

Explosion proof pressure switch

type : 953 series

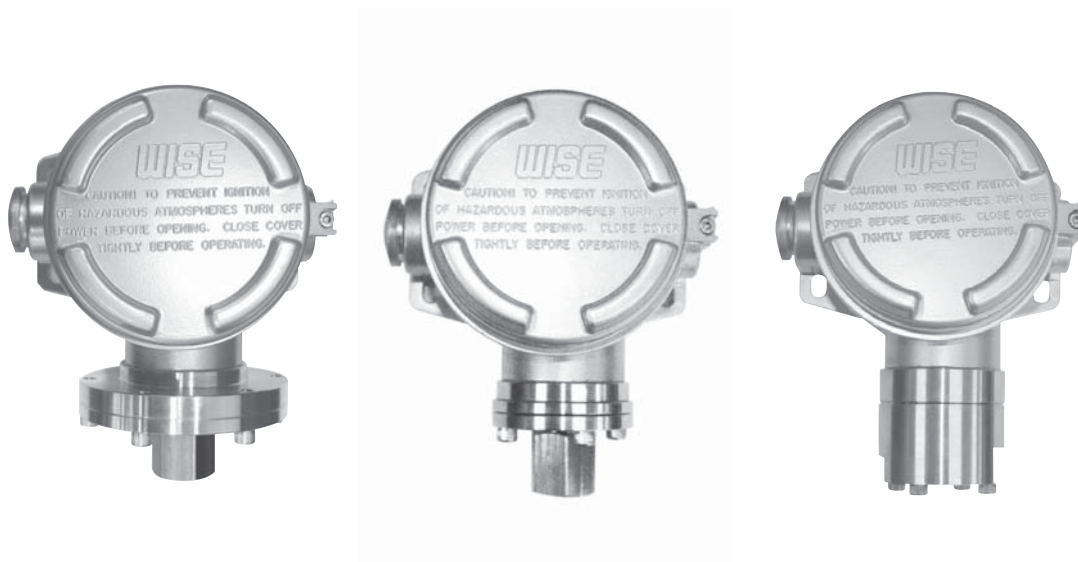
Model : P953

WISE®

Service intended

P953 Diaphragm type 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 is a force-balanced and piston actuated assembly.



Standard features

Approval by standards

Explosion Proof(Ex d IIC T6)

Adjustable range

1kPa ~10MPa (20MPa)

Dimension

Refer to Drawing Type

Element

Diaphragm (316LSS)

Material

Case & Cover : ALDC 12.1
Pressure Connection : 316SS
Diaphragm : 316LSS

Repeatability

±1.0% of Adjustable Range

Contact

Micro Contact Type
One SPDT (Model : P953-1B3)
Two SPDT (Model : P953-2B3)

Conduit connection

3/4" NPT (F)

Process connection

1/2" NPT (F)

Approval

Ex d IIC T6 (KGS)
II 2G (LCIE 06 ATEX 6073X)
IECEX KGS-04-0001
Ex d IIC T6 (Tamb= -20°C To + 60°C)

Ordering information

Base model

P953: Explosion proof pressure switch

Switch form

- 1 : One SPDT
- 2 : Two SPDT (Only available with single set point)

Unused character

B3

Process connection

- C : 1/4"
- D : 3/8"
- E : 1/2"

Connection type

- B : PF
- C : PT
- D : NPT
- E : NPT (F)-1/2" NPT (F) only

Measuring unit

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

Range (Refer to measuring range table)

Refer to Pressure Unit & Range Table

Pressure connection Element mat'l

- 3 : 316SS & 316LSS
- V : 316SS & Viton

Options

- 0 : None
- 1 : Accessories

P953

2

B3

E

D

H

041

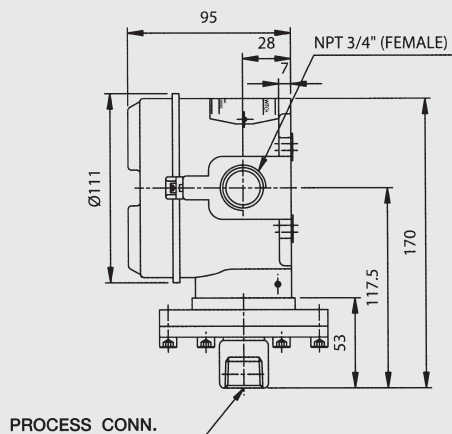
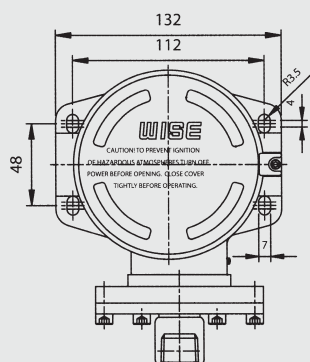
V

0

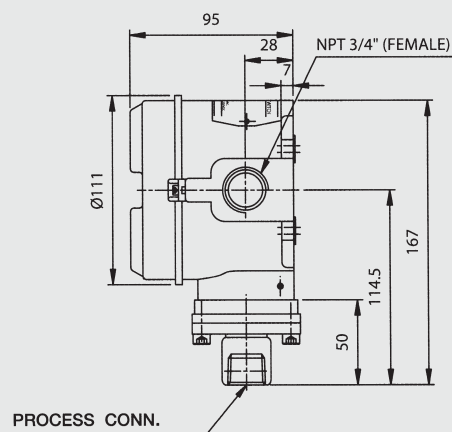
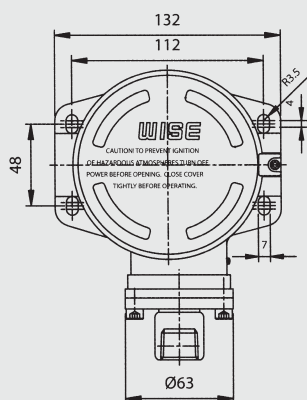
**Sample
model number**

P953 : Type of mounting

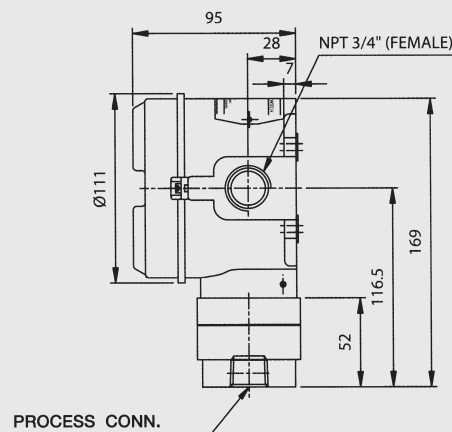
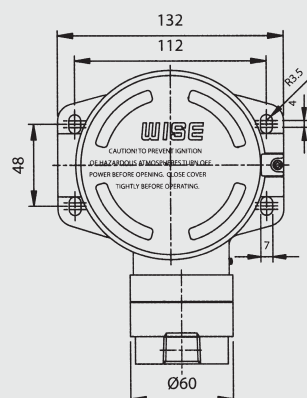
① 0.3~14kpa



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.

DEADBAND

The difference in pressure between the increasing Set Point and the decreasing Set Point.

PROOF PRESSURE

The maximum input pressure that can be continuously applied to the pressure switch without causing permanent change of set point, 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 Setpoint 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		OVER RANGE		
			ONE SPDT SET POINT	TWO SPDT SET POINT	PROOF RANGE	BURST RANGE	
	bar	kPa	mmH2O(bar)			bar	MPa
068	0.003~0.07	0.3~7	Within 5% of Adjustable Range	Within 10% of Adjustable Range	150% of Adjustable Range	35	3.5
072	0.027~0.15	2.7~15					
077	0.045~0.3	4.5~30					
080	0.075~0.5	7.5~50					
088	0.09~0.6	9~60					
081	0.12~0.8	12~80					
041	0.15~1	15~100					
042	0.3~2	30~200				70	7
043	0.45~3	45~300					
045	0.9~6	90~600					
047	1.5~10	0.15~1MPa					
050	2.25~15	0.225~1.5MPa					
051	3~20	0.3~2MPa				170	17
053	4.5~30	0.45~3MPa					
055	7.5~50	0.75~5MPa					
062	8.5~70	0.85~7MPa				200	20
064	10.5~100	1.05~10MPa					
065	15.5~150	1.55~15MPa				400	40
067	20~200	2~20MPa					

RATED VOLTAGE	RESISTANCE LOAD		INDUCTIVE LOAD	
	NC	NO	NC	NO
125V AC	15(10)		15(10)	
250V AC	15(10)		15(10)	
480V AC	10		10	
8V DC	15		15	
14V DC	15		10	
30V DC	2		1	
125V DC	0.4		0.03	
250V DC	0.2		0.02	

SPDT SWITCHING ELEMENT

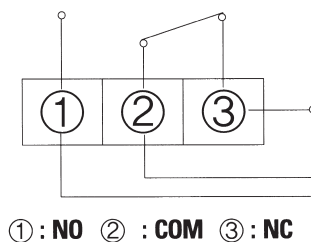
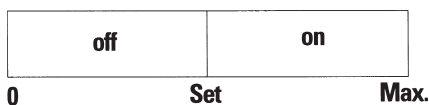
Single-Pole, Double Throw (SPDT) has three connection : C-Common, NO-Normally open and NC-Normally closed, which allows the switching element to be electrically to the circuit NO or NC state.

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.

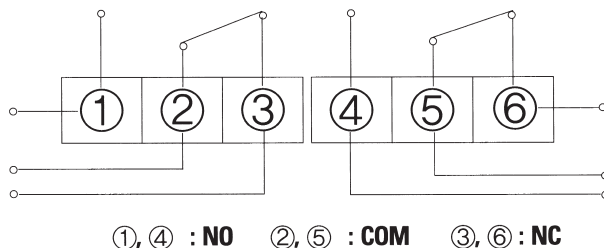
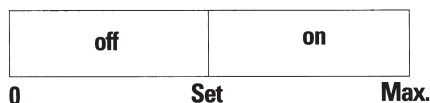
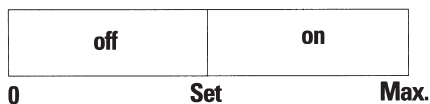
P953 1B3 TYPE

When the input pressure reach the upper or lower limit set point, The circuit is closed and opened.



P953 2B3 TYPE

When the input pressure reach the upper or lower limit set point, Two circuit are simultaneously closed and opened.



Conversion table

PRESSURE CONVERSION CHART

PSI	ATM	kg/cm ²	in.H ₂ O	mmHg	in.Hg	kPa	Bar	mmH ₂ O
1	0.068046	0.070307	27.7276	51.715	2.03602	6.895	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	10000
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

VOLUME CONVERSION CHART

GALLON (U.S.)	CUBIC FEET	CUBIC INCHES	BARRELS (OIL)	CUBIC CM	CUBIC METER	LITER	IMP. GALLON
1	0.1337	231	0.02381	3785	0.003785	3.785	0.8327
7.481	1	1728	0.1781	28320	0.02832	28.32	6.229
0.004329	0.000578	1	0.000103	16.39	0.000016	0.01639	0.003605
42	5.615	9702	1	159000	0.159	158.94	34.97
0.000264	0.000035	0.06102	0.000006	1	0.000001	0.001	0.00022
264.17	35.3144	61023	6.2906	1000000	1	1000	220.1
0.264	0.0353	61.03	0.0629	1000	0.001	1	0.22
1.201	0.1606	277.4	0.0286	4546	0.004546	4.546	1

MASS CONVERSION CHART

lb.	oz.	kg	gm	gal H ₂ O (32F)	long ton	metric tonne	ton
1	16	0.4536	453.6	0.1198	0.000446	0.000453	0.0005
0.0625	1	0.02835	28.35	0.00749	0.000027	0.000028	0.000031
2.205	35.27	1	1000	0.2642	0.009839	0.001	0.001102
0.002205	0.03527	0.001	1	0.000264	0.000000	0.000001	0.000001
8.345	133.5	3.785	3785	1	0.003726	0.003786	0.004171
2240	35840	1016.4	1016363	268.352	1	1.016	1.12
2204.6	35273	1000	1000000	264.11	0.9842	1	1.1023
2000	32000	907.03	909090.9	239.7	0.892857	0.907194	1

DENSITY CONVERSION CHART

lb/ft ³	gm/cm ³	kg/m ³	lb/in ³
1	0.016018	16.0184	0.000578
62.43	1	1000	0.03613
0.06243	0.001	1	0.000036
1728	27.68	27679.8	1