Weatherproof type pressure switch
Model: P945 series

EAC

Service intended

P945 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 part is a piston actuated assembly.

Fluid
Gas and oil

Repeatability
±1.0 % of adjustable range

Adjustable range (mbar, kPa, bar, MPa)
-0.9 to 275 bar

Dead band
Fixed
One SPDT : Approx. 5 % of adjustable range
Two SPDT : Approx. 10 % of adjustable range

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

Degree of protection
EN60529/IEC529/IP65

Standard features

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

Element
Stainless steel (316L SS)
Model and Hastelloy-C

Case and cover
ALDC 12.1 (Silver gray painted)

Contact
Micro contact type
One SPDT
Two SPDT (Only available with single setpoint)

Contact rating
SPDT contact rating
AC 125 V / 250 V, 15 A
DC 125 V, 0.5 A for resistance load
DC 125V, 0.03 A for inductive load

Conduit connection
¾" NPT (F)

Process connection
½" NPT(F)

WISE®

1. Base model

P945   Weatherproof type pressure switch

2. Deadband

F   Fixed

3. Switch form

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

4. Process connection

E   ½"

5. Connection type

E   NPT (F)

6. Unit

H   bar
I   MPa
J   kPa
S   mbar

7. Setting range

XXX   Refer to pressure range table

8. Process connection and element material

3   316SS / 316L SS
Z   Monel / Monel
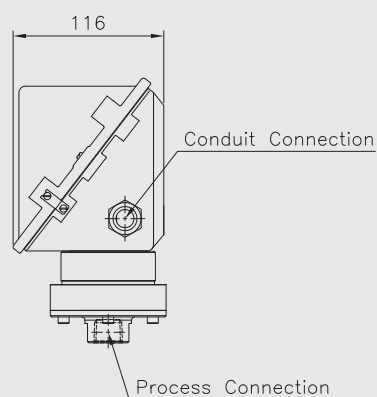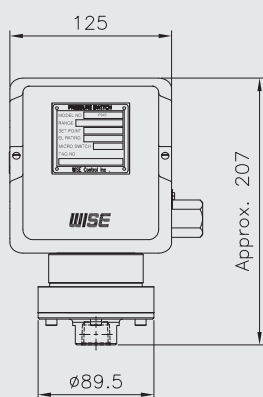**H**   Hastelloy-C / Hastelloy-C

9. Options

0   None
1   Wall mounting braket
2   2" mounting braket
4   ½" NPT (F) conduit connection

1	2	3	4	5	6	7	8	9	
P945	F	1	E	E	H	XXX	3	0	**Sample ordering code**

P945—STANDARD

125

116

Approx. 207

⌀89.5

Conduit Connection

Process Connection

LOW PRESSURE

125

116

Approx. 207

⌀60

Conduit Connection

Process Connection

MIDDLE PRESSURE

125

116

Approx. 213

⌀36

Conduit Connection

Process Connection

HIGH PRESSURE

WISE®

P945-WALL MOUNTING TYPE
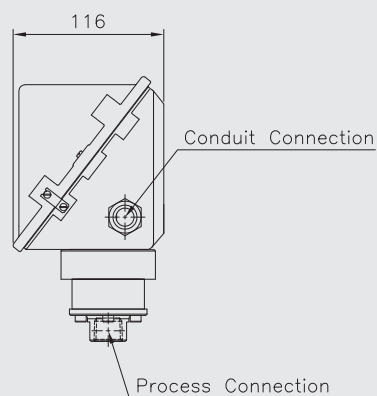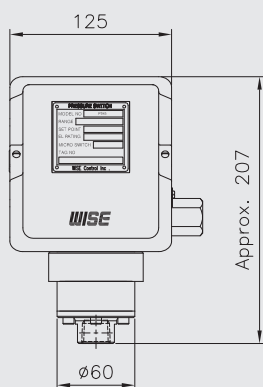
LOW PRESSURE
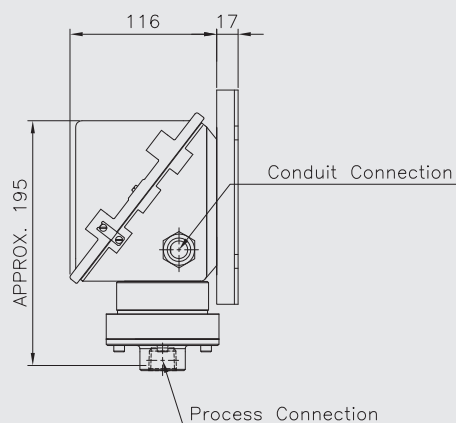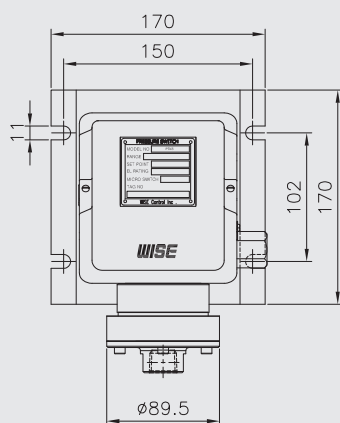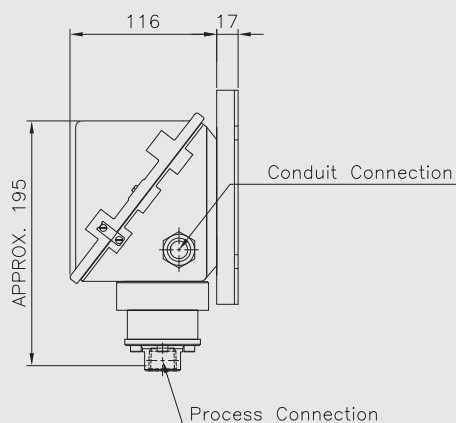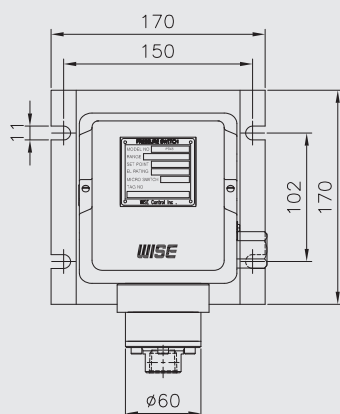

MIDDLE PRESSURE
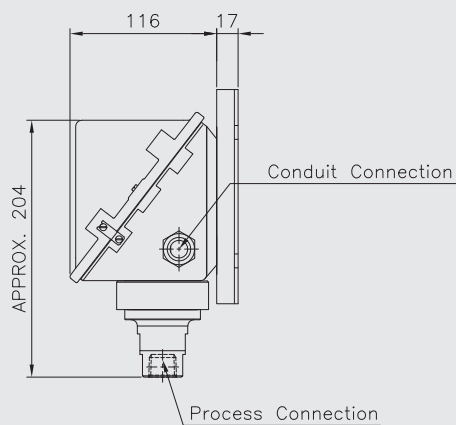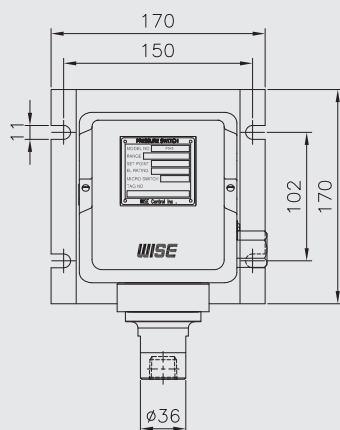
HIGH PRESSURE

P945−2"MOUNTING TYPE

116

APPROX. 277

APPROX. 195

Conduit Connection

Process Connection

ø89.5
125
149

LOW PRESSURE

116

APPROX. 277

APPROX. 195

Conduit Connection

Process Connection

ø60
125
149

MIDDLE PRESSURE

116

APPROX. 287

APPROX. 204

Conduit Connection

Process Connection

ø36
125
149
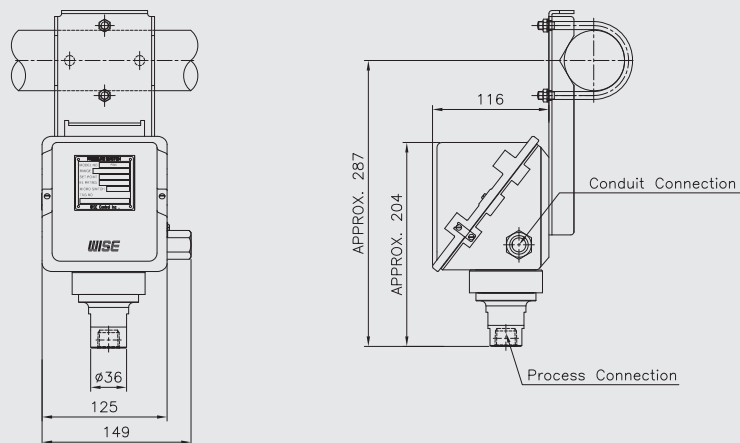
HIGH PRESSURE

WISE®

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.

Working range

The maximum input pressure that can be continuously applied to the pressure switch without causing permanent change of set point, leakage or material failure.

Max. Working 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

List	Adjustable setting range	Dead band		Working range	Max. Working pressure
	bar [mbar]	One SPDT Setpoint	Two SPDT Setpoint	bar	bar
Positive Pressure	[3.0 ~ 10]	Within 10 % adjustable range	X	14	28
	[8.5 ~ 100]	Within 5 % adjustable range	Within 10 % adjustable range		
	[80 ~ 300]				
	[150 ~ 500]				
	[250 ~ 900]				
	[200 ~ 1000]			50	70
	1 ~ 3				
	1.4 ~ 4				
	3.5 ~ 14			100	170
	8 ~ 24				
	11 ~ 38				
	9 ~ 36			170	410
	24 ~ 85				
	35 ~ 120				
	70 ~ 275			340	410
Compound Pressure	[-30 ~ +30]	Within 10 % adjustable range	X	14	28
	[-50 ~ +50]	Within 5 % adjustable range	Within 10 % adjustable range	50	70
	-0.3 ~ 0.1				
	-0.9 ~ 0				
	-0.9 ~ 0.5			100	170
	-0.9 ~ 4				

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	0.015 Ω max
Shock resistance	100 m/sec² max
Ambient temperature	-25 ~ 80 ºC
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	15		3	1.5	15		5	2.5
250 V AC	15		2.5	1.25	15		3	1.5
8 V DC	15		3	1.5	15		5	2.5
30 V DC	2		2	1.4	1		1	1
125 V DC	0.5*		0.5*	0.5*	0.03		0.03	0.03
250 V DC	0.2		0.2	0.2	0.02		0.02	0.02

The DC current ratings marked with an asterisk have been verified by testing and experience.

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.
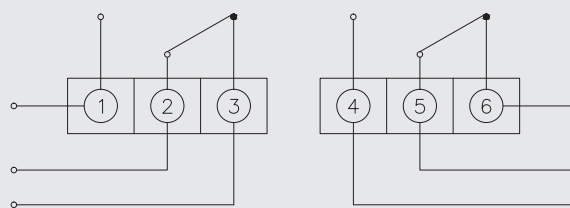
One SPDT

Pressure reach the upper or lower limit setpoint, circuit closed and opened.
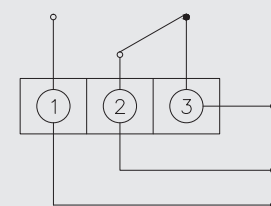
①:NO ②:COM ③:NC

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