Differential pressure gauge with reed switch
Model: P680 series

Spec. sheet no. PD06-06

Service intended
P680 series are differential pressure gauge is designed to measure differential pressure from 25 kPa to 2.0 MPa at Max.working 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 uses a reed switch for warning and control applications.

Nominal diameter
150 mm

Accuracy
±1.0 % of full scale
±1.6 % of full scale

Scale range (MPa, kPa, bar, mbar)
0 ~ 25 kPa to 0 ~ 0.25 MPa (P681 model)
0 ~ 0.4 MPa to 0 ~ 2.0 MPa (P682 model)

Max. working pressure (Static pressure)
Max. 10 MPa

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

Degree of protection
EN60529/IEC529/IP55

Temperature effect
Accuracy at temperature above and below the reference temperature (20 ℃) will be effected by approximately ±0.5 % per 10 ℃ 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)

Contact
Reed switch, One and two SPST

Conduit connection
¾" PF(F)

Process connection
¼" NPT(F)
½" NPT(F) at 3-way and 5-way manifold valve

Standard accessories
Mounting bracket for 2” pipe
mounting with silver gray finished steel

Option
- Remote seal - Not available with less than 40 kPa of differential pressure range
- Mounting bracket with 316SS for 2" pipe
- 3-way and 5-way manifold valve
- 3-way and 5-way manifold valve (Monel)

Main order Ordering information

1. Base model

P681	Differential pressure gauge with reed switch (0 ~ 25 kPa to 0 ~ 0.25 MPa)
P682	Differential pressure gauge with reed switch (0 ~ 0.4 MPa to 0 ~ 2.0 MPa)

2. Contact function

1	High alarm
2	Low alarm
3	High and low alarm
4	Two high alarm
5	Two low alarm

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. Option

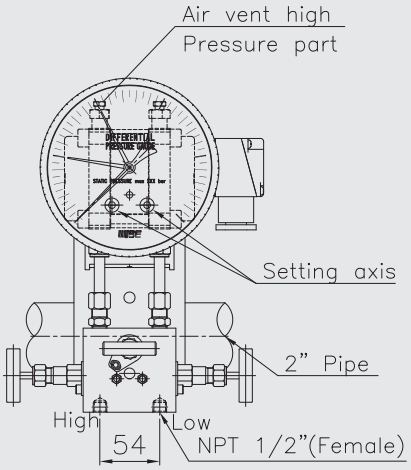
0	None
1	Manifold valve
8	½" or ¾" NPT(F) conduit connection

Sample ordering code

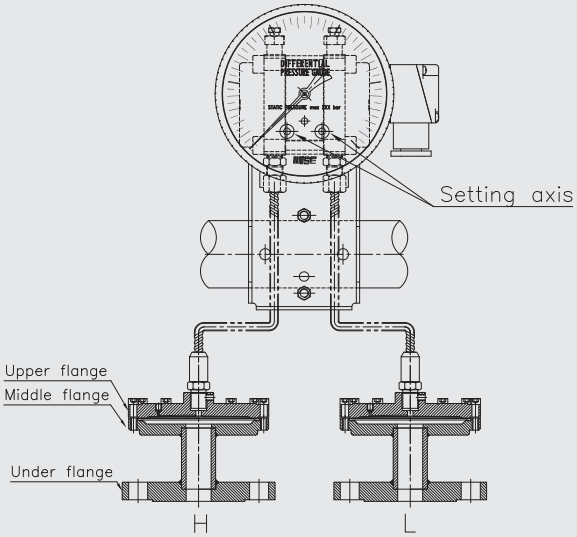
1	2	3	4	5	6	7	8	9	10
P681	**1**	**D**	**4**	**C**	**D**	**H**	**XXX**	**1**	**0**

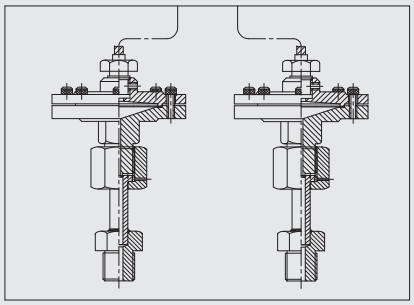
P680 : Type of mounting

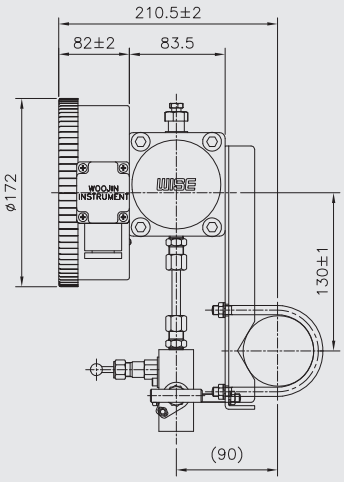
Code:(D) P680

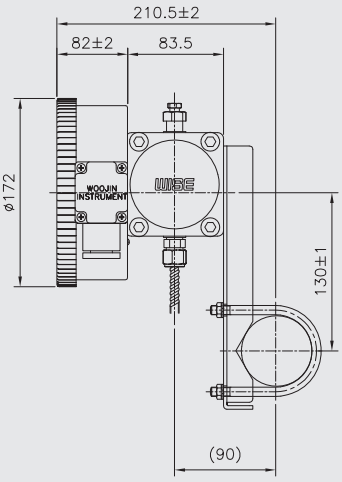


Code:(D) P680(Remote seal)









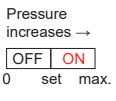
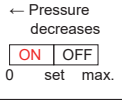
Electrical

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

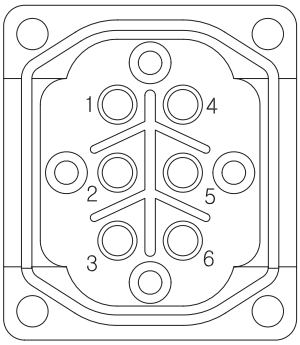
Withstand voltage

* 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 read switch load.
* These gauges cannot be used with 220 V AC.

Contact function

Code	Type of contact	Mark	Operation system and operation diagram	Connection terminal number	Setting pointer
1	High alarm	H	When the differential pressure increases (decreases) to the set pressure, the contacts operate and turn ON(OFF) the circuit. 	①-②	Red pointer
2	Low alarm	L	When the differential pressure increases (increases) to the set pressure, the contacts operate and turn ON(OFF) the circuit. 	④-⑤	Yellow pointer
3	High and Low alarm	H L	Combines the upper limit type (reverse lower limit type) and lower limits type (reverse upper limit type). Each type operates independently.	①-② ④-⑤	Red pointer Yellow pointer
4	Two high alarm	2 H	Combines two upper limit type (reverse lower limit type). Each type operates independently.	①-② ④-⑤	Red pointer Yellow pointer
5	Two low alarm	2 L	Combines two lower limit type (reverse upper limit type). Each type operates independently.	①-② ④-⑤	Red pointer Yellow pointer

Terminal block arrangement



1. High alarm
① Normal open
② Common

2. Low alarm
④ Normal close
⑤ Common

3. High and low alarm

High alarm
① Normal open
② Common

Low alarm
④ Normal close
⑤ Common

4. Two high alarm

No.1 High alarm
① Normal open
② Common

No.2 High alarm
④ Normal open
⑤ Common

5. Two low alarm

No.2 Low alarm
① Normal close
② Common

No.1 Low alarm
④ Normal close
⑤ Common

Pressure unit and range table

Range and code	Unit and code				Model	Max. static pressure
	J : kPa	S : mbar	H : bar	I : MPa		
118	0 ~ 25	0 ~ 250	X	X	P681	10 MPa
121	0 ~ 40	0 ~ 400	X	X		
125	0 ~ 60	0 ~ 600	X	X		
041	0 ~ 100	X	0 ~ 1	0 ~ 0.1		
133	0 ~ 160	X	0 ~ 1.6	0 ~ 0.16		
042	0 ~ 200	X	0 ~ 2	0 ~ 0.2		
134	0 ~ 250	X	0 ~ 2.5	0 ~ 0.25		
044	0 ~ 400	X	0 ~ 4	0 ~ 0.4	P682	
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		

X : Not available

Memo