



Miniature Pressure Switches and Vacuum Switches

P8 Series



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Typical Applications



Fire Suppression System



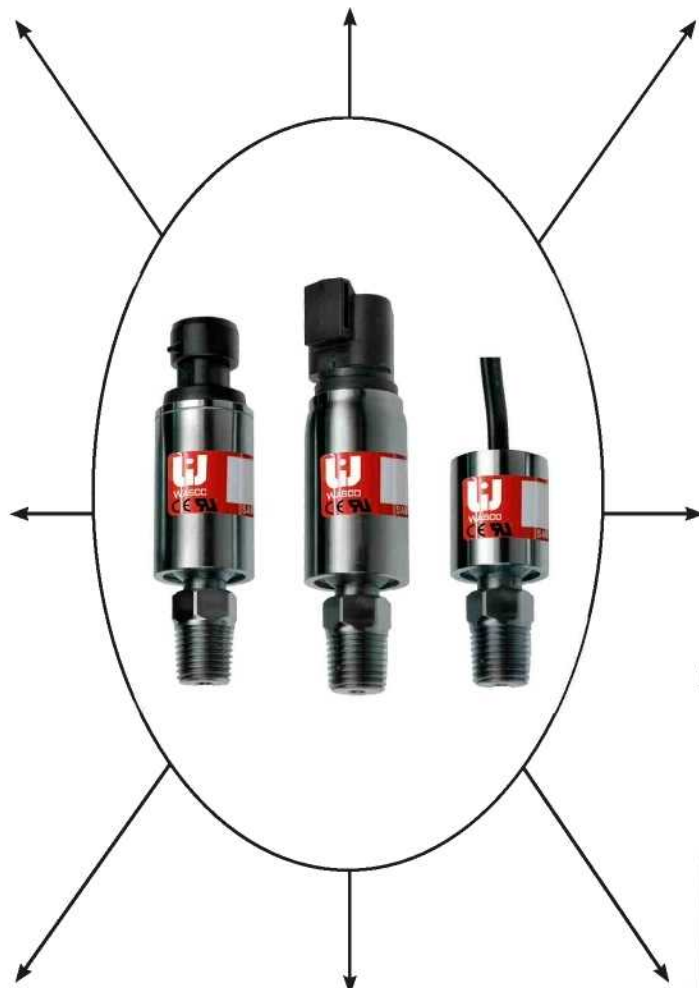
Automotive



Factory Automated Equipment



Medical and Dental Equipment



Refrigeration Recovery



Food Manufacturing Machinery



Solar Energy



HVAC Control

P8 Series Pressure and Vacuum Switches

P8 Series

Material Specifications:

NON-WETTED MATERIALS

Electrical Housing - 300 Series Stainless Steel
 Electric Contact - Silver-plated Brass, (Gold optional)
 Electrical Termination - Varies by customer selection

WETTED MATERIALS

All Wetted Material - Stainless Steel

MEETS: IP65 and NEMA 4



(Packard)

(Deutsch)

(Jacketed Wires)

Technical Specifications

No.	Name	Requirements
1	Activation Point Range	Open/Close at 30 inHg to 2000 PSI*
2	Activation Point Tolerance Positive Pressure	± 3 to ± 100 PSI (See table I on page 7)
3	Activation Point Tolerance Vacuum	± 6 inHg (See table II on page 7)
4	Proof Pressure**	≤ (Max Operating Pressure x 1.5)
5	Burst Pressure***	For Max Operating Pressure ≤ 165 PSI, Burst Pressure = 2500 PSI For Max Operating Pressure ≥ 165 PSI, Burst Pressure = 5000 PSI
6	Temperature Range	Ambient: -5° F to 175° F Medium: -40° F to 260° F
7	Electrical Rating	50/60 Hz DC 36V 6A AC 240V 6A Custom Currents Available
8	Dielectric Strength	AC 700 VRMS Open Switch AC 1500 VRMS Terminals Fitting Leakage Current ≤ 1mA
9	Insulation Resistance	DC 500V ≥ 100 MΩ
10	Contact Resistance	≤ 20 mΩ
11	Expected Lifetime	≥ 150,000 cycles
12	Leak Rate	≤ 1.0 x 10 ⁻⁵ cc/min Air

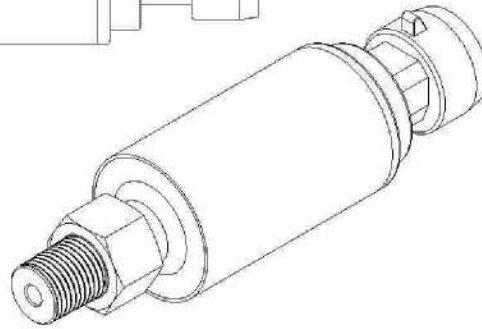
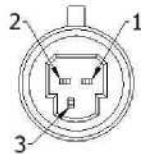
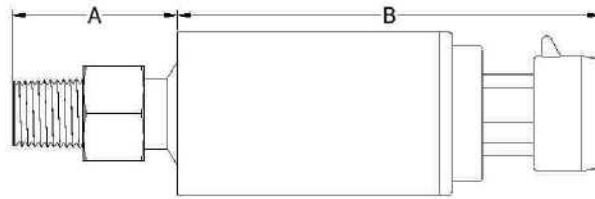
*UL Recognition for operating pressures ≤ 800 psig

**Operate at proof pressure for up to 1 minute with no leakage. Calibration may be permanently affected.

***Operate at burst pressure for up to 1 minute with no burst occurrence

P8 Series Connector Termination

P8 Series with Packard Connector

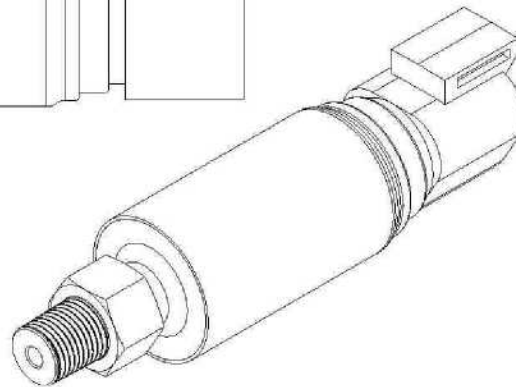
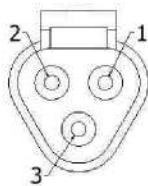
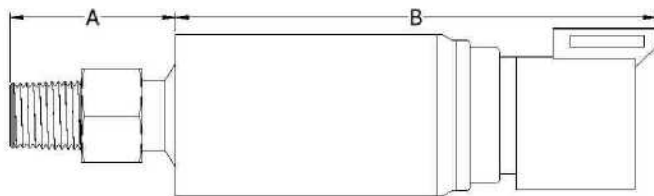


P8 - with Packard Metripack 150
(mates with Packard 12065287)

Fitting	A	B
1/8"-27 NPT	0.93	2.46
1/4"-18 NPT	0.99	2.46
1/4" Female Flare	0.70	2.46

Pin	Pressure Switch	Vacuum Switch
1	Normally Closed	Normally Open
2	Common	Common
3	Normally Open	Normally Closed

P8 Series with Deutsch Connector



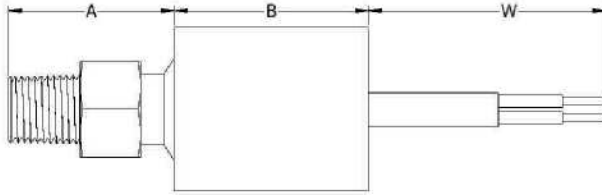
P8 - with Deutsch DT04-3P
(mates with Deutsch DT06-3S)

Fitting	A	B
1/8"-27 NPT	0.93	2.80
1/4"-18 NPT	0.99	2.80
1/4" Female Flare	0.70	2.80

Pin	Pressure Switch	Vacuum Switch
1	Normally Closed	Normally Open
2	Common	Common
3	Normally Open	Normally Closed

P8 Series Wire and Blade Termination

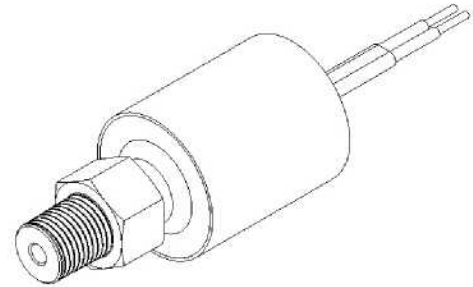
Wire Termination



P8 - Wires

Fitting	A	B (SPST)	B (SPDT)	W
1/8"-27 NPT	0.93	1.13	1.52	*
1/4"-18 NPT	0.99	1.13	1.52	*
1/4" Female Flare	0.70	1.13	1.52	*

* Customer Specified Length (3-99")



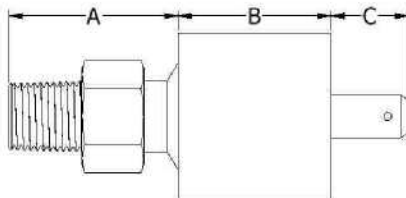
SPST Color Code

Wire Color	Terminal
Black	Normally Closed / Normally Open
Black	Common

SPDT Color Code

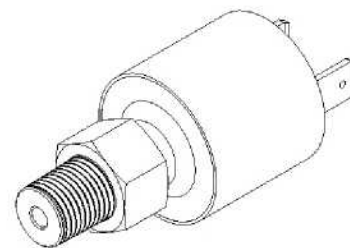
Wire Color	Pressure Switch	Vacuum Switch
Blue	Normally Closed	Normally Open
Green	Common	Common
Brown	Normally Open	Normally Closed

1/4" Blade Termination



P8 - with 1/4" Blades

Fitting	A	B	C
1/8"-27 NPT	0.93	0.87	0.44
1/4"-18 NPT	0.99	0.87	0.44
1/4" Female Flare	0.70	0.87	0.44



Note: P8 Series with 1/4" blade termination is only available as a SPST configuration

How to Order P8 Series Switches

P8-K-0200 J-0100 G-NC P3-S-X/2245

Model Number

P8 Stainless Steel Auto Reset Switch

Fitting

J	1/8" NPT (MALE)
K	1/4" NPT (MALE)
S	1/4" Female Flare w/ Deflator (7/16" - 20 UNF)
X	Additional Fittings Available

Open Pressure

-30 inHg to +2000 PSI

Decreasing/Increasing Pressure

Tolerance (in PSI)

No.	Min. Operating Pressure (PSI)	Activation Point Range (PSI)	Deactivated Range (PSI)	Activation Tolerance (PSI)
G	50	4-10	4-11	5
G	100	8-16	8-17	8
G	150	12-20	12-17	12
G	200	16-25	16-22	16
G	300	24-38	24-33	24
G	400	32-50	32-45	32
G	500	40-60	40-55	40
G	600	48-72	48-66	48
G	700	56-84	56-78	56
G	800	64-96	64-88	64
G	900	72-108	72-99	72
G	1000	80-120	80-110	80
G	1200	96-144	96-132	96
G	1400	112-168	112-156	112
G	1600	128-192	128-176	128
G	1800	144-216	144-198	144
G	2000	160-240	160-220	160
G	2200	176-264	176-246	176
G	2400	192-288	192-270	192
G	2600	208-312	208-294	208
G	2800	224-336	224-318	224
G	3000	240-360	240-342	240
G	3200	256-384	256-366	256
G	3400	272-408	272-390	272
G	3600	288-432	288-408	288
G	3800	304-456	304-432	304
G	4000	320-480	320-456	320
G	4200	336-504	336-480	336
G	4400	352-528	352-504	352
G	4600	368-552	368-528	368
G	4800	384-576	384-552	384
G	5000	400-600	400-576	400
G	5200	416-624	416-600	416
G	5400	432-648	432-624	432
G	5600	448-672	448-648	448
G	5800	464-696	464-672	464
G	6000	480-720	480-696	480
G	6200	496-744	496-720	496
G	6400	512-768	512-744	512
G	6600	528-792	528-768	528
G	6800	544-816	544-792	544
G	7000	560-840	560-816	560
G	7200	576-864	576-840	576
G	7400	592-888	592-864	592
G	7600	608-912	608-888	608
G	7800	624-936	624-912	624
G	8000	640-960	640-936	640
G	8200	656-984	656-960	656
G	8400	672-1008	672-984	672
G	8600	688-1032	688-1008	688
G	8800	704-1056	704-1032	704
G	9000	720-1080	720-1056	720
G	9200	736-1104	736-1080	736
G	9400	752-1128	752-1104	752
G	9600	768-1152	768-1128	768
G	9800	784-1176	784-1152	784
G	10000	800-1200	800-1176	800

Close Pressure

-30 inHg to +2000 (PSI)

Circuitry

NO	Normally OPEN
NC	Normally CLOSE
DT	Double Throw (SPDT)

Termination

00	1/4" Blades
03-99	Wire Length (inches)
D3	Packard Connector
P3	Deutsch Connector

Base Material

S Stainless Steel

X Items

X Additional / Custom Items (as needed)

Application Number

Wasco will assign an Application number that will correlate to your unique application, and include any specific options that are not called out in our standard part numbering.

Pressure Switch Example: P8-K-0200J-0100G-NC P3-S-X/2245

(P8) series stainless steel pressure switch, (K) 1/4" NPT MALE fitting, Open at (200) PSI ± 10 PSI (J), Close at (100) PSI ± 7 PSI (G), (NC) SPST normally closed, (P3) Packard connector, (S) Stainless Steel fitting, (X) laser marked serialization, (2245) assigned Application Number.

Operating Pressure Range and Standard Tolerances

Table I- Positive Pressure Activation Points

No.	Max. Operating Pressure (PSI)	Activation Point Range (PSI)	Deadband Range (PSI)	Activation Point Tolerance (\pm) (PSI)
C	150	0 - 10	5 - 10	3
D	150	11 - 20	6 - 15	4
E	150	21 - 30	6 - 15	5
F	150	31 - 50	7 - 20	6
G	160	51 - 80	8 - 40	7
H	195	81 - 110	10 - 60	8
I	220	111 - 130	15 - 80	9
J	270	131 - 180	20 - 90	10
K	375	181 - 250	25 - 100	11
L	450	251 - 300	30 - 150	12
M	525	301 - 350	40 - 200	14
N	600	351 - 400	50 - 200	15
O	675	401 - 450	50 - 200	16
P	750	451 - 500	50 - 200	17
Q	900	501 - 600	50 - 200	18
R	975	601 - 650	50 - 200	20
S	1050	651 - 700	50 - 200	30
T	1200	701 - 800	50 - 200	40
U*	1200	801 - 1000	50 - 200	50
V*	1440	1001 - 1200	50 - 200	60
W*	1800	1201 - 1500	50 - 200	80
X*	2400	1501 - 2000	50 - 200	100

* Activation Point ranges U, V, W and X are not UL recognized

Operating Vacuum Range and Standard Tolerance

Table II- Vacuum Pressure Activation Points

No.	Operating Vacuum Range (inHg)	Min. Deadband Range (inHg)	Activation Point Tolerance (\pm) (inHg)
C	-30 to 0	8	6

Vacuum Switch Example: P8-J-V015C-V007C-NCD3-S-X/2246

(P8) series auto reset switch, (J) 1/8" NPT fitting, (V015) Open at 15 inHg \pm 6 inHg (C), (V007) Close at 7 inHg \pm 6 inHg (C), (NC) SPST normally closed, (D3) Deutsch connector, (S) Stainless Steel fitting, (X) Deutsch mating connector included, (2246) assigned Application Number.

P8 Series Glossary of Terms

Activation Point: The point at which a sensor changes mechanical or electrical output state as a result of change to its input. Sometimes referred to as "Cut-in". (i.e. the pressure at which a switch will change from OFF to ON) *See also: Deactivation Point, Set Point.*

Activation Point Tolerance: The range expressing the largest variation of activation of a sensor while operating within the listed operating conditions.

Auto Reset: Automatic Reset switches, which are the most common type, will change the state of the electrical poles ("cut-in/cut-out") when the pressure crosses the activation point (Set Point). The electrical state will return to the previous state when the pressure crosses the deactivation point. These switches do not need human interaction to operate.

Burst Pressure: Pressure which causes failure of pressure sensing element. Exceeding the burst pressure results in permanent damage and mechanical breach of process media.

Deadband: The difference in pressure between the activation point (Set Point) and deactivation point (Reset Point). *See also: Hysteresis.*

Deactivation Point: The point at which a sensor changes mechanical or electrical output state as a result of change to its input. Sometimes referred to as "Cut-out". (i.e. the pressure at which a switch will change from ON to OFF) *See also: Activation Point, Set Point.*

Dielectric Strength: The maximum electric field strength that an insulator can withstand intrinsically without breaking down, i.e., without experiencing failure of its insulating properties.

Hysteresis: The difference in readings of an instrument when the value of the measured quantity is approached from two different directions.

IP 65: Product is totally protected from dust and protected against low pressure jets of water from all directions - limited ingress permitted.

Maximum Operating Pressure: The designed safe pressure limit of a sensing element at which regular use will cause no damage.

Maximum Operating Temperature: The designed safe temperature below which a sensor may be operated without loss of accuracy or integrity.

NEMA 4: Water-tight and dust-tight enclosures intended for use indoors or outdoors to protect the equipment against splashing, falling, or hose directed water, external condensation and water seepage. They are also sleet-resistant.

Operating Pressure Range: The pressure range (minimum and maximum pressure) in which a sensor can be safely operated and maintain activation point and mechanical integrity.

Proof Pressure: Pressure exceeding the Maximum Operating Pressure to which a sensor may be occasionally subjected to and cause no mechanical loss of integrity.

Repeatability: The exactness with which a sensor duplicates its Activation Point after successive cycles within the same operating conditions.

Reset Band: The difference in pressure between the activation point (Set Point) and deactivation point (Reset Point). *See also: Hysteresis.*

Reset Point: Point at which a switch will return to its original or normal operating position.

Sensor: A primary measuring device (bellows, diaphragm, piston) for detecting either the absolute or variable pressure.

Set Point: The calibrated point at which a sensor will activate. Set Point can be specified including the intended direction of pressure change (increasing or decreasing) to account for hysteresis. *See also: Activation Point*

SPDT: An acronym meaning Single Pole Double Throw, referring to an electrical switch contain common, normally open and normally closed terminals. *See also: SPST.*

SPST: An acronym meaning Single Pole Single Throw, referring to an electrical switch containing a common terminal and either a normally open or a normally closed terminal. *See also: SPDT*

Vacuum Pressure: The range of pressure identified as below atmospheric pressure.

Wetted Parts: Sensor components that come into direct contact with the process media.

Return Policy

Should one of our products be suspected of malfunction, return it as soon as possible, with shipping charges prepaid. An RMA (Return Material Authorization) number must be issued for your return. Please do not attempt to disassemble or repair as this action may destroy evidence of malfunction. Your cooperation in this regard will save both time and money.

Warranty Policy

WASCO warrants the P8 series to be free from defects in material and workmanship in normal use and service for a period of 1 year or 150,000 cycles from date of shipment, whichever ever occurs first. This warranty is limited to the repair or replacement of the product or part thereof which the Seller's inspection finds to be defective. This warranty shall not apply if the product has been subjected to misuse, negligence, accident, modification or repair by unauthorized persons. Repairs NOT covered under this Warranty will be subjected to a standard service charge. No other warranty or guarantee is expressed or implied.

Note: Please consider all the possible failure modes in your system that could occur with the use of our product. The switch you are considering could fail mechanically or electrically and the user must bear full responsibility for its' misapplication and misuse, including but not limited to any losses or damages caused by your use of that switch in your products, and by your customer's use of your products. Wasco, Inc. accepts no responsibility or liability for failures resulting from any misapplication of its product.

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