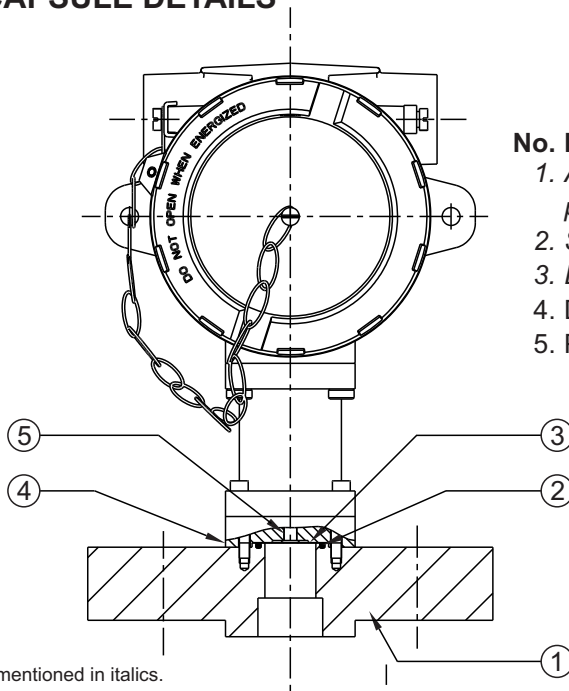


FR FLANGED PRESSURE SWITCHES



PRESSURE CAPSULE DETAILS

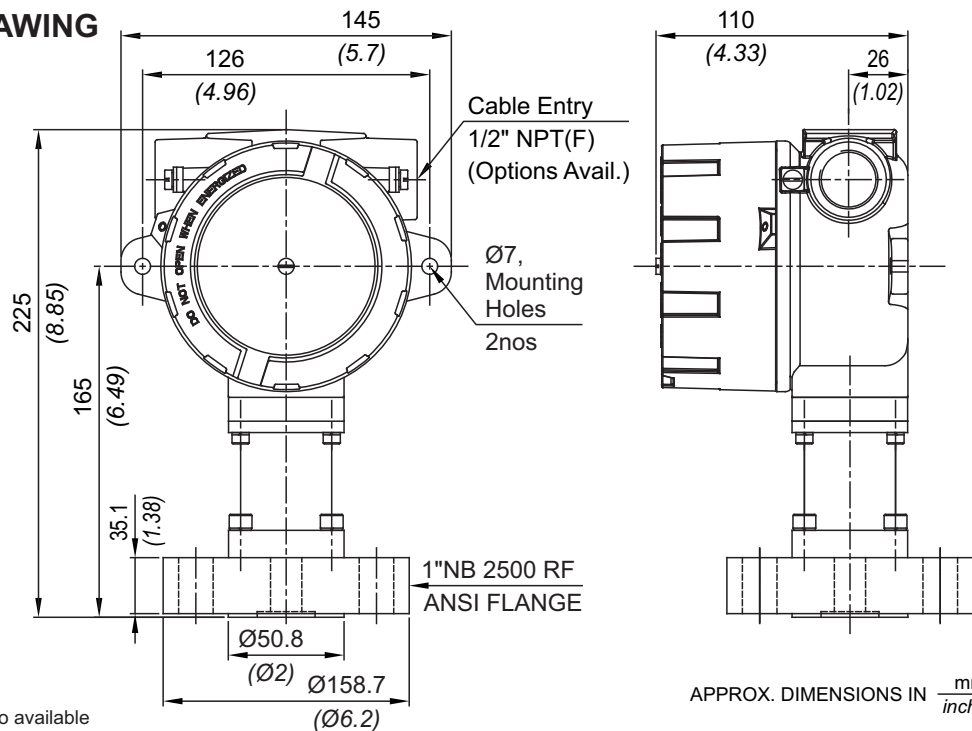


No. Description

1. ANSI FLANGE to your specifications
please refer table for possible combinations
2. Sealing Ring
3. Diaphragm
4. Disc
5. Plunger

Note : *wetted parts* are mentioned in italics.

INSTALLATION DRAWING



Note : Other flange options are also available

APPROX. DIMENSIONS IN $\frac{\text{mm}}{\text{inches}}$

FR FLANGED PRESSURE SWITCHES

RANGE SELECTION TABLE

Range Code	Range bar (psi) <i>(1.45 to 14.50)</i>	Differential* bar (psi)	Maximum Working Pressure bar (psi)
		Approximate Maximum for "A1" microswitch	
H01	0.1 to 1.0 <i>(1.45 to 14.50)</i>	0.10 <i>(1.45)</i>	As per the class of flange Please consult Sales Office in case you need clarification on availability of maximum working pressure for a particular range.
H02	0.1 to 1.5 <i>(1.45 to 21.76)</i>	0.12 <i>(1.74)</i>	
H03	0.2 to 2.6 <i>(2.90 to 37.71)</i>	0.15 <i>(2.17)</i>	
H04	0.2 to 3.6 <i>(2.90 to 52.21)</i>	0.20 <i>(2.90)</i>	
H07	0.5 to 7.0 <i>(7.25 to 101.53)</i>	0.40 <i>(5.80)</i>	
H10	0.5 to 10.0 <i>(7.25 to 145.04)</i>	0.60 <i>(8.70)</i>	
H15	1.0 to 15.0 <i>(14.50 to 217.56)</i>	1.00 <i>(14.50)</i>	
H30	5.0 to 25.0 <i>(72.52 to 362.59)</i>	1.50 <i>(21.75)</i>	
H4T	5.0 to 40.0 <i>(72.52 to 580.15)</i>	5.0 <i>(72.52)</i>	
H1H	10.0 to 100.0 <i>(145.04 to 1450.38)</i>	12.0 <i>(174.05)</i>	
H2H	7.0 to 200.0 <i>(101.53 to 2900.75)</i>	24.0 <i>(348.09)</i>	
H4H	40.0 to 400.0 <i>(580.151 to 5801.51)</i>	70.0 <i>(1015.26)</i>	

FLANGE CODE TABLE (Please refer page no. 120 & 121 for more options)

	SS316L		Hastelloy C276		Monel		Titanium		Tantalum	
	RF*	FF*	RF*	FF*	RF*	FF*	RF*	FF*	RF*	FF*
150 #										
1" NB	AC	BS	DI	EY	GO	IE	JU	LK	NA	OQ
2" NB	AF	BV	DL	FB	GR	IH	JX	LN	ND	OT
300#										
1" NB	AI	BY	DO	FE	GU	IK	KA	LQ	NG	OW
2" NB	AL	CB	DR	FH	GX	IN	KD	LT	NJ	OZ

Note:

*RF = Raised Face *FF = Flat Face

1. The minimum differential increases with the setpoint. The differential values mentioned in the above table are approximate maximum for FSR. The differential value will vary according to the pressure range selected and microswitch type. For actual values of differential please contact sales office.

2. When using 2SPDT switching arrangement, both microswitches may not actuate and/or deactuate at the same point. A small stage gap, normally upto +/- 5% FSR (depending on range code) may be observed. The On-Off differential (hysteresis) typically tends to be atleast double of those published for 1SPDT pressure switches.

If actuation and/or deactuation at same point is critical part of operation, then it can be achieved by using a separate DPDT relay. This relay will need a separate power supply for it's coil.

Intrinsic Safety (Exia) : Pressure and temperature switches are classified as simple apparatus, as per IEC 60079-1, as they neither store or generate energy Hence switches can be used in intrinsically safe systems provided the power source is IS certified. Because of low voltages and current it is recommended to use hermetically sealed microswitches/ microswitches.

RANGE AVAILABILITY AS PER BORE SIZES

	H01 to H04	H07	H10	H15	H30	H4T to H2H
1" NB	NA	Yes	Yes	Yes	Yes	Yes
2" NB	Yes	Yes	Yes	Yes	Yes	Yes

Note : When using 2SPDT switching arrangement, both microswitches may not actuate and/or deactuate at the same point. Please refer note no. 7 on page no. 122.

HOW TO ORDER FLAMEPROOF FLANGED PRESSURE SWITCHES

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8								
Non standard allocation	Model	Switch Type	Range Code (values in bar)	Microswitch Type	Flange Size and Material	Diaphragm									
<p>□ A prefix "N" is used in the model code in case of any non standard options / accessories that are provided with the switches. Will be given by manufacturer, only after agreement of supply details with customer.</p> <p>The prefix is subject to change as per specific requirement.</p> <p>Approx. switch weight in Kgs</p> <table border="1"> <tr> <td>Enclosure</td> <td>FR</td> </tr> <tr> <td>Aluminium</td> <td>Switch weight varies with flange, please consult sales office</td> </tr> <tr> <td>Grey CI</td> <td></td> </tr> <tr> <td>SS</td> <td></td> </tr> </table>	Enclosure	FR	Aluminium	Switch weight varies with flange, please consult sales office	Grey CI		SS		<p>FR = Flameproof pressure switch, EAC approved</p>	<p>1 = Al. head 1/2" NPT threads 2 = Al. head 3/4" NPT threads 3 = Al. head M20 x 1.5 threads *4 = Grey CI head 1/2" NPT threads *5 = Grey CI head 3/4" NPT threads *6 = Grey CI head M20 x 1.5 threads 7 = SS head 1/2" NPT threads 8 = SS head 3/4" NPT threads 9 = SS head M20 x 1.5 threads</p>	<p>A1 = ANSI Flanged pressure switch, fixed differential without scale A2 = ANSI Flanged pressure switch, fixed differential with scale in bar A3 = ANSI Flanged pressure switch, fixed differential with scale in psi</p> <p>For adjustable differential please select microswitch A6 in group 6</p>	<p>H01 = 0.1 - 1.0 H02 = 0.1 - 1.5 H03 = 0.2 - 2.6 H04 = 0.2 - 3.6 H07 = 0.5 - 7.0 H10 = 0.5 - 10.0 H15 = 1.0 - 15.0 H30 = 5.0 - 25.0 H4T = 5 - 40 H1H = 10 - 100 H2H = 7 - 200 H4H = 40 - 400</p>	<p>A1 = General purpose microswitch rated at 15 A; 250 VAC *A6 = elements with adjustable deadband *A7 = 2SPDT switching elements A8 = General purpose microswitch rated at 5 A, 250 VAC; 5 A, 28 VDC B1 = Low differential microswitch rated at 15 A, 250 VAC; 5 A, 28 VDC</p> <p>Please refer to page nos. 120 & 121 for options and specifications of microswitches * Please contact sales office for additional information Please check the note under Range Selection Table for Exi applications.</p>	<p>Please refer to the flange code table on Page nos. 118 & 119 for selection of the flange</p>	<p>*0 = Neoprene *1 = PTFE 2 = SS316L 3 = Hastelloy C 4 = Monel 400 5 = Titanium 6 = Tantalum</p> <p>*In case of non-metallic diaphragms the ambient temperature range should be (-)20° to 60° C.</p> <p>Please contact sales office for additional information</p>
Enclosure	FR														
Aluminium	Switch weight varies with flange, please consult sales office														
Grey CI															
SS															

eg. A flameproof switch for gas group IIC, with 1/2" NPT cable entry in aluminium housing with an ANSI flange, having 0.5 bar to 7 bar pressure range, with 15 Amp. microswitch, 1" NB 150# RF SS316L flange & SS316L diaphragm shall be specified by

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8
□	FR	1	A1	H07	A1	AC	2

Please specify full model number to avoid ambiguity. If only the first two groups are specified while ordering, uncalibrated switches with standard wetted parts and enclosures will be supplied.