

# Differential pressure gauge with reed switch

## Model: P680 series

Spec. sheet no. PD06-10

### Service intended

P680 series differential pressure gauge is designed to measure differential pressure from 25 kPa to 2.0 MPa at static pressure 10 MPa. A set of two stainless steel bellows mounted on a force balance allows direct reading of the actual differential pressure. The contacts use a reed switch for warning and control applications.



### Nominal diameter

160 mm

### Accuracy

±1.0% of full scale

±1.6% of full scale

### Scale range (MPa, kPa, bar, mbar)

0 ~ 25 kPa to 0 ~ 0.2 MPa (P681 model)

0 ~ 0.25 MPa to 0 ~ 2.0 MPa (P682 model)

### Static pressure

Max. 10 MPa

### Working temperature

Ambient : -20 ~ 65°C

Fluid : Max. 100°C

### Degree of protection

EN60529/IEC529/IP65

### Temperature effect

Accuracy at temperature above and below the reference temperature (20°C) will be effected by approximately ±0.5% per 10°C of full scale



## Standard features

### Pressure connection

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

### Element

Bellows

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

### Case and cover

ALDC12.1, black painted

Screwed type

### Window

Safety glass

### Dial

White aluminium with black graduations

### Filling liquid for differential cell

Silicone oil

### Pointer

Black painted aluminium alloy (Zero adjustable)

### Process connection

¼" NPT(F)

½" NPT(F) at 3-way manifold valve and 5-way manifold valve

### Standard accessories

Mounting bracket for 2" pipe

mounting with silver gray finished steel

### Optional

■ Remote seal - Not available with less than 40 kPa of differential pressure range

■ Mounting bracket with 316SS for 2" pipe

■ 3-way manifold valve and 5-way manifold valve

■ 3-way manifold valve and 5-way manifold valve (Monel)

### Conduit connection

¾" PF(F)

### Contact

Reed switch, One and two SPST

**WISE**®

**1. Base model**

**P681** Differential pressure gauge with reed switch  
(0 ~ 25 kPa to 0 ~ 0.2 MPa)

**P682** Differential pressure gauge with reed switch  
(0 ~ 0.25 MPa to 0 ~ 2.0 MPa)

**2. Switch form**

- 1 One SPST
- 2 Two SPST

**3. Type of mounting**

- D Bottom connection, mounting bracket for 2" pipe

**4. Accuracy**

- 3 ±1.0% of full scale (Optional)
- 4 ±1.6% of full scale (Standard)

**5. Process connection**

- C ¼" NPT(F)
- E ½" NPT(F) (only at 3-way and 5-way manifold valve)

**6. Mounting bracket**

- D Standard bracket
- E 304SS mounting bracket
- F 316SS mounting bracket
- W Wall mounting bracket (316SS)
- N None

**7. Unit**

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

**8. Range**

**XXX** Refer to pressure unit and range table

**9. Element and flange material**

- 1 316L SS
- 2 Monel
- 3 Hastelloy-C

**10. Options**

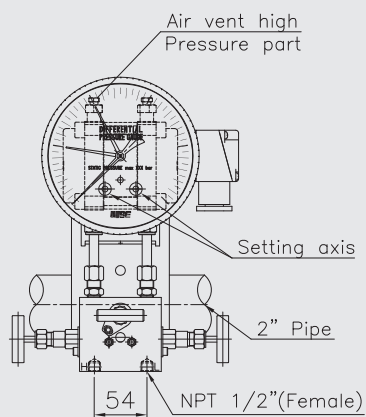
- 0 None
- 1 Manifold valve
- 8 ½" or ¾" NPT(F) conduit connection

1	2	3	4	5	6	7	8	9	10
P681	1	D	4	C	D	H	XXX	1	0

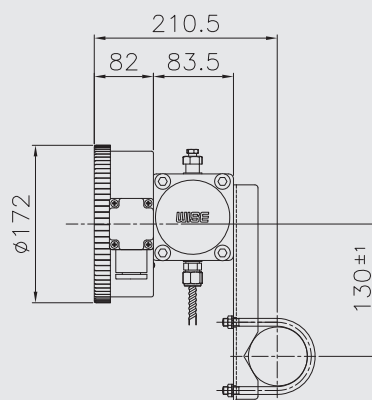
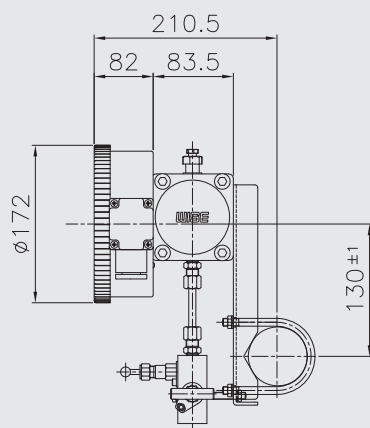
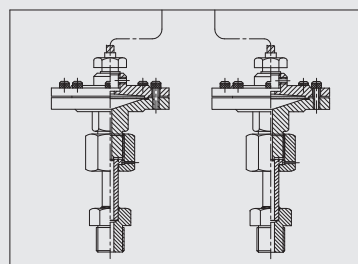
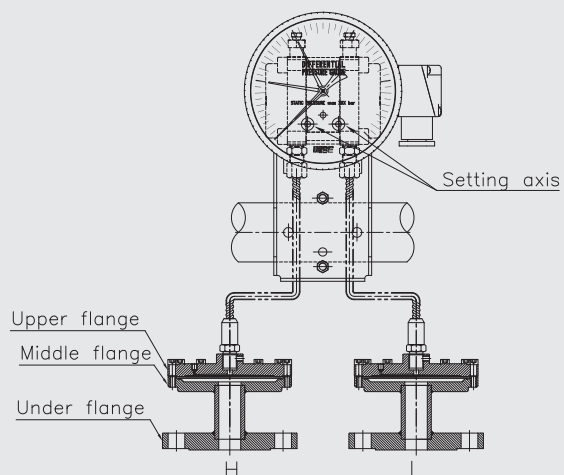
Sample  
ordering code

## P680 : Type of mounting

Code:(D) P680



Code:(D) P680(Remote seal)



## Electrical

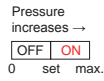
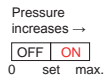
Switch	Rating	Withstand voltage	Insulation resistance
Reed switch	125 V AC 0.2 A	Between noncontiguous terminals	500 V DC 100MΩ or over Between terminals and case
	200 V DC 0.25 A	400 V AC for 1 minute	
	100 V DC 0.7 A	Between terminals and case	
	(Resistance load)	600 V AC for 1 minute	

### Withstand voltage

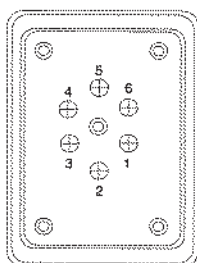
\* A contact protection circuit is required when using an inductive load or a load (Capacitive load, long cable, etc) through which a surge current (Inrush current) flows as the reed switch load.

\* These gauges cannot be used with 220 V AC.

## Type of contacts and wiring

Model	Type of contacts	Mark	Operation system and operation diagram	Connection terminal number	Setting pointer
P680	Upper limit type with one contact	H	When the differential pressure increases (decreases) to the set pressure, the contacts operate and turn ON(OFF) the circuit. 	①-②	Red pointer
	Lower limit type with one contact	L	When the differential pressure increases (decreases) to the set pressure, the contacts operate and turn ON(OFF) the circuit. 	③-④	Yellow pointer
	Upper & lower limit type with two contacts	H L	Combines two upper limit type and lower limits type each type operates independently.	①-② ③-④	Red pointer Yellow pointer
	Upper limit type with two contact	2 H	Combines two upper limit type each type operates independently.	①-② ③-④	Red pointer Yellow pointer
	Lower limit type with two contacts	2 L	Combines two upper limit type each type operates independently.	①-② ③-④	Red pointer Yellow pointer

## Terminal block arrangement



### 1. High alarm

- ① Normal open
- ② Common
- ③ Normal close

### 2. High and low alarm

#### High alarm

- ① Normal open
- ② Common
- ③ Normal close

#### Low alarm

- ④ Normal open
- ⑤ Common
- ⑥ Normal close

### 3. Low alarm

- ① Normal open
- ② Common
- ③ Normal close

### 4. High and h/High alarm

#### High alarm

- ① Normal open
- ② Common
- ③ Normal close

#### High and high alarm

- ④ Normal open
- ⑤ Common
- ⑥ Normal close

### 5. Low and l/Low alarm

#### High alarm

- ① Normal open
- ② Common
- ③ Normal close

#### Low and low alarm

- ④ Normal open
- ⑤ Common
- ⑥ Normal close

## Pressure unit and range table

Range and code	Unit and code			
	J : kPa	S : mbar	H : bar	I : MPa
517	0 ~ 25	0 ~ 250	X	X
121	0 ~ 40	0 ~ 400	X	X
131	0 ~ 60	0 ~ 600	X	X
041	X	X	0 ~ 1	0 ~ 0.1
133	X	X	0 ~ 1.6	0 ~ 0.16
134	0 ~ 250	X	0 ~ 2.5	0 ~ 0.25
044	0 ~ 400	X	0 ~ 4	0 ~ 0.4
045	0 ~ 600	X	0 ~ 6	0 ~ 0.6
047	0 ~ 1,000	X	0 ~ 10	0 ~ 1
143	X	X	0 ~ 16	0 ~ 1.6
051	X	X	0 ~ 20	0 ~ 2

O : Available    X : Not available

