

Explosion proof type differential pressure switch (Up to 20 kPa)

Model: P991 series

Spec. sheet no. PD09-13

Service intended

P991 explosion proof type differential switch series are bellows type, and these are primarily used for detecting the draft pressure in thermal power plants.



Fluid

Air and gas

Repeatability

±1.5 % of full range

Dead band

Fixed. 0.25 ~ 0.8 kPa or less

Differential pressure range (kPa)

0 ~ 4 kPa to 0 ~ 20 kPa

Max. Working pressure (Static pressure)

500 kPa

Working temperature

Ambient : -20 ~ 65 °C

Fluid : Max. 60 °C

Degree of protection

EN60529/IEC529/min IP65



Standard features

Pressure connection

Stainless steel (316L SS)

Conduit connection

¾" PF (F)

Element

Bellows : Stainless steel (316L SS)

Gasket : PTFE

Process connection

¼" NPT (F)

Mounting

Surface wall mounting

Operating environment

Hazardous area refer to the explosion-proof item for information

Setpoint adjustment

Internal

Contact

One SPDT

Two SPDT (Only available with single setpoint)

Certificates

KCS Ex d IIC T6

Contact rating

SPDT contact rating

AC 125 V / 250 V, 15 A

DC 125 V, 0.4 A for resistance load

DC 125V, 0.03 A for inductive load

Option

3-way manifold valve

5-way manifold valve

1. Base model

P991 Explosion proof type differential pressure switch

2. Type of mounting

B Panel mounting

3. Switch form

- 4** One SPDT
- 5** Two SPDT (Only available with single setpoint)

4. Contact

- 1** High alarm with single contact
- 2** Low alarm with single contact

5. Process connection

C ¼" NPT (F)

6. Mounting bracket type

- D** Standard bracket
- E** 304SS mounting bracket
- F** 316SS mounting bracket

7. Differential pressure range (kPa)

- 464** 0 ~ 4
- 465** 0 ~ 5
- 467** 0 ~ 7
- 469** 0 ~ 10
- 437** 0 ~ 20
- 419** -2 ~ +2
- 413** -5 ~ +5
- 000** Other

8. Switch type

- 0** Standard
- 1** High sensitivity

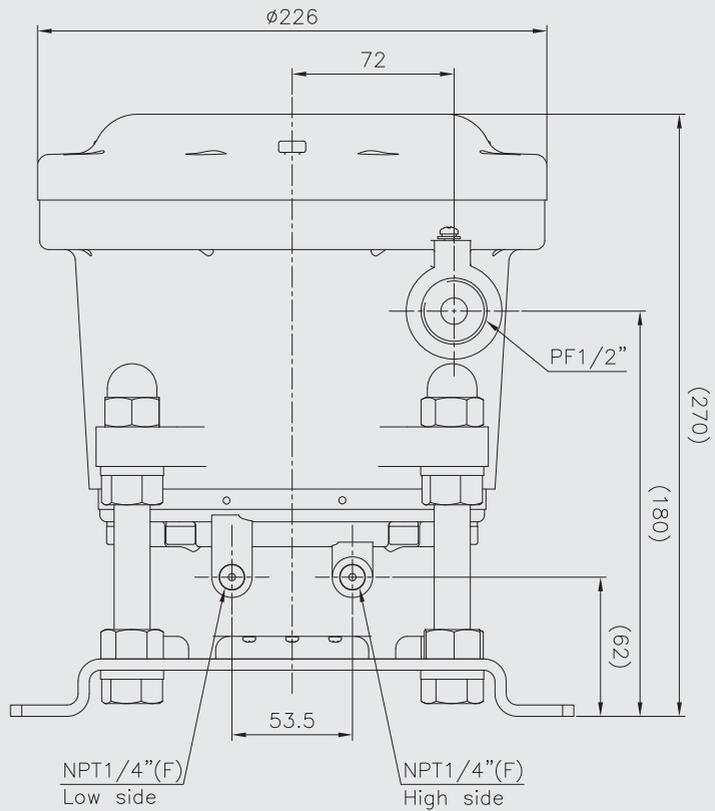
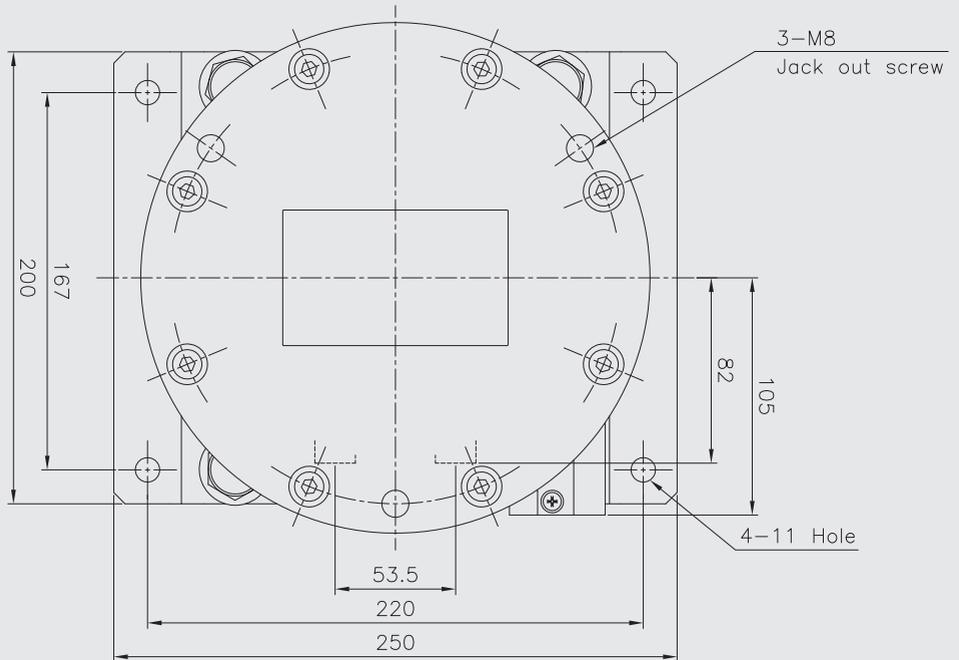
9. Option

- 0** Standard
- 1** Accessories (3-way and 5-way manifold valve)

1	2	3	4	5	6	7	8	9
P991	B	4	1	C	D	464	0	0

Sample
ordering code

P991 : Type of mounting



Pressure switch

A bi-stable electro mechanical device than actuates/deactuates one or more electrical switching element at a predetermined discrete pressure upon rising or falling.

Adjustable range

The span of pressure between upper and lower limits within which the pressure switch can be adjusted to actuate/deactuate. It is expressed for increasing pressure.

Setpoint

That discrete pressure at which the pressure switch is adjusted to actuate/deactuate on rising or falling pressure. It must fall with the adjustable range and be called out as increasing.

Dead band

The difference in pressure between the increasing set point and the decreasing set point.

Repeatability

The ability of a pressure switch to successively operate at a set point that is approached from a starting point in the same direction and returns to the starting point over three consecutive cycles to establish a pressure profile.

The closeness of the measures set point values is normally expressed as a percentage of full scale (maximum adjustable range pressure).

Micro contact

General

The micro contact has a large switching capacity with high repeat accuracy. The contact mechanism is a crossbar type with gold alloy contacts, which ensures highly reliable operations for micro loads.

Characteristics

Item	Micro switch
Operating speed	0.01 mm to 1 m/s
Mechanical operating frequency	240 operations/min
Insulation resistance	100 MΩ 1 min at 500 VDC
Contact resistance	15 MΩ max
Shock resistance	100 m/sec ² max
Ambient temperature	-25 ~ 80 °C
Ambient humidity	35 ~ 85 % RH

Specifications

Rated voltage	Non inductive load (A)				Inductive load (A)			
	Resistive load		Lamp load		Inductive load		Motor load	
	NC	NO	NC	NO	NC	NO	NC	NO
125 V AC	10		2	1	6		3	1.5
250 V AC	10		1.5	0.7	4		2	1
8 V DC	10		3	1.5	6		5	2.5
30 V DC	10		3	1.5	4		3	1.5
125 V DC	0.5		0.5		0.05		0.05	
250 V DC	0.25		0.25		0.03		0.03	

DPDT switching element

Double-pole, double throw (DPDT) is two SPDT switching elements operated by a common lever assembly so simultaneous actuation / deactuation occurs at both the increasing and the decreasing set point.

Two independent electrical circuits can be switches, i.e. one AC and one DC.

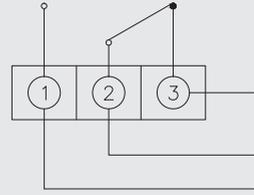
Micro contact

SPDT switching element

Single-pole, double throw (SPDT) has three connection : C-common, NO-normally open and NC-normally close, which allows the switching element to be electrically to the circuit NO or NC state.

One SPDT

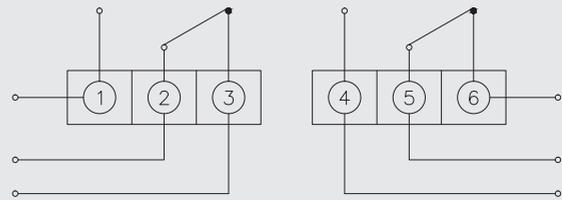
Pressure reach the upper or lower limit setpoint, circuit closed and opened.



①:NO ②:COM ③:NC

Two SPDT

Pressure reach the upper or lower limit setpoint, two circuit simultaneous closed and opened.



①,④:NO ②,⑤:COM ③,⑥:NC

NO : Normal open
NC : Normal close

Large empty rectangular area for writing or drawing.