User Manual

Model 3960 Series

29 cu ft Environmental Chamber

Operating and Maintenance Manual 7003960 Rev. 19

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Models covered by this manual	
Model	**Voltage***
3960	100-120
3961	200-230

**All units are 50/60 Hz.*

MANUAL NUMBER 7003960

19	40639	5/19/16	Risk assessment information	ccs
18	31580/IN-4675	10/7/15	Motor chg - Parts list, expl dwg, and elec schematics	ccs
17	31289	7/18/14	Removed CE reference from page 7-2	ccs
16	30374/IN-4419	5/14/14	Updated 1900010-06 drawing - pg 8-6 (left hand door swing)	ccs
15	29318/IN-4272	12/14/12	Clarified usage on 3960-06-1 exploded drawing list	ccs
14	24921/IN-3939	2/16/12	Removed accessory list - 7-2	ccs
13	27292/IN-4073	9/29/11	Revised drawings on pgs 8-3 and 8-4, spacers and power supply kit	ccs
12	25454/IN-3930	4/16/09	Corrected figures on page 1-1 to 3960	ccs

Important Read this instruction manual. Failure to read, understand and follow the instructions in this manual may result in damage to the unit, injury to operating personnel, and poor equipment performance. ▲

Warning All internal adjustments and maintenance must be performed by qualified service personnel. ▲

- Use this product only in the way described in the product literature and in this manual. Before using it, verify that this product is suitable for the intended use.
- Do not modify system components, especially the controller. Use OEM exact replacement equipment or parts. Before use, confirm that the product has not been altered in any way.
- Disconnect the unit from all power sources before cleaning, troubleshooting, or performing other maintenance on the product or its controls. To disconnect power supply to the incubator, unplug the supply cord at the back of the incubator. Note that turning the key switch on the front control panel to the Off position is not sufficient to disconnect power.

Warning The user is responsible for carrying out appropriate decontamination procedures when hazardous materials are spilled on or inside the incubator. ▲

Caution If the incubator is not used in the manner specified in this operating manual, the protection provided by the equipment design may be impaired. ▲

Material in this manual is for information purposes only. The contents and the product it describes are subject to change without notice. Thermo Fisher Scientific makes no representations or warranties with respect to this manual. In no event shall Thermo be held liable for any damages, direct or incidental, arising out of or related to the use of this manual.

Important operating and/or maintenance instructions. Read the accompanying text carefully.

Potential electrical hazards. Only qualified persons should perform procedures associated with this symbol.

Equipment being maintained or serviced must be turned off and locked off to prevent possible injury.

WEEE Compliance: Thermo Fisher Scientific has contracted with companies for recycling/disposal in each EU Member State. For further information, send an email to weee.recycle@thermofisher.com.

- ✔ Always use the proper protective equipment (clothing, gloves, goggles, etc.)
- ✔ Always dissipate extreme cold or heat and wear protective clothing.
- ✔ Always follow good hygiene practices.
- ✔ Each individual is responsible for his or her own safety.

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Whatever Thermo Scientific products you need or use, we will be happy to discuss your applications. If you are experiencing technical problems, working together, we will help you locate the problem and, chances are, correct it yourself...over the telephone without a service call.

When more extensive service is necessary, we will assist you with direct factory trained technicians or a qualified service organization for on-the-spot repair. If your service need is covered by the warranty, we will arrange for the unit to be repaired at our expense and to your satisfaction.

Regardless of your needs, our professional telephone technicians are available to assist you Monday through Friday from 8:00 a.m. to 6:00 p.m. Eastern Time. Please contact us by telephone or fax. If you wish to write, our mailing address is:

Thermo Fisher Scientific (Asheville) LLC
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International customers, please contact your local Thermo Scientific distributor.

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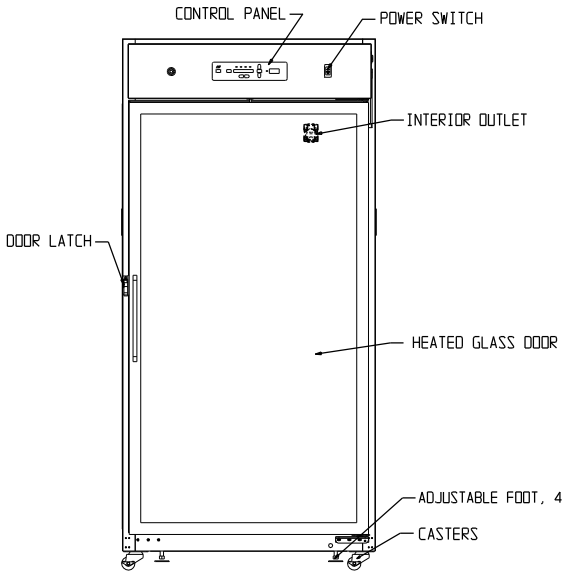


Figure 1-1. Front View

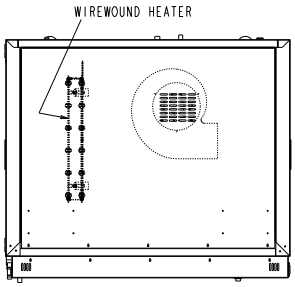


Figure 1-2. Top View

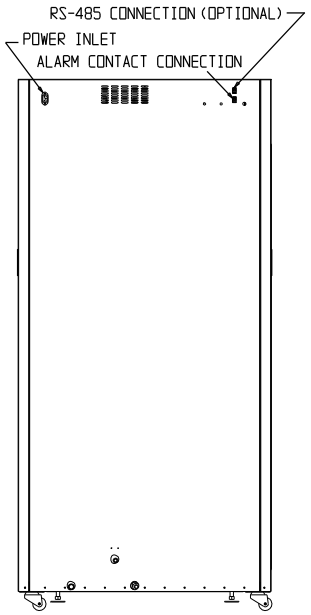


Figure 1-3. Back View

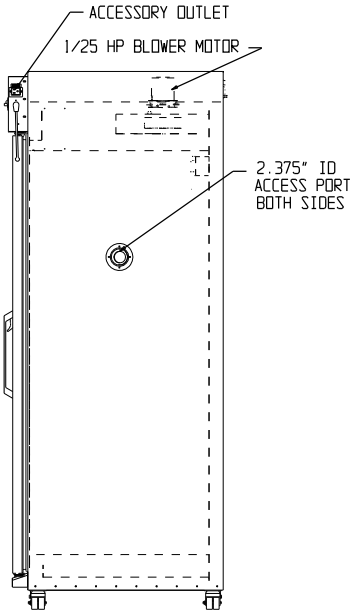


Figure 1-4. Side View

Control Panel Keys, Displays & Indicators

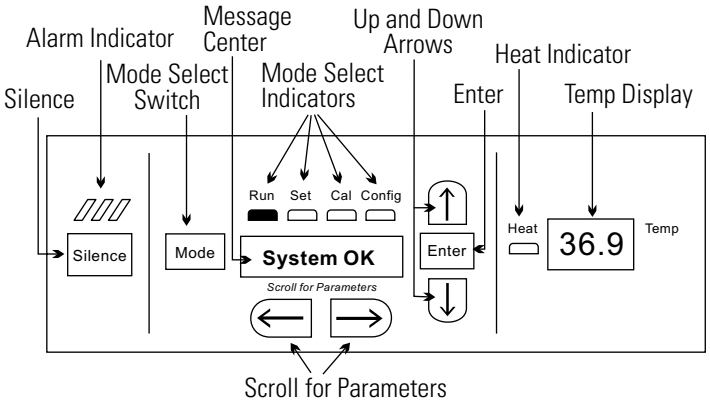


Figure 1-5. Control Panel

Silence - Press to mute the audible alarm. See Section 4 for alarm ringback times.

Alarm Indicator - Light pulses on/off during an alarm condition in the unit.

Mode Select Switch - Used to select Run, Setpoints, Calibration and System Configuration Modes.

Message Center - Displays system status.

Mode Select Indicators -

- Run: Run Menu
- Set: Set Points Menu
- Cal: Calibrate Menu
- Config: Configuration Menu

Up and Down Arrows - Increases/decreases or toggles the parameter values that have been selected in the SET, CAL, and CONFIG Modes.

Enter - Press to save all changed values to computer memory.

Heat Indicator - Lights when power is applied to the heaters.

Temp Display – Displays temperature continuously

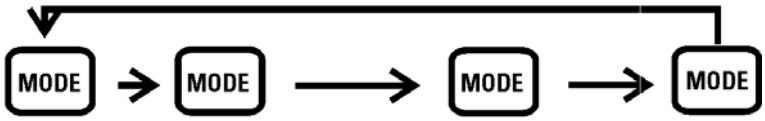
Scroll for Parameters Arrows - Steps the operator through the parameters of SET, CAL and CONFIG Modes. The right arrow goes to the next parameter, the left arrow returns to the previous parameter.

Keypad Operation

The Model 3960 Series Reach-In Incubator has four basic modes that allow incubator setup: Run, Setpoints, Calibration and System Configuration.

- Run is the default mode during normal operation.
- Set is used to enter system setpoints.
- Calibration is used to calibrate various system parameters.
- Configuration allows for custom setup of various options.

The chart below shows the selections under each of the modes.



RUN	SETPOINT	CALIBRATION	CONFIGURATION
Default Mode	Temperature	Temp Offset	Audible
	Overtemp		Access Code
			Temp Lo Alarm
			Temp Relay
			RS485 Address

Install the Unit

Unit must be installed against a wall or similar structure. Maintain a minimum six inch clearance behind the incubator for electrical connections. In addition, a minimum three inch ventilation clearance is needed on each side.

Locate the incubator away from exterior doors and windows as changes in outdoor temperatures and contact with direct sunlight can affect the anti-condensation functions of the unit.

Position the door opening away from forced air heating and cooling ducts as these can carry dust, dirt, and other contaminants into the incubator chamber, as well as negatively affect the door opening recovery time.

Locate the unit on a firm level surface capable of supporting the unit's weight of approximately 500 lbs.

Warning This incubator weighs approximately 500 lbs. Have sufficient personnel available when moving. ▲

Preliminary Cleaning and Disinfecting

Disinfect all interior surfaces with a general-use laboratory disinfectant, such as quaternary ammonium, to remove any residues which may remain from production of the incubator. Rinse thoroughly with sterile distilled water, then 70% alcohol. Dry with a sterile cloth as needed.

Disinfect the shelf channels and shelves, then rinse with distilled water before installing.

Caution Before using any cleaning or decontamination method except those recommended by the manufacturer, users should check with the manufacturer that the proposed method will not damage the equipment. ▲

Install the Shelves

The shelves may be installed at any level in the incubator. Install a shelf channel on each side. With the tabs pointing up, attach the channel by locating the rivet into a slotted hole, far end first. Pull the channel toward the front and slide the front rivet on the channel into the slotted hole and press down. Make sure that the channels are opposite each other so that the installed shelf will be level.

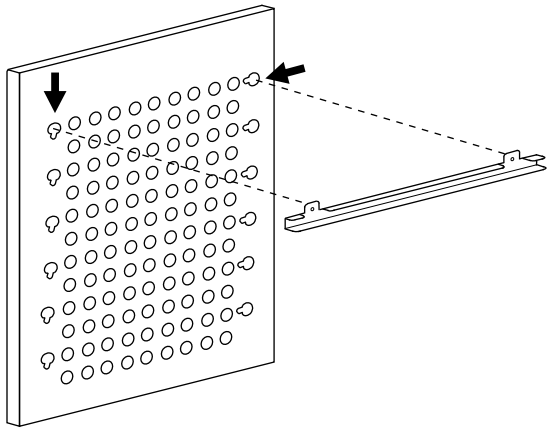


Figure 1-5. Shelf Channel on Side Duct

Level the Unit

Place a bubble-type level on a shelf inside the incubator. Adjust the feet as needed; counterclockwise to lengthen or clockwise to shorten. Level the unit front-to-back and left-to-right.

Connect to Electrical Power

See the serial tag on the side of the unit or Specifications section for electrical specifications. Refer to the electrical schematics at the end of this manual.

Warning Connect the incubator to a grounded, dedicated circuit. The power cord connector is the mains disconnect device for the incubator. Position the incubator to allow unobstructed access to the power cord so that it can be easily disconnected in case of an emergency. ▲

Plug the provided power cord into the power inlet connector on the back of the cabinet, then into the grounded, dedicated electrical circuit.

The Model 3960 Series also has an internal outlet located on the right side of the interior back wall. The outlet is to provide power (230W maximum) to accessory equipment. This outlet is not to be used when the temperature is above 40°C.

Incubator Start-Up

With the incubator properly installed and connected to power, system setpoints can be entered. The following setpoints can be entered in Set Mode: Temperature and Overtemperature. To enter Set Mode, press the Mode key until the Set indicator lights. Press the right and/or left arrow keys until the proper parameter appears in the message display center. See Chart 1-1 for more detail.

Caution It is the responsibility of the user to validate the proper operation of each incubator in their specific application(s) with respect to unit location, operating environment, and settings. ▲

Set the Operating Temperature

This incubator has an operating temperature setpoint range of 5.0°C above ambient to 60.0°C. It is shipped from the factory with a temperature setpoint of 10.0°C. At this setting, all heaters are turned off. To change the operating temperature setpoint:

1. Press the Mode key until the Set indicator lights.
2. Press the right arrow until “TEMP XX.XC” is displayed in the message center.
3. Press up/down until the desired temperature setpoint is displayed.
4. Press Enter to save the setpoint.
5. Press the Mode key until the Run indicator lights for Run mode or press the right/left arrow keys to go to next/previous parameter.

Set the Overtemp Setpoint

Caution Any equipment placed inside chamber must be rated for unit operating temperature. ▲

Caution In the event that the heaters are locked on as a result of a failure in the main temperature control, the independent overtemp system is designed as a safety to protect the incubator only. It is not intended to protect or limit the maximum temperature of cell cultures or customer's equipment inside the incubator if an overtemp condition occurs. ▲

The incubator is equipped with an independent circuit that monitors the air temperature in the cabinet. Should the main temperature control fail, the overtemp circuit will disconnect power to all heaters when the chamber temperature reaches the Overtemp setpoint. When the chamber temperature falls below the Overtemp setpoint, the overtemp circuit will reconnect power to all heaters. An incubator operating in the overtemp condition will maintain the chamber temperature approximately 1°C around the Overtemp setpoint.

The overtemp setpoint is set by the factory (default) at 40°C. However, the overtemp can be reset over a range from 0.5°C above the operating temperature setpoint to 65°C.

If the incubator's operating temperature setpoint is set above the overtemp setpoint, the overtemp setpoint will automatically update to 1°C above the temperature setpoint. It is recommended that the overtemp setpoint be maintained at 1°C over the operating temperature setpoint.

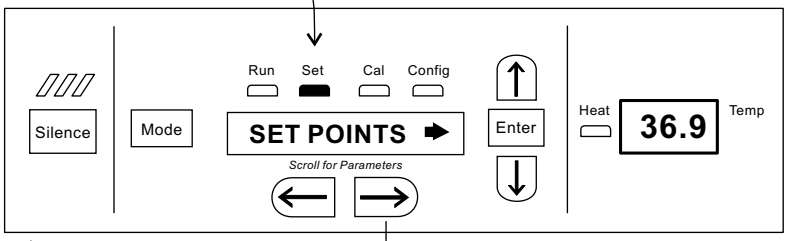
To set the Overtemp setpoint:

1. Press the Mode key until the Set indicator lights.
2. Press the right arrow until OTEMP XX.XC is displayed in the message center.
3. Press the up or down arrow until the desired Otemp setpoint is displayed.
4. Press Enter to save the setting.
5. Press the Mode key until the Run indicator lights, or press the right or left arrow to go to the next or previous parameter.

Chart 1-1

Set Mode

Press MODE to light SET



To Set:

Operating Temperature

Press MODE to move to CALIBRATE mode

Mode

TEMP XX.X C

Scroll for Parameters

Press ← to return to previous parameter

Enter

Numbers increase

Press Enter to save setting

Numbers decrease

Over Temperature

Mode

OTEMP XX.X C

Scroll for Parameters

Press ← to return to previous parameter

Enter

Numbers increase

Press Enter to save setting

Numbers decrease

Section 2 Calibration

After the unit has stabilized, several different systems can be calibrated. In Calibration mode, the air temperature, CO_2 and RH levels can be calibrated to reference instruments. To access Calibration mode, press the Mode key until the Cal indicator lights. Press the right and/or left arrow until the proper parameter appears in the message center. See Chart 2-1 at the end of this section for more detail.

Calibration frequency is dependent on use, ambient conditions and accuracy required. A good laboratory practice would require at least an annual calibration check. On new installations, all parameters should be checked after the stabilization period.

Prior to calibration, the user should be aware of the following system functions. While the unit is in Calibration mode, all system control functions are stopped so the unit remains stable. Readout of the system being calibrated will appear on the message center. If no keys are pressed for approximately five minutes while in Calibration mode, the system will reset to Run mode so control functions are reactivated.

Caution Before making any calibration or adjustments to the unit, it is imperative that all reference instruments be properly calibrated. It is the responsibility of the user to understand the interactive effects of temperature, CO_2 and RH% on each other and the independent reference instruments, especially a Fyrite® sensor. Read and understand all reference instrument operating manuals before use. Double-check all values entered into the incubator for accuracy before completing calibration and returning unit to service. ▲

Calibrate the Temperature

Before calibration, allow the cabinet temperature to stabilize. Place the calibrated instrument in the center of the chamber. The instrument should be in the airflow, not against the shelf.

Start-Up - Allow 12 hours for the temperature in the cabinet to stabilize before proceeding.

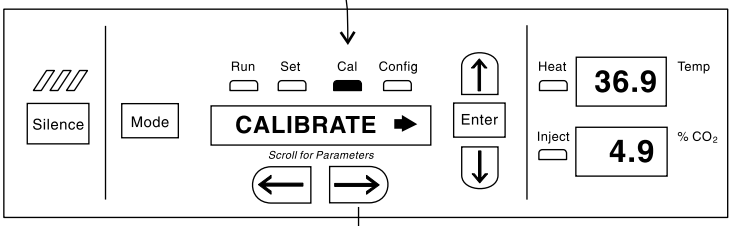
Presently Operating - Allow at least 2 hours after the display reaches set-point for temperature to stabilize before proceeding.

1. Press the Mode key until Cal indicator lights.
2. Press the right arrow until “TMPCAL XX.X” appears in the message center.
3. Press the up/down arrow to match the display to the calibrated instrument.
4. Press Enter to store calibration.
5. Press the Mode key to return to Run or the right/left arrow to go to next/previous parameter.

Chart 2-1

Calibrate Mode

Press MODE to light CAL



To Calibrate:

Operating Temperature

Press MODE to move to SYS CONFIG mode

Mode

TEMPCAL XX.X

Scroll for Parameters

Press ← to return to previous parameter

Enter

Numbers increase

Press ENTER to save the setting

Numbers decrease

Section 3 Configuration

Several features available in the Configuration Mode allow custom setup of the incubator. These features are listed and described below. All features may not be necessary in all applications, but are available if needed. To enter Configuration mode, press the Mode key until the Config indicator lights. Press the right and/or left arrow until the appropriate parameter appears in the message center. See Chart 3-1 at the end of this section for more detail.

Turn All Audible Alarms On/Off

The audible alarms can be turned on or off. The factory setting is ON.

1. Press the Mode key until the Config indicator lights.
2. Press the right arrow until AUDIBLE XXX is displayed in the message center.
3. Press up/down arrow to toggle AUDIBLE ON/OFF.
4. Press Enter to save the setting.
5. Press the Mode key to return to run mode or right/left to go to next/previous parameter.

Set an Access Code

A 3-digit Access Code can be entered to avoid unauthorized personnel from changing the setpoints, calibration, or configuration. A setting of 000 will bypass the access code. The factory setting is 000.

1. Press the Mode key until the Config indicator lights.
2. Press the right arrow until ACC CODE XXX is displayed in the message center.
3. Press up or down arrow to change the access code.
4. Press Enter to save the access code.
5. Press the Mode key to return to the Run mode or right/left to go to next/previous parameter.

Set Low Temp Alarm Limit (Tracking Alarm)

The low temp alarm limit is the deviation from the temperature setpoint, which will cause a low temp alarm. The low temp alarm is variable from 0.5° below setpoint to 5.0° below setpoint. The factory setting is 1.0° below setpoint. A minus sign in the display indicates that the alarm setting is below the setpoint.

1. Press the Mode key until the Config indicator lights.
2. Press the right arrow until TMP LO -X.XC is displayed in the message center.
3. Press up/down arrow to change the low temp alarm limit.
4. Press Enter to save the low temp alarm limit.
5. Press the Mode key to return to Run mode or right/left to go to next/previous parameter.

Enable Temp Alarms to Trip Relay Contacts

The temperature alarms can be programmed to trip the remote alarm contacts. A setting of ON will cause this, a setting of OFF will not allow temperature alarms to trip the contacts. The factory setting is ON.

1. Press the Mode key until the Config indicator lights.
2. Press the right arrow until TEMP RLY XXX is displayed.
3. Press the up/down arrow to toggle the setting ON/OFF.
4. Press Enter to save the setting.
5. Press the Mode key to return to Run or the right/left arrow key to go to next/previous parameter.

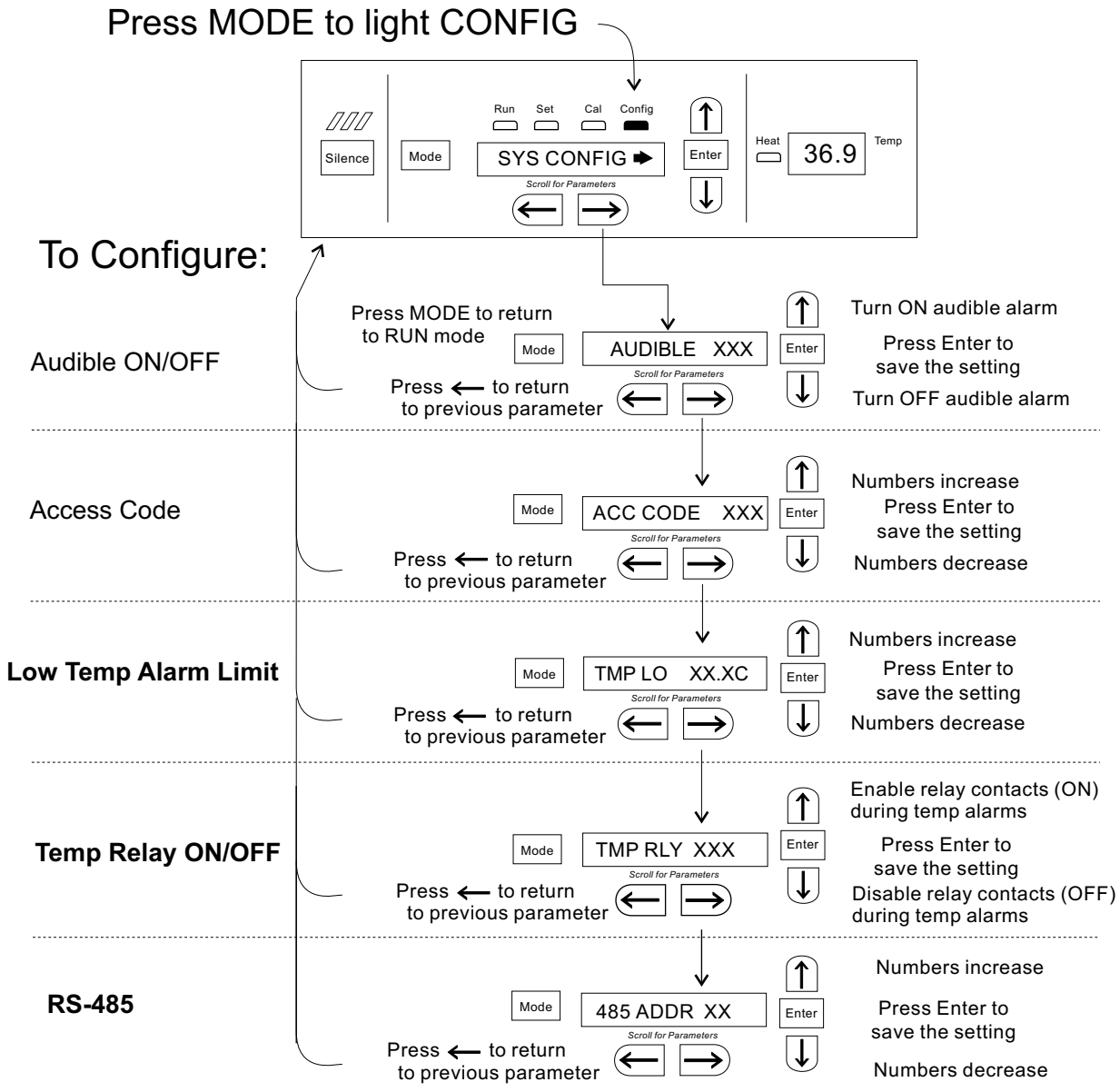
Communications Address - RS485

On units that have the RS485 option, direct communication with the Model 1535 alarm system can be established. Each piece of equipment connected to the 1535 must have a unique address. An address of 0-24 can be entered for the incubator. A setting of 0 is an invalid address that the 1535 will ignore. The factory setting for the RS485 address is 0.

1. Press the Mode key until the Config indicator lights.
2. Press the right arrow until 485 ADDR XX is displayed in the message center.
3. Press up/down arrow to change the RS485 address.
4. Press Enter to save the RS485 address.
5. Press the Mode key to return to Run mode or right/left to go to next/previous parameter.

Chart 3-1

Configure Mode



Section 4 Alarms

The Model 3960 Series incubator is equipped with a system which notifies the user of an alarm condition inside the incubator. All alarms are displayed in the control panel message center. The following table contains information on all possible systems alarms.

To avoid alarms going off in day-to-day use, some alarms are equipped with a time-delay feature. For this to function correctly, the alarm condition must exist for the specified length of time before the message center will display the alarm. This allows for interruptions, such as door openings, to occur without the incubator going into a continuous state of alarm.

When an alarm condition exists, the Silence key can be pressed to temporarily mute the audible alarm. The message center will continue to show the alarm condition. If the alarm condition is not corrected within a specified length of time, the alarm will sound again or "ringback" to remind the user.

When multiple alarm conditions occur, active messages are displayed in the display center one at a time, updating at 5-second intervals. Pressing Silence during multiple alarms causes all active alarms to be muted and to ringback in 15 minutes.

The temperature alarms are disabled when the Temp set point is 10°C.

Table 4-1. Systems Alarms

Description	Message Code	Delay	Ringback	Relay
No alarm condition exists	SYSTEM OK	-----	-----	-----
Temp > Otemp Set point	SYS IN OTEMP	0 min.	15 min.	Yes
Air Temp Sensor Fault	AIR SNSR ERR	0 min.	15 min.	No
Temperature Controller Failure	TMP CTRL ERR	0 min.	15 min.	Yes
Door is Open	DOOR IS OPEN	15 min.	15 min.	Yes
Temp < Temp Low Tracking Alarm	TEMP IS LOW	15 min.	15 min.	Programmable

Sensor Fault Alarms

The microprocessor in Model 3960 Series incubators continually scans all available sensors to ensure that they are operating properly. Should an error be detected, the incubator will sound an alarm and display the appropriate message. If such an alarm occurs, contact your local distributor or the Technical Services department.

Section 5 Maintenance

Caution If the unit has been in service, disconnect the power cord from both the unit and the power source. Allow the unit to cool before proceeding with any maintenance. ▲

Caution Before using any cleaning or decontamination method except those recommended by the manufacturer, users should check with the manufacturer that the proposed method would not damage equipment. ▲

Warning It is the responsibility of the user to immediately clean up after all accidental spills of hazardous materials. Be certain to follow local EHS policies with regards to personal protective equipment, cleaning, and disposal. ▲

Cleaning

The chamber interior may be cleaned with a general-use laboratory disinfectant, such as quaternary ammonium, or alcohol.

The cabinet exterior may be cleaned with soap and water or any non-abrasive commercial glass cleaner.

Warning Alcohol, even a 70% solution, is volatile and flammable. Use it only in a well ventilated area that is free from open flame. If any component is cleaned with alcohol, do not expose the component to open flame or other possible hazards. Allow the alcohol to fully dry before turning power on. ▲

Caution Do not use strong alkaline or caustic agents. Stainless steel is corrosion resistant, not corrosion proof. Do not use solutions of sodium hypochlorite (bleach) as they may cause pitting and rust. ▲

Clean the Glass Doors

The chamber glass door and the optional independent inner doors may be cleaned using the same disinfectant as used on the incubator interior. It is imperative that they be rinsed with sterile distilled water to remove the disinfectant residue. The doors should then be dried with a sterile soft cloth.

Clean the Glass Doors (continued)

Some precautions in the cleaning and care of the incubator glass doors: Moisture leaches alkaline materials (sodium, Na) from the surface of the glass. Evaporation of the moisture concentrates the alkaline and may produce a white staining or clouding of the glass surface. Cleaning chemicals with a pH above 9 accelerate the corrosion process. Therefore, it is very important to rinse and dry the glass doors after cleaning.

Caution There is no simple method for repairing corroded glass. In most cases, the glass must be replaced. ▲

Replace the Power Fuses

Warning De-energize all potential sources of energy to this unit and lockout/tagout the controls. (O.S.H.A. Regulation, Section 1910-147.) ▲

Warning High voltage is present behind control panel. The remote overtemp alarm system should be installed only by qualified electrical service personnel. ▲

There are only two replaceable fuses in the incubator. See Table 5-1 for fuse specifications.

1. Turn off the incubator's power switch and unplug the power cord.
2. Remove the top of the unit to access the fuses.
3. Refer to Figure 5-1 for the location of the two fuses.
4. Install the top cover and return the unit to service. If the fuse(s) blow after restoring power to the incubator, contact the Technical Services Department.

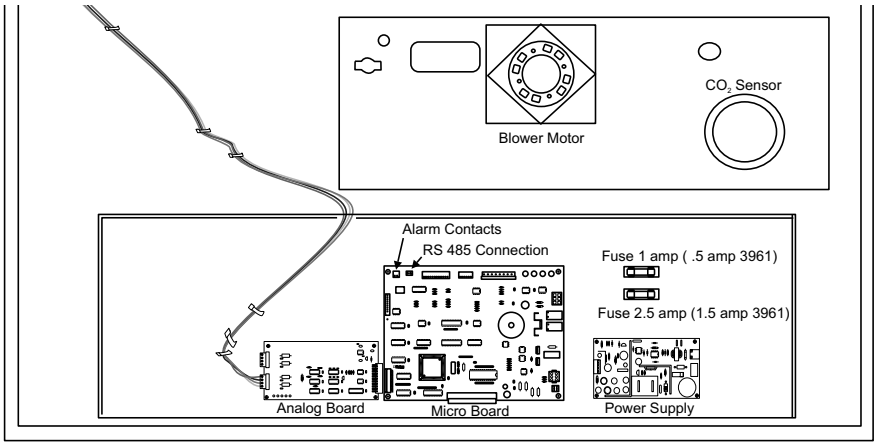


Figure 5-1. Fuse Locations

Table 5-1. Fuse Replacement

Fuse Voltage and Application	Manufacturers Part #	Amp Rating	Rupture Speed	IEC Letter Code
115 VAC Accessory Outlet	GMC-1A	1.0 Amp	Time-Lag	T
230 VAC Accessory Outlet	GMC-500mA	0.5 Amp	Time-Lag	T
115 VAC Interior Outlet	GMC-2.5A	2.5 Amp	Time-Lag	T
230 VAC Interior Outlet	GMC-1.5A	1.5 Amp	Time-Lag	T

Discarding/ Removing Incubator from Service

Warning Federal regulations require that doors be removed from incubators before units are removed from service or discarded. ▲

Section 6 Factory Installed Options

Connect the Remote Alarm Contacts

A set of relay contacts is provided to monitor alarms through a RJ-11 telephone style connector on the back of the unit. Refer to Figure 6-3 for the location of the alarm connector. The 12-foot telephone cord (P/N 190388) and RJ11-to-screw terminal conversion box (190392) are available through the Technical Services department.

The remote alarm provides a NO (normally open) output, an NC (normally closed) output and COM (common). Refer to Figure 6-1.

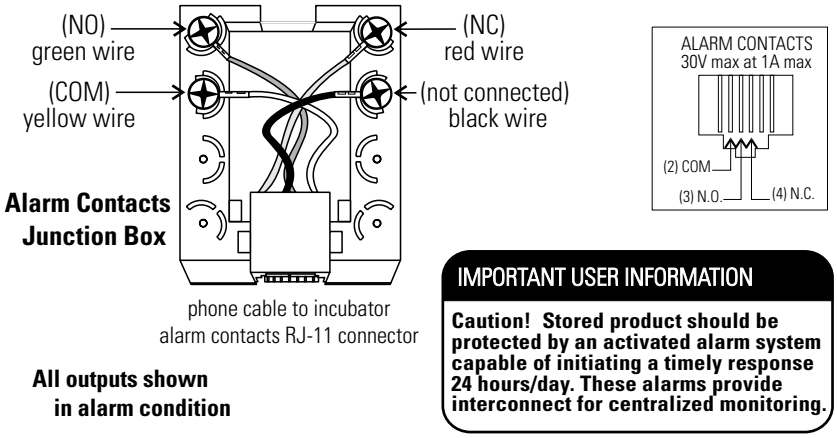


Figure 6-1. Remote Alarm Outputs

The contacts will trip on a power outage or an overtemperature condition. The contacts may also be programmed to trip or not trip on temperature alarms and CO_2 alarms. See Section 3, Configuration.

Note After connecting the incubator to the external alarm system, verify proper alarm operation by simply placing the incubator power switch to its off position to simulate a power outage condition.

Connect the RS485 Interface

All incubator models can be purchased with the RS485 communications option (190523). This option allows the incubator to be directly connected to a Model 1535 alarm system without the use of a communications module. A junction box is provided with each RS485 option. Refer to Figure 6-2 for wiring details. Figure 6-3 shows the location of the RS485 connector on the back of the incubator.

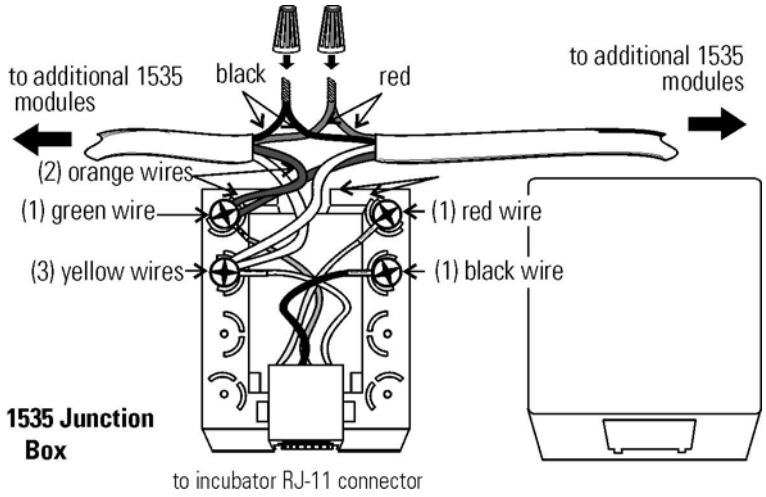


Figure 6-2. Wiring Details

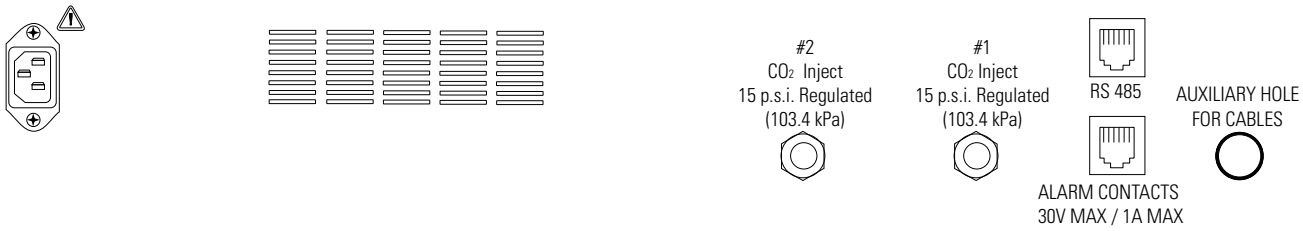


Figure 6-3. Location on Back

To allow the incubator and the 1535 to communicate, an address must be allocated on the 1535. Refer to the 1535 operating manual. The same address number must be assigned to the incubator. Refer to Section 3 of this manual.

Note After connecting the Model 1535 Alarm System to the incubator, verify that there are no RS485 communication errors per the Model 1535 operating manual. Simulate incubator failures of each module to verify proper Model 1535 operation.

Connect the Analog Output Boards

CAUTION
Contains Parts and Assemblies Susceptible to Damage by Electrostatic Discharge (ESD)

The analog output board is an option (190512, 190543, 190544) that allows the incubator to output analog signals representing the air temperature of the incubator interior. There are three different analog output board options available: 0-1V, 0-5V or 4-20mA signals.

Refer to Table 6-1 for output specifications of the three boards.

	190512 4-20 mA Output Scaling 4-20mA Equals	190544 0-1V Output Scaling 0-1 V Equals	190543 0-5V Output Scaling 0-5V Equals
Temperature	0.0-100.0 °C	0.0-100.0 °C	0.0-100.0 °C
CO2	0.0-100.0 %CO2	0-100.0 %CO2	0-100.0 %CO2

Table 6-1. Analog Output Board Specifications

Negative display readings will output 0V. The outputs do not have isolated grounds.

To wire in the analog output board, a shielded 22 gauge, 3-conductor wire, Part # 73041, is recommended.

Warning The electronics area contains hazardous voltages. Opening the drawer and/or wiring in an analog board should be performed by qualified personnel only. If the unit has been in service, disconnect the power cord from both the unit and the power source, turn off all gas regulators, and disconnect all tubing and any other connections from the rear of the electronics drawer. ▲

1. To access the analog board, remove the top of the incubator.
2. Locate the Analog Output board.
3. Strip the ends of the conductor and wire it to the appropriate terminals of connectors J2 on the analog board. Refer to Figure 6-4.

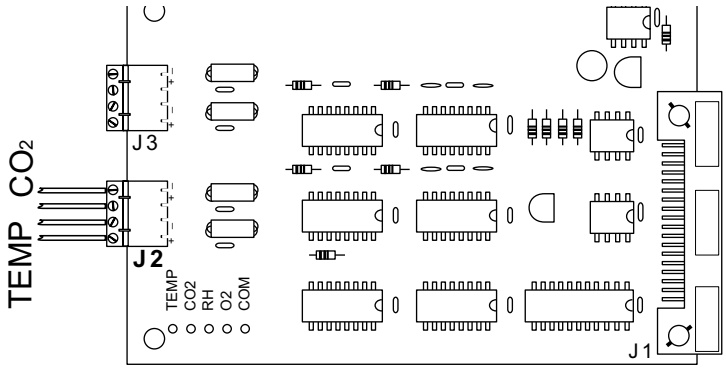


Figure 6-4. Connectors on Board

Connect the Analog Output Boards (cont.)

4. Route the wires through the auxiliary hole located on the back of the unit. See Figure 6-3 for the location of this hole and Figure 6-5 for routing details.

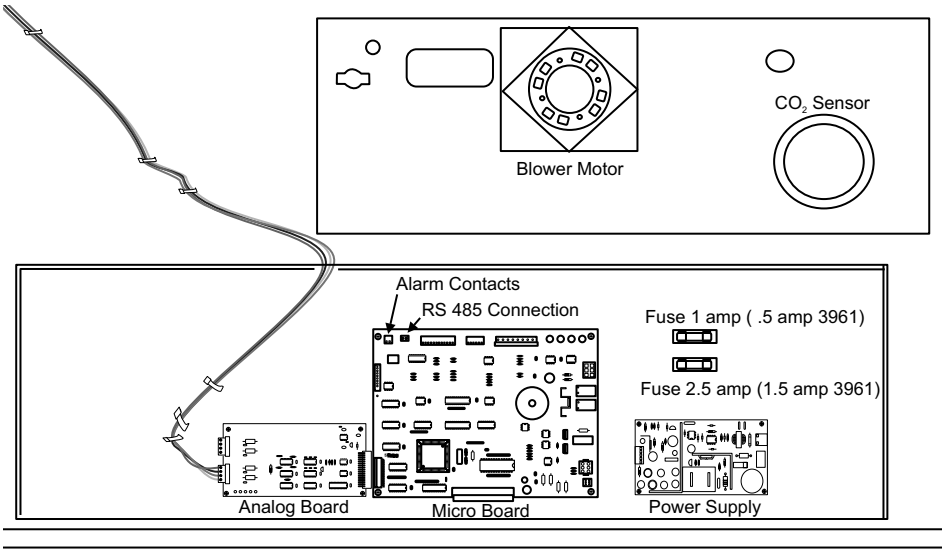


Figure 6-5. Board Location in Drawer

5. When wiring is completed, re-install the unit top.

Note Accuracy of the analog outputs measured at the circuit board terminal strip with respect to the incubator display is ±1 unit. There is no calibration of the analog outputs by the incubator, so the instrument(s) connected to the analog outputs must be calibrated to match the incubator display before returning to service.

Inner Doors

Align the shelves and shelf channels with each of the inner doors to facilitate introduction and removal of trays. Clean these doors with the same care as the single door (see Section 5).

Shaker Support Shelves

Shaker support shelves are reinforced and secured to the incubator walls. They have a load limit of (1) shaker or 200 pounds per shelf, one shelf being the floor of the unit. The shaker platform limit is 50 pounds. Shakers must not exceed 250 rpm when used inside this incubator. For shaker power connection, an internal outlet in the upper right corner of the back wall is installed. Casters are installed at the factory for moving the cabinet to the desired location. After the unit is in place and prior to operation, the casters must be removed. The large rubber vibration feet, factory installed, are positioned correctly for operation. Do not adjust.

Caution Any equipment placed inside the chamber must be rated for unit operating temperature. ▲

Section 7 Specifications

** Specifications are based on nominal voltages of 115V or 230V in ambient temperatures of 22°C to 35°C.*

Temperature

Control . . . . . .+0.1°C Microprocessor PID
Setpoint . . . . . .Digital - Touch Pad, 0.1°C
Range . . . . . .+5°C above ambient to 60°C
Uniformity . . . . . .+0.3°C @ +37°C
Tracking Alarm . . User programmable (low) indicator
Overtemp . . Tracking, user programmable, action and indicator
Display . . . . . .Digital, LED, 0.1°C increments

Over Temperature Protection

Type . . Extreme temperature safety, action and indicator
Sensor . . Thermostat, independent of temperature control system
Indicator . . Message center, audible and visual alarms

Shelves

Dimensions . . . 30.62" W x 25.81" F-B (77.78 cm x 65.56 cm)
Construction . . . . . .Solid stainless steel, 2B finish
Surface Area . . . . . .5.4 sq. ft (0.51 sq. m) per shelf
Max per Chamber . . . . .145.8 sq. ft (13.55 sq. m)
Standard 5
Maximum 27
Clearance . . . . . .Adjustable on 2" (5 cm) centers

Construction

Interior volume: . . . . . .29 cu ft (823 liters)
Interior: . . . . . .304 stainless steel, 2B finish
Exterior: . . . . . .18-gauge cold rolled steel
Exterior Door: . .Heated, triple pane tempered glass
Outer Door Gasket: . . . . . .Molded vinyl
Insulation: . . . . . .2" fiberglass

Fittings

Access Port: . . .2.4” (6.1 cm) ID, one port per side

Electrical

Model 3960

100-120VAC, 50/60Hz, 1 PH, 9.0 FLA

15A Breaker power switch

Model 3961

200-230VAC, 50/60Hz, 1 PH, 5.0 FLA

8A Breaker power switch

Power Switch: . . . . . .2-pole circuit breaker

Accessory Outlet . . Voltage equal to the cabinet input, 75W max., 0.5mA leakage current

Interior Outlet . . Voltage equal to cabinet input, 230W max, 0.5mA leakage current

Remote Alarm Contacts . . Deviation of temperature & power, N/O & N/C

Unit BTU Output

115V/230V: . . . . . .510 BTUH (150W)

Dimensions

Exterior: . . . . . .38.0” W x 80.0” H x 33.0” F-B
. . . . . .(96.5 cm x 203.2 cm x 83.8 cm)

Interior: . . . . . .31.0” W x 60.0” H x 27.0” F-B
. . . . . .(78.7 cm x 152.4 cm x 68.6 cm)

Weight: . . . . . .500 lbs. (226.8 kg)

Safety Specifications

Indoor Use Only

Altitude . . . . . .Up to 2,000 meters

Temperature . . . . . .5°C to 40°C

Humidity (maximum)

80% RH for temperatures up to 31°C, decreasing linearly to 50% RH at 40°C non-condensing

Mains Supply Fluctuations - not to exceed ±10% of nominal voltage

Operating Voltage Range

Installation Category II[1]

Pollution Degree 2[2]

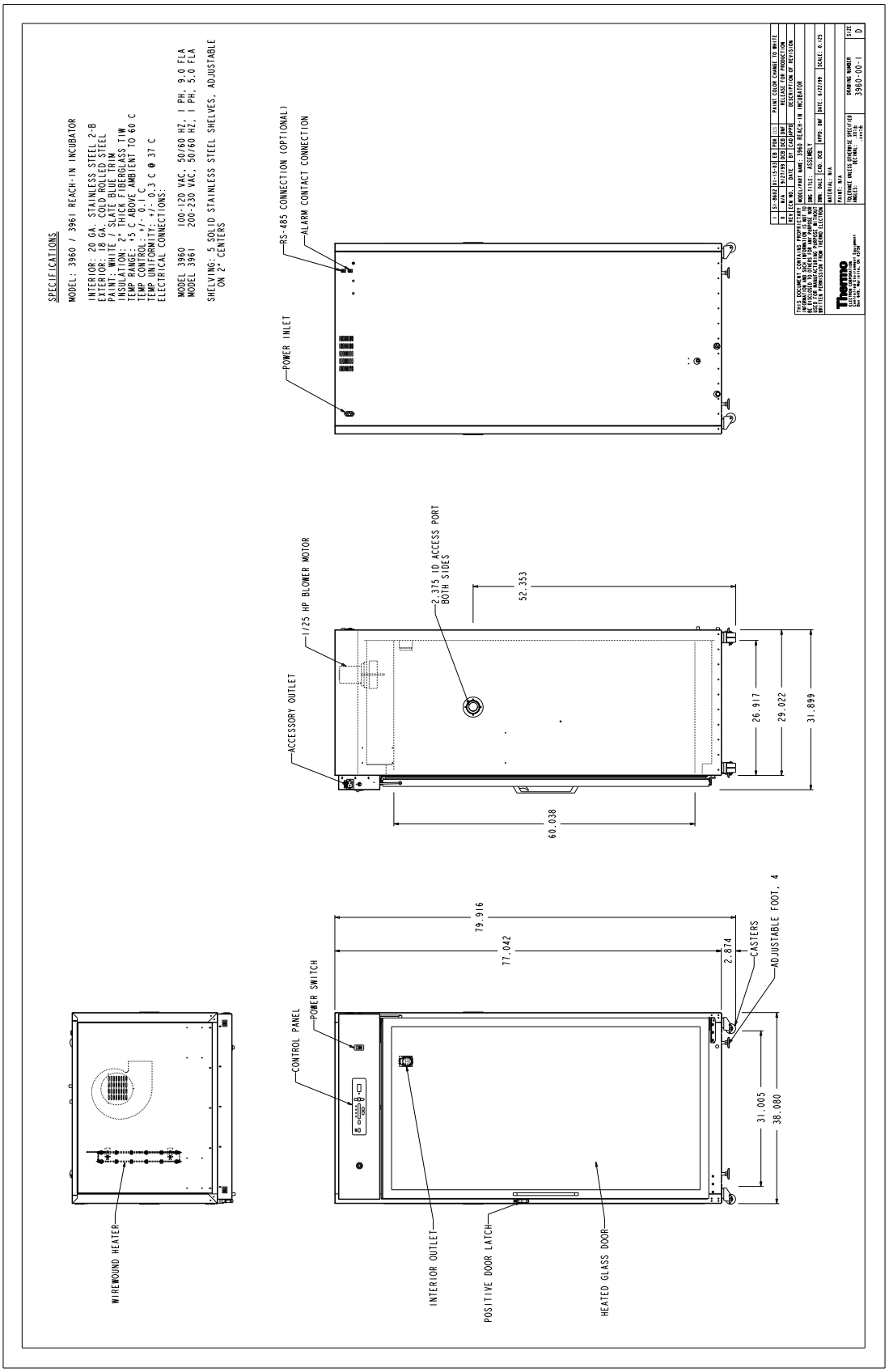
Class of Equipment 1

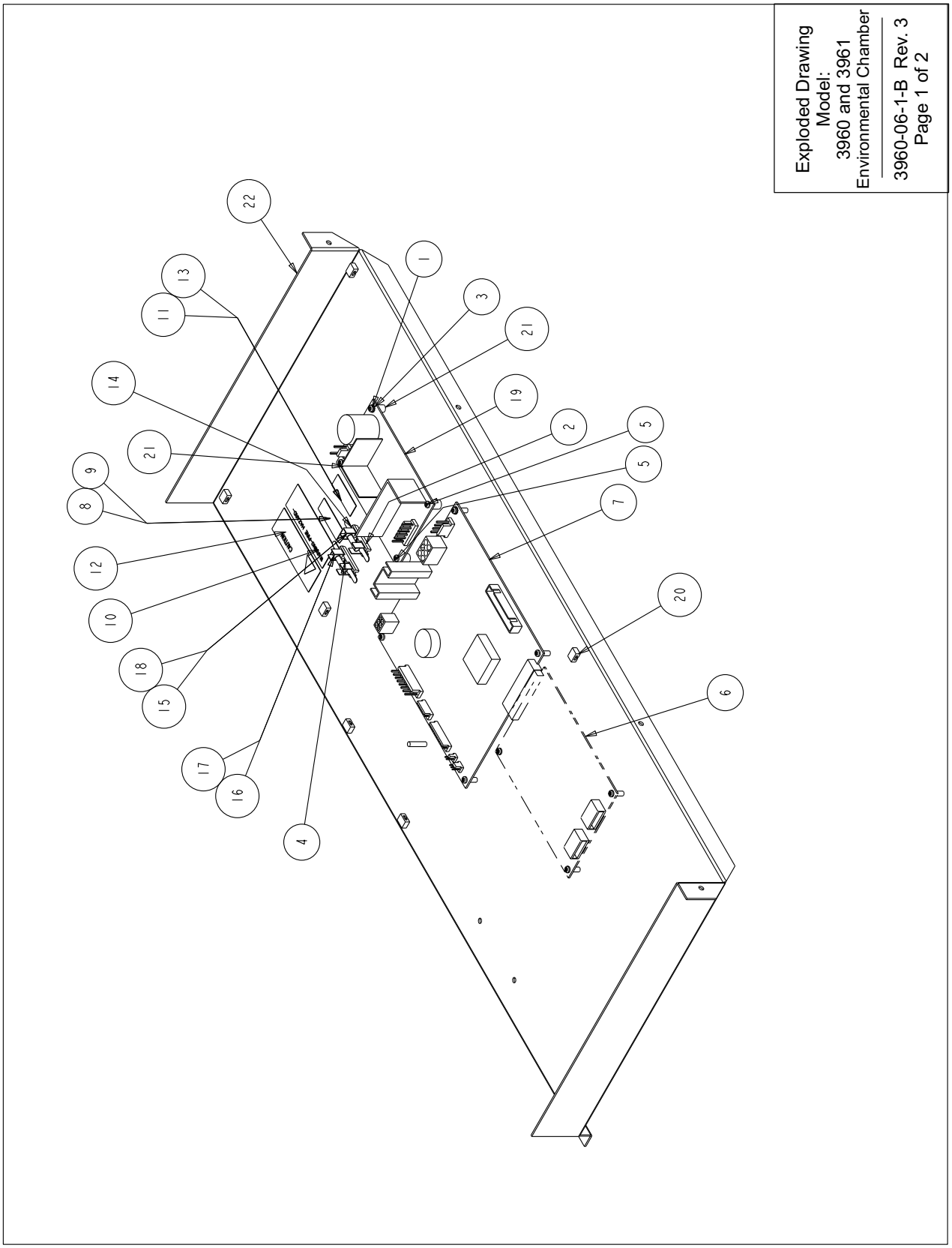
1 Installation category (overvoltage category) defines the level of transient overvoltage which the instrument is designed to withstand safely. It depends on the nature of the electricity supply and its overvoltage protection means. For example, in CAT II which is the category used for instruments in installations supplied from a supply comparable to public mains such as hospital and research laboratories and most industrial laboratories, the expected transient overvoltage is 2500V for a 230V supply and 1500V for a 120V supply.

2 Pollution degree describes the amount of conductive pollution present in the operating environment. Pollution degree 2 assumes that normally only non-conductive pollution such as dust occurs with the exception of occasional conductivity caused by condensation.

Section 8 Parts

Part Number	Description
230135	1 amp fuse (3960 accessory outlet)
230158	2.5 amp fuse (3960 interior outlet)
230120	0.5 amp fuse (3961 accessory outlet)
230106	1.5 amp fuse (3961 interior outlet)
1900621	Blower motor service kit
170164	Motor capacitor 3 MFD, 370VAC
600210	300 watt wire-wound heater
360157	Door switch
290138	Temperature control sensor
400201	40W Switcher kit
515080	Leveler, 2” diameter
227083	Door latch assembly
505071	Stainless steel shelf
190012	Stainless steel shelf channel
180006	0 - 60°C chart paper, single pen recorder


SPECIFICATIONS
MODEL: 3960 / 3961 REACH-IN INCUBATOR
INTERIOR: 20 GA. STAINLESS STEEL 2-B
EXTERIOR: 18 GA. COLD ROLLED STEEL
PAINT: WHITE / SLATE BLUE TRIM
INSULATION: 2" THICK FIBERGLASS TIW
TEMP RANGE: 5°C ABOVE AMBIENT TO 60 C
TEMP CONTROL: +/- 0.1 C
TEMP UNIFORMITY: +/- 0.3 C @ 37 C
ELECTRICAL CONNECTIONS:
MODEL 3960 100-120 VAC, 50/60 HZ, 1 PH, 9.0 FLA
MODEL 3961 200-230 VAC, 50/60 HZ, 1 PH, 5.0 FLA
SHELVING: 5 SOLID STAINLESS STEEL SHELVES, ADJUSTABLE ON 2" CENTERS
RS-485 CONNECTION (OPTIONAL)
ALARM CONTACT CONNECTION
POWER INLET
1/25 HP BLOWER MOTOR
2.375 ID ACCESS PORT BOTH SIDES
52.353
ACCESSORY OUTLET
26.917
29.022
31.899
60.038
79.916
77.042
2.874
CASTERS
ADJUSTABLE FOOT, 4
CONTROL PANEL
POWER SWITCH
31.005
38.080
WIREWOUND HEATER
INTERIOR OUTLET
POSITIVE DOOR LATCH
HEATED GLASS DOOR
Thermo
3960-00-1

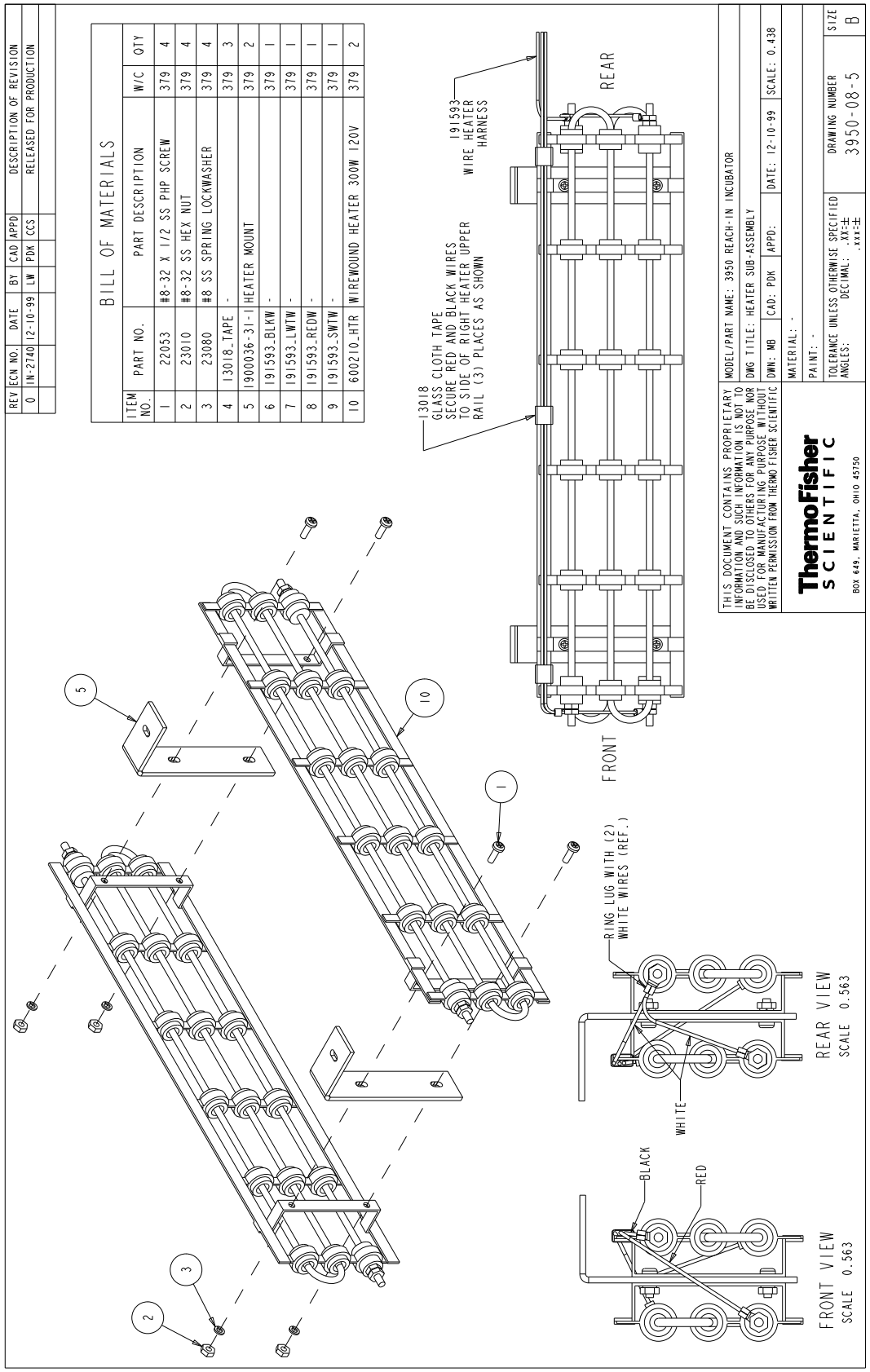

Exploded Drawing
Model:
3960 and 3961
Environmental Chamber
3960-06-1-B Rev. 3
Page 1 of 2
22
13
11
14
21
9
8
12
10
18
15
17
16
4
1
3
21
19
2
5
5
7
20
6

BILL OF MATERIALS

ITEM NO.	PART NO.	PART DESCRIPTION	W/C	QTY
1	22130	#4-40 X 1/4 SS PHP SCREW		11
2	23006	#4-40 ZP LKWASH HEX NUT		2
3	23029	#4 SS EXT TOOTH LOCKWASHER		2
4	59007	#4-40 X 3/8 SS PHP SCREW		2
5	125035	5/16OD X .192ID X 3/8L NYLON SPACER		2
6	190571	4-20MA ANALOG BOARD (OPTIONAL)		1
7	191615	3960 MICRO BOARD		1
8	220359	1 AMP FUSE LABEL (3960 ONLY)		1
9	220378	.5 AMP LABEL (3961 ONLY)		1
10	220437	FIRE HAZARD LABEL		1
11	220439	1.5 AMP LABEL (3961 ONLY)		1
12	220555	ESD LABEL		1
13	220569	2.5 AMP FUSE LABEL (3960 ONLY)		1
14	230105	FUSE BLOCK 5 X 22 MM		2
15	230106	FUSE_1.5A_5X22MM (3961 ONLY)		1
16	230120	FUSE_.5A_5X22MM (3961 ONLY)		1
17	230135	FUSE_1A_5X22MM (3960 ONLY)		1
18	230158	FUSE_2.5A_5X22MM (3960 ONLY)		1
19	400119	SWITCHER		1
20	440002	TIE WRAP PUSH-IN ANCHOR		6
21	515084	1/4 DIA. X 3/8L SS SPACER		2
22	1900006-17-3	COMPONENT MOUNT SUB-ASSY		1

Exploded Drawing
Model:
3960 and 3961
Environmental Chamber

3960-06-1-B Rev. 3
Page 2 of 2


DWG. NUMBER: 3950-08-5-B
REV | ECN NO. | DATE | BY | CAD | APPD | DESCRIPTION OF REVISION
0 | IN-2740 | 12-10-99 | LW | PDK | CCS | RELEASED FOR PRODUCTION
BILL OF MATERIALS
ITEM NO. | PART NO. | PART DESCRIPTION | W/C | QTY
1 | 22053 | #8-32 X 1/2 SS PHP SCREW | 379 | 4
2 | 23010 | #8-32 SS HEX NUT | 379 | 4
3 | 23080 | #8 SS SPRING LOCKWASHER | 379 | 4
4 | 13018_TAPE | - | 379 | 3
5 | 1900036-31-1 | HEATER MOUNT | 379 | 2
6 | 191593_BLKW | - | 379 | 1
7 | 191593_LWTW | - | 379 | 1
8 | 191593_REDW | - | 379 | 1
9 | 191593_SWTW | - | 379 | 1
10 | 600210_HTR | WIREWOUND HEATER 300W 120V | 379 | 2
13018 GLASS CLOTH TAPE SECURE RED AND BLACK WIRES TO SIDE OF RIGHT HEATER UPPER RAIL (3) PLACES AS SHOWN
191593 WIRE HEATER HARNESS
REAR
FRONT
RING LUG WITH (2) WHITE WIRES (REF.)
WHITE
BLACK
RED
FRONT VIEW
SCALE 0.563
REAR VIEW
SCALE 0.563
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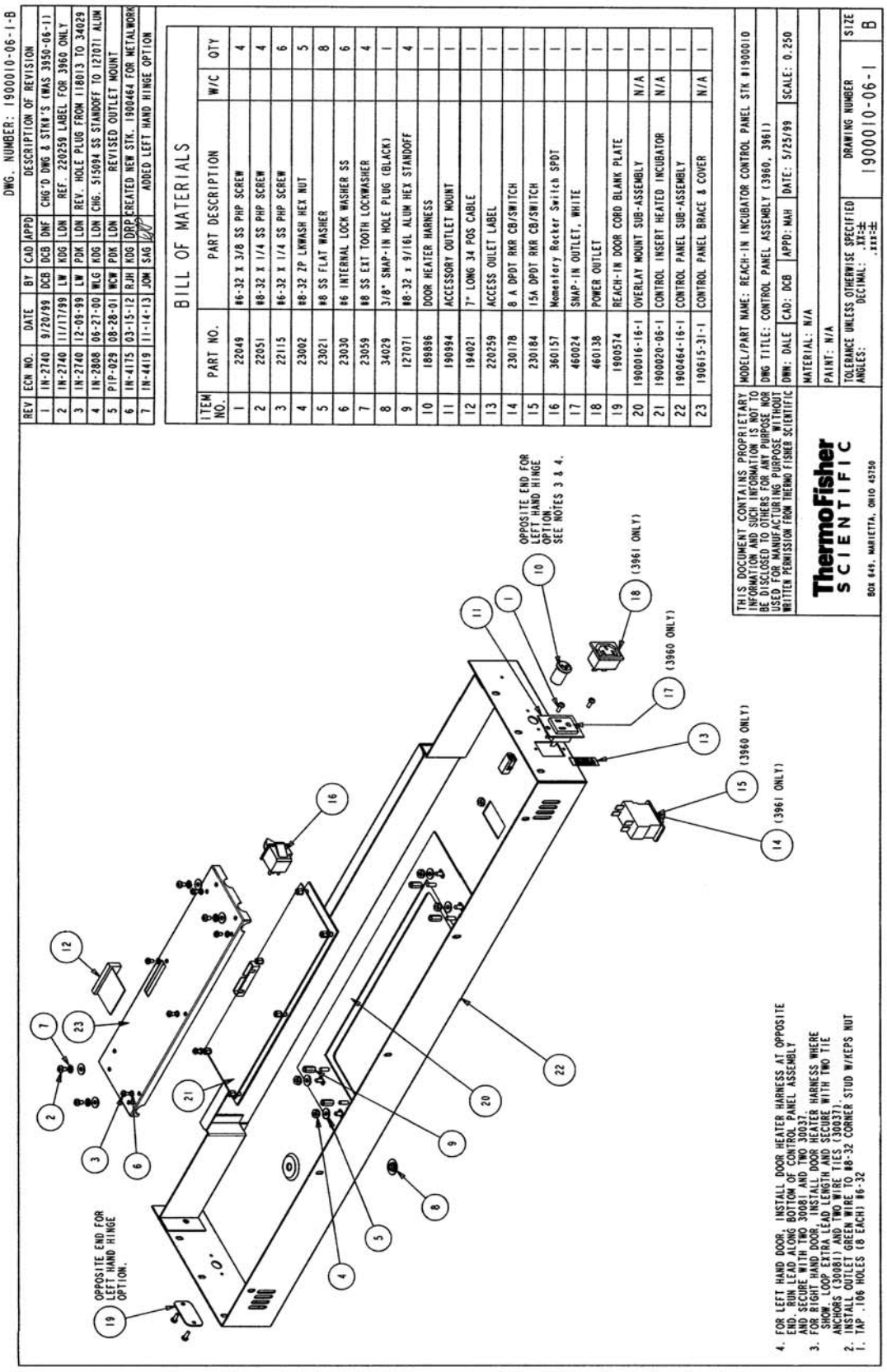
ThermoFisher SCIENTIFIC
BOX 649, MARIETTA, OHIO 45750
MODEL/PART NAME: 3950 REACH-IN INCUBATOR
DWG TITLE: HEATER SUB-ASSEMBLY
DWN: MB | CAD: PDK | APPD: | DATE: 12-10-99 | SCALE: 0.438
MATERIAL: -
PAINT: -
TOLERANCE UNLESS OTHERWISE SPECIFIED
ANGLES: DECIMAL: .XX=±, .XXX=±
DRAWING NUMBER 3950-08-5
SIZE B


DWG. NUMBER: 1900010-06-1-B
REV | ECN NO. | DATE | BY | CAD | APPD | DESCRIPTION OF REVISION
1 | IN-2740 | 9/20/99 | DCB | DCB | DNF | CHG'D DWG & STK#'S (WAS 3950-06-1)
2 | IN-2740 | 11/17/99 | LW | KDG | LDN | REF. 220259 LABEL FOR 3960 ONLY
3 | IN-2740 | 12-09-99 | LW | PDK | LDN | REV. HOLE PLUG FROM 118013 TO 34029
4 | IN-2808 | 06-27-00 | WLG | KDG | LDN | CHG. 515094 SS STANDOFF TO 127071 ALUM
5 | PIP-029 | 08-28-01 | MCW | PDK | LDN | REVISED OUTLET MOUNT
6 | IN-4175 | 03-15-12 | RJH | KDG | DRP | CREATED NEW STK. 1900464 FOR METALWORK
7 | IN-4419 | 11-14-13 | JOM | SAG | | ADDED LEFT HAND HINGE OPTION
BILL OF MATERIALS
ITEM NO. | PART NO. | PART DESCRIPTION | W/C | QTY
1 | 22049 | #6-32 X 3/8 SS PHP SCREW | | 4
2 | 22051 | #8-32 X 1/4 SS PHP SCREW | | 4
3 | 22115 | #6-32 X 1/4 SS PHP SCREW | | 6
4 | 23002 | #8-32 ZP LKWASH HEX NUT | | 5
5 | 23021 | #8 SS FLAT WASHER | | 8
6 | 23030 | #6 INTERNAL LOCK WASHER SS | | 6
7 | 23059 | #8 SS EXT TOOTH LOCKWASHER | | 4
8 | 34029 | 3/8" SNAP-IN HOLE PLUG (BLACK) | | 1
9 | 127071 | #8-32 x 9/16L ALUM HEX STANDOFF | | 4
10 | 189886 | DOOR HEATER HARNESS | | 1
11 | 190994 | ACCESSORY OUTLET MOUNT | | 1
12 | 194021 | 7" LONG 34 POS CABLE | | 1
13 | 220259 | ACCESS OUTLET LABEL | | 1
14 | 230178 | 8 A DPDT RKR CB/SWITCH | | 1
15 | 230184 | 15A DPDT RKR CB/SWITCH | | 1
16 | 360157 | Momentary Rocker Switch SPDT | | 1
17 | 460024 | SNAP-IN OUTLET, WHITE | | 1
18 | 460138 | POWER OUTLET | | 1
19 | 1900574 | REACH-IN DOOR CORD BLANK PLATE | | 1
20 | 1900016-16-1 | OVERLAY MOUNT SUB-ASSEMBLY | N/A | 1
21 | 1900020-06-1 | CONTROL INSERT HEATED INCUBATOR | N/A | 1
22 | 1900464-16-1 | CONTROL PANEL SUB-ASSEMBLY | | 1
23 | 190615-31-1 | CONTROL PANEL BRACE & COVER | N/A | 1
OPPOSITE END FOR LEFT HAND HINGE OPTION.
OPPOSITE END FOR LEFT HAND HINGE OPTION SEE NOTES 3 & 4.
(3961 ONLY)
(3960 ONLY)
(3960 ONLY)
(3961 ONLY)
4. FOR LEFT HAND DOOR, INSTALL DOOR HEATER HARNESS AT OPPOSITE END. RUN LEAD ALONG BOTTOM OF CONTROL PANEL ASSEMBLY AND SECURE WITH TWO 30081 AND TWO 30037 HARNESS WHERE SHOWN. COIL EXTRA LEAD LENGTH AND SECURE WITH TWO TIE ANCHORS (30081) AND TWO WIRE TIES (30037).
3. FOR RIGHT HAND DOOR, INSTALL DOOR HEATER HARNESS WHERE SHOWN. COIL EXTRA LEAD LENGTH AND SECURE WITH TWO TIE ANCHORS (30081) AND TWO WIRE TIES (30037).
2. INSTALL OUTLET GREEN WIRE TO #8-32 CORNER STUD W/KEPS NUT
1. TAP .100 HOLES (8 EACH) #6-32
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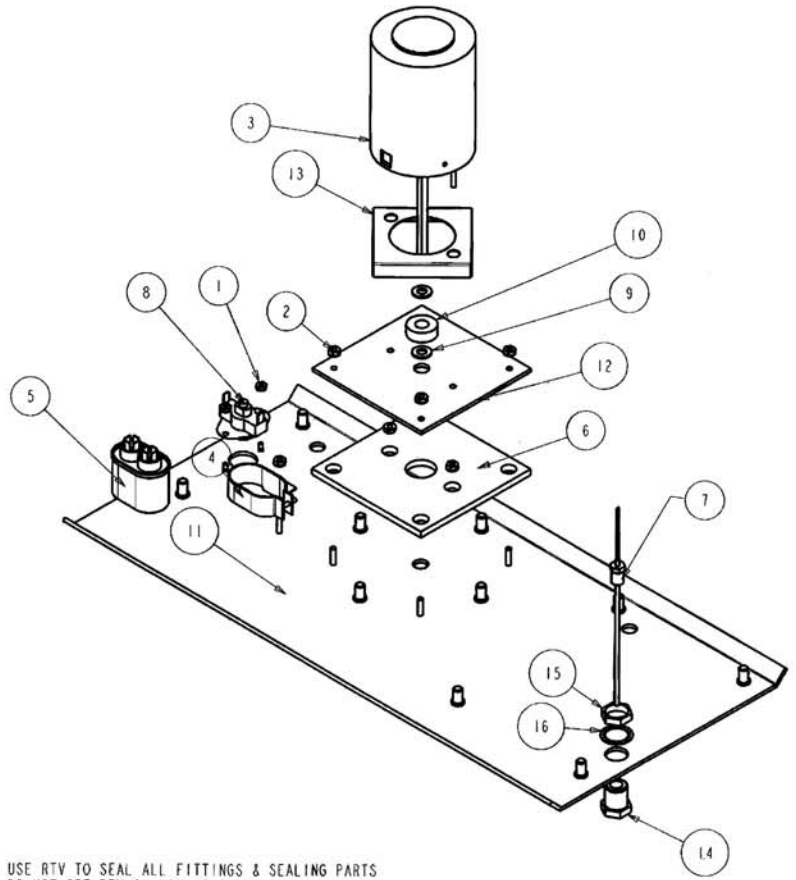
MODEL/PART NAME: REACH-IN INCUBATOR CONTROL PANEL STK #1900010
DWG TITLE: CONTROL PANEL ASSEMBLY (3960, 3961)
DWN: DALE | CAD: DCB | APPD: MAH | DATE: 5/25/99 | SCALE: 0.250
MATERIAL: N/A
PAINT: N/A
ThermoFisher SCIENTIFIC
BOX 649, MARIETTA, OHIO 45750
TOLERANCE UNLESS OTHERWISE SPECIFIED
ANGLES: DECIMAL: .XX=±
.XXX=±
DRAWING NUMBER 1900010-06-1
SIZE B

DWG. NUMBER: 1900014-06-1-B

REV	ECN NO.	DATE	BY	CAD	APPD	DESCRIPTION OF REVISION
0	N/A	05-04-99	DCB	DCB	DNF	RELEASE FOR PRODUCTION
1	IN-2740	12-08-99	PDK	PDK	LDM	REV. MOTOR SPACER PART NUMBER
2	IN-3320	08-07-06	JNL	NSE	[illegible]	CHG'D WASHERS IN SHAFT TO ELIMINATE LEAKING
3	SI-10246	09-21-09	PEJ	LDC	[illegible]	REVISED I.D. OF 730068 (ITEM 9)



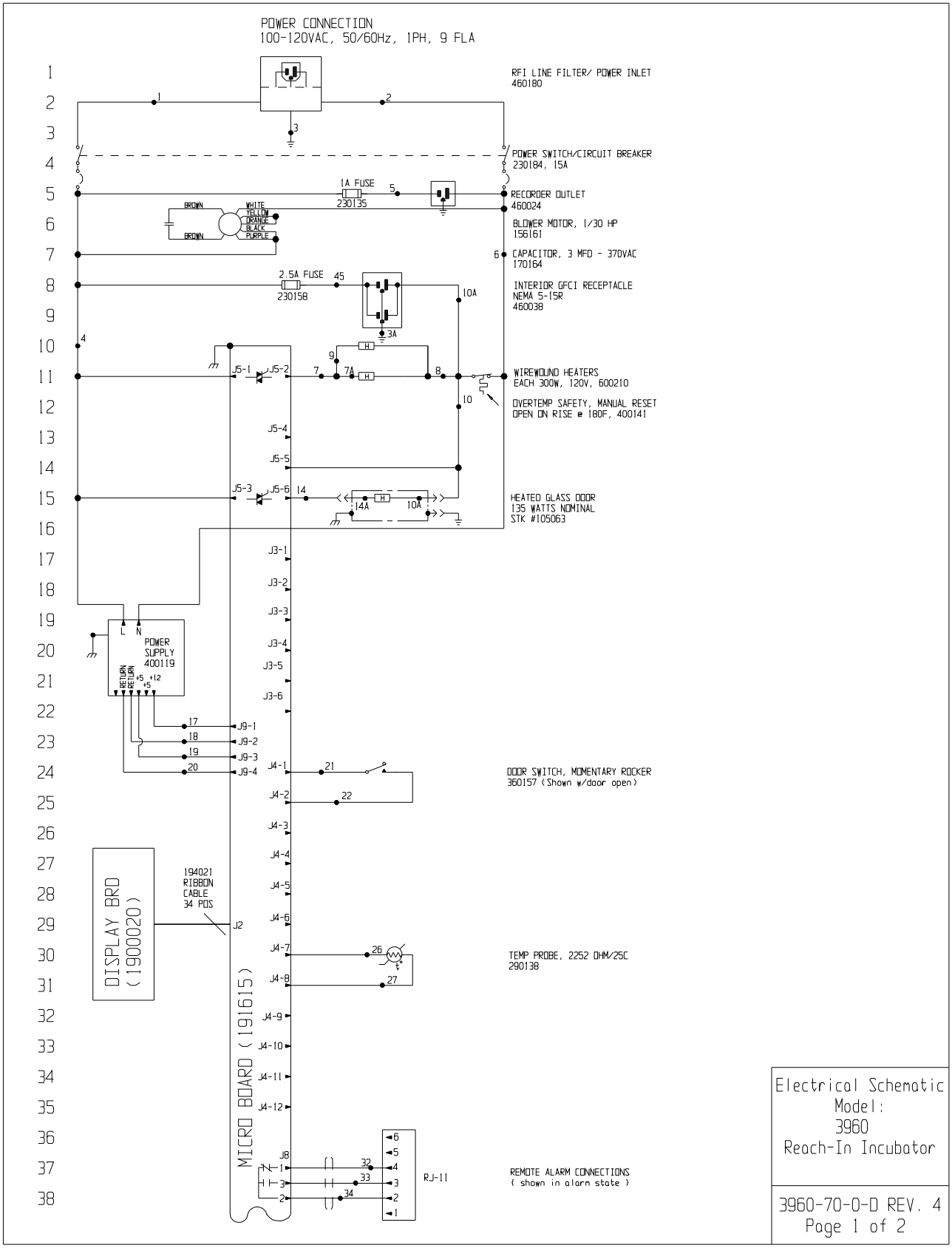
1. USE RTV TO SEAL ALL FITTINGS & SEALING PARTS
DO NOT GET RTV ON MOVING PARTS

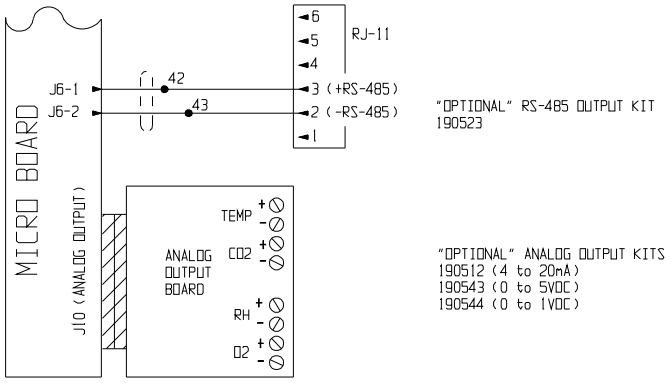
BILL OF MATERIALS

ITEM NO.	PART NO.	PART DESCRIPTION	W/C	QTY
1	23001	#6-32 ZP LKWASH HEX NUT		2
2	23002	#8-32 ZP LKWASH HEX NUT		7
3	156112	1/30 HP PSC MOTOR	N/A	1
4	170025	CAPASITOR MOUNT	N/A	1
5	170164	3MFD RUN CAPASITOR	N/A	1
6	190151	MTR MNT GASKET .250 X 5 X 5	N/A	1
7	290138	THERMISTER PROBE ASSY	N/A	1
8	400141	60T15 THERMOSTAT 180F	N/A	1
9	730068	.310 ID TEFLON FLAT WASHER		2
10	730069	SILICONE WASHER	N/A	1
11	1900017-06-1	BLOWER MOUNT SUB-ASSY		1
12	1900022-31-1	BLOWER MNT PLATE	N/A	1
13	1900035-31-1	MOTOR SPACER	N/A	1
14	380502_FTG	.125 NPT X .75-20 BLKHD FTG	N/A	1
15	380502_NUT	.750 X 20 BLKHD FTG NUT	N/A	1
16	380502_WSHR	.750 INTL WASHER BLKHD FTG	N/A	1

MODEL/PART NAME: 3950 REACH-IN INCUBATOR
DWG TITLE: BLOWER MOTOR MOUNT ASSY
DWN: DALE | CAD: DCB | APPD: MAH | DATE: 2/20/99 | SCALE: 0.300
MATERIAL: -
PAINT: N/A
TOLERANCE UNLESS OTHERWISE SPECIFIED
ANGLES: DECIMAL: .XX=± .XXX=±
DRAWING NUMBER: 1900014-06-1
SIZE: B

ThermoFisher SCIENTIFIC
BOX 649, MARIETTA, OHIO 45750


POWER CONNECTION
100-120VAC, 50/60Hz, 1PH, 9 FLA
RFI LINE FILTER/ POWER INLET
460180
POWER SWITCH/CIRCUIT BREAKER
230184, 15A
1A FUSE
230135
RECORDER OUTLET
460024
BROWN
WHITE
YELLOW
ORANGE
BLACK
PURPLE
BROWN
BLOWER MOTOR, 1/30 HP
156161
CAPACITOR, 3 MFD - 370VAC
170164
2.5A FUSE
230158
INTERIOR GFCI RECEPTACLE
NEMA 5-15R
460038
10A
3A
WIREWOUND HEATERS
EACH 300W, 120V, 600210
OVERTEMP SAFETY, MANUAL RESET
OPEN ON RISE @ 180F, 400141
J5-1
J5-2
J5-4
J5-5
J5-3
J5-6
14A
10A
HEATED GLASS DOOR
135 WATTS NOMINAL
STK #105063
J3-1
J3-2
J3-3
J3-4
J3-5
J3-6
POWER
SUPPLY
400119
RETURN
RETURN
+5
+12
+5
J9-1
J9-2
J9-3
J9-4
J4-1
J4-2
DOOR SWITCH, MOMENTARY ROCKER
360157 (Shown w/door open)
DISPLAY BRD
(1900020)
194021
RIBBON
CABLE
34 POS
J2
J4-3
J4-4
J4-5
J4-6
J4-7
J4-8
TEMP PROBE, 2252 OHM/25C
290138
J4-9
J4-10
J4-11
J4-12
MICRO BOARD (191615)
J8
RJ-11
REMOTE ALARM CONNECTIONS
(shown in alarm state)
Electrical Schematic
Model:
3960
Reach-In Incubator
3960-70-0-D REV. 4
Page 1 of 2



WIRE REFERENCE CHART

NO.	GA.	COLOR	NO.	GA.	COLOR
1	16	BROWN	32	22/3	BLACK
2	16	BLUE	33	22/3	RED
3	16	GRN/YEL	34	22/3	WHITE
3A	18	BLACK	42	22/2	RED
4	16	BLACK	43	22/2	BLACK
4A	18	YELLOW			
5	18	BLACK	45	18	RED
6	16	WHITE			
7	18	ORANGE			
7A	16	BLACK			
8	16	WHITE			
9	16	RED			
10	16	GRAY			
10A	18	WHITE			
14	18	BROWN			
17	18	RED			
18	18	GREEN			
19	18	ORANGE			
20	18	GREEN			
21	22	BLUE			
22	22	BLUE			
26	22	RED			
27	22	RED			

NOTES:
- ⊛ Denotes Terminal Strip Connection
- N/A Last Relay Number
- N/A Last Terminal Number
- 45 Last Wire Number

CUSTOMER APPROVAL/REFERENCE
APPROVED BY _____
APPROVING FIRM _____
DATE OF APPROVAL _____

REV	ECN NO.	DATE	BY	CAD	APPD	DESCRIPTION OF REVISION
4	IN-4675	09-09-15	GLM	SAG	CCS	156161 WAS 156112, CHG LEAD COLORS
3	IN-3872	09-17-08	MSB	KOG	LDN	CORRECT TEMP PROBE 290137 TO 290138
2	IN-3038	07-01-02	RLM	KOG	LDN	CHG. 285758 OUTLET TO 460038 GFI
1	IN-2869	11-14-00	GJG	GJG	MSB	REVISED DOOR NOTE
0	N/A	07-27-99	GLM	GLM	DNF	RELEASED FOR PRODUCTION

DATE 07-27-99 | DWN GLM | CAD GLM | APPDM.H. | SCALE

CUSTOMER **MODEL 3960**

JOB TITLE **REACH-IN INCUBATOR** 115 VOLT (DOM.)

DWG TITLE **ELECTRICAL SCHEMATIC**

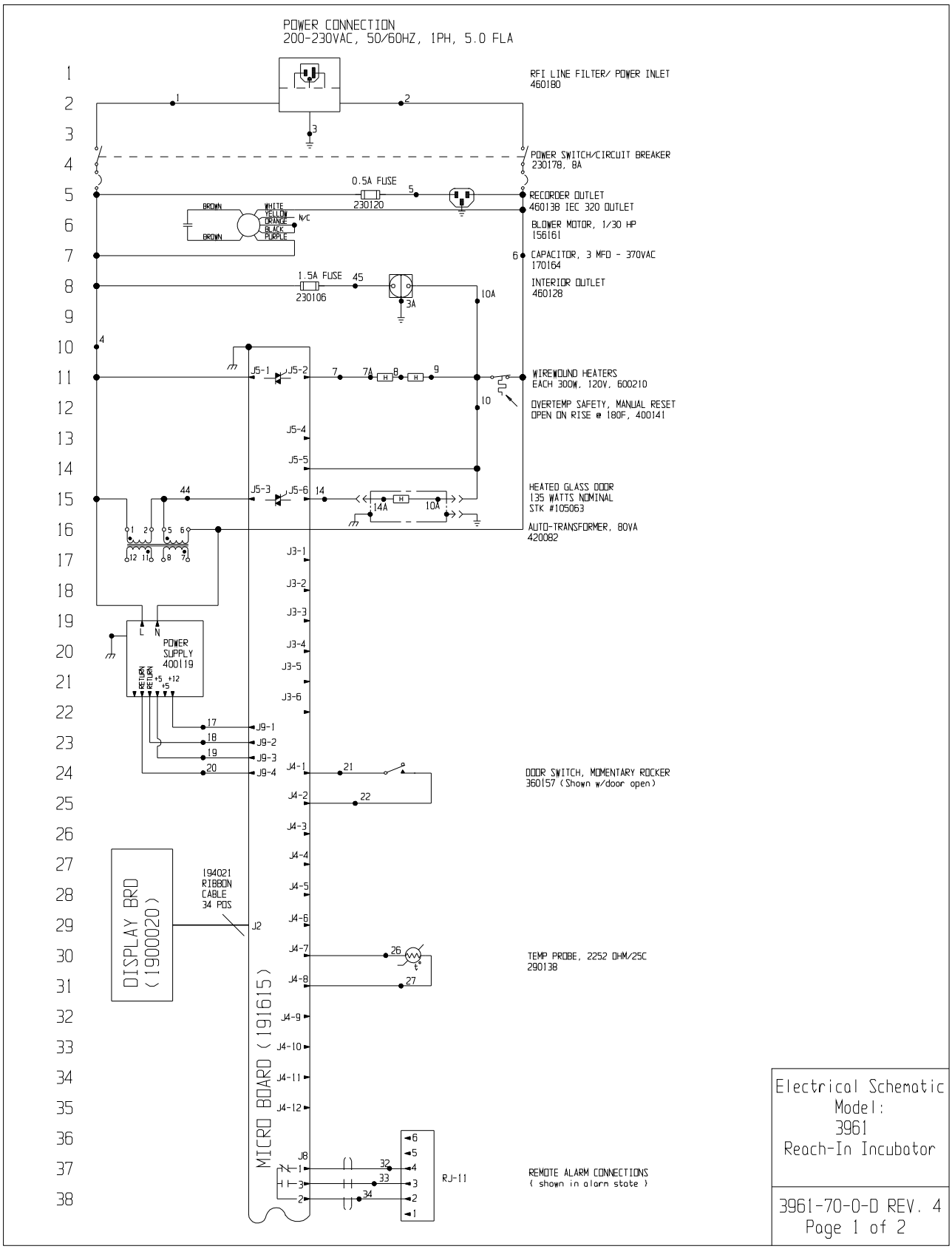
LOCATION	JOB NUMBER	DRAWING NUMBER
INCUBATR		3960-70-0-D

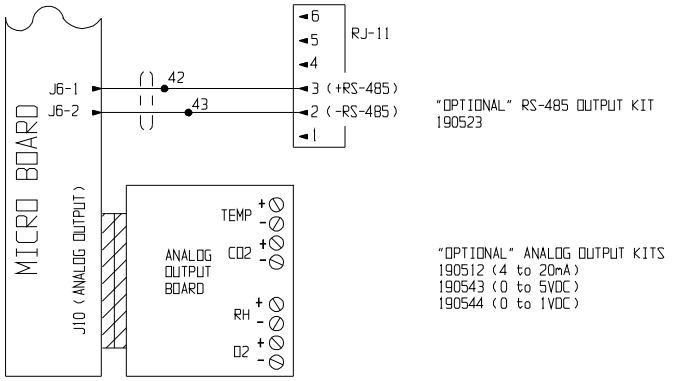
ATTENTION
OBSERVE PRECAUTIONS
ELECTROSTATIC
SENSITIVE DEVICES

ThermoFisher SCIENTIFIC
BOX 649, MARIETTA, OHIO 45750

Electrical Schematic
Model:
3960
Reach-In Incubator

3960-70-0-D REV. 4
Page 2 of 2


POWER CONNECTION
200-230VAC, 50/60HZ, 1PH, 5.0 FLA
RFI LINE FILTER/ POWER INLET
460180
POWER SWITCH/CIRCUIT BREAKER
230178, 8A
0.5A FUSE
230120
RECORDER OUTLET
46013B IEC 320 OUTLET
BROWN
WHITE
YELLOW
ORANGE
BLACK
PURPLE
N/C
BLOWER MOTOR, 1/30 HP
156161
CAPACITOR, 3 MFD - 370VAC
170164
1.5A FUSE
230106
INTERIOR OUTLET
460128
WIREWOUND HEATERS
EACH 300W, 120V, 600210
OVERTEMP SAFETY, MANUAL RESET
OPEN ON RISE @ 180F, 400141
HEATED GLASS DOOR
135 WATTS NOMINAL
STK #105063
AUTO-TRANSFORMER, 80VA
420082
POWER
SUPPLY
400119
RETURN
+5
+12
DOOR SWITCH, MOMENTARY ROCKER
360157 (Shown w/door open)
TEMP PROBE, 2252 OHM/25C
290138
DISPLAY BRD
(1900020)
194021
RIBBON
CABLE
34 POS
MICRO BOARD (191615)
RJ-11
REMOTE ALARM CONNECTIONS
(shown in alarm state)
Electrical Schematic
Model:
3961
Reach-In Incubator
3961-70-0-D REV. 4
Page 1 of 2



WIRE REFERENCE CHART

NO.	GA.	COLOR	NO.	GA.	COLOR
1	16	BROWN	32	22/3	BLACK
2	16	BLUE	33	22/3	RED
3	16	GRN/YEL	34	22/3	WHITE
3A	18	BLACK	42	22/2	RED
4	16	BLACK	43	22/2	BLACK
			44	18	YELLOW
5	18	BLACK	45	18	RED
6	16	WHITE			
7	18	ORANGE			
7A	16	BLACK			
8	16	WHITE			
9	16	RED			
10	16	GRAY			
10A	18	WHITE			
14	18	BROWN			
17	18	RED			
18	18	GREEN			
19	18	ORANGE			
20	18	GREEN			
21	22	BLUE			
22	22	BLUE			
26	22	RED			
27	22	RED			

NOTES:
- ⊛ Denotes Terminal Strip Connection
- N/A Last Relay Number
- N/A Last Terminal Number
- 45 Last Wire Number

CUSTOMER APPROVAL/REFERENCE
APPROVED BY
APPROVING FIRM
DATE OF APPROVAL

ATTENTION
OBSERVE PRECAUTIONS
ELECTROSTATIC
SENSITIVE DEVICES

ThermoFisher SCIENTIFIC
BOX 649, MARIETTA, OHIO 45750

REV	ECN NO.	DATE	BY	CAD	APPD	DESCRIPTION OF REVISION
4	IN-4675	09-15-15	GLM	SAG	CCS	156161 WAS 156112, CHG LEAD COLORS
3	IN-4670	09-10-15	GLS	SAG	DRP	ADDED MODEL 3962
2	IN-3872	09-17-08	MSB	KDG	MSB	CORRECT TEMP PROBE 290137 TO 290138
1	IN-2869	11-14-00	GJG	GJG	MSB	REVISED DOOR NOTE
0	N/A	07-27-99	GLM	GLM	DNF	RELEASED FOR PRODUCTION

DATE 07-27-99 | DWN GLM | CAD GLM | APPOM.H. | SCALE
CUSTOMER MODEL 3961, 3962
JOB TITLE REACH-IN INCUBATOR 230 VOLT (EXP.)
DWG TITLE ELECTRICAL SCHEMATIC

LOCATION	JOB NUMBER	DRAWING NUMBER
INCUBATR		3961-70-0-D

Electrical Schematic
Model:
3961
Reach-In Incubator

3961-70-0-D REV. 4
Page 2 of 2

THERMO FISHER SCIENTIFIC STANDARD PRODUCT WARRANTY

The Warranty Period starts two weeks from the date your equipment is shipped from our facility. This allows for shipping time so the warranty will go into effect at approximately the same time your equipment is delivered. The warranty protection extends to any subsequent owner during the first year warranty period.

During the first year, component parts proven to be non-conforming in materials or workmanship will be repaired or replaced at Thermo's expense, labor included. The Watlow EZ-ZONE PM controller is covered for one additional year for repair or replacement (parts only), provided the unit has not been misapplied. Installation and calibration are not covered by this warranty agreement. The Technical Services Department must be contacted for warranty determination and direction prior to performance of any repairs. Expendable items, glass, filters and gaskets are excluded from this warranty.

Replacement or repair of components parts or equipment under this warranty shall not extend the warranty to either the equipment or to the component part beyond the original warranty period. The Technical Services Department must give prior approval for return of any components or equipment. At Thermo's option, all non-conforming parts must be returned to Thermo Fisher Scientific postage paid and replacement parts are shipped FOB destination.

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL OR IMPLIED. NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY. Thermo shall not be liable for any indirect or consequential damages including, without limitation, damages relating to lost profits or loss of products.

Your local Thermo Sales Office is ready to help with comprehensive site preparation information before your equipment arrives. Printed instruction manuals carefully detail equipment installation, operation and preventive maintenance.

If equipment service is required, please call your Technical Services Department at 1-800-438-4851 (USA and Canada) or 1-740-373-4763. We're ready to answer your questions on equipment warranty, operation, maintenance, service and special application. Outside the USA, contact your local distributor for warranty information.

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THERMO FISHER SCIENTIFIC INTERNATIONAL DEALER WARRANTY

The Warranty Period starts two months from the date your equipment is shipped from our facility. This allows for shipping time so the warranty will go into effect at approximately the same time your equipment is delivered. The warranty protection extends to any subsequent owner during the first year warranty period. Dealers who stock our equipment are allowed an additional six months for delivery and installation, provided the warranty card is completed and returned to the Technical Services Department.

During the first year, component parts proven to be non-conforming in materials or workmanship will be repaired or replaced at Thermo's expense, labor excluded. The Watlow EZ-ZONE PM controller is covered for one additional year for repair or replacement (parts only), provided the unit has not been misapplied. Installation and calibration are not covered by this warranty agreement. The Technical Services Department must be contacted for warranty determination and direction prior to performance of any repairs. Expendable items, glass, filters, reagents, tubing, and gaskets are excluded from this warranty.

Replacement or repair of components parts or equipment under this warranty shall not extend the warranty to either the equipment or to the component part beyond the original warranty period. The Technical Services Department must give prior approval for return of any components or equipment. At Thermo's option, all non-conforming parts must be returned to Thermo postage paid and replacement parts are shipped FOB destination.

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL OR IMPLIED. NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY. Thermo shall not be liable for any indirect or consequential damages including, without limitation, damages relating to lost profits or loss of products.

Your local Thermo Sales Office is ready to help with comprehensive site preparation information before your equipment arrives. Printed instruction manuals carefully detail equipment installation, operation and preventive maintenance.

Contact your local distributor for warranty information. We're ready to answer your questions on equipment warranty, operation, maintenance, service and special application.

Rev. 5 8/13

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Marietta, Ohio 45750
United States

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