Explosion proof pressure switch
Model: P953 series

Service intended

P953 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.

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 finished aluminium

Adjustable range
1 kPa ~ 15 MPa

Repeatability
±1.0% of adjustable range

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

Contact
Micro contact type
One SPDT (Model : P953-1B3)
Two SPDT (Model : P953-2B3)(Only single setpoint)
One DPDT (Model : P953-2B3)

Conduit connection
¾" NPF (F)

Process connection
¼", ⅜", ½" PT, NPT and PF

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)

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1. Base model

P953 Explosion proof 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"
D ⅜"
E ½"

5. Connection type

B PF
C PT
D NPT
E NPT (F) - ½" NPT (F) only

6. Unit

H bar
I MPa
J kPa
S mbar

7. Range

XXX Refer to pressure 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 2" pipe mounting bracket SPC2
2 2" pipe mounting bracket 304SS
3 2" pipe mounting bracket 316SS

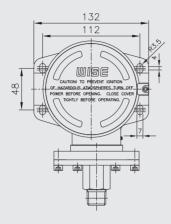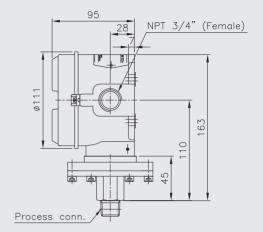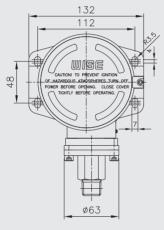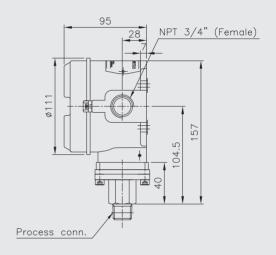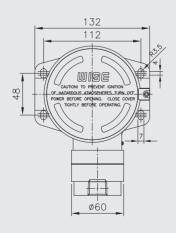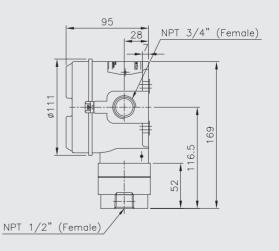| 1	2	3	4	5	6	7	8	9	
P953	2	B3	C	D	H	XXX	3	0	**Sample ordering code**

P953 : Type of mounting

① 0.3 ~ 100KPa

② 1~20bar

③ 20~200bar

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 setpoint.

Proof pressure (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		Dead band		Pmax	Flange size (mm)	Burst pressure	
			One SPDT Setpoint	Two SPDT Setpoint				
	bar	kPa	bar		bar	bar	bar	MPa
929	0.003 ~ 0.07	0.3 ~ 7	Within 5% adjustable range	Within 10% adjustable range	10	88 ~ 98	35	3.5
933	0.027 ~ 0.15	2.7 ~ 15						
938	0.045 ~ 0.3	4.5 ~ 30						
941	0.075 ~ 0.5	7.5 ~ 50						
949	0.09 ~ 0.6	9 ~ 60			20	63		
942	0.12 ~ 0.8	12 ~ 80						
902	0.15 ~ 1	15 ~ 100						
903	0.3 ~ 2	30 ~ 200						
904	0.45 ~ 3	45 ~ 300			50	60	70	7
906	0.9 ~ 6	90 ~ 600						
908	1.5 ~ 10	0.15 ~ 1 MPa						
911	2.25 ~ 15	0.225 ~ 1.5 MPa						
912	3 ~ 20	0.3 ~ 2 MPa						
914	4.5 ~ 30	0.45 ~ 3 MPa					170	17
916	7.5 ~ 50	0.75 ~ 5 MPa			100			
923	8.5 ~ 70	0.85 ~ 7 MPa					200	20
919	10.5 ~ 100	1.05 ~ 10 MPa			150			
926	15.5 ~ 150	1.55 ~ 15 MPa					400	40

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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

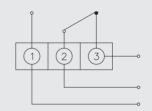Double-pole, double throw (DPDT) is two SPDT
switching elements operated by a common lever
assembly so simultaneous actuation / deactuation occurs
at both the increasing and the decreasing set point.
Two independent electrical circuits can be switched, i.e.
one AC and one DC.

P953 1B3 type
When the input pressure reach the upper or lower limit set point.
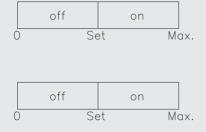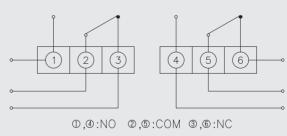The circuit is closed and opened.

①:NO   ②:COM   ③:NC

P953 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

Conversion table

Pressure conversion chart

psi	atm	kgf/cm²	inH₂O	mmHg	inHg	kPa	bar	mmH₂O
1	0.068046	0.070307	27.7276	51.715	2.03602	6.835	0.06895	704.28104
14.696	1	1.0332	407.484	760	29.921	101.325	1.01325	10350.0936
14.2233	0.96784	1	394.38	735.559	28.959	98.096	0.98067	10,000
0.036092	0.002454	0.00253	1	1.8651	0.07343	0.249	0.00249	25.4
0.019336	0.001315	0.001359	0.53616	1	0.03937	0.1333	0.001333	13.618464
0.491154	0.0033421	0.03453	13.6185	25.4	1	3.3864	0.033864	345.9099
0.145	0.00987	0.010197	4.0186	7.5006	0.2953	1	0.01	102.07244
14.5038	0.98692	1.01972	402.156	750.062	29.53	100	1	10214.7624
0.00142	0.000097	0.0001	0.03937	0.0734	0.0029	0.0098	0.000098	1

Memo

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