

# Differential pressure gauge with electrical contact

## Model: P621 series

Spec. sheet no. PD06-04

### Service intended

The P621 series are designed to measure a differential pressure from 5 kPa to 1.5 MPa at static pressure up to 5 and 25MPa and have electrical contact. These models are designed to control and alarm for a differential pressure, providing a right time to replace air and sludge filter during the process.



### Nominal diameter

100 and 160 mm

### Accuracy

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

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

0 ~ 5 kPa to 0 ~ 50 kPa  
0 ~ 0.1 MPa to 0 ~ 1.5 MPa

### Static pressure

5 MPa : Model P62X1  
25 MPa : Model P62X2

### 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)

### Element

Bellows  
Stainless steel (316L SS)

### Case

Stainless steel (304SS)

### Bezel ring

Stainless steel (304SS)  
Bayonet type

### Window

Polycarbonate

### Dial

White aluminium with black graduations

### Pointer

Black painted aluminium alloy

### 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
- Mounting bracket with 316SS for 2" pipe mounting
- 3-way manifold valve (316SS, Monel)
- 5-way manifold valve (316SS, Monel)

### Conduit connection

M20 x 1.5

**WISE**<sup>®</sup>

**1. Base model**

- P621** High alarm contact differential pressure gauge  
**P622** High and low alarm contact differential pressure gauge  
**P623** Low alarm contact differential pressure gauge  
**P624** High and hi/high alarm contact differential pressure gauge  
**P625** Low and lo/low alarm contact differential pressure gauge

**2. Static pressure**

- 1** 5 MPa  
**2** 25 MPa

**3. Nominal diameter (mm)**

- 4** 100  
**6** 160

**4. Type of mounting**

- D** Bottom connection, mounting bracket for 2" pipe

**5. Accuracy**

- 3** ±1.0% of full scale  
**4** ±1.6% of full scale

**6. Process connection**

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

**7. Mounting bracket**

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

**8. Unit**

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

**9. Range**

- 041** 0 ~ 0.1 MPa  
**042** 0 ~ 0.2 MPa  
**043** 0 ~ 0.3 MPa  
**044** 0 ~ 0.4 MPa  
**045** 0 ~ 0.6 MPa  
**047** 0 ~ 1 MPa  
**050** 0 ~ 1.5 MPa  
**465** 0 ~ 5 kPa, not available with remote seal type  
**469** 0 ~ 10 kPa, not available with remote seal type  
**518** 0 ~ 30 kPa, not available with remote seal type  
**040** 0 ~ 50 kPa

**10. Options**

- 0** None  
**1** Manifold valve  
**6** Silicone filling  
**7** Manifold valve and silicone filling  
**8** ½" or ¾" NPT(F) conduit connection

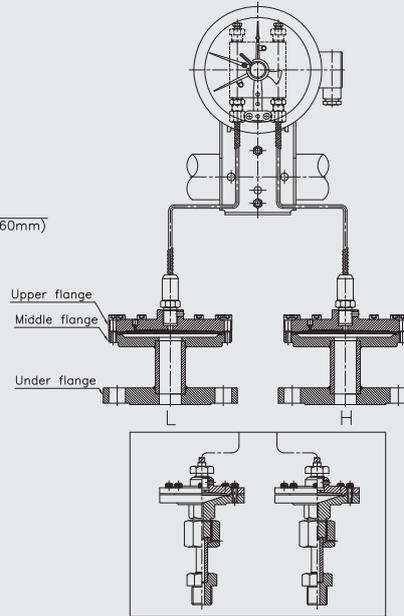
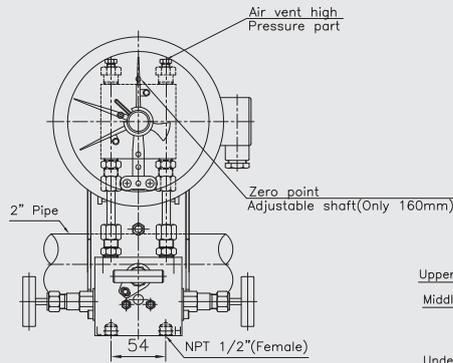
1	2	3	4	5	6	7	8	9	10
P623	1	6	D	4	E	D	I	047	1

Sample  
ordering code

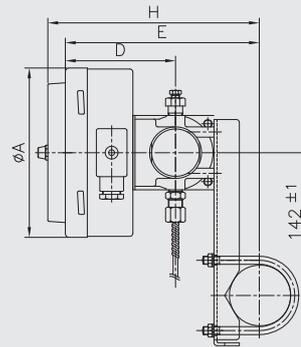
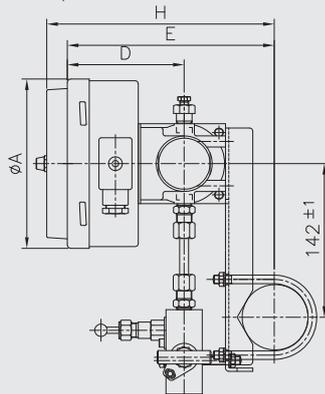
# P62X : Type of mounting

Code : P621, P622, P623, P624, P625

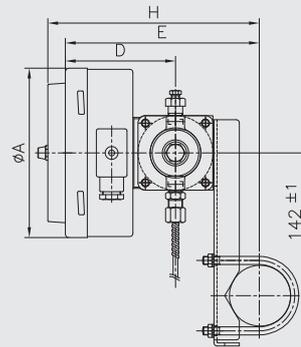
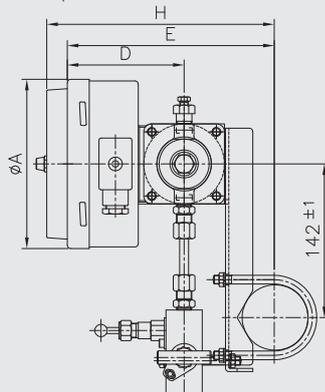
Code : P621, P622, P623, P624, P625(Remote seal)



Static pressure : 5 MPa



Static pressure : 25 MPa



Dimensions (mm)

Dial size	A	D±2	E±2	H
100	101.3	138	185.5	221.5
160	160.6	141.5	190	225

## Snap - action contacts

### General

Electromechanical limit switches in pointer type measuring instruments are auxiliary current switches which open or close electrical circuits at set limit values by means of a contact arm which is moved by the actual value pointer.

The snap action contact is a mechanical contact for switching capacities up to 30 W 50 VA max.

Contact making will be delayed and or advanced in relation to the movement of the actual value pointer.

To closed the circuit, the contact pin of the movable contact arm is attracted in a jump by the permanent magnet fastened to the supporting arm shortly before the set value has been reached.

Due to the retention force of the magnet, snap action contacts are more resistant against shock and vibration.

The switching safety is increased by the increased contact pressure.

When the circuit is opened, the magnet keeps the contact arm in its place until the restoring force of the measuring element exceeds the magnetic force, and the contact opens in a jump.

### Specifications

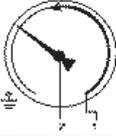
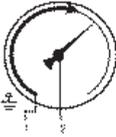
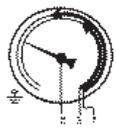
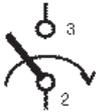
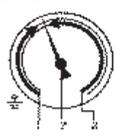
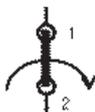
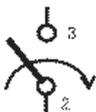
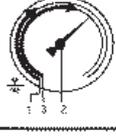
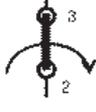
Maximum contact rating with non-inductive (ohmic) load		Electric contacts type pressure gauge model P620 series	
		Dry gauges	Liquid filled gauges
Maximum voltage		250 V	250 V
Current ratings	Make ratings	1.0 A	1.0 A
	Break ratings	1.0 A	1.0 A
	Continuos load	0.6 A	0.6 A
Maximum load		30 W 50 VA	20 W 20 VA
Material of contact points		Silver-nickel alloy (80% Ag / 20%Ni / 10µm) gold-plated	
Ambient operating temperature		-20°C...+70°C	
Max. no. of contacts		2	
Voltage test		Circuit / protective earth conductor - 2,000 vac 1 minute	
		Circuit /circuit - 2,000 vac 1 minute	

### Recommended contact ratings with ohmic and inductive load

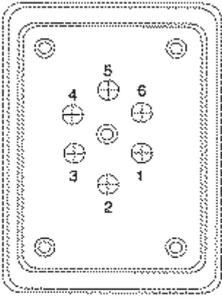
Voltage (DIN IEC 38) DC / AC	Electric contacts type pressure gauge model P620 series					
	Dry gauges		Liquid filled gauges			
	Ohmic load		Inductive load	Ohmic load		Inductive load
	DC	AC	$\cos\phi > 0.7$	DC	AC	$\cos\phi > 0.7$
<b>V</b>	mA	mA	mA	mA	mA	mA
<b>220 / 230</b>	100	120	65	65	90	40
<b>110 / 110</b>	200	240	130	130	180	85
<b>48 / 48</b>	300	450	200	190	330	130
<b>24 / 24</b>	400	600	250	250	450	150

In order to ensure a high switching reliability of the contacts the switching voltage should not be below 24 V, also taking environmental influences in the long term into account.

## Contact function table

Gauge model	Wiring scheme	Contact function		Wiebrock code no.	Remark	
		1 <sup>st</sup> contact	2 <sup>nd</sup> contact			
<b>Single contact</b>						
P621	Control make when pointer reaches setpoint (Normal open - NO)				S/M-1	Normal use high alarm system
P623	Control break when pointer reaches setpoint (Normal close - NC)				S/M-2	Normal use low alarm system
<b>Double Contact - Common circuit</b>						
P624	1 <sup>st</sup> and 2 <sup>nd</sup> contact make when pointer reaches setpoint				S/M-11	Normal use high and high alarm system
P622	1 <sup>st</sup> contact break 2 <sup>nd</sup> contact make when pointer reaches setpoint				S/M-21	Normal use high and low alarm system
P625	1 <sup>st</sup> and 2 <sup>nd</sup> contact break when pointer reaches setpoint				S/M-22	Normal use low and low alarm system

## Terminal block arrangement



### 1. P621 (High alarm)

- ① Normal open
- ② Common
- ③ Normal close

### 2. P622 (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. P623 (Low alarm)

- ① Normal open
- ② Common
- ③ Normal close

### 4. P624 (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. P625 (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