

# 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

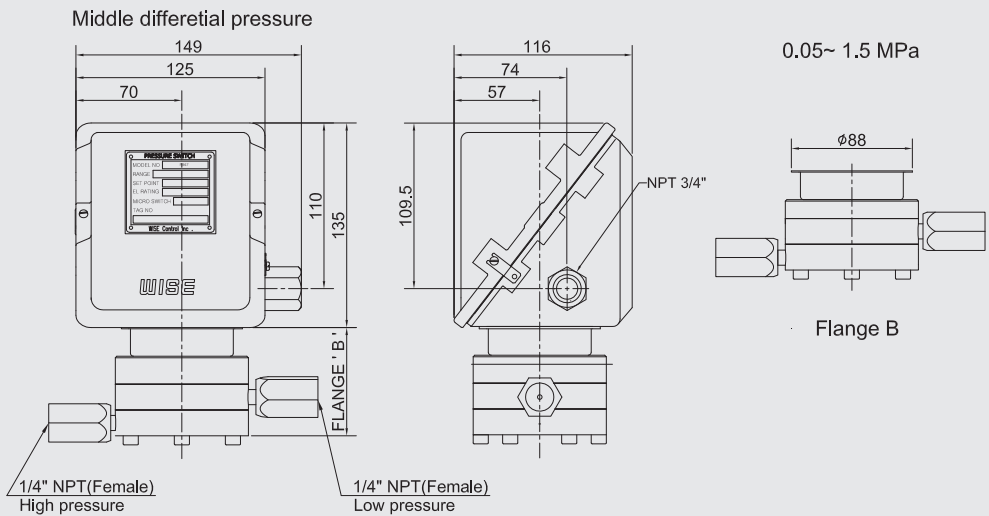
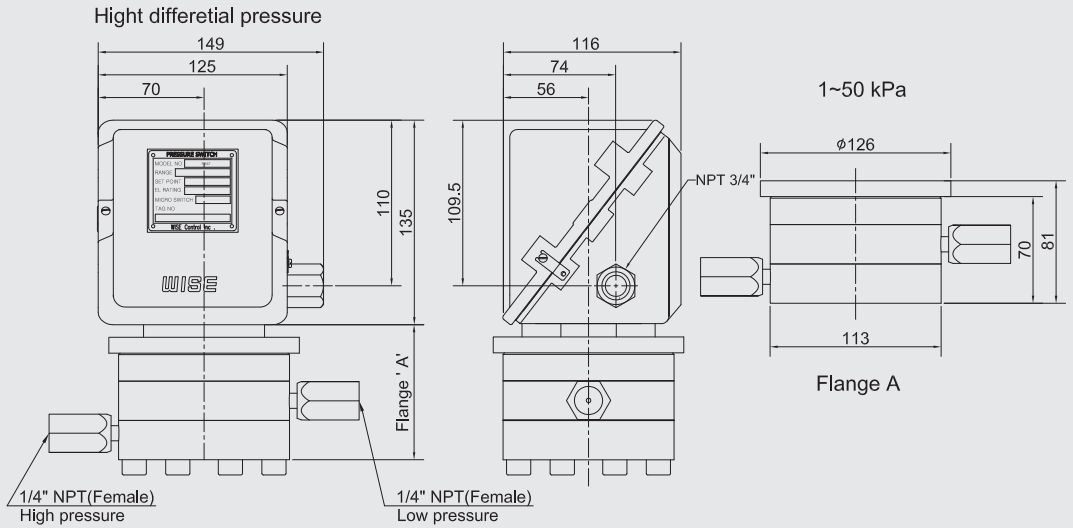
**9. Options**

- 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



### 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.

### Proof pressure (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           |    |

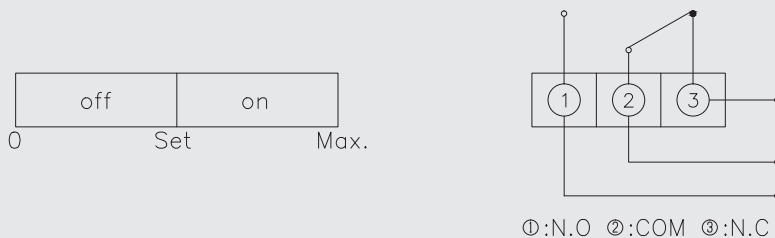
### SPDT switching element

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.

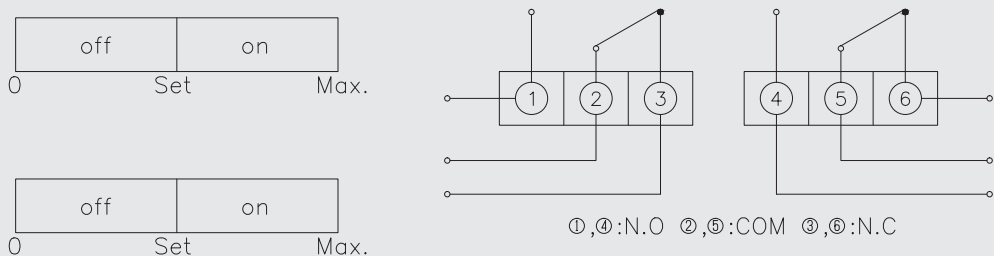
### DPDT switching element

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.



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



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

A large empty rectangular box with a thin black border, intended for writing a memo.