

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

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

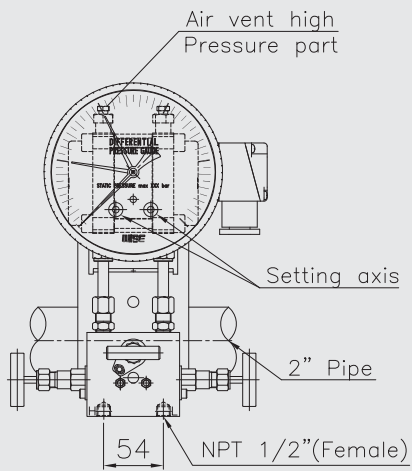
- 0 None
- 1 Manifold valve
- 8 ½" or ¾" NPT(F) conduit connection

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

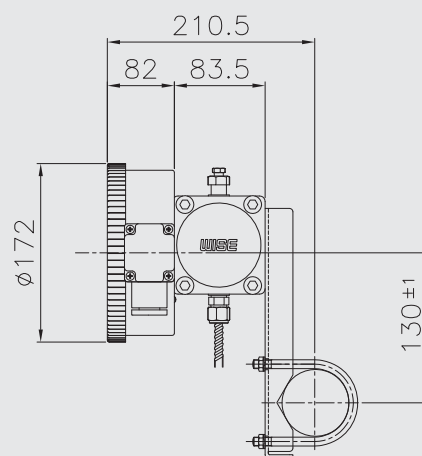
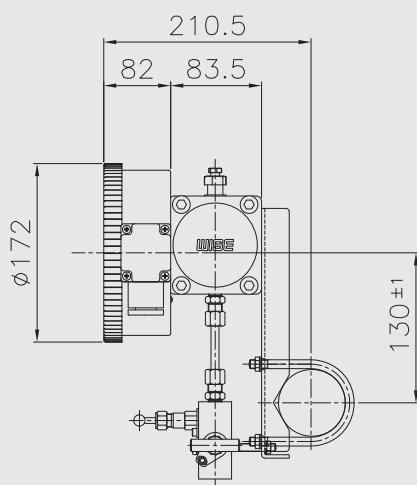
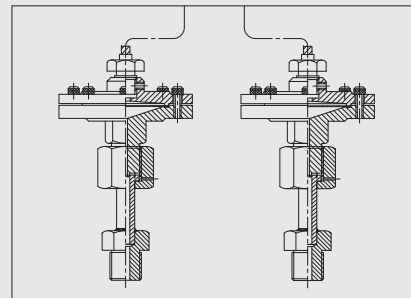
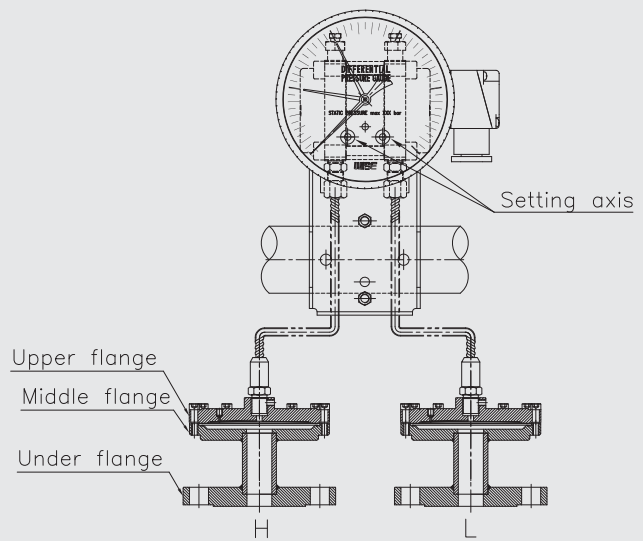
Sample
ordering code

P680 : Type of mounting

Code:(D) P680



Code:(D) P680(Remote seal)



Electrical

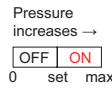
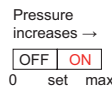
Switch	Rating	Withstand voltage	Insulation resistance
Reed switch	125 V AC 0.2 A	Between noncontiguous terminals	500 V DC 100MΩ or over Between terminals and case
	200 V DC 0.25 A	400 V AC for 1 minute	
	100 V DC 0.7 A	Between terminals and case	
	(Resistance load)	600 V AC for 1 minute	

Withstand voltage

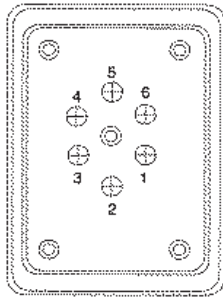
* A contact protection circuit is required when using an inductive load or a load (Capacitive load, long cable, etc) through which a surge current (Inrush current) flows as the reed switch load.

* 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