



Standard Electromechanical Pressure Controls

P70, P72, and P170 Series Controls for Low Pressure Applications (Continued)

Selection Chart for Standard P70, P72, and P170 Controls for Low Pressure Applications

Product Code Number	Switch Action	Range psi (kPa)	Differential psi (kPa)	Pressure Connection	Max. Overpressure	Max. Working Pressure	Limited Knob Adjustment
MICRO-SET Controls (For Non-Corrosive Refrigerants)							
P70AB-12C	SPST open low	12 in. Hg to 80 (-41 to 551)	Minimum 5 (34) Maximum 35 (241)	36 in. capillary with 1/4 in. flare nut	525 psig (3,617 kPa)	80 psig (551 kPa)	Supplied, but not assembled
P170AB-12C				1/4 in. external flare connector			
P70EA-14C	SPDT 1 to 3 open low			36 in. capillary with 1/4 in. flare nut			
P170EA-14C	1 to 2 close low			1/4 in. external flare connector			
All-Range Controls (For Non-Corrosive Refrigerants)							
P70AB-1C	SPST open low	20 in. Hg to 100 (-68 to 690)	Minimum 7 (48) Maximum 50 (345)	1/4 in. external flare connector	325 psig (2,239 kPa)	100 psig (690 kPa)	Supplied, but not assembled
P70AB-2C				36 in. capillary with 1/4 in. flare nut			
P70BA-1C			Manual reset lockout	1/4 in. external flare connector			None
P70BA-10C							
P70EA-10C	SPDT 1 to 3 open low 1 to 2 close low		5 (34) fixed				
P72AA-1C	DPST open low		Minimum 7 (48) Maximum 50 (345)	36 in. capillary with 1/4 in. flare nut			Mounted on differential screw
P72AB-1C							
P170AB-2C	SPST open low			1/4 in. external flare connector			None
P70CA-1C	SPST open high			36 in. capillary with 1/4 in. flare nut			
P170CA-1C				1/4 in. external flare connector			
All-Range Controls (Ammonia-Compatible)							
P70AA-5C	SPST open low	20 in. Hg to 100 (-68 to 690)	Minimum 7 (48) Maximum 50 (345)	1/4 in. SS Internal NPT	325 psig (2,239 kPa)	100 psig (690 kPa)	None
P70CA-4C	SPST open high						
P70GA-11C	Four-wire, Two-circuit						
P70HA-3C	Line M1 close low Line M2 open low						

Note: To order models not listed in the selection chart, please contact Johnson Controls/PENN® Refrigeration Application Engineering at 1-800-275-5676.

Technical Specifications

Single Pressure Controls Switch Action, Low Event, High Event, and Models

Switch and Action	Low Event	High Event	Models
SPST Open Low	Cut-Out (Opens Line to M1)	Cut-In (Closes Line to M1)	P70A, P70B, P170A
SPST Open High	Cut-In (Closes Line to M1)	Cut-Out (Opens Line to M1)	P70C, P70D, P170C, P170D
SPDT	Opens 1 to 2 and closes 1 to 3	Closes 1 to 2 and Opens 1 to 3	P70E, P70F
Four-Wire, Two-Circuits, 1 N.O., 1 N.C. Open Low	Cut-Out (Opens M2 to Line and Closes M1 to Line)	Cut-In (Closes M2 to Line and Opens M1 to Line)	P70G, P70H
Four-Wire, Two-Circuits, 1 N.O., 1 N.C. Open High	Cut-In (Closes M2 to Line and Opens M1 to Line)	Cut-Out (Opens M2 to Line and Closes M1 to Line)	P70J, P70K, P170K
DPST Open Low	Cut-Out (Opens M1 to Line and M2 to Line)	Cut-In (Closes M1 to Line and M2 to Line)	P72A, P72B
DPST Open High	Cut-In (Closes M1 to Line and M2 to Line)	Cut-Out (Opens M1 to Line and M2 to Line)	P72C, P72D

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Ranco® Refrigeration Cross-Reference (Continued)

Pressure Controls (Ranco Series 3126-3161, G20-G23, and O10-O20) (Part 2 of 3)

Product #	Range	Differential	Switch	Capillary	Connection	Cover	Notes
Ranco PENN 3161-201 P70DA-1C	200/475 50/450	Manual Manual	SPDT Open HI	60" 36"	Sweat w/ Flare	Open NEMA 1	(5)(4)
Ranco PENN 3161-205 P70DA-1C	125/285 50/450	Manual Manual	Open HI Open HI	60" 36"	w/ Flare w/ Flare	NEMA 1	Open (5)
Ranco PENN 3161-403 P20EB-2C	200/475 100/425	50/150 60/77 FXD	SPDT SPDT	60" 36"	Sweat Sweat	Open Open	(6)
Ranco PENN G20-4050 P70AB-2C	7/27 20"/100	12 FXD 7/50 ADJ	Open LO Open LO	60" 36"	Sweat w/ Flare	Open NEMA 1	(5)(4)
Ranco PENN G20-4051 P20EB-1C	7/77 7/150	19/70 29/32 FXD	Open LO SPDT	60" 36"	Sweat Sweat	Open Open	(6)
Ranco PENN G20-4412 P70BA-1C	7/70 20"/100	Manual Manual	Open LO Open LO	60" 36"	Sweat w/ Flare	Open NEMA 1	(5)(4)
Ranco PENN G23-5052 P20EB-2C	150/450 100/425	50/125 60/77 FXD	Open HI SPDT	60" 36"	Sweat Sweat	Open Open	(6)
Ranco PENN G23-5253 P70DA-1C	50/450 50/450	Manual Manual	Open HI Open HI	60" 36"	Sweat w/ Flare	Open NEMA 1	(5)(4)
Ranco PENN O10-1093 P70AB-2C	10"/100 20"/100	10/40 7/50	Open LO Open LO	48" 36"	w/ Flare w/ Flare	NEMA 1	NEMA 1
Ranco PENN O10-1401 P170AB-12C	12"/50 12"/80	5/35 5/35	Open LO Open LO	None None	External Flare External Flare	NEMA 1	NEMA 1
Ranco PENN O10-1402 P70AB-12C	12"/50 12"/80	535 5/35	Open LO Open LO	36" 36"	w/ Flare w/ Flare	NEMA 1	NEMA 1
Ranco PENN O10-1483 P70AB-2C	10"/100 20"/100	10/40 7/50	Open LO Open LO	36" 36"	w/ Flare w/ Flare	NEMA 1	NEMA 1
Ranco PENN O10-1807 P70AA-151C	100/250 50/300	20/100 20/120	Open LO Open LO	None None	External Flare External Flare	NEMA 1	NEMA 1
Ranco PENN O10-1831 P70AB-12C	10"/100 12"/80	10/40 5/35	Open LO Open LO	None 36"	External Flare w/ Flare	NEMA 1 NEMA 1	
Ranco PENN O10-1842 P70AB-12C	12"/50 12"/80	5/35 5/35	Open LO Open LO	48" 36"	w/ Flare w/ Flare	NEMA 1 NEMA 1	
Ranco PENN O10-2000 P70AA-3C	100/250 100/300	20/100 25/75	Open LO Open LO	48" 36"	w/ Flare w/ Flare	NEMA 1 NEMA 1	
Ranco PENN O10-2054 P70AA-118C	100/400 100/400	40/150 35/200	Open LO Open LO	36" 36"	w/ Flare w/ Flare	NEMA 1 NEMA 1	
Ranco PENN O11-1711 P70CA-3C	150/450 50/450	40/150 60/150	Open HI Open HI	36" 36"	w/ Flare w/ Flare	NEMA 1 NEMA 1	
Ranco PENN O11-1713 P70CA-2C	150/450 50/450	40/150 60/150	Open HI Open HI	None None	External Flare External Flare	NEMA 1 NEMA 1	
Ranco PENN O11-1799 P170CA-1C	10"/100 20"/100	10/40 6/70	Open HI Open HI	None None	External Flare External Flare	NEMA 1 NEMA 1	
Ranco PENN O11-3099 P70CA-1C	10"/100 20"/100	10/40 6/70	Open HI Open HI	36" 36"	w/ Flare w/ Flare	NEMA 1 NEMA 1	
Ranco PENN O16-107 P70EA-10C	10"/100 20"/100	10/40 ADJ 5 FXD	SPDT SPDT	None None	External Flare External Flare	NEMA 1 NEMA 1	
Ranco PENN O16-120 P70EA-10C	12"/50 20"/100	5/35 ADJ 5 FXD	SPDT SPDT	None None	External Flare External Flare	NEMA 1 NEMA 1	
Ranco PENN O16-142 P70EA-6C	100/400 100/300	17 FXD 14 FXD	SPDT SPDT	36" 36"	w/ Flare Sweat	NEMA 1 NEMA 1	(4)
Ranco PENN O16-166 P70GA-2C	50/150 20"/100	10/40 7/50	SPDT NO/NC	36" 36"	w/ Flare w/ Flare	NEMA 1 NEMA 1	(12)
Ranco PENN O16-200 P70KA-1C	150/450 50/450	Manual Manual	SPDT NO/NC	48" 36"	w/ Flare w/ Flare	NEMA 1 NEMA 1	(12)
Ranco PENN O16-209 P170KA-1C	150/450 50/450	Manual Manual	SPDT NO/NC	None None	External Flare External Flare	NEMA 1 NEMA 1	(12)
Ranco PENN O16-261 P70HA-2C	10"/100 20"/100	Manual Manual	SPDT NO/NC	48" 36"	w/ Flare w/ Flare	NEMA 1 NEMA 1	(12)
Ranco PENN O16-503 P70JA-18C	150/450 50/450	40/150 60/150	SPDT NO/NC	None None	External Flare External Flare	NEMA 1 NEMA 1	(12)

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ALCO® Cross Reference

Temperature Controls



Product #	Range	Differential	Switch	Capillary	Bulb	Cover	Notes
ALCO TF115-S2 AE00	-20/60F	3/30F ADJ	SPDT	NONE	COILED	NEMA 1	
ALCO TSI-X2E 30/40	-20/60F	3/30F ADJ	SPDT	NONE	COILED	NEMA 1	
PENN A19BBC-2C	-30/100F	3/12F ADJ	SPDT	None	Coiled	NEMA 1	(1)
PENN A19BBC-6C	-30/100F	3/12F ADJ	SPDT	None	Coiled	NEMA 1	(1)(2)
ALCO TF115-S3 AE00	15/95F	3/30F ADJ	SPDT	NONE	COILED	NEMA 1	
ALCO TSI-X3E 64/48	15/95F	3/30F ADJ	SPDT	NONE	COILED	NEMA 1	
PENN A19BBC-2C	-30/100F	3/12F ADJ	SPDT	None	Coiled	NEMA 1	(1)
PENN A19BBC-6C	-30/100F	3/12F ADJ	SPDT	None	Coiled	NEMA 1	(1)(2)
ALCO TF115-S4 AF10	-20/95F	5/35F ADJ	SPDT	120"	3/8x2-3/4	NEMA 1	
ALCO TSI-X4F 32/41	-20/95F	5/35F ADJ	SPDT	120"	3/8x2-3/4	NEMA 1	
PENN A19ABC-24C	-30/100F	3/12F ADJ	SPDT	96"	3/8x4	NEMA 1	(1)
PENN A19ABC-36C	-30/100F	3/12F ADJ	SPDT	240"	3/8x4	NEMA 1	(1)

Notes:

- (1) Can use A419ABC-1, -30/212F range, 1/30F differential, SPDT, 78" lead, 0.25 x 2 PTC sensor, NEMA 1.
- (2) Knob assembly/concealed adjustment packed separately.

Pressure Controls



Product #	Range	Differential	Switch	Capillary	Connection	Cover	Notes
ALCO FF115-S1 BAK	24"/42	3/30 ADJ	SPDT	36"	w/ Flare	NEMA 1	
ALCO PS1-X1K 7/15	24"/42	3/30 ADJ	SPDT	36"	w/ Flare	NEMA 1	
PENN P70AB-12C	12"/80	5/35 ADJ	Open LO	36"	w/ Flare	NEMA 1	
ALCO FF115-S3 BAK	15"/100	7/70 ADJ	SPDT	36"	w/ Flare	NEMA 1	
ALCO PS1-X3K 50/65	15"/100	7/70 ADJ	SPDT	36"	w/ Flare	NEMA 1	
PENN P70AB-2C	20"/100	7/50 ADJ	Open LO	36"	w/ Flare	NEMA 1	
ALCO FF115-S3 BAA	15"/100	7/70 ADJ	SPDT	None	External Flare	NEMA 1	
ALCO PS1-X3A 50/65	15"/100	7/70 ADJ	SPDT	None	External Flare	NEMA 1	
PENN P170AB-2C	20"/100	7/50 ADJ	Open LO	None	External Flare	NEMA 1	
ALCO FF115-S4 BAK	15/290	15/145 ADJ	SPDT	36"	w/ Flare	NEMA 1	
ALCO PS1-X4K 115/145	15/290	15/145 ADJ	SPDT	36"	w/ Flare	NEMA 1	
PENN P70AA-2C	0/150	12/40 ADJ	Open LO	36"	w/ Flare	NEMA 1	
PENN P70AA-3C	100/300	25/75 ADJ	Open LO	36"	w/ Flare	NEMA 1	
ALCO FF115-S5 BAK	90/450	30/220	SPDT	36"	w/ Flare	NEMA 1	
ALCO PS1-X5K 230/290	90/450	30/220	SPDT	36"	w/ Flare	NEMA 1	
PENN P70AA-118C	100/400	35/200	Open LO	36"	w/ Flare	NEMA 1	
PENN P70CA-3C	50/450	60/150	Open HI	36"	w/ Flare	NEMA 1	
ALCO FF115-S5 BAA	90/450	30/220	SPDT	None	External Flare	NEMA 1	
ALCO PS1-X5A 140/280	90/450	30/220	SPDT	None	External Flare	NEMA 1	
PENN P170AA-118C	100/400	35/200	Open LO	None	External Flare	NEMA 1	
PENN P170CA-3C	50/450	60/150	Open HI	None	External Flare	NEMA 1	
ALCO FF115-S5 BRK	90/450	Manual	SPDT	36"	w/ Flare	NEMA 1	
ALCO PS1-Y5K 230/290	90/450	Manual	SPDT	36"	w/ Flare	NEMA 1	
PENN P70DA-1C	50/450	Manual	Open HI	36"	w/ Flare	NEMA 1	
PENN P70KA-1C	50/450	Manual	M-Block	36"	w/ Flare	NEMA 1	(3)
ALCO FF115-S5 BRA	90/450	Manual	SPDT	None	External Flare	NEMA 1	
ALCO PS1-Y5A 330/390	90/450	Manual	SPDT	None	External Flare	NEMA 1	
PENN P170DA-1C	50/450	Manual	Open HI	None	External Flare	NEMA 1	

Notes:

- (3) Main opens HI, auxilliary opens LO (primarily used for alarm circuit).