



PA404A, B Pressuretrol Controllers

PRODUCT DATA

APPLICATION

The PA404A and B are pressure sensing controls used in line voltage, low voltage or millivoltage applications. The PA404A is a high limit, pressure safety control to regulate the burner on a steam heating boiler. The PA404B is used with suspension type unit heaters to complete the fan circuit when a pressure rise indicates the presence of steam.

INSTALLATION

When Installing this Product...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Installer must be a trained, experienced service technician.
3. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
4. Disconnect power supply before making wiring connections to prevent electrical shock and equipment damage.
5. All wiring must comply with applicable codes and ordinances.
6. Do not exceed the ratings given in the Specifications section.
7. Always conduct a thorough checkout when installation is complete.

When used to replace an earlier controller, the PA404 may be installed at the same location if that location was satisfactory. If the earlier controller has a rear pressure connection, elbows and close nipples should be used to adapt to the bottom connection of the PA404.

The PA404A must be located above the water line in a steam boiler, either adjacent to a pressure gauge or in another location recommended by the boiler manufacturer. See Fig. 1.

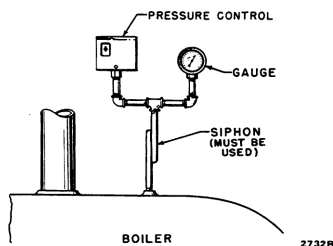


Fig. 1. Typical installation of the PA404A, mounted with a gauge on a boiler.

The PA404B must be mounted in the steam line ahead of the unit heater. See Fig. 2.

A siphon must always be connected between the unit and the boiler or steam line. The siphon acts as a trap to prevent corrosive vapors or scale resulting from the use of boiler compounds from damaging the control.

If there is excessive vibration at the point where the PA404 is connected, mount the controller on a vibration-free wall or post and use copper tubing for connecting. Mount it high enough and pitch the connecting piping to drain all condensation back to the boiler. Install the siphon directly under the controller.

For general applications where excessive pressure surges or water hammer occurs, install a surge tank or use capillary tubing for connecting the PA404 to protect it from the surges.

When making piping connections, use pipe dope or white lead sparingly and only on male threads. Excess dope might clog the small orifice in the PA404 fitting.



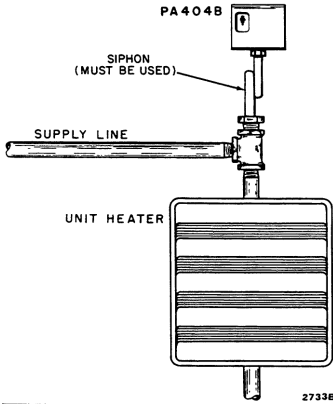


Fig. 2. Typical installation of the PA404B, mounted on the supply line of a unit heater.

WIRING

All models are equipped with 2 terminals located on the switch, inside the cover. A wiring hole is provided for 1/2-inch rigid or flexible conduit. All wiring must comply with local electrical codes. See Fig. 3, 4, and 5 for typical wiring connections.

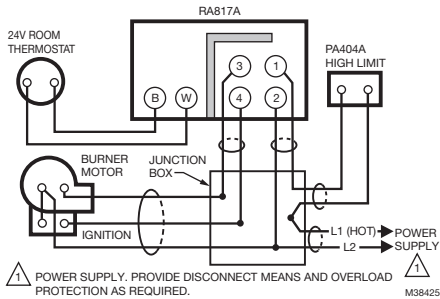


Fig. 3. Typical connections for a PA404A used as a high limit in an oil-fired steam system.

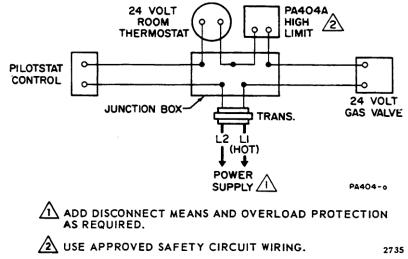


Fig. 4. Typical connections for a PA404A used as a high limit in a gas-fired steam system.

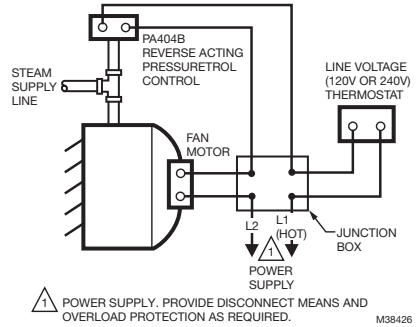


Fig. 5. Typical connections for a PA404B used in a unit heater installation.

OPERATION

On a steam pressure fall past the set point, the PA404A makes the burner circuit, turning on the burner. After the steam pressure rises past the differential set point, the circuit breaks and shuts off the burner.

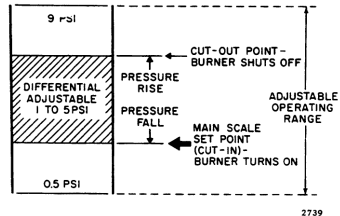


Fig. 6. Operation of the PA404A.

On a steam pressure fall past the set point, the PA404B breaks the fan circuit to shut down fan operation. After a steam pressure rise past the differential set point, the circuit makes to resume fan operation.

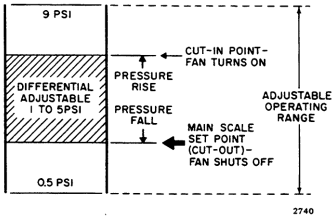


Fig. 7. Operation of the PA404B.

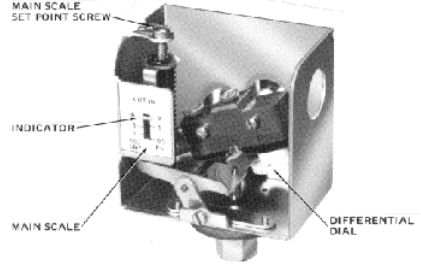


Fig. 8. Internal view of PA404, showing adjustment screw and differential dial.

TO SET THE PA404A WITH ADDITIVE DIFFERENTIAL

1. Set main scale indicator at desired cut-in point by turning main scale set point screw until indicator (see Fig. 8) corresponds to pressure at which electric circuit should make.
2. Set differential adjustment dial to number of pounds that pressure should rise above main scale cut-in point before the electric circuit breaks.

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CHECKOUT

Operate equipment through at least 1 complete cycle to make certain equipment is controlled as intended.



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