

Weatherproof type pressure switch

Model: P945 series

Spec. sheet no. PD09-05

Service intended

P945 diaphragm type pressure switch can be used in a variety of process lines. Internal micro switch is operated by pressure of various fluids such as atmospheric pressure and water pressure. The pressure sensing part is a piston actuated assembly.

ERC

Fluid

Gas and oil

Repeatability

±1.0 % of adjustable range

Adjustable range (mbar, kPa, bar, MPa)

-0.1 to -0.15 bar
0.3 kPa to 15 MPa

Dead band

Fixed

One SPDT : Approx. 5 % of adjustable range
Two SPDT : Approx. 10 % of adjustable range

Working temperature

Ambient : -20 ~ 65 °C
Fluid : Max. 100 °C

Degree of protection

EN60529/IEC529/IP65



Standard features

Pressure connection

Stainless steel (316SS), Monel and Hastelloy-C

Element

Stainless steel (316L SS)

Case and cover

ALDC 12.1 (Silver gray painted)

Contact

Micro contact type
One SPDT
Two SPDT (Only available with single setpoint)

Contact rating

SPDT contact rating

AC 125 V / 250 V, 15 A
DC 125 V, 0.4 A for resistance load
DC 125V, 0.03 A for inductive load

Conduit connection

3/4" NPT (F)

Process connection

3/8", 1/2" PT, NPT and PF

WISE[®]

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1. Base model**P945** Weatherproof type pressure switch**2. Deadband****F** Fixed**3. Switch form**

- 1** One SPDT
- 2** Two SPDT (Only available with single setpoint)

4. Process connection

- C** ¼"
- D** ⅜"
- E** ½"

5. Connection type

- B** PF
- C** PT
- D** NPT
- E** NPT (F)

6. Unit

- H** bar
- I** MPa
- J** kPa
- S** mbar

7. Setting range**XXX** Refer to pressure range table**8. Process connection and element material**

- 3** 316SS / 316L SS
- V** 316SS / Viton
- L** 316SS / Hastelloy-C
- K** 316SS / Monel
- Z** Monel / Monel
- H** Hastelloy-C / Hastelloy-C

9. Options

- 0** None
- 1** Mounting bracket
- 4** ½" NPT (F) conduit connection

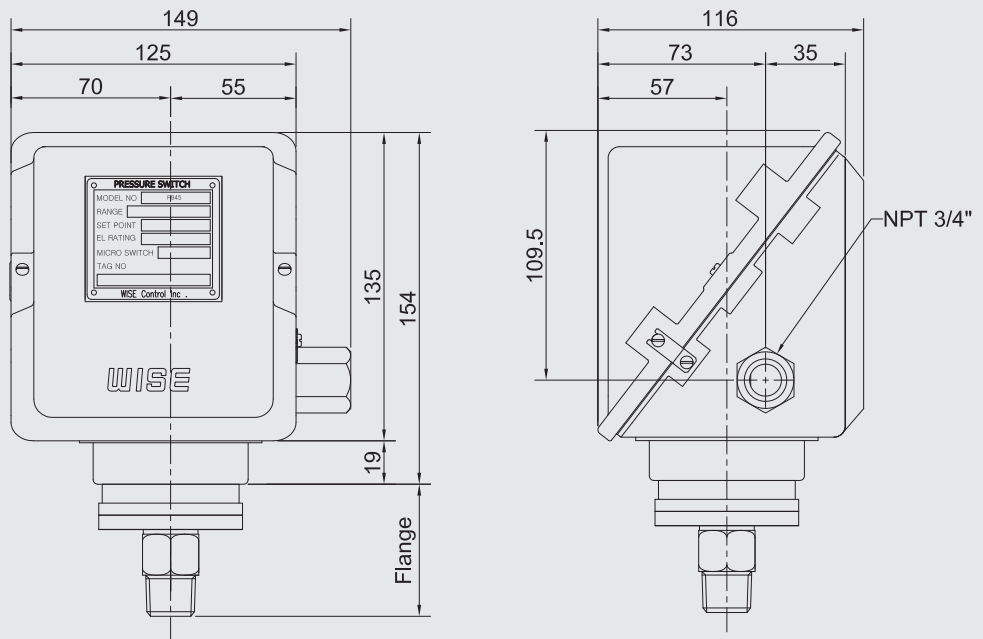
1	2	3	4	5	6	7	8	9
P945	F	1	C	B	H	XXX	3	0

Sample
ordering code

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P945 : Type of mounting

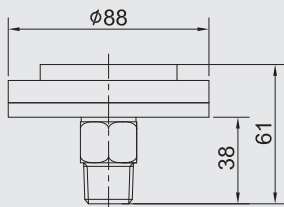
Model : P945-A



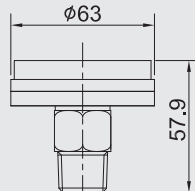
Low Pressure Range
0.3~14 kPa

Middle Pressure Range
1~20 bar

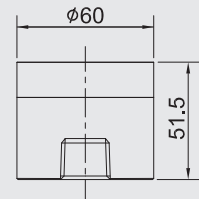
High Pressure Range
20~150 bar



Type A



Type B



Type C

Pressure switch

A bi-stable electro mechanical device than actuates/deactuates one or more electrical switching element at a predetermined discrete pressure upon rising or falling.

Adjustable range

The span of pressure between upper and lower limits within which the pressure switch can be adjusted to actuate/deactuate. It is expressed for increasing pressure.

Setpoint

That discrete pressure at which the pressure switch is adjusted to actuate/deactuate on rising or falling pressure. It must fall with the adjustable range and be called out as increasing.

Dead band

The difference in pressure between the increasing set point and the decreasing set point.

Working range

The maximum input pressure that can be continuously applied to the pressure switch without causing permanent change of set point, leakage or material failure.

Max. Working pressure

The maximum input pressure that can be continuously applied to the pressure switch without causing leakage or catastrophic material failure. Permanent change of set point may occur, or the device may be rendered inoperative.

Repeatability

The ability of a pressure switch to successively operate at a set point that is approached from a starting point in the same direction and returns to the starting point over three consecutive cycles to establish a pressure profile.

The closeness of the measures set point values is normally expressed as a percentage of full scale (maximum adjustable range pressure).

Pressure range table

Code	Adjustable setting range		Dead band		Working range	Flange size (mm)	Max. Working pressure	
			One SPDT Setpoint	Two SPDT Setpoint				
	bar	kPa	bar		bar	bar	bar	MPa
900	-0.1 ~ -0.15	-100 ~ -15	Within 10 % adjustable range	Within 20 % adjustable range	10	88 ~ 98	35	3.5
901	0.075 ~ 0.15	7.5 ~ 15	Within 5 % adjustable range	Within 10 % adjustable range				
938	0.045 ~ 0.3	4.5 ~ 30						
941	0.075 ~ 0.5	7.5 ~ 50						
949	0.09 ~ 0.6	9 ~ 60						
942	0.12 ~ 0.8	12 ~ 80						
902	0.15 ~ 1	15 ~ 100						
903	0.3 ~ 2	30 ~ 200						
904	0.45 ~ 3	45 ~ 300						
906	0.9 ~ 6	90 ~ 600						
908	1.5 ~ 10	0.15 ~ 1 MPa						
911	2.25 ~ 15	0.225 ~ 1.5 MPa						
912	3 ~ 20	0.3 ~ 2 MPa						
914	4.5 ~ 30	0.45 ~ 3 MPa						
916	7.5 ~ 50	0.75 ~ 5 MPa						
918	8.5 ~ 70	0.85 ~ 7 MPa						
919	10.5 ~ 100	1.05 ~ 10 MPa						
926	15.5 ~ 150	1.55 ~ 15 MPa						
					20	63		
					50	60	70	7
					100		170	17
					150		200	20
							400	40

Micro contact

General

The micro contact has a large switching capacity with high repeat accuracy. The contact mechanism is a crossbar type with gold alloy contacts, which ensures highly reliable operations for micro loads.

Characteristics

Item	Micro switch
Operating speed	0.01 mm to 1 m/s
Mechanical operating frequency	240 operations/min
Insulation resistance	100 M Ω 1 min at 500 VDC
Contact resistance	0.015 Ω max
Shock resistance	100 m/sec ² max
Ambient temperature	-25 ~ 80 °C
Ambient humidity	35 ~ 85 % RH

Specifications

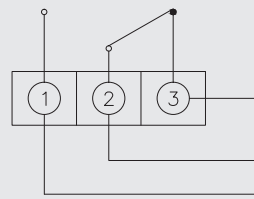
Rated voltage	Non inductive load (A)				Inductive load (A)			
	Resistive load		Lamp load		Inductive load		Motor load	
	NC	NO	NC	NO	NC	NO	NC	NO
125 V AC	15		3	1.5	15		5	2.5
250 V AC	15		2.5	1.25	15		3	1.5
8 V DC	15		3	1.5	15		5	2.5
30 V DC	2		2	1.4	1		1	1
125 V DC	0.4		0.4	0.4	0.03		0.03	0.03
250 V DC	0.2		0.2	0.2	0.02		0.02	0.02

SPDT switching element

Single-pole, double throw (SPDT) has three connection : C-common, NO-normally open and NC-normally close, which allows the switching element to be electrically to the circuit NO or NC state.

One SPDT

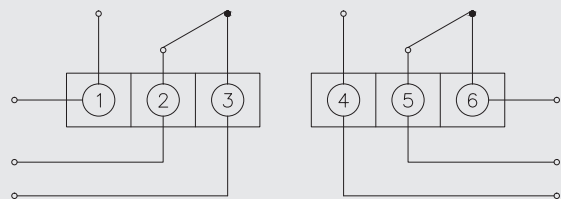
Pressure reach the upper or lower limit setpoint, circuit closed and opened.



①:NO ②:COM ③:NC

Two SPDT

Pressure reach the upper or lower limit setpoint, two circuit simultaneous closed and opened.



①,④:NO ②,⑤:COM ③,⑥:NC

NO : Normal open
NC : Normal close

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