

P10 Series Low Pressure Controls

Application

The P10 low pressure controls are for applications in which a pneumatic air signal is used to operate an electric or electronic device. Other applications include the control of pumps and small air compressors.

IMPORTANT: The P10 Series low pressure controls are intended to control equipment under normal operating conditions. Where failure or malfunction of a P10 low pressure control could lead to an abnormal operating condition that could cause personal injury or damage to the equipment or other property, other devices (limit or safety controls) or systems (alarm or supervisory) intended to warn of or protect against failure or malfunction of the P10 low pressure control must be incorporated into and maintained as part of the control system.

Operation

Controls have snap-acting switches designed for slow or fast cycling applications. The one and two-stage models have SPDT contact action and the three-stage duplex model has normally closed SPST contact action.

A calibrated indicator scale indicates the high setting of the single-stage models. On the two-stage models it indicates the high setting of the high switch. Duplex models have two indicator scales. These scales indicate the settings at which the single switch and the ganged switches activate upon pressure increases.

Installation

Mounting

These controls may be mounted in any position. A mounting bracket is supplied for panel mounting as required.

Models with barbed fittings are for use with 1/4 in. O.D. polytubing.

Do not install these controls where the ambient temperature falls below 32°F (0°C) or exceeds 140°F (60°C). The electrical load should not exceed the ratings shown on the control label.

Wiring

WARNING: Risk of electrical shock.
Disconnect power supply before wiring connections are made to avoid possible electrical shock.

CAUTION: Risk of equipment damage.
Disconnect power supply before wiring connections are made to avoid damage to the equipment.

Make all wiring connections using copper conductors only, and in accordance with the local, national, and regional regulations.

The terminals on SPDT models are color coded. The common terminal is red; the red to yellow terminals open on a drop in pressure; the red to blue terminals close on a drop in pressure. (See Fig. 4.)

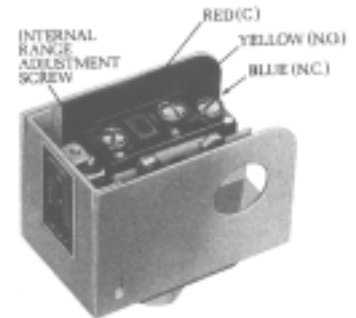


Fig. 1 -- Interior view of the single stage pressure control.

IMPORTANT: Use terminal screws furnished in the switch (8-32 x 1/4 in. binder head). Substitution of other screws may cause problems in making proper connections.

Adjustment

The controls are factory set with the settings shown on the control label but may be adjusted in the field.

Setpoint adjustment can be made two ways: (1) using the slotted 1/4 in. hex nut end of the adjusting screw, externally located next to the diaphragm cover; (2) with the control cover removed, using the screwdriver slot located at the internal end of the adjusting screw.

The setpoint adjusting screw sets the pressure at which the contacts transfer from their normal (de-energized) position.

1. Connect an accurate air pressure gauge and a variable pressure source to the control's air connector.
2. Turn the setpoint adjusting screw to position the indicator to the desired pressure setting.

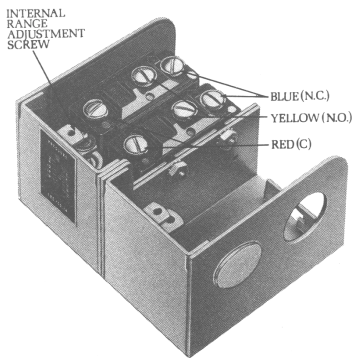


Fig. 2 -- Interior view of the two-stage pressure control.

3. Apply and gradually increase the air pressure. Note the pressure at which the contacts transfer.
4. Remove the air pressure and slightly turn the setpoint adjusting screw. Reapply and gradually increase the air pressure, while noting the switching pressure, until the desired switching point is achieved.

The differential is factory set but varies when the setpoint is changed. At the high end of the operating range the differential will be approximately 25% greater than mid-range and approximately 25% less at the low end of the operating range.

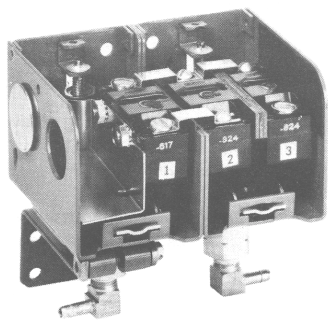


Fig. 3 -- Interior view of the three-switch duplex pressure control with barbed fittings and mounting bracket.

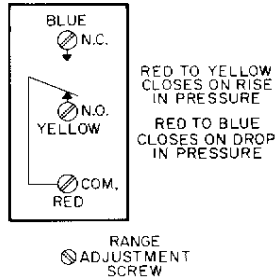


Fig. 4 — Terminal arrangement and contact action.

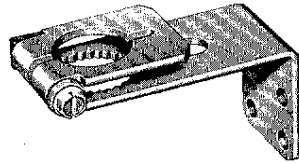


Fig. 5 — Universal mounting bracket No. BKT16A-600.

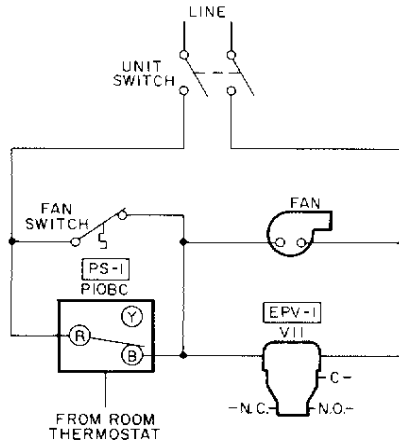


Fig. 6 — Typical schematic for the P10BC Single-Stage Pressure Control.

Checkout Procedure

Before leaving the installation, observe at least three operating cycles to be sure that all components are functioning correctly.

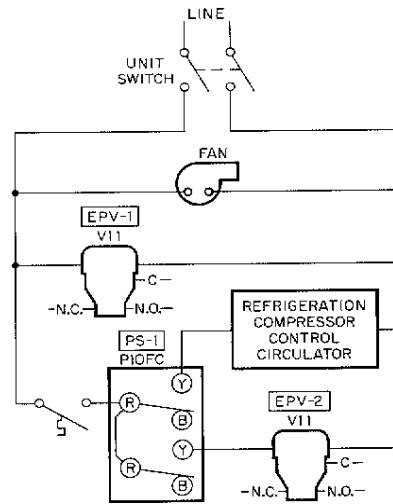


Fig. 7 — Typical schematic for the P10FC Two-Stage Pressure Control.

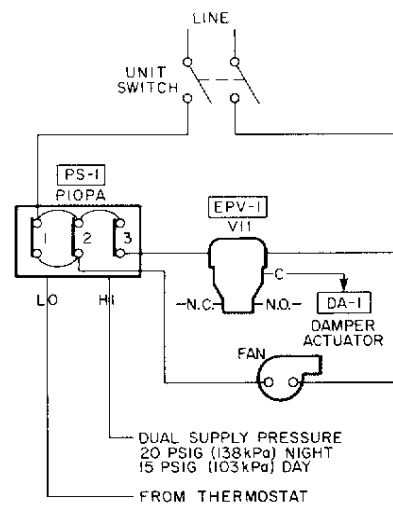


Fig. 8 — Typical schematic for the P10PA Duplex Pressure Control.

Repairs and Replacement

Field repairs must not be made. For a replacement control, contact the nearest Johnson Controls distributor.

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Published in U.S.A.
www.johnsoncontrols.com