

JOHNSON CONTROLS - Low Pressure Control

P67 Series

Selection Chart



271-350

DESCRIPTION

P67 pressure controls are used to close or open an electrical circuit, based on a predetermined air pressure signal. The operating point of the control and the differential, are easy to adjust with the externally-located adjustment screws on the top of the control enclosure. The pressure controls incorporate a non-metallic diaphragm that is positioned by air pressure changes. The diaphragm, in turn, actuates a heavy-duty electrical contact block using a lever mechanism.

FEATURES

- Long-life contact structure, high contact force
- Easy-to-adjust settings: single sight-set scales show both cut-in and cut-out settings

APPLICATIONS

Typical applications include the control of air compressors, fans, pilot lights, resistance heating elements, and other devices.

SELECTION CHART

PART NO	Control Action	Scale Range psig(a) (kPa)	Differential psi (kPa)	Temperature Range	MAXIMUM OVERPRESSURE psig (kPa)	Connector
P67AA-1C	DPST opens on pressure drop	3 to 30(21 to 207)	1 1/2-20(10 to 138)Adjustable	32 to 140°F 0 to 60°C	50 (345)	Angle Barbed Fitting
P67CA-1C	DPST opens on pressure rise	3 to 30(21 to 207)	1 1/2-20(10 to 138)Adjustable	32 to 140°F 0 to 60°C	50 (345)	Angle Barbed Fitting
P67EA-5C	L-M2 contacts connect on pressure rise and simultaneously the L-M1 contacts break	3 to 30(21 to 207)	1 1/2-20(10 to 138)Adjustable	32 to 140°F 0 to 60°C	50 (345)	1/8 in. Male NPT
P67FA-5C	L-M2 contacts break on pressure rise and simultaneously the L-M1 contacts make	3 to 30(21 to 207)	1 1/2-20(10 to 138)Adjustable	32 to 140°F 0 to 60°C	50 (345)	1/8 in. Male NPT

- (a) Range is minimum cut-out to maximum cut-in on Open Low controls. It is minimum cut-in to maximum cut-out on Open High controls.

JOHNSON CONTROLS - Controls for High Pressure Applications

P70, P72, and P170 Series



P70CA-3 High Pressure Cutout Control

DESCRIPTION

The P70, P72, and P170 controls for high pressure applications are designed primarily for high pressure cut-out control, head pressure control, and condenser fan cycling control on commercial refrigeration and air conditioning applications. Controls are available in several pressure ranges and are compatible with most common refrigerants. They may also be used on other non-corrosive fluid applications. Ammonia compatible models are also available. Several different electrical ratings and switch configurations are available. The P72 models provide direct control of 208-240 volt single phase motors up to 3 hp, and 208-220 volt 3-phase motors up to 5 hp.

FEATURES

- All-steel case and cover provides long lasting, rugged protection for internal components
- “Sight-Set” calibrated pressure adjustment displays a visible pressure scale, fully adjustable through the range without removing the cover (on NEMA 1 enclosure models)
- Manual reset lockout option provides “tripfree” lockout that cannot be overridden or reset until pressure returns to specified level
- Variety of available pressure connection styles allows greater flexibility when mounting control and adapting pressure connections to field application requirements

APPLICATIONS

• P70C, P70D P170C and P170D models

With Single-Pole Single-Throw (SPST) Open-high switch action are the most popular models, and are typically used for high-pressure cutout. The **C models** are automatic reset. The **D models** have a manual reset lockout mechanism. Some **P70C, P70D P170C and P170D models** are UL Listed as refrigeration pressure limiting controls.

- **P70A and P170A models** are available with SPST Open-low switch action, and typically are used for condenser fan cycling control.

- **P70 and P170 models** with Single-Pole Double-Throw (SPDT), or 4-wire, 2-circuit switch action allow users to install alarm devices or other control circuits.

- **P72 models** have a Double-Pole Single- Throw (DPST) switch with load-carrying contacts that can provide direct control of 208-240 V single-phase motors up to 3 hp, and 208-220 V 3-phase motors up to 5 hp Refer to *DPST Electrical Ratings (P72A, B, C, and D Models)* on Page 3.

NEMA 1 Enclosures are standard on most models. **NEMA 3R Enclosures** are also available.

SELECTION CHART - Condenser Fan Cycling Controls (for Non-Corrosive Refrigerants)

PART NO	SWITCH ACTION	Range psig (kPa)	Differential psi (kPa)	PRESSURE CONNECTION	Max Overpressure	Max Working Pressure
P70AA-118C	SPST Open-low	100 to 400 (690 to 2758)	Minimum 35 (241) Maximum 200 (1379)	36 in. Capillary with 1/4 in. Flare Nut	475 psig (3275 kPa)	400 psig (2758 kPa)
P70AA-2C	SPST Open-low	0 to 150	Minimum 12 (83) Maximum 70 (482)	36 in. Capillary with 1/4 in. Flare Nut	525 psig (3620 kPa)	150 psig (1034 kPa)
P72AA-27C	DPST Open-low	0 to 1034	Minimum 35 (241) Maximum 200 (1379)	36 in. Capillary with 1/4 in. Flare Nut	475 psig (3275 kPa)	400 psig (2758 kPa)
P170AA-118C	SPST Open-low	100 to 400 (690 to 2758)	Minimum 35 (241) Maximum 200 (1379)	1/4 in. Male Flare Connector	475 psig (3275 kPa)	400 psig (2758 kPa)

JOHNSON CONTROLS - Controls for High Pressure Applications

P70, P72, and P170 Series

All Range Controls (for Non-Corrosive Refrigerants)

PART NO	PRESSURE CONNECTION	Differential psi (kPa)	SWITCH ACTION	Max Working Pressure	Range psig (kPa)	Max Overpressure
P70CA-2(a)	1/4 in. Male Flare Connector	Minimum 60 (414) Maximum 150 (1034)	SPST Open-high	500 psig (3448 kPa)	50 to 500 (345 to 3448)	525 psig (3620 kPa)
P70CA-3(a)	36 in. Capillary with 1/4 in. Flare Nut	Minimum 60 (414) Maximum 150 (1034)	SPST Open-high	500 psig (3448 kPa)	50 to 500 (345 to 3448)	525 psig (3620 kPa)
P70DA-1C(a)	36 in. Capillary with 1/4 in. Flare Nut	Manual Reset Lockout	SPST Open-high	500 psig (3448 kPa)	50 to 500 (345 to 3448)	525 psig (3620 kPa)
P70KA-1C	36 in. Capillary with 1/4 in. Flare Nut	Manual Reset Lockout	4-wire, 2-circuit Line-M1 Close-high Line-M2 Open-high	500 psig (3448 kPa)	50 to 500 (345 to 3448)	525 psig (3620 kPa)
P72CA-2(a)	36 in. Capillary with 1/4 in. Flare Nut	Minimum 60 (414) Maximum 150 (1034)	DPST Open-high	500 psig (3448 kPa)	50 to 500 (345 to 3448)	525 psig (3620 kPa)
P72DA-1(a)	36 in. Capillary with 1/4 in. Flare Nut	Manual Reset Lockout	DPST Open-high	500 psig (3448 kPa)	50 to 500 (345 to 3448)	525 psig (3620 kPa)
P170CA-3C	SPST Open-high	50 to 500 (345 to 3448)	Minimum 60 (414) Maximum 150 (1034)	1/4 in. Male Flare Connector	500 psig (3448 kPa)	525 psig (3620 kPa)
P170DA-1C	SPST Open-high	50 to 500 (345 to 3448)	Manual Reset Lockout	1/4 in. Male Flare Connector	500 psig (3448 kPa)	525 psig (3620 kPa)
P170KA-1C	4-wire, 2-circuit Line-M1 Close-high, Line-M2 Open-high	50 to 500 (345 to 3448)	Manual Reset Lockout	1/4 in. Male Flare Connector	500 psig (3448 kPa)	525 psig (3620 kPa)

(a) UL Listed as Refrigeration Pressure Limiting Controls

Ammonia Compatible Models

PART NO	Differential psi (kPa)	Max Working Pressure	Range psig (kPa)	SWITCH ACTION	MaxOverrun Pressure	PRESSURE CONNECTION
P70AA-119C	Minimum 20 (138) Maximum 120 (827)	300 psig (2068 kPa)	50 to 300 (345 to 2068)	SPST Open Low	400 psig (2758 kPa)	1/4 in. SS Female NPT
P70CA-5C(a)	Minimum 60 (414) Maximum 150 (1034)	300 psig (2068 kPa)	50 to 500 (345 to 3448)	SPST Open-high	525 psig (3620 kPa)	1/4 in. SS Female NPT
P70DA-2C(a)	Lockout (requires manual reset)	300 psig (2068 kPa)	50 to 500 (345 to 3448)	SPST Open-high	525 psig (3620 kPa)	1/4 in. SS Female NPT

(a) UL Listed as Refrigeration Pressure Limiting Controls