



INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS FOR EXPLOSION-PROOF HEATER CONTROLS

I. GENERAL

HEATREX™ Explosion-proof Heater Controls are FM and CSA approved for use in industrial areas that are classified as Class I, Division 1, Groups B, C & D. And Class II, Division 1, Groups E, F & G, as indicated on the data plate. The control boxes contain a magnetic contactor and may have a control voltage transformer and, or a built-in or attached temperature control thermostat. The control boxes are intended to be used to control the electrical power to electric space heaters for temperature and ON/OFF control.

For details on the particular hazardous environments having the potential for explosion, refer to Articles 500 through 516 of the National Electrical Code, and/or Section 18 of the Canadian Electrical Code, Part I.

A. The HEATREX™ Explosion-proof Heater controls are intended to be permanently mounted to a wall or mounting brackets. When factory mounted on the heater cabinet the enclosures are connected to the heater terminal box using rigid metal conduit and the controls are factory wired. All wiring connections to a remotely located heater control box must be made using rigid metal conduit, and an explosion-proof conduit seal must be located within 18 inches of the enclosure entrance. All wiring must comply with all national and local codes for equipment in hazardous locations.

B. When installing:

1. Observe all nameplate ratings, warnings and notes.
2. Follow the wiring diagram in making all electrical connections.
3. Keep all electrical connections tight.
4. Carefully read and comply with all warnings and cautions.

II. INSTALLATION

A. Mechanical Installation. Once an acceptable location has been determined, follow these instructions to complete the mechanical installation.

- 1.) See Fig. 1 for mounting hole location dimensions.
- 2.) Mark the mounting screw locations.
- 3.) Center punch and drill the mounting screw locations.
- 4.) Insert 2 mounting screws through the enclosure mounting holes, and screw into the mounting surface.

B. Electrical Installation. Follow these instructions to complete the electrical installation.

WARNING

Potentially lethal voltages are present. Be sure to lock the branch circuit disconnect switch in the off position and tag the circuit "Out for Maintenance" before working on this equipment.

- 1.) Follow the heater wiring diagram and any Code recommendations in making all electrical connections.
- 2.) Use only an approved explosion-proof means of wiring, such as insulated copper conductors in rigid metal conduit with threaded connections per the NEC or the CEC to make the electrical connections to the control.
- 3.) Determine the voltage, phase and KW rating of the heater to be controlled from the heater data plate.
- 4.) The branch circuit voltage and phase must match the heater voltage and phase rating, and the heater controls voltage and phase rating.
- 5.) If the control box does not have a control voltage transformer the branch circuit voltage must match the control box control voltage rating.

- 6.) The contactor control cannot be used to carry a current greater than the nameplate rating.
- 7.) Calculate the rated load current as follows:

For single phase heaters;

$$\text{Rated load current , (Amps)} = \frac{\text{Kilowatt rating X 1000}}{\text{Branch Circuit Voltage}}$$

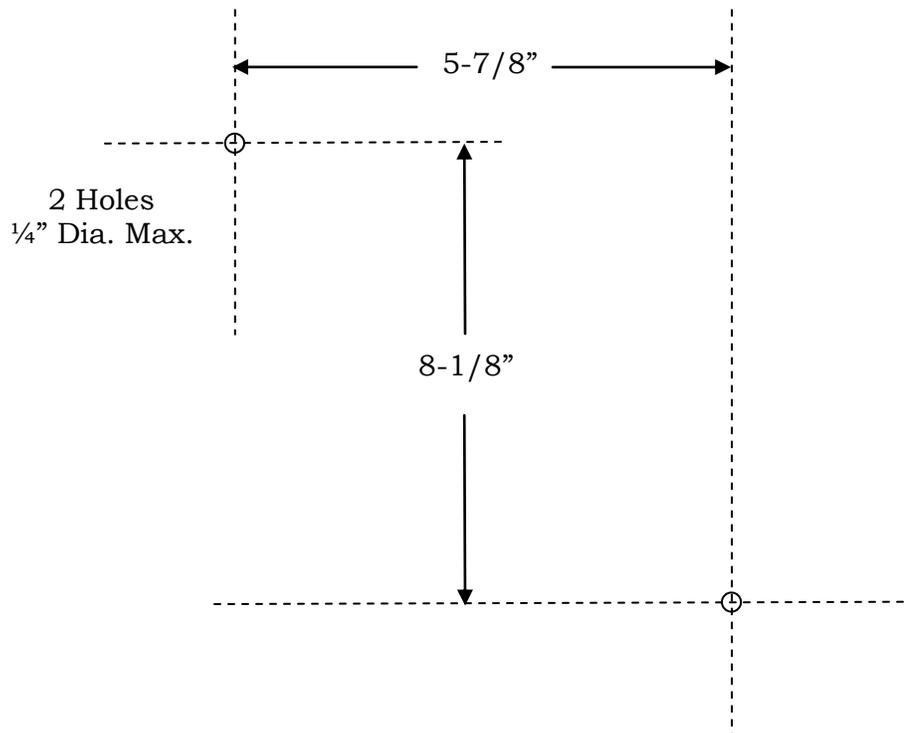
For three phase heaters;

$$\text{Rated load current , (Amps)} = \frac{\text{Kilowatt rating X 1000}}{1.73 \text{ X Branch Circuit Voltage}}$$

- 8.) Use branch circuit supply wires rated for 75°C and the rated load current to connect the heater.
- 9.) Install an appropriately rated conduit sealing fitting in the 3/4" NPT connection point.
- 10.) Install an appropriately rated pipe thread plug in any un-used hubs.
- 11.) Remove the terminal box cover.

- 12.) If the control box has a built in thermostat remove the thermostat adjustment knob by pulling it up and off the shaft.
- 13.) If the control box has a built in thermostat remove the fish paper barrier to gain access to the wiring connection terminal blocks.
- 14.) Connect the branch circuit power wires to the power terminal strip, marked L1, L2, etc.
- 15.) If there is control circuit wiring to remote thermostats, etc. connect them to the appropriate control blocks per the wiring diagram.
- 16.) Ensure all electrical connections are tight and secure.
- 17.) Install the fish paper barrier and thermostat knob, as required.
- 20.) Install the terminal box cover, making sure it is screwed tightly in place.
- 21.) Pour the explosion-proof seal in the sealing fitting(s).

Keep these instructions with the control box for future reference.



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