Explosion proof type differential pressure switch
Model: P970

Spec. sheet no. PD09-10

Service intended
P970 diaphragm type differential pressure switch can be used in a variety of process lines. Internal micro switch is operated by pressure of various fluids, such as atmospheric pressure and water pressure. The pressure sensing part is a force balanced and piston actuated assembly.

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

Standard features

Pressure connection
Stainless steel (316SS)
316L SS, Monel and Hastelloy-C

Element
Stainless steel (316L SS)
Monel, Hastelloy-C and Viton

Case and cover
ALDC 12.1
Silver gray painted aluminium

Adjustable range
1 kPa ~ 15 MPa

Repeatability
±1.0% of adjustable range

Contact
Micro contact type
One SPDT (Model : P970-1B3)
Two SPDT (Model : P970-2B3)(Only single setpoint)
One DPDT (Model : P970-2B3)

Conduit connection
¾" NPF (F)

Process connection
¼" NPT (F)

Contact rating
AC 125 V / 250 V, 15 A
DC 125 V, 0.5 A for resistance load
DC 125 V, 0.05 A for inductive load

Approval by standards
Ex d IIC T6 (KGS)
II 2G (LCIE 06 ATEX 6073X)
IECEx KGS-04-0001
Ex d IIC T6 (Tamb= -20 ~ + 60°C)

Main order — Ordering information

1. Base model

P970	Explosion proof type differential pressure switch

2. Switch form

1	One SPDT
2	Two SPDT (Only available with single setpoint)

3. Unused character

B3	None

4. Process connection

C	¼"

5. Connection type

D	NPT (F)

6. Unit

H	bar
I	MPa
J	kPa
S	mbar

7. Range

XXX	Refer to pressure unit and range table

8. Pressure connection / Element material

3	316SS / 316L SS
V	316SS / Viton
L	316SS / Hastelloy-C
K	316SS / Monel
Z	Monel / Monel
H	Hastelloy-C / Hastelloy-C

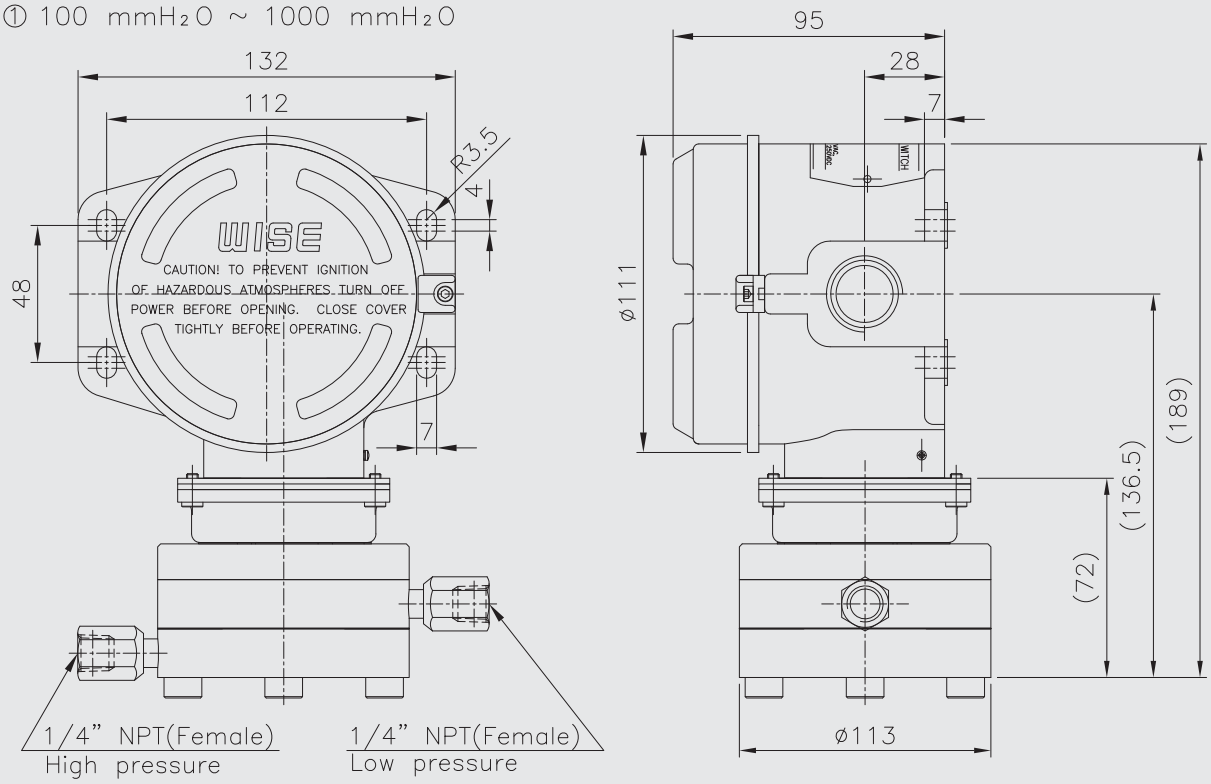
9. Options

0	None
1	3 way / 5 way manifold valve

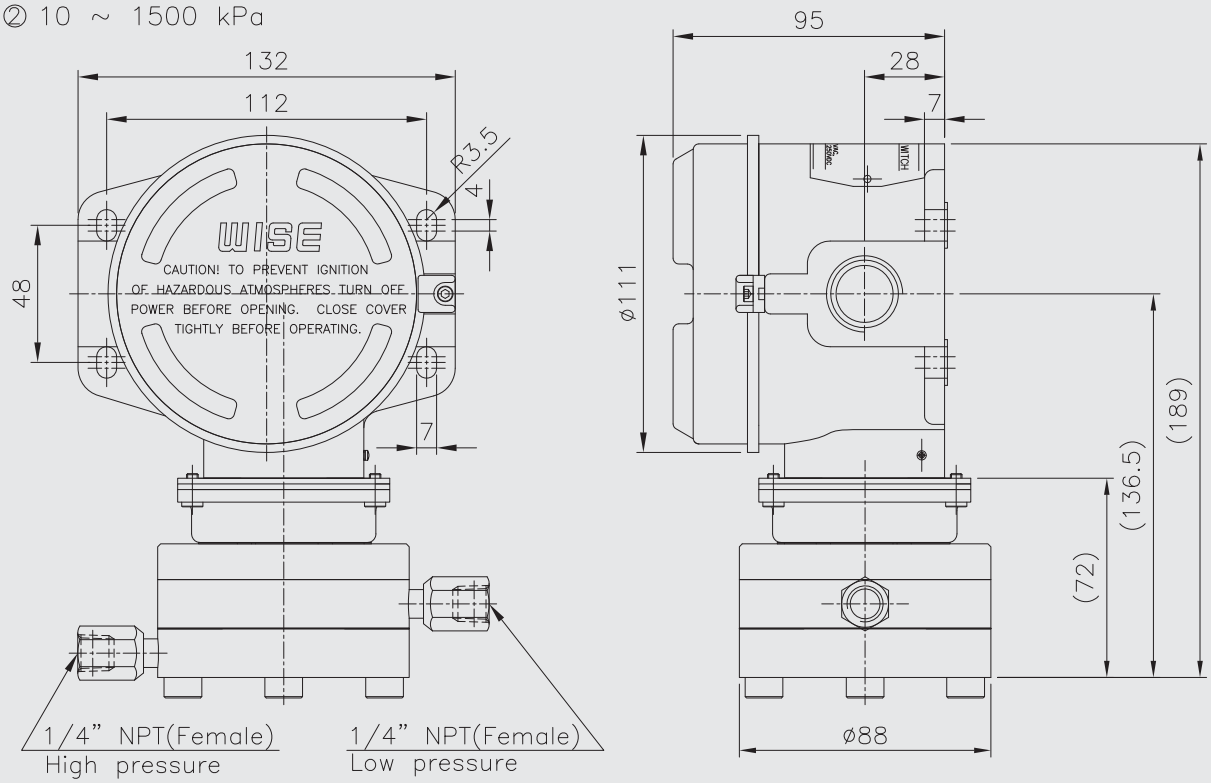
1	2	3	4	5	6	7	8	9	
P970	**1**	**B3**	**C**	**D**	**H**	**XXX**	**3**	**0**	**Sample ordering code**

P970 : Type of mounting

① 100 mmH_2O ~ 1000 mmH_2O



② 10 ~ 1500 kPa



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.

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

Proofpressure (Pmax)
The maximum input pressure that can be continuously applied to the pressure switch without causing permanent change of setpoint, leakage or material failure.

Burst pressure
The maximum input pressure that can be continuously applied to the pressure switch without causing leakage or catastrophic material failure. Permanent change of set point may occur, or the device may be rendered inoperative.

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).

Pressure range table

Code	Adjustable setting range		
	H : bar	I : MPa	J : kPa
994	0.1 ~ 0.15		1 ~ 15
907	0.15 ~ 0.25		15 ~ 25
909	0.25 ~ 0.35		25 ~ 35
910	0.35 ~ 0.5		35 ~ 50
922	0.5 ~ 2	0.05 ~ 0.2	
905	2 ~ 4	0.2 ~ 0.4	
924	4 ~ 7	0.4 ~ 0.7	
917	7 ~ 15	0.7 ~ 1.5	

Code	Resistance load		Inductive load	
	NC	NO	NC	NO
125 V AC	15 (10)		15 (10)	
250 V AC	15 (10)		15 (10)	
480 V AC	10		10	
8 V DC	15		15	
14 V DC	15		10	
30 V DC	2		1	
125 V DC	0.4		0.03	
250 V DC	0.2		0.02	

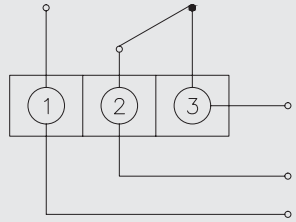
SPDT switching element

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

DPDT switching element

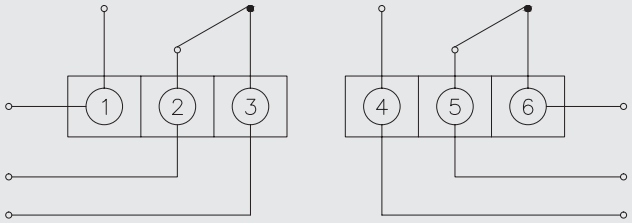
Double-pole, double throw (DPDT) is two SPDT switching elements operated by a common lever assembly so simultaneous actuation / deactuation occurs at both the increasing and the decreasing set point. Two independent electrical circuits can be switched, i.e. one AC and one DC.

P970 1B3 type
When the input pressure reach the upper or lower limit set point.
The circuit is closed and opened.



①:NO ②:COM ③:NC

P970 2B3 type
When the input pressure reach the upper or lower limit set point.
Two circuit are simultaneously closed and opened.



①,④:NO ②,⑤:COM ③,⑥:NC

NO : Normal open
NC : Normal close