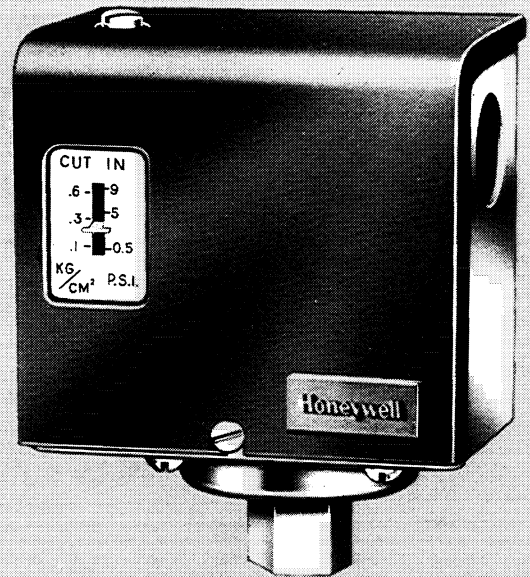


# Honeywell

## PRESSURETROL CONTROLLER

THE PA404 IS A SERIES 40 (2-WIRE, SPST) PRESSURETROL CONTROLLER FOR USE IN 24, 120, 240 or 277 VOLT CONTROL CIRCUITS OR IN SELF-POWERED (MILLIVOLTAGE) APPLICATIONS.

- The PA404A is a pressure actuated high limit, safety control for steam heating boilers; it breaks an electrical circuit to shut down the burner if steam pressure rises above a safe level.
- The PA404B is used with suspension-type unit heaters to make the fan circuit when a pressure rise indicates the presence of steam.
- Each model contains an spst MICRO SWITCH snap-acting switch.
- Sensitive pressure-actuated diaphragm expands or contracts with pressure variations, moving a lever mechanism which operates the snap switch.
- A screw on top of the case allows set point adjustment without removing the cover.
- Differential is adjusted by means of a dial located inside the case.



## PA404A, B

S.K.  
8-75(.005)

Residential Div. Form Number

60-2341-1

# SPECIFICATIONS

**MODELS:**

PA404A Pressuretrol Controller. Pressure-actuated safety control. Available with additive or subtractive differentials.

PA404B Pressuretrol Controller. Pressure-actuated fan control. Additive differential.

**MAXIMUM OPERATING PRESSURE:** 20 psi.

**MAXIMUM AMBIENT TEMPERATURE:** 150 F.

**ELECTRICAL RATING (amperes):**

	120V AC	240V AC	277V AC
Full Load	8.0	5.1	—
Locked Rotor	48.0	30.6	—
Resistance Load	8.3	8.3	7.2

2.0 amp at 24V ac; 0.25 amp at 1/4 to 12V dc.

**SWITCH:** Pressure actuated spst, snap-action.

**ADJUSTMENT MEANS:** Operating range set point—screw on top of case; differential set point—dial inside of case.

**MOUNTING MEANS:** 1/4 inch female pipe threads.

**CASE DIMENSIONS (inches):** 4-15/32 high, 3-3/8 wide, 2-1/4 deep.

**FINISH:** Gray enamel.

**WIRING ACCESS:** 1/2 inch conduit.

**ACCESSORY:** No. 14026 steam trap.

**UNDERWRITERS' LABORATORIES, INC. LISTED:**  
File No. MP466, Guide No. MBPR.

**CANADIAN STANDARDS ASSOCIATION LISTED:**  
File No. LR1620.

TABLE I—OPERATING CHARACTERISTICS

MODEL	ADJUSTABLE OPERATING RANGE (PSI)	ADJUSTABLE DIFFERENTIAL (PSI)	SWITCH ACTION	
			ON PRESSURE FALL	ON PRESSURE RISE
PA404A (Subtractive differential)	3.0 to 15	1 to 5	Makes at set point <sup>a</sup> minus differential	Breaks at set point
PA404A (Additive differential)	0.5 to 9	1 to 5	Makes at set point	Breaks at set point plus differential
PA404B (Additive differential)	0.5 to 9	1 to 5	Breaks at set point	Makes at set point plus differential

<sup>a</sup>Recommended minimum set point is differential setting plus 1-1/2 psi.

# INSTALLATION

**CAUTION**

1. Installer must be a trained, experienced serviceman.
2. Disconnect power supply before making wiring connections to prevent electrical shock and equipment damage.

3. All wiring must comply with applicable codes and ordinances.
4. Do not exceed the ratings given in the Specifications section.
5. Always conduct a thorough checkout when installation is complete.

# ORDERING INFORMATION

**WHEN ORDERING REFER TO THE TRADELINE CATALOG OR PRICE SHEETS FOR COMPLETE ORDERING SPECIFICATION NUMBER, OR . . .**

**SPECIFY—**

1. MODEL NUMBER.
2. ADDITIVE OR SUBTRACTION DIFFERENTIAL (PA404A) SEE TABLE I.
3. ACCESSORY, IF DESIRED.

**ORDER FROM—**

1. YOUR USUAL SOURCE, OR
2. HONEYWELL  
1885 DOUGLAS DRIVE, NORTH  
MINNEAPOLIS, MINNESOTA 55422  
(IN CANADA—HONEYWELL CONTROLS LIMITED  
740 ELLESMERE ROAD  
SCARBOROUGH, ONTARIO)  
INTERNATIONAL SALES AND SERVICE OFFICES  
IN ALL PRINCIPAL CITIES OF THE WORLD.

## MOUNTING

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.

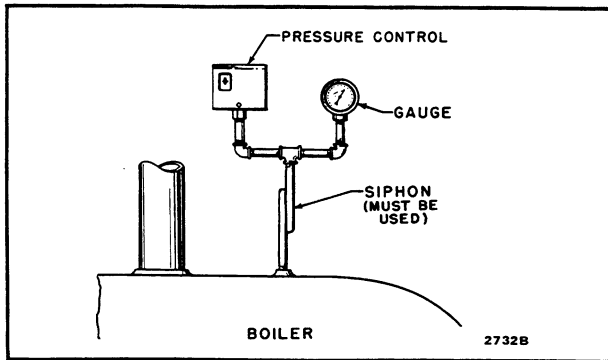


FIG. 1—TYPICAL INSTALLATION OF THE PA404A, MOUNTED WITH A GAUGE ON A BOILER.

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

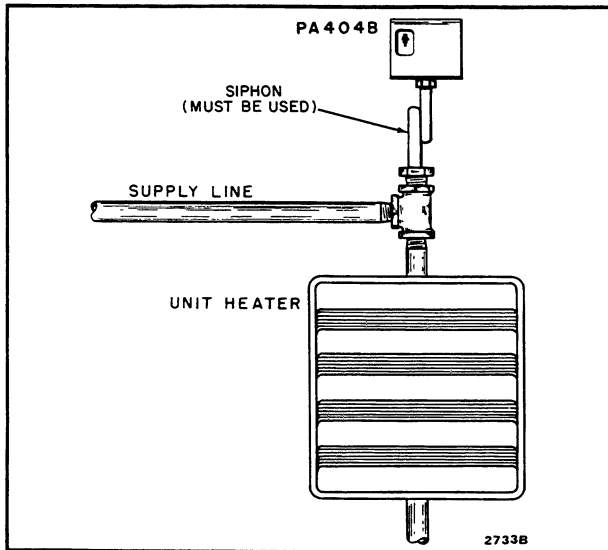


FIG. 2—TYPICAL INSTALLATION OF THE PA404B, MOUNTED ON THE SUPPLY LINE OF A UNIT HEATER.

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.

## WIRING

### CAUTION

Disconnect power supply before making wiring connections to avoid electrical shock or equipment damage.

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 Figs. 3, 4, and 5 for typical wiring connections.

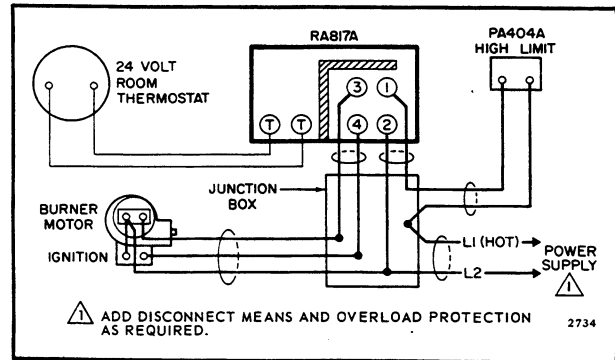


FIG. 3—TYPICAL CONNECTIONS FOR A PA404A USED AS A HIGH LIMIT IN AN OIL-FIRED STEAM SYSTEM.

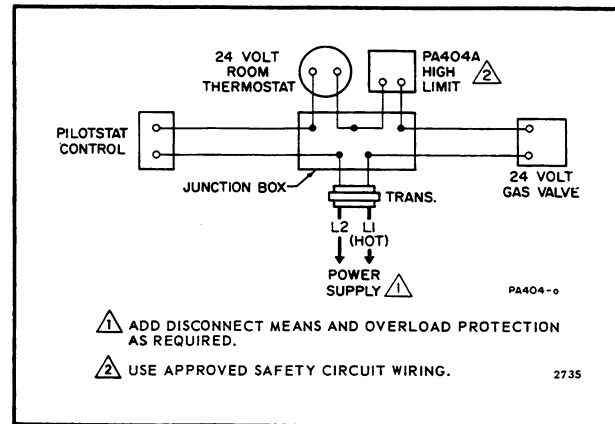


FIG. 4—TYPICAL CONNECTIONS FOR A PA404A USED AS A HIGH LIMIT IN A GAS-FIRED STEAM SYSTEM.

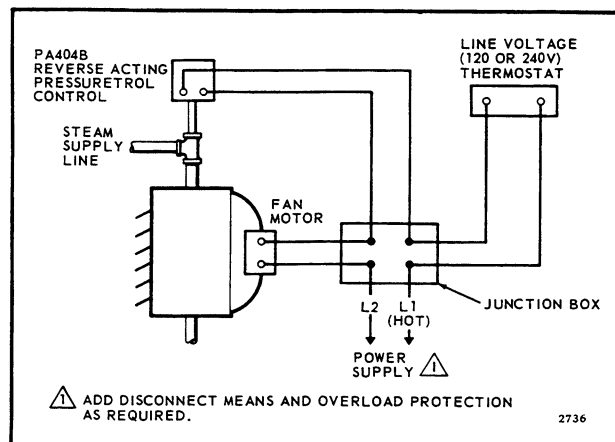


FIG. 5—TYPICAL CONNECTIONS FOR A PA404B USED IN A UNIT HEATER INSTALLATION.

# SETTINGS

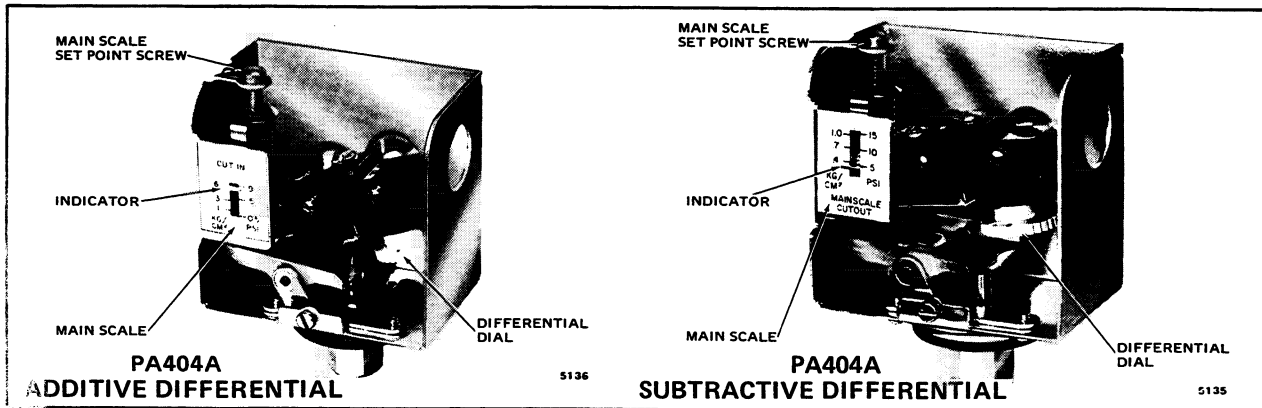


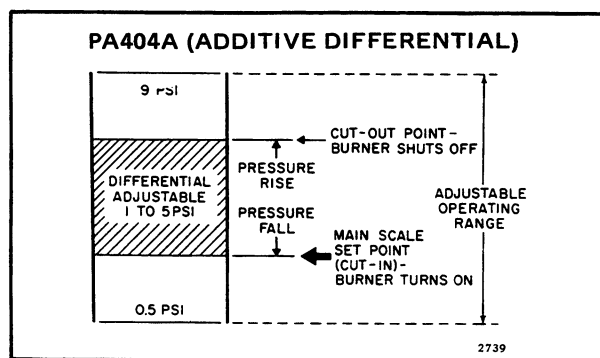
FIG. 6—COVER-OFF VIEW OF PA404, SHOWING ADJUSTMENT SCREWS.

See "Switch Action" in Table 1.

## TO SET THE PA404A WITH SUBTRACTIVE DIFFERENTIAL

1. Set main scale indicator at desired cutout point by turning main scale set point screw until indicator (see Fig. 6) corresponds to pressure at which electric circuit should break. The recommended minimum set point is the differential setting plus 1-1/2 psi.

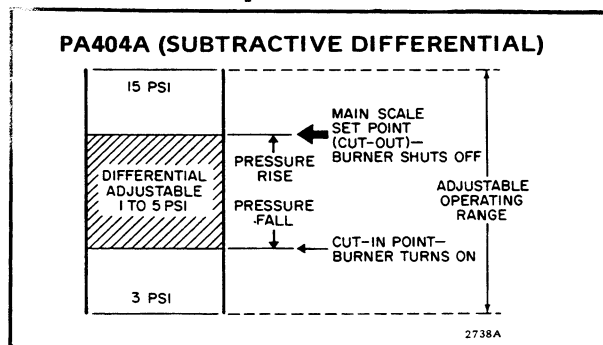
2. Set the differential adjustment dial to the number of pounds that pressure should fall below the main scale cutout point before the circuit makes.



## TO SET THE PA404B WITH ADDITIVE DIFFERENTIAL

1. Set main scale indicator at desired cutout point by turning main scale set point screw until indicator (see illustration below) corresponds to pressure at which electric circuit should break.

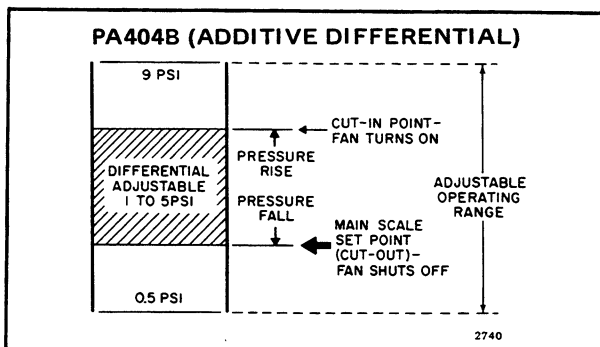
2. Set differential adjustment dial to number of pounds that pressure should rise above main scale cutout point before electric circuit makes.



## 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. 6) 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.



# CHECKOUT

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