

Max-Air TECHNOLOGY

The Best Way To Automate Your Process

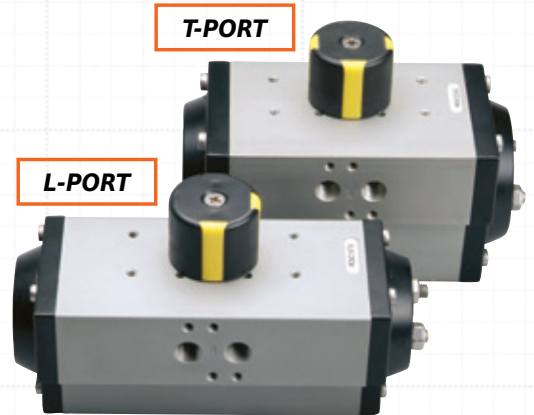


Product Overview

ALUMINUM ACTUATORS

The MT Series actuator design helps make automation effortless.

The MT Series rack & pinion pneumatic actuators continue the Max-Air tradition of easy integration, flexible customization, and reliable operation. Features include two ISO bolt circle patterns drilled directly in the body, NAMUR standard mounting for accessories, and our patented $\pm 10^\circ$ adjustment for the open/closed positions, all backed by the best unlimited cycle life warranty.



For multiport applications, Max-Air offers a highly visible yellow and black indicator with interchangeable yellow and black inserts for easy configuration. This option distinctly shows the correct flow path in a multiport application.

FEATURES & BENEFITS

- The MAX-AIR MT Series rack & pinion pneumatic actuator produces linear torque output in a compact design, utilizing many of the same design features found in the UT Series double acting and spring return units.
- NAMUR VDI/VDE 3845 and ISO 5211 dimensions on all sizes. No special blocks are required to mount solenoid valves, limit switches or positioners.
- The standard angle of rotation is 90° . Additional travel rotations of 120° , 135° , 150° and 180° are available. MT16 through MT66* feature a travel stop with $\pm 10^\circ$ adjustment in both open and closed directions (International Patent).
- MAX-AIR carries more actuator sizes than any other manufacturer.
- All pinions are supplied with anti-blowout retention in both directions.
- The female pinion drive is standard with a double square output drive and optional with a double-D drive or keyed drive to meet your specific requirements.
- Shaft bearings isolate the pinion gear from the housing and support the shaft for high cycle applications.
- The pinion teeth are engaged for the full length and stroke of the piston. The pinion height allows manual override without disturbing the position indication.
- Extruded aluminum body is internally machined and honed to exact specifications. All internal and external surfaces are anodized for corrosion resistance and enhanced wear properties.
- External open/closed indicator is standard, available for all rotations.
- Pistons incorporate double wear pads to separate the rack from the actuator wall and serve as both guide and wear bearings.
- Epoxy coated special steel springs are pre-loaded with non-metallic materials. The stainless steel end cap fasteners are extra long to allow for spring relaxation. All parts are corrosion resistant.
- Air pressure operation from 40 to 150 PSI. Water, nitrogen and compatible hydraulic fluids may also be used to power the actuator.
- All external fasteners are corrosion resistant stainless steel.
- All units are permanently lubricated at the factory with non-silicone grease.
- All units are externally stamped with a progressive traceable serial number.
- 100% of all units are factory pressure and leak tested, and individually boxed thru MT66 for shipping.

*MT04, MT71 and MT76 offer 5° stroke adjustment on the opening phase of the actuator.

MAX-AIR TECHNOLOGY EXCLUSIVE

SEALS

Temperature range from -4°F to 176°F with standard BUNA-N nitrile seals. Higher temperature with optional VITON® seals and technopolymer piston guides and bearings (250°F continuous and 300°F cyclic). Lower temperatures available with silicone seals (-40°F).

Note: Standard temperature rating for Canadian market is -40°F to 500°F with silicone seals

INDICATOR

OPEN/CLOSED, standard for 90° and 180°.

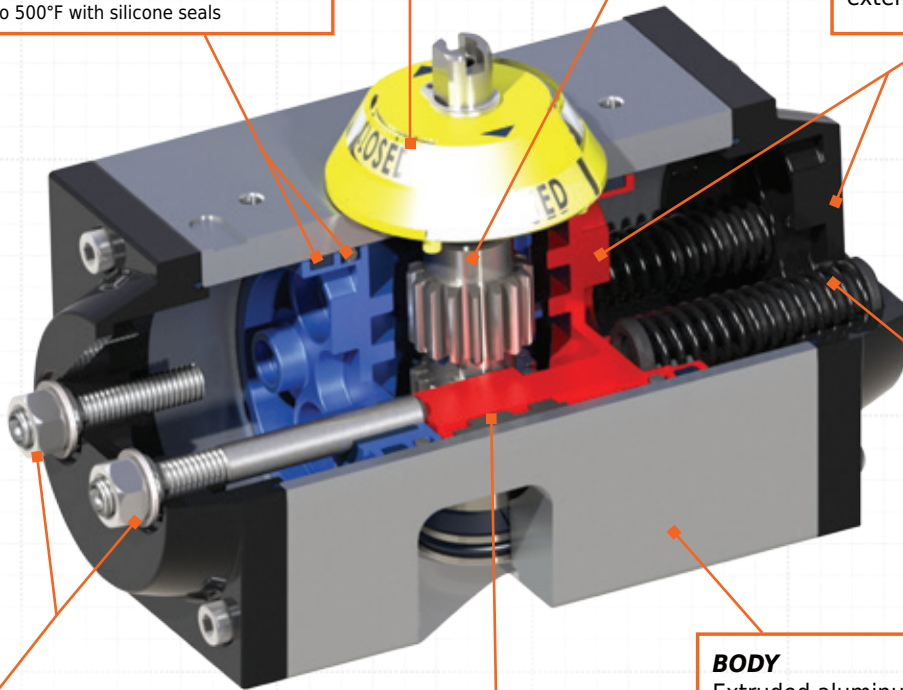
PINION

Carbon steel/electroless nickel plated for all sizes. Stainless steel option available on request.

END CAPS AND PISTONS

Die-cast aluminum pistons are epoxy powder coated (internal and external) for corrosion resistance.

Die-cast aluminum end caps are epoxy powder coated (internal and external) for corrosion resistance.



SPRING CARTRIDGES

Springs are carbon steel and coated for corrosion resistance. Spring guides are corrosion resistant technopolymer.

DUAL TRAVEL STOPS

Two travel stops allow $\pm 10^\circ$ adjustment in both open and closed directions in the UT/MT16 through UT/MT66. (Int. Patent)

MT04, UT/MT71 and UT/MT76 offer 5° stroke adjustment on the opening phase of the actuator
MT08 offers $\pm 10^\circ$ in both directions

BEARING PAD

Large contact area, high performance, long-life resistance, made of technopolymer.

BODY

Extruded aluminum body (ASTM B210 6063) is internally machined to exact specifications and honed to reduce friction and increase the life of seals and skates. All internal and external surfaces are anodized for corrosion resistance.

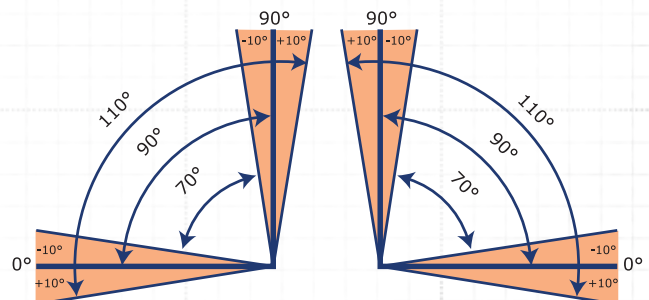
Available options: hard anodizing with Lock Mesh coating, epoxy coated units or autocatalytic nickel impregnated body protection

BI-DIRECTIONAL PATENTED TRAVEL STOP ILLUSTRATION

Max-Air actuators feature a bi-directional travel stop (International Patent). Side located stops allow a $\pm 10^\circ$ adjustment in both closing and opening directions, providing a range of adjustment between 70° and 110° of actuator stroke.

Travel stops are designed to absorb the maximum rated torque of the actuator and the maximum impact load associated with recommended speed stroke.

Adjustment of the counter clockwise and clockwise rotation is accomplished by turning the respective left (MAX) and right (0°) adjustment screws to increase or decrease output rotation.



ENGINEERED POLYMER ACTUATORS

The Max-Air line of technopolymer and glass-reinforced polypropylene actuators are designed to withstand the most extreme environments. Available in three sizes, your applications requiring plastics and corrosion resistance are covered with up to 500 in-lbs of torque (Double-Acting).



GLASS REINFORCED POLYPROPYLENE

Ideal for strong acid and alkali environments.

TECHNOPOLYMER

Suited for service in environments with hydrocarbons, organic solvents, and fuels.



Max-Air Technology offers a matching limit switch to accompany the UT SERIES Technopolymer actuators.

FEATURES & BENEFITS

- Double-acting or spring-return with spring cartridges made of non-metallic materials (springs are epoxy coated).
- Stainless steel or nickel plated pinion with anti-blowout protection in both directions.
- The pinion's lower drive connection is double square according to ISO 5211/DIN 3337 standards, for ease of valve assembly.
- Upper drilling for accessories and upper pinion machining according to NAMUR VDI/VDE 3845 standards.
- Solenoid valve connection according to NAMUR VDI/VDE 3845 made with an insert in alloy UNI 5076 (ASTM B 179) coated with high corrosion resistance material. Air connections are 1/4" NPT.
- Supply: air (lubricated if possible), hydraulic oil or water, min 40 PSI-max 120 PSI.
- Standard working temperature: -4°F +176°F
- Progressive serial number stamped for traceability.

DIRECT MOUNT COMPACT DESIGN



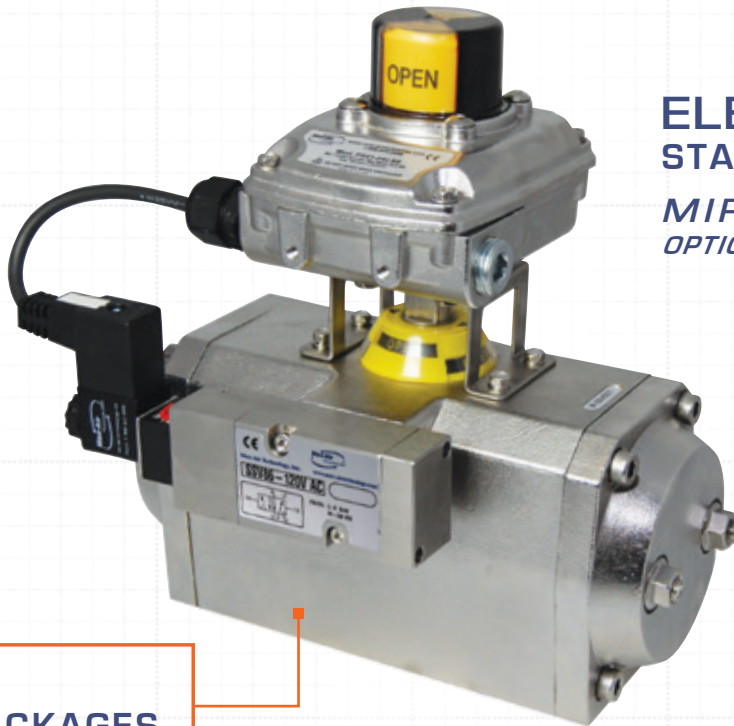
Technopolymer limit switch boxes are available to complement the corrosion resistant line of actuators. Available with custom mounting brackets, or direct mount to the actuator. See pg. 9 for more details.



STAINLESS STEEL ACTUATORS

Best In Class Stainless Steel Actuators

The SS Series actuators take corrosion resistance to the extreme with all of the great engineering features that separate Max-Air from the competition. Our stainless steel actuators conform to the ISO standard which makes valve automation easy and cost effective. Max-Air Technology's dual patented travel stops allow up to 110° of stroke in a 90° actuator, providing exceptional positioning adjustment.



ELECTRO-POLISH STANDARD

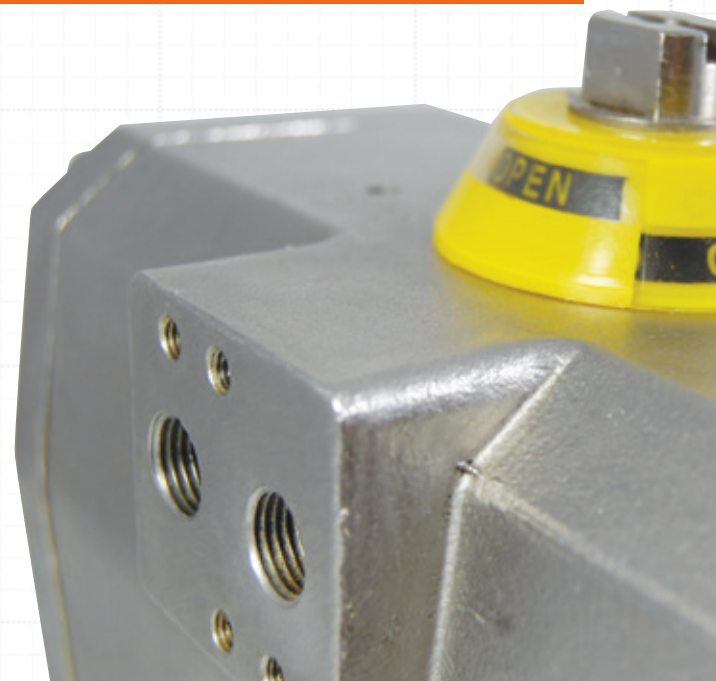
MIRROR FINISH
OPTIONAL

Please ask about our stainless steel limit switch and solenoid valve to complement our stainless steel actuators.

COMPLETE
STAINLESS PACKAGES

FEATURES & BENEFITS

- Double-acting or spring-return with epoxy coated spring cartridges and extra long stainless end cap fasteners for spring relaxation.
- Stainless steel pinion with anti-blowout protection in both directions.
- The pinion's lower drive connection is double square according to ISO 5211/DIN 3337 standards, for ease of valve assembly.
- Upper drilling for accessories and upper pinion machining according to NAMUR VDI/VDE 3845 and ISO 5211 standards.
- Air connections are 1/4" NPT.
- Supply: air (lubricated if possible), hydraulic oil or water, min 40 PSI-max 120 PSI.
- Standard working temperature: -4°F +176°F
- Progressive serial number applied for traceability.

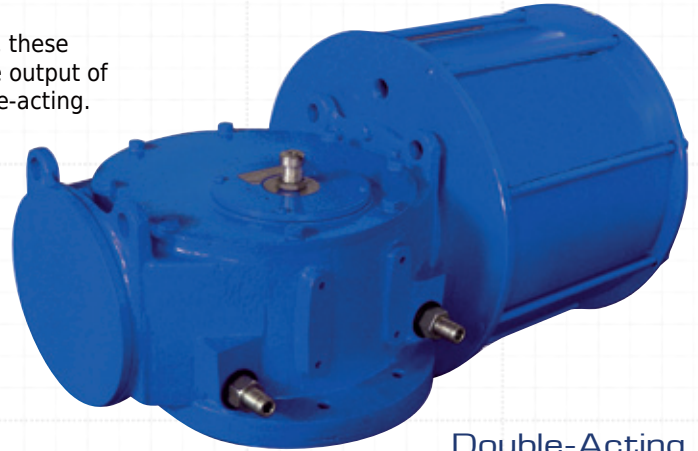


SCOTCH YOKE ACTUATORS

Scotch yokes feature a non-linear torque curve that delivers the most torque at the start and end of the cycle—where you need it most!

Ideal for high-torque, double-acting and spring-return applications, these heavy duty actuators are available in a variety of sizes with torque output of up to 600,000 in-lbs spring-return and over 2,000,000 in-lbs double-acting.

Max-Air Technology Scotch Yoke Actuators feature a modular design.



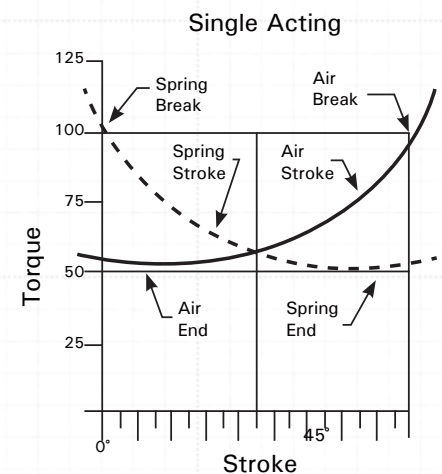
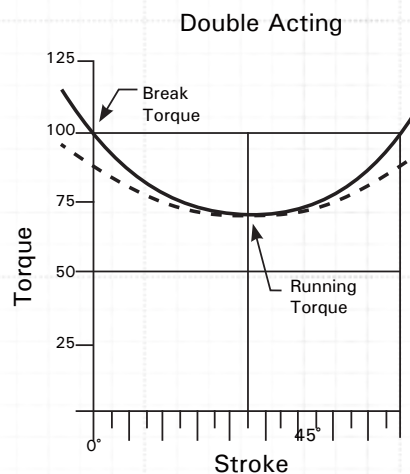
Double-Acting



Spring-Return

FEATURES & BENEFITS

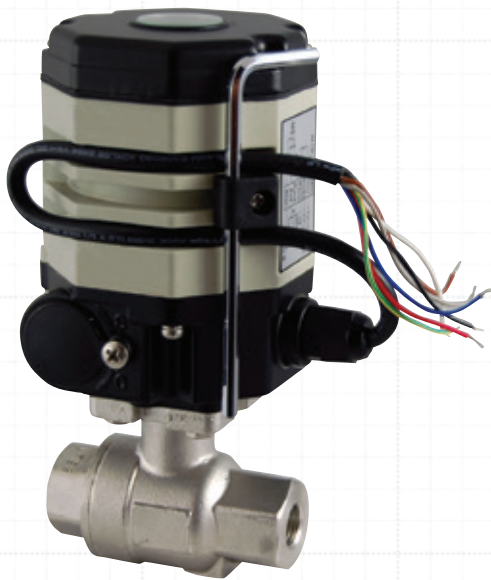
- Efficient and interchangeable modular design with air cylinder, power drive, spring pack, and override module.
- Standard NAMUR VDI/VDE 3845 with direct accessory mounting.
- Engineered bi-directional travel stops allow for 80° to 100° total travel adjustment.
- ISO 5211 range specification for easy automated valve assemblies.
- Self-lubricating bearings allow for maximum energy transfer directly to the valve stem.
- Integrated safety lock prevents accidental release of spring tension.
- 100% seal and running test carried out on electronic equipment.



MACC ELECTRIC ACTUATORS

Compact MACC series electric actuators ideal for small packages

MACC electric actuators come with prewired leads available in several different lengths, pre-calibrated cams and switches, and several different ISO standard mounting patterns to fit easily into your application. A position indicator and manual override come standard with this low-profile and cost-effective unit.



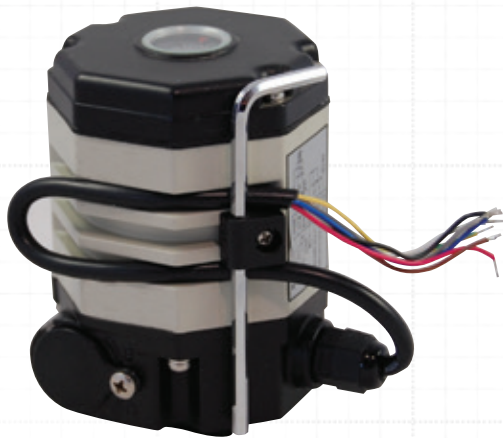
AVAILABLE OPTIONS

AC-With Signal Switches

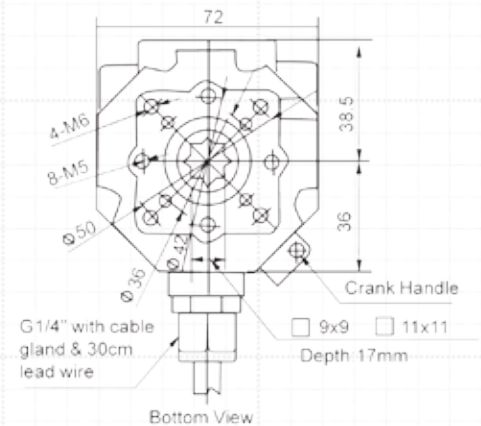
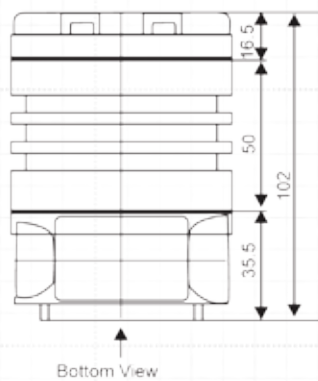
DC-With Signal Switches

Voltage Options

24 VAC 120VAC 240 VAC 24VDC

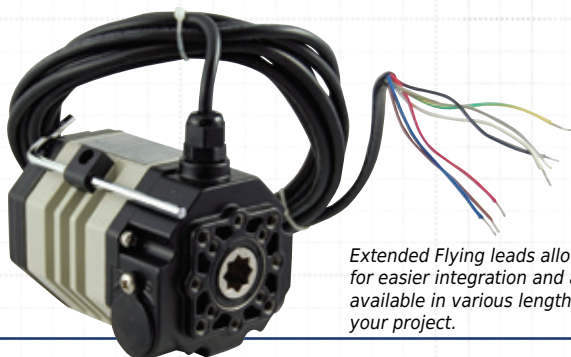
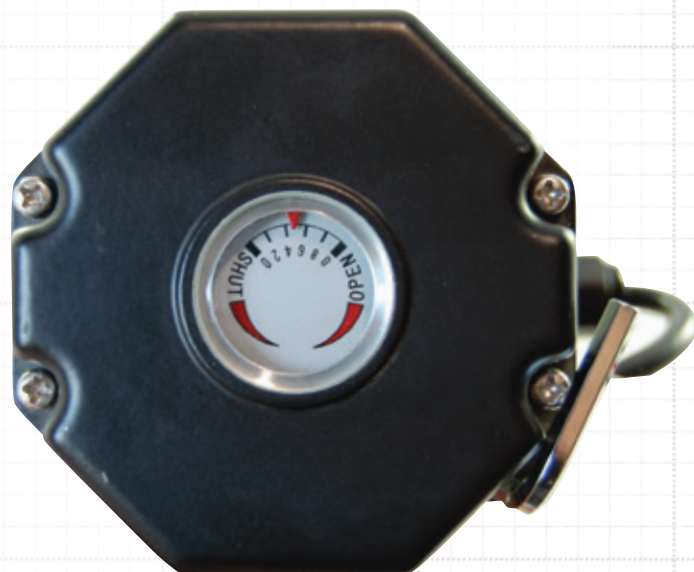


COMPACT DIMENSIONS



FEATURES & BENEFITS

- Compact design generating 160 in-lbs of output torque (or 80 in-lbs in the quick acting unit).
- Standard mounting patterns in F03, F04, and F05 with 9 or 11mm square output drive.
- Available voltage options: 24VAC/DC, 110/220 VAC.
- Auxiliary signaling switches available.
- 12" standard flying leads; additional lengths available.



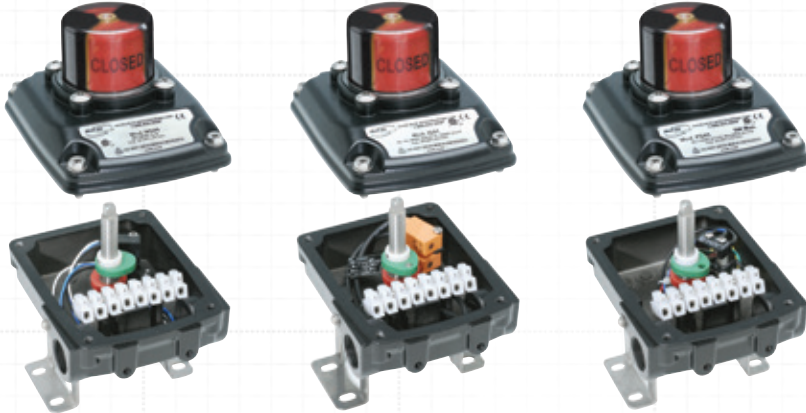
Extended Flying leads allow for easier integration and are available in various lengths to fit your project.

MS45 SERIES LIMIT SWITCHES

The Max-Air Technology aluminum and stainless steel limit switch box is setting a new standard for compact limit switches. Units are available with mechanical, proximity, and inductive options to allow for a low cost switch based on the needs and demands of your application. [NOTE: Formerly known as MS41-2AL]

NOW

 LISTED



MS45-2-1-S-A-0-U
2 Mechanical Switches

IS45-2-1-S-A-E-U
2 Inductive Proximity Sensors

PS45-2-1-S-A-H-U
2 Magnetic Proximity Sensors



ELECTRICAL RATING

Mechanical Switches	3A @ 250VAC
Proximity Switches	See Ordering Information
Magnetic Switches	Max 48VDC @ .25 A-5W max

Specification	Standard
Enclosure Protection	IP67/NEMA 4/4X
Temperature Range	-4°F to 176°F
Conduit Entries	½" NPT
Switches	See above
Terminal	8 points (Prox) 10 points (Mech)
External Coating	Black epoxy powder coating
Weight	1.76 lbs



FEATURES & BENEFITS

- Equipped with “quick set” cams that can be easily adjusted manually without the use of tools and are spring backed so as not to be affected by normal vibration of the unit.
- The compact design creates a smaller valve package envelope size.
- MS45 units come standard with two conduit entries, ½" NPT, and one terminal strip with 8 or 10 points angled for easy wiring.
- The high visibility beacon offers clear indication of the valve position.
- Stainless steel captive cover bolts are standard in all units.
- Supplied NAMUR 80mmx30mm H30 stainless steel bracket and fastening hardware for ease in mounting the box to the actuator.
- NAMUR H20 actuator mounting is available with a technopolymer coupling.

New Explosion Proof Limit Switch Box



Model: MS48

Mechanical

IP67 T4A
 Class I, Div1 Groups C, D
 Class II, Div 1 Groups E, F, G

Proximity

IP67 T4A
 Class I, Div2
 Groups A, B, C, D



Available ATEX II 3 D and ATEX II 2 G D (EExia) approved.

Ask about our CSA listed switches.

MS41 SERIES TECHNOPOLYMER SWITCHES

The MAX-AIR series of Limit Switch Boxes are compact and highly corrosion resistant. Manufactured completely in technopolymer with stainless steel fasteners and NEMA 4, 4x (IP65) rating, these switches are suitable for the most demanding environments.

MECHANICAL OR
PROXIMITY SWITCH



STANDARD MOUNT
(As shown)
DIRECT MOUNT
(Optional)



FEATURES & BENEFITS

- Equipped with “quick set” cams that can be easily adjusted manually without the use of tools and are spring backed so as not to be affected by normal vibration of the unit.
- The compact design creates a smaller valve package envelope size.
- MS41 units come standard with two conduit entries, ½” NPT, one 8-terminal strip and one 2-terminal strip.
- The high visibility beacon offers clear indication of the valve position.
- Stainless steel captive cover bolts are standard in all units.
- Technopolymer mounting bracket supplied standard with NAMUR 80mmx30mm spacing, mounting hardware and coupling.
- CSA listed (mechanical switches only)

Visit www.maxairtech.com for product drawings and specifications.

DIRECT MOUNT COMPACT DESIGN



MS41 limit switches are available pre-wired, watertight, or with other types of specialty connectors (pre-wired with direct mount option shown).

NAMUR SOLENOID VALVES

Solenoid valves are available in single coil, dual coil or 3-position configuration and can be used with either lubricated or non-lubricated air.

The Max-Air NAMUR series solenoid valve features an electroless nickel plated spool, easy-to-use manual override (lockable), and is field convertible for use on either double acting (4 way) or spring return (3 way) actuators.



SV61 Series
NEMA 4/4x, IP65, any voltage

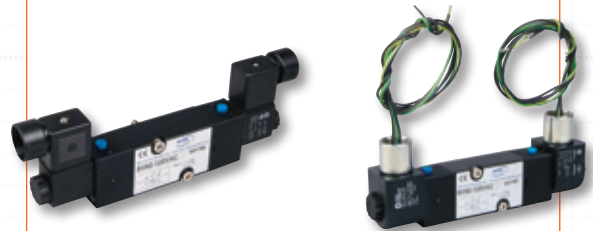
SV71 Series
Intrinsically safe, 24 VDC
(not pictured)

SV91 Series
NEMA 7/9 Explosion
Proof, any voltage



Dual Coil Series

All configurations shown are available with dual coils.



3 Position Versions

Open Centers
Closed Centers
Centers in Pressure

FEATURES & BENEFITS

- Design according to NAMUR VDI/VDE 3845.
- NAMUR mounting ensures universal mounting on pneumatic actuators.
- 1/4" NPT inlet and exhaust port size.
- Standard, lockable manual override.
- Standard nylon coil, insulated class F; optional technopolymer coil, insulation class H
- Protection against NEMA 4/4X (IP65) standard.
- Optional: Intrinsically safe EExi, Explosion-proof EExm, Explosion-proof EExd (NEMA 7)
- All units are marked with a progressive, traceable serial number.



Note: All solenoids also available with HIGH TEMPERATURE (-HT) VITON® seals.

YT-200A/B

The Max-Air YT200 filter regulator is a standard duty unit designed for use in systems with limited pressure regulation and filtration at the point of use and is capable of working with supply pressures up to 250 PSI and reliably regulates downstream pressure.



FILTER REGULATOR USE IS THE KEY TO LONG LIFE PERFORMANCE

FILTER REGULATORS

The filters in the Max-Air line of filter regulators are capable of eliminating particulates as small as 5 microns in size and help dry the air supply by preventing the passage of water droplets.

MAFRL1N14

The MAFRL1N14 unit is an economical filter regulator designed for general purpose applications and provides individual device pressure regulation and filtration within most common air system operating conditions.



MAX-AIR SMART BEACON

The solution of choice for applications where space minimization is a priority and plug and play limit switches are desired.

The concept of THE SMART BEACON is simple, effective and designed to work with most inductive type sensors from manufacturers such as IFM, Türck, and Pepperl + Fuchs.



GEAR OPERATORS

Max-Air offers manual and declutchable gear operators for quarter-turn valve applications.

The units come standard with black epoxy paint and iron or stamped steel hand wheels, making them well suited for general industrial service applications. Both types are designed with a broad output torque range, and are equipped with ISO 5211 valve mounting interfaces. The declutchable meets ISO 5211 mounting standards for the valve and actuator.

ROTARY VALVE POSITIONERS

Max-Air offers both single & double-acting valve positioners, with input signals of 4-20 mA and 3-15 PSI configurations, for proportional control of rotary actuators.

The positioners operate on the force-balance principal by comparing the standard signal transmitted from a pneumatic or an electro-pneumatic device and the angular rotation of the operating stem, and conveys a positioning amplified pressure to the valve actuator. Offered in NEMA 4/4X, explosion proof and intrinsically safe environments. Please call our sales team at (636) 272-4934 for more information.



Positioner mounted to Max-Air double-acting actuator.



POSITION TRANSMITTER & LIMIT SWITCHES

Max-Air offers a stand-alone direct mount position transmitter (PTM01) and a stand-alone position transmitter with internal limit switches (PTM02). The position transmitter and limit switches can also be ordered as an option within the desired rotary positioner. Please call our sales team at (636) 272-4934 for more information.

OPTIONS

- **Independent Position Transmitters**
PTM01-Position Transmitter, MTG
PTM02-Position Transmitter + LS, MTG
- **High & Low Temperature Adder-All Positions**
TEA01-High & Low Temperature Adder
- **High Vibration Electro-Pneumatic Positioners**
PEVX01-Remote SMART High Vibration, DA, PTM
PEVX02-Remote SMART High Vibration, SR, PTM
- **Positioner Assembly & Piping Options**
TUBING-SS-SS Tubing + SS Fittings
TUBING-NYLON-Nylon Tubing + Air Fittings
TUBING-TEFLON-High & Low Temp + Air Fittings



**Ask about the certifications available.
Call our sales team for more details at
636-272-4934.**



Pneumatic Positioners with Gauges

PNY01-3-15 PSI, Universal Mounting
 PNY02-3-15 PSI, Universal Mounting, LS
 PNY03-3-15 PSI, Universal Mounting, PTM
 PNY04-3-15 PSI, Universal Mounting, LS + PTM



Electro-Pneumatic Positioners with Gauges

PEY01-4-20 mA, Universal Mounting
 PEY02-4-20 mA, Universal Mounting, LS
 PEY03-4-20 mA, Universal Mounting, PTM
 PEY04-4-20 mA, Universal Mounting, LS + PTM



Explosion Proof Electro-Pneumatic Positioners

PEX01-4-20 mA, Universal Mounting
 PEX02-4-20 mA, Universal Mounting, LS
 PEX03-4-20 mA, Universal Mounting, PTM
 PEX04-4-20 mA, Universal Mounting, LS + PTM



Smart Positioners

PE-SMART-DA-2500 4-20mA, DA
 PE-SMART-SR-2500 4-20mA, SR



Smart Positioners - Stainless Steel

PES-SMART-DA-2550 4-20mA, DA
 PES-SMART-SR-2550 4-20mA, SR

MAX-AIR TECHNOLOGY POSITIONER

PRODUCT LEGEND

LS=Limit Switch
 DA=Double Acting

PTM=Position Transmitter
 SR=Spring Return

• **SMART Positioners**

PE-SMART-DA-SMART 4-20mA, DA
 PE-SMART-SR-SMART 4-20mA, SR

• **SMART Positioners-Stainless Steel**

PES-SMART-DA-SS SMART
 PES-SMART-SR-SS SMART 4-20mA, SR

• **SMART Positioners-Explosion Proof**

PEX-SMART-DA-EXPL PRF SMART 4-20mA, DA
 PEX-SMART-SR-EXPL PRF SMART 4-20mA, SR

• **SMART Positioners-Optional Features**

PTA01-SMART Position Transmitter Adder
 HCA01-SMART Hart Protocol Adder
 LSA01-SMART Limit Switch Adder
 FFA01-Foundation Fieldbus Adder



SPECIAL COATINGS

A wide variety of actuator coatings are available to extend the limits of service for aluminum actuators.

These coatings provide economical alternatives to stainless steel in a wide variety of applications, extending the boundaries of the traditional service limits for aluminum actuators. From salt spray to immersion to caustic washdown environments, our specialty coatings can solve your actuation problems without the extreme cost of stainless steel.

Increased Corrosion Resistance



Material / Coating	Aluminum: Hard Anodized (Standard)	Aluminum: Anodized w/ Polyamide Epoxy Coating	Aluminum: Electroless Nickel Infused	Aluminum: *Lock Mesh Coating	Stainless Steel
Appearance	Silver-gray with a matte appearance	Black with a medium gloss finish	Medium gloss silver finish	Dark Grey finish	Silver; low to medium gloss unless polished
General Properties	Good general corrosion properties in most "natural" environments with pH from 4.5 to 8.5. Good resistance to salt air environments. The coating is extremely hard and resistant to abrasion.	This epoxy coating is a relatively thick coating which creates a barrier against many of the chemicals which anodizing alone cannot adequately resist. It will resist more acidic or basic environments than anodizing alone.	Uniformly thick coating with essentially no porosity and a reasonably high hardness. The coating is pure, tough, hard, and resistant to many types of corrosion media.	This coating provides complete surface coverage and exhibits excellent corrosion resistance properties in a wide variety of applications. In addition, it is FDA approved for food contact.	304 and 316 stainless steel are the most commonly used alloys. Both have good corrosion resistance but 316 is generally considered superior, however more expensive.
Relative Cost	Lowest Cost	Moderate Cost	Moderately High Cost	Moderately High Cost	Highest Cost
Performance Limitations	Highly acidic or basic environments will break down the coating.	Good general corrosion resistance, particularly in salt or alkaline environments. Limited resistance to acids. Surface chalking will occur when exposed to UV radiation. Also suitable for low concentrations of caustic washdown solutions.	The coating will provide enhanced corrosion protection in very acidic environments but will not withstand attack from strong alkaline media. Also suitable for low to medium concentrations of caustic washdown solutions.	These coatings are resistant to any environment into which an actuator would be installed. Provided the integrity of the surface is intact, the coating can resist a broad array of chemical environments at temperatures ranging from sub-zero to over 300° F.	Although stainless steel does offer enhanced corrosion resistance, it also is dramatically higher in both cost and weight. The weight differential will often necessitate the use of special support bracketry. Corrosion resistance is superior.

*NOTE: See Lock Mesh Product Bulletin 20130305-RO for technical details of this incredible coating.

SPECIAL APPLICATIONS

Max-Air Technology is committed to solving your most challenging applications.

With the widest range of application solutions and the greatest degree of mounting flexibility possible, Max-Air Technology has the solution for all of your application requirements.

180° ACTUATORS

180°/150°/135°/120° Double Acting Actuators

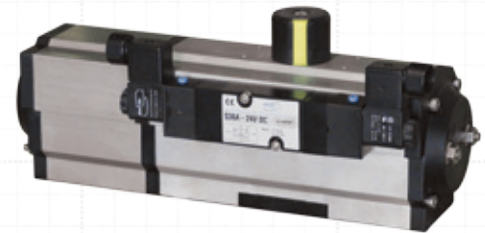
Max-Air Technology offers a complete range of extended body, double-acting actuators from 120° up to 180°. These options allow you to choose the actuator that best fits your application instead of the actuator dictating your automation requirements.

Note: 120° actuators are also available in spring return configuration.



180° Center Return Spring Actuators ±90° & Return to Center

For applications where returning to center is imperative, Max-Air Technology has this optimal solution. Specially designed and machined, this unit saves hours of engineering redesign for fail-to-center applications.



180° Spring-Return Actuators

The Max-Air Technology 180° actuator maintains the same high output torques as the standard MT actuators while providing a solid solution for a lifetime of consistent performance without hassling with an oversized unit.



Accumulator Tank Options

Electro-Hydraulic Actuators Self-Contained Unit

A unique approach to providing operational self-containment, Max-Air offers this spring-return unit ready to operate without preparing any complicated controls or wiring. Please call or visit www.maxairtech.com for more information.

Dribble Control: 3 & 4 Position Actuators

Completely integrated solution using a combination limit switch and solenoid box for any double-acting or spring-return 3 or 4 position control application.



ISO 9001 Certified

The Best Way To Automate Your Process



MT Series
Pneumatic Actuators

- Honed Bore For High Cycle Life
- Patented +/- 10 Degrees Travel Stops
- More Actuator Sizes Than Any Other Manufacturer
- Severe Environment Options For Corrosion Resistance
- Unlimited Cycle Life Warranty

The Largest Selection Of Actuator Sizes & Options



Electroless
Nickel Infused



Lock Mesh™ Coating



Stainless Steel



Polyamide
Epoxy Coating



Glass-Reinforced Polypropylene



Custom Stainless Steel Solutions



Engineered Technopolymer

Your nearest Max-Air dealer can be found at: