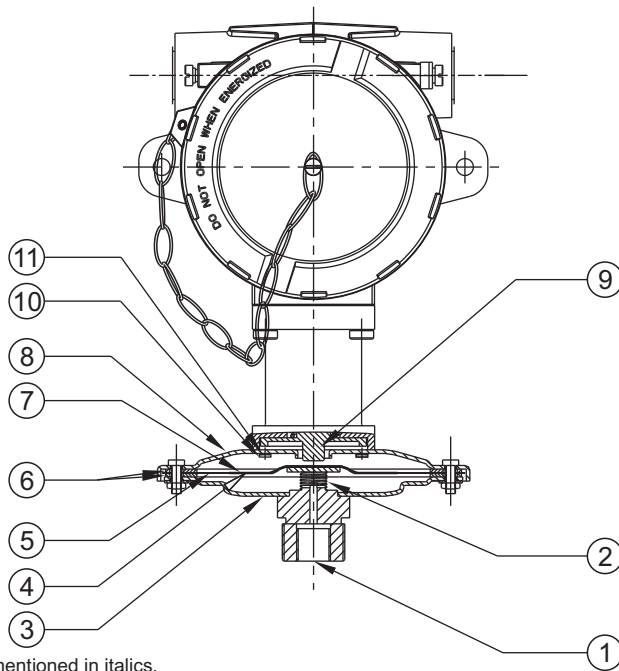


# FR LOW RANGE COMPOUND SWITCHES



## PRESSURE CAPSULE DETAILS



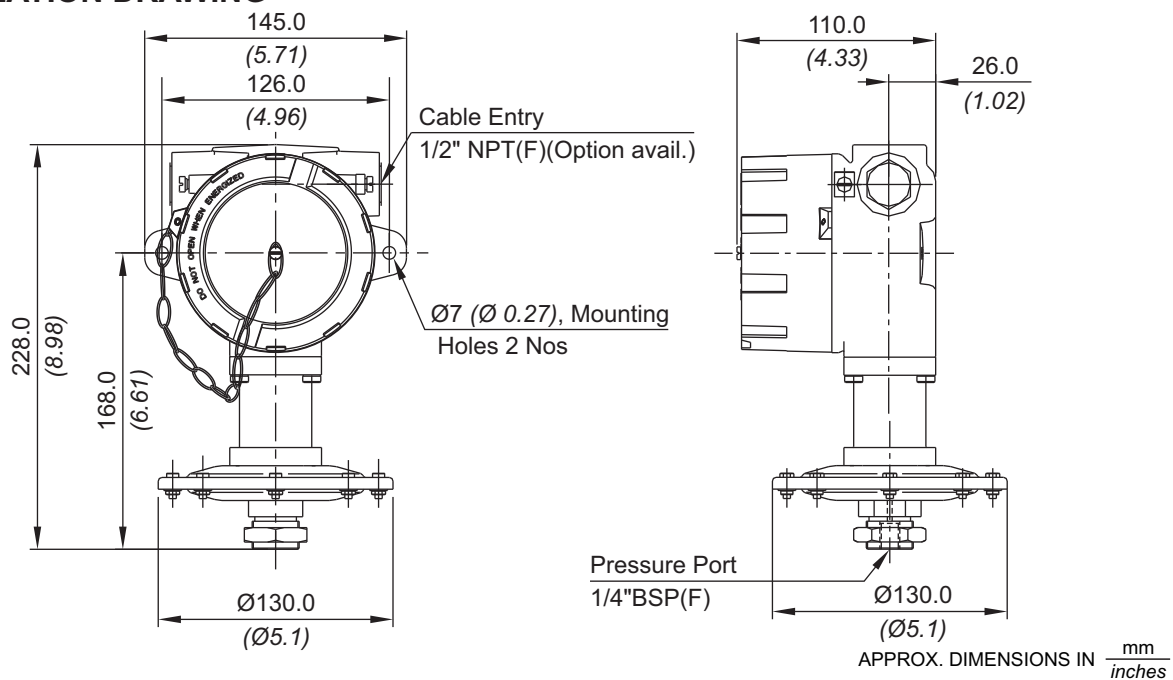
### No. Description

1. Pressure port (S.S.)\*
2. Support spring (S.S.)
3. Bottom flange (S.S.)
4. Support plate (Aluminium)
5. Diaphragm (Neoprene)
6. Gasket (Silicone)
7. Top plate (Aluminium)
8. Top flange (S.S.)
9. Plunger (Aluminium)
10. Top flange screw (S.S.)
11. Sealing 'O' ring (Silicone)

\*Pressure port is welded with flange

Note : *wetted parts* are mentioned in italics.

## INSTALLATION DRAWING



# FR LOW RANGE COMPOUND SWITCHES

## RANGE SELECTION TABLE

Range Code	Range mbar ("Wc)	Differential* mm wc ("Wc)	Maximum Working Pressure bar (psi)
		Approximate Maximum for "A1" microswitch	
CL2	-15 to 15 (-6.030 to 6.030)	40.0 (1.574)	2.0 (29.00)
CL3	-25 to 25 (-10.047 to 10.047)	60.0 (2.362)	2.0 (29.00)
CL5	-50 to 50 (-20.093 to 20.093)	100.0 (3.937)	2.0 (29.00)
CLX	-100 to 100 (-40.186 to 40.186)	150.0 (5.90)	2.0 (29.00)

Note:

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 60079-11, 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.

## HOW TO ORDER LOW RANGE COMPOUND SWITCHES

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8								
Non standard allocation	Model	Cable Entry Size	Switch Type	Range Code (values in mbar)	Microswitch Type	Pressure Port Material / Size	Diaphragm								
<p><input type="checkbox"/> 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><b>FR</b> = IP66 Flameproof pressure switch, EAC approved</p>	<p><b>1</b> = Al. head 1/2" NPT threads  <b>2</b> = Al. head 3/4" NPT threads  <b>3</b> = Al. head M20 x 1.5 threads  <b>*4</b> = Grey Cl head 1/2" NPT threads  <b>*5</b> = Grey Cl head 3/4" NPT threads  <b>*6</b> = Grey Cl head M20 x 1.5 threads  <b>7</b> = SS head 1/2" NPT threads  <b>8</b> = SS head 3/4" NPT threads  <b>9</b> = SS head M20 x 1.5 threads</p>	<p><b>C1</b> = Compound switch, fixed differential without scale</p> <p>For adjustable differential please select microswitch A6 in group 6</p>	<p><b>CL2</b> = (1.5 - 15)  <b>CL3</b> = (-25 - 25)  <b>CL5</b> = (-50 - 50)  <b>CLX</b> = (-100 - 100)</p>	<p><b>A1</b> = General purpose microswitch rated at 15 A; 250 VAC  <b>*A6</b> = elements with adjustable deadband  <b>*A7</b> = 2SPDT switching elements  <b>A8</b> = General purpose microswitch rated at 5 A; 250 VAC; 5 A, 28 VDC  <b>B1</b> = Low differential microswitch rated at 15 A; 250 VAC; 5 A; 28 VDC</p> <p>Please refer to page nos. 120 &amp; 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><b>S1</b> = SS316 / 1/4" BSP(F)  <b>S2</b> = SS316 / 1/4" NPT(F)</p> <p>More options available, please contact sales office</p>	<p><b>*0</b> = Neoprene  <b>*1</b> = PTFE</p> <p><b>*In case of non-metallic diaphragms the ambient temperature range should be (-20° to 60° C.</b></p>								
<p>Approx. switch weight in Kgs</p> <table border="1"> <thead> <tr> <th>Enclosure</th> <th>FR</th> </tr> </thead> <tbody> <tr> <td>Aluminium</td> <td>2.450</td> </tr> <tr> <td>Grey Cl</td> <td>4.850</td> </tr> <tr> <td>SS</td> <td>4.950</td> </tr> </tbody> </table>		Enclosure	FR	Aluminium	2.450	Grey Cl	4.850	SS	4.950						
Enclosure	FR														
Aluminium	2.450														
Grey Cl	4.850														
SS	4.950														

eg. Flameproof switch for gas group IIC, with 1/2" NPT cable entry in aluminium housing as 1SPDT pressure switch, having -150 to 150 mm Wc pressure range, with 15Amp. microswitch, SS316 pressure housing with 1/4" BSP port size & neoprene diaphragm shall be specified by

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8
<input type="checkbox"/>	FR	1	C1	CL2	A1	S1	0

Please specify full model number to avoid ambiguity.