

P-Series Explosion Proof Pressure Switches

FEATURES

- Precision SPDT snap-acting micro switch
- Setpoint adjustable from 15-100% of range
- Single or dual adjustable set points
- Fixed or adjustable deadband
- Wide selection of switch elements
- Fixed or adjustable deadband

TYPICAL USES

- Refineries
- Chemical and Petrochemical Plants
- Steel Mills
- Water and Sewage Treatment Plants
- Pumps, Compressors and Turbines
- Boilers and Burners
- Reverse Osmosis Systems and Filters



P-Series
Explosion-Proof Enclosure

P-Series
Explosion-Proof Enclosure
Differential Pressure Switch



SPECIFICATIONS

Set Repeatability (Accuracy):	±1% of span (Additional setpoint shift of ±1% of range per 50°F from initial setpoint set at 70°F typical)
Switch Type:	SPDT or 2 SPDT with independent setpoints
Setpoint:	Single setpoint, fixed deadband Single setpoint, adjustable deadband Dual independent setpoints, fixed deadband
Deadband:	Fixed or adjustable deadband
Enclosure Ratings:	NEMA 7 & 9, IP66
Enclosure Material:	Epoxy coated aluminum
Process Connection:	¼ NPT Female, ½ NPT Female, ¼ NPT Female and ½ NPT Male Combination
Electrical Termination:	¾ NPT Female

APPROVALS

Explosion Proof:	UL, CSA  CLASS I DIV 1 GROUPS B, C, & D CLASS II DIV 1 GROUPS E, F, & G
Standard:	CRN

KEY BENEFITS

- Epoxy-coated aluminum enclosures provide added protection in harsh environments
- Dual chamber design provides safe setpoint adjustment even with power connected
- Designed for use in wide range of applications
- Easily configurable to meet your application requirements
- Hermetically sealed micro switches offer improved reliability and safety (UL Class I Div II approval)

WETTED COMPONENTS

Actuator Seal	Process Connection:	
Buna-N®, Teflon®, Viton®, 316L SS, or Monel®	Pressure Switches 316L SS or Monel® for psi ranges Epoxy coated carbon steel or 316L SS for IW ranges	Differential Switches Nickel plated brass or 316L SS for psid ranges Epoxy coated carbon steel or 316L SS for IWD ranges

P-Series Explosion Proof Pressure Switches

ORDERING CODE	Example:	PPSN7	G	S	25	X6B	100#
Enclosure – Pressure Switch							
PPSN7 - Single setpoint, fixed deadband, N7-NEMA 7 & 9, IP66, explosion proof Div, 1 & 2		PPSN7					
PPDN7 - Two independent adjustable setpoints, fixed deadband, N7-NEMA 7 & 9, IP66, explosion proof Div, 1 & 2							
PPAN7 - Single setpoint, adjustable deadband, N7-NEMA 7 & 9, IP66, explosion proof Div, 1 & 2							
Enclosure – Differential Pressure Switch							
PDSN7 - Single setpoint, fixed deadband, N7-NEMA 7 & 9, IP66, explosion proof Div, 1 & 2							
PDDN7 - Two independent adjustable setpoints, fixed deadband, N7-NEMA 7 & 9, IP66, explosion proof Div, 1 & 2							
PDAN7 - Single setpoint, adjustable deadband, N7-NEMA 7 & 9, IP66, explosion proof Div, 1 & 2							
Switch Elements For Single Setpoint with Adjustable Deadband - UL/CSA Listed							
H - General purpose, 10A - 125/250 Vac. ½A, 125Vdc, ¼A, 250Vdc							
J - Hermetically sealed, general pupose - 11A, - 125/250 Vac, 5A, 30Vdc							
Single/Dual Switch Setpoint with Fixed Deadband - UL/CSA Listed							
C/CC - Heavy duty ac, 22A - 125/250 Vac							
E/EE - Manual reset acutates on decreasing pressure 15A, 125/250 Vac 6A, 130 Vdc (no hazardous approval)							
F/FF - Sealed environment proof, 15A - 125/250 Vac. (estimated dc rating - 4A, 28Vdc, not UL listed)							
G/GG - General purpose, 15A - 125/250/480 Vac, ½A - 125 Vdc, ¼A - 250 Vdc (not listed at 480 Vac)			G				
H/HH - General purpose, 10A - 125/250 Vac 10A, Vdc							
J/JJ - Hermetically sealed switch, general purpose, 11A, 125/250 Vac, 5A, 30 Vdc							
K/KK - Narrow deadband, 15A - 125/250 Vac. (estimated dc rating, 0.4A, 120 Vdc, not UL listed)							
L/LL - Hermetically sealed switch, gold contacts, 1A - 125 Vac							
M/MM - Low level (gold) contacts, 1A - 125 Vac							
P/PP - Hermetically sealed AC - 5A, 125/250 Vac. (estimated dc rating - 2.5A, 28Vdc, not UL listed)							
S/SS - Heavy duty dc, 10A - 125 Vac or dc, ½ HP - 125 Vac or dc.						S	
U/UU - Manual reset actuates on increasing pressure 15A, 125/250 Vac, 6A, 130Vdc (no hazardous approval)							
Y/YY - High temperature 300°F (148°C) ambient, 15A, 125/250 Vac							
W/WW - Ammonia service - 5A, 125/250 Vac, 6A, 30 Vdc							
Actuator Seal							
	Temperature Limits						
Material	Ambient	Process					
B - Buna-N®	-20°F to 150°F	0°F to 150°F					
V - Viton®	-20°F to 150°F	20°F to 300°F					
T - Teflon®	-20°F to 150°F	0°F to 150°F					
S - 316L SS	-20°F to 150°F	20°F to 300°F	Not available in vacuum, & inches of water ranges or pressures above 1,000 psi			S	
P - Monel®	-20°F to 150°F	20°F to 300°F	Not available in vacuum, & inches of water ranges or pressures above 1,000 psi				
Process Connections							
25- ¼ NPT Female					25		
06- ¼ NPT Female and ½ NPT Male combination							
07- ½ NPT Female							
Options - Select from Table 4 on page 4 (If choosing an option(s) must include an "X")							
6B - Cleaned for oxygen service (NA w BUNA-N actuator seal)						X _ _	6B
Pressure Range (select from pressure range tables on page 3)							
100# - 100 psi							100#

Data Sheet

P-Series Explosion Proof Pressure Switches

TABLE 1 - PRESSURE/VACUUM RANGES				Approximate Deadband Switch Element for Buna-N® Diaphragm									
Nominal Ranges		Overpressure Ratings		See multiplier TABLE 3 for additional material multipliers									
				PPA		PPS				PPD			
		Proof psi	Minimum Burst psi	Switch Element									
J, H	G			J, H	K, F	P	GG	JJ, HH	KK, FF	PP			
Vacuum													
30IMV	-760mmHg	-100 kPa	250	400	7-26	3-5	3-6.5	1-2	1-2.5	3-5	4-6.5	1-2	1-2.5
Compound													
30IMV/ 15#	-760mmHg/ 1.0 kg/cm ²	-100 kPa 100 kPa	250	400	10-25 4-13	3-5 1-2	4-6 1-3.5	1-2 0.5-1	1-2.5 0.5-1.2	3-5 2-4	2.5-4.5 1.3	1-2 0.5-1	1-2.5 0.5-1.2
Pressure													
30IW	750mmH ₂ O	7.5 kPa	20	35	4-27	1.5-3.5	2-5	0.5-1	0.5-2	1.5-3.5	2-5	0.5-1	0.5-2
60IW	1,500mmH ₂ O	15 kPa	20	35	5-54	1.5-3.5	2.5-5	0.5-1.3	1-2	1.5-3.5	2.5-5	0.5-1.3	1-2
100IW	2,500mmH ₂ O	25 kPa	20	35	8.5-90	4-6	4-8.5	1-2	1-3	4-7	4-8.5	1-2	1-3
150IW	3,750mmH ₂ O	37 kPa	20	35	18-135	5.0-11	10-18	1.5-3	2-6	8-14	10-18	1.5-3	2-6
15#	1.0 kg/cm ²	100 kPa	500	1,500	2.5-13	1-2	1-3	0.5-1	0.5-1.2	1-2	1-3	0.5-1	0.5-1.2
30#	2.0 kg/cm ²	200 kPa	500	1,500	3-26	1-2.5	2-4.5	0.5-1.5	0.5-1.5	1-2.5	2-4.5	0.5-1.5	0.5-1.5
60#	4.0 kg/cm ²	400 kPa	500	1,500	5-54	2-4	4-7	1-2	1-2.5	2-4	4-7	1-2	1-2.5
100#	7.0 kg/cm ²	700 kPa	1,000	3,000	10-90	5-7	5-10	1-2.5	2-4	5-7	5-10	1-2.5	2-4
200#	14 kg/cm ²	1,400 kPa	1,000	3,000	20-180	10-15	10-18	1-4	5-8	10-20	15-35	3-6	5-8
400#	28 kg/cm ²	2,800 kPa	2,400	3,000	45-360	16-30	16-45	4-8	5-15	16-30	16-45	4-8	5-15
600#	42 kg/cm ²	4,200 kPa	2,400	3,000	75-540	16-50	20-75	5-15	6-25	16-50	20-75	5-15	6-25
1000#	70 kg/cm ²	7,000 kPa	12,000	14,000	160-900	75-130	50-160	7-30	10-85	75-130	50-160	7-30	10-85
2000#	140 kg/cm ²	14,000 kPa	12,000	14,000	350-1,800	150-200	150-350	20-50	25-110	150-200	150-350	20-50	25-110
3000#	210 kg/cm ²	21,000 kPa	12,000	14,000	400-2,600	180-250	180-400	30-70	50-250	180-250	180-400	30-70	50-250

TABLE 2 - DIFFERENTIAL PRESSURE RANGES				Approximate Deadband Switch Element for Buna-N® Diaphragm									
Nominal Ranges		Overpressure Ratings		See multiplier TABLE 3 for additional material multipliers									
				PDA		PDS				PDD			
		Static psi	Minimum Proof psi	Switch Element									
J, H	G			J, H	K, F	P	GG	JJ, HH	KK, FF	PP			
Differential Pressure													
30IWD	-760mmHg	5.4	21.6	5.5-27	3-5	4-6.5	0.5-1	0.5-2	3-5	4-6.5	0.5-1	0.5-2	
60IWD	1,500mmH ₂ O	5.4	21.6	5.5-54	3-5	4.5-6.5	0.5-1.3	1-2	3.5	4-6.5	0.6-1.3	1-2	
100IWD	2,500mmH ₂ O	5.4	21.6	8.5-90	4-6	4.0-8.5	1-2	1-3	4-7	4-8.5	1-2	1-3	
150IWD	3,750mmH ₂ O	5.4	21.6	18-135	5-11	10-18	1.5-3	2-6	8-12	10-18	1.5-3	2-6	
30#D	1.0 kg/cm ²	500	1,500	2.5-13	1-2	1-3	0.5-1	0.5-1.2	1-2	1-3	0.5-1	0.5-1.2	
60#D	2.0 kg/cm ²	500	2,000	6.5-54	1-2.5	2-4.5	1-1.5	1-1.5	1-2.5	2-4.5	0.5-1.5	0.5-1.5	
100#D	7.0 kg/cm ²	1,000	4,000	10-90	5-7	5-10	1-2.5	2-4	5-7	5-10	1-2.5	2-4	
200#D	14 kg/cm ²	1,000	4,000	20-180	10-15	10-18	1-4	5-8	10-20	10-18	3-6	5-8	
400#D	28 kg/cm ²	1,000	8,000	45-360	16-30	16-45	4-8	5-15	16-30	16-45	4-8	5-15	

TABLE 3 - DEADBAND MULTIPLIER TABLE		
Diaphragm Material	Multiply	Notes
Buna-N®	1.0	Multiplier table for additional diaphragm materials
Viton®	1.4	
Teflon®	1.7	
316 SS	1.7	Not applicable for adjustable deadband units PPA, PDA
Monel®	1.7	

P-Series Explosion Proof Pressure Switches

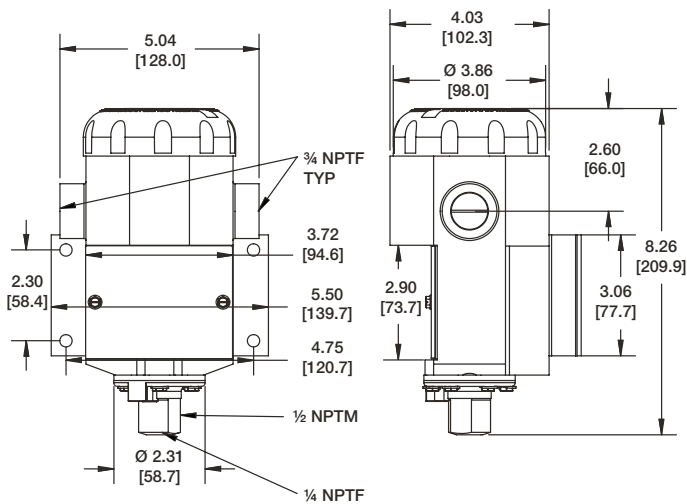
TABLE 4 - OPTIONS		Pressure		Differential Pressure		Notes
Code	Description	psi	inH ₂ O	psid	inH ₂ O	
CH	Chained cover	•	•	•	•	
FP	Fungus proofing	•	•	•	•	
FS	Factory adjusted setpoints (Supply static pressure for D/P switches)	•	•	•	•	
G9	Fire safe actuator	•				SS and Monel Actuator only
HS	High static operating pressure for psi range D/P			•		15# & 30# with B or V actuator seals only
HY	Hydrostatic testing	•	•	•	•	
HX	High operating pressure for inH ₂ O ranges					
	40 psi Static (Pressure and D/P)		•	•		
	100 psi Proof (Pressure)					
	160 psi Proof (D/P)					
JL	¾" to ½" Reducing bushing	•	•	•	•	
K3	Terminal blocks	•	•	•	•	
LE	6ft Wired leads	•	•	•	•	
MA	NACE (MR-01-75)	•	•	•	•	Only with Monel actuator seal
MD	Metric range on label	•	•	•	•	
NH	Tagging SS	•	•	•	•	
PM	¾" Sealed conduit connection with 16" lead wires	•	•	•	•	
TA	316 SS pressure connection for H ₂ O ranges		•		•	
TM	2" Pipe mounting bracket	•	•	•	•	
UD	316 SS Pressure Connection for psid ranges			•		Standard on models with S actuator seal
C4	Calibration chart	•	•	•	•	
C8	CSA approval	•	•	•	•	
D2	Dual seal rating	•			•	Must order with XC8
6B	Cleaned for oxygen service	•		•		N/A with BUNA-N [®] actuator seal

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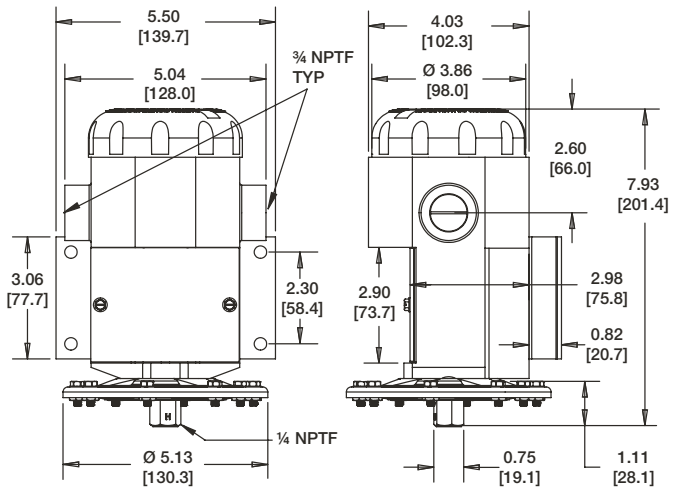
DIMENSIONS in [] are millimeters

For reference only, consult Ashcroft for specific dimensional drawings.

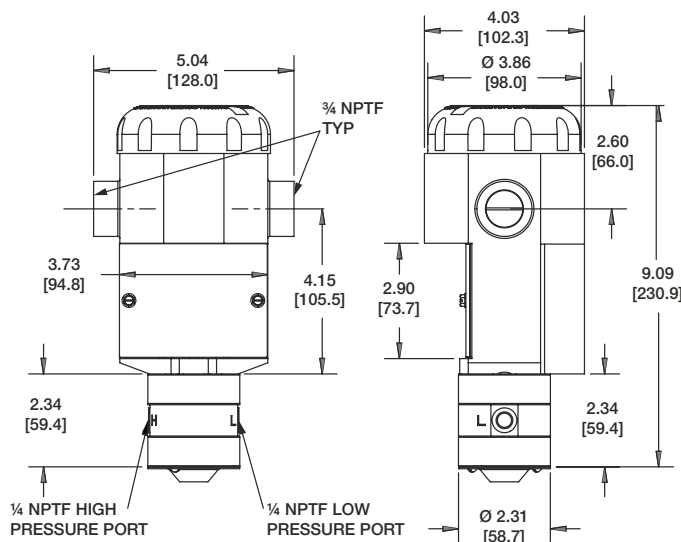
PRESSURE SWITCH – PSI RANGES



PRESSURE SWITCH – INCHES OF WATER RANGES



**DIFFERENTIAL PRESSURE SWITCH –
PSI DIFFERENTIAL RANGES**



**DIFFERENTIAL PRESSURE SWITCH –
INCHES OF WATER RANGES**

