Differential pressure gauge with reed switch
Model: P680 series

Service intended

P680 series are 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 uses a reed switch for warning and control applications.

Nominal diameter
150 mm

Accuracy
±1.0% of full scale
±1.5% 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)

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℃) 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 manifold valve 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)

WISE®

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
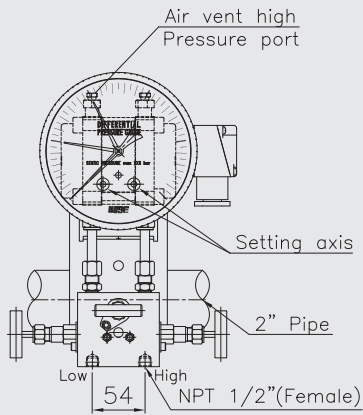**3**   Hastelloy-C

10. Option

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

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

Code:(D) P680

Air vent high
Pressure port

Setting axis

2" Pipe

Low   High
54   NPT 1/2"(Female)

Code:(D) P680(Remote seal)

Setting axis

Upper flange
Middle flange

Under flange

L   H

210.5±2
82±2 83.5

Ø172

130±1

210.5±2
82±2 83.5

Ø172

130±1
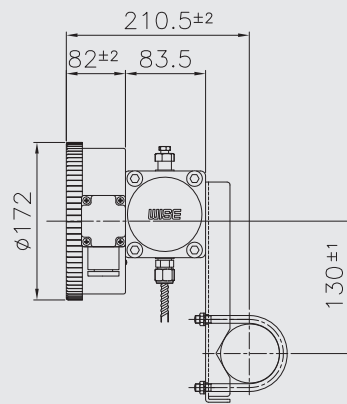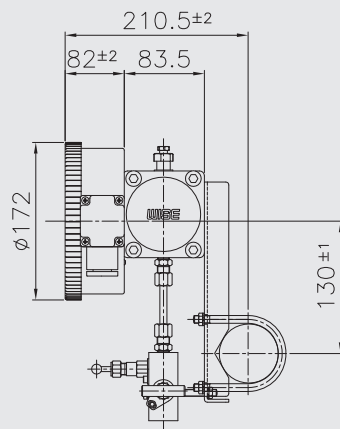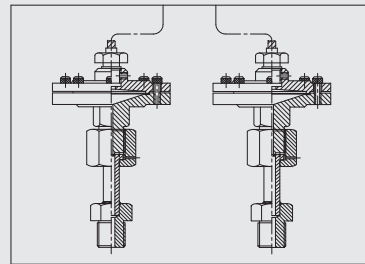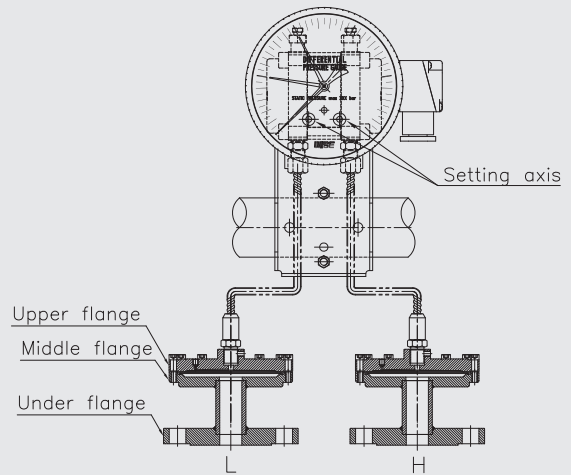
Electrical

| Switch	Rating	Withstand voltage	Insulation resistance
Reed switch	125 V AC 0.2 A	Between noncontiguos terminals 400 V AC for 1 minute	500 V DC 100MΩ or over Between terminals and case
	200 V DC 0.25 A		
	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 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. Pressure increases → OFF ON 0 set max.	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. ← Pressure decreases ON OFF 0 set max.	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
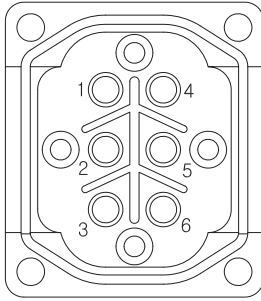
1. High alarm
① Normal open
② Common

2. Low alarm
④ Normal close
⑤ Common

3. High and low alarm

High alarm   Low alarm
① Normal open   ④ Normal close
② Common   ⑤ Common

4. Two high alarm

No.1 High alarm   No.2 High alarm
① Normal open   ④ Normal close
② Common   ⑤ Common

5. Two low alarm

No.2 Low alarm   No.1 Low alarm
① Normal open   ④ Normal close
② Common   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