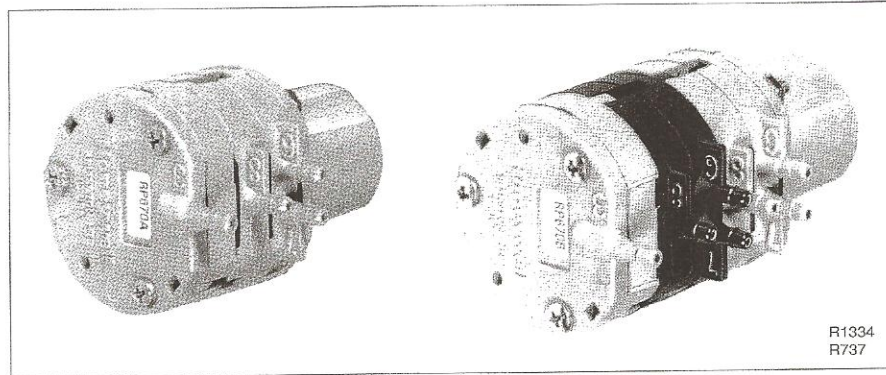


RP670A & B Pneumatic Switching Relays



General

The RP670A and B Switching Relays are two-position pneumatic relays with either single-pole (RP670A) or double-pole (RP670B), double-throw switching action. They are designed for use in pneumatic heating and cooling control systems where a valve or damper operator must be switched from one circuit to another. Switchover pilot pressure must be two-position, not modulated.

Features

- Available with either single-pole, double-throw (spdt) or double-pole, double-throw (dpdt) switching action
- Second switch on dpdt (RP670B) models molded in black for identification
- Air connections for 5/32-in. (4-mm) O.D. plastic tubing
- Molded plastic construction with neoprene diaphragms, stainless steel lever, and music wire spring
- In-line mounting, or wall or panel mounting with provided metal spring clip

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Description

RP670A and B Switching Relays are two-position pneumatic relays with either single-pole (RP670A) or double-pole (RP670B), double-throw switching action.

Specifications

Models:

RP670A: Spdt switching Relay; switching action occurs between:

- 3 and 7 psi (20 and 50 kPa)
- 13 and 17 psi (90 and 120 kPa)
- 18 and 22 psi (124 and 152 kPa)
- 20 and 25 psi (140 and 175 kPa)

RP670B: Dpdt Switching Relay; switching action occurs between:

- 3 and 7 psi (20 and 50 kPa)
- 13 and 17 psi (90 and 120 kPa)
- 18 and 22 psi (124 and 152 kPa)
- 20 and 25 psi (140 and 175 kPa)

Operating Pressure:

0 to 25 psi (0 to 150 kPa)

Air Handling Capacity:

0.039 scfm (18 ml/s) and 1 psi (7 kPa) pressure drop across RP670

Air Connections:

For 5/32-in. (4-mm) O.D. plastic tubing

Materials of Construction:

Molded plastic with neoprene diaphragms
Stainless steel lever
Music wire spring

Mounting:

In line, or wall or panel with metal spring clip (optional)

Switchover Pilot Pressure:

Two-position

Maximum Safe Pressure:

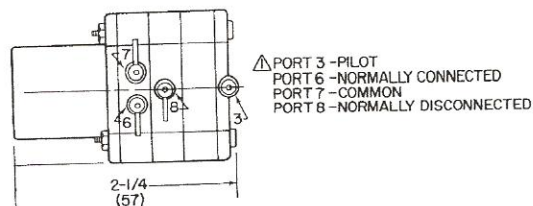
30 psi (207 kPa)

Ambient Operating Limits:

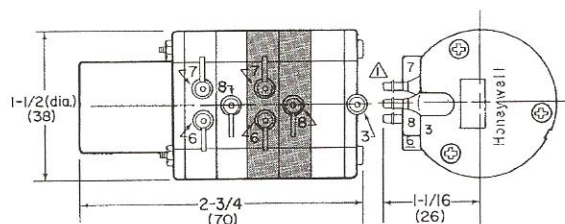
Temperature: 32 to 125F (0 to 52C)

Humidity: 5 to 95% rh

Dimensions In Inches (Millimeters)



RP670A



RP670B

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RP670A and B Pneumatic Switching Relays

INSTALLATION INSTRUCTIONS

DESCRIPTION

The RP670A/B are two-position switching relays. They are used in pneumatic heating and cooling control systems where a valve or a damper actuator must be switched from one circuit to another. Fig. 1 and 2 show approximate dimensions.

The RP670A has SPDT switching action and is gray in color.

The RP670B has DPDT switching action; one SPDT switch is gray and the second SPDT switch is white, as shown in Fig. 2.

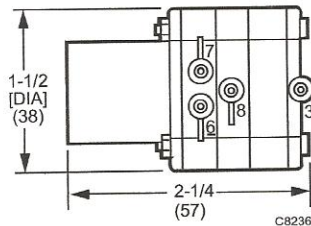


Fig. 1. Dimensions of RP670A in in. (mm).

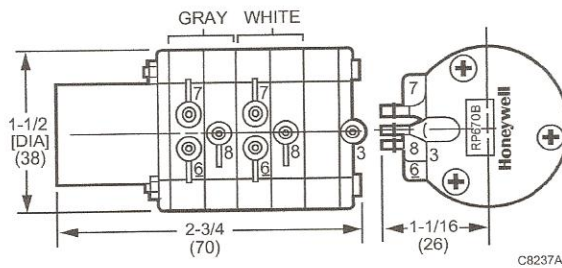


Fig. 2. Dimensions of RP670B in in. (mm).

BEFORE INSTALLATION

! CAUTION

Equipment Damage Hazard.

Switchover pilot pressure must be two-position, not modulated, because during the switching, all three ports of the switch (6, 7 and 8) are interconnected.

INSTALLATION

Mounting

Suspend on tubing or mount on a surface. Mount on a wall or panel with the 1-1/2 in. (38 mm) diameter spring clip supplied (part no. 14003030-001). Obtain a no. 10 screw locally when using the mounting clip. There are two ways of surface mounting. See Fig. 3.

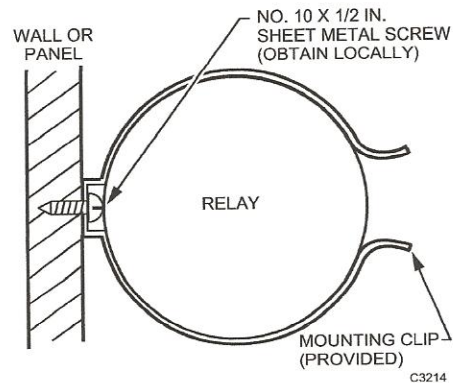


Fig. 3. RP670 surface mounting.

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Piping

Fig. 4 shows adaptation piping. All connections are sharp barb 5/32 in. (4 mm) O.D. polyethylene tubing.



CAUTION

Equipment Damage Hazard.

To prevent damage to the sharp barb connections, do not attempt to cut or pull tubing. To remove tubing from the barb connections, cut tubing a few inches from the control device. Use a coupling to reconnect tubing.

NOTE: When the system is other than copper or polyethylene tubing, adapt as shown in Fig. 4. Some models provide parts for adapting.

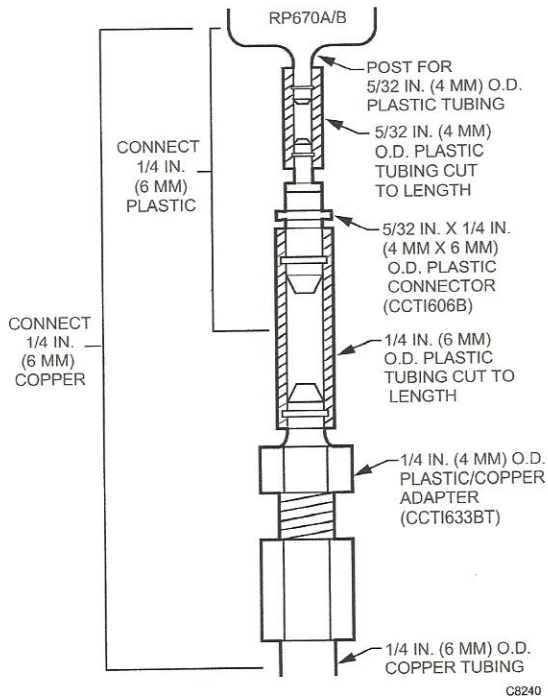


Fig. 4. Adaptation piping.

Port Identification Table

Table 1 identifies the ports of Honeywell pneumatic relays including older models when upgrading the installation.

Table 1. Pneumatic Relay Ports.

	RP670A RP670B	RP412A RP412B	RO404	RO48A
Pilot	3	Pilot	P	1
Common	7 ^a	Common	3	3
Normally Connected	6 ^a	OFF	4	4
Normally Disconnected	8 ^a	ON	2	2

^a On RP670B, one set of ports is gray and the other is white. Each set is independent, but both switch at the same time.

ENGINEERING DATA

Specifications

Models:

RP670A: SPDT switching relay; switching action occurs between:

- 3 and 7 psi (21 and 48 kPa).
- 13 and 17 psi (90 and 117 kPa).
- 18 and 22 psi (124 and 152 kPa).
- 20 and 25 psi (138 and 172 kPa).

RP670B: DPDT switching relay; switching action occurs between:

- 3 and 7 psi (21 and 48 kPa).
- 13 and 17 psi (90 and 117 kPa).
- 18 and 22 psi (124 and 152 kPa).
- 20 and 25 psi (138 and 172 kPa).

Operating Pressure (Switch and Pilot) Range:

Normal: 13 to 25 psi (90 to 172 kPa).
Maximum Safe: 30 psi (207 kPa).

Ambient Operating Limits:

Temperature: 20 to 140°F (-7 to 60°C).
Relative Humidity: 5 to 95%.

Air Handling Capacity: Pressure Drops: 0.039 scfm (18.3 ml/s) and 1 psi (7 kPa).

Construction: molded plastic with neoprene diaphragms, stainless steel lever, steel spring.

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Operation

When the pilot pressure exceeds the preset spring pressure, port 8 opens and connects to port 7 and port 6 closes. See Fig. 5A. When pilot pressure is less than the preset spring pressure, port 8 closes and port 6 opens and connects to port 7. See Fig. 5B.

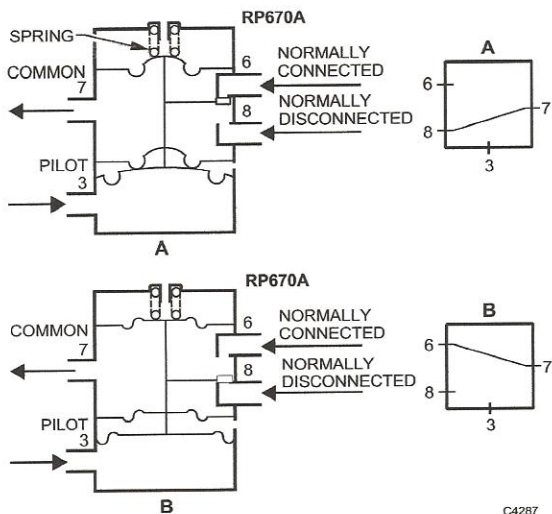


Fig. 5. RP670 operation.

Application

Fig. 6 shows a typical heating and cooling application using an RP670A. During the cooling cycle, pilot pressure (port 3) is below the relay minimum switching pressure. Ports 6 and 7 are connected and port 8 is blocked, removing the low-limit controller from the system.

During the heating cycle, the pilot pressure is above the preset switching pressure. Ports 7 and 8 are connected and the low-limit controller resumes its override operation. Port 6 is blocked.

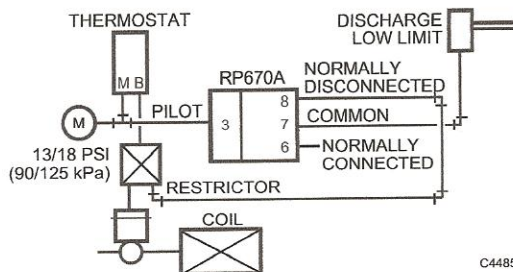


Fig. 6. RP670A typical application.

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