

Weatherproof type differential pressure switch

Model: P946 series

Spec. sheet no. PD09-06

Service intended

P946 diaphragm type differential 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 force balanced and piston actuated assembly.



Fluid

Gas and oil

Repeatability

±1.0% of adjustable range

Adjustable range (mbar, kPa, bar, MPa)

15 kPa to 1.5 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

Material

Case and cover : ALDC 12.1 (Silver gray finished)

Pressure connection : 316SS

Diaphragm : 316L SS and Viton

Conduit connection

3/4" NPT (F)

Process connection

1/4" NPT (F)

Contact

Micro contact type

One SPDT

Two SPDT (Only single setpoint)

Optional

Bracket : 304SS and 316SS

Wall mounting bracket

Remote diaphragm seal

Contact rating

■ AC 125 V / 250 V, 15 A

DC 125 V, 0.5 A for resistance load

■ AC 125 V / 250 V, 15 A

DC 125 V, 0.05 A for inductive load

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1. Base model

P946 Differential switch (Only single set point)

2. Deadband

F Fixed

3. Switch form

- 1** One SPDT
- 2** Two SPDT (Only setpoint)

4. Process connection

C ¼"

5. Connection type

D NPT (F)

6. Unit

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

7. Setting range

XXX Refer to pressure range table

8. Element and flange material

- V** 316SS and viton
- 3** 316SS and 316L SS

9. Options

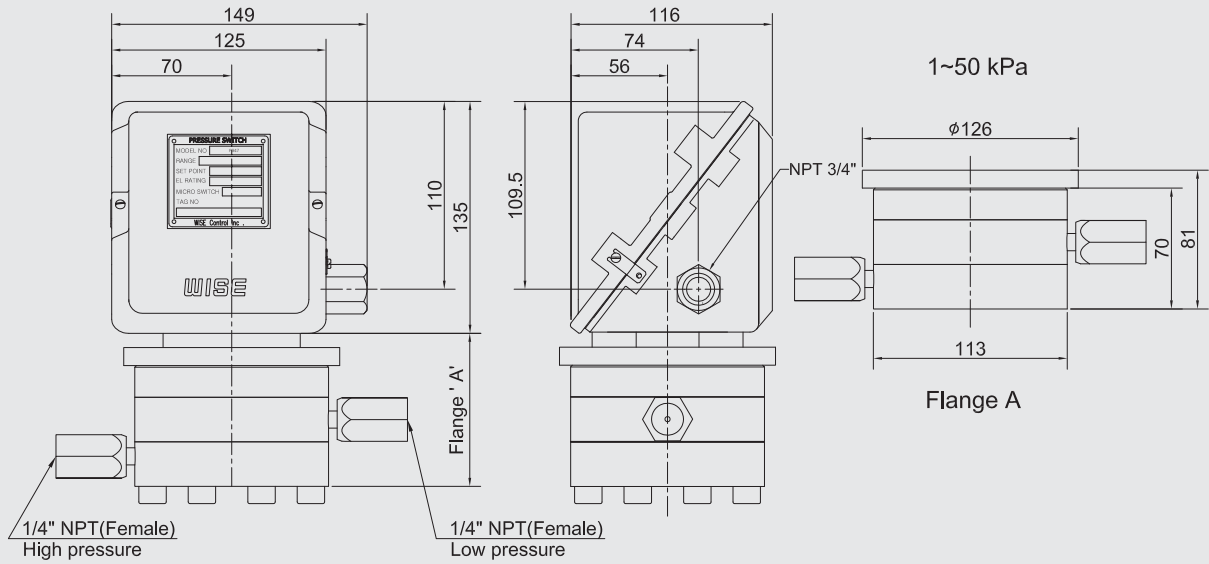
- 0** None
- 1** Mounting bracket
- 2** Diaphragm seal

1	2	3	4	5	6	7	8	9
P946	F	1	C	D	H	XXX	3	0

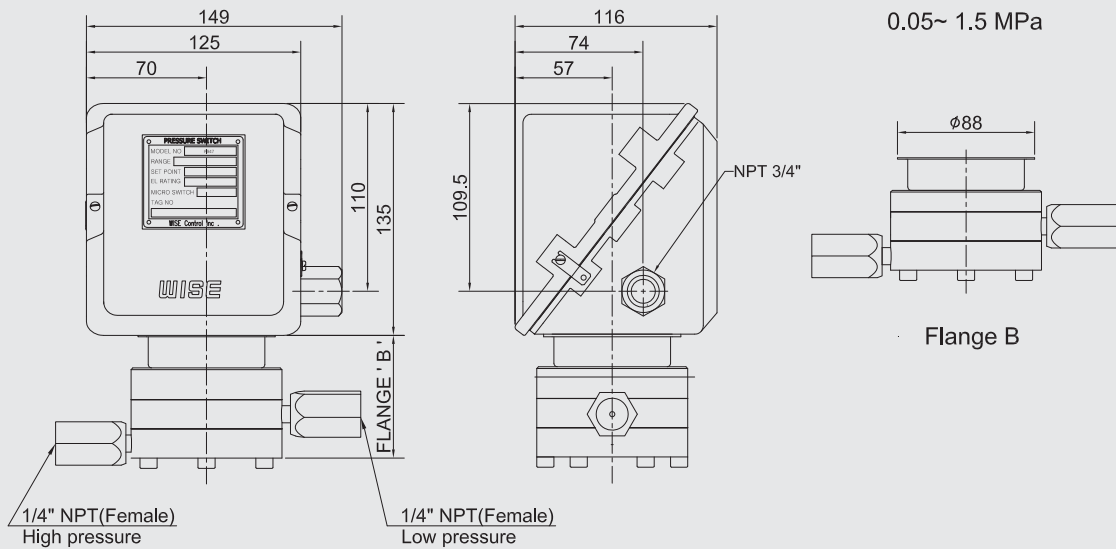
Sample
ordering code

P946 : Type of mounting

High differential pressure



Middle differential pressure



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.

Deadband

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

Proofpressure (Pmax)

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

Burst 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	Setting range		Pmax	Flange size
	kPa	MPa	bar	Diameter (mm)
115	1 ~ 15		50	126
118	15 ~ 25			
120	25 ~ 35			
123	35 ~ 50			
42		0.05 ~ 0.2	100	88
044		0.2 ~ 0.4		
046		0.4 ~ 0.7		
050		0.7 ~ 1.5		

Code	Resistance load		Inductive load	
	NC	NO	NC	NO
125 V AC		15 (10)		15 (10)
250 V AC		15 (10)		15 (10)
480 V AC		10		10
8 V DC		15		15
14 V DC		15		10
30 V DC		2		1
125 V DC		0.4		0.03
250 V DC		0.2		0.02

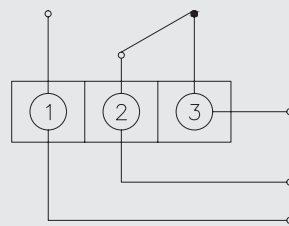
SPDT switching element

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

DPDT switching element

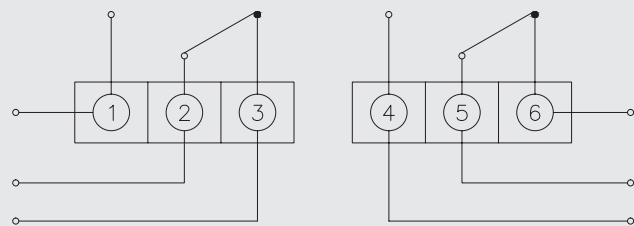
Double-pole, double throw (DPDT) is two SPDT switching elements operated by a common lever assembly so simultaneous actuation / deactuation occurs at both the increasing and the decreasing set point. Two independent electrical circuits can be switched, i.e. one AC and one DC.

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



①:N.O ②:COM ③:N.C

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



①,④:N.O ②,⑤:COM ③,⑥:N.C

N.O : Normal open
N.C : Normal close