP5004 Tester



A Tester that provides quick operational check of most Honeywell BC7000, R4140, R7140 and R4150 programmers and R7795 primary controls (order 198355A adapter separately).

- Includes indicator lights that visually represent control functions of programmer as unit simulates system operation.
- Works with 120 Vac, 60 Hz controls.
- Use to test some Gordon-Piatt programmers.
- Cannot be used to test some R4140 and R4150 models due to design or wiring differences. Reference the list at right to see if you have one of the controls that CANNOT be tested. If you do, check these out using the instructions provided in their respective instruction manuals.
- R4150/R4140/BC7000/R7795/R7140 Tester (120V only). Provides a quick operational check.

Voltage: 120 Vac

Frequency: 50 Hz; 60 Hz

| Material Number | Application | Comments | Used With |
|-----------------|-------------|---|-----------------------------|
| FSP5004/U | Tester | DO NOT USE WITH: BC7000L1018, BC7000L1034, BC7000L1063; R4140D1004, R4140E1001, R4140M1079, or non-120 Vac R4140 models | BC7000; R4140; R7795; R7140 |

P531; P532 3-channel, Signal Processors



The P532/P531 supports three separate viewing heads, two S55XBE and one S70X. Independent 2 x SPDT Flame On relay contacts are provided for each viewing head (6 total). 0-20 or 4-20mA scalable analog output also provided for each viewing head. SIL 3 capable.

- 3 channels.
- Two SPDT flame relay outputs, one SPDT self-check relay output and one N.O. alarm relay output per channel.
- FM and CSA approved.
- Monitor the UV and IR flame component simultaneously or separately when using the S550B/BE.
- Monitor 3 viewing heads simultaneously.
- Independent configuration for each viewing head.
- 2 sets of configuration data per viewing head.
- Viewing head temperature indication.
- Automatic set-up functionality.

- Automatic viewing head detection.
- Modbus and RS422 protocol compatible.
- NEMA 1 Enclosure Rated.

Output: 4-20mA

Communications: ModBus and RS422 Compatible

Mounting: Cabinet mounting tabs

Connection Type: Removable terminals

Dimensions: 4.3 in. wide x 5.8 in. deep x 5.5 in. high (109 mm wide x 147 mm deep x 117 mm high)

Approvals, CSA: Approved (Temperature Range -40 to 158°F; -40 to 70°C)

Approvals, Factory Mutual: Approved (Temperature Range -40 to 158°F; -40 to 70°C)

Used With: S550BE, S552BE, S556BE, S70X, S80X viewing heads

| Material Number | Description | Application | Keypad | Status Monitoring | Electrical Ratings | Frequency | Required Components |
|-----------------|--|---|-------------------|-------------------|----------------------------|--------------|----------------------------|
| P531AC | AC Signal Processor | Signal Processor with 3 channels without keypad | Use KP532U keypad | LEDs | 85-264 Vac + 24 Vdc backup | 50 Hz; 60 Hz | Appropriate Flame Detector |
| P531DC | DC Signal Processor | Signal Processor with 3 channels without keypad | Use KP532U keypad | LEDs | 22-26 Vdc+ 24 Vdc backup | | Appropriate Flame Detector |
| P532AC | AC Signal Processor | Signal Processor with 3 channels and keypad | Integrated | tri-color display | 85-264 Vac + 24 Vdc backup | 50 Hz; 60 Hz | Appropriate Flame Detector |
| P532DC | DC Signal Processor | Signal Processor with 3 channels and keypad | Integrated | tri-color display | 22-26 Vdc+ 24 Vdc backup | | Appropriate Flame Detector |
| P532UI | Program module/keypad used with the P531 | Program module/keypad used with the P531 | | | | | |

600U Flame Rod Signal Processor



Model 600 Ultra Flame Rod is a reliable Flame Detecting system based on the proven principle of measuring rectified current flow through a flame rod when a flame touches it. The Model 600 Flame Detector measures the rectified current and closes the flame relay if the current exceeds the value for the flame-on set-point.

Output: 175 Vac for flame rod

Mounting: DIN rail, 35mm

Connection Type: Removable terminals

Dimensions: 2-63/64 in. wide x 3-1/4 in. deep x 5-31/64 in. high (76 mm wide x 83 mm deep x 139 mm high)

Used With: Flame Rod

| Material Number | Description | Application | Keypad | Status Monitoring | Electrical Ratings | Frequency |
|-----------------|---|----------------------------|------------|-------------------|-------------------------------|--------------|
| 600U | Flame rod signal processor with DPDT flame relay contacts, DPST ignition transformer relay or ignition coil drive | Flame rod signal processor | Integrated | LEDs | 85 to 132Vac or 170 to 264Vac | 50 Hz; 60 Hz |

Industrial Flame Monitoring

Signal Processors

P522 Signal Processor with 2 Channels and Keypad



The P522 supports two switched (not simultaneously) S55XBE viewing heads. 2 x SPDT Flame On relay contacts and 0-20 or 4-20mA scalable analog output is also provided. SIL 3 capable.

- 2 channels.
- Integrated keypad.
- Two SPDT flame relay outputs and one SPDT self-check relay output.
- FM and CSA approved.
- Flame failure response and time delay on set-up.
- Connect 2 viewing heads, monitoring 1 at a time.
- Independent configuration for each viewing head.
- 2 sets of configuration data per viewing head.
- Viewing head temperature indication.
- Modbus and RS422 protocol compatible.
- NEMA 1 Enclosure Rating.

Dimensions: 4.3 in. wide x 6.4 in. deep x 6.7 in. high (109 mm wide x 162 mm deep x 170 mm high)

Approvals, CSA: Approved

Approvals, Factory Mutual: Approved (Temperature Range -32 to +122°F; 0 to +50°C)

Application: Signal Processor with 2 channels and keypad

Keypad: Integrated

Status Monitoring: LEDs

Output: 4-20mA

Communications: ModBus and RS422 Compatible

Mounting: Cabinet mounting tabs

Connection Type: Removable terminals

| Material Number | Description | Electrical Ratings | Frequency | Used With | Required Components |
|-----------------|---------------------|----------------------------|--------------|--|----------------------------|
| P522AC | AC Signal Processor | 85-264 Vac + 24 Vdc backup | 50 Hz; 60 Hz | S550B/BE, S552B/BE, S556B/BE viewing heads | Appropriate Flame Detector |
| P522DC | DC Signal Processor | 22-26 Vdc+ 24 Vdc backup | | S550B/BE, S552B/BE, S556B/BE viewing heads | Appropriate Flame Detector |

WATCHDOGIII Flare Stack Signal Processor



The P222 is used with S256 viewing head for remote monitoring of flare flame. 2 x SPDT Flame On relay contacts for T1 timer and 1 x SPDT for T2 timer. 0-20 or 4-20mA scalable analog output is also provided. Two timers are included for flame delay off settings one 0 to 60 seconds (T1) and one 0 to 3600 seconds (T2).

Application: Flare Stack signal processor with 1 channel and keypad

Keypad: Integrated

Status Monitoring: LEDs

Output: 0/4-20mA

Communications: ModBus and RS422 Compatible

Mounting: Cabinet mounting tabs

Connection Type: Removable terminals

Dimensions: 4.3 in. wide x 6.4 in. deep x 6.7 in. high (109 mm wide x 162 mm deep x 170 mm high)

Approvals, QPS: Approved

| Material Number | Description | Electrical Ratings | Frequency | Used With | Required Components |
|-----------------|---|----------------------------|--------------|---|----------------------------|
| P222 | Watchdog Signal Processor | 85-264 Vac + 24 VDC backup | 50 Hz; 60 Hz | S256 WATCHDOGIII flare stack viewing head | Appropriate Flame Detector |
| WATCHDOGIII | Kit consisting of P222 processor, S256B Viewing Head, 10-ft. C328 cable, quick disconnect plug. | 85-264 Vac | 50 Hz; 60 Hz | | |

S256B Flare Stack Viewing Head



S256B is a UV flare stack viewing head/flame detector, that detects the presence or absence of flame at the flare stack tip. Used for continuous UV flare stack monitoring to ensure no unburned toxic or waste gas releases into the atmosphere.

- Not adversely affected by Gamma Rays or X-Rays.
- Solar blind.
- Ground mounted, up to 1000 feet away from flare stack tip.
- UV gain selection of 0-99.
- Digital display.
- Quick disconnect plug.
- Easy to install with no plant shutdown.
- NEMA 4X / IP67 enclosure rating.
- Ambient temperature: -40°F to +140°F (-40°C to +70°C).
- 22-26 VDC supplied by signal processor.
- Used with P222 signal processor.

Application: Flame Detector for use with P222 processor

NEMA Rating: 4X

Electrical Connections: Quick disconnect plug

Mounting: 2" Pipe mount

Electrical Ratings: 22 to 26Vdc from signal processor

Dimensions: 3.7 in. wide x 20.3 in. deep x 13.7 in. high (94 mm wide x 516 mm deep x 348 mm deep)

Ambient Temperature Range: -40 to 140°F (-40 to 60°C)

Approvals, QPS: QPS to CSA 22.2

Environmental, Electrical, or Ingress Protection Rating: IP67

Comments: One color monitoring

Used With: P222 Processor

| Material Number | UV Gain Adjustment | IR Gain Adjustment | Digital Displays | Description |
|-----------------|--------------------|--------------------|------------------|-----------------------------------|
| S256B | 0-99 | | Yes (1) | UV viewing head for use with P222 |

700 Signal Processor with 1 Channel



The 700 supports one UV or IR viewing head model S70X or S80X. 2 x SPDT Flame On relay contacts and 0-20 or 4-20mA scalable analog output is also provided. SIL 3 capable.

- 1 channel.
- Two SPDT flame relay outputs and one SPDT self-check relay output.
- FM and CSA approved.
- Status LEDs.
- DIN rail mounting.
- Modbus and RS422 protocol compatible.
- NEMA 1 Enclosure Rating.

Application: Signal processor with 1 channel and keypad

Status Monitoring: LEDs

Output: 4-20mA

Communications: ModBus and RS422 Compatible

Mounting: DIN rail

Connection Type: Removable terminals

Dimensions: 2.9 in. wide x 3.3 in. deep x 5.5 in. high (74 mm wide x 84 mm deep x 140 mm high)

Approvals, CSA: Approved

Approvals, Factory Mutual: Approved (Temperature Range 32 to 140°F; 0 to 60°C)

| Material Number | Description | Keypad | Electrical Ratings | Frequency | Used With | Required Components |
|-----------------|---------------------|------------|--------------------|--------------|--|----------------------------|
| 700ACSP | AC Signal Processor | Integrated | 85-264 Vac | 50 Hz; 60 Hz | All models of S702, S706, S802, S806 viewing heads | Appropriate Flame Detector |
| 700DCSP | DC Signal Processor | Integrated | 22-26 Vdc | | All models of S702, S706, S802, S806 viewing heads | Appropriate Flame Detector |

All-in-One Viewing Head and Processor

All-in-One Viewing Head and Processor



U2-101x and U2-101x PF are integrated viewing head and processor (All in One) with integral touch screen for operator interface. One Normally Open Flame relay contact and one Normally Open Fault relay contact is provided for interlock. 0-20 or 4-20 mA scalable analog output is also provided. Power input is 24 VDC @ 120 mA. Temperature sensor is included that provides display in degree F and C. System is self checking (no mechanical shutter) fit for use in SIL3 application. Approvals include (IP66), Class I Div 1 (IEC Ex d-ATEX Zone 1) for PF version and Class I, Div 2 (IEC Ex nA) for quick disconnect type models. For remote monitoring and configuration, FLAMETOOL –HMI (support 32 loops) or FLAMETOOL-PC (Supports 248 loops) is available. Available models are UVtron only (clean gases), IR only (oil and coal), UVtron plus IR (for all fuels- all applications including SRU, Kiln etc.). (UVSS is currently disabled).

Application: Combination DC signal processor and dual UV/IR Viewing head

Keypad: Integrated

Electrical Ratings: 22-26 Vdc

Output: 4-20mA

Communications: ModBus and RS422 Compatible

Dimensions: 4.3 in. wide x 5.8 in. deep x 5.5 in. high (109 mm wide x 147 mm deep x 117 mm high)






Approvals, CSA: Approved (Temperature Range -40 to 158°F; -40 to 70°C)

Approvals, Factory Mutual: Approved (Temperature Range -40 to 158°F; -40 to 70°C)

Approvals, Others: SIL3 (Temperature Range -40 to 158°F; -40 to 70°C)

| Material Number | Description | Status Monitoring | Mounting | Connection Type | Used With | Required Components |
|--|--|---|---------------------------|-----------------------|-----------|--|
| Combination DC signal processor and dual UV/IR Viewing head | | | | | | |
| U2-1010 | Combination DC signal processor and dual UV/IR Viewing head. | LED for each sensor, flame relay, and self check. | 1" NPT process connection | 12 pin connector | | Cable and connector, PT adapter and purge air coupler sold separately. |
| U2-1010-PF | Combination DC signal processor and dual UV/IR Viewing head with 10-ft pigtail. | LED for each sensor, flame relay, and self check. | 1" NPT process connection | pigtail, 10-ft (3m) | | PT adapter and purge air coupler sold separately. |
| U2-1010-PF-050 | Combination DC signal processor and dual UV/IR Viewing head with 50-ft (15m) pigtail. | LED for each sensor, flame relay, and self check. | 1" NPT process connection | pigtail, 50-ft (15m) | | PT adapter and purge air coupler sold separately. |
| U2-1010-PF-100 | Combination DC signal processor and dual UV/IR Viewing head with 100-ft (30m) pigtail. | LED for each sensor, flame relay, and self check. | 1" NPT process connection | pigtail, 100-ft (30m) | | PT adapter and purge air coupler sold separately. |
| U2-1018-PF | Combination DC signal processor and dual UV/IR Viewing head with 10-ft pigtail. Pipe fitting connection. | LED for each sensor, flame relay, and self check. | 1" NPT process connection | pigtail, 10-ft (3m) | | PT adapter and purge air coupler sold separately. |
| Combination DC signal processor and IR Viewing head | | | | | | |
| U2-1012 | Combination DC signal processor and IR Viewing head. | LED for each sensor, flame relay, and self check. | 1" NPT process connection | 12 pin connector | | Cable and connector, PT adapter and purge air coupler sold separately. |
| U2-1012-PF | Combination DC signal processor and IR Viewing head with 10-ft pigtail. Pipe fitting connection. | LED for each sensor, flame relay, and self check. | 1" NPT process connection | pigtail, 10-ft (3m) | | PT adapter and purge air coupler sold separately. |
| Combination DC signal processor and UV Viewing head | | | | | | |
| U2-1016 | Combination DC signal processor and UV Viewing head. | LED for each sensor, flame relay, and self check. | 1" NPT process connection | 12 pin connector | | Cable and connector, PT adapter and purge air coupler sold separately. |
| U2-1016-PF | Combination DC signal processor and UV Viewing head with 10-ft pigtail. Pipe fitting connection. | LED for each sensor, flame relay, and self check. | 1" NPT process connection | pigtail, 10-ft (3m) | | PT adapter and purge air coupler sold separately. |

ISO UNIT

| Material Number | Application | Description | Used With | |
|-----------------|---|--|-------------------------|---|
| ISO-OR | Replacement O-ring | Replacement O-ring for ISO-UNIT and ISO-UNITSS | ISO-UNIT and ISO-UNITSS |  |
| ISO-QW | Replacement quartz window | Replacement quartz window for ISO-Unit and ISO-UnitSS | ISO-UNIT and ISO-UNITSS |  |
| ISO-RR | Replacement retainer ring | Replacement retainer ring for ISO-UNIT | ISO-UNIT |  |
| ISO-RRSS | Replacement retainer ring | Replacement retainer ring for ISO-UNITSS | ISO-UNITSS | |
| ISO-UNIT | Sealing union with quartz window | 1 in. NPTF sealing union with quartz window and 1/2 in. NPTF purge port. | |  |
| ISO-UNITHPGT | Sealing Union - Stainless Steel 1" NPTF w/1/2" purge port | Sealing Union - Stainless Steel 1" NPTF w/1/2" purge port | |  |
| ISO-UNITSS | Sealing union with quartz window | 1 in. NPTF stainless steel sealing union with quartz window and 1/2 in. NPTF purge port. | |  |



Industrial Flame Monitoring

Flame Tool





| Material Number | Application | Description | Used With | Comments |
|------------------|--------------------------------|---|----------------------------|-------------------------|
| FLAMETOOLS-HMI/U | For all series 700, 500 and U2 | Remote programming and logging using touchscreen system. Uses Honeywell S7999 display | All 700, 500 and U2 family | Supports multiple loops |
| FLAMETOOLS-PC | For all series 700, 500 and U2 | Remote programming and logging using user PC. Supports Windows 7 and 8, includes RS232 converter cable and manual | All 700, 500 and U2 family | Supports multiple loops |

Industrial Flame Monitoring Accessories




| Material Number | Application | Description | Used With | |
|-----------------|---|--|---|---|
| 700-1 | Swivel Mount | Swivel Mount, 1" NPT to 1/2" NPT | S700 and S800 Viewing heads | |
| 700-2 | Swivel Mount | Swivel mount for S700 and S800 series viewing heads. Flanged connection to 1/2 in. NPTM connection. | S700 and S800 series viewing heads | |
| 700-3 | Swivel Mount | Swivel mount for S700 and S800 series viewing heads. 1/2 in. NPTF to 1/2 in. NPTM connection. | S700 and S800 series viewing heads | |
| 700ACC | Model S700 viewing head cooling jacket | Model S700 viewing head cooling jacket. Use with vortex coolers. | Vortex coolers | |
| 700CRLT | Liquid tight cable restraint | Liquid tight cable restraint for S700 and S800 series viewing heads. For S800 viewing head, purchase S800 adapter ring, part 800-ACC-RING, separately. | S700 and S800 series viewing heads. For S800 viewing head, purchase S800 adapter ring, part 800-ACC-RING, separately. | |
| 700DA | Delrin adapter replacement | Delrin adapter replacement for S700 series viewing heads. 1/2 in. NPTF process and 1/4 in. NPTF purge connections. | S700 series viewing heads |  |
| 700DA-1 | Delrin adapter replacement | Delrin adapter replacement for S700 series viewing heads. 1 in. NPTF process and 1/4 in. NPTF purge connections. | S700 series viewing heads | |
| 700LTA | Liquid tight viewing head cable adapter | Liquid tight viewing head cable adapter for S700/S800 series viewing heads. | S700 and S800 series viewing heads | |
| 700RAA | Model S700/S800 viewing head right angle adapter | Model S700/S800 viewing head right angle adapter. 1/2 in. NPTF to 1/2 in. NPTM connection. | | |
| 700UA | Ultem heat insulating adapter | Ultem heat insulating adapter for S700 series viewing heads. 1/2 in. NPTF process and 1/4 in. NPTF purge connections. | S700 series viewing heads | |
| 800ACC | Model S800 viewing head cooling jacket | Model S800 viewing head cooling jacket. Use with vortex coolers. | Vortex coolers | |
| 800ACC-RING | Adapter ring | Adapter ring to fit 800 viewing head to 700ACC cooling jacket and 700CRLT cable restraint. | 800 viewing head to 700ACC cooling jacket and 700CRLT cable restraint | |
| 800DA | Delrin adapter replacement | Delrin adapter replacement for S800 series viewing heads. 1/2 in. NPTF process and 1/4 in. NPTF purge connections. | S800 series viewing heads |  |
| 800UA | Ultem heat insulating adapter | Ultem heat insulating adapter for S800 series viewing heads. 1/2 in. NPTF process and 1/4 in. NPTF purge connections. | S800 series viewing heads | |
| ACC55XBE | Air cooling canister for Model S55XBE viewing heads | Air cooling canister for Model S55XBE viewing heads. 1/4 inch air inlet port. Use with vortex coolers. | Model S55XBE viewing heads; Vortex coolers | |
| ACC5XX | Air cooling canister for Model 5XX viewing heads | Air cooling canister for Model 5XX viewing heads. 1/4 inch air inlet port. Use with vortex coolers. | Model 5XX viewing heads; Vortex coolers |  |
| ASY55XBE | Model S55xBE viewing head installation. | Cable Assembly, 50 foot C330S with overmolded S55xBE connector. Includes 50 foot 4 conductor cable with foil/braid shield and coupling nut tied to shield. Use with Model S55xBE Viewing Heads | Model S55xBE Viewing Heads | |
| ASY55XBE-50 | Model S55xBE viewing head installation. | Cable Assembly, 50 foot C330S with overmolded S55xBE connector. Includes 50 foot 4 conductor cable with foil/braid shield and coupling nut tied to shield. Use with Model S55xBE Viewing Heads | Model S55xBE Viewing Heads | |
| ASY55XBE-100 | Model S55xBE viewing head installation | Cable Assembly, 100 foot C330S with overmolded S55xBE connector. Includes 200 foot 4 conductor cable with foil/braid shield and coupling nut tied to shield. Use with Model S55xBE Viewing Heads | Model S55xBE Viewing Heads | |

| Material Number | Application | Description | Used With | |
|-----------------|---|--|---|---|
| ASY55XBE-200 | Model S55xBE viewing head installation. | Cable Assembly, 200 foot C330S with overmolded S55xBE connector. Includes 200 foot 4 conductor cable with foil/braid shield and coupling nut tied to shield. Use with Model S55xBE Viewing Heads | Model S55xBE Viewing Heads | |
| ASY55XBE-300 | Model S55xBE viewing head installation | Cable Assembly, 300 foot C330S with overmolded S55xBE connector. Includes 300 foot 4 conductor cable with foil/braid shield and coupling nut tied to shield. Use with Model S55xBE Viewing Heads | Model S55xBE Viewing Heads | |
| ASY785 | Model S70x/S80x viewing head installation. | Cable Assembly, 50 foot C330S with pre-wired S70x/S80x connector. Includes 50 foot 4 conductor, 22g cable with drain, foil/braid shield and connector housing tied to shield. Use with Model S70x/S80x Viewing Heads | Model S70x/S80x Viewing Heads | |
| ASY785-200 | Model S70x/S80x viewing head installation. | Cable Assembly, 200 foot C330S with pre-wired S70x/S80x connector. Includes 50 foot 4 conductor, 22g cable with drain, foil/braid shield and connector housing tied to shield. Used with Model S70x/S80x Viewing Heads | Model S70x/S80x Viewing Heads | |
| ASY786 | Model S70x/S80x viewing head installation. | Field Wireable Shielded Connector for S70x/S80x Viewing Heads. Used with Model S70x/S80x Viewing Heads | Model S70x/S80x Viewing Heads | |
| ASY964 | 15-ft cable with quick disconnect | 15-ft cable (12 conductor) with quick disconnect for all U2 non-pipe fitting models. | U2-1010, U2-1012, U2-1016, U2-1018 models only. |  |
| C12S | 12 conductor cable with braided shield | 12 conductor cable with braided shield for use with all U2 combination DC signal processor and viewing heads. Sold per foot. | U2-1010, U2-1012, U2-1016, U2-1018, U2-1010-pf, U2-1012-pf, U2-1016-pf, U2-1018-pf models only. Used with -pf models for cable extension. | |
| C330S | 4 Conductor Cable with braided shield for S70x, S80x and S55xBE Viewing heads | 4 Conductor Cable with braided shield for all Iris viewing heads | S55xBE, S70x/S80x viewing heads, P522, and P53x signal processors. | |
| M3204 | Vortex air cooler, model 3204. | Vortex air cooler, model 3204 -4SCFM (113SLPM) for maximum refrigeration 275 BTU/HR (69 Kcal/hr) | All cooling jackets | |
| M3208 | Vortex air cooler, model 3208. | Vortex air cooler, model 3208 -8SCFM (227 SLPM) for maximum refrigeration 550 BTU/HR (139 Kcal/hr) | All cooling jackets | |
| M3210 | Vortex air cooler, model 3210. | Vortex air cooler, model 3210 -10 SCFM (283SLPM) for maximum refrigeration 650 BTU/HR (164 Kcal/hr) | All cooling jackets | |
| M4025 | Vortex air cooler, model 4025. | Vortex air cooler, for cabinet model 4025 - maximum refrigeration 1700 BTU/HR (428 Kcal/hr) | For processor cabinet cooling | |
| M-701-1 | Swivel Mount | Swivel mount, 2 in. pipe slip-on to 1 in. NPT connection. | All viewing heads- S70x with DA-1 | |
| M-701-2 | Swivel Mount | Swivel Mount, 2" NPT to 1" NPT | All viewing heads- S70X with DA-1 | |
| M-701-2-FLG | Flanged swivel mount | Flanged swivel mount, 2 in. flanged to 1 in. NPTF. | All viewing heads- S70X with DA-1 | |
| M-701-2-SS | Swivel Mount | Swivel mount, 2 in. NPT female to 1 in. NPT female, Stainless steel construction. | All viewing heads- S70X with DA-1 | |
| M-701-3 | Flanged swivel mount | Flanged swivel mount, 3-bolt, 4.5 in. flanged to 1 in. NPTF. | All viewing heads- S70X with DA-1 | |
| M-701-3P | Swivel Mount | Swivel mount, 3 in. NPTF to 1 in. NPTF connection. | All viewing heads- S70X with DA-1 | |
| M-701-4 | Swivel Mount | Swivel mount, 2-bolt to 1 in. NPTF connection. | All viewing heads- S70X with DA-1 | |
| M-702-6 | Orifice and retaining ring set. | Orifice and retaining ring set. Used for all viewing heads. | Used for all viewing heads. |  |
| PT-GA1 | High temperature gasket for 1 in. locking coupler. | High temperature gasket for 1 in. locking coupler. | 1 in. locking coupler | |
| PT-QL1 | Quartz lens for 1 in. locking coupler. | Quartz lens for 1 in. locking coupler. | 1 in. locking coupler | |
| R-518-08 | Viewing Head S256 Quick Disconnect Plug | Viewing Head S256 Quick Disconnect Plug | WDIII S256 viewing head | |

IFM Accessories

| Material Number | Application | Description | Used With | |
|-----------------|--|--|--|---|
| R-518-11 | Model S55xBE viewing head installation. | S55xBE Field Wireable Cable with 6-8mm cable bushing for use with C330S cable. Includes Field wireable with proper bushing size to provide IP seal with C330S cable. No shield at connector, less robust version. Used with Model S55xBE Viewing Heads | Model S55xBE viewing head, and C330S cable. | |
| R-518-12 | Heat Block-1" NPT | All viewing heads with 1" NPTF connection | All viewing heads with 1" NPTF connection | |
| R-518-13 | Heat insulating nipple for S70X/S80X series viewing heads. | 1/2 in. NPT Ultem heat insulating nipple for S70X/S80X series viewing heads. | S70X/S80X series viewing heads | |
| R-518-CL12-HTG | Locking coupler | 1 in. NPT locking coupler with high temperature gasket. Must be used with R-518-PT12 or R-518-PT12L | All viewing head that has 1" NPTF |  |
| R-518-CL12-PG | Locking quick disconnect/cam and groove coupler adapter | 1 in. NPT aluminum locking quick disconnect/cam and groove coupler adapter with 1/2 in. NPT purge. Must be used with R-518-PT12 and R-518-PT12L | All viewing head that has 1" NPTF | |
| R-518-CL13-HTG | Locking coupler | 1/2 in. NPT locking coupler with high temperature gasket. Must be used with R-518-PT13 or R-518-PT13L | All viewing heads that have 1/2" NPTF connection |  |
| R-518-PT12 | Insulating locking coupler adapter | 1 in. NPT Ultem insulating locking coupler adapter. Used with U2 processor/viewing head. | 1 in. NPT Ultem insulating locking coupler adapter use with R-518-CL12-HTG and R-518-CL12PG |  |
| R-518-PT12L | Locking coupler adapter with quartz lens. | 1 in. NPT Ultem locking coupler adapter with quartz lens. | 1 in. NPT Ultem insulating locking coupler adapter with quartz lens for use with R-518-CL12-HTG and R-518-CL12PG | |
| R-518-PT13 | Locking coupler adapter only. | 1/2 in. NPT Ultem insulating locking coupler adapter use with R-518-CL13-HTG and R-518-CL13HTG | |  |
| R-518-PT13L | Locking coupler adapter with quartz lens. | 1/2 in. NPT Ultem locking coupler adapter with quartz lens. | | |
| UVSOURCE | Testing any UV based system | Ultraviolet light source battery operated | Test for any UV tube based system | |

Fiberoptic System

| Material Number | Application | Description | Used With | |
|-----------------|---|---|-----------------------------------|---|
| FASA-GLASS | Glass fiber optics assembly for IR flame detection | Glass fiber optics complete assembly for IR flame detection with guide pipes and flex connection. Standard assembly length 5-feet. Standard 5-ft fiber optic cable. Use FASA-GLASS-FT to add additional fiber optic cable length and inner/outer assemblies | |  |
| FASA-GLASS-FT | Glass fiber optics assembly for IR flame detection | Glass fiber optics complete assembly per foot adder for FASA-GLASS, for IR flame detection. Includes fiber optic cable and inner/outer assemblies in 1-ft segments. | FASA-GLASS | |
| FASA-INT-GLASS | Glass fiber optics assembly for IR flame detection | Glass fiber optics inner tube assembly for IR flame detection with flex connector. No guide pipes. Standard assembly length 5-ft. Use FASA-INT-GLS-FT to add additional fiber optic cable length and inner assembly in 1-ft length | | |
| FASA-INT-GLS-FT | Glass fiber optics assembly for IR flame detection | Glass fiber optics inner assembly per foot adder for FASA-INT-GLASS, for IR flame detection. Includes fiber optic cable and inner assembly in 1-ft increment. | FASA-INT-GLASS | |
| FASA-INT-QTZ-FT | Quartz fiber optics assembly for UV/IR flame detection | Quartz fiber optics inner tube assembly per foot adder for FASA-INT-QUARTZ, for UV/IR flame detection. Includes fiber optic cable and inner assembly in 1-ft segments. | FASA-INT-QUARTZ | |
| FASA-INT-QUARTZ | Quartz fiber optics assembly for UV/IR flame detection | Quartz fiber optics inner tube assembly for UV/IR flame detection with flex connector. No guide pipes. Standard assembly length 5-ft. Use FASA-INT-QTZ-FT to add for longer than 5' | | |
| FASA-QUARTZ | Quartz fiber optics assembly for UV/IR flame detection | Quartz fiber optics complete assembly for UV/IR flame detection with guide pipes and flex connection. Standard assembly length 5. Use FASA-QUARTZ-FT for longer than 5' by 1' increment | | |
| FASA-QUARTZ-FT | Quartz fiber optics assembly for UV/IR flame detection | Quartz fiber optics complete assembly per foot adder for FASA-QUARTZ, for UV/IR flame detection. Includes fiber optic cable and inner/outer assemblies in 1-ft increment | FASA-QUARTZ | |
| FLEX-HOSE | Hose for fiber optics assembly. | 1/2 in. NPT x 36 in. long flex hose for fiber optics assembly. | | |
| FOC-GLASS | 5-ft Glass Fiber optic cable for IR viewing heads. | 5-ft Glass Fiber optic cable, for IR viewing heads. Use FOC-GLASS-FT adder for each additional foot in length required. | IR viewing heads | |
| FOC-GLASS-FT | Glass fiber optic cable per foot adder for FOC-GLASS, for IR flame detection. | Glass fiber optic cable per foot adder for FOC-GLASS, for IR flame detection. | FOC-GLASS, for IR flame detection | |
| FOC-QUARTZ | 5-ft Fiber optic cable, quartz bundle for UV/IR viewing heads with high temperature epoxy | 5-ft Fiber optic cable, quartz bundle for UV/IR viewing heads with high temperature epoxy. Use FOC-QUARTZ-FT adder for each additional foot in length required. | FOC-QUARTZ-FT | |
| FOC-QUARTZ-FT | Quartz fiber optic cable for UV/IR flame detection | Quartz fiber optic cable per foot adder for FOC-QUARTZ, for UV/IR flame detection. | FOC-QUARTZ | |
| FOLC-9C | Fiber optic lens cartridge and coupler | Fiber optic lens cartridge and coupler - 9 degree viewing angle | FASA and FASA-INT |  |
| FOLC-HS | Replacement fiber optic lens cartridge mounting hood/lens housing | Replacement fiber optic lens cartridge mounting hood/lens housing with 1/2 inch NPT connection. | |  |

IFM Accessories

| Material Number | Application | Description | Used With | |
|-----------------|--|---|--------------------------------|---|
| FOLC-SC | Fiber optic lens cartridge and coupler | Fiber optic lens cartridge and coupler - straight connection. | |  |
| S550FOAD | Fiber optics adapter viewing head side | Fiber optics adapter for S55XB/S55XBE viewing head and U2 models. | S55XB/S55XBE viewing heads, U2 |  |
| S550FOADY-FT | Fiber optics adapter | Fiber optics adapter with air purge connection for all viewing heads with 1" NPT connection | S55XB/S55XBE viewing heads, U2 |  |
| S550FOADY-FT-AL | Fiber optics adapter | Fiber optics adapter with air purge connection for all viewing heads with 1" NPT connection | S55XB/S55XBE viewing heads, U2 | |
| S592-OR | Spare Parts for FOLC-SC and FOLC-9C | Metal O-Ring Spare Parts for FOLC-SC and FOLC-9C | FOLC-SC and FOLC-9C | |
| S592-PC | Spare Parts for FOLC-SC and FOLC-9C | Fiber assembly quartz lens (plano/convex) for FOLC-SC and FOLC-9C | FOLC-SC and FOLC-9C | |
| S592-PP | Spare Parts for FOLC-SC and FOLC-9C | Plano/Plano window For FOLC-SC and FOLC-9C | FOLC-SC and FOLC-9C | |
| S592-RR | Spare Parts for FOLC-SC and FOLC-9C | Retainer clip for FOLC-SC and FOLC-9C | FOLC-SC and FOLC-9C | |
| S700FOAD | Fiber optics adapter | Fiber optics adapter for S70X viewing heads. | Any 1/2" viewing head/ FASA |  |
| S800FOAD | Fiber optics adapter | Fiber optics adapter for S80X viewing heads. | S80X viewing heads |  |

GHE Igniter System



The GHE High Energy Igniter is a non fouling high energy device, designed to directly ignite all liquid and gaseous fuels. The GE High Tension Igniter is designed to provide reliable ignition and or warm up when and where required. It can be applied to boiler applications from industrial to utility lime and cement kiln heaters, etc.

| Material Number | Application | Description | Used With | Comments |
|-----------------|--|--|---|--|
| GHE1-3 | Gas high energy pilot igniter assembly used with gaseous fuels | Gas high energy pilot igniter assembly used with liquid and gaseous fuels, 1-3 MBH capacity, 1-7/8 inch OD with 36 inch SS flex hose, 36 inch SS air hose, burner mounting tube, high energy probe, igniter tip 12 in. long x 1/2 in OD. | Gaseous fuels | 1-3 MMBTU/HR capacity, 1-7/8 inch OD with 36 inch SS flex hose, 36 inch SS air hose, burner mounting tube, high energy probe, igniter tip 12 in. long x 1/2 in OD. Standard assembly length 2-feet. Use IGADD for each 1-ft assembly length addition. Order Powerpack-12-CS, IGN-CPC-10 HT cable, IGN-CPC-ADD for longer than 10' cable and Power pack cabinet. Integral optical flame scanner option is available. |
| GHE2-5 | Gas high energy pilot igniter assembly used with gaseous fuels | Gas high energy pilot igniter assembly used with liquid and gaseous fuels, 1-3 MBH capacity, 1-7/8 inch OD with 36 inch SS flex hose, 36 inch SS air hose, burner mounting tube, high energy probe, igniter tip 12 in. long x 1/2 in OD. | Gaseous fuels | 2-5 MMBTU/HR capacity, 2-7/8 inch OD with 36 inch SS flex hose, 36 inch SS air hose, burner mounting tube, high energy probe, igniter tip 12 in. long x 1/2 in OD. Standard assembly length 2-feet. Use IGADD for each 1-ft assembly length addition. Order Powerpack-12-CS, IGN-CPC-10 HT cable, IGN-CPC-ADD for longer than 10' cable and Power pack cabinet. Integral optical flame scanner and quick disconnect options are available. |
| GT-LITE | Ignitor Spark tip / probe | Ignitor Spark tip / probe, 12 inch long x 1/2 inch OD. | | 12 inch long x 1/2 inch OD. |
| HEPADD | High energy probe | High energy probe per foot adder for lengths over 2-feet. Use to add length to IPASS, gas high energy replacement pilot igniter probe assembly, in 1-foot increments. | IPASS | Use to add length to IPASS, gas high energy replacement igniter probe assembly, in 1-foot increments. |
| HV-HT | Replacement internal GHE ignitor cable with contact | Replacement internal GHE ignitor cable with contact, 2-foot length standard. Internal cable from igniter tip to junction box. Use HV-HT-FT cable adder for each additional foot in length required. | GHE ignitor cable | Internal cable from igniter tip to junction box. Use HV-HT-FT cable adder for each additional foot in length required. |
| HV-HT-FT | Replacement internal GHE ignitor cable | Replacement internal GHE ignitor cable per foot adder for lengths over 2-feet. Use to add length to HV-HT in 1-foot increments. | GHE ignitor cable | Use to add length to HV-HT in 1-foot increments. |
| IGADD | Ignitor assembly per foot adder | Ignitor assembly per foot adder for igniter length over 2-ft. Use to add length to GHE1-3 or GHE2-5, gas high energy pilot igniter assembly in 1-foot increments. | Add length to GHE1-3 or GHE2-5, gas high energy pilot igniter assembly in 1-foot increments | Foot adder for igniter length over 2-ft |
| IGN-CPC-10 | Ignitor cable 10 ft with canon plug | Ignitor cable 10 ft with canon plug for POWERPACK-12-CS. From power pack to igniter. To add length, use IGN-CPC-ADD. | POWERPACK-12-CS | From power pack to igniter. To add length, use IGN-CPC-ADD. |
| IGN-CPC-ADD | Cannon plug cable | Cannon plug cable adder for length over 10-ft. Per foot adder for IGN-CPC-10. | IGN-CPC-10. | For length over 10-ft |
| IGN-CPC-LB | Replacement ignitor probe junction box with canon plug receptacle | Replacement ignitor probe junction box with canon plug receptacle for GHE ignitors. | GHE ignitors | |
| IPASS | GHE pilot igniter probe assembly without burner mounting tube, flange, gas insert or air/gas flex hoses. | GHE pilot igniter probe assembly includes igniter tip, junction box. Standard assembly is 2'. Use HEPADD for longer length. Order 12- Joule PowerPack,-12-CS and IGN-CPC-10/IGN-CPC-ADD | Gaseous fuels | Includes high energy probe, igniter tip 12 in. long x 1/2 in OD and junction box with receptacle. Standard assembly length 2-feet. Use HEPADD for each 1-ft assembly length addition. Order 12-Joule POWERPACK-12-CS and associated cabling with canon plug |
| NEMA-12-ADD | NEMA 12 enclosure for igniter powerpack. | NEMA 12 enclosure for igniter powerpack. | Igniter powerpack | |

Industrial Flame Monitoring

IFM Accessories

| Material Number | Application | Description | Used With | Comments |
|-----------------|---|---|-------------------|---|
| NEMA-4-ADD | NEMA 4 enclosure for igniter powerpack. | NEMA 4 enclosure for igniter powerpack. | Igniter powerpack | |
| NEMA-4X-ADD | NEMA 4X enclosure for igniter powerpack. | NEMA 4X enclosure for igniter powerpack. | Igniter powerpack | |
| POWERPACK-12-CS | Ignitor 12 Joule Power pack for GHE and IPASS | Ignitor 12 Joule Power Pack | GHE and IPASS | 120V/220V/50-60Hz, output energy 2,500Vdc, 12 Joule pulses @ 6 sparks/second. |
| QDADD | Quick disconnect/cam and groove coupler | Add quick disconnect/cam and groove coupler on GHE2-5 in place of the standard flange connection to the burner mounting tube. | GHE2-5 | |

700 and 800 System



Available in single sensor only, UVTron or IR. Options include quick disconnect with two LEDs or factory installed cable.

Application: Flame Detector for Oil Fired burners

Mounting: 1/2" NPTF or 1" NPTF with 1/4" NPT Purge connection

Electrical Ratings: 22 to 26Vdc from signal processor

Sight Pipe (NPT): 1/2 in.

Purge Air Pipe (NPT): 1/4 in.

Ambient Temperature Range: -40 to 149°F (-40 to 65°C)

Approvals, CSA: Approved CSA, FM IEC, SIL3 (Temp rating -40 to 149°F/-40 to 65°C)

Approvals, Factory Mutual: Approved

Environmental, Electrical, or Ingress Protection Rating: IP64

Required Components: Order ASY785 (50foot) or ASY785-200 (200ft) for molded, shielded cable assemblies. ASY785 or ASY785-200 are recommended for new installations.

| Material Number | Type | Electrical Connections | Shutter | UV Gain Adjustment | IR Gain Adjustment | Dimensions | Comments | Used With |
|-----------------|--|------------------------|------------|--------------------|--------------------|--|---|--------------------------------|
| S702 | IR Compact viewing head with 15-foot cable | Quick disconnect plug | Electronic | | 1-9 | 2.0 in. wide x 9.7 in. deep x 2.0 in. high (51 mm wide x 246 mm deep x 51 mm high) | Removable connector cover for diagnostic LED viewing during installation. | Use with 700 AC SP or 700DC SP |
| S702PF | IR Compact viewing head with 10-foot cable | Quick disconnect plug | Electronic | | 1-9 | 2.0 in. wide x 9.7 in. deep x 2.0 in. high (51 mm wide x 246 mm deep x 51 mm high) | | |
| S706 | UV Compact viewing head with 15-foot cable | Quick disconnect plug | Electronic | 1-9 | | 2.0 in. wide x 9.7 in. deep x 2.0 in. high (51 mm wide x 246 mm deep x 51 mm high) | Removable connector cover for diagnostic LED viewing during installation. | Use with 700 AC SP or 700DC SP |
| S706PF | UV Compact viewing head with 15-foot cable | Quick disconnect plug | Electronic | 1-9 | | 2.0 in. wide x 9.7 in. deep x 2.0 in. high (51 mm wide x 246 mm deep x 51 mm high) | | Use with 700 AC SP or 700DC SP |
| S802 | IR Compact viewing head with 15-foot cable | Quick disconnect plug | Electronic | | 1-9 | 1.8 in. wide x 9.2 in. deep x 1.8 in. high (46 mm wide x 234 mm deep x 46 mm high) | Removable connector cover for diagnostic LED viewing during installation. | Use with 700 AC SP or 700DC SP |
| S806 | UV Compact viewing head with 15-foot cable | Quick disconnect plug | Electronic | 1-9 | | 1.8 in. wide x 9.2 in. deep x 1.8 in. high (46 mm wide x 234 mm deep x 46 mm high) | Removable connector cover for diagnostic LED viewing during installation. | Use with 700 AC SP or 700DC SP |

Viewing Heads

S55xBE Viewing head



The S550BE is provided with UVTron and IR sensors. System is self checking, no mechanical shutters, not adversely affected by X or Gamma rays generated by pipe check welding. Suitable for all fuel flames, single or multiple fuels. Optional pipe fitting (PF) versions provided with factory installed cable. Suitable for hazardous location duty. SIL 3 capable.

- Not adversely affected by Gamma Rays or X-Rays.
- Mount in any orientation.
- IR gain selection of 0-699.
- UV gain selection of 0-99.
- 2 digital displays.
- Quick disconnect plug.
- Parameters stored in signal processor EEPROM.
- Ultraviolet and infrared with electronic shutter.
- Ambient Temperature: -40°F to +149°F (-40°C to +65°C)
- 22-26 VDC supplied by signal processor.
- CSA Rated IP64 Enclosure.
- Used with P532, P531, P531, P522, P522 signal processors.

Application: Flame Detector for All fuels multiple burners
Mounting: 1" NPTF burner front with 1/2" purge connection
Electrical Ratings: 22 to 26Vdc from signal processor
Sight Pipe (NPT): 1 in.
Purge Air Pipe (NPT): 1/2 in.
Dimensions: 4.1 in. wide x 8.1 in. deep x 5.4 in. high (104 mm wide x 206 mm deep x 137 mm high)
Ambient Temperature Range: -40 to 158°F (-40 to 70°C)
Approvals, CSA: Approved CSA
Approvals, Others: SIL3 (Temp rating -40 to 149°F/ -40 to 65°C)
 IECEx IEC: Approved
Approvals, Factory Mutual: Approved
Environmental, Electrical, or Ingress Protection Rating: IP64
Used With: P522, P531 and P532 Processors

| Material Number | Type | Electrical Connections | Shutter | UV Gain Adjustment | IR Gain Adjustment | Digital Displays | Comments | Required Components |
|---|--------------------------------------|------------------------|-----------------------|--------------------|--------------------|------------------|-------------------------------|--|
| Flame Detector for All fuels multiple burners | | | | | | | | |
| S550BE | | Quick disconnect plug | Electronic of IR only | 0-99 | 0-699 | Yes (2) | 2 digit display for UV and IR | Use with molded cable ASY55XBE or ASY55XBE-200. P522 or P532 signal processor. |
| S550BE-PF | UV/IR Viewing Head | 10 foot pigtail | Electronic of IR only | 0-99 | 0-699 | Yes (2) | 2 digit display for UV and IR | Factory installed 10' cable. P522 or P532 signal processor. |
| Flame Detector for Gas multiple Burners | | | | | | | | |
| S556BE | UV Viewing Head with Digital Display | Quick disconnect plug | | 0-99 | | Yes (1) | 2 digit display for UV | Use with molded cable ASY55XBE or ASY55XBE-200. P522 or P532 signal processor. |
| S556BE-PF | UV Viewing Head with Digital Display | 10 foot pigtail | | 0-99 | | Yes (1) | 2 digit display for UV and IR | P522 or P532 signal processor. |
| Flame Detector for Oil and Coal multiple burners | | | | | | | | |
| S552BE | | Quick disconnect plug | Electronic | | 0-699 | Yes (1) | 2 digit display for IR | Use with molded cable ASY55XBE or ASY55XBE-200. P522 or P532 signal processor. |
| S552BE-PF | IR Viewing Head | 10 foot pigtail | Electronic | | 0-699 | Yes (1) | 2 digit display for IR | P522 or P532 signal processor. |

Video is a very effective medium to use for both technical training and product familiarization. Many of the programs described here are relatively short and make a nice addition to a service meeting or formal class on HVAC controls. These tapes have been widely used in a number of applications such as:

- *At the distributor's counter* – to help answer questions and show technicians how to use new products
- *At service meetings* – to review new service procedures at the beginning of a season
- *In the classroom* – to provide students with authoritative information direct from the manufacturer

Commercial HVAC Controls

In Control With Solid State

This three-part DVD covers solid state economizer control systems, and features the H705A Enthalpy Controller, the M7415A Actuator, W7459 Economizer Logic Module, C7400 Air Sensor and C7150 Discharge Air Sensor. Separate parts cover Operation (12:00), Installation (15:00), and Checkout and Troubleshooting (8:00). 35:00

VT34/U

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Heating Controls

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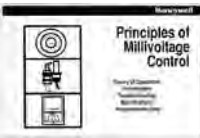

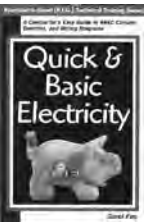

Contains the following modules: Basic Hydronic Control 14:33, Hydronic Heating Distribution 12:39, Outdoor Temperature Compensation 16:22, Oil Burner Controls 14:37, Flame Detection 13:14, Standing Pilot 12:33, Intermittent Pilot 14:16, SmartValve System 10:57, Direct Burner Ignition 12:05, SmartValve Direct Burner Ignition 9:44, Advanced SmartValve 11:27, SmartValve Water Heater Control 11:26 (2004), and Universal Integrated Furnace Control 11:07 (2007)

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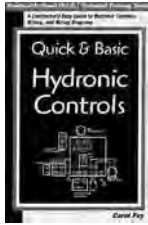
Training Booklets

Training Booklets

| | | | |
|---|---|-------------------|----------------|
|  | <p>Electronic Air Cleaner Application and Installation</p> <p>Includes selection, application and installation information for residential and light commercial type electronic air cleaners. <i>31 pages</i></p> | 70-9723/U | \$1.10 |
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|  | <p>Principles of Millivoltage Control</p> <p>Theory, controls and control circuits for millivoltage for heating systems with performance specifications on thermopiles. <i>22 pages, 1989</i></p> <p>Orderable in packs of 25 from: http://literature.honeywell.com/</p> | 71-97280 | \$23.38 |
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|  | <p>Quick and Basic Electricity</p> <p>A contractor's beginning guide to HVAC circuits, controls and wiring diagrams. <i>80 pages</i></p> | 71-97431/U | \$20.00 |
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Programmed Instruction Books

Training Booklets



Quick and Basic Hydronic Controls

Another in the "Practical is Good" (P.I.G.) Technical Training Series. A contractor's easy guide to hydronic controls, wiring, and wiring diagrams. How figuring circuits is like watching a bug on a rope; why thinking in circles is good; how every hydronic control is a power supply, a switch, or a load; how limit controls are like a safety committee; how to see the friendly side of control panels. *87 pages, 2000*

71-97160/U

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Quick and Basic Troubleshooting Book

This book tells you how to troubleshoot controls and control circuits using a meter, a "hopscotch," "Leapfrog," "daisy chain," and "homerun" methods, a troubleshooting chart, a wiring diagram and your common sense. *80 pages*

71-97931/U

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71-97966/U

\$20.00



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This manual is for a two-day in-house course on Honeywell pneumatic controls. It is available separately for use in your own training. *150 pages*
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71-97070

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Programmed Instruction Books



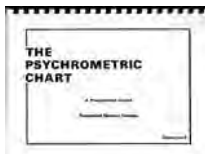
Fundamentals of Residential Control

A step-by-step, self-instruction workbook in a question and answer format. Students learn the necessary foundation for advanced study in controls while working at their own speed. Ideal for individual student use in preparation for other courses. Topics include: nature of electricity, rules governing electricity, inductive and capacitive circuits, principles of motor operation, power, transformer principles, relay principles, analyzing control circuits. *250 pages*

71-97083

\$258.41

Orderable in packs of 25 from: <http://literature.honeywell.com/>



The Psychrometric Chart

A valuable tool for everyone in the HVAC industry. Knowledge of the complex relationship between the various characteristics of the air (temperature, humidity, moisture content, etc.) can be the key to solving a number of air conditioning problems. Text illustrates with examples of how to use psychrometric charts. Use it as a self-instruction text or a class exercise. *100 pages*

71-97444

\$111.63

Orderable in packs of 25 from: <http://literature.honeywell.com/>

Service Publications

Service Handbooks



Honeywell Service Data Manual

Formerly known as the Service Handbook Library, these manuals have been completely updated and published in a new 8-1/2 x 11 in. format to make even more service information available to technicians working on residential and light commercial heating and air conditioning equipment and controls.

71-97932

\$42.80

Orderable in packs of 5 from: <http://literature.honeywell.com/>

- **Gas Controls Service Manual**

All of the technical data and service information needed to safely and efficiently check and repair gas burner controls systems. Includes combination gas controls manufactured in the last 30 years for furnace, boiler and other heating appliance manufacturers, as well as service replacement controls.

- **Gas Electronic Ignition Controls Service Manual**

Principles of controlling gas heating equipment including intermittent pilot, direct spark ignition and hot surface ignition. Model numbers and specifications for obsolete as well as currently manufactured controls, with information on making replacements of special models made for equipment manufacturers with universal replacement models available for service work. Includes troubleshooting flowcharts for old and new controls.

- **Oil Controls Service Manual**

Control of oil burners is undergoing a major change as manufacturers are transitioning from electromechanical and electronic controls to microelectronic oil primary controls. This manual includes information on these controls as well as older devices that have been used for years.

- **Commercial Controls Service Manual**

Introduction and fundamentals of electric and electronic controls used on commercial packaged and other light commercial equipment. Includes: motors and actuators, linkages, dampers and valves, electromechanical controllers, electronic sensors, electromechanical economizers, electronic solid state economizers, reset systems and fan coil systems.



RA890, R4795 and R7795 Service Handbook

Wiring and checkout, normal operation summary, flame current check, flame simulator, final checkout, service notes and test equipment. *59 pages*

70-8610/U

\$1.42



Troubleshooting Flame Safeguard Systems

Generalized troubleshooting information for the controls used on large burners and boilers. Information on recurring shutdowns, random shutdowns, measuring flame signal. Ten commandments for the burner service person, checking system operation and periodic maintenance. *11 pages*

70-8626

\$17.55

Orderable in packs of 25 from: <http://literature.honeywell.com/>

These manuals and notebooks provide instructional support on the fundamentals of controls for residential and some light commercial heating and cooling applications.

- A **Reference Manual**, or mini-text, is a clearly written text with easy-to-follow diagrams that detail the fundamentals of controls and control systems. Designed for use by the student as well as the instructor and organized so that the instructor can vary the outline to fit specific teaching goals. Includes reproductions of the program's overhead slides.
- A **Student Notebook** reinforces instruction and offers a check on student understanding through the use of exercises and review questions.

Oil Control and Electric Heating

Oil Heating Controls

Oil burner ignition and safety control systems for residential heating. Includes: fuel oil characteristics, oil burner primary controls, stack relay and cad cell flame detection systems, servicing oil burner control systems and general troubleshooting.

Student Notebook - Orderable in packs of 25 from: <http://literature.honeywell.com/>

71-97090

\$32.71

Electric Heat Controls

The basics of residential electric heating control starting with a brief review of electrical principles and going through to service procedures. Information on influence of humidity, air circulation and radiant temperature on comfort; heating system performance in terms of response time, cycling rate, heat anticipation and timed sequencing; central and decentralized electric heating systems; servicing electric heat systems and troubleshooting.

Reference Manual - Orderable in packs of 5 from: <http://literature.honeywell.com/>

71-97306

\$8.43

Student Notebook - Orderable in packs of 5 from: <http://literature.honeywell.com/>

71-97308

\$3.79

ControlPro Reference Material

These publications are part of the ControlPro one-day class for heating and air conditioning technicians, and are good references for anyone needing information on Oil or Hydronic Heating Controls.



Controls for Oil-Fired Heating

The "textbook" for the ControlPro Oil class. Includes: fuel oil and oil burning equipment, ignition requirements, oil burner control requirements, stack relays, cad cell primary controls, oil primary controls, oil control service and troubleshooting, glossary. *61 pages, 2005*

71-97406

\$30.75

Orderable in packs of 25 from: <http://literature.honeywell.com/>



Hydronic Heating Controls Technical Reference

A compilation of all the specification data, installation and service publications on Honeywell's hydronic heating controls, including Aquastat® controllers, Aquastat® relays, zone controls, outdoor temperature compensation controls, thermostats and hydronic heating controls accessories. *415 pages, 2005*

71-97480/U

\$24.00

FSG Textbook

FSG Textbook, "Flame Safeguard Controls: A Honeywell Textbook" 2nd edition

The most comprehensive and popular Flame Safeguard textbook available in our industry. It's where the beginners begin and where the "Old Pros" return year after year and problem after problem.

Textbook



FSG Textbook, "Flame Safeguard Controls: A Honeywell Textbook"; 362 pages

Contents:

71-97558/U

\$22.50

- *Introduction to Flame Safeguard* – Flame Safeguard functions and controls.
- *Combustion* – explanation of fuel types and flame characteristics.
- *Burners and Boilers* – description of representative burners and boilers.
- *Flame Rod Application* – design and installation of flame rods and rectification systems.
- *Optical Detector Applications* – description, operation, application and checkout of detectors; covering rectifying photocells, infrared, and ultraviolet detectors.
- *Primary Controls* – capabilities and operation of primary controls (RA890, R4795 and R7795) used on smaller burners
- *Programming Controls* – capabilities and operation of programming controls (R4140 and BC7000 Microcomputer Programmable Controls).
- *Troubleshooting FSG Systems* – outlines systematic procedures for isolating common Flame Safeguard problems.
- *Service Equipment* – description and operation of testers, simulators and meters.
- *Auxiliary Equipment* – description, operation, application and checkout of pressure and temperature controllers.
- *Valves and Valve Trains* – description and application of typical Flame Safeguard valves and valve trains.
- *Sizing and Application of Large Gas Valves* – principles and procedures for selecting gas valves (includes selection nomographs).
- *Firing Rate Controls* – covers methods for controlling firing rate, firing rate sequences, programmer switching, motors and valves.
- *Glossary* – Flame Safeguard terminology.

These reference manuals are collations of Honeywell publications used to apply, install and service various categories of control products. Combined they represent virtually all of the technical information Honeywell publishes on its residential and light commercial electric and electronic controls.

Reference Manuals



THE SOURCE Reference Material for Gas Ignition

These are the publications used with *The Source* gas ignition technical training program.

- **THE SOURCE Technical Reference**

A compilation of all the specification data, installation and service publications on Honeywell's residential gas ignition controls such as gas valves, ignition modules and electronic fan timers. *634 pages, 2004*

71-97414

\$33.69

Orderable in packs of 5 from: <http://literature.honeywell.com/>

- **THE SOURCE Class Notes and Lab Exercises**

Reproductions of the visuals used in *The Source* classroom training program along with the lab exercises that make up Honeywell's popular training program on gas ignition controls. *114 pages, 2003*

71-97162

\$118.75

Orderable in packs of 25 from: <http://literature.honeywell.com/>



The Firing Line

A comprehensive manual designed to facilitate the upgrading and replacement of burner and boiler controls in commercial and industrial applications. Extensive information on approval bodies to explain what type of controls are required to meet various codes. Subjects include how to sell control modernization, how to sell replacement, conversion wiring, handy survey guides and worksheets.

70-8900/U

\$125.00



The Firing Line CD-ROM Version

The CD-ROM version of *The Firing Line* is a comprehensive reference media designed to facilitate the upgrade/replacement of burner and boiler controls in commercial and industrial applications. *1996*

66-1081/U

\$25.00



Flame Safeguard Reference Manual

Specification sheet collation on: primary controls, programming controls, gas valves, flame sensors, FSG motors, ignition transformers, pressure controls/limits, reset controls, multiple boiler controls, low water cutoff, and feed water valve.

66-1004/U

\$135.00



7800 Series Burner Control Manual

This manual contains promotional literature, features/functions/benefits, product selection submittal information, programmers, semi-automatic programmers, primaries, semiautomatic primaries, subbases, amplifiers, purge cards, optional components, expanded annunciator, communications, tester, accessories, conversion wiring diagrams, diagnostics, and troubleshooting, and cross references. In 3-ring poly binder.

66-1065/U

\$55.00

Reference Manuals

Reference Manuals



Engineering Manual of Automatic Control for Commercial Buildings - Soft cover

The 21st edition of this widely used and extremely valuable manual. Now includes direct digital control and operator workstations, as well as other current control technology and strategies. The 500+ pages guide the reader through the fundamentals of control system theory, direct digital control, building management systems and a dozen other disciplines essential to proper environmental control in buildings. In this edition, microprocessor controls are shown in most of the control applications, rather than pneumatic, electric or electronic controls, to reflect the trends in today's industry. Also included is new information on indoor air quality and district heating. Often referred to as the "Gray Manual," this technical resource has been a standard among engineering design professionals since it was first published in 1934. *Revised 1997*

77-1100/U

\$24.00



Zoning Systems Reference Manual

A comprehensive reference on the Honeywell residential zoning capability. Includes Consumer Literature, System Design, Zone and Bypass Dampers, Networked Zoning, TotalZone, EMM Series, MM-2 and MM-3, Thermostats, Control Accessories and Fresh Air.

63-7067/U

\$10.00



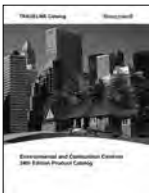
Water Control Product Catalog

Honeywell Catalogue - Full Line of Quality Products for Water Management Solutions: Water Controls Products, Hydronic Heating, Plumbing and Energy Products.

63-8702/U

\$1.70

- Honeywell Water Products: Mixing Valves, Air Vents, Boiler feed Valves/Back Flow Preventer, Expansion Tanks/Combo Kits, Honeywell Thermometers and Tridicators, DS05, DS06 DialSet Pressure Regulation Valves, T104/V110 High Capacity Thermostatic Radiator Valves, MT100/MT110 Service Tools, F74 Water Sediment Filters, D05/D06 Universal Pressure Regulating Valves, T100/V100 Standard capacity TRV, V135/T100 Loop Controls for radiant floor applications



Honeywell TRADELINE Catalog

Recently updated, this product catalog is an education in itself—over 1,000 pages of specifications and application information on Honeywell's residential, light commercial and burner and boiler controls. Included are Home Control products, Water Control products, Building Control products, Indoor Air Quality Products, Pneumatic Controls and Flame Safeguard Products.

70-6910/U

\$7.00

A lab trainer requires the student to actually perform point-to-point wiring to achieve a properly functioned control system.

Demonstrators



DSP3168 Gas Ignition Trainer

The DSP3168 is a suitcase-style hands-on laboratory workstation designed to support instruction in gas ignition controls as used on residential gas heating equipment and some commercial cooking equipment. Using point-to-point wiring, students wire up actual controls to simulate the operation of a number of types of gas ignition systems, using a small propane-fired burner.

DSP3168/U \$1,750.00

The DSP3168 can be set up to simulate the following types of gas ignition systems:

- Intermittent Pilot Ignition utilizing electronic flame detection to provide pilot safety.
- Direct Spark Ignition uses a spark electrode and a separate electronic flame detector electrode to directly light the main burner in a furnace, boiler or some other heating or cooking appliance.
- Hot Surface Ignition uses a hot surface igniter to directly light the main burner.
- SmartValve uses electronic flame sensing (flame rectification). This combines gas flow control and electronic intermittent pilot sequencing functions into a single unit. The low voltage igniter, and flame sensor on the pilot burner plug directly into the system control.

The DSP3168 lab trainer includes the following control and accessories: Honeywell VR8204, VR8205, and SV9501 gas valves; S8610U, S87D, and S8910U electronic ignition surface modules, and LP regulator and hose, ignition cable, wires with banana plugs, timing tab for S8910U, a propane tank holder, and an accessory box containing a spark adapter, direct spark igniter, intermittent pilot igniter-flame sensor Allen wrench and screws. Propane not included.

Using the banana plug wires, the student connects the controls and devices into the proper 120V and 24V circuits, both of which are fused.

Also included: a controls/devices list, lab exercises, a troubleshooting sheet, and reference material from THE SOURCE gas ignition training program.



DSP3564 ControLinks™ Demonstrator

The DSP3564 is designed for use in training on the Honeywell ControLinks™ Fuel Air Control System.

DSP3564/U \$1,575.00

The demonstrator contains the following items:

- One RM7800L1012 One R7847A1033
- One ST7800A1021 One Q7800A1005
- One R7999A1005 One Q7999A1006
- Four ML7999A1003 Six Indicator Lights
- One 1-5K Pot One 2-1K Pot
- Six SPST Toggle Switches One Carrying Case with handle (22" x 16" x 6")



DSP3981 ControLinks FAR Configuration Toolkit

The DSP3981 Toolkit includes USB-485 Converter with cable and Connector for ControLinks; ZM Software

DSP3981/U \$2,277.75



DSP3943 SOLA Demonstrator

The DSP3943 is used as a SOLA commissioning or monitoring tool when a System or Local Operator Interface is not required for operation. The DSP contains the S7999B1026 touchscreen display which uses a wizard-like process to assist you through the commissioning process.

DSP3944/U \$4,791.03



DSP3980 SOLA Demonstrator

The DSP3980 contains an S7999D1006 Touchscreen Display to commission or monitor the SOLA system when a System or Local Operator Interface is not required for operation. The DSP3980 includes the power supply for operation and cable with connector for the SOLA system. A USB storage drive is provided to save display screen snapshots or trending information.

DSP3980/U

Lab Trainers

Demonstrators



Burner and Boiler Controls Demonstrator Instructors Manual

This Manual is the Instructor's version of the Operating Training Board Exercises for the DSP3472.

71-97117

\$66.08

Orderable in packs of 25 from: <http://literature.honeywell.com/>



Burner and Boiler Controls Demonstrator Student Workbook

This Manual contains the Operating Training Board Exercises for the student for the DSP3472.

71-97116

\$66.08

Orderable in packs of 25 from: <http://literature.honeywell.com/>

Ordering Information

Order online

You can order online at <http://customer.honeywell.com>

If you are already a Honeywell customer, please login with your name and password. You can then go to the quick order form and fill it out to place your order.

Some products are available through the Print-On-Demand site at <http://Literature.honeywell.com>

Shipping

All U.S. orders for training materials are shipped freight collect, UPS ground. Please pay with a credit card and the charges will be added to your total.

Expedited Orders

When requested, we will expedite an order and ship by air, but you must pay by credit card and you will be billed for the shipping costs.

International Orders

International orders *MUST* be placed through your local Honeywell subsidiary. They can advise you on ordering and shipping procedures. We cannot accept or ship international orders.

Returns

Returned items are accepted within four months of purchase. There are no cash refunds, and a \$30 restocking fee *per item* will be deducted from your credit. You are responsible for return shipping costs. The address for returns is printed on the bill of lading. Please call or fax in advance of your return and provide a list of the items that you are returning and a reason as to why you are returning them.

Form of Payment

For online orders, payment must be made by VISA, MasterCard, or American Express card or a company purchase order.

Inquiries

If it is necessary to contact us regarding your order, please provide the following information:

The date the order was placed, your account number, the web order number (found on the order confirmation) and the reference number.

Contact us at:

Honeywell International Inc.
MN10-131A
1985 Douglas Drive North
Golden Valley, MN 55422
FAX: 800-356-0149
PHONE: 763-954-5720

Note: Please allow 1 to 2 weeks to process and fill your order.

Honeywell

ENVIRONMENTAL AND COMBUSTION CONTROL WARRANTY POLICY

Honeywell warrants the products in this catalog (except those parts designated on Honeywell's price lists as not covered by this warranty) to be free from defects due to workmanship or materials, under normal use and service, for the following warranty periods.

Sixty (60) months from date of installation

- Prestige®, Prestige® IAQ, Lyric Thermostat, VisionPRO®, Commercial VisionPRO®, CommercialPRO®, FocusPRO®, Wireless FocusPRO®, PRO 4000, PRO 3000, LineVoltPRO™, Digital Round™, and Modern Round™ (T87K, N) Series Thermostats with a date code of 0501 or later
- Air Cleaners, Humidifiers, Ventilators, Ultraviolet Treatment and Zoning products with a date code of 0501 or later, excluding replacement maintenance parts
- Indoor air quality products F50, F52, F300, F200, F150, UV100E, HE225, HE265, HE365, with date codes of 0452 or earlier, excluding replacement maintenance parts
- MS, MN and fast acting 2-position Direct Coupled Actuators
- JADE economizer when used with Honeywell sensors and actuators
- AquaPUMP circulating pump
- C7189R RedLINK Wireless Indoor Air Sensor
- C7061 UV Detector

Sixty (60) months from date of manufacture

- Access and Video Systems power supplies

If a product is defective due to workmanship or materials, is removed within the applicable warranty period, and is returned to Honeywell in accordance with the procedure described below, Honeywell will, at its option, either repair, replace or credit the customer for the purchase price of the product, in accordance with the procedure described below. This warranty extends only to persons or organizations who purchase products in this catalog for resale.

The expressed warranty above constitutes the entire warranty of Honeywell with respect to the products in this catalog and IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL HONEYWELL BE RESPONSIBLE FOR ANY CONSEQUENTIAL DAMAGES OF ANY NATURE WHATSOEVER.

Thirty-six (36) months from date of shipment

- Variable frequency drive devices (VFD) and accessories

Thirty-six (36) months from date of installation

- AUBE branded thermostats, timers, and switches

Twenty-four (24) months from date of installation

- SuitePRO thermostats
- PRO 2000 and PRO 1000 thermostats
- Other Honeywell indoor air quality and zoning products with a date code of 0452 or earlier, unless otherwise specified
- AQ2000 Aquatrol panels and AQ1000 thermostats
- RedLINK Entry/Exit Remote
- RedLINK Vent Boost Remote

Twenty-four (24) months from date of manufacture

- Pan-Tilt-Zoom Domes for Access and Video Systems

Eighteen (18) months from date of shipment,

- All WEBS building automation and security parts, unless specified otherwise (warranty replacement parts will be warranted for 90 days or the balance of the original warranty period, whichever is longer)

Twelve (12) months from date of installation

- Water Solutions products
- Other Honeywell thermostats and thermostats with a date code of 0452 or earlier, unless specified otherwise
- RedLINK Wireless Outdoor Air Sensor
- RedLINK Portable Comfort Control
- RedLINK Internet Gateway

Twelve (12) months from date of shipment

- Building automation security accessories

Twelve (12) months from date of manufacture

- Keyboards, Controllers and other Access and Video System accessories.

Ninety (90) days from date of manufacture

- IR Halogen bulbs for Access and Video Systems

The warranty period for all other products is twelve (12) months from date of installation.

INSTRUCTIONS—INSTALLING OR SERVICING CONTRACTOR OR DEALER

When replacing a Honeywell product under warranty, including those products furnished on original heating and/or cooling equipment, you should rely on your local Honeywell Wholesaler or Distributor for prompt and efficient product replacement service.

No warranty claim for product replacement or credit will be honored by Honeywell without a completed return authorization form or a manual return authorization form issued by Honeywell Customer Care.

INSTRUCTIONS—WHOLESALE OR DISTRIBUTOR

The following will apply to the return of any product to Honeywell under this warranty, except any products which are not variable frequency drives or WEBS and are:

- (i) identified with a Honeywell Return Authorization Form (obtained from the B2B website at Customer.Honeywell.com)
- (ii) display the Return Authorization Form number and return address label on the outside of the return carton. Make sure a copy of the form is enclosed in the return carton
- (iii) packed separately from other returns and protected from shipping damage;

- (iv) have certification by the installer or servicing dealer that the product was removed, due to failure, within the applicable warranty period;
- (v) are received transportation pre-paid at the facility listed on the shipping and/or packing slip.
- (vi) and are found by Honeywell's inspection to be defective in workmanship or materials under normal use and service

will be handled in accordance with one of the two following procedures, as specified by the customer making the return.

1. **CREDIT PROCEDURE.** Honeywell will issue credit, at Honeywell's lowest wholesaler net price in effect at the time of the return (as set forth on Honeywell's then current price sheet) or at the actual invoice amount if a copy of that invoice is attached to the packing list. (TRADELINE Replacement Exchange Products will be at Honeywell's lowest replacement exchange net price in effect at the time of such return, as shown on Honeywell's then current price sheet.) Honeywell reserves the right to disallow this credit option in cases of warranty abuse.
2. **REPLACEMENT PROCEDURE.** Warranty replacement procedure must be used for in-warranty emergency replacement orders. Customer will not be credited for items not meeting warranty criteria as outlined by policy. Please return the defective item to the address listed on the return authorization form.

List Water Solutions products on a separate Return Goods Order form, marked "Water Solutions".

All new and unused VBN control ball valves MUST be approved by your Honeywell sales representative before returned.

WEBS return products must be processed through WEBS Customer Care. Defective hardware products under warranty have to be returned to Tridium in Richmond, VA. Security Access and Video products must have prior authorization.

All VFD warranty return products must be coordinated through the Commercial Components Hotline (1-888-516-9347 option 4) staff and VFD Warranty and Repair Program Coordinator (ECC-VFD Coordinator). All VFD warranty returns must have prior authorization and must be returned to the specified Honeywell VFD Service Center.

The warranty will not be honored if:

- (i) product is damaged or missing parts or accessory items including batteries.
- (ii) product exhibits evidence of field misapplications.

Final disposition of any warranty claim will be determined solely by Honeywell. If inspection by Honeywell does not disclose any defect covered by the warranty, the product will be returned or scrapped as instructed by the customer and Honeywell's regular service charges will apply. Products returned to the customer may be sent shipping charges collect.

If you have any questions relative to product returns to Honeywell, contact your Customer Care Representative:

Honeywell International Inc.
Customer Care MN10-131A
1985 Douglas Drive
Golden Valley, MN 55422
1-888-793-8193

SPECIAL MESSAGE TO INDUSTRIAL USERS AND BUILDING OWNERS

Thank you for using Honeywell products.

As a user, when you purchase a Honeywell product from this catalog you should expect performance from the product and, if it fails, replacement of the product by the installing dealer.

Typically, you will have purchased a Honeywell product under the following circumstances:

1. To modernize or refurbish your existing commercial and/or process control system.

2. You have purchased new commercial and/or process heating, cooling, air cleaning or humidification equipment that is furnished with Honeywell controls or components (refer to your owner's manual furnished with the equipment).
3. A control has failed on your existing commercial and/or process heating and/or cooling equipment and is replaced by a Honeywell TRADELINE product.

With few exceptions, you utilize the services of a competent plumbing, heating and/or cooling dealer/contractor for new or replacement work performed.

Although our warranty does not extend to you, Honeywell does extend a warranty to your supplier.

Your supplier can rely on its local Honeywell Wholesaler/Distributor or Honeywell for prompt replacement.

If you have any questions, need additional information or would like to comment on Honeywell's products or services, please write or phone:

Honeywell International Inc.
Customer Care MN10-131A
1985 Douglas Drive North
Golden Valley, MN 55422-4386
1-888-793-8193

or check your telephone directory (white pages) for one of many Honeywell field sales offices.

Honeywell | Automation and Control Solutions

Honeywell International Inc.
1985 Douglas Drive North
Golden Valley, MN 55422
customer.honeywell.com

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