

# 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

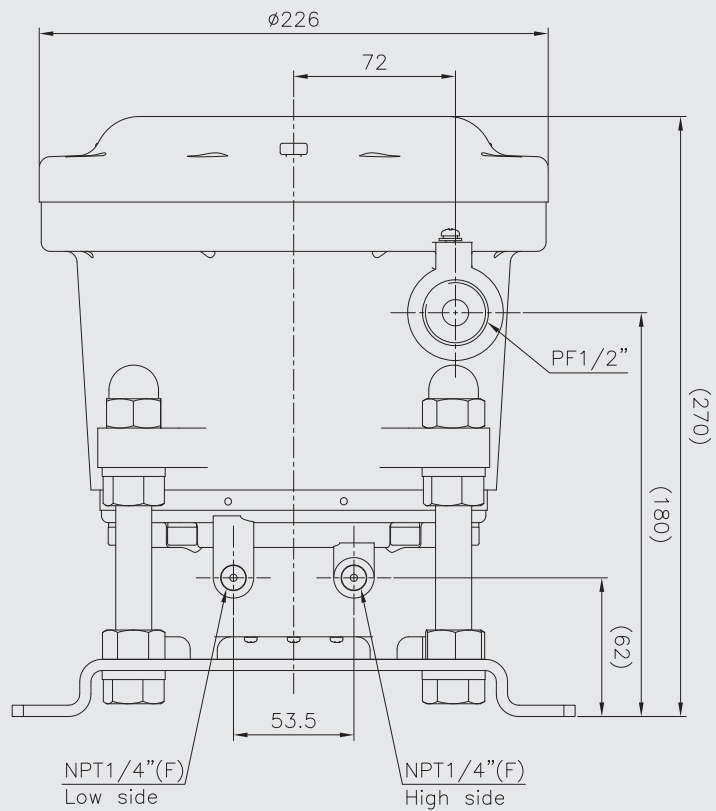
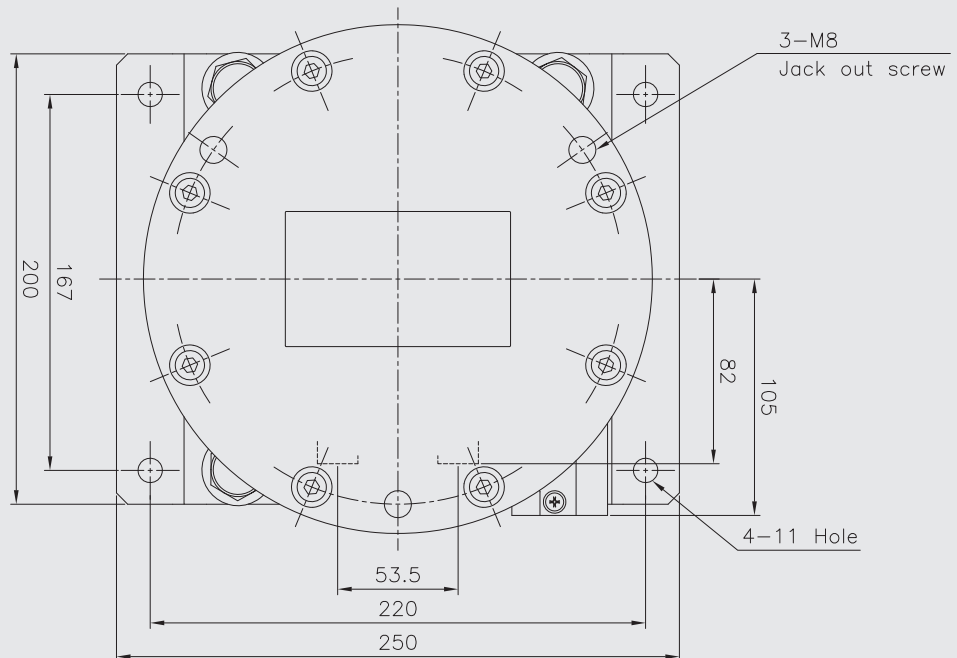
5-way manifold valve

**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
<b>P991</b>	<b>B</b>	<b>4</b>	<b>1</b>	<b>C</b>	<b>D</b>	<b>464</b>	<b>0</b>	<b>0</b>

**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.

## Dead band

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

## 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.

## 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).

## 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.

## 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 <sup>2</sup> 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.

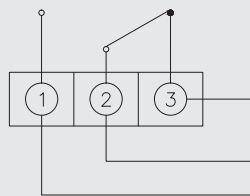
Two independent electrical circuits can be switches, i.e. one AC and one DC.

### 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

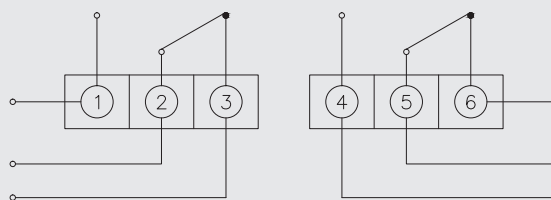
Pressure reach the upper or lower limit setpoint, circuit closed and opened.



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

