



PENN Controls Cross Reference Guide



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Disclaimer:

PENN replacement controls included in this document represent what we believe to be equivalents for the part numbers listed. Emphasis has been placed on providing the user with a replacement control with the same form, fit and function when possible. The user must determine the acceptability of the recommended replacement by reviewing the control specifications.

Johnson Controls assumes no responsibility for guaranteeing the acceptability of any suggested replacement in this document.



Ranco to PENN Cross Reference

Ranco to PENN Cross Reference: Temperature Controls

Product	Product number	Range	Differential	Switch	Capillary	Bulb	Enclosure
Ranco	ETC111000-000	-30/220°F	1/30°F ADJ	Single-pole, double-throw (SPDT)	96 in. Leads	1/2 in. x 2 in.	NEMA 1
Penn	A421ABC-02C ¹	-40/212°F	1/30°F ADJ	SPDT	72 in. Leads	1/2 in. x 2 in.	NEMA 1
Ranco	ETC-111100-000	-30/220°F	1/30°F ADJ	0-10 VDC Output	96 in. Leads	1/2 in. x 2 in.	NEMA 1
Penn	C450CPW-400C ²	-40/250°F	ADJ	0-10 VDC Output	72 in. Leads	1/2 in. x 2 in.	NEMA 1
Ranco	ETC112000-000 ³	-30/220°F	1/30°F ADJ	SPDT	96 in. Leads	1/2 in. x 2 in.	NEMA 1
Penn	A421GBF-02C ³	-40/248°F	1/30°F ADJ	SPDT	72 in. Leads	1/2 in. x 2 in.	NEMA 1
Ranco	ETC-112100-000 ³	-30/220°F	1/30°F ADJ	0-10 VDC Output	96 in. Leads	1/2 in. x 2 in.	NEMA 1
Penn	C450CPW-400C ³	-40/250°F	ADJ	0-10 VDC Output	78 in. Leads	1/2 in. x 2 in.	NEMA 1
Ranco	3130-101	35/45°F	12°F FXD	Open LO	None	240 in.	NEMA 1
Penn	A11B-1C	35/45°F	12°F FXD	Open LO	48 in.	240 in.	NEMA 1
Ranco	3130-201	35/45°F	Manual	Open LO	None	240 in.	NEMA 1
Penn	A11A-1C	35/45°F	Manual	Open LO	48 in.	240 in.	NEMA 1
Ranco	3311-651	37°F FXD	Manual	Open LO	180 in.	1/2 in. x 4.25 in.	NEMA 1
Penn	A70BA-17C	35/80°F	Manual	Open LO	72 in.	3/8 in. x 3 in.	NEMA 1
Ranco	3311-701	30°F FXD	15°F FXD	Open LO	120 in.	3/8 in. x 6.5 in.	NEMA 1
Penn	A70AA-15C	-10/65°F	4/40°F ADJ	Open LO	72 in.	3/8 in. x 3 in.	NEMA 1
Ranco	A22-2237	41°F FXD	6°F FXD	Open HI	48 in.	48 in.	NEMA 1
Penn	A11E-6C	35/45°F	12°F FXD	SPDT	48 in.	240 in.	NEMA 1
Ranco	O10-1010	0/55°F	7/55°F ADJ	Open LO	48 in.	48 in.	NEMA 1
Penn	A11B-1C	35/45°F	12°F FXD	Open LO	48 in.	240 in.	NEMA 1
Ranco	O10-1408	-15/40°F	3/20°F ADJ	Open LO	72 in.	3/8 in. x 4 in.	NEMA 1
Penn	A19ABC-24C ⁴	-30/100°F	3/12°F ADJ	SPDT	96 in.	3/8 in. x 4 in.	NEMA 1
Ranco	O10-1409	0/55°F	3/20 ADJ	Open LO	72 in.	3/8 in. x 5.11 in.	NEMA 1
Penn	A19ABA-1C ⁴	-30/50°F	5/20°F ADJ	Open LO	72 in.	3/8 in. x 5.11 in.	NEMA 1
Ranco	O10-1410	25/75°F	3/20°F ADJ	Open LO	72 in.	3/8 in. x 4 in.	NEMA 1
Penn	A19ABA-4C ⁴	20/80°F	3.5/14°F ADJ	Open LO	72 in.	3/8 in. x 5.11 in.	NEMA 1
Ranco	O10-1416	0/55°F	3/20°F ADJ	Open LO	72 in.	3/8 in. x 4 in.	NEMA 1
Penn	A11B-1C	35/45°F	12°F FXD	Open LO	48 in.	240 in.	NEMA 1
Ranco	O10-1418	0/55°F	3/20°F ADJ	Open LO	None	Coiled	NEMA 1
Penn	A19BBA-1C ⁴	-30/50°F	5/20°F ADJ	Open LO	None	Coiled	NEMA 1
Ranco	O10-1473	0/55°F	7/55°F ADJ	Open LO	72 in.	3/8 in. x 4 in.	NEMA 1
Penn	A19ABA-1C ⁴	-30/50°F	5/20°F ADJ	Open LO	72 in.	3/8 in. x 5.11 in.	NEMA 1
Ranco	O10-1490	0/55°F	2°F FXD	Open LO	72 in.	3/8 in. x 4 in.	NEMA 1
Penn	A19ABA-1C ⁴	-30/50°F	5/20°F ADJ	Open LO	72 in.	3/8 in. x 5.11 in.	NEMA 1

- 1 May be extended up to 800 feet
- 2 Requires the C450YNN-1C. The C450CPW-400C does not include a temperature sensor. Select the A99BB-200C sensor for 72 in. leads.
- 3 24 VAC input voltage
- 4 Can use A421ABC-02C, -30/212°F range, 1/30°F differential, SPDT, 78 in. lead, 0.25 x 2 PTC sensor, NEMA 1



Ranco to PENN Cross Reference: Temperature Controls

Product	Product number	Range	Differential	Switch	Capillary	Bulb	Enclosure
Ranco	O10-1491	25/75°F	2°F FXD	Open LO	72 in.	3/8 in. x 4 in.	NEMA 1
Penn	A19ABA-4C ¹	20/80°F	3.5/14°F ADJ	Open LO	72 in.	3/8 in. x 5.11 in.	NEMA 1
Ranco	O10-1802	25/75°F	3/29°F ADJ	Open LO	None	Coiled	NEMA 1
Penn	A19BAC-1C ¹	30/110°F	3.5°F FXD	SPDT	None	Coiled	NEMA 1
Ranco	O10-301	30/95°F	2°F FXD	Open LO	None	Coiled	NEMA 1
Penn	A19BAA-5C ¹	30/110°F	3.5°F FXD	Open LO	None	Coiled	NEMA 1
Ranco	O16-104	0/55°F	3/20°F ADJ	SPDT	72 in.	3/8 in. x 4 in.	NEMA 1
Penn	A19ABC-24C ¹	-30/100°F	3/12°F ADJ	SPDT	96 in.	3/8 in. x 4 in.	NEMA 1
Ranco	O16-111	0/55°F	3/20°F ADJ	SPDT	72 in.	None	NEMA 1
Penn	A11E-6C	35/45°F	12°F FXD	SPDT	48 in.	240 in.	NEMA 1
Ranco	O16-165	30/90°F	2.5°F FXD	SPDT	None	Coiled	NEMA 1
Penn	A19BAC-1C ¹	30/110°F	3.5°F FXD	SPDT	None	Coiled	NEMA 1
Ranco	O16-263	0/55°F	Manual	SPDT	72 in.	3/8 in. x 4 in.	NEMA 1
Penn	A19ACC-6C	30/100°F	Manual	SPDT	72 in.	3/8 in. x 3.67 in.	NEMA 1
Penn	A70BA-17C ²	35/80°F	Manual	Open LO	72 in.	3/8 in. x 3 in.	NEMA 1
Ranco	O16-264	0/55°F	Manual	SPDT	96 in.	None	NEMA 1
Penn	A11D-1C	35/45°F	Manual	SPDT	48 in.	240 in.	NEMA 1
Penn	A70BA-18C ²	15/55°F	Manual	Open LO	None	240 in.	NEMA 1
Ranco	O16-588	-15/40°F	1.5°F FXD	SPDT	None	72 in.	NEMA 1
Penn	A11E-6C ¹	35/45°F	12°F FXD	SPDT	48 in.	240 in.	NEMA 1
Penn	A70AA-16C	15/55°F	5°F FXD	Open LO	None	240 in.	NEMA 1
Ranco	O16-594	0/55°F	2°F FXD	SPDT	None	Coiled	NEMA 1
Penn	A19BBC-2C ¹	-30/100°F	3/12°F ADJ	SPDT	None	Coiled	NEMA 1
Ranco	O16-595	50/130°F	3/20°F ADJ	SPDT	96 in.	3/8 in. x 6 in.	NEMA 1
Penn	A19ABC-4C ¹	50/130°F	3.5/14°F ADJ	SPDT	96 in.	3/8 in. x 5 in.	NEMA 1
Ranco	O16-601	22.5/47.5°F	2.5°F FXD	SPDT	36 in.	3/8 in. x 6 in.	NEMA 1
Penn	A19ABC-2C ¹	20/80°F	3.5/14°F ADJ	SPDT	72 in.	3/8 in. x 5 in.	NEMA 1
Penn	A70AA-15C ²	-10/65°F	10°F FXD	Open LO	72 in.	3/8 in. x 3 in.	NEMA 1
Ranco	O20-7041	0/100°F	6/20 ADJ	Double-pole, single-throw (DPST), Open LO	96 in.	3/8 in. x 6 in.	NEMA 1
Penn	A72AA-3C	50/90°F	ADJ	DPST, Open LO	72 in.	11/16 in. x 6-3/4 in.	NEMA 1
Penn	A72AA-2C	15/55°F	ADJ	DPST, Open LO	72 in.	3/8 in. x 3 in.	NEMA 1
Ranco	O52-6910	30/95°F	2°F FXD	SPDT	None	Coiled	NEMA 4X
Penn	A19PRC-1C	30/110°F	3/12°F ADJ	SPDT	None	Coiled	NEMA 4X
Ranco	O60-100	-35/95°F	4/50°F ADJ	SPDT	96 in.	3/8 in. x 6 in.	NEMA 1
Penn	A19ABC-24C ¹	-30/100°F	3/12°F ADJ	SPDT	96 in.	3/8 in. x 4 in.	NEMA 1
Ranco	O60-101	-35/95°F	4/50°F ADJ	SPDT	None	Coiled	NEMA 1
Penn	A19BBC-2C ¹	-30/100°F	3/12°F ADJ	SPDT	None	Coiled	NEMA 1
Ranco	O60-120	-35/95°F	4/50°F ADJ	SPDT	240 in.	3/8 in. x 6 in.	NEMA 1
Penn	A19ABC-36C ¹	-30/100°F	3/12°F ADJ	SPDT	240 in.	3/8 in. x 4 in.	NEMA 1
Ranco	O60-1072	-15/40°F	3/20°F ADJ	Open LO	None	Coiled	NEMA 1
Penn	A19BBA-1C ¹	-30/50°F	5/20°F ADJ	Open LO	None	Coiled	NEMA 1
Ranco	O60-200	95/240°F	6/50°F ADJ	SPDT	96 in.	3/8 in. x 6 in.	NEMA 1
Penn	A19ABC-12C ¹	100/240°F	6/24°F ADJ	SPDT	96 in.	9/32 in. x 2.5 in.	NEMA 1

- 1 Can use A421ABC-02C, -30/212°F range, 1/30°F differential, SPDT, 78 in. lead, 0.25 x 2 PTC sensor, NEMA 1
- 2 Different switch



Ranco to PENN Cross Reference: Defrost and Fan Delay Temperature Controls

Product	Product number	Range	Differential	Switch	Capillary	Bulb	Enclosure
Ranco	F25-107	40/75°F	20°F FXD	SPDT	60 in.	3/8 in. x 4 in.	Open
Penn	A19ZBC-2C ¹	45/85°F	25°F ADJ	SPDT	72 in.	3/10 in. x 3 1/8 in.	NEMA 1
Ranco	F25-114	43/73°F	24°F FXD	SPDT	60 in.	3/8 in. x 4 in.	Open
Penn	A19ZBC-2C ¹	45/85	25°F ADJ	SPDT	72 in.	3/10 in. x 3 1/8 in.	NEMA 1

1 Range is Defrost Termination for both

Ranco to PENN Cross Reference: Single Pressure Controls

Product	Product number	Range	Differential	Switch	Capillary	Connection	Enclosure
Ranco	3126-116	7/125 psig	25 psig FXD	SPDT	60 in.	Sweat	Open
Penn	P20EB-1C ¹	7/150 psig	29/32 psig FXD	SPDT	36 in.	Sweat	Open
Ranco	3126-117	7/27 psig	12 psig FXD	SPDT	60 in.	Sweat	Open
Penn	P70AB-2C ^{2,3}	20 in./100 psig	7/50 psig ADJ	Open LO	36 in.	w/ Flare nut	NEMA 1
Ranco	3126-216	7/125 psig	Manual	Open LO	60 in.	Sweat	Open
Penn	P70BA-1C ^{2,3}	20 in./100 psig	Manual	Open LO	36 in.	w/ Flare nut	NEMA 1
Ranco	3126-412	7/77 psig	23/70 psig	SPDT	60 in.	Sweat	Open
Penn	P20EB-1C ¹	7/150 psig	29/32 psig FXD	SPDT	36 in.	Sweat	Open
Ranco	3127-140	125/450 psig	70 psig FXD	Open HI	60 in.	Sweat	Open
Penn	P20EB-2C ¹	100/425 psig	60/77 psig FXD	SPDT	36 in.	Sweat	Open
Ranco	3127-220	125/450 psig	Manual	SPDT	60 in.	Sweat	Open
Penn	P70DA-1C ^{2,3}	50/450 psig	Manual	Open HI	36 in.	w/ Flare nut	NEMA 1
Ranco	3127-414	150/450 psig	70/125 psig	SPDT	60 in.	Sweat	Open
Penn	P20EB-2C ¹	100/425 psig	60/77 psig FXD	SPDT	36 in.	Sweat	Open
Ranco	3160-012	5/110 psig	25 psig FXD	SPDT	60 in.	Sweat	Open
Penn	P20EB-1C ¹	7/150 psig	29/32 psig FXD	SPDT	36 in.	Sweat	Open
Ranco	3160-014	5/125 psig	25 psig FXD	Open LO	60 in.	Sweat	Open
Penn	P20EB-1C ¹	7/150 psig	29/32 psig FXD	SPDT	36 in.	Sweat	Open
Ranco	3160-212	5/110 psig	Manual	Open LO	60 in.	Sweat	Open
Penn	P70BA-1C ^{2,3}	20 in./100 psig	Manual	Open LO	36 in.	w/ Flare nut	NEMA 1
Ranco	3160-406	5/125 psig	12/50 psig	SPDT	60	Sweat	Open
Penn	P20EB-1C ¹	7/150 psig	29/32 psig FXD	SPDT	36 in.	Sweat	Open
Ranco	3161-002	200/475 psig	75 psig FXD	Open HI	60 in.	Sweat	Open
Penn	P20EB-2C ¹	100/425 psig	60/77 psig FXD	SPDT	36 in.	Sweat	Open
Ranco	3161-003	200/475 psig	110 psig FXD	Open HI	60 in.	Sweat	Open
Penn	P20EB-2C ¹	100/425 psig	60/77 psig FXD	SPDT	36 in.	Sweat	Open

- 1 Differential depends on setting
- 2 Different pressure element.
- 3 Not as compact



Ranco to PENN Cross Reference: Single Pressure Controls

Product	Product number	Range	Differential	Switch	Capillary	Connection	Enclosure
Ranco	3161-004	200/475 psig	50 psig FXD	Open HI	60 in.	Sweat	Open
Penn	P20EB-2C ³	100/425 psig	60/77 psig FXD	SPDT	36 in.	Sweat	Open
Ranco	3161-009	125/285 psig	50 psig FXD	SPDT	60 in.	Sweat	Open
Penn	P20EB-2C ³	100/425 psig	60/77 psig FXD	SPDT	36 in.	Sweat	Open
Ranco	3161-201	200/475 psig	Manual	SPDT	60 in.	Sweat	Open
Penn	P70DA-1C ^{1,2}	50/450 psig	Manual	Open HI	36 in.	w/ Flare nut	NEMA 1
Ranco	3161-205	125/285 psig	Manual	Open HI	60 in.	w/ Flare nut	Open
Penn	P70DA-1C ¹	50/450 psig	Manual	Open HI	36 in.	w/ Flare nut	NEMA 1
Ranco	3161-403	200/475 psig	50/150 psig	SPDT	60 in.	Sweat	Open
Penn	P20EB-2C ³	100/425 psig	60/77 psig FXD	SPDT	36 in.	Sweat	Open
Ranco	G20-4050	7/27 psig	12 psig FXD	Open LO	60 in.	Sweat	Open
Penn	P70AB-2C ^{1,2}	20 in./100 psig	7/50 psig ADJ	Open LO	36 in.	w/ Flare nut	NEMA 1
Ranco	G20-4051	7/77 psig	19/70 psig	Open LO	60 in.	Sweat	Open
Penn	P20EB-1C ³	7/150 psig	29/32 psig FXD	SPDT	36 in.	Sweat	Open
Ranco	G20-4412	7/70 psig	Manual	Open LO	60 in.	Sweat	Open
Penn	P70BA-1C ^{1,2}	20 in./100 psig	Manual	Open LO	36 in.	w/ Flare nut	NEMA 1
Ranco	G23-5052	150/450 psig	50/125 psig	Open HI	60 in.	Sweat	Open
Penn	P20EB-2C ³	100/425 psig	60/77 psig FXD	SPDT	36 in.	Sweat	Open
Ranco	G23-5253	50/450 psig	Manual	Open HI	60 in.	Sweat	Open
Penn	P70DA-1C ^{1,2}	50/450 psig	Manual	Open HI	36 in.	w/ Flare nut	NEMA 1
Ranco	O10-1093	10 in./100 psig	10/40 psig	Open LO	48 in.	w/ Flare nut	NEMA 1
Penn	P70AB-2C	20 in./100 psig	7/50 psig	Open LO	36 in.	w/ Flare nut	NEMA 1
Ranco	O10-1401	12 in./50 psig	5/35 psig	Open LO	None	External Flare	NEMA 1
Penn	P170AB-12C	12 in./80 psig	5/35 psig	Open LO	None	External Flare	NEMA 1
Ranco	O10-1402	12 in./50 psig	5/35 psig	Open LO	36 in.	w/ Flare nut	NEMA 1
Penn	P70AB-12C	12 in./80 psig	5/35 psig	Open LO	36 in.	w/ Flare nut	NEMA 1
Ranco	O10-1483	10 in./100 psig	10/40 psig	Open LO	36 in.	w/ Flare nut	NEMA 1
Penn	P70AB-2C	20 in./100 psig	7/50 psig	Open LO	36 in.	w/ Flare nut	NEMA 1
Ranco	O10-1807	100/250 psig	20/100 psig	Open LO	None	External Flare	NEMA 1
Penn	P70AA-151C	50/300 psig	20/120 psig	Open LO	None	External Flare	NEMA 1
Ranco	O10-1831	10 in./100 psig	10/40 psig	Open LO	None	External Flare	NEMA 1
Penn	P70AB-12C	12 in./80 psig	5/35 psig	Open LO	36 in.	w/ Flare nut	NEMA 1
Ranco	O10-1842	12 in./50 psig	5/35 psig	Open LO	48 in.	w/ Flare nut	NEMA 1
Penn	P70AB-12C	12 in./80 psig	5/35 psig	Open LO	36 in.	w/ Flare nut	NEMA 1
Ranco	O10-2000	100/250 psig	20/100 psig	Open LO	48 in.	w/ Flare nut	NEMA 1
Penn	P70AA-3C	100/300 psig	25/75 psig	Open LO	36 in.	w/ Flare nut	NEMA 1
Ranco	O10-2054	100/400 psig	40/150 psig	Open LO	36 in.	w/ Flare nut	NEMA 1
Penn	P70AA-118C	100/400 psig	35/200 psig	Open LO	36 in.	w/ Flare nut	NEMA 1
Ranco	O11-1711	150/450 psig	40/150 psig	Open HI	36 in.	w/ Flare nut	NEMA 1
Penn	P70CA-3C	50/450 psig	60/150 psig	Open HI	36 in.	w/ Flare nut	NEMA 1
Ranco	O11-1713	150/450 psig	40/150 psig	Open HI	None	External Flare	NEMA 1
Penn	P70CA-2C	50/450 psig	60/150 psig	Open HI	None	External Flare	NEMA 1

- 1 Not as compact
- 2 Different pressure element
- 3 Differential depends on setting



Ranco to PENN Cross Reference: Single Pressure Controls

Product	Product number	Range	Differential	Switch	Capillary	Connection	Enclosure
Ranco	O11-1799	10 in./100 psig	10/40 psig	Open HI	None	External Flare	NEMA 1
Penn	P170CA-1C	20 in./100 psig	6/70 psig	Open HI	None	External Flare	NEMA 1
Ranco	O11-3099	10 in./100 psig	10/40 psig	Open HI	36 in.	w/ Flare nut	NEMA 1
Penn	P70CA-1C	20 in./100 psig	6/70 psig	Open HI	36 in.	w/ Flare nut	NEMA 1
Ranco	O16-107	10 in./100 psig	10/40 psig ADJ	SPDT	None	External Flare	NEMA 1
Penn	P70EA-10C	20 in./100 psig	5 psig FXD	SPDT	None	External Flare	NEMA 1
Ranco	O16-108	100/400 psig	40/150 psig	SPDT	36 in.	w/ Flare nut	NEMA 1
Penn	P77AAA-15500	44/435 psig	44/174 psig	SPDT	36 in.	w/ Flare nut	NEMA 3R
Ranco	O16-120	12 in./50 psig	5/35 psig ADJ	SPDT	None	External Flare	NEMA 1
Penn	P70EA-10C	20 in./100 psig	5 psig FXD	SPDT	None	External Flare	NEMA 1
Ranco	O16-142	100/400 psig	17 psig FXD	SPDT	36 in.	w/ Flare nut	NEMA 1
Penn	P70EA-6C ³	100/300 psig	14 psig FXD	SPDT	36 in.	Sweat	NEMA 1
Ranco	O16-166	50/150 psig	10/40 psig	SPDT	36 in.	w/ Flare nut	NEMA 1
Penn	P70GA-2C ¹	20 in./100 psig	7/50 psig	NO/NC	36 in.	w/ Flare nut	NEMA 1
Ranco	O16-200	150/450 psig	Manual	SPDT	48 in.	w/ Flare nut	NEMA 1
Penn	P70KA-1C ¹	50/450 psig	Manual	NO/NC	36 in.	w/ Flare nut	NEMA 1
Ranco	O16-209	150/450 psig	Manual	SPDT	None	External Flare	NEMA 1
Penn	P170KA-1C ¹	50/450 psig	Manual	NO/NC	None	External Flare	NEMA 1
Ranco	O16-261	10 in./100 psig	Manual	SPDT	48 in.	w/ Flare nut	NEMA 1
Penn	P70HA-2C ¹	20 in./100 psig	Manual	NO/NC	36 in.	w/ Flare nut	NEMA 1
Ranco	O16-503	150/450 psig	40/150 psig	SPDT	None	External Flare	NEMA 1
Penn	P70JA-18C ¹	50/450 psig	60/150 psig	NO/NC	None	External Flare	NEMA 1
Ranco	O16-527	10 in./100 psig	10/40 psig ADJ	SPDT	36 in.	w/ Flare nut	NEMA 1
Penn	P70EA-10C ²	20 in./100 psig	5 psig FXD	SPDT	None	External Flare	NEMA 1
Ranco	O16-557	12 in./50 psig	5/35 psig ADJ	SPDT	36 in.	w/ Flare nut	NEMA 1
Penn	P70EA-10C ²	20 in./100 psig	5 psig FXD	SPDT	None	External Flare	NEMA 1
Ranco	O16-585	10 in./100 psig	Manual	SPDT	None	External Flare	NEMA 1
Penn	P70HA-3C ^{1,3}	20 in./100 psig	Manual	NO/NC	None	Internal NPT	NEMA 1
Ranco	O20-1894	100/400 psig	40/150 psig	Open LO	None	External Flare	NEMA 1
Penn	P170AA-118C	100/400 psig	35/200 psig	Open LO	None	External Flare	NEMA 1
Ranco	O20-7002	12 in./50 psig	5/35 psig	DPST-LO	36 in.	w/ Flare nut	NEMA 1
Penn	P72AA-1C	20 in./100 psig	7/50 psig	DPST-LO	36 in.	w/ Flare nut	NEMA 1
Ranco	O20-7006	100/400 psig	40/150 psig	DPST-LO	36 in.	w/ Flare nut	NEMA 1
Penn	P72AA-27C	100/400 psig	35/200 psig	DPST-LO	36 in.	w/ Flare nut	NEMA 1

- 1 Different switch.
- 2 Add SEC99A UltraCap armored capillary
- 3 Different pressure element



Ranco to PENN Cross Reference: Single Pressure Controls

Product	Product number	Cut-Out	Cut-In	Range	Switch	Electrical	Pressure
Ranco	3100-001	15 psig	40 psig	None	Single-pole, single-throw (SPST)	30 in. Leads	1/4 in. Sweat
Penn	P100AA-1C	10 psig	40 psig	None	SPST	48 in. Leads	1/4 in. Internal Flare
Ranco	3100-002	5 psig	30 psig	None	SPST	72 in. Leads	1/4 in. Internal Flare
Penn	P20EB-1C ^{1,2,3,4,5}	ADJ.	N/A	7/150 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	3100-003	20 psig	45 psig	None	SPST	72 in. Leads	1/4 in. Internal Flare
Penn	P20EB-1C ^{1,2,3,4,5}	ADJ.	N/A	7/150 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	3100-004	35 psig	60 psig	None	SPST	QC	1/4 in. Internal Flare
Penn	P100AA-2C ⁵	35 psig	60 psig	None	SPST	48 in. Leads	1/4 in. Internal Flare
Ranco	3100-005	15 in. VAC	17.5 psig	None	SPDT	QC	1/4 in. Internal Flare
Penn	P70AB-1C ^{1,2,4,5}	ADJ.	N/A	20 in./100 psig	SPST	Screw Terms.	1/4 in. External Flare
Ranco	3100-006	48 psig	80 psig	None	SPDT	36 in. Leads	1/4 in. Sweat
Penn	P20EB-1C ^{1,2,3,4,5}	ADJ.	N/A	7/150 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	3100-007	15 psig	40 psig	None	SPST	30 in. Leads	1/4 in. Internal Flare
Penn	P100AA-1C	10 psig	40 psig	None	SPST	48 in. Leads	1/4 in. Internal Flare
Ranco	3100-009	0 psig	20 psig	None	SPST	QC	1/4 in. Internal Flare
Penn	P70AB-1C ^{1,2,4,5}	ADJ.	N/A	20 in./100 psig	SPST	Screw Terms.	1/4 in. External Flare
Ranco	3100-010	45 psig	70 psig	None	SPDT	QC	1/4 in. Internal Flare
Penn	P20EB-1C ^{1,2,3,4}	ADJ.	N/A	7/150 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	3100-050	10 psig	30 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P100AA-1C	10 psig	40 psig	None	SPST	48 in. Leads	1/4 in. Internal Flare
Ranco	3100-051	25 psig	80 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P20EB-1C ^{1,2,3,4,5}	ADJ.	N/A	7/150 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	3100-052	40 psig	80 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P100AA-2C	35 psig	60 psig	None	SPST	48 in. Leads	1/4 in. Internal Flare
Ranco	3100-075	85 psig	135 psig	None	SPDT	QC	1/4 in. Internal Flare
Penn	P70AA-119C ^{2,4,5,6}	ADJ.	N/A	50/300 psig	SPST	Screw Terms.	1/4 in. Internal Flare
Ranco	3100-076	108 psig	135 psig	None	SPST	QC	1/4 in. Internal Flare
Penn	P20EB-1C ^{1,2,3,4,6}	ADJ.	N/A	7/150 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	3100-077	115 psig	165 psig	None	SPST	QC	1/4 in. Internal Flare
Penn	P170AA-118C ^{1,2,4,5}	ADJ.	N/A	100/400 psig	SPST	Screw Terms.	1/4 in. External Flare
Ranco	3100-078	135 psig	185 psig	None	SPDT	QC	1/4 in. Internal Flare
Penn	P170AA-118C ^{1,2,4,5,6}	ADJ.	N/A	100/400 psig	SPST	Screw Terms.	1/4 in. External Flare
Ranco	3100-079	165 psig	215 psig	None	SPST	QC	1/4 in. Internal Flare
Penn	P100AA-4C ⁵	170 psig	250 psig	None	SPST	48 in. Leads	1/4 in. Internal Flare
Ranco	3100-080	200 psig	240 psig	None	SPDT	QC	1/4 in. Internal Flare
Penn	P170AA-118C ^{1,2,4,5,6}	ADJ.	N/A	100/400 psig	SPST	Screw Terms.	1/4 in. External Flare
Ranco	3100-081	250 psig	300 psig	None	SPDT	QC	1/4 in. Internal Flare
Penn	P170AA-118C ^{1,2,4,5,6}	ADJ.	N/A	100/400 psig	SPST	Screw Terms.	1/4 in. External Flare

- 1 Different pressure element
- 2 Not as compact
- 3 Differential depends on setting
- 4 Not an encapsulated switch as Ranco's is
- 5 Different electrical connection
- 6 Different switch



Ranco to PENN Cross Reference: Single Pressure Controls

Product	Product number	Cut-Out	Cut-In	Range	Switch	Electrical	Pressure
Ranco	3100-100	425 psig	325 psig	None	SPST	72 in. Leads	1/4 in. Internal Flare
Penn	P100CA-2C	425 psig	325 psig	None	SPST	48 in. Leads	1/4 in. Internal Flar
Ranco	3100-101	400 psig	300 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P100CA-1C	400 psig	300 psig	None	SPST	48 in. Leads	1/4 in. Internal Flare
Ranco	3100-102	220 psig	170 psig	None	SPST	QC	1/4 in. Internal Flare
Penn	P100CA-2C ¹	425 psig	325 psig	None	SPST	48 in. Leads	1/4 in. Internal Flare
Ranco	3100-103	410 psig	Manual	None	SPST	42 in. Leads	1/4 in. Internal Flare
Penn	P100DA-1C	410 psig	Manual	None	SPST	48 in. Leads	1/4 in. Internal Flare
Ranco	3100-104	420 psig	Manual	None	SPST	48 in. Leads	1/4 in. Internal Flare
Penn	P70DA-1C ^{1,2,3,4}	ADJ.	Manual	50/450 psig	SPST	Screw Terms.	36 in. Cap, Flare
Ranco	3100-105	440 psig	Manual	None	SPST	36 in. Leads	.093 Cap. Tube
Penn	P70DA-1C ^{1,2,3,4}	ADJ.	Manual	50/450 psig	SPST	Screw Terms.	36 in. Cap, Flare
Ranco	3100-106	475 psig	Manual	None	SPST	42 in. Leads	1/4 in. Sweat w/ Cap.
Penn	P100DA-2C ²	475 psig	Manual	None	SPST	48 in. Leads	1/4 in. Internal Flare
Ranco	3100-107	232 psig	Manual	None	SPST	84 in. Leads	1/4 in. Internal Flare
Penn	P70DA-1C ^{1,2,3,4}	ADJ.	Manual	50/450 psig	SPST	Screw Terms.	36 in. Cap, Flare
Ranco	3100-108	280 psig	Manual	None	SPST	12 in. Leads	1/4 in. NPTF
Penn	P20EB-2C ^{1,2,3,4,5}	ADJ.	N/A	100/425 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	3100-110	375 psig	275 psig	None	SPDT	QC	1/4 in. Sweat
Penn	P20EB-2C ^{1,2,3,4,5}	ADJ.	N/A	100/425 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	3100-111	375 psig	275 psig	None	SPST	QC	1/4 in. Internal Flare
Penn	P20EB-2C ^{1,2,3,4,5}	ADJ.	N/A	100/425 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	3100-112	275 psig	175 psig	None	SPST	24 in. Leads	1/4 in. Internal Flare
Penn	P20EB-2C ^{1,2,3,4,5}	ADJ.	N/A	100/425 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	3100-113	395 psig	295 psig	None	SPST	QC	1/4 in. Sweat
Penn	P20EB-2C ^{1,2,3,4,5}	ADJ.	N/A	100/425 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	3100-115	350 psig	250 psig	None	SPDT	36 in. Leads	1/4 in. Sweat
Penn	P20EB-2C ^{1,2,3,4,5}	ADJ.	N/A	100/425 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	3100-116	213 psig	113 psig	None	SPST	QC	1/4 in. Internal Flare
Penn	P20EB-2C ^{1,2,3,4,5}	ADJ.	N/A	100/425 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	3100-117	140 psig	190 psig	None	SPST	12 in. Leads	.093 Cap. Tube
Penn	P20EB-2C ^{1,2,3,4,5}	ADJ.	N/A	100/425 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	3100-118	295 psig	395 psig	None	SPST	QC	1/4 in. Internal Flare
Penn	P20EB-2C ^{1,2,3,4,5}	ADJ.	N/A	100/425 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	3100-120	420 psig	320 psig	None	SPST	QC	1/4 in. Internal Flare
Penn	P20EB-2C ^{1,2,3,4,5}	ADJ.	N/A	100/425 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	3100-121	426 psig	272 psig	None	SPST	QC	1/4 in. Sweat
Penn	P20EB-2C ^{1,2,3,4,5}	ADJ.	N/A	100/425 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	3100-150	350 psig	250 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P20EB-2C ^{1,2,3,4,5}	ADJ.	N/A	100/425 psig	SPDT	Arkles	36 in. Cap, Sweat

- 1 Different electrical connection
- 2 Different pressure element
- 3 Not as compact
- 4 Not an encapsulated switch as Ranco's is
- 5 Differential depends on setting



Ranco to PENN Cross Reference: Single Pressure Controls

Product	Product number	Cut-Out	Cut-In	Range	Switch	Electrical	Pressure
Ranco	3100-151	400 psig	300 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P100CA-1C	400 psig	300 psig	None	SPST	48 in. Leads	1/4 in. Internal Flare
Ranco	3100-152	400 psig	200 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P100CA-1C	400 psig	300 psig	None	SPST	48 in. Leads	1/4 in. Internal Flare
Ranco	3100-153	450 psig	250 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P20EB-2C ^{1,4,5,6}	ADJ.	N/A	100/425 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	3100-154	500 psig	400 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P70LB-1C ^{2,3,1,4,5}	ADJ.	N/A	100/500 psig	SPST	Screw Terms.	36 in. Cap, Flare
Ranco	3100-155	500 psig	300 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P70LB-1C ^{2,3,1,4,5}	ADJ.	N/A	100/500 psig	SPST	Screw Terms.	36 in. Cap, Flare
Ranco	MPF-7006	75 psig	120 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P20EB-1C ^{4,5,6}	ADJ.	N/A	7/150 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	MPF-7007	110 psig	170 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P20EB-1C ^{4,5,6}	ADJ.	N/A	7/150 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	MPF-7008	150 psig	225 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P100AA-3C	150 psig	225 psig	None	SPST	48 in. Leads	1/4 in. External Flare
Ranco	MPF-7009	190 psig	275 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P20EB-2C ^{4,5,6}	ADJ.	N/A	100/425 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	MPF-7010	300 psig	400 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P20EB-2C ^{4,5,6}	ADJ.	N/A	100/425 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	MPH-7101	250 psig	180 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P20EB-2C ^{4,5,6}	ADJ.	N/A	100/425 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	MPH-7102	270 psig	200 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P20EB-2C ^{4,5,6}	ADJ.	N/A	100/425 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	MPH-7103	300 psig	200 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P20EB-2C ^{4,5,6}	ADJ.	N/A	100/425 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	MPH-7104	325 psig	225 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P20EB-2C ^{4,5,6}	ADJ.	N/A	100/425 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	MPH-7105	350 psig	250 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P20EB-2C ^{4,5,6}	ADJ.	N/A	100/425 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	MPH-7106	375 psig	275 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P20EB-2C ^{4,5,6}	ADJ.	N/A	100/425 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	MPH-7107	400 psig	300 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P100CA-1C	400 psig	300 psig	None	SPST	48 in. Leads	1/4 in. External Flare
Ranco	MPH-7108	425 psig	325 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P100CA-2C	425 psig	325 psig	None	SPST	48 in. Leads	1/4 in. External Flare
Ranco	MPL-7001	5 psig	20 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P100AC-1C	5 psig	20 psig	None	SPST	48 in. Leads	1/4 in. External Flare
Ranco	MPL-7002	15 psig	35 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P100AA-1C	10 psig	40 psig	None	SPST	48 in. Leads	1/4 in. External Flare
Ranco	MPL-7003	25 psig	80 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P20EB-1C ^{4,5,6}	ADJ.	N/A	7/150 psig	SPDT	Arkles	36 in. Cap, Sweat

- 1 Not as compact
- 2 Different pressure element
- 3 Dual control, ignore low side
- 4 Not an encapsulated switch as Ranco's is
- 5 Different electrical connection
- 6 Differential depends on setting



Ranco to PENN Cross Reference: Single Pressure Controls

Product	Product number	Cut-Out	Cut-In	Range	Switch	Electrical	Pressure
Ranco	MPL-7004	35 psig	60 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P100AA-2C	35 psig	60 psig	None	SPST	48 in. Leads	1/4 in. External Flare
Ranco	MPL-7005	45 psig	60 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P20EB-1C ^{1,2,3}	ADJ.	N/A	7/150 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	MPL-7011	10 psig	25 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P20EB-1C ^{1,2,3}	ADJ.	N/A	7/150 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	MPL-7012	20 psig	45 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P20EB-1C ^{1,2,3}	ADJ.	N/A	7/150 psig	SPDT	Arkles	36 in. Cap, Sweat
Ranco	MPL-7014	40 psig	80 psig	None	SPST	18 in. Leads	1/4 in. Internal Flare
Penn	P20EB-1C ^{1,2,3}	ADJ.	N/A	7/150 psig	SPDT	Arkles	36 in. Cap, Sweat

- 1 Not an encapsulated switch as Ranco's is
- 2 Different electrical connection
- 3 Differential depends on setting



Ranco to PENN Cross Reference: Dual Pressure Controls

Product	Product number	LO Side	Differential	HI Side	Differential	Capillary	Connection
Ranco	O12-1502	12 in./50 psig	5/35 psig	150/450 psig	70 psig FXD	36 in.	W/ Flare nut
Penn	P70LB-6C	12 in./80 psig	5/35 psig	100/500 psig	60 psig FXD	36 in.	W/ Flare nut
Ranco	O12-1505	12 in./50 psig	5/35 psig	100/250 psig	50 psig FXD	None	External Flare
Penn	P170LB-6C	12 in./80 psig	5/35 psig	100/500 psig	60 psig FXD	None	External Flare
Ranco	O12-1506	12 in./50 psig	5/35 psig	100/250 psig	50 psig FXD	36 in.	W/ Flare nut
Penn	P70LB-6C	12 in./80 psig	5/35 psig	100/500 psig	60 psig FXD	36 in.	W/ Flare nut
Ranco	O12-1549	10 in./100 psig	10/40 psig	150/450 psig	70 psig FXD	36 in.	W/ Flare nut
Penn	P70LB-1C	20 in./100 psig	7/50 psig	100/500 psig	60 psig FXD	36 in.	W/ Flare nut
Ranco	O12-1550	10 in./100 psig	10/40 psig	150/450 psig	70 psig FXD	None	External Flare
Penn	P170LB-1C	20 in./100 psig	7/50 psig	100/500 psig	60 psig FXD	None	External Flare
Ranco	O12-1554	12 in./50 psig	5/35 psig	100/250 psig	50 psig FXD	48 in.	W/ Flare nut
Penn	P70LB-6C	12 in./80 psig	5/35 psig	100/500 psig	60 psig FXD	36 in.	W/ Flare nut
Ranco	O12-1594	10 in./100 psig	Manual	150/450 psig	Manual	36 in.	W/ Flare nut
Penn	P70NA-1C	20 in./100 psig	Manual	100/500 psig	Manual	36 in.	W/ Flare nut
Ranco	O12-4139	12 in./50 psig	5/35 psig	150/450 psig	70 psig FXD	None	External Flare
Penn	P170LB-6C	12 in./80 psig	5/35 psig	100/500 psig	60 psig FXD	None	External Flare
Ranco	O12-4833	12 in./50 psig	5/35 psig	150/450 psig	70 psig FXD/Man	48 in.	W/ Flare nut
Penn	P70SA-1C	12 in./80 psig	5/35 psig	100/500 psig	60 FXD	36 in.	W/ Flare nut
Ranco	O12-4834	10 in./100 psig	10/40 psig	150/450 psig	70 psig FXD/Man	48 in.	W/ Flare nut
Penn	P70SA-1C	12 in./80 psig	5/35 psig	100/500 psig	60 psig FXD	36 in.	W/ Flare nut
Ranco	O12-4842	12 in./50 psig	5/35 psig	150/450 psig	70 FXD/Man	None	External Flare
Penn	P170SA-1C	12 in./80 psig	5/35 psig	100/500 psig	55 psig FXD	None	External Flare
Ranco	O12-4846	10 in./100 psig	10/40 psig	150/450 psig	70 psig FXD/Man	None	External Flare
Penn	P170SA-1C	12 in./80 psig	5/35 psig	100/500 psig	55 psig FXD	None	External Flare
Ranco	O12-4848	10 in./100 psig	10/40 psig	150/450 psig	70 psig FXD/Manual	None	External Flares
Penn	P170SA-1C	12 in./80 psig	5/35 psig	100/500 psig	55 psig FXD	None	External Flares
Ranco	O22-7702	12 in./50 psig	5/35 psig	100/250 psig	50 psig FXD/Man	36 in.	W/ Flare nut
Penn	P72LB-1C ¹	20 in./100 psig	7/50 psig	100/500 psig	60 psig FXD	36 in.	W/ Flare nut
Ranco	O22-7706	10 in./100 psig	10/40 psig	150/450 psig	70 psig FXD	36 in.	W/ Flare nut
Penn	P72LB-1C ¹	20 in./100 psig	7/50 psig	100/500 psig	60 psig FXD	36 in.	W/ Flare nut

1 Convertible

Ranco to PENN Cross Reference: Low Pressure Cutout with Time Delay

Product	Product number	Range	Differential	Time Delay	Capillary	Connection	Enclosure
Ranco	3341-161	0/100 psig	5 psig FXD	120 Secs.	36 in.	W/ Flare nut	NEMA 1
Penn	P29NC-38C	20 in./100 psig	2.2 psig FXD	120 Secs.	36 in.	W/ Flare nut	NEMA 1



Ranco to PENN Cross Reference: Lube Oil Pressure Controls

Product	Product number	Range	Reset	Delay	Capillary	Connection	Enclosure
Ranco	3321-001	9 psig FXD	Manual	45, 60, 90, 120	None	External Flare	NEMA 1
Penn	P128AA-**C ¹	8/70 psig ADJ	Manual	See Table 376	None	External Flare	NEMA 1
Ranco	3321-009	5 psig FXD	Manual	45, 60, 90, 120	36 in.	W/ Flare nut	NEMA 1
Penn	P28AA-**C ¹	8/70 psig ADJ	Manual	See Table 376	36 in.	W/ Flare nut	NEMA 1
Ranco	3321-010	9 psig FXD	Manual	45, 60, 90, 120	36 in.	W/ Flare nut	NEMA 1
Penn	P28AA-**C ¹	8/70 psig ADJ	Manual	See Table 376	36 in.	W/ Flare nut	NEMA 1
Ranco	3321-014	15 psig FXD	Manual	45, 60, 90, 120	36 in.	W/ Flare nut	NEMA 1
Penn	P28AA-**C ¹	8/70 psig ADJ	Manual	See Table 376	36 in.	W/ Flare nut	NEMA 1
Ranco	3321-015	30 psig FXD	Manual	45, 60, 90, 120	36 in.	W/ Flare nut	NEMA 1
Penn	P28AA-**C ¹	8/70 psig ADJ	Manual	See Table 376	36 in.	W/ Flare nut	NEMA 1
Ranco	P30-3601	8/60 psig ADJ	Manual	60	36 in.	W/ Flare nut	NEMA 1
Penn	P28AA-2C	8/70 psig ADJ	Manual	60	36 in.	W/ Flare nut	NEMA 1
Ranco	P30-3701	8/60 psig ADJ	Manual	90	36 in.	W/ Flare nut	NEMA 1
Penn	P28AA-1C	8/70 psig ADJ	Manual	90	36 in.	W/ Flare nut	NEMA 1
Ranco	P30-3801	8/60 psig ADJ	Manual	120	36 in.	W/ Flare nut	NEMA 1
Penn	P28AA-17C	8/70 psig ADJ	Manual	120	36 in.	W/ Flare nut	NEMA 1
Ranco	P30-5826	9 psig FXD	Manual	120	36 in.	W/ Flare nut	NEMA 1
Penn	P45NCA-12C	9 psig FXD	Manual	120	36 in.	W/ Flare nut	NEMA 1
Ranco	P30-5827	9 psig FXD	Manual	120	None	External Flare	NEMA 1
Penn	P145NCA-12C	9 psig FXD	Manual	120	None	External Flare	NEMA 1

1 See Table 376.

Ranco to PENN Cross Reference: Lube Oil Pressure Controls without Time Delay

Product	Product number	Range	Differential	Cut-In	Switch	Capillary	Connection
Ranco	3311-101	14 psig FXD	5 psig FXD	9 psig FXD	SPDT	36 in.	1/4 in. Internal Flares
Penn	P74AA-1C ¹	8/70 psig ADJ	8/30 psig ADJ	ADJ	Open Hi	36 in.	1/4 in. Internal Flares
Ranco	3311-103	4/6 psig ADJ	5/6 psig	9/12 psig	SPDT	24 in.	W/1/4 in. Sweats
Penn	P74EA-8C ²	2/26 psig ADJ	3.5 psig FXD	N/A	SPDT	36 in.	1/4 in. Internal Flares
Ranco	3311-111	4/6 psig FXD	5/6 psig	9/12 psig	SPDT	84 in.	1/4 in. Internal Flares
Penn	P74EA-8C	2/26 psig ADJ	3.5 psig FXD	N/A	SPDT	36 in.	1/4 in. Internal Flares
Ranco	3311-115	6 psig FXD	5 psig FXD	11 psig FXD	Open LO	24 in.	1/4 in. Internal Flares
Penn	P74BA-1C	8/70 psig ADJ	7/30 psig ADJ	ADJ	Open LO	36 in.	1/4 in. Internal Flares
Ranco	3311-118	40 psig FXD	5 psig FXD	45 psig FXD	Open LO	25 in. and 24 in.	W/1/4 in. Sweats
Penn	P74BA-1C ²	8/70 psig ADJ	7/30 psig ADJ	ADJ	Open LO	36 in.	1/4 in. Internal Flares
Ranco	3311-201	7 psig FXD	Manual	Manual	SPDT	49 in. and 72 in.	W/1/4 in. Sweats
Penn	P74AB-1C ^{1,2}	8/70 psig ADJ	Manual	Manual	Open Hi	None	1/4 in. Internal NPT
Ranco	3315-101	14 psig FXD	5 psig FXD	9 psig FXD	SPDT	36 in.	1/4 in. Internal Flares
Penn	P74AA-1C ¹	8/70 psig ADJ	8/30 psig ADJ	ADJ	Open Hi	36 in.	1/4 in. Internal Flares
Ranco	3315-801	11/14 psig ADJ	5 psig FXD	16/19 psig	SPDT	None	External Flares
Penn	P74BA-1C ^{1,2}	8/70 psig ADJ	7/30 psig ADJ	ADJ	Open LO	36 in.	1/4 in. Internal Flares

1 Different switch type

2 Different pressure element



Ranco to PENN Cross Reference: Transformers

Product	Product number	VA	Prim. Volt.	Prim. Lead	Sec. Volt.	Sec. Lead	Mounting
Ranco	620-205	20	120	8 in. Leads	24	8 in. Leads	Foot
Penn	Y65A13-0	40	120	8 in. Leads	24	30 in. Leads	Foot w/ Hubs
Ranco	620-206	20	208/240	8 in. Leads	24	8 in. Leads	Foot
Penn	Y65T31-0 ¹	40	120/208/240	8 in. Leads	24	3 Terminals	Universal
Ranco	620-403	40	120	8 in. Leads	24	8 in. Leads	Universal
Penn	Y65T31-0 ¹	40	120/208/240	8 in. Leads	24	3 Terminals	Universal
Ranco	620-404	40	208/240	8 in. Leads	24	8 in. Leads	Universal
Penn	Y65T31-0 ¹	40	120/208/240	8 in. Leads	24	3 Terminals	Universal
Ranco	620-405	40	120	8 in. Leads	24	8 in. Leads	Foot
Penn	Y65A13-0	40	120	8 in. Leads	24	30 in. Leads	Foot w/ Hubs
Ranco	620-406	40	208/240	8 in. Leads	24	8 in. Leads	Foot
Penn	Y65T31-0 ¹	40	120/208/240	8 in. Leads	24	3 Terminals	Universal
Ranco	620-482	40	120/208/240	8 in. Leads	24	8 in. Leads	Foot
Penn	Y65A13-0 ²	40	120	8 in. Leads	24	30 in. Leads	Foot w/ Hubs
Penn	Y65T31-0	40	120/208/240	8 in. Leads	24	3 Terminals	Universal
Ranco	620-502	50	120/208/240	8 in. Leads	24	8 in. Leads	Universal
Penn	Y63T22-0 ²	50	120/208/240	8 in. Leads	24	8 in. Leads	Universal
Ranco	620-752	75	120/208/240	8 in. Leads	24	8 in. Leads	Foot
Penn	Y66T12-0 ²	75	120/208/240	8 in. Leads	24	8 in. Leads	Foot
Ranco	620-758	75	480	8 in. Leads	24	8 in. Leads	Foot
Penn	Y66F12-0	75	277/480	8 in. Leads	24	8 in. Leads	Foot

- 1 Different electrical connection
- 2 Choose which transformer based on primary voltage desired

Choose correct P28 series control below based on time delay and pressure connection required. Verify specifications.

PENN P28 Series Lube Oil Controls - Specifications

Product code number	Range	Time delay	Capillaries	Pressure connection
P28AA-1	8/70 psi ADJ	90 s	36 in.	W/ Flare nut
P28AA-2	8/70 psi ADJ	60 s	36 in.	W/ Flare nut
P28AA-17	8/70 psi ADJ	120 s	36 in.	W/ Flare nut
P28AA-18	8/70 psi ADJ	45 s	36 in.	W/ Flare nut
P128AA-1	8/70 psi ADJ	90 s	None	External Flare
P128AA-2	8/70 psi ADJ	60 s	None	External Flare
P128AA-17	8/70 psi ADJ	120 s	None	External Flare



ALCO to Penn Cross Reference

ALCO to PENN Cross Reference: Temperature Controls

Product	Product number	Range	Differential	Switch	Capillary	Bulb	Enclosure
ALCO	TF115-S2 AE00	-20/60°F	3/30°F ADJ	Single-pole, double-throw (SPDT)	None	Coiled	NEMA 1
ALCO	TSI-X2E 30/40	-20/60°F	3/30°F ADJ	SPDT	None	Coiled	NEMA 1
Penn	A19BBC-2C ¹	-30/100°F	3/12°F ADJ	SPDT	None	Coiled	NEMA 1
Penn	A19BBC-6C ^{1,2}	-30/100°F	3/12°F ADJ	SPDT	None	Coiled	NEMA 1
ALCO	TF115-S3 AE00	15/95°F	3/30°F ADJ	SPDT	None	Coiled	NEMA 1
ALCO	TSI-X3E 64/48	15/95°F	3/30°F ADJ	SPDT	None	Coiled	NEMA 1
Penn	A19BBC-2C ¹	-30/100°F	3/12°F ADJ	SPDT	None	Coiled	NEMA 1
Penn	A19BBC-6C ^{1,2}	-30/100°F	3/12°F ADJ	SPDT	None	Coiled	NEMA 1
ALCO	TF115-S4 AF10	-20/95°F	5/35°F ADJ	SPDT	120 in.	3/8x2-3/4	NEMA 1
ALCO	TSI-X4F 32/41	-20/95°F	5/35°F ADJ	SPDT	120 in.	3/8x2-3/4	NEMA 1
Penn	A19ABC-24C ¹	-30/100°F	3/12°F ADJ	SPDT	96 in.	3/8x4	NEMA 1
Penn	A19ABC-36C ¹	-30/100°F	3/12°F ADJ	SPDT	240 in.	3/8x4	NEMA 1

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

ALCO to PENN Cross Reference: Single Pressure Controls

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

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

ALCO to PENN Cross Reference: Dual Pressure Controls

Product	Product number	LO Side	Differential	HI Side	Differential	Capillary	Connection
ALCO	FF215-S9 BAUK	24 in./42 psig	3/30 psig	90/450 psig	60 psig FXD	48 in.	W/ Flare nut
ALCO	PS2-Y9K	24 in./42 psig	3/30 psig	90/450 psig	60 psig FXD	48 in.	W/ Flare nut
Penn	P70SA-1C	12 in./80 psig	5/35 psig	100/500 psig	60 psig FXD	36 in.	W/ Flare nut
ALCO	FF215-S7 BAUK	15 in./100 psig	7/70 psig	90/450 psig	60 psig FXD	48 in.	W/ Flare nut
ALCO	PS2-Y7K	15 in./100 psig	7/70 psig	90/450 psig	60 psig FXD	48 in.	W/ Flare nut
Penn	P70SA-1C	12 in./80 psig	5/35 psig	100/500 psig	60 psig FXD	36 in.	W/ Flare nut
ALCO	FF215-S7 BAUA	15 in./100 psig	7/70 psig	90/450 psig	60 psig FXD	None	External Flare
ALCO	PS2-Y7A	15 in./100 psig	7/70 psig	90/450 psig	60 psig FXD	None	External Flare
Penn	P170SA-1C	12 in./80 psig	5/35 psig	100/500 psig	60 psig FXD	None	External Flare

ALCO to PENN Cross Reference: Lube Oil Pressure Controls

Product	Product number	Range	Reset	Delay	Capillary	Connection	Enclosure
ALCO	FD113-ZUK	4/65 ADJ	Manual	20-150 secs.	36 in.	W/ Flare	NEMA 1
Penn	P28AA-**C (See)	8/70 ADJ	Manual	See .	36 in.	W/ Flare	NEMA 1
Penn	P45NCA-12C (See)	9.0 FXD	Manual	120 secs.	36 in.	W/ Flare	NEMA 1
Penn	P45NCA-82C (See)	6.5 FXD	Manual	45 secs.	36 in.	W/ Flare	NEMA 1
ALCO	FD113-ZU	4/65 ADJ	Manual	20-150 secs.	None	External Flare	NEMA 1
Penn	P128AA-**C (See)	8/70 ADJ	Manual	See .	None	External Flare	NEMA 1
Penn	P145NCA-12C (See)	9.0 FXD	Manual	120 secs.	None	External Flare	NEMA 1
Penn	P145NCA-82C (See)	6.5 FXD	Manual	45 secs.	None	External Flare	NEMA 1

Choose correct P28 series control below based on time delay and pressure connection required. Verify specifications.

PENN P28 Series Lube Oil Controls - Specifications

Product code number	Range	Time delay	Capillaries	Pressure connection
P28AA-1	8/70 psi ADJ	90 s	36 in.	W/ Flare nut
P28AA-2	8/70 psi ADJ	60 s	36 in.	W/ Flare nut
P28AA-17	8/70 psi ADJ	120 s	36 in.	W/ Flare nut
P28AA-18	8/70 psi ADJ	45 s	36 in.	W/ Flare nut
P128AA-1	8/70 psi ADJ	90 s	None	External Flare
P128AA-2	8/70 psi ADJ	60 s	None	External Flare
P128AA-17	8/70 psi ADJ	120 s	None	External Flare



Danfoss to PENN Cross Reference

Danfoss to PENN Cross Reference: Temperature Controls

Manufacturer	Product number	Range	Differential	Switch	Capillary	Bulb	Enclosure	Notes
Danfoss	O60L2150	-30/80°F	3.6/12.6°F ADJ	SPDT	120 in.	3/8 in. x 4 in.	NEMA 1	KPU 19 Series
Penn	A19ABC-37C ¹	-30/100°F	3/12°F ADJ	SPDT	120 in.	3/8 in. x 4 in.	NEMA 1	
Danfoss	O60L2151	-30/80°F	3.6/12.6°F ADJ	SPST, Open LO	80 in.	3/8 in. x 4 in.	NEMA 1	KPU 19 Series
Penn	A19ABC-24C ¹	-30/100°F	3/12°F ADJ	SPDT	96 in.	3/8 in. x 4 in.	NEMA 1	
Danfoss	O60L2152	-30/80°F	3.6/12.6°F ADJ	SPDT	None	Air Coil	NEMA 1	KPU 19 Series
Penn	A19BBC-2C ¹	-30/100°F	3/12°F ADJ	SPDT	None	Air Coil	NEMA 1	
Danfoss	O60L5201	-20/60°F	2.5/13°F ADJ	SPDT	80 in.	3/8 in. x 4 in.	NEMA 1	KPU 61 Series
Penn	A19ABC-24C ¹	-30/100°F	3/12°F ADJ	SPDT	96 in.	3/8 in. x 4 in.	NEMA 1	
Danfoss	O60L5203	-20/60°F	2.5/13°F ADJ	SPDT	80 in.	3/8 in. x 2-3/4 in.	NEMA 1	KPU 61 Series
Penn	A19ABC-24C ¹	-30/100°F	3/12°F ADJ	SPDT	96 in.	3/8 in. x 4 in.	NEMA 1	
Danfoss	O60L5206	-20/60°F	2.5/13°F ADJ	SPDT	None	Air Coil	NEMA 1	KPU 61 Series
Penn	A19BBC-2C ¹	-30/100°F	3/12°F ADJ	SPDT	None	Air Coil	NEMA 1	
Danfoss	O60L-5215	25/95°F	3/13°F ADJ	SPDT	None	Air Coil	NEMA 1	KPU 61 Series
Penn	A19BBC-2C ¹	-30/100°F	3/12°F ADJ	SPDT	None	Air Coil	NEMA 1	
Danfoss	O60L5208	-15/60°F	5/50°F ADJ	SPDT	80 in.	3/8 in. x 4 in.	NEMA 1	KPU 61 Series
Penn	A72AP-1C	-10/65°F	4/40°F ADJ	DPST, Open LO	72 in.	11/16 in. x 6-3/4 in.	NEMA 1	
Danfoss	O60L5218	25/70°F	4/16°F ADJ	SPDT	80 in.	3/8 in. x 4 in.	NEMA 1	KPU 61 Series
Penn	A72AP-1C	-10/65°F	4/40°F ADJ	DPST, Open LO	72 in.	11/16 in. x 6-3/4 in.	NEMA 1	
Danfoss	O60L5223	60/140°F	6.3/18°F ADJ	SPDT	80 in.	3/8 in. x 4 in.	NEMA 1	KPU 61 Series
Penn	A19ABC-4C ¹	50/130°F	3.5/14°F ADJ	SPDT	96 in.	3/8 in. x 4 in.	NEMA 1	

1 The Danfoss control is square shaped. The Penn control is rectangular. Check physical dimensions.

Danfoss to PENN Cross Reference: Single Pressure Controls

Manufacturer	Product number	Range	Differential	Switch	Capillary	Connection	Enclosure	Notes
Danfoss	O60-117366	116/464 psig	43 psig FXD	SPDT	None	External Flare	NEMA 1	Manual Reset
Penn	P170DA-1C ¹	50/500 psig	60 psig FXD	SPST, Open HI	None	External Flare	NEMA 1	Manual Reset
Danfoss	O60-5231	6 in./108 psig	10/60 psig ADJ	SPST, Open LO	None	External Flare	NEMA 1	KPU 1
Penn	P170AB-2C	20 in./100 psig	7/50 psig ADJ	SPST, Open LO	None	External Flare	NEMA 1	
Danfoss	O60-5232	28 in./100 psig	10 psig FXD	SPDT	None	External Flare	NEMA 1	Manual Reset, KPU 1B
Penn	P70EA-10C	20 in./100 psig	5 psig FXD	SPDT	None	External Flare	NEMA 1	Manual Reset
Danfoss	O60-5233	6 in./108 psig	10/60 psig ADJ	SPST, Open LO	36 in.	W / Flare Nut	NEMA 1	KPU 1
Penn	P70AB-2C	20 in./100 psig	7/50 psig ADJ	SPST, Open LO	36 in.	W / Flare Nut	NEMA 1	
Danfoss	O60-5234	28 in./100 psig	10 psig FXD	SPDT	36 in.	W / Flare Nut	NEMA 1	Manual Reset, KPU 1B
Penn	P70AB-2C	20 in./100 psig	7/50 psig ADJ	SPST, Open LO	36 in.	W / Flare Nut	NEMA 1	
Danfoss	O60-5235	6 in./73 psig	6/30 psig ADJ	SPST, Open LO	36 in.	W / Flare Nut	NEMA 1	KPU 2
Penn	P70AB-12C	12 in./80 psig	5/35 psig ADJ	SPST, Open LO	36 in.	W / Flare Nut	NEMA 1	
Danfoss	O60-5237	6 in./73 psig	6/30 psig ADJ	SPST, Open LO	None	External Flare	NEMA 1	KPU 2
Penn	P170AB-12C	12 in./80 psig	5/35 psig ADJ	SPST, Open LO	None	External Flare	NEMA 1	
Danfoss	O60-5239	6 in./73 psig	6/30 psig ADJ	SPDT	None	External Flare	NEMA 1	KPU 2
Penn	P170EA-14C	12 in./80 psig	5/35 psig ADJ	SPDT	None	External Flare	NEMA 1	
Danfoss	O60-5240	6 in./73 psig	6/30 psig ADJ	SPDT	36 in.	W / Flare Nut	NEMA 1	KPU 2
Penn	P70EA-14C	12 in./80 psig	5/35 psig ADJ	SPDT	36 in.	W / Flare Nut	NEMA 1	
Danfoss	O60-5241	100/465 psig	26.1/87 psig ADJ	SPST, Open LO	None	External Flare	NEMA 1	Fan Cycling, KPU 5
Penn	P170AA-118C	100/400 psig	35/200 psig ADJ	SPST, Open LO	None	External Flare	NEMA 1	Fan Cycling
Danfoss	O60-5242	100/465 psig	26.1/87 psig ADJ	SPST, Open LO	36 in.	W / Flare Nut	NEMA 1	Fan Cycling, KPU 5
Penn	P70AA-118C	100/400 psig	35/200 psig ADJ	SPST, Open LO	36 in.	W / Flare Nut	NEMA 1	Fan Cycling
Danfoss	O60-5243	100/600 psig	58/145 psig ADJ	SPDT	None	External Flare	NEMA 1	KPU 6W
Penn	P170CA-400C ^{1,2}	200/610 psig	60/150 psig ADJ	SPST, Open HI	None	External Flare	NEMA 1	
Danfoss	O60-5244	100/600 psig	60 psig FXD	SPDT	None	External Flare	NEMA 1	Manual Reset, KPU 6B
Penn	P170DA-1C	50/500 psig	60 psig FXD	SPST, Open HI	None	External Flare	NEMA 1	Manual Reset
Danfoss	O60-5245	100/600 psig	58/145 psig ADJ	SPDT	36 in.	W / Flare Nut	NEMA 1	KPU 6W
Penn	P70CA-400C ^{1,2}	200/610 psig	60/150 psig ADJ	SPST, Open HI	36 in.	W / Flare Nut	NEMA 1	
Danfoss	O60-5246	100/600 psig	60 psig FXD	SPDT	36 in.	W / Flare Nut	NEMA 1	Manual Reset, KPU 6B
Penn	P70DA-1C	50/500 psig	60 psig FXD	SPDT	36 in.	W / Flare Nut	NEMA 1	Manual Reset

1 Switch types are different

2 UL Listed as refrigeration pressure limiting control

Danfoss to PENN Cross Reference: Dual Pressure Controls

Manufacturer	Product number	LO Side	Differential	HI Side	Differential	Capillary	Connections	Notes
Danfoss	O60-5247	6/108 psig	10/60 psig ADJ	100/465 psig	60 psig FXD	None	External Flares	KPU 15
Penn	P170LB-1C ¹	20 in./100 psig	7/50 psig ADJ	100/500 psig	65 psig FXD	None	External Flares	
Danfoss	O60-5248	6/108 psig	10/60 psig ADJ	100/465 psig	60 psig FXD	36 in.	W / Flare Nuts	KPU 15
Penn	P70LB-1C ¹	20 in./100 psig	7/50 psig ADJ	100/500 psig	65 psig FXD	36 in.	W / Flare Nuts	
Danfoss	O60-5249	6/108 psig	10/60 psig ADJ	100/465 psig	60 psig FXD	None	External Flares	Manual Reset, KPU 15B
Penn	P170MA-1C ¹	20 in./100 psig	6/50 psig ADJ	100/500 psig	55 psig FXD	None	External Flares	Manual Reset
Danfoss	O60-5250	6/108 psig	10/60 psig ADJ	100/465 psig	60 psig FXD	36 in.	W / Flare Nuts	Manual Reset, KPU 15B
Penn	P70MA-1C ¹	20 in./100 psig	6/50 psig ADJ	100/500 psig	55 psig FXD	36 in.	W / Flare Nuts	Manual Reset
Danfoss	O60-5251	6/108 psig	10/60 psig ADJ	100/600 psig	60 psig FXD	None	External Flares	KPU 16W
Penn	P170LB-1C ¹	20 in./100 psig	7/50 psig ADJ	100/500 psig	65 psig FXD	None	External Flares	
Danfoss	O60-5252	6/108 psig	10/60 psig ADJ	100/600 psig	60 psig FXD	36 in.	W / Flare Nuts	KPU 16W
Penn	P70LB-1C ¹	20 in./100 psig	7/50 psig ADJ	100/500 psig	65 psig FXD	36 in.	W / Flare Nuts	
Danfoss	O60-5253	6/108 psig	10/60 psig ADJ	100/600 psig	60 psig FXD	None	External Flares	KPU 16B
Penn	P170LB-1C ¹	20 in./100 psig	7/50 psig ADJ	100/500 psig	65 psig FXD	None	External Flares	
Danfoss	O60-5254	6/108 psig	10/60 psig ADJ	100/600 psig	60 psig FXD	36 in.	W / Flare Nuts	KPU 16B
Penn	P70LB-1C ¹	20 in./100 psig	7/50 psig ADJ	100/500 psig	65 psig FXD	36 in.	W / Flare Nuts	

1 UL Listed as refrigeration pressure limiting control

Danfoss to PENN Cross Reference: Lube Oil Controls

Manufacturer	Product number	Range	Reset	Time delay	Capillary	Connection	Enclosure	Notes
Danfoss	O60B200266	29 in./175 psig	Manual	90 s	None	External Flares	NEMA 1	MP54
Penn	P128AA-1C ¹	8 to 70 psig	Manual	90 s	None	External Flares	NEMA 1	
Danfoss	O60B200366	29 in./175 psig	Manual	120 s	None	External Flares	NEMA 1	MP54
Penn	P145NCB-12C ¹	9 psi FXD	Manual	120 s	None	External Flares	NEMA 1	
Danfoss	O60B200766	29 in./175 psig	Manual	120 s	None	External Flares	NEMA 1	MP55
Penn	P28AA-17C ¹	8 to 70 psig	Manual	120 s	None	External Flares	NEMA 1	
Danfoss	O60B200866	29 in./175 psig	Manual	45 s	None	External Flares	NEMA 1	MP54
Penn	P145NCB-82C ¹	6.5 psi FXD	Manual	45 s	None	External Flares	NEMA 1	
Danfoss	O60B201266	29 in./175 psig	Manual	60 s	None	External Flares	NEMA 1	MP54
Penn	P128AA-2C ¹	8 to 70 psig	Manual	60 s	None	External Flares	NEMA 1	
Danfoss	O60B205066	29 in./175 psig	Manual	45 s	36 in.	W / Flare Nuts	NEMA 1	MP54
Penn	P145NCB-82C ^{1,2}	6.5 psi FXD	Manual	45 s	36 in.	W / Flare Nuts	NEMA 1	
Danfoss	O60B205366	29 in./175 psig	Manual	120 s	36 in.	W / Flare Nuts	NEMA 1	MP54
Penn	P145NCB-12C ^{1,2}	9 psi FXD	Manual	120 s	36 in.	W / Flare Nuts	NEMA 1	
Danfoss	O60B205466	29 in./175 psig	Manual	45 s	36 in.	W / Flare Nuts	NEMA 1	MP55
Penn	P28AA-18C ¹	8 to 70 psig	Manual	45 s	36 in.	W / Flare Nuts	NEMA 1	
Danfoss	O60B205766	29 in./175 psig	Manual	120 s	None	External Flares	NEMA 1	MP55
Penn	P28AA-17C ¹	8 to 70 psig	Manual	120 s	None	External Flares	NEMA 1	

1 Verify compressor time delay requirements

2 Use two SEC99AA-36C UltraCap armored capillaries



Honeywell to PENN Cross Reference

Honeywell to PENN Cross Reference: Temperature Controls

Manufacturer	Product number	Range	Differential	Switch	Capillary	Bulb	Enclosure	Notes
Honeywell	L6018C-1006	55/85°F	3.5°F FXD	SPDT	96 in.	1/2 in. x 4-3/16 in.	NEMA 1	
Penn	A19ABC-24C	-30/100°F	3/12°F ADJ	SPDT	96 in.	3/8 in. x 4 in.	NEMA 1	
Honeywell	L6021A-1005	15/75°F	3.5°F FXD	SPDT	96 in.	1/2 in. x 4-3/16 in.	NEMA 1	
Penn	A19ABC-24C	-30/100°F	3/12°F ADJ	SPDT	96 in.	3/8 in. x 4 in.	NEMA 1	
Honeywell	T675A1011	0/100°F	3/10°F ADJ	SPDT	60 in.	1/2 in. x 4-3/16 in.	NEMA 1	
Penn	A19ABC-24C	-30/100°F	3/12°F ADJ	SPDT	96 in.	3/8 in. x 4 in.	NEMA 1	
Honeywell	T675A1136	0/100°F	1°F FXD	SPDT	240 in.	1/2 in. x 4-3/16 in.	NEMA 1	
Penn	A19ABC-36C	-30/100°F	3/12°F ADJ	SPDT	240 in.	3/8 in. x 4 in.	NEMA 1	
Honeywell	T675A1425	55/175°F	3.6/12°F ADJ	SPDT	240 in.	1/2 in. x 3-9/16 in.	NEMA 1	
Penn	A19ABB-2C ¹	50/200°F	6/24°F ADJ	SPDT	120 in.	1/3 in. x 2-1/2 in.	NEMA 1	
Honeywell	T675A1508	0/100°F	1°F FXD	SPDT	60 in.	1/2 in. x 4-3/16 in.	NEMA 1	Includes bulb duct holder
Penn	A19ABC-24C	-30/100°F	3/12°F ADJ	SPDT	96 in.	3/8 in. x 4 in.	NEMA 1	
Honeywell	T675A1516	0/100°F	1°F FXD	SPDT	60 in.	1/2 in. 4-3/16 in.	NEMA 1	Includes bulb duct holder
Penn	A19ABC-24C	-30/100°F	3/12°F ADJ	SPDT	96 in.	3/8 in. x 4 in.	NEMA 1	
Honeywell	T675A1532	160/260°F	3/10°F ADJ	SPDT	60 in.	1/2 in. x 4-3/16 in.	NEMA 1	
Penn	A19AAC-9C	100/240°F	6°F FXD	SPDT	72 in.	3/8 in. x 4 in.	NEMA 1	
Honeywell	T675A1565	0/100°F	3/10°F ADJ	SPDT	240 in.	1/2 in. x 4-3/16 in.	NEMA 1	Includes bulb duct holder
Penn	A19ABC-36C	-30/100°F	3/12°F ADJ	SPDT	240 in.	3/8 in. x 4 in.	NEMA 1	
Honeywell	T775A2009	-40/248°F	1/150°F ADJ	SPDT	9 in.	1/2 in. x 2 in.	NEMA 1	
Penn	A421ABC-02C ²	-40/212°F	1/30°F ADJ	SPDT	78 in.	1/2 in. x 2 in.	NEMA 1	
Honeywell	T4031A-1008	-30/50°F	3.5°F FXD	SPDT	60 in.	3/8 in. x 3 in.	NEMA 1	
Penn	A19ABC-24C	-30/100°F	3/12°F ADJ	SPDT	96 in.	3/8 in. x 4 in.	NEMA 1	
Honeywell	T4031A-1073	-30/50°F	3.5°F FXD	SPDT	96 in.	3/8 in. 3 in.	NEMA 1	
Penn	A19ABC-24C	-30/100°F	3/12°F ADJ	SPDT	96 in.	3/8 in. x 4 in.	NEMA 1	
Honeywell	T6031A-1011	15/90°F	3.5°F FXD	SPDT	60 in.	3/8 in. 3 in.	NEMA 1	
Penn	A19ABC-24C	-30/100°F	3/12°F ADJ	SPDT	96 in.	3/8 in. x 4 in.	NEMA 1	
Honeywell	T6031A-1029	-30/90°F	3.5/16°F ADJ	SPDT	96 in.	3/8 in. x 3 in.	NEMA 1	
Penn	A19ABC-24C	-30/100°F	3/12°F ADJ	SPDT	96 in.	3/8 in. x 4 in.	NEMA 1	

- 1 Switch types are different
- 2 Provides on/off temperature control only



Carel to PENN Cross Reference

Carel to PENN Cross Reference: Electronic Case Temperature Controllers

Manufacturer	Part Number	Notes for PENN Replacement
Carel	PJEZ50x(P,0)1xx	
PENN	TC3221N5V-000C	Check voltage rating, 115VAC, 1 temp sensor included
Carel	PJEZ50x(0,P)xxx	
PENN	TC3221N7V-000C	1 temp sensor included
Carel	PJEZx(S,X,Y)0x(A,0)0x	
PENN	TC3222N7V-000C	2 temp sensors included
Carel	PJZC0xx00	
PENN	TC3223N7V-000C	2 temp sensors included
Carel	IREVY7HN0E	
PENN	TC3224N9R-000C	2 temp sensors included
Carel	IREVx(Y,S)0x(0,E)x(N,A,H,P)x(A,0)0	
PENN	TC3224N9R-000C	2 temp sensors included
Carel	IREVx(Y,S)0x(0,E)x(N,A,H,P)x(A,0)0	
PENN	TC3222N5V-000C	Check voltage rating 115 VAC - 2 temp sensors included
Carel	IR33SOEx(H,N,P,R)x(A,0)x(A,0,M,S)	
PENN	TC3224N9R-000C	2 temp sensors included
Carel	IR33SOEx(H,N,P,R)x(A,0)x(A,0,M,S)	
PENN	TC3222N5V-000C	Check voltage rating 115 VAC - 2 temp sensors included
Carel	IR33F0Ex(F,H)Ax(0,1)	
PENN	TC3224N9R-000C	2 temp sensors included
Carel	IR33COHx(I,H,F)2x(A,0)	
PENN	TC3224N9R-000C	2 temp sensors included
Carel	IR33x(V,W,Z,A,B,E)7Hx(B,R)20	
PENN	TC3224N9R-000C	2 temp sensors included
Carel	DN33x(V,W,Z,A,B,E)7Hx(B,R)20	
PENN	TC3224N9R-000C	2 temp sensors included
Carel	IR33F0AHA0	
PENN	TC3223N5V-000C	2 temp sensors included
Carel	IR33F0HH20	
PENN	TC3224N9R-000C	115/230 - 2 temp sensors included
Carel	IR33F0HH20	
PENN	TC3223N5V-000C	Check voltage rating 115 VAC - 2 temp sensors included
Carel	IR33Y7HR0S	
PENN	TC3224N9R-000C	115/230 - 2 temp sensors included
Carel	IR33Y7HR0S	
PENN	TC3222N5V-000C	Check voltage rating 115 VAC - 2 temp sensors included



Danfoss to PENN Cross Reference

Danfoss to PENN Cross Reference: Electronic Case Temperature Controllers

Manufacturer	Part Number	Notes for PENN Replacement
Danfoss	ERC211 - 080G3290	
PENN	TC3221N5V-000C	1 temp sensor included
Danfoss	ERC211 - 080G3263	
PENN	TC3221N7V-000C	1 temp sensor included
Danfoss	ERC211 - 080G3262	
PENN	TC3221N5V-000C	1 temp sensor included
Danfoss	ERC211 - 080G3293	
PENN	TC3221N7V-000C	1 temp sensor included
Danfoss	ERC213 - 080G3411	
PENN	TC3223N5V-000C	1 temp sensor included
Danfoss	ERC213 - 080G3412	
PENN	TC3223N7V-000C	2 temp sensors included
Danfoss	ERC213 - 080G3264	
PENN	TC3223N5V-000C	2 temp sensors included
Danfoss	ERC213 - 080G3265	
PENN	TC3223N7V-000C	2 temp sensors included
Danfoss	ERC213 - 080G3291	
PENN	TC3223N5V-000C	2 temp sensors included
Danfoss	ERC214 - 080G3295	
PENN	TC3223N7V-000C	2 temp sensors included
Danfoss	ERC214 - 080G3292	
PENN	TC3223N5V-000C	2 temp sensors included
Danfoss	EKC202A - 084B8xx1	
PENN	TC3222N7V-000C	2 temp sensors included
Danfoss	EKC202B - 84B8xx2	
PENN	TC3223N7V-000C	2 temp sensors included
Danfoss	EKC202C - 084B8xx3	
PENN	TC3224N9R-000C	Check voltage rating 115/230 - 2 temp sensors included
Danfoss	EKC202D - 84B8xx6	
PENN	TC3224N9R-000C	Check voltage rating 115/230 - 2 temp sensors included



Emerson / Dixell to PENN Cross Reference

Emerson / Dixell to PENN Cross Reference: Electronic Case Temperature Controllers

Manufacturer	Part Number	Notes for PENN Replacement
Emerson / Dixell	XR0x{1,2}CX-4N0F1	
PENN	TC3221N5V-000C	1 temp sensor included
Emerson / Dixell	XR0x{1,2}CX-5N0C1	
PENN	TC3221N7V-000C	1 temp sensor included
Emerson / Dixell	XRx{3,4}CX-4N0F1	
PENN	TC3222N5V-000C	2 temp sensors included
Emerson / Dixell	XR0x{3,4}CX-5N0C1	
PENN	TC3222N7V-000C	2 temp sensors included
Emerson / Dixell	XR06CX-4N1F1	
PENN	TC3223N5V-000C	2 temp sensors included
Emerson / Dixell	XR06CX-5N0C1	
PENN	TC3223N7V-000C	2 temp sensors included
Emerson / Dixell	XR10C-4N1F1	
PENN	TC3223N5V-000C	2 temp sensors included
Emerson / Dixell	XR10CX-5N0C1	
PENN	TC3221N7V-000C	2 temp sensors included
Emerson / Dixell	XR10CX-5N0C0	
PENN	TC3222N5V-000C	2 temp sensors included
Emerson / Dixell	XR10CX-1Nxxx	
PENN	No Replacement	
Emerson / Dixell	XR10CX-0Nxxx	
PENN	No Replacement	
Emerson / Dixell	XR20CX-5N0C1	
PENN	TC3221N7V-000C	1 temp sensor included
Emerson / Dixell	XR20CX-5N1C0	
PENN	TC3221N7V-000C	1 temp sensor included
Emerson / Dixell	XR20CX-3Nxxx	
PENN	No Replacement	
Emerson / Dixell	XR20CX-0Nxxx	
PENN	No Replacement	
Emerson / Dixell	XR30CX-5N0C1	
PENN	TC3222N7V-000C	2 temp sensors included
Emerson / Dixell	XR30CX-5N1C1	
PENN	TC3222N7V-000C	2 temp sensors included
Emerson / Dixell	XR40CX-0N0C1	
PENN	No Replacement	



Emerson / Dixell to PENN Cross Reference: Electronic Case Temperature Controllers

Manufacturer	Part Number	Notes for PENN Replacement
Emerson / Dixell	XR40CX-5N1C1	
PENN	TC3222N7V-000C	2 temp sensors included
Emerson / Dixell	XR40CX-5N0C0	
PENN	TC3222N7V-000C	2 temp sensors included
Emerson / Dixell	XR40CX-5R0C1	
PENN	TC3222N7V-000C	2 temp sensors included
Emerson / Dixell	XR50CX-5N0C1	
PENN	TC3223N7V-000C	2 temp sensors included
Emerson / Dixell	XR60CX-4Nxxx	
PENN	TC3223N5V-000C	2 temp sensors included
Emerson / Dixell	XR60CX-5Nxxx	
PENN	TC3223N7V-000C	2 temp sensors included
Emerson / Dixell	XR60CX-5N0C1	
PENN	TC3223N7V-000C	2 temp sensors included
Emerson / Dixell	XR60CX-AN1F1	
PENN	No Replacement	
Emerson / Dixell	XR70CX-5x0C3	
PENN	TC3223N7V-000C	2 temp sensors included
Emerson / Dixell	XR75CX	
PENN	TC3223N7V-000C	2 temp sensors included
Emerson / Dixell	XR80CX-5N0Cx	
PENN	TC3222N7V-000C	2 temp sensors included
Emerson / Dixell	XR110C-5N0C1	
PENN	TC3224N9R-000C	Check voltage rating 115/230 - 2 temp sensors included
Emerson / Dixell	XR120x	
PENN	TC3224N9R-000C	Check voltage rating 115/230 - 2 temp sensors included
Emerson / Dixell	XR130C-0POC1	
PENN	No Replacement	
Emerson / Dixell	XR130C-0NOC1	
PENN	No Replacement	
Emerson / Dixell	XR130D	
PENN	TC3224N9R-000C	Check voltage rating 115/230 - 2 temp sensors included
Emerson / Dixell	XR140x	
PENN	TC3224N9R-000C	Check voltage rating 115/230 - 2 temp sensors included
Emerson / Dixell	XR150C	
PENN	TC3224N9R-000C	Check voltage rating 115/230 - 2 temp sensors included



Emerson / Dixell to PENN Cross Reference: Electronic Case Temperature Controllers

Manufacturer	Part Number	Notes for PENN Replacement
Emerson / Dixell	XR160C-0P0C1	
PENN	No Replacement	
Emerson / Dixell	XR160C-0P0C3	
PENN	No Replacement	
Emerson / Dixell	XR170C-0P0C1	
PENN	No Replacement	
Emerson / Dixell	XR170C-0P0C3	
PENN	No Replacement	
Emerson / Dixell	943-0291-00	
PENN	TC3223N5V-000C	2 temp sensors included
Emerson / Dixell	943-0293-00	
PENN	TC3223N7V-000C	2 temp sensors included

Full Gauge / Robertshaw to PENN Cross Reference

Full Gauge / Robertshaw to PENN Cross Reference: Electronic Case Temperature Controllers

Manufacturer	Part Number	Notes for PENN Replacement
Full Gauge / Robertshaw	TC-900E-2HP	
PENN	TC3224N9R-000C	Check voltage rating 115/230 - 2 temp sensors included
Full Gauge / Robertshaw	TC-900E-POWER	
PENN	TC3224N9R-000C	Check voltage rating 115/230 - 2 temp sensors included
Full Gauge / Robertshaw	TC-900E-LOG	
PENN	TC3224N9R-000C	Check voltage rating 115/230 - 2 temp sensors included



Product and contact information

Repair information

If the product fails to operate within its specifications, replace the unit. For a replacement, contact the nearest Johnson Controls® representative.

Product warranty

This product is covered by a limited warranty, details of which can be found at www.johnsoncontrols.com/buildingswarranty.

Software terms

Use of the software that is in (or constitutes) this product, or access to the cloud, or hosted services applicable to this product, if any, is subject to applicable end-user license, open-source software information, and other terms set forth at www.johnsoncontrols.com/techterms. Your use of this product constitutes an agreement to such terms.

Patents

Patents: <https://jciapat.com>

Single point of contact

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JOHNSON CONTROLS C/O CONTROLS PRODUCT MANAGEMENT NO. 32 CHANGJIANG RD NEW DISTRICT WUXI JIANGSU PROVINCE 214028 CHINA	JOHNSON CONTROLS VOLTAWEG 20 6101 XK ECHT THE NETHERLANDS	JOHNSON CONTROLS 5757 N GREEN BAY AVE MILWAUKEE WI 53209 USA

Contact information

Contact your local branch office: www.johnsoncontrols.com/locations

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