INDUSTRIAL SWITCHES

SPECIFIER'S GUIDE FOR

- PRESSURE SWITCHES
- PRESSURE DIFFERENCE SWITCHES
- VACUUM SWITCHES
- TEMPERATURE SWITCHES

Orion® INSTRUMENTS

MD

CE

IP66

MT

IP66

Bulletin No. KA220802

Using the section

This section helps you make a logical choice in selecting the best product for a particular application. It allows a user familiar with our product line to locate the exact page the product is listed on. For those not familiar with our products, a logical sequence is given to help the user pick the best product for their need.

By taking a few minutes to familiarise yourself with the catalogue organisation, you will find it very easy to locate the product / information you need.

1. The contents page lists the broad outline in which the catalogue is organised, and will help the user familiar with products to select the page on which the product or other useful information is listed.
2. Need Product Selection help ?

   Product selection help will start with the "Pictorial Index" on Page 12 to 15, where the products are broadly classified. A brief description of each product group , a typical photo of the product within the group and the page number on which it is listed are given.

   If the user is not familiar with the products, a product selection guide is provided on pages 18 through 27, where photos for each product and important specifications are given to help determine and select the best product for the application.

   By evaluating and comparing these parameters, a logical selection can be made. Turn to the page on which the product information for the selected product is listed, for :

   Capsule Construction details

   Physical sizes

   Special features

   Ranges, hysterisis, electrical ratings etc.

   Ordering information

   Some applications

   The organisation of each of these pages is demonstrated on pages 6 and 7, of this section "How to use this section".

   In many cases, more than one product may work. For the most cost effective solution, compare prices and consider alternatives. Remember, the end cost includes initial product price, plus the installation, plus the service.

3. Need the terminology explained? (see page 304)

   Turn to page 304 for the definitions and terminology. This will help you familiarize with the terms used throughout the catalogue.

4. Need information on Accessories? (see page 296)

   Turn to page 296 for information on important accessories. These will give information on only important accessories, and information needed, when these are to be supplied with our products.

5. Need selection guidance? (see page 305)

   A logical procedure on page 305 will help you to consider most of the important factors when selecting a pressure switch.

6. Need other products ? (see page 306)

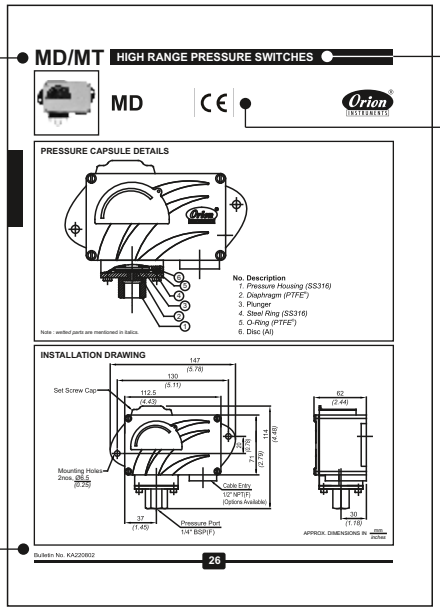
   Products other than those listed in this catalogue are referenced on these pages. Separate catalogues for these products are available.

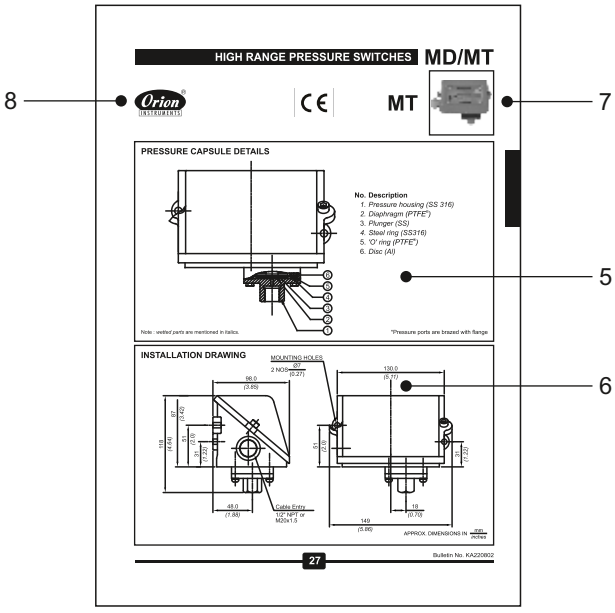
HOW TO USE this section

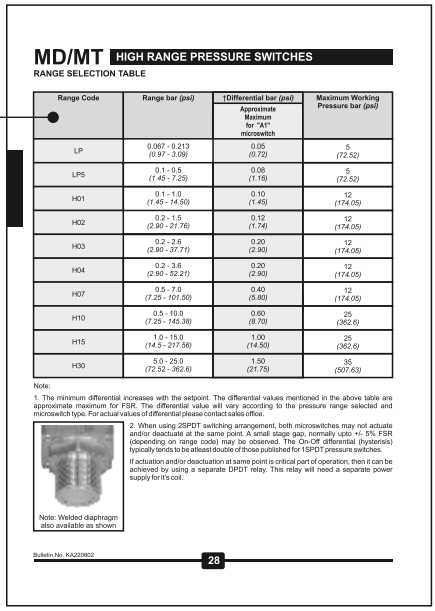
Due to the variety in product types and their salient features, catalogue page formats may vary. But generally the following format is adhered to.

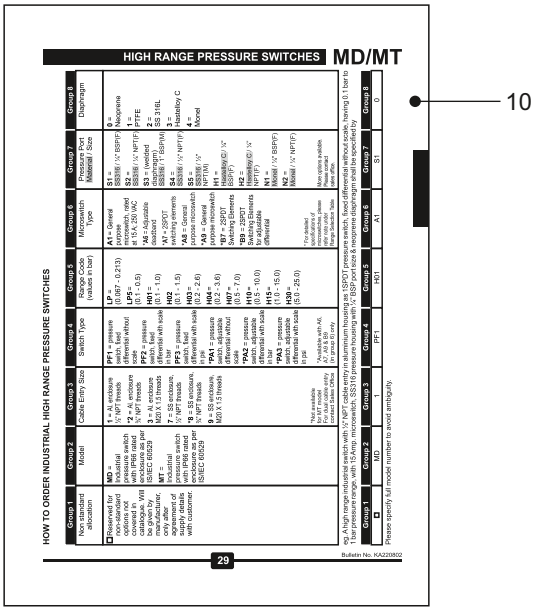
Elements appearing on each page will be:

1. **Product family/series** - A product family/series will appear on the outside page corner, depending on the left / right hand page, and will be in large bold type.
2. **Product section** - will appear immediately following the product family / series at top of the page and will be in bold type.
3. **Certification** - Where ever applicable, will appear below the name of the product section in between product photo and company logo.
4. **Features** - will appear next to product description & will enlist only the major attributes.
5. **Pressure capsule details** - will show the construction of the pressure capsule and all it's internal parts. If the process / working medium is variable, the wetted parts will be mentioned in italics. If the wetted parts are unique, the material of construction (MOC) will be mentioned alongside in brackets. Where the material of construction is not specified, it will vary and the options are to be selected by the user considering the compatibility of the process / working medium. Modifications can be made to suit any particular medium, if the answer for your needs is not in the standard MOC listed. Products for which process / working medium is predefined, pressure capsule details are not provided (e.g as in case of comparison test pump). Pressure capsule details of accessories are not given.

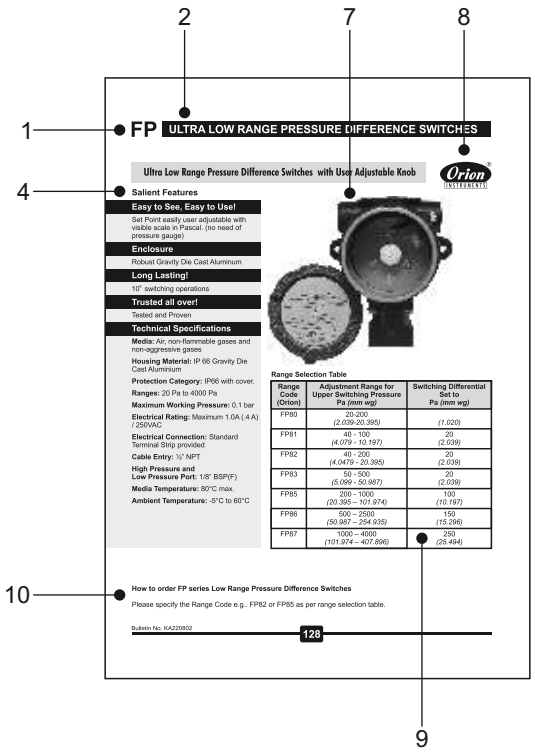


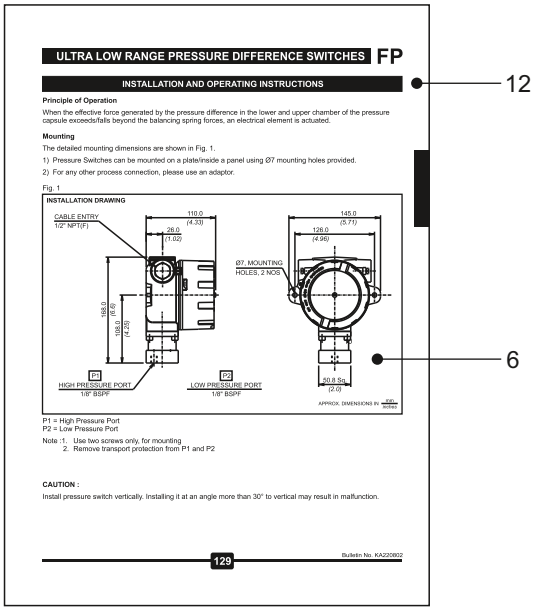






6. **Installation drawing** - will show the typical installation dimensions of products as they exist in their standard forms. The dimensions are mentioned in millimetres and also in inches to facilitate the user. The dimensions of accessories will have to be added to these to arrive at any particular general arrangement (GA) drawings. The dimensions are approximate and for precise dimensions, where mounting space is restricted, the user may contact the nearest sales office. Installation drawings of only fast moving accessories are given.
7. **Photos** - will appear on the relevant top of the page for products. If there are mounting variations/styles, all the styles for standard products will appear for easy identification. Options, if included in the photograph, are for demonstration only, and are not a part of the standard equipment. For accessories, the photos are not given due to the sheer variety and range available.
8. **Logo** - will appear on right hand top of page to identify the manufacturer.
9. **Characteristics** - Range tables and their relevant data, e.g the range covered, the differentials and maximum working pressures will generally appear on the right hand page. Additional technical details will also be mentioned, wherever required, on the right hand side of the page.
10. **Ordering guide** - A guide as to how to order the particular series' variations will appear on right hand bottom of the page. Only the variations available within a particular product family / series will appear here. Any additional accessories or modifications required for the product need to be mentioned in text by the user.
11. **Some applications** - will appear at the bottom left of the page. This is for easy understanding of the specific use of the switch.
12. **Installation and operating instructions** - This will include the principle of operation and mounting instructions and will appear on the right hand page
13. Numerous combinations are possible when pressure switches are provided with accessories like chemical seals, snubbers, remote seals, pipe mounting brackets, combination of switches mounted in a panel etc. Users are requested to provide the details of accessories required in text / drawings, as separate identification codes are provided for pressure switches fitted and supplied with accessories.





Introduction

MD and MT series pressure switches have been designed for applications that require robust, long lasting switches, coupled with a high accuracy and repeatability, in adverse conditions. By using appropriate capsules and wetted parts, MD/MT series pressure switches can be used for thousands of applications. A wide choice of electrical elements including SPDT, DPDT, gold plated contacts make these switches ideal for a variety of critical applications. A wide scale, when opted for, offers ease of setting, given the smaller least counts.

APPLICATIONS

- Power Generation
- Burners and Furnaces
- Glass and Metal Industries
- Chemical Industries
- Steel Industry
- Hydraulic, Steam and GasTurbines
- Boilers & Compressors
- Machine tools
- Railway braking systems
- Water treatment
- Sugar and Paper Mills
- Fire protection
- Surgical gas, Breweries, Milk industries
- Tyre Industry
- Natural Gas, LPG storage and transportation

PRODUCT SPECIFICATIONS:

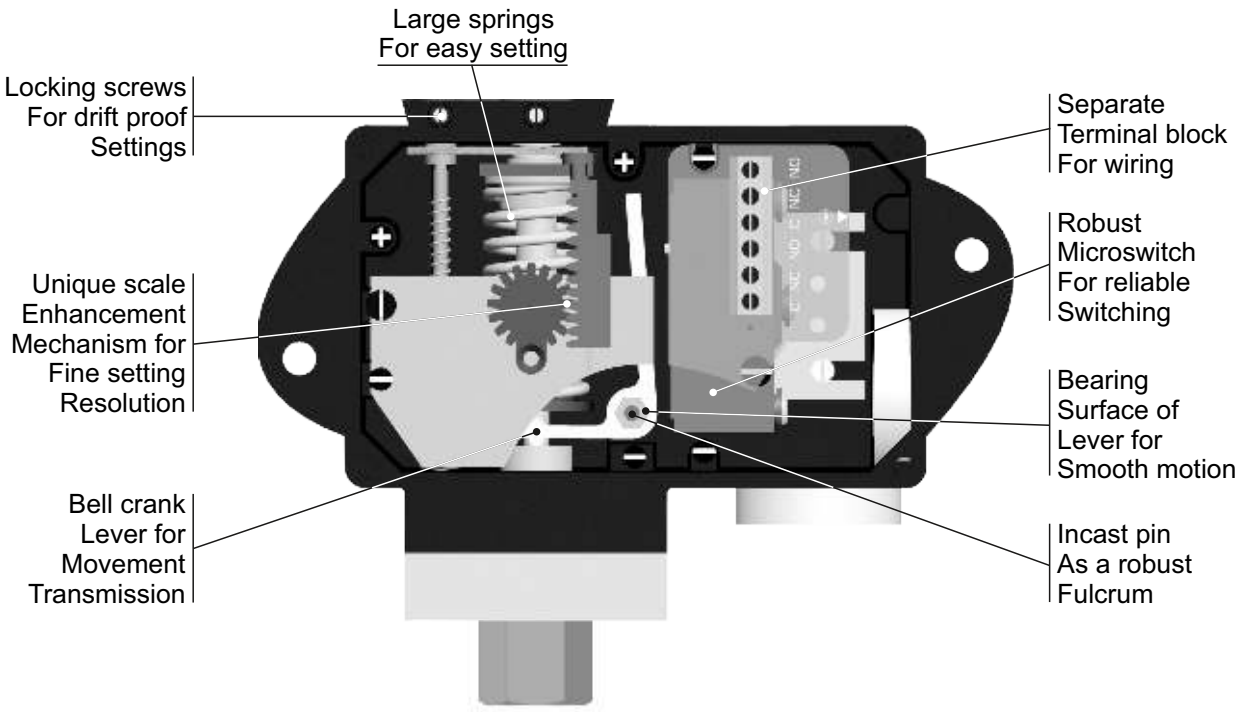
- Storage temperature : Atmospheric temperature
- Operating ambient temperature : - 20° C to + 60° C
- Media Temp.:- for rubber diaphragms 80 degree C max., higher with metal diaphragms
- Can be offered for higher temperatures with other capsule combinations
- Setpoint repeatability : ± 1 % of FSR
- Enclosure : Die cast aluminium to IP 66
- Switch output : SPDT, DPDT, hermetically sealed, gold plated contacts
- Process connection : ¼ "BSP standard, other options like flanges, triclover clamps, diaphragm seals available.

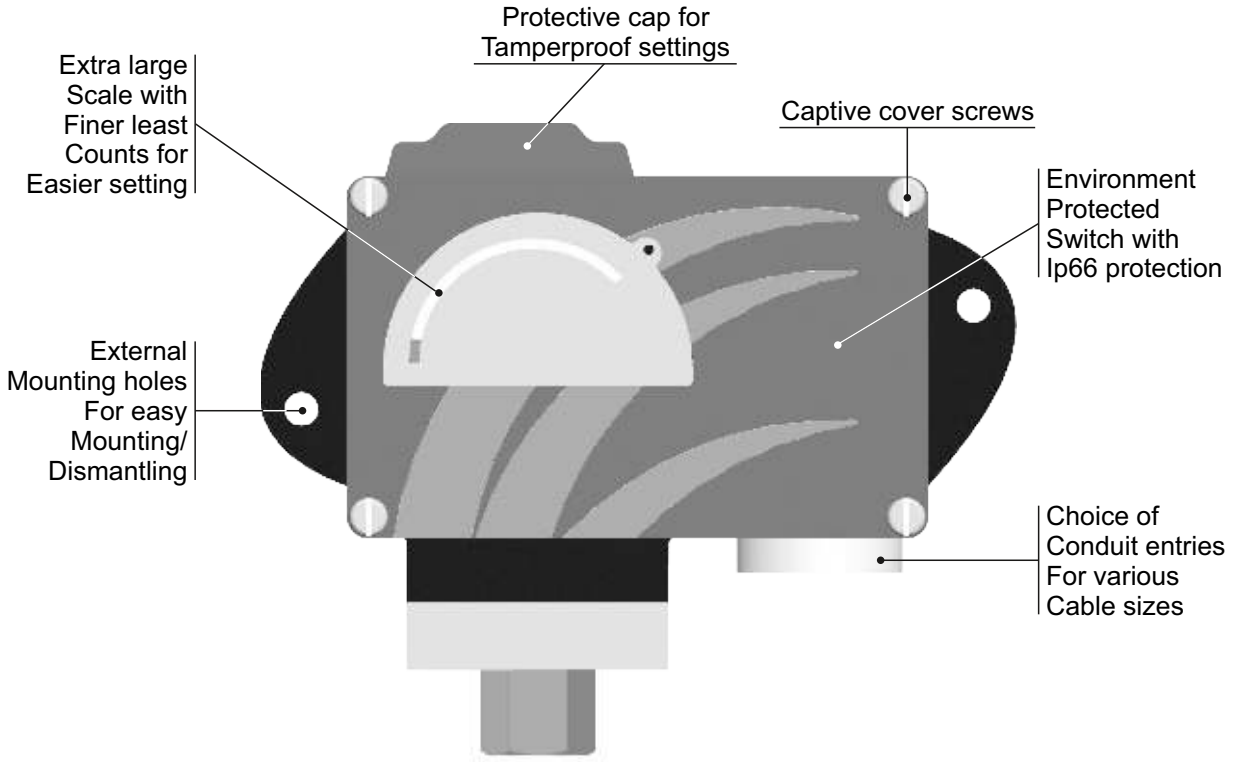
FEATURES

- Robust
- Wide scale for easier setpoint (optional)
- Enclosure protection : IP 66 standard
- Reliable accurate microswitches for long life switching
- Customized arrangements for switching values on request
- Easy safe wiring options
- Filed adjustable
- Accuracy +/- 1 % FSR
- Warranty : 2 years

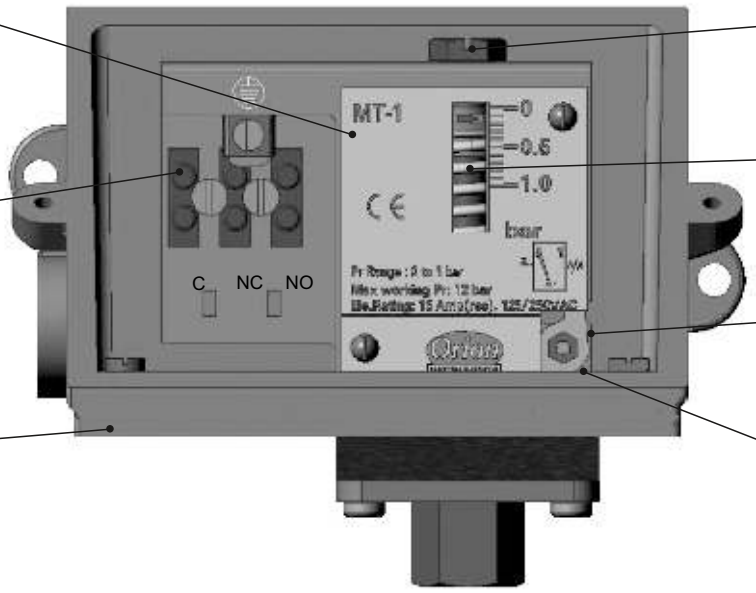
*Accuracy changes with switch configuration

MD Switch Construction





MT Switch Construction



Extra large scale with finer least count for easier setting

Separate terminal block for wiring

Aluminium Die-cast IP66 enclosure for excellent ingress protection

Internal set screw to avoid easy access to set point

Large spring for ease of set point

Bell crank lever mechanism for movement transmission

Bearing surface of lever for smooth motion

Environment protected switch with IP66 protection

Choice of conduit entries for various cable entries

Choice of wetted parts to sense a wide variety of media

External mounting hole for easy mounting/ dismounting

Non-corroding exteriors for a long life of the switch

MD/MT Switch Construction

The versatile construction of MD/MT switches allows configuration by selecting the following main subassemblies / components :

a) Main body casing :

This is aluminium pressure die cast, and has an IP 66 protection factor. This houses a lever mechanism , as also a scale enhancement mechanism, which is displayed on the page alongside. The cover has captive screws, and the scale, when provided, is clearly visible through a transparent window.

The cable entries in this casing can be of the following types :
- ½ " NPT
- ¾ "NPT
- M20 X 1.5

Other cable glands to MIL standards can be fitted optionally on request.

b) The electrical element (s) :

Choice of electrical elements to suit end use are offered, like :

A1 : General purpose applications

A7 : 2SPDT switching elements

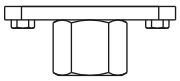
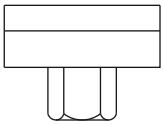
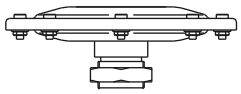
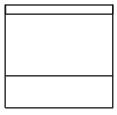
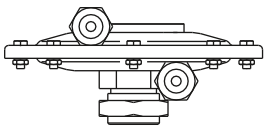
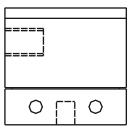
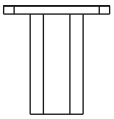
A9 : General purpose applications

It is possible to have more options of electrical elements not published here, to suit individual end use.

The deadband (or hysterisis / on-off differential) of the switches will change with the change of the electrical element (s). The approximate values for each range (for standard microswitches offered) are published in this catalogue

c) The pressure capsule :

To suit the setpoints , the working media and the function of the switch in the application:

High Pressure Ranges (typically from 0.067 barg to 25 barg) 	**High Proof High Pressure Ranges** (typically from 0.067 barg to 25 barg, Pmax = 70 bar) 	**Low Pressure Ranges** (typically from 1.5 mbarg to 350 mbarg) 	**High Range Pressure Difference Switches** (typically from 0.1 barg to 25 barg) 
Low Range Pressure* Difference Switches (typically from 1.5 mbarg to 350 mbarg) 	**Vacuum Switches** (typically from 760 mm Hg to atmospheric pressure) 	**Hydraulic Pressure Ranges** (typically from 0.5 barg to 400 barg) 	

*The pressure capsule can be modified to take high proof pressures [typically 100 bar for high and low pressure switches, or pressure difference switches (from high pressure side)].

Several accessories like chemical seals, pipe mounting brackets etc can be supplied with these switches to suit the media to be sensed. All of these are not listed, though most popular ones can be found on pages 284 through 290.

Please do get in touch with us for any of your applications, not addressed in this catalogue. We would be glad to offer you a solution.

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PRESSURE SWITCHES

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HIGH PROOF HIGH RANGE

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HYDRAULIC DIAPHRAGM

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HYDRAULIC RANGE*

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LOW RANGE

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ULTRA LOW RANGE

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HIGH RANGE DP

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HYDRAULIC RANGE DP

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LOW RANGE

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LOW DP HIGH PROOF

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LOW ΔP HIGH PROOF

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ULTRA LOW RANGE PD

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*Hydraulic ranges are ranges typically from 2 bar to 700 bar, used in oil applications.
However, these switches can be used for other media depending on wetted parts compatibility.

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COMPOUND SWITCHES

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LOW RANGE

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TEMPERATURE SWITCHES

TEMPERATURE SWITCH

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DIRECT MOUNTED

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*Pneumatic switches gives a pneumatic output instead electrical output. Since no electricity is involved thus no need of flameproof certification.

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LOW RANGE

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PRESSURE DIFFERENCE SWITCHES

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HIGH RANGE DP

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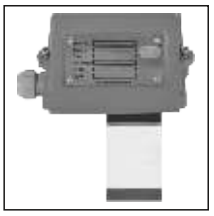
HYDRAULIC RANGE DP



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LOW RANGE

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LOW DP HIGH PROOF

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LOW ΔP HIGH PROOF

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*Hydraulic ranges are ranges typically from 2 bar to 700 bar, used in oil applications.
However, these switches can be used for other media depending on wetted parts compatibility.

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TEMPERATURE SWITCH

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HYDRAULIC DIAPHRAGM

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DUAL HIGH RANGE DP

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DUAL HIGH RANGE PRESSURE DIFFERENCE

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*Hydraulic ranges are ranges typically from 2 bar to 700 bar, used in oil applications.
However, these switches can be used for other media depending on wetted parts compatibility.

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ULTRA LOW RANGE FP

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Switch type	High Pressure Ranges	High Proof High Pressure Ranges	Hydraulic Diaphragm
Repeatability (% FSR)	± 1	± 2	± 2
Range covered	0.067 bar to 25 bar	0.067 bar to 25 bar	0.5 bar to 400 bar
Enclosure Protection	IP 66		
Enclosure Material	Pressure die-cast aluminium		
WETTED PARTS Sensing element	Diaphragm		Diaphragm
Standard	Nylon reinforced neoprene diaphragm protected by PTFE		SS316L
Optional	PTFE, SS316L, Hastelloy C, Monel	SS 316L / PTFE	
Pressure housing Standard Optional	SS 316 Hastelloy C, Monel		SS 316
Other Wetted Parts	SS316, PTFE		PTFE
Optional wetted parts through chem. seal	SS316, Hastelloy, Inconel Alloy, Monel, Nickel, Platinum, Tantalum, Titanium, Zirconium, PTFE		
Temp. of working medium	For non-metallic diaphragm: 80°C maximum. For metallic diaphragm: 150°C maximum For higher temperature, please use impulse tubing/chemical seals.		
Switching element	SPDT Snap action switch A1 : General purpose rated at 15A, 250 VAC, 0.2 A, 250 VDC resistive. For other switching elements please contact sales office.		

Accessories can be supplied with most of the switches. Please consult sales office.

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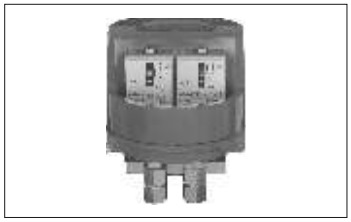

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Hydraulic Ranges	Flanged	Dual High Range Pressure Switches	Switch type
± 1	± 2	± 2	Repeatability (% FSR)
5 bar to 400 bar	0.1 bar to 200 bar	0.1 bar to 200 bar	Range covered
IP66			Enclosure Protection
Pressure die-cast aluminium			Enclosure Material
Piston SS SS 316L, PTFE	Diaphragm Nylon reinforced neoprene diaphragm protected by PTFE SS316L, Hastelloy C, Titanium, Monel, Tantalum	Diaphragm Nylon reinforced neoprene diaphragm protected by PTFE SS316L, Hastelloy C, Titanium, Monel, Tantalum	Sensing element Standard Optional
SS 316	Polypropelene SS316L Hastelloy C, Titanium, Monel, Tantalum	Flange SS316L Hastelloy C, Titanium, Monel, Tantalum	Pressure housing Standard Optional
Viton, PTFE, SS	PTFE	PTFE	Other Wetted Parts
			Optional wetted parts through chem. seal
For non-metallic diaphragm: 80°C maximum. For metallic diaphragm: 150°C maximum For higher temperature, please use impulse tubing/chemical seals.			Temp. of working medium
SPDT Snap action switch A1 : General purpose rated at 15A, 250 VAC, 0.2 A, 250 VDC resistive. For other switching elements please contact sales office.			Switching element

WETTED PARTS

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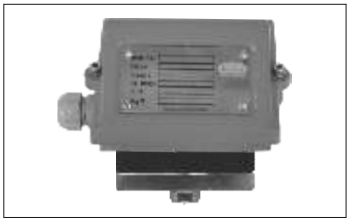

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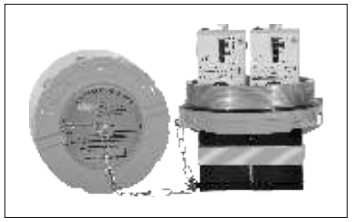
Switch type	Dual Pressure Switches	Hydraulic Diaphragm Pressure Switches	Dual Hydraulic Pressure Ranges
Repeatability (% FSR)	± 1	± 1	± 1
Range covered	0.1 bar to 25 bar	1 bar to 400 bar	1 bar to 400 bar
Enclosure Protection	IP 66		
Enclosure Material	Gravity die-cast aluminium		
WETTED PARTS Sensing element	Diaphragm		
Standard	Neoprene		
Optional	PTFE, SS 316		
Pressure housing Standard Optional	SS 316		
Other Wetted Parts			
Optional wetted parts through chem. seal			
Temp. of working medium	For non-metallic diaphragm: 80°C maximum. For metallic diaphragm: 150°C maximum For higher temperature, please use impulse tubing/chemical seals.		
Switching element	SPDT Snap action switch A1 : General purpose rated at 15A, 250 VAC, 0.2 A, 250 VDC resistive. For other switching elements please contact sales office.		

Accessories can be supplied with most of the switches. Please consult sales office.
* Higher ranges available on request



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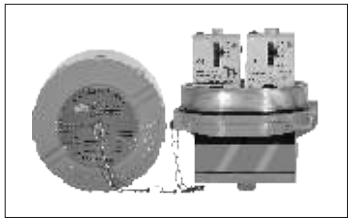

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Dual High Range DP Switches	Dual High Range Pressure Difference Switches	Dual High Range Pressure Difference Switches	Switch type
± 1	± 1	± 1	Repeatability (% FSR)
0.1 bar to 3.6 bar*	0.1 bar to 3.6 bar*	0.1 bar to 3.6 bar*	Range covered
IP 66			Enclosure Protection
Pressure die-cast aluminium			Enclosure Material
	Diaphragm Nylon reinforced neoprene PTFE		Sensing element Standard Optional
SS 316, Hastelloy C, Monel		SS 316	Pressure housing Standard Optional
PTFE, SS 316			Other Wetted Parts
			Optional wetted parts through chem. seal
For non-metallic diaphragm: 80°C maximum. For metallic diaphragm: 150°C maximum For higher temperature, please use impulse tubing/chemical seals.			Temp. of working medium
SPDT Snap action switch A8 : General purpose rated at 5A, 250 VAC,			Switching element

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Switch type	Low Pressure Ranges	Low Range High Proof	Ultra Low Range
Repeatability (% FSR)	± 2	± 2	± 1
Range covered	1.5 mbar to 350 mbar	0.1 bar to 200 bar	20 Pa to 4000 Pa
Enclosure Protection	IP66		
Enclosure Material	Pressure die-cast aluminium		Gravity die-cast aluminium
WETTED PARTS Sensing element Standard Optional	Diaphragm Nylon reinforced neoprene diaphragm protected by PTFE PTFE	Diaphragm Nylon reinforced neoprene diaphragm protected by PTFE SS316L, Hastelloy C, Titanium, Monel, Tantalum	Diaphragm PTFE Neoprene
Pressure housing Standard Optional	SS 316 M.S.	Flange SS 316L Hastelloy C, Titanium, Monel, Tantalum	SS 316
Other Wetted Parts	M.S., SS, Nitrile, Al., Neoprene	PTFE	
Optional wetted parts through chem. seal			
Temp. of working medium	For non-metallic diaphragm: 80°C maximum. For metallic diaphragm: 150°C maximum For higher temperature, please use impulse tubing/chemical seals.		
Switching element			SPDT Snap action switch A1 : General purpose rated at 15A, 250 VAC, 0.2 A, 250 VDC resistive. For other switching elements please contact sales office.

Accessories can be supplied with most of the switches. Please consult sales office.
* Higher ranges available on request

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High Range Pressure Difference Switches	High Range DP	Hydraulic Range DP	Switch type
± 1	± 1	± 1	Repeatability (% FSR)
0.1 bar to 3.6 bar*	0.1 bar to 25 bar	0.1 bar to 200 bar	Range covered
IP 66			Enclosure Protection
Pressure die-cast aluminium			Enclosure Material
Diaphragm Nylon reinforced neoprene PTFE	Diaphragm Nylon reinforced neoprene diaphragm protected by PTFE PTFE, SS316L		Sensing element Standard Optional
SS 316, Hastelloy C, Monel	SS 316	SS 316, Hastelloy C, Monel	Pressure housing Standard Optional
PTFE, SS316			Other Wetted Parts
			Optional wetted parts through chem. seal
For non-metallic diaphragm: 80°C maximum. For metallic diaphragm: 150°C maximum For higher temperature, please use impulse tubing/chemical seals.			Temp. of working medium
SPDT Snap action switch A1 : General purpose rated at 15A, 250 VAC, 0.2 A, 250 VDC resistive. For other switching elements please contact sales office.			Switching element

Product Selection Guide


MD Page No. 100 | **MT** Page No. 101


MD Page No. 104 | **MT** Page No. 105


MD Page No. 108 | **MT** Page No. 109

Switch type	Low Range Pressure Difference Switches		Low DP High Proof Pressure Difference		Low ΔP High Proof Pressure Difference Switches
Repeatability (% FSR)	± 2		± 1		± 2
Range covered	1.5 mbar to 350 mbar		1.5 mbar to 350 mbar		5 mbar to 350 mbar
Enclosure Protection	IP 66				
Enclosure Material	Pressure die-cast aluminium				Gravity die-cast aluminium
WETTED PARTS Sensing element Standard Optional	Diaphragm Nylon reinforced neoprene PTFE		Diaphragm Nylon reinforced neoprene diaphragm protected by PTFE PTFE, SS 316L		Diaphragm Silicone
Pressure housing Standard Optional	SS 316				
Other Wetted Parts	M.S., SS, Nitrile, Neoprene		PTFE, SS316		PTFE, SS
Optional wetted parts through chem. seal					
Temp. of working medium					
Switching element	SPDT Snap action switch A1 : General purpose rated at 15A, 250 VAC, 0.2 A, 250 VDC resistive. For other switching elements please contact sales office.				

Accessories can be supplied with most of the switches. Please consult sales office.
* Higher ranges available on request


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MD Page No. 120 **MT** Page No. 121

Ultra Low Range Pressure Difference Switches	Vacuum Switches	High Range Compound Switches	Switch type
± 2	± 1	± 2	Repeatability (% FSR)
0.4 mbar to 4 mbar	760 mmHg to 100 mmHg	-1 bar to 3.6 bar	Range covered
IP 66			Enclosure Protection
Pressure die-cast aluminium			Enclosure Material
Diaphragm Nylon reinforced neoprene PTFE		Diaphragm Nylon reinforced neoprene PTFE	Sensing element Standard Optional
SS 316		SS 316	Pressure housing Standard Optional
M.S., SS, Nitrile, Al., Neoprene		PTFE, SS316	Other Wetted Parts
			Optional wetted parts through chem. seal
For non-metallic diaphragm: 80°C maximum. For metallic diaphragm: 150°C maximum For higher temperature, please use impulse tubing/chemical seals.			Temp. of working medium
SPDT Snap action switch A1 : General purpose rated at 15A, 250 VAC, 0.2 A, 250 VDC resistive. For other switching elements please contact sales office.			Switching element

WETTED PARTS

Product Selection Guide

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MT Page No. 125

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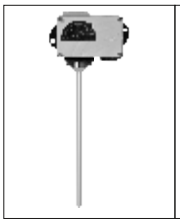
MT Page No. 129



MD Page No. 132

MT Page No. 133

Switch type	Low Range Compound Switches		Temperature Switches	Direct Mounted Temperature Switches
Repeatability (% FSR)	± 2		± 1	± 1
Range covered	-150 mm wc to 250 mm wc		25 °C to 215 °C	35°C to 215°C
Enclosure Protection	IP 66			
Enclosure Material			Pressure die-cast aluminium	
WETTED PARTS Sensing element Standard Optional	Diaphragm Nylon reinforced neoprene diaphragm protected by PTFE PTFE		Bulb/Probe Brass	Bulb/Probe Brass
Pressure housing Standard Optional	SS 316			
Other Wetted Parts	SS, Nitrile, Al., M.S.			
Optional wetted parts through chem. seal				
Temp. of working medium			For non-metallic diaphragm: 80°C maximum. For metallic diaphragm: 150°C maximum For higher temperature, please use impulse tubing/chemical seals.	
Switching element			SPDT Snap action switch A1 : General purpose rated at 15A, 250 VAC, 0.2 A, 250 VDC resistive. For other switching elements please contact sales office.	

Accessories can be supplied with most of the switches. Please consult sales office.
* Higher ranges available on request

FP

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Ultra Low Range Pressure Difference Switches	Switch type
± 2	Repeatability (% FSR)
20 Pa to 4000 Pa	Range covered
IP 66	Enclosure Protection
Gravity die-cast aluminium	Enclosure Material
Diaphragm Nylon reinforced neoprene PTFE	Sensing element Standard Optional
M.S. SS 316	Pressure housing Standard Optional
M.S., SS, Nitrile, Al., Neoprene	Other Wetted Parts
	Optional wetted parts through chem. seal
For non-metallic diaphragm: 80°C maximum. For metallic diaphragm: 150°C maximum For higher temperature, please use impulse tubing/chemical seals.	Temp. of working medium
SPDT Snap action switch A1 : General purpose rated at 15A, 250 VAC, 0.2 A, 250 VDC resistive. For other switching elements please contact sales office.	Switching element

WETTED PARTS

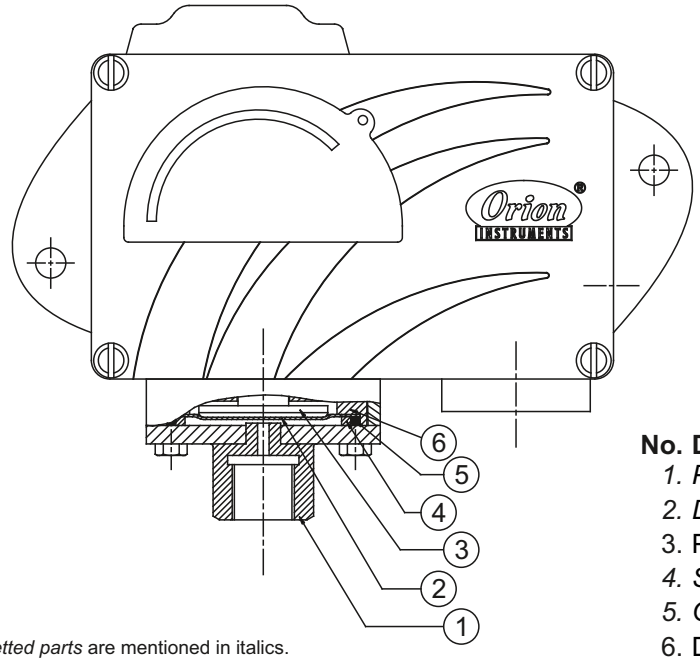
MD/MT HIGH RANGE PRESSURE SWITCHES

MD

CE

Orion® INSTRUMENTS

PRESSURE CAPSULE DETAILS

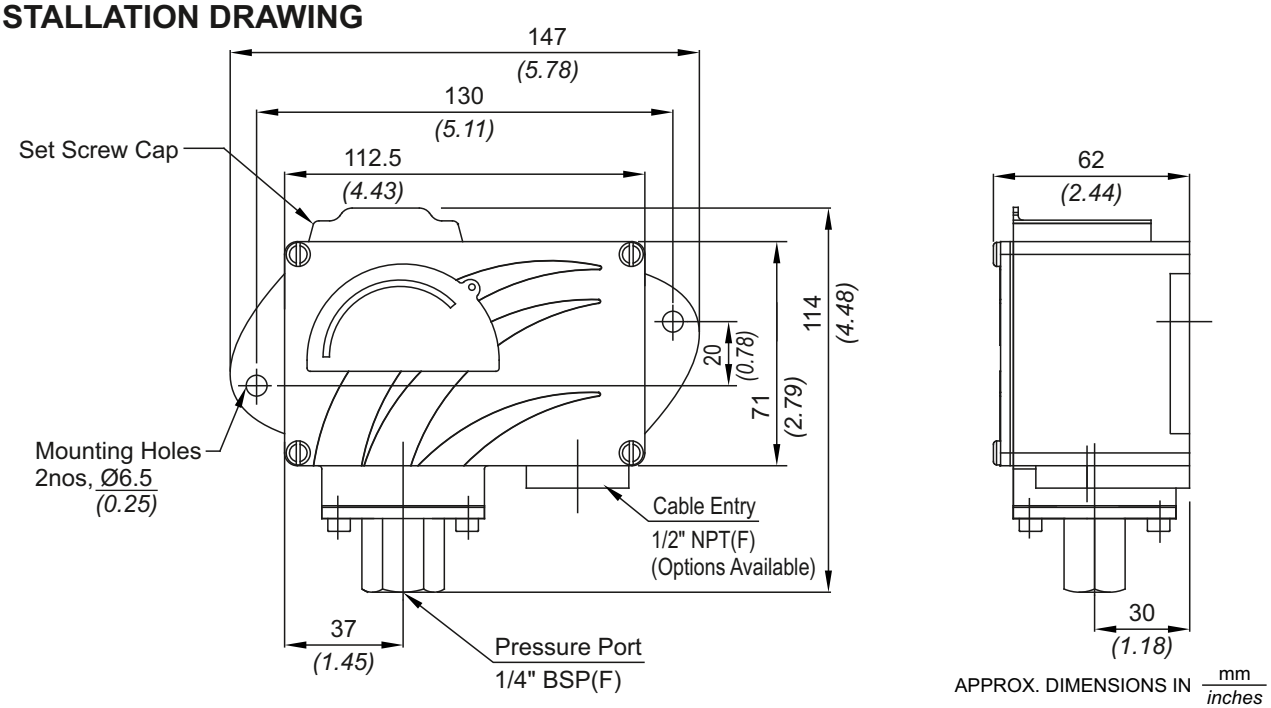


Note : *wetted parts* are mentioned in italics.

No. Description

1. *Pressure Housing (SS316)*
2. *Diaphragm (PTFE®)*
3. Plunger
4. *Steel Ring (SS316)*
5. *O-Ring (PTFE®)*
6. Disc (Al)

INSTALLATION DRAWING



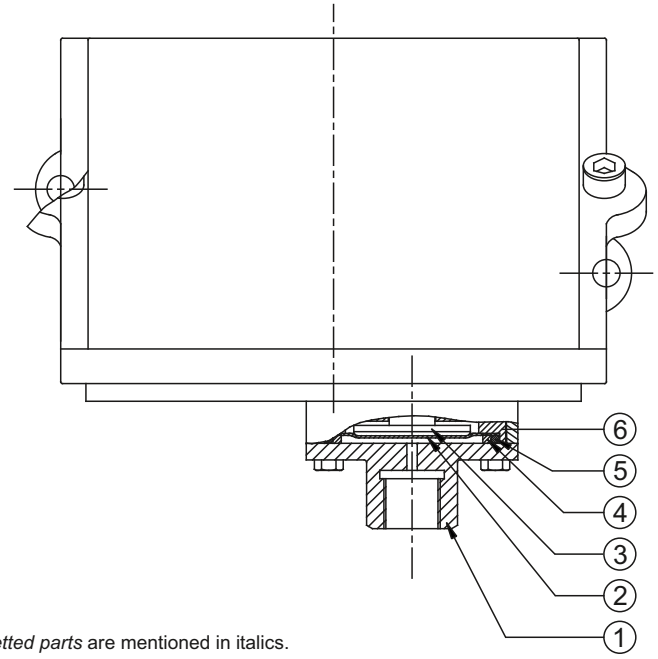
APPROX. DIMENSIONS IN mm / *inches*

Orion® INSTRUMENTS

CE

MT

PRESSURE CAPSULE DETAILS



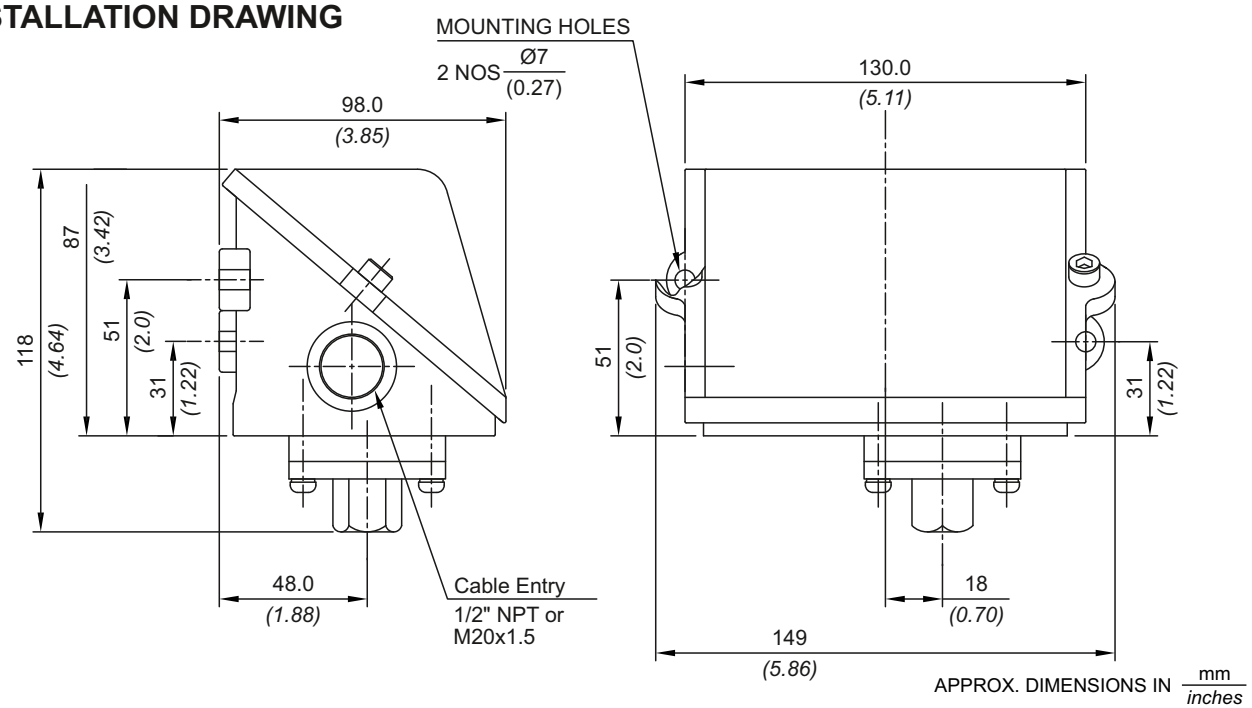
No. Description

1. *Pressure housing (SS 316)*
2. *Diaphragm (PTFE®)*
3. *Plunger (SS)*
4. *Steel ring (SS316)*
5. *'O' ring (PTFE®)*
6. *Disc (Al)*

Note : *wetted parts* are mentioned in italics.

*Pressure ports are brazed with flange

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

MD/MT HIGH RANGE PRESSURE SWITCHES

RANGE SELECTION TABLE

Range Code	Range bar *(psi)*	†Differential bar *(psi)* Approximate Maximum for "A1" microswitch	Maximum Working Pressure bar *(psi)*
LP	0.067 - 0.213 *(0.97 - 3.09)*	0.05 *(0.72)*	5 *(72.52)*
LP5	0.1 - 0.5 *(1.45 - 7.25)*	0.08 *(1.16)*	5 *(72.52)*
H01	0.1 - 1.0 *(1.45 - 14.50)*	0.10 *(1.45)*	12 *(174.05)*
H02	0.2 - 1.5 *(2.90 - 21.76)*	0.12 *(1.74)*	12 *(174.05)*
H03	0.2 - 2.6 *(2.90 - 37.71)*	0.20 *(2.90)*	12 *(174.05)*
H04	0.2 - 3.6 *(2.90 - 52.21)*	0.20 *(2.90)*	12 *(174.05)*
H07	0.5 - 7.0 *(7.25 - 101.50)*	0.40 *(5.80)*	12 *(174.05)*
H10	0.5 - 10.0 *(7.25 - 145.38)*	0.60 *(8.70)*	25 *(362.6)*
H15	1.0 - 15.0 *(14.5 - 217.56)*	1.00 *(14.50)*	25 *(362.6)*
H30	5.0 - 25.0 *(72.52 - 362.6)*	1.50 *(21.75)*	35 *(507.63)*

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.

Note: Welded diaphragm also available as shown

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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL HIGH RANGE PRESSURE 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 bar)	Microswitch Type	Pressure Port Material / Size	Diaphragm
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**MD** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529 **MT** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads ***2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads ***8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads *Not available for MT model For dual cable entry contact Sales Office	**PF1** = pressure switch, fixed differential without scale **PF2** = pressure switch, fixed differential with scale in bar **PF3** = pressure switch, fixed differential with scale in psi ***PA1** = pressure switch, adjustable differential without scale ***PA2** = pressure switch, adjustable differential with scale in bar ***PA3** = pressure switch, adjustable differential with scale in psi *Available with A6, A7, A9 & B9 (in group 6) only	**LP** = (0.067 - 0.213) **LP5** = (0.1 - 0.5) **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)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements ***B9** = 2SPDT Switching Elements for adjustable differential * For detailed specifications of microswitches, please refer note under Range Selection Table	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F) **S3** = (welded diaphragm) SS316 / 1" BSP(M) **S4** = SS316 / ½" NPT(F) **S5** = SS316 / ½" NPT(M) **H1** = Hastelloy C / ¼" BSP(F) **H2** = Hastelloy C / ¼" NPT(F) **N1** = Monel / ¼" BSP(F) **N2** = Monel / ¼" NPT(F) More options available. Please contact sales office.	**0** = Neoprene **1** = PTFE **2** = SS 316L **3** = Hastelloy C **4** = Monel

eg. A high range industrial switch with ½" NPT cable entry in aluminium housing as 1SPDT pressure switch, fixed differential without scale, having 0.1 bar to 1 bar pressure range, with 15 Amp. microswitch, SS316 pressure housing with ¼" 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
☐	MD	1	PF1	H01	A1	S1	0

Please specify full model number to avoid ambiguity.

Bulletin No. KA220802

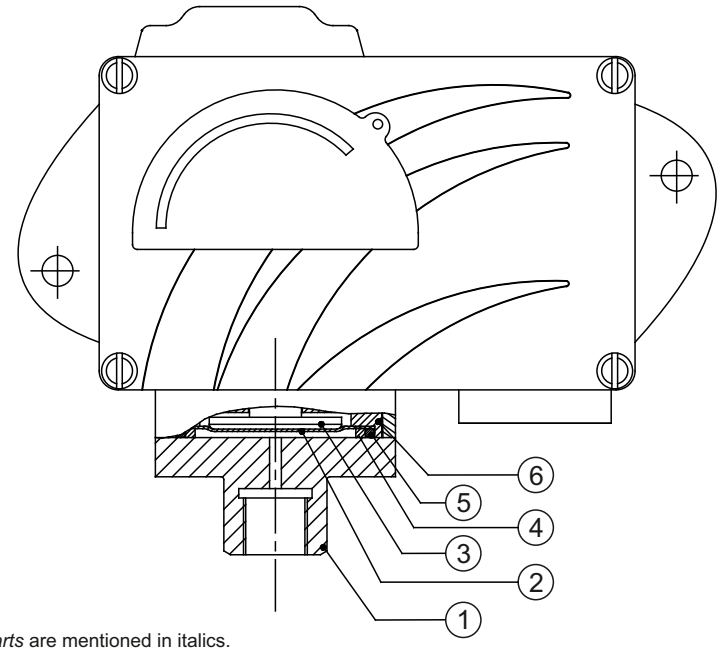
MD/MT HIGH PROOF HIGH RANGE PRESSURE SWITCHES

MD

CE

Orion® INSTRUMENTS

PRESSURE CAPSULE DETAILS

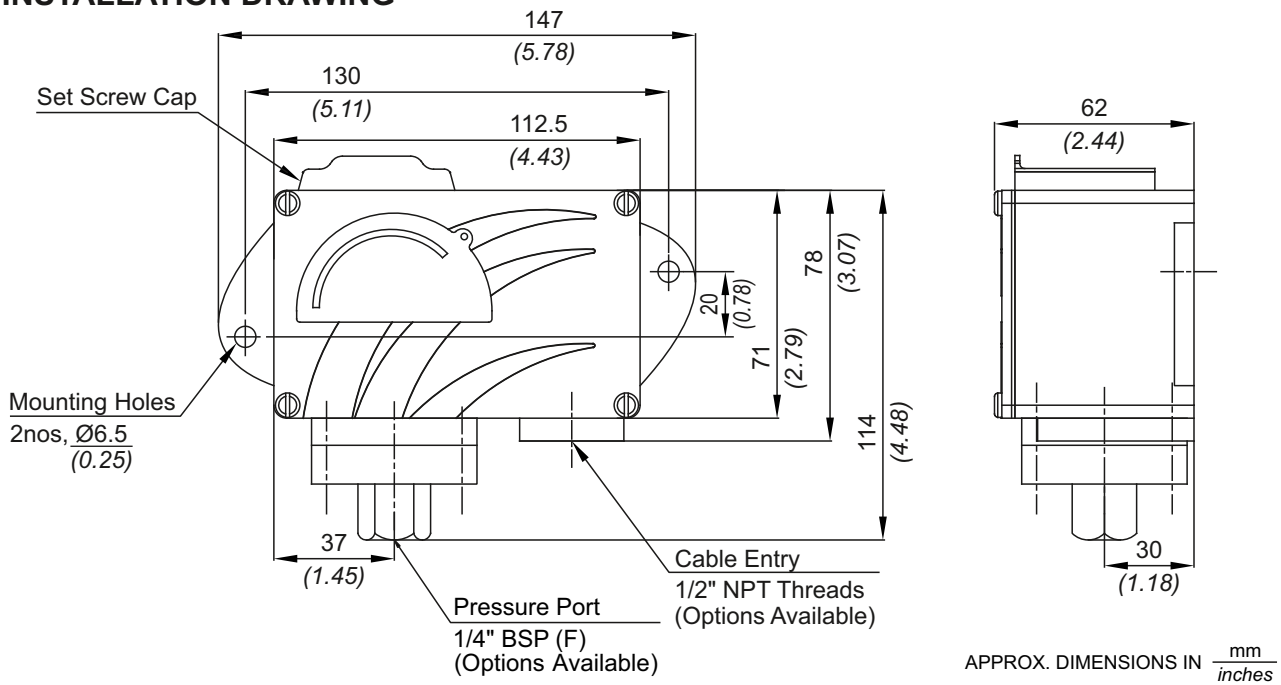


No. Description

1. *Pressure Housing (SS316)*
2. *Diaphragm (PTFE®)*
3. Plunger (SS)
4. *Steel Ring (SS316)*
5. *O-Ring (PTFE®)*
6. Disc (Al)

Note : *wetted parts* are mentioned in italics.

INSTALLATION DRAWING



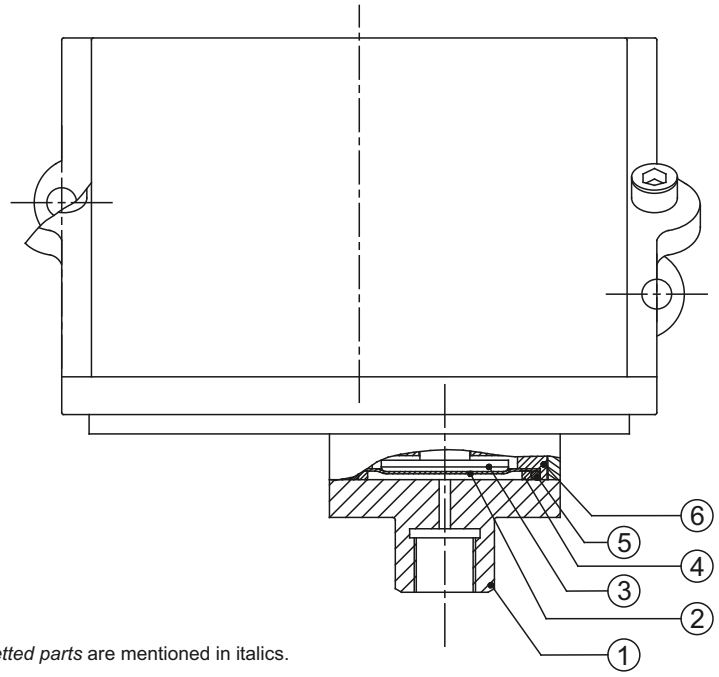
APPROX. DIMENSIONS IN mm / *inches*

Orion® INSTRUMENTS

CE

MT

PRESSURE CAPSULE DETAILS



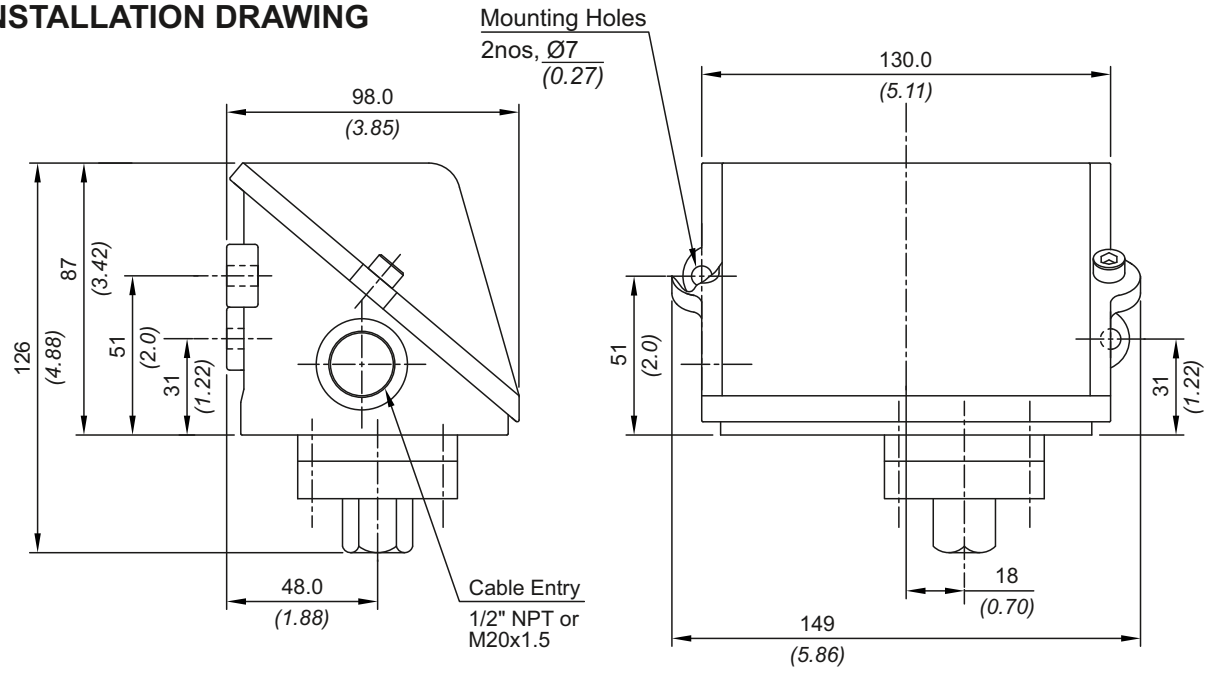
No. Description

1. *Pressure housing (SS316)*
2. *Diaphragm (PTFE®)*
3. Plunger (SS)
4. *Steel ring (SS316)*
5. *'O' ring (PTFE®)*
6. Disc (Al)

Note : *wetted parts* are mentioned in italics.

*Pressure ports are brazed with flange

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

MD/MT HIGH PROOF HIGH RANGE PRESSURE SWITCHES

RANGE SELECTION TABLE

Range Code	Range bar *(psi)*	Differential* bar *(psi)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A1" microswitch	
P01	0.1 - 1.0 *(1.45 - 14.50)*	0.20 *(2.90)*	70 *(1015.27)*
P02	0.2 - 1.5 *(2.90 - 21.76)*	0.20 *(2.90)*	70 *(1015.27)*
P03	0.2 - 2.6 *(2.90 - 37.71)*	0.30 *(4.35)*	70 *(1015.27)*
P04	0.2 - 3.6 *(2.90 - 52.21)*	0.40 *(5.80)*	70 *(1015.27)*
P07	0.5 - 7.0 *(7.25 - 101.50)*	0.60 *(8.70)*	70 *(1015.27)*
P10	0.5 - 10.0 *(7.25 - 145.04)*	0.80 *(11.60)*	70 *(1015.27)*
P15	1.0 - 15.0 *(14.5 - 217.6)*	1.50 *(23.21)*	70 *(1015.27)*
P30	5.0 - 25.0 *(72.52 - 362.5)*	2.00 *(29.00)*	70 *(1015.27)*

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.

Note: Welded diaphragm also available as shown

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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL HIGH PROOF HIGH RANGE PRESSURE 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 bar)	Microswitch Type	Pressure Port Material / Size	Diaphragm
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**MD** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529 **MT** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads ***2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads ***8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads *Not available for MT model For dual cable entry contact Sales Office	**PF1** = pressure switch, fixed differential without scale **PF2** = pressure switch, fixed differential with scale in bar **PF3** = pressure switch, fixed differential with scale in psi ***PA1** = pressure switch, adjustable differential without scale ***PA2** = pressure switch, adjustable differential with scale in bar ***PA3** = pressure switch, adjustable differential with scale in psi *Available with A6, A7, A9 & B9 (in group 6) only	**P01** = (0.1 - 1.0) **P02** (0.1 - 1.5) **P03** = (0.2 - 2.6) **P04** = (0.2 - 3.6) **P07** = (0.5 - 7.0) **P10** = (0.5 - 10.0) **P15** = (1.0 - 15.0) **P30** = (5.0 - 25.0)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements ***B9** = 2SPDT Switching Elements for adjustable differential * For detailed specifications of microswitches, please refer note under Range Selection Table	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F) **S3** = (welded diaphragm) SS316 / 1" BSP(M) **S4** = SS316 / ½" NPT(F) **S5** = SS316 / ½" NPT(M) **H1** = Hastelloy C / ¼" BSP(F) **H2** = Hastelloy C / ¼" NPT(F) **N1** = Monel / ¼" BSP(F) **N2** = Monel / ¼" NPT(F) More options available. Please contact sales office.	**0** = Neoprene **1** = PTFE **2** = SS 316L **3** = Hastelloy C **4** = Monel

eg. A high proof high range industrial switch with ½" NPT cable entry in aluminium housing as 1SPDT pressure switch, fixed differential without scale, having 0.1 bar to 1 bar pressure range, with 15 Amp. microswitch, SS316 pressure housing with ¼" 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
☐	MD	1	PF1	P01	A1	S1	0

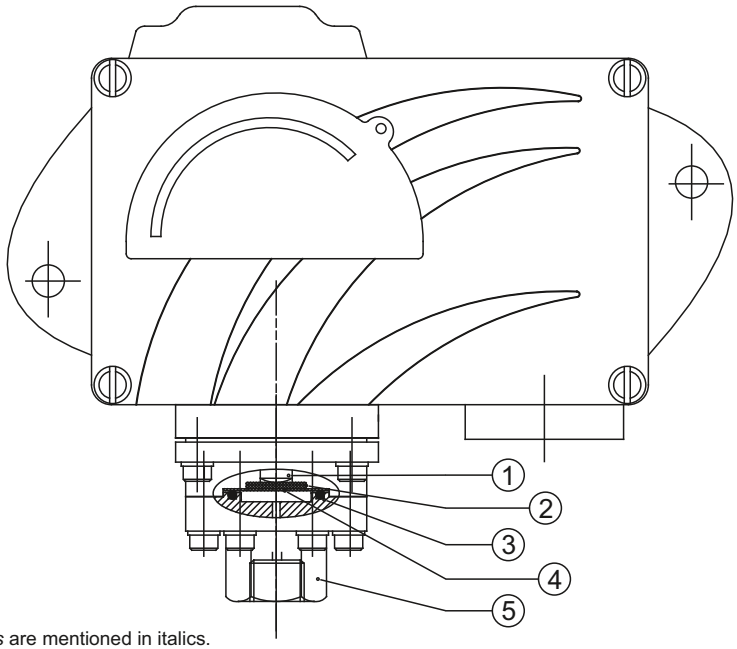
Please specify full model number to avoid ambiguity.

Bulletin No. KA220802

MD/MT HYDRAULIC DIAPHRAGM SWITCH

MD

PRESSURE CAPSULE DETAILS

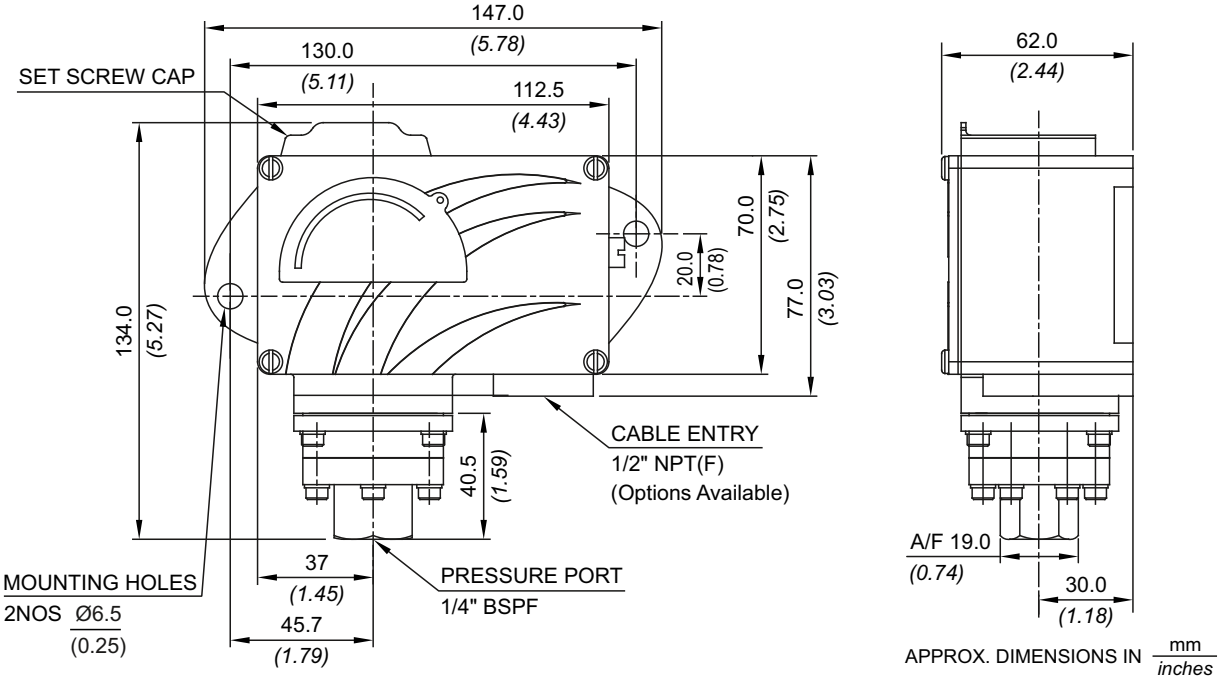


No. Description

1. *Pressure Housing (SS316)*
2. *O-Ring (PTFE®)*
3. *Diaphragm (PTFE®)*
4. Plunger
5. Cushioning Pad
   (Options Available)

Note : *wetted parts* are mentioned in italics.

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

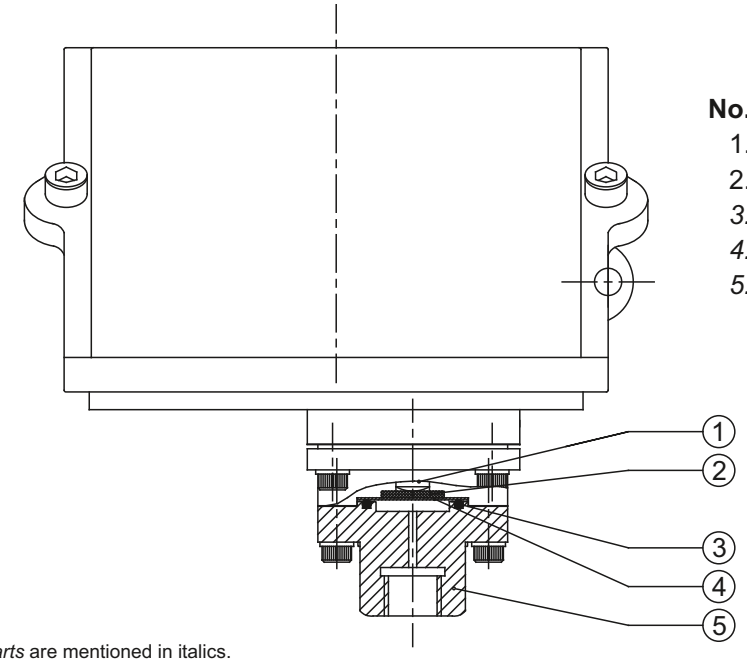
HYDRAULIC DIAPHRAGM SWITCH MD/MT

Orion® INSTRUMENTS

CE

MT

PRESSURE CAPSULE DETAILS



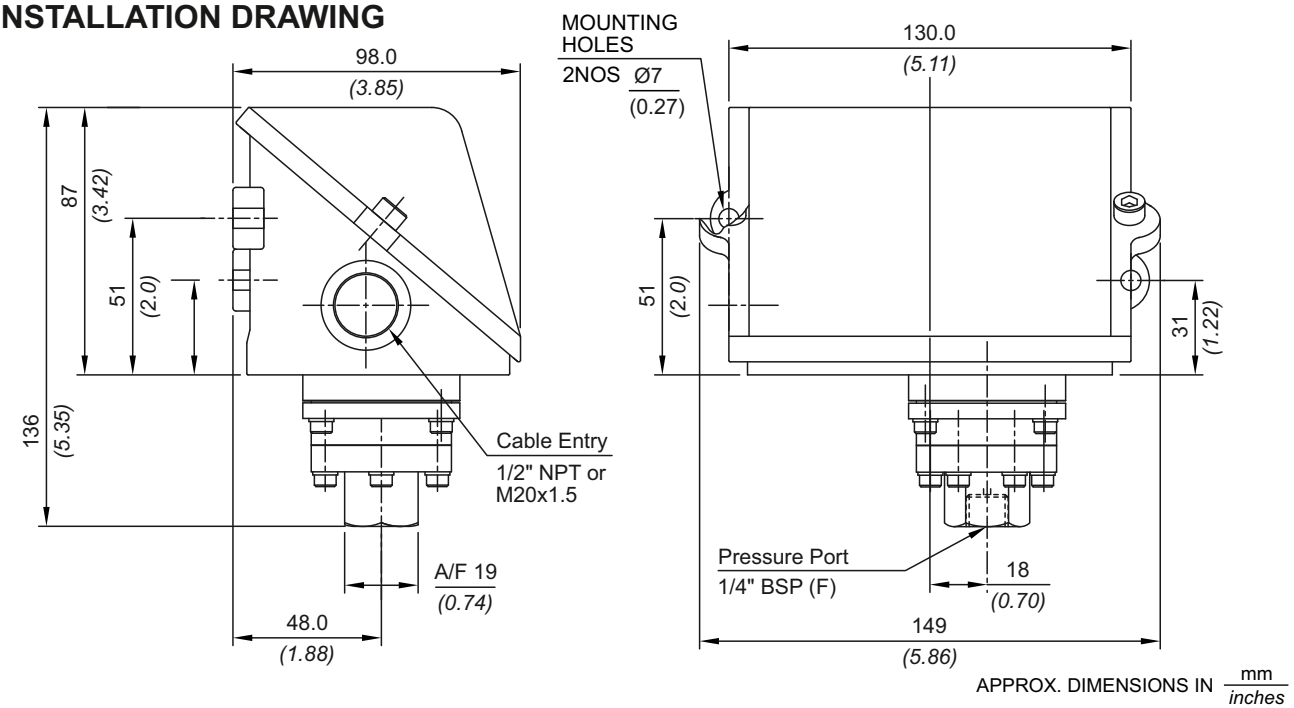
No. Description

1. Transfer Pin (SS)
2. Cushioning Pad
3. *'O' ring (PTFE®)*
4. *Diaphragm (PTFE®)*
5. *Pressure Housing (SS316)*

Note : *wetted parts* are mentioned in italics.

*Pressure ports are brazed with flange

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

MD/MT HYDRAULIC DIAPHRAGM SWITCH

RANGE SELECTION TABLE

Range Code	Range bar *(psi)*	Differential* bar *(psi)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A8" microswitch	
H1T	0.5 - 10 *(7.25 - 145.04)*	1 *(14.50)*	150 *(2175.51)*
H2T	2 - 20 *(29.00 - 290.07)*	2 *(29.00)*	200 *(2900.76)*
H4T	5 - 40 *(72.52 - 580.15)*	5 *(72.52)*	200 *(2900.76)*
H1H	10 - 100 *(146.04 - 1450.38)*	12 *(174.05)*	200 *(2900.76)*
H2H	7 - 200 *(101.52 - 2900.76)*	24 *(348.09)*	400 *(5801.52)*
H4H	40 - 400 *(580.15 - 5801.52)*	50 *(725)*	500 *(7251.88)*
H7H	70 - 700 *(1015.26 - 10152.64)*	70 *(1015.26)*	800 *(11603)*
H1K	100 - 1000 *(1450.37 - 14503.77)*	100 *(1450.37)*	1100 *(15954.15)*

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.

Note: Welded diaphragm also available as shown

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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL HYDRAULIC DIAPHRAGM RANGE PRESSURE SWITCHES

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8
Non standard allocation	Gas Group Classification	Cable Entry Size	Switch Type	Range Code (values in bar)	Microswitch Type	Pressure Port Material / Size	Diaphragm
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**MD** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529 **MT** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads ***2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads ***8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads *Not available for MT model For dual cable entry contact Sales Office	**PF1** = pressure switch, fixed differential without scale **PF2** = pressure switch, fixed differential with scale in bar **PF3** = pressure switch, fixed differential with scale in psi ***PA1** = pressure switch, adjustable differential without scale ***PA2** = pressure switch, adjustable differential with scale in bar ***PA3** = pressure switch, adjustable differential with scale in psi *Available with A6, A7, A9 & B9 (in group 6) only	**H1T** = (0.5 - 10) **H2T** = (2 - 20) **H4T** = (5 - 40) **H1H** = (10 - 100) **H2H** = (7 - 200) **H4H** = (40 - 400) **H7H** = (70 - 700) **H1K** = 100 - 1000)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements ***B9** = 2SPDT Switching Elements for adjustable differential * For detailed specifications of microswitches, please refer note under Range Selection Table	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F) **S3** = (welded diaphragm) SS316 / 1" BSP(M) **S4** = SS316 / ½" NPT(F) **S5** = SS316 / ½" NPT(M) **H1** = Hastelloy C / ¼" BSP(F) **H2** = Hastelloy C / ¼" NPT(F) **N1** = Monel / ¼" BSP(F) **N2** = Monel / ¼" NPT(F) More options available. Please contact sales office.	**0** = Neoprene **1** = PTFE **2** = SS 316L **3** = Hastelloy C **4** = Monel

eg. A hydraulic diaphragm pressure switch, with ½" NPT cable entry in aluminium housing as 1SPDT pressure switch, fixed differential without scale, having 5 bar to 40 bar pressure range, with 15 Amp. microswitch, SS316 pressure housing with ¼" BSP port size shall be specified by

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8
☐	MD	1	PF1	H4T	A1	S1	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.

Bulletin No. KA220802

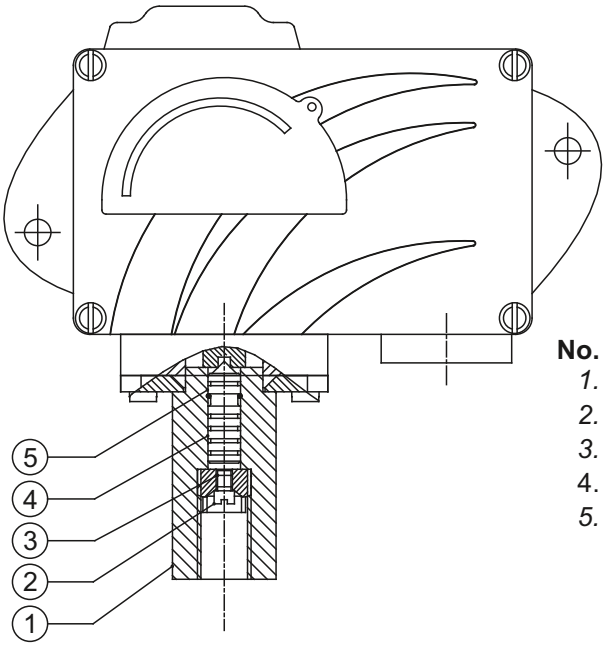
MD/MT HYDRAULIC RANGE PRESSURE SWITCHES

MD

CE

Orion® INSTRUMENTS

PRESSURE CAPSULE DETAILS

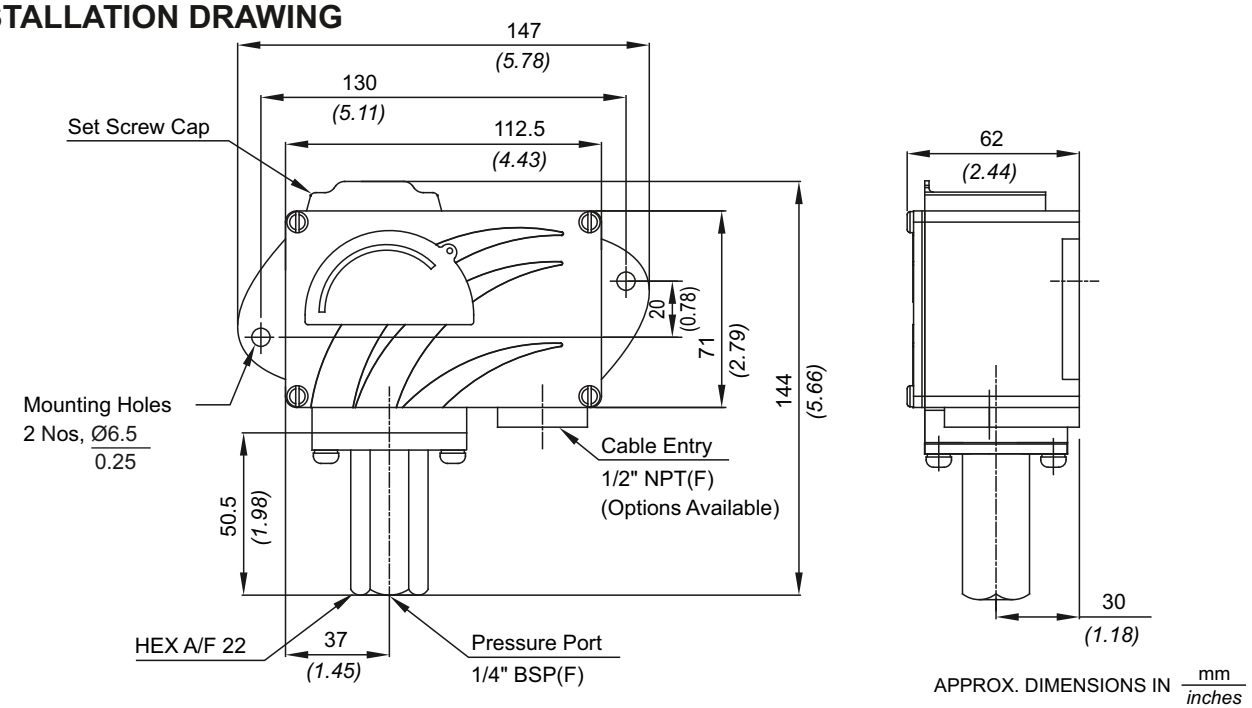


No. Description

1. *Pressure Housing (SS316)*
2. *Surge Arrestor (SS)*
3. *Surge Reducer (Brass)*
4. Piston (SS)
5. *O-Ring (Viton)*
   (Options Available)

Note : *wetted parts* are mentioned in italics.

INSTALLATION DRAWING



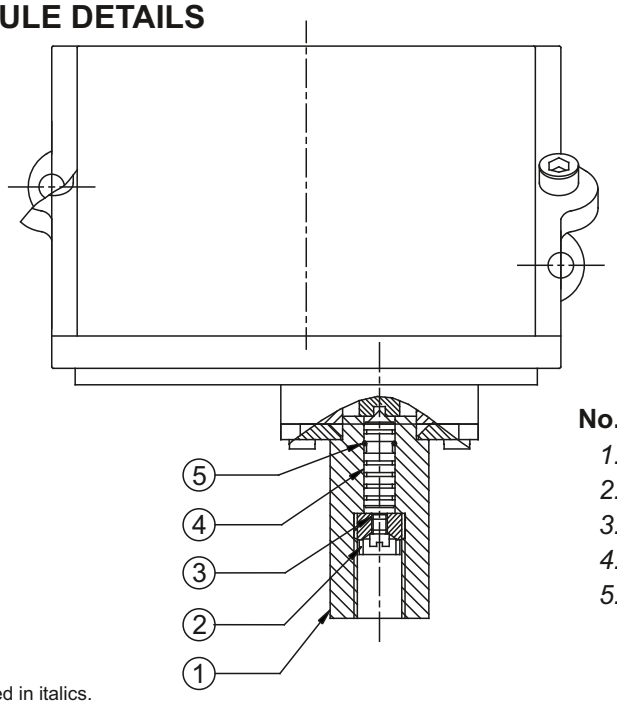
APPROX. DIMENSIONS IN mm / *inches*

Orion® INSTRUMENTS

CE

MT

PRESSURE CAPSULE DETAILS



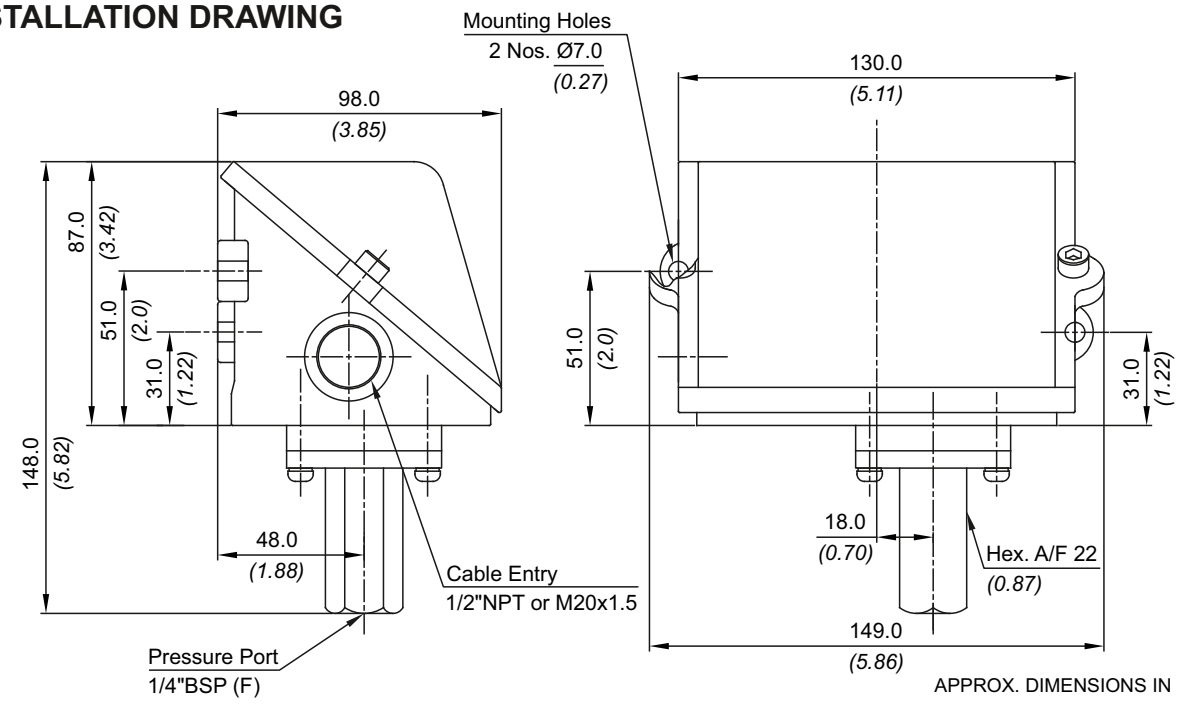
No. Description

1. *Pressure Housing (SS316)*
2. *Surge Arrestor (SS)*
3. *Surge Reducer (SS)*
4. *Piston (SS)*
5. *O-ring (Viton)*

Note : *wetted parts* are mentioned in italics.

*Pressure ports are brazed with flange

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

MD/MT HYDRAULIC RANGE PRESSURE SWITCHES

RANGE SELECTION TABLE

Range Code	Range bar *(psi)*	Differential* bar *(psi)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A1" microswitch	
040	5 - 40 *(72.52 - 580.15)*	5 *(72.52)*	80 *(1160.30)*
100	10 - 100 *(145.04 - 1450.38)*	12 *(174.05)*	120 *(1740.45)*
200	10 - 200 *(145.03 - 2900.76)*	24 *(348.09)*	300 *(4351.13)*
350	35 - 350 *(507.63 - 5076.33)*	30 *(435.11)*	400 *(5801.52)*
400	100 - 400 *(1450.38 - 5801.52)*	40 *(580.15)*	500 *(7251.9)*
700	100 - 700 *(1450.38 - 10152.64)*	70 *(1015.26)*	800 *(11603.00)*

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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL HYDRAULIC RANGE PRESSURE 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 bar)	Microswitch Type	Pressure Port Material / Size	Piston
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**MD** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529 **MT** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads ***2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads ***8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads *Not available for MT model For dual cable entry contact Sales Office	**PF1** = pressure switch, fixed differential without scale **PF2** = pressure switch, fixed differential with scale in bar **PF3** = pressure switch, fixed differential with scale in psi ***PA1** = pressure switch, adjustable differential without scale ***PA2** = pressure switch, adjustable differential with scale in bar ***PA3** = pressure switch, adjustable differential with scale in psi *Available with A6, A7, A9 & B9 (in group 6) only	**040** = (5 - 40) **100** = (10 - 100) **200** = (7 - 200) **350** = (35 - 350) **400** = (100 - 400) **700** = (100 - 700)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements ***B9** = 2SPDT Switching Elements for adjustable differential * For detailed specifications of microswitches, please refer note under Range Selection Table	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F) **S3** = (welded diaphragm) SS316 / 1" BSP(M) **S4** = SS316 / ½" NPT(F) **S5** = SS316 / ½" NPT(M) **H1** = Hastelloy C / ¼" BSP(F) **H2** = Hastelloy C / ¼" NPT(F) **N1** = Monel / ¼" BSP(F) **N2** = Monel / ¼" NPT(F) More options available. Please contact sales office.	**2** = SS 316L

eg. A hydraulic industrial switch, with ½" NPT cable entry in aluminium housing as 1SPDT pressure switch, fixed differential without scale, having 5 bar to 40 bar pressure range, with 15 Amp. microswitch, SS316 pressure housing with ¼" BSP port size shall be specified by

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8
☐	MD	1	PF1	040	A1	S1	2

Please specify full model number to avoid ambiguity.

Bulletin No. KA220802

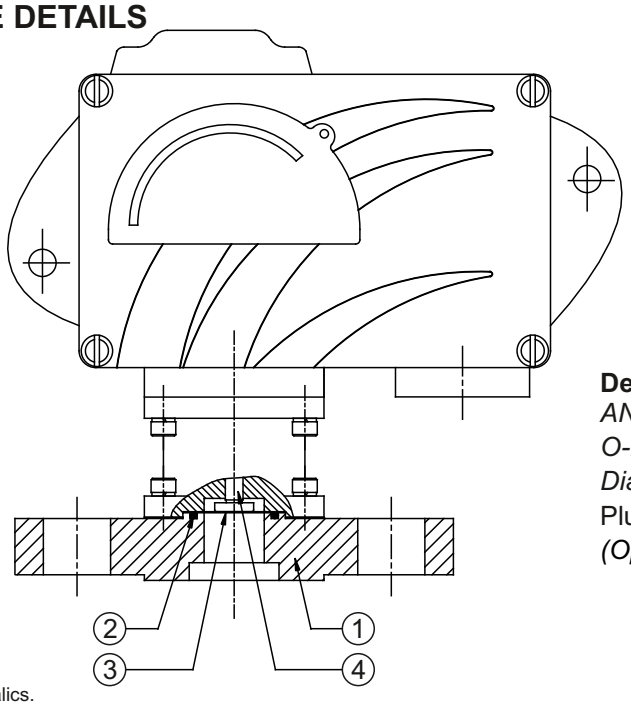
MD/MT FLANGED PRESSURE SWITCHES

MD

CE

Orion® INSTRUMENTS

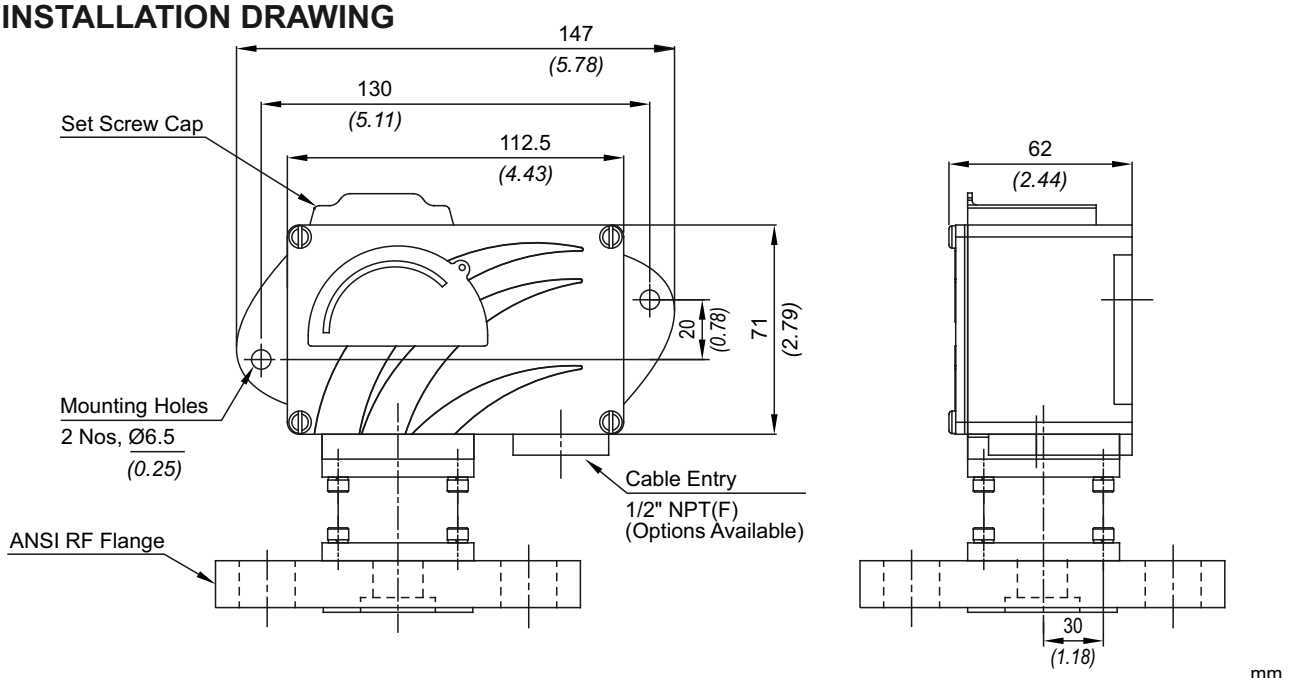
PRESSURE CAPSULE DETAILS



Description
ANSI 600 Flange (SS316)
O-Ring (PTFE®)
Diaphragm (PTFE®)
Plunger *(SS)*
(Options Available)

Note : *wetted parts* are mentioned in italics.

INSTALLATION DRAWING



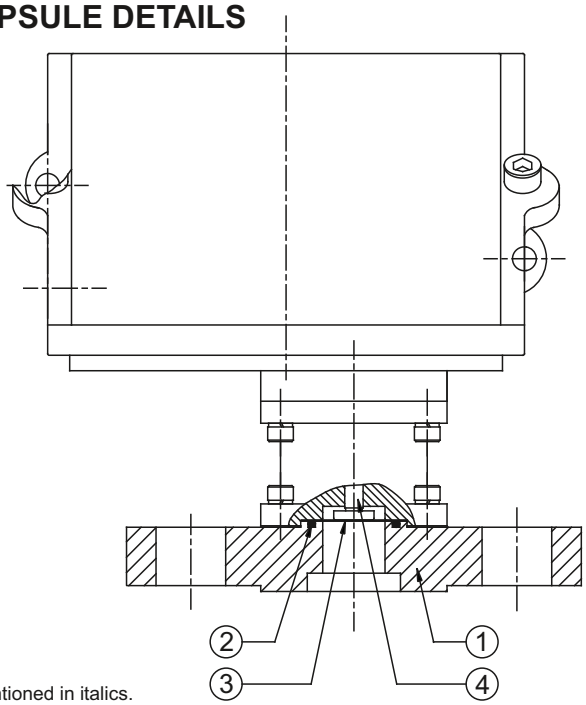
APPROX. DIMENSIONS IN mm / *inches*

Orion® INSTRUMENTS

CE

MT

PRESSURE CAPSULE DETAILS



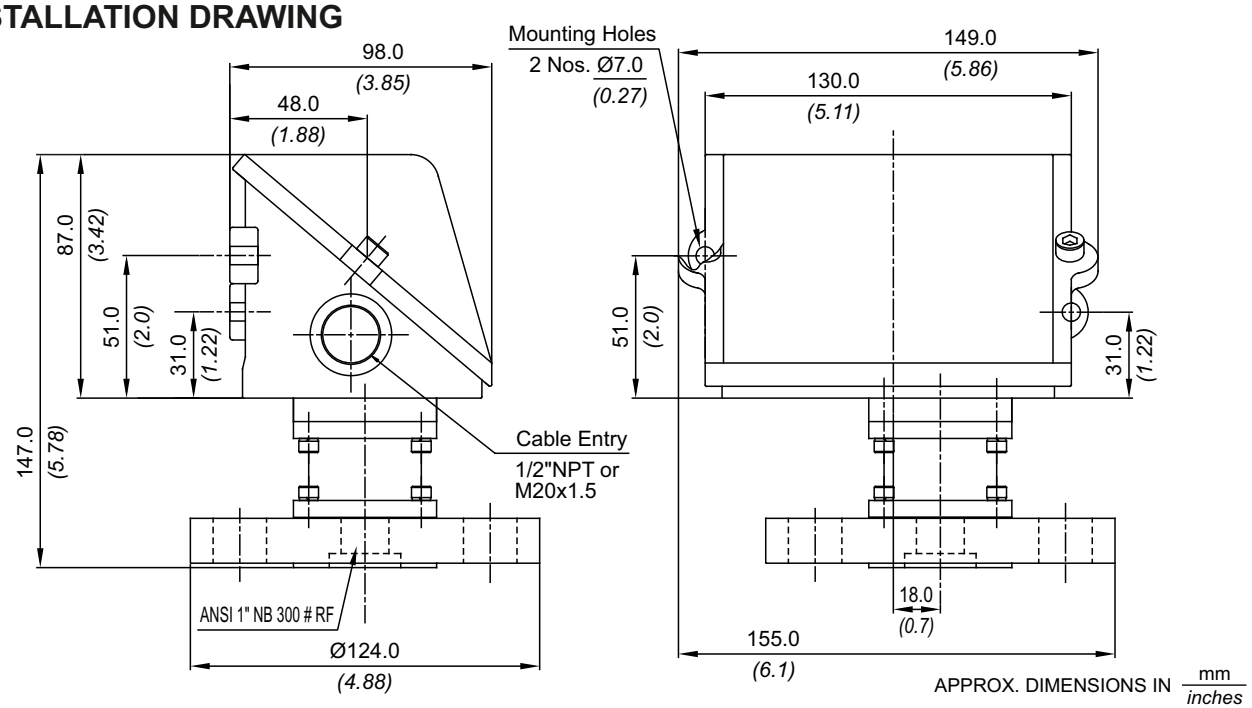
No. Description

1. *ANSI 300 RF Flange (SS 316)*
2. *O-Ring (PTFE®)*
3. *Diaphragm (SS)*
4. Plunger (SS)

Note : *wetted parts* are mentioned in italics.

*Pressure ports are brazed with flange

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

MD/MT FLANGED PRESSURE SWITCHES

RANGE SELECTION TABLE

Range Code	Range bar *(psi)*	Differential* bar *(psi)* Approximate Maximum for "A1" microswitch	Maximum Working Pressure bar *(psi)*
H01	0.1 - 1.0 *(1.45 - 14.50)*	0.10 *(1.45)*	As per the class of flange
H02	0.1 - 1.5 *(1.45 - 21.76)*	0.12 *(1.74)*	
H03	0.2 - 2.6 *(2.90 - 37.71)*	0.15 *(2.17)*	
H04	0.2 - 3.6 *(2.90 - 52.21)*	0.20 *(2.90)*	Please consult Sales Office in case you need clarification on availability of maximum working pressure for a particular range.
H07	0.5 - 7.0 *(7.25 - 101.50)*	0.40 *(5.80)*	
H10	0.5 - 10.0 *(7.25 - 145.04)*	0.80 *(11.60)*	
H15	1.0 - 15.0 *(14.50 - 217.56)*	1.00 *(14.15)*	
H30	5.0 - 25.0 *(72.52 - 362.6)*	2.00 *(29.00)*	
H4T	5 - 40 *(72.52 - 580.15)*	5.00 *(72.52)*	
H1H	10 - 100 *(145.04 - 1450.38)*	12.00 *(174.05)*	
H2H	10 - 200 *(145.038 - 2900.76)*	24.00 *(348.09)*	
H4H	40 - 400 *(580.15 - 5801.52)*	70 *(1015.27)*	

* Minimum differential increases with setpoint (Graphs available on request)
* Differentials of miroswitches A2 through A9 will vary. Differentials for A7 are typically twice that for A1 microswitch.
Please indicate specifically the differential value in enquiry/order, when it is critical in your application.

FLANGE CODE TABLE (Please refer page no. 268 & 269 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
2500#										
1" NB	BM	DC	ES	GI	HY	JO	LE	MU	OK	QA
2" NB	BP	DF	EV	GL	IB	JR	LH	MX	ON	QD

*RF = Raised Face
*FF = Flat Face

RANGE AVAILABILITY AS PER BORE SIZES

	H01 to H04	H07	H10	H15	H30	H2T to H2H
1" NB	NA	Yes	Yes	Yes	Yes	Yes
2" NB	Yes	Yes	Yes	Yes	Yes	Yes

HOW TO ORDER INDUSTRIAL FLANGED PRESSURE 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 ANSI flanged	Range Code (values in bar)	Microswitch Type	Flange Size and Material	Diaphragm
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**MD** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529 **MT** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads ***2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads ***8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads *Not available for MT model For dual cable entry contact Sales Office	**AF1** = pressure switch, fixed differential without scale **AF2** = pressure switch, fixed differential with scale in bar **AF3** = pressure switch, fixed differential with scale in psi ***AA1** = pressure switch, adjustable differential without scale ***AA2** = pressure switch, adjustable differential with scale in bar ***AA3** = pressure switch, adjustable differential with scale in psi *Available with A6, A7, A9 & B9 (in group 6) only	**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	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements ***B9** = 2SPDT Switching Elements for adjustable differential * For detailed specifications of microswitches, please refer note under Range Selection Table	Please select as per Flange Code Table More options available. Please contact sales office.	**0** = Neoprene **1** = PTFE **2** = SS316L **3** = Hastelloy C **4** = Monel 400 **5** = Titanium **6** = Tantalum

eg. A high range Industrial ANSI flanged pressure switch with ½" NPT cable entry with fixed differential without scale, having 0.1 bar to 1 bar pressure range, with 15 Amp. microswitch, and 2" 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
☐	MD	1	AF1	H01	A1	AF	2

Please specify full model number to avoid ambiguity.

Bulletin No. KA220802

DS

Dual Pressure Switches

For

HI-HI | **LO-LO** | **HI-LO**

Setpoints/Applications

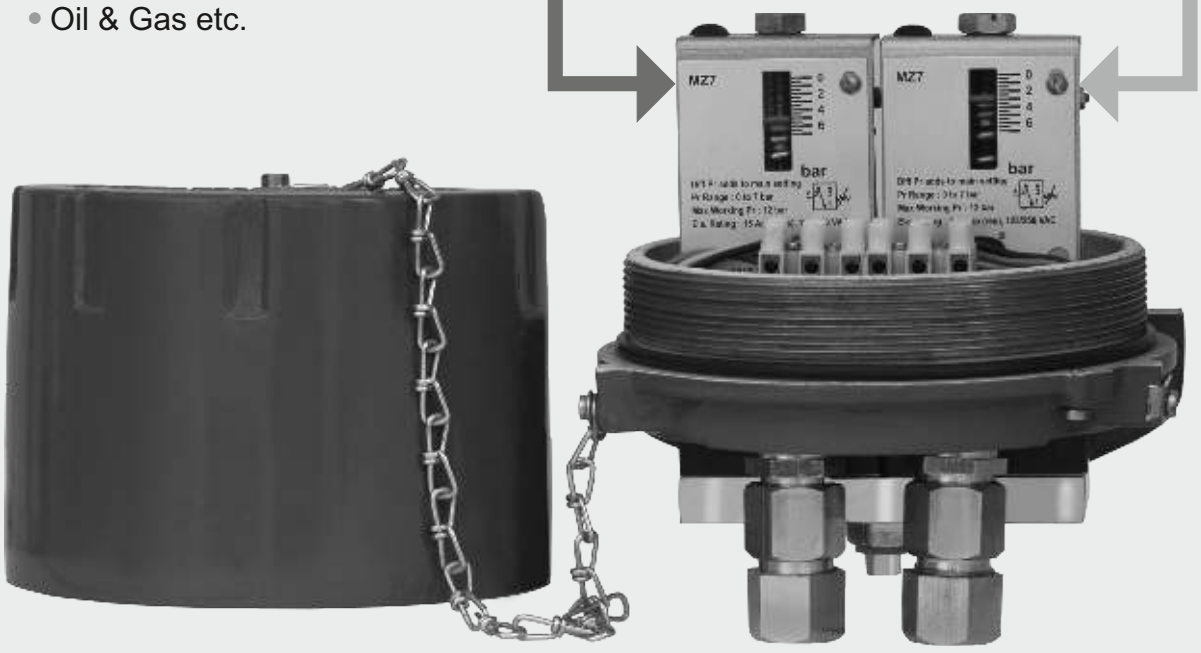
4 SPDT Option Available

2 in 1

DUAL SWITCH

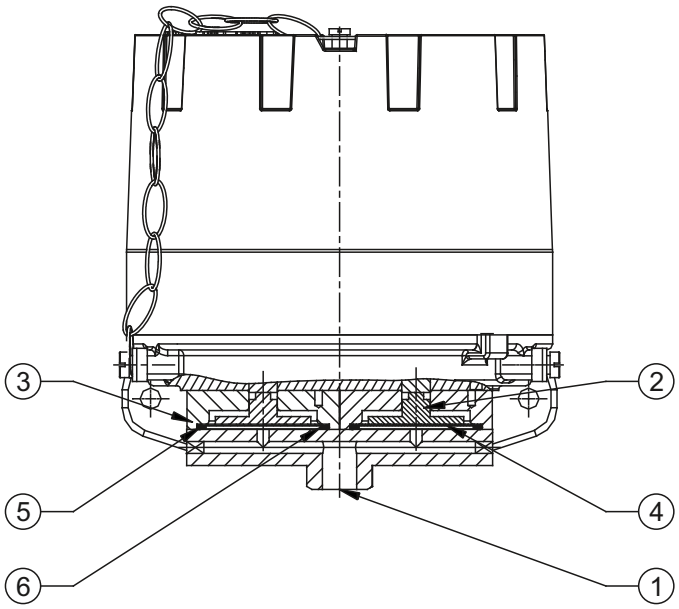
SOME APPLICATIONS

- Pharma
- Power
- Oil & Gas etc.



PRESSURE SWITCHES **ΔP SWITCHES** **0.2 mbar to 1000 bar**

PRESSURE CAPSULE DETAILS

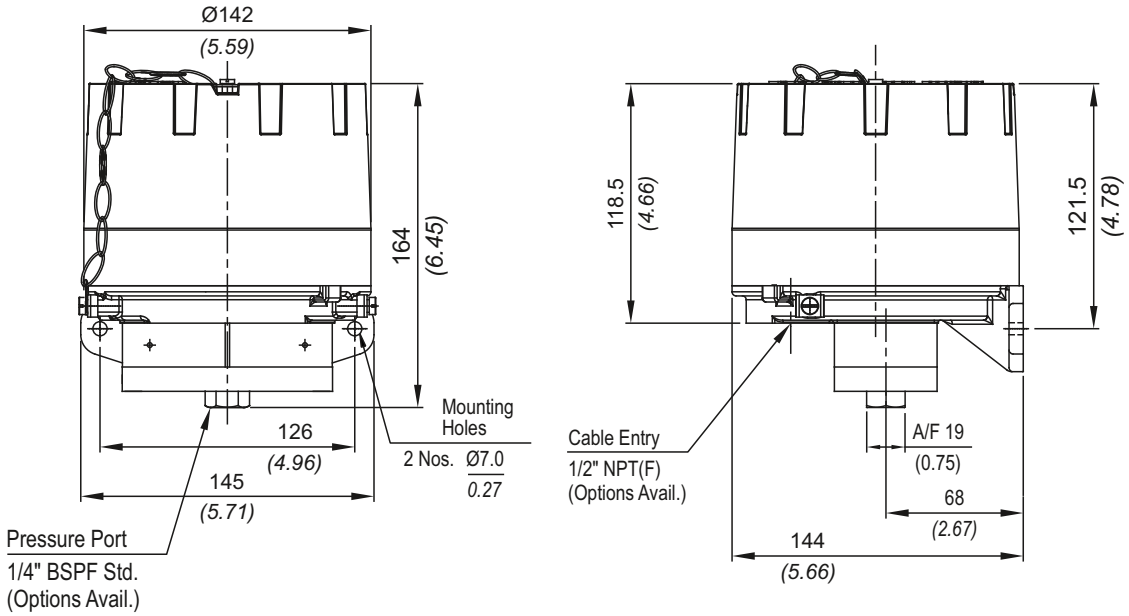


No. Description

1. *Pressure Port (SS)*
2. Plunger (SS)
3. Housing Plate (SS)
4. *Diaphragm (SS)*
5. *O-Ring (PTFE®)*
6. *Backup Ring (SS316)*

Note : *wetted parts* are mentioned in italics.

INSTALLATION DRAWING



*164mm (*6.45 inches*) for range codes H4T, H1H and H2H

APPROX. DIMENSIONS IN mm / *inches*

DS DUAL HIGH RANGE PRESSURE SWITCHES

RANGE SELECTION TABLE

Range Code	Range bar *(psi)*	Differential* bar *(psi)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A8" microswitch	
H01	0.1 - 1.0 *(1.45 - 14.50)*	0.10 *(1.45)*	12 *(174.05)*
H02	0.2 - 1.5 *(2.90 - 21.76)*	0.20 *(2.90)*	12 *(174.05)*
H03	0.2 - 2.6 *(2.90 - 37.71)*	0.20 *(2.90)*	12 *(174.05)*
H04	0.2 - 3.6 *(2.90 - 52.21)*	0.20 *(2.90)*	12 *(174.05)*
H07	0.5 - 7.0 *(7.25 - 101.50)*	0.40 *(5.80)*	12 *(174.05)*
H10	0.5 - 10.0 *(7.25 - 145.04)*	0.80 *(11.60)*	25 *(362.6)*
H15	1.0 - 15.0 *(14.50 - 217.56)*	1.00 *(14.50)*	25 *(362.6)*
H30	5.0 - 25.0 *(72.52 - 362.6)*	1.50 *(21.75)*	35 *(507.63)*

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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL DUAL HIGH RANGE PRESSURE 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 bar)	Microswitch Type	Pressure Port Material / Size	Diaphragm
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**DS** = Dual pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads **2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads **8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads	**PF2** = pressure switch, fixed differential with scale in bar **PF3** = pressure switch, fixed differential with scale in psi ***PA2** = pressure switch, adjustable differential with scale in bar ***PA3** = pressure switch, adjustable differential with scale in psi *Available with A6, A9 and B9 (in group 6) only	**LP** = (0.067 - 0.213) **LP5** = (0.1 - 0.5) **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)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements ***B9** = 2SPDT Switching Elements for adjustable differential * For detailed specifications of microswitches, please refer note under Range Selection Table	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F) Please refer page no. 290 & 291 for more pressure port options	**0** = Neoprene **1** = PTFE **2** = SS 316L

eg. A dual pressure switch with fixed differential having 0.1 bar to 1 bar pressure range, with 5 Amp. microswitch, SS316 pressure housing with ¼" 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
☐	DS	3	PF2	H01	A8	S1	0

Please specify full model number to avoid ambiguity.

Bulletin No. KA220802

MT

Dual Pressure Switches

For

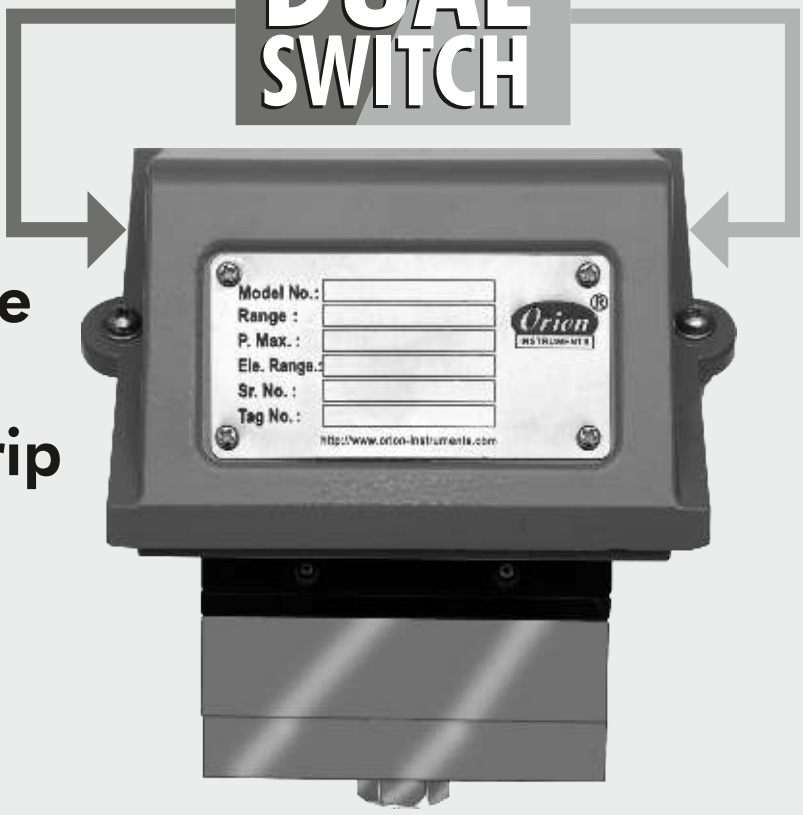
HI-HI | **LO-LO** | **HI-LO**

Setpoints/Applications

4 SPDT Option Available

2 in 1

DUAL SWITCH



Dual pressure switches for Alarm and Trip

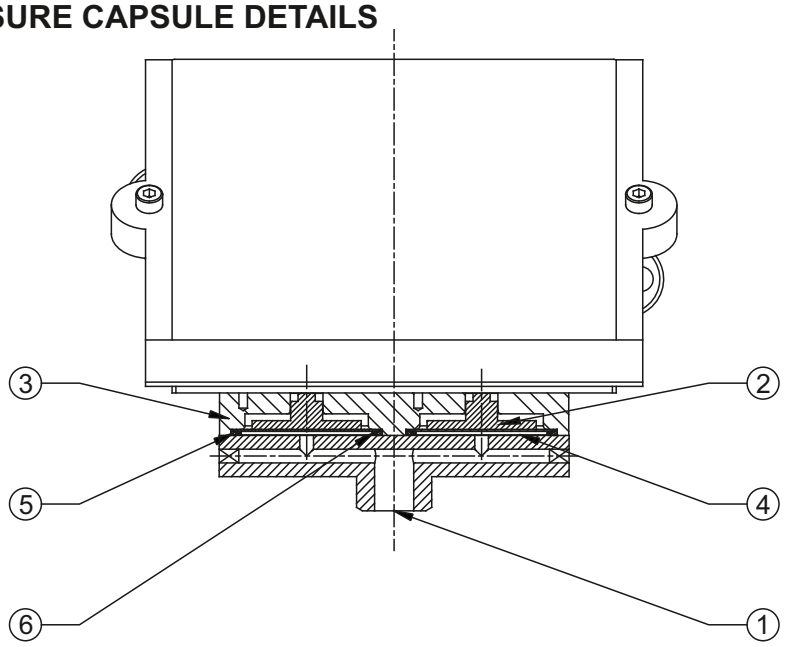
■ PRESSURE SWITCHES ■ ΔP SWITCHES

0.2 mbar to 1000 bar

Orion® INSTRUMENTS

CE

PRESSURE CAPSULE DETAILS



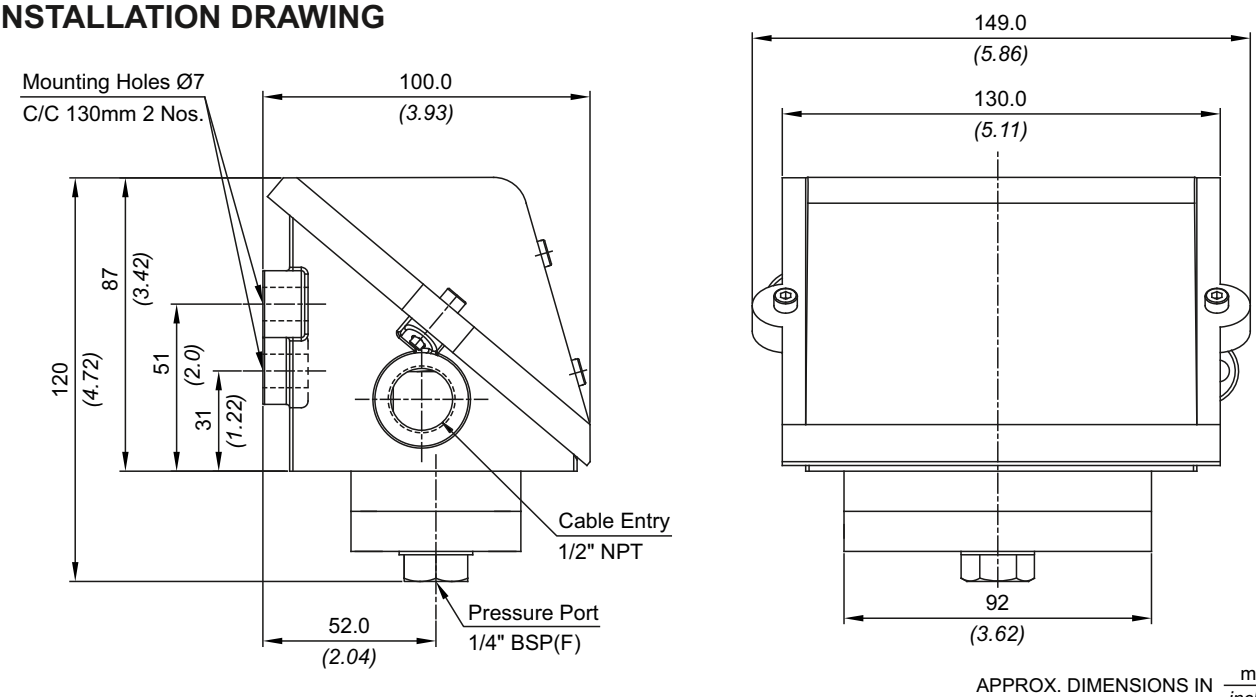
No. Description

1. Pressure Port (SS)
2. Plunger (SS)
3. Disc Plate (SS)
4. *Diaphragm (SS)*
5. *'O' Ring (PTFE®)*
6. *Backup Ring (SS)*

Note : *wetted parts* are mentioned in italics.

*Pressure ports are brazed with flange

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

MT DUAL PRESSURE RANGES

RANGE SELECTION TABLE

Range Code	Range bar *(psi)*	†Differential bar *(psi)* Approximate Maximum for "A8" microswitch	Maximum Working Pressure bar *(psi)*
H01	0.1 - 1.0 *(1.45 - 14.50)*	0.10 *(1.45)*	12 *(174.05)*
H02	0.2 - 1.5 *(2.90- 21.76)*	0.20 *(2.90)*	12 *(174.05)*
H03	0.2 - 2.6 *(2.90 - 37.71)*	0.20 *(2.90)*	12 *(174.05)*
H04	0.2 - 3.6 *(2.90 - 52.21)*	0.20 *(2.90)*	12 *(174.05)*
H07	0.5 - 7.0 *(7.25 - 101.50)*	0.40 *(5.80)*	12 *(174.05)*
H10	0.5 - 10.0 *(7.25 - 145.38)*	0.80 *(11.60)*	25 *(362.6)*
H15	1.0 - 15.0 *(14.5 - 217.56)*	1.00 *(14.50)*	25 *(362.6)*
H30	5.0 - 25.0 *(72.52 - 362.6)*	1.50 *(21.75)*	35 *(507.63)*

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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL DUAL PRESSURE 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 bar)	Microswitch Type	Pressure Port Material / Size	Diaphragm
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**MT** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads **9** = SS enclosure, M20 X 1.5 threads	**KF2** = Dual pressure switch, fixed differential with scale in bar **KF3** = Dual pressure switch, fixed differential with scale in psi ***KA2** = Dual pressure switch, adjustable differential with scale in bar ***KA3** = Dual pressure switch, adjustable differential with scale in psi *Available with A6 (in group 6) only	**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)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements * For detailed specifications of microswitches, please refer table on page no. 294 & 295	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F)	**0** = Neoprene **1** = PTFE **2** = SS 316L **3** = Hastelloy C **4** = Monel

eg. Industrial Dual switch with ½" NPT cable entry in aluminium housing as 1SPDT pressure switch, fix differential with scale having 0.2 bar to 2.6 bar pressure range, with 5 A microswitch, SS316 pressure housing with ¼" BSP port size & teflon diaphragm shall be specified by

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8
☐	MT	1	KF2	H03	A8	S1	1

Please specify full model number to avoid ambiguity.

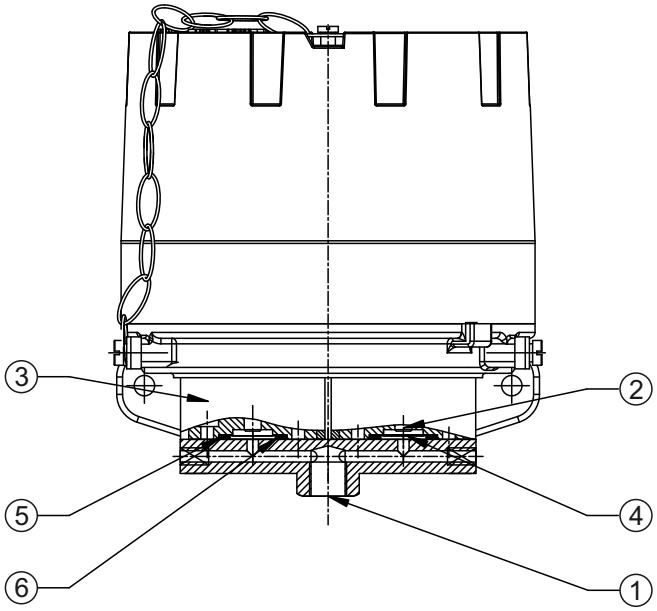
DS
HYDRAULIC DIAPHRAGM PRESSURE SWITCHES

Pressure Ranges from 1 bar to 400 bar

Orion® INSTRUMENTS

CE

PRESSURE CAPSULE DETAILS



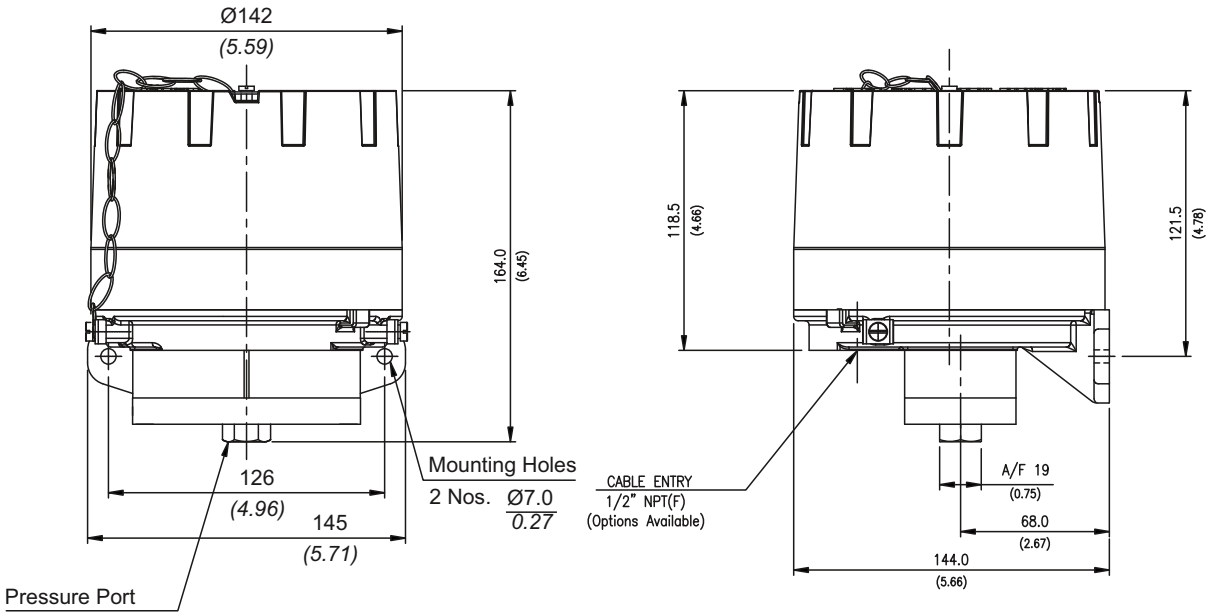
No. Description

1. *Pressure Port (SS)*
2. Plunger (SS)
3. Housing Plate (SS)
4. *Diaphragm (SS)*
5. *O-Ring (PTFE®)*
6. *Backup Ring (SS316)*
   (Options Available)

Note : *wetted parts* are mentioned in italics.

*Pressure ports are brazed with flange

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

DS HYDRAULIC DIAPHRAGM PRESSURE SWITCHES

RANGE SELECTION TABLE

Range Code	Range bar *(psi)*	Differential* bar *(psi)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A8" microswitch	
H1T	1 - 10 *(14.50 - 145.04)*	1 *(14.50)*	150 *(2175.51)*
H2T	2 - 20 *(29.00 - 290.07)*	2 *(29.00)*	200 *(2900.76)*
H4T	5 - 40 *(72.52 - 580.15)*	5 *(72.52)*	200 *(2900.76)*
H1H	10 - 100 *(146.04 - 1450.38)*	12 *(174.05)*	200 *(2900.76)*
H2H	10 - 200 *(145.03 - 2900.76)*	24 *(348.09)*	400 *(5801.52)*
H4H	40 - 400 *(580.15 - 5801.52)*	70 *(1015.27)*	500 *(7251.88)*

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 (hysterisis) 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.

HOW TO ORDER PROCESS HYDRAULIC DIAPHRAGM PRESSURE SWITCHES

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8
Non standard allocation	Model	Cable Entry Size and Material of Enclosure	Switch Type	Range Code (values in bar)	Microswitch Type	Pressure Port Material / Size	Diaphragm
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**DS** = Process pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads **2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads **8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads	**PF2** = pressure switch, fixed differential with scale in bar **PF3** = pressure switch, fixed differential with scale in psi ***PA2** = pressure switch, adjustable differential with scale in bar ***PA3** = pressure switch, adjustable differential with scale in psi *Available with A6, A9 & B9 (in group 6) only	**H1T** = (0.5 - 10) **H2T** = (2 - 20) **H4T** = (5 - 40) **H1H** = (10 - 100) **H2H** = (7 - 200) **H4H** = (40 - 400)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements ***B9** = 2SPDT Switching Elements for adjustable differential * For detailed specifications of microswitches, please refer table on page no. 294 &295	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F) Please refer page no. 290 & 291 for more pressure port options	**2** = SS316 **3** = Hastelloy C **4** = Monel

eg. A industrial pressure switch with fixed differential having 5 bar to 40 bar pressure range, with 5 Amp. m icroswitch, SS316 pressure housing with ¼" 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
☐	DS	3	PF2	H1T	A1	S1	2

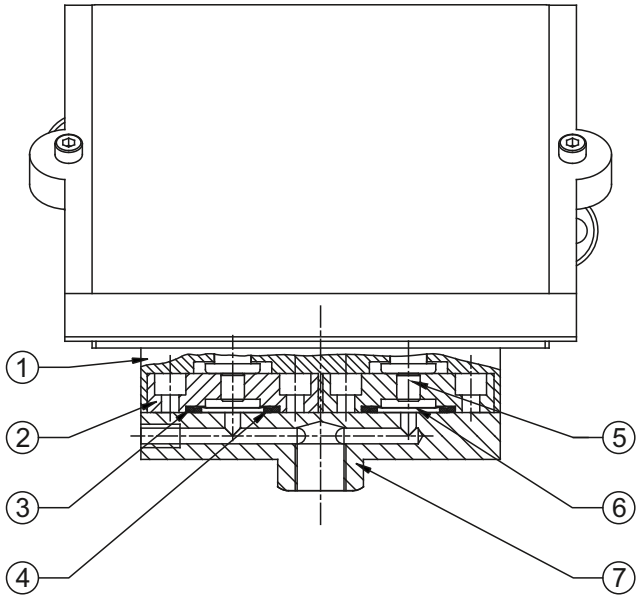
Please specify full model number to avoid ambiguity.

Bulletin No. KA220802

MT
DUAL HYDRAULIC PRESSURE RANGES

Pressure Ranges from 1 bar to 400 bar

PRESSURE CAPSULE DETAILS



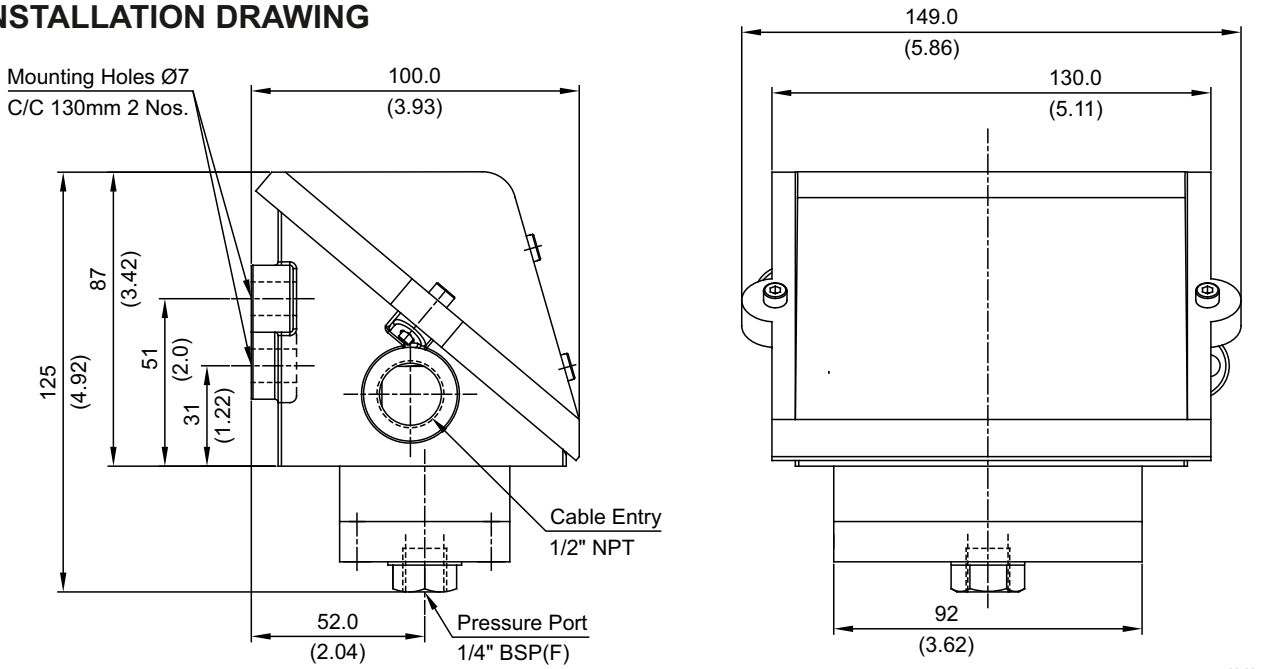
No. Description

1. Disc Plate (SS)
2. Disc (Al)
3. *O-Ring (PTFE®)*
4. *Backup Ring (SS)*
5. Plunger (MS/SS)
6. *Diaphragm (SS)*
7. *Pressure Port (SS)*

Note : *wetted parts* are mentioned in italics.

*Pressure ports are brazed with flange

INSTALLATION DRAWING



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

MT DUAL HYDRAULIC PRESSURE RANGES

RANGE SELECTION TABLE

Range Code	Range bar *(psi)*	Differential* bar *(psi)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A1" microswitch	
H1T	1 - 10 *(14.50 - 145.04)*	1 *(14.50)*	150 *(2175.57)*
H2T	2 - 20 *(29.00 - 290.07)*	2 *(29.00)*	200 *(2900.76)*
H4T	5 - 40 *(72.52 - 580.15)*	5 *(72.52)*	200 *(2900.76)*
H1H	10 - 100 *(145.04 - 1450.38)*	12 *(174.05)*	200 *(2900.76)*
H2H	10 - 200 *(145.03 - 2900.76)*	24 *(348.09)*	400 *(5801.52)*
H4H	40 - 400 *(580.15 - 5801.52)*	70 *(1015.27)*	500 *(7251.9)*

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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL DUAL PRESSURE 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 bar)	Microswitch Type	Pressure Port Material / Size	Diaphragm
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**MT** = Industrial dual hydraulic pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads **9** = SS enclosure, M20 X 1.5 threads	**KF2** = Dual pressure switch, fixed differential with scale in bar **KF3** = Dual pressure switch, fixed differential with scale in psi ***KA2** = Dual pressure switch, adjustable differential with scale in bar ***KA3** = Dual pressure switch, adjustable differential with scale in psi *Available with A6, A9 & B9 (in group 6) only	**H1T** = (0.5 - 10) **H2T** = (2 - 20) **H4T** = (5 - 40) **H1H** = (10 - 100) **H2H** (7 - 200) **H4H** = (40 - 400)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements * For detailed specifications of microswitches, please refer table on page no. 294 & 295	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F)	**0** = Neoprene **1** = PTFE **2** = SS 316L **3** = Hastelloy C **4** = Monel

eg. Industrial Dual Hydraulic switch with ½" NPT cable entry in aluminium housing as 1SPDT pressure switch, fix differential with scale having 2 bar to 20 bar pressure range, with 5 A microswitch, SS316 pressure housing with ¼" B SP port size & teflon diaphragm shall be specified by

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8
☐	MT	1	KF2	H2T	A8	S1	1

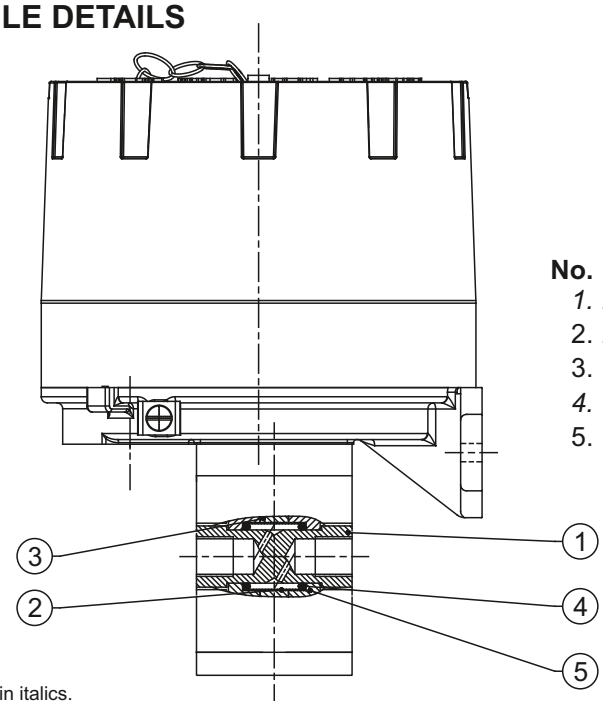
Please specify full model number to avoid ambiguity.

Bulletin No. KA220802

DS
DUAL HIGH RANGE DP SWITCHES

Pressure Ranges from 0.1 bar to 25 bar

PRESSURE CAPSULE DETAILS

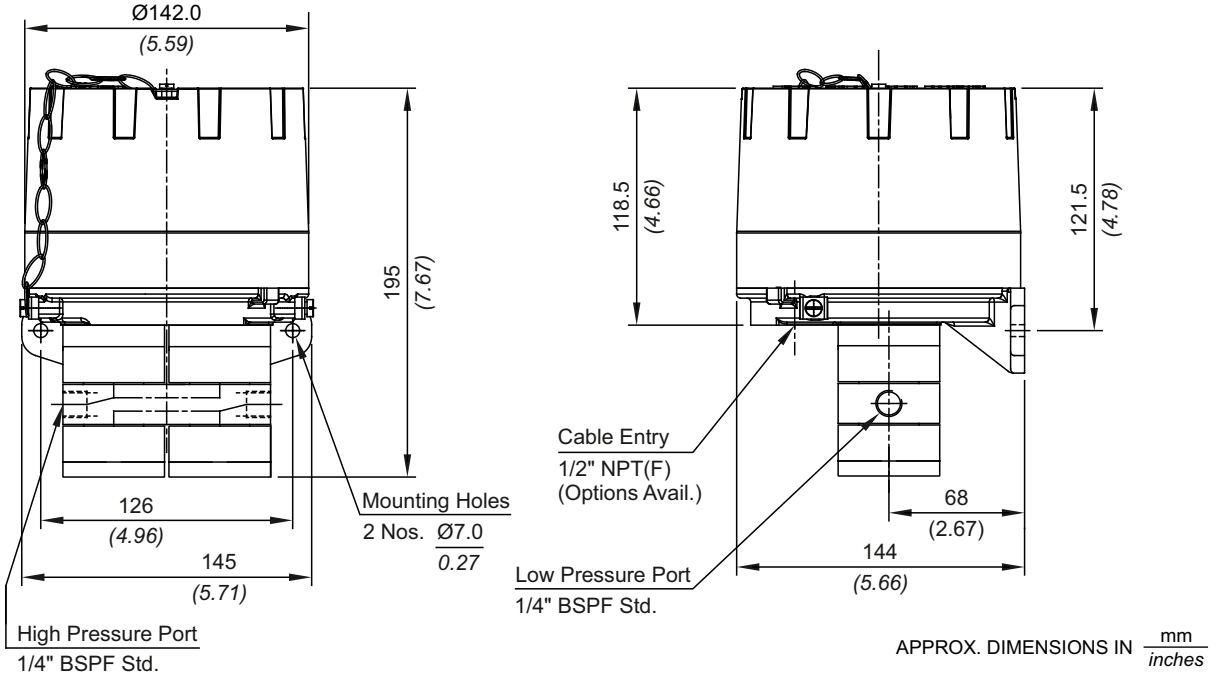


No. Description

1. *Pressure Housing (SS)*
2. *Diaphragm (SS)*
3. Plunger (SS)
4. *O-Ring (Viton)*
5. Disc (Al)

Note : *wetted parts* are mentioned in italics.

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

DS DUAL HIGH RANGE DP SWITCHES

RANGE SELECTION TABLE

Range Code	Range bar *(psi)*	Differential* bar *(psi)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A1" microswitch	
D01	0.1 - 1.0 *(1.45 - 14.50)*	0.12 *(1.74)*	70 *(1015.26)*
D02	0.2 - 1.5 *(2.90 - 21.76)*	0.20 *(2.90)*	70 *(1015.26)*
D03	0.2 - 2.6 *(2.90 - 37.71)*	0.30 *(4.35)*	70 *(1015.26)*
D04	0.2 - 3.6 *(2.90 - 52.21)*	0.40 *(5.80)*	70 *(1015.26)*
D07	0.5 - 7.0 *(7.25 - 101.50)*	0.80 *(11.60)*	70 *(1015.26)*
D10	0.5 - 10.0 *(7.25 - 145.04)*	1.00 *(14.50)*	70 *(1015.26)*
D15	1.0 - 15.0 *(14.50 - 217.71)*	1.50 *(21.75)*	70 *(1015.26)*
D30	5.0 - 25.0 *(72.52 - 362.6)*	2.00 *(29.00)*	70 *(1015.26)*

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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL DUAL HIGH RANGE DP 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 bar)	Microswitch Type	Pressure Port Material / Size	Diaphragm
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**DS** = Dual pressure Switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads **2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads **8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads	**DF2** = pressure difference switch, fixed differential with scale in bar **DF3** = pressure difference switch, fixed differential with scale in psi ***DA2** = pressure difference switch, adjustable differential with scale in bar ***DA3** = pressure difference switch, adjustable differential with scale in psi *Available only with option A6 and A9 in Group 6	**D01** = (0.1 - 1.0) **D02** (0.1 - 1.5) **D03** = (0.2 - 2.6) **D04** = (0.2 - 3.6) **D07** = (0.5 - 7.0) **D10** = (0.5 - 10.0) **D15** = (1.0 - 15.0) **D30** = (5.0 - 25.0)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements * For detailed specifications of microswitches, please refer table on page no. 294 & 295	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F) More options available. Please contact sales office.	**0** = Neoprene **1** = PTFE **2** = SS316L **4** = Monel

eg. A dual high range pressure difference switch with fixed differential having 0.1 bar to 1 bar pressure range, with 5 Amp. microswitch, SS316 pressure housing with ¼" 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
☐	DS	3	DF2	D01	A8	S1	0

Please specify full model number to avoid ambiguity.

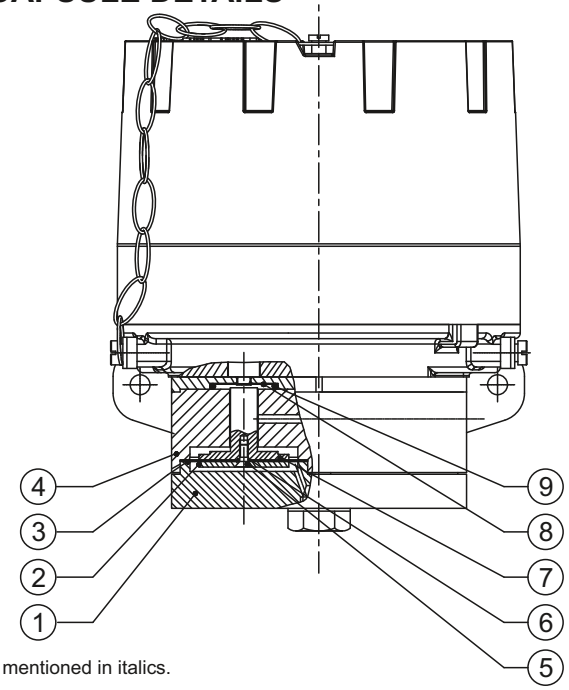
Bulletin No. KA220802

DS
DUAL HIGH RANGE PRESSURE DIFFERENCE SWITCHES

Pressure Ranges from 0.1 bar to 3.6 bar

DUAL HIGH RANGE PRESSURE DIFFERENCE SWITCHES DS

PRESSURE CAPSULE DETAILS



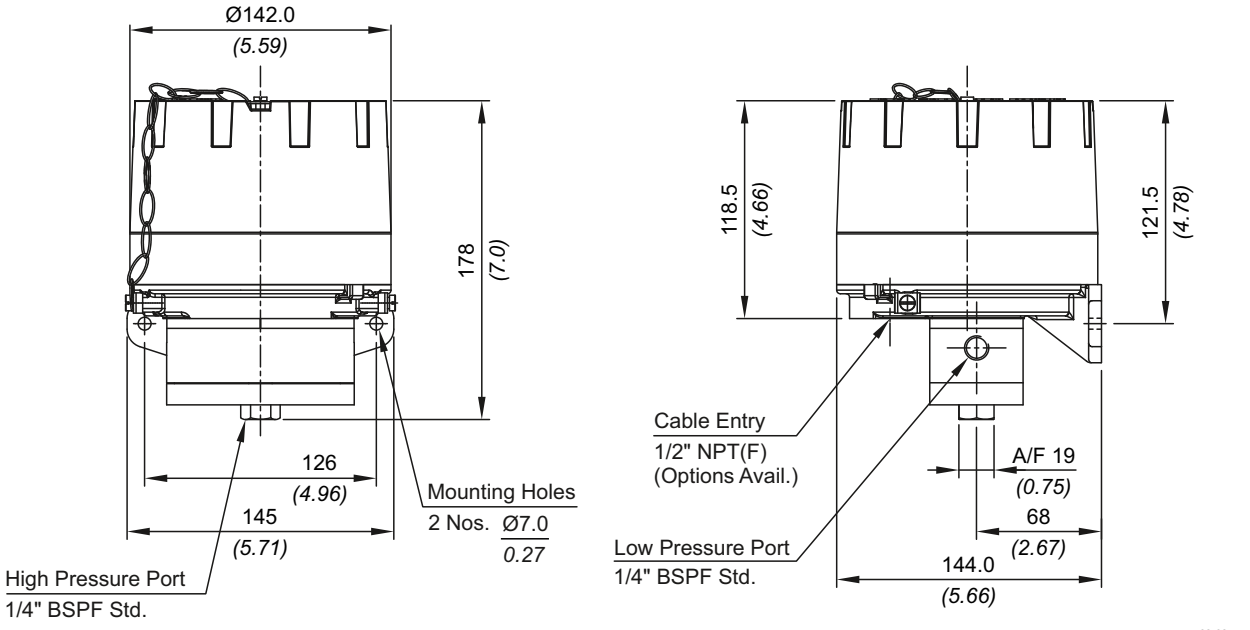
No. Description

1. *Pressure Housing (SS)*
2. *HP Plunger (SS316)*
3. *Diaphragm (PTFE®)*
4. *Disc (Al)*
5. *CSK Screw (SS)*
6. *0-Ring (PTFE®)*
7. *LP Plunger (SS316)*
8. *Sealing Diaphragm (PTFE®)*
9. *Sealing 0-Ring (PTFE®)*

(Options Available)

Note : *wetted parts* are mentioned in italics.

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

DS DUAL HIGH RANGE PRESSURE DIFFERENCE SWITCHES

RANGE SELECTION TABLE

Range Code	Range bar *(psi)*	Differential* bar *(psi)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A1" microswitch	
H01	0.1 - 1.0 *(1.45 - 14.50)*	0.12 *(1.74)*	12 *(174.05)*
H02	0.2 - 1.5 *(2.90 - 21.76)*	0.20 *(2.90)*	12 *(174.05)*
H03	0.2 - 2.6 *(2.90 - 37.71)*	0.20 *(2.90)*	12 *(174.05)*
H04	0.2 - 3.6 *(2.90 - 52.21)*	0.30 *(4.35)*	12 *(174.05)*

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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL DUAL HIGH RANGE PRESSURE DIFFERENCE 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 bar)	Microswitch Type	Pressure Port Material / Size	Diaphragm
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**DS** = Dual Pressure Switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads **2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads **8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads	**DF2** = pressure difference switch, fixed differential with scale in bar **DF3** = pressure difference switch, fixed differential with scale in psi ***DA2** = pressure difference switch, adjustable differential with scale in bar ***DA3** = pressure difference switch, adjustable differential with scale in psi *Available only with option A6 and A9 in Group 6	**H01** = (0.1 - 1.0) **H02** (0.1 - 1.5) **H03** = (0.2 - 2.6) **H04** = (0.2 - 3.6)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements * For detailed specifications of microswitches, please refer table on page no. 294 & 295	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F) More options available. Please contact sales office.	**0** = Neoprene **1** = PTFE

eg. A dual high range pressure difference switch with fixed differential having 0.1 bar to 1 bar pressure range, with 5 Amp. microswitch, SS316 pressure housing with ¼" 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
☐	DS	3	DF2	H01	A8	S1	0

Please specify full model number to avoid ambiguity.

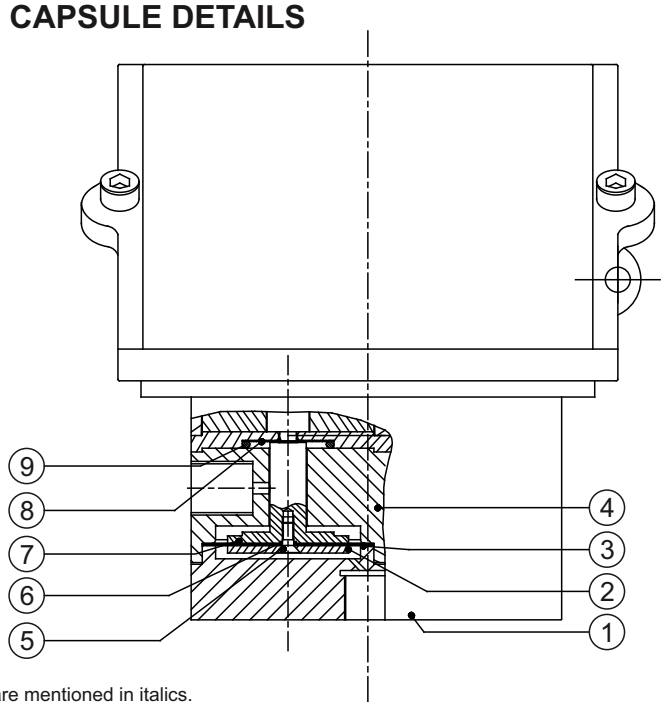
Bulletin No. KA220802

MT
DUAL HIGH RANGE PRESSURE DIFFERENCE SWITCHES

Pressure Ranges from 0.1 bar to 3.6 bar

DUAL HIGH RANGE PRESSURE DIFFERENCE SWITCHES MT

PRESSURE CAPSULE DETAILS

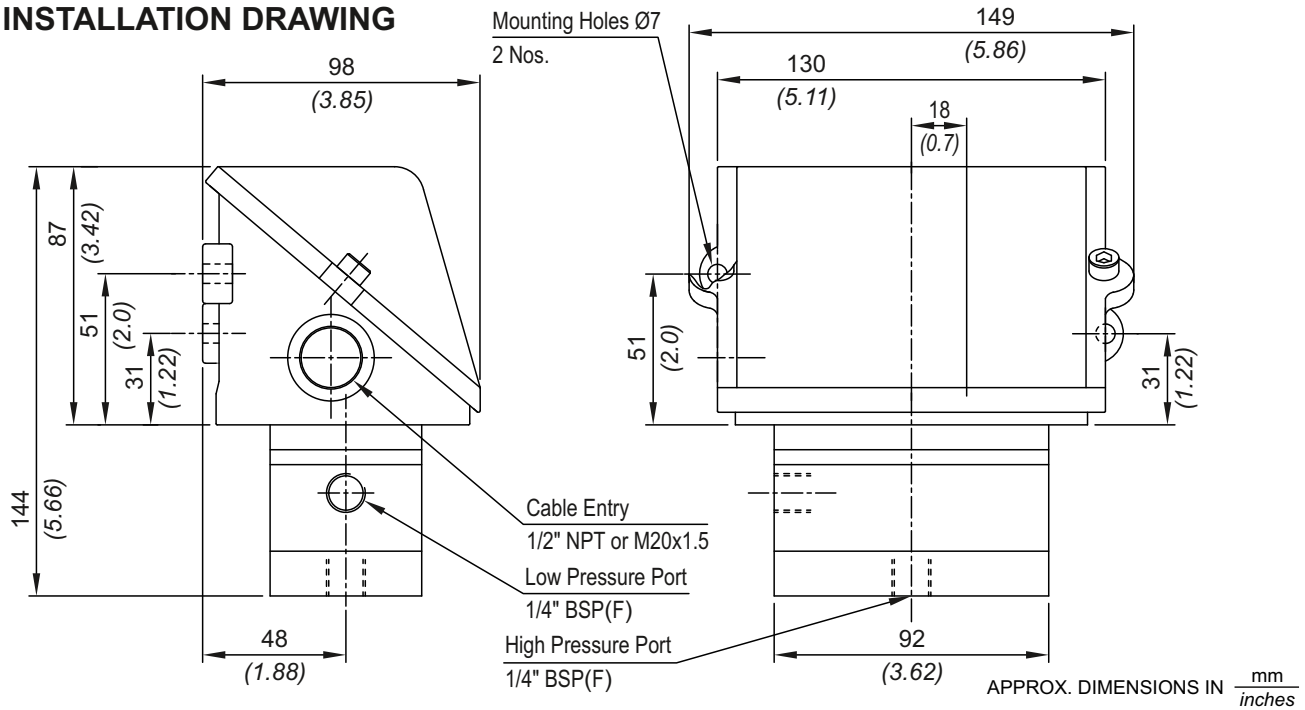


No. Description

1. Pressure Housing (SS)
2. HP Plunger (SS316)
3. Diaphragm (PTFE®)
4. *Disc (Al)*
5. *CSK Screw (SS)*
6. *0-Ring (PTFE®)*
7. *LP Plunger (SS316)*
8. *Sealing Diaphragm (PTFE®)*
9. *Sealing 0-Ring (PTFE®)*

Note : *wetted parts* are mentioned in italics.

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

RANGE SELECTION TABLE

Range Code	Range bar *(psi)*	Differential* bar *(psi)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A1" microswitch	
H01	0.1 - 1.0 *(1.45 - 14.50)*	0.12 *(1.74)*	12 *(174.05)*
H02	0.2 - 1.5 *(2.90 - 21.76)*	0.20 *(2.90)*	12 *(174.05)*
H03	0.2 - 2.6 *(2.90 - 37.71)*	0.20 *(2.90)*	12 *(174.05)*
H04	0.2 - 3.6 *(2.90 - 52.21)*	0.30 *(4.35)*	12 *(174.05)*

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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL DUAL HIGH RANGE PRESSURE DIFFERENCE 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 bar)	Microswitch Type	Pressure Port Material / Size	Diaphragm
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**MT** = Dual Pressure Switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads **9** = SS enclosure, M20 X 1.5 threads For dual cable entry contact Sales Office	**EF2** = pressure difference switch, fixed differential with scale in bar **EF3** = pressure difference switch, fixed differential with scale in psi ***EA2** = pressure difference switch, adjustable differential with scale in bar ***EA3** = pressure difference switch, adjustable differential with scale in psi *Available only with option A6 in Group 6	**H01** = (0.1 - 1.0) **H02** (0.1 - 1.5) **H03** = (0.2 - 2.6) **H04** = (0.2 - 3.6)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***B7** = 2SPDT Switching Elements * For detailed specifications of microswitches, please refer table on page no. 294 & 295	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F)	**0** = Neoprene **1** = PTFE

eg. A dual high range pressure difference switch with fixed differential having 0.1 bar to 1 bar pressure range, with 5 Amp. microswitch, SS316 pressure housing with ¼" 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
☐	MT	3	EF2	H01	A8	S1	0

Please specify full model number to avoid ambiguity.

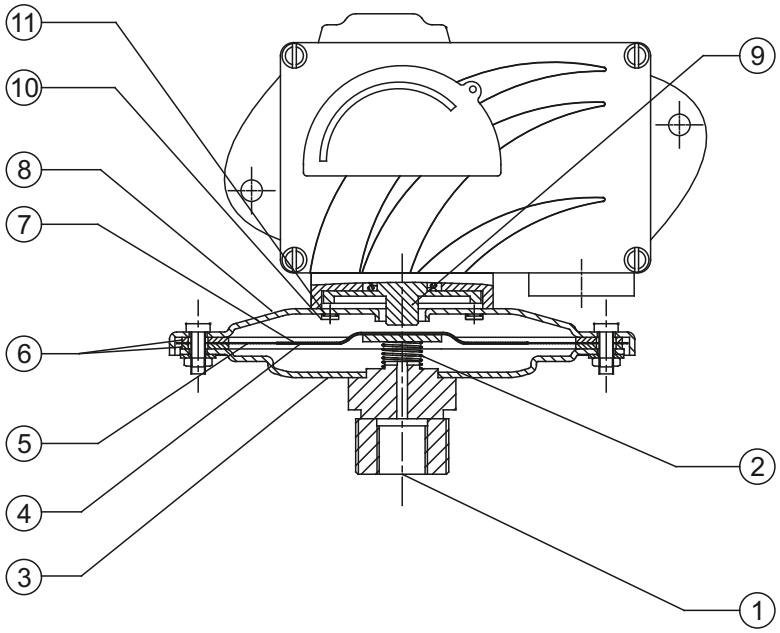
MD/MT LOW RANGE PRESSURE SWITCHES

MD

CE

Orion® INSTRUMENTS

PRESSURE CAPSULE DETAILS



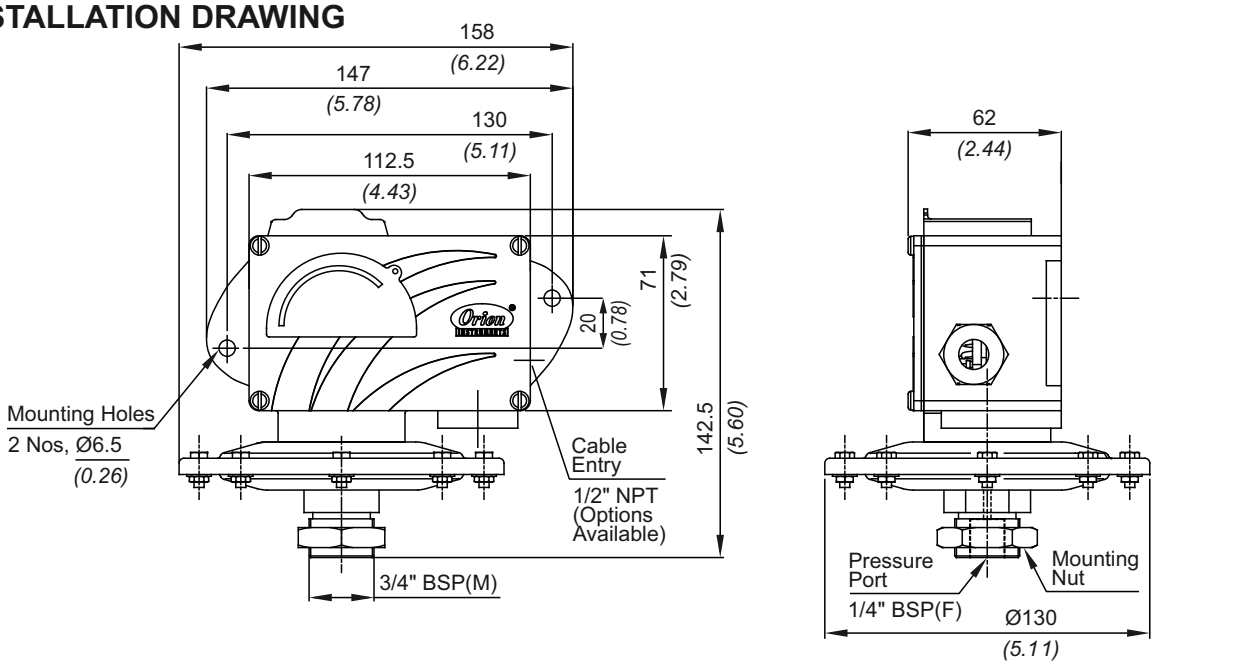
No. Description

1. *Pressure Port (SS)*
2. *Support Spring (SS)*
3. *Bottom Flange (SS)*
4. *Support Plate (Al)*
5. *Diaphragm (Neoprene)*
6. *Gasket (PTFE®)*
7. Top Plate (Aluminium)
8. Top Flange (SS)
9. Plunger (SS)
10. Top Flange Screw (SS)
11. Sealing O-Ring (Nitrile)

Note : *wetted parts* are mentioned in italics.

*Pressure ports are brazed with flange

INSTALLATION DRAWING



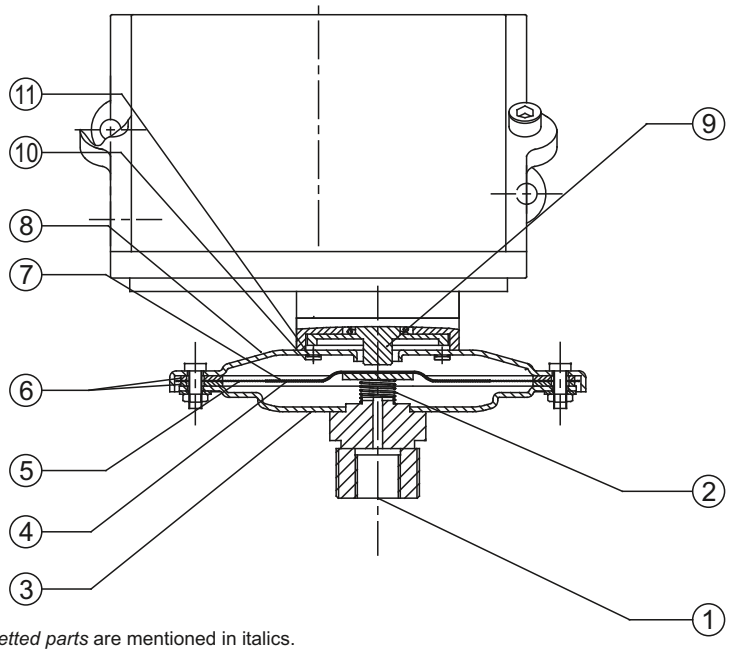
APPROX. DIMENSIONS IN mm / *inches*

Orion® INSTRUMENTS

CE

MT

PRESSURE CAPSULE DETAILS



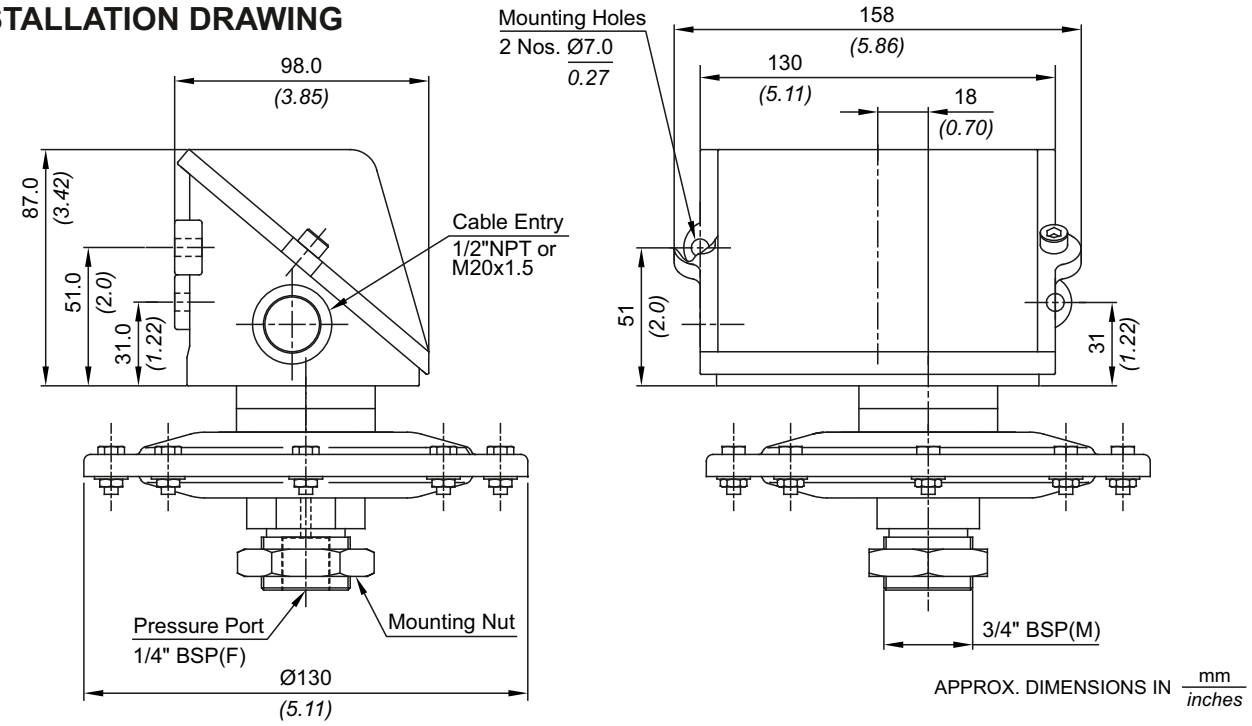
No. Description

1. *Pressure Port (SS)*
2. *Support Spring (SS)*
3. *Bottom Flange (SS)*
4. *Support Plate (Al)*
5. *Diaphragm (Neoprene)*
6. *Gasket (PTFE®)*
7. Top Plate (Aluminium)
8. Top Flange (SS)
9. Plunger
10. Top Flange Screw (SS)
11. Sealing O-Ring (Nitrile)

Note : *wetted parts* are mentioned in italics.

*Pressure ports are brazed with flange

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

MD/MT LOW RANGE PRESSURE SWITCHES

RANGE SELECTION TABLE

Range Code	Range mbar *("wc)*	Differential* mbar *("wc)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A1" microswitch	
L02	1.5 - 15.0 *(0.602 - 6.021)*	3 *(1.204)*	2 *(29.00)*
L03	5.0 - 25.0 *(2.007 - 10.037)*	5 *(2.007)*	2 *(29.00)*
L05	10.0 - 50.0 *(4.015 - 20.073)*	5 *(2.007)*	2 *(29.00)*
L10	10.0 - 100.0 *(4.015 - 40.146)*	10 *(4.015)*	2 *(29.00)*
L15	10.0 - 150.0 *(4.015 - 60.22)*	15 *(6.027)*	2 *(29.00)*
L25	20.0 - 250.0 *(8.029 - 100.36)*	20 *(8.037)*	2 *(29.00)*
L35	50.0 - 350.0 *(20.073 - 140.52)*	25 *(10.036)*	2 *(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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL LOW RANGE PRESSURE 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
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**MD** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529 **MT** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads ***2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads ***8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads *Not available for MT model For dual cable entry contact Sales Office	**PF1** = pressure switch, fixed differential without scale **PF2** = pressure switch, fixed differential with scale in mbar **PF3** = pressure switch, fixed differential with scale in "Wc ***PA1** = pressure switch, adjustable differential without scale ***PA2** = pressure switch, adjustable differential with scale in mbar ***PA3** = pressure switch, adjustable differential with scale in "Wc *Available with A6, A7, A9 & B9 (in group 6) only	**L02** = (1.5 - 15) **L03** = (5 - 25) **L05** = (10 - 50) **L10** = (10 - 100) **L15** = (10 - 150) **L25** = (20 - 250) **L35** = (50 - 350)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements ***B9** = 2SPDT Switching Elements for adjustable differential * For detailed specifications of microswitches, please refer table on page no. 294 & 295	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F) More options available. Please contact sales office.	**0** = Neoprene **1** = PTFE **2** = SS316L More options available. Please contact sales office.

eg. A low range industrial switch, with ½" NPT cable entry in aluminium housing as 1SPDT pressure switch, fixed differential without scale, having 5 mbar to 25 mbar pressure range, with 15 Amp. microswitch, SS316 pressure housing with ¼" BSP port size & neoprene diaphragm shall be specified by

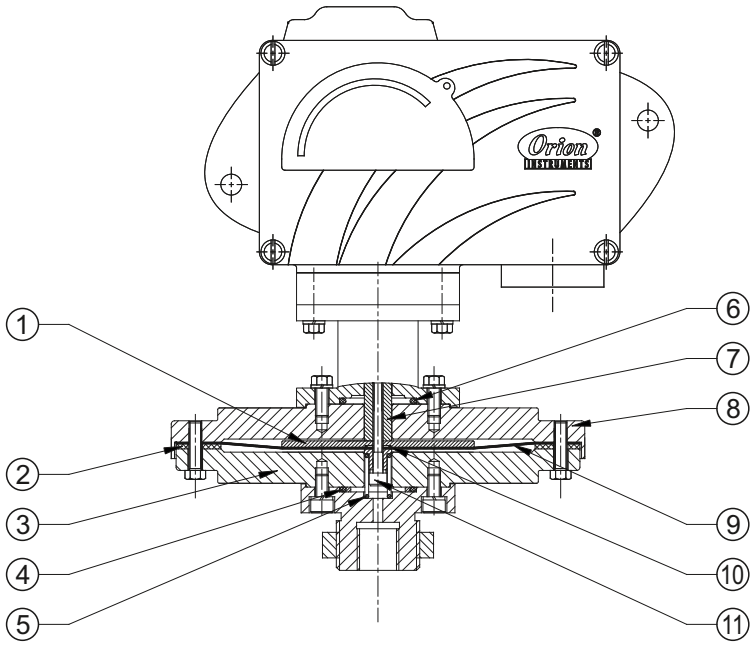
Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8
☐	MD	1	PF1	L03	A1	S1	0

Please specify full model number to avoid ambiguity.

Bulletin No. KA220802

MD/MT LOW RANGE HIGH PROOF PRESSURE SWITCHES

MD



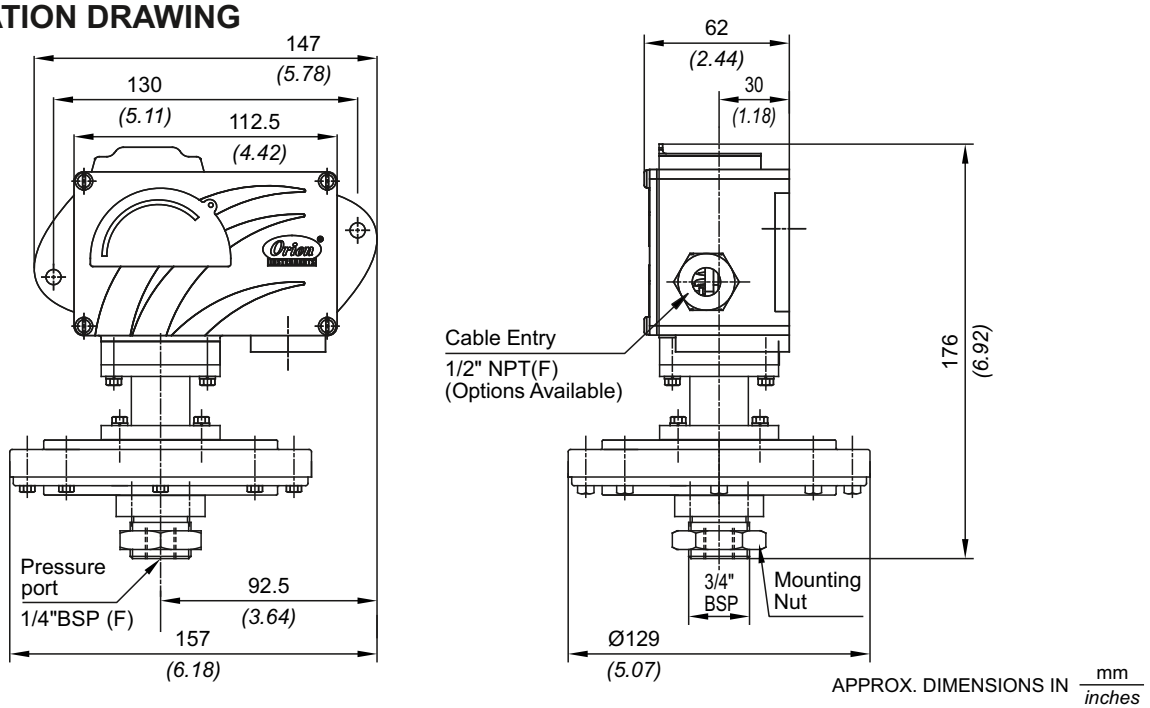
No. Description

1. *Support Plate (SS)*
2. *Gasket (PTFE®)*
3. *Bottom Flange (SS)*
4. *Sealing Ring (PTFE®)*
5. Support Spring (SS)
6. *O-ring (Nitrile)*
7. *Transfer Pin (SS)*
8. *Top Flange (SS)*
9. *Diaphragm (Neoprene)*
10. *O-Ring (Viton)*
11. Clamping Screw (CS)

Note : *wetted parts* are mentioned in italics.

*Pressure ports are brazed with flange

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

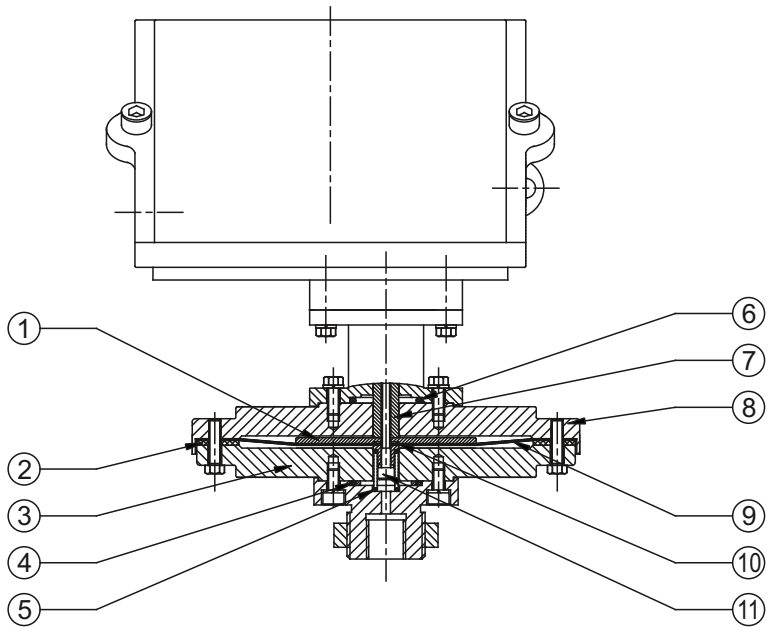
LOW RANGE HIGH PROOF PRESSURE SWITCHES MD/MT

Orion® INSTRUMENTS

CE

MT

PRESSURE CAPSULE DETAILS

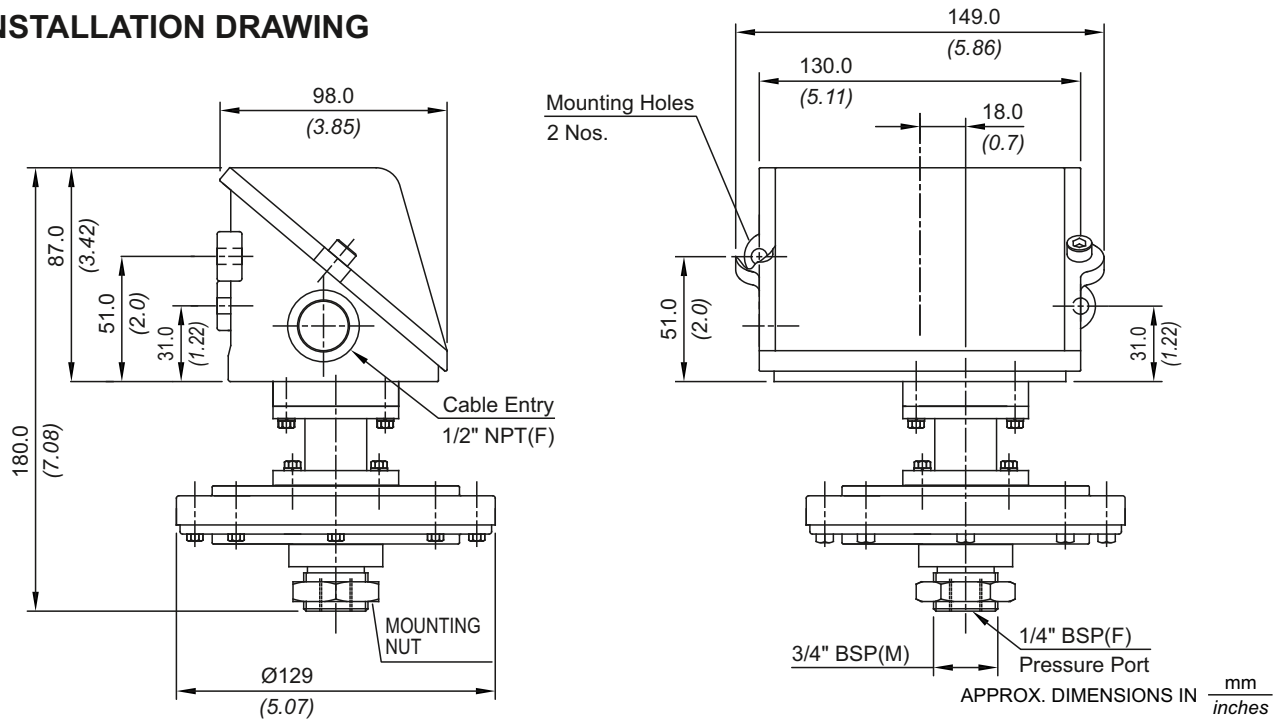


No. Description

1. *Support Plate (SS)*
2. *Gasket (PTFE®)*
3. *Bottom Flange (SS)*
4. *Sealing Ring (PTFE®)*
5. *Support Spring (SS)*
6. *O-Ring (Nitrile)*
7. *Transfer Pin (SS)*
8. *Top Flange (SS)*
9. *Diaphragm (Neoprene)*
10. *O-Ring (Viton)*
11. Clamping Screw (CS)

Note : *wetted parts* are mentioned in italics.

INSTALLATION DRAWING



MD/MT LOW RANGE HIGH PROOF PRESSURE SWITCHES

RANGE SELECTION TABLE

Range Code	Range mbar *("wc)*	Differential* mbar *(" wc)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A1" microswitch	
N02	3 - 15 *(1.200 - 6.02)*	3 *(1.204)*	20 *(290.076)*
N03	5 - 25 *(2.007 - 10.037)*	5 *(2.007)*	20 *(290.076)*
N05	10 - 50 *(4.015 - 20.073)*	5 *(2.007)*	20 *(290.076)*
N10	10 - 100 *(4.015 - 40.146)*	10 *(4.015)*	20 *(290.076)*
N15	10 - 150 *(4.015 - 60.22)*	15 *(6.020)*	20 *(290.076)*
N25	20 - 250 *(8.03 - 100.36)*	20 *(8.030)*	20 *(290.076)*
N35	50 - 350 *(20.073 - 140.51)*	35 *(14.05)*	20 *(290.076)*

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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL LOW RANGE HIGH PROOF PRESSURE 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
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**MD** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529 **MT** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads ***2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads ***8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads *Not available for MT model For dual cable entry contact Sales Office	**PF1** = pressure switch, fixed differential without scale **PF2** = pressure switch, fixed differential with scale in mbar **PF3** = pressure switch, fixed differential with scale in "Wc ***PA1** = pressure switch, adjustable differential without scale ***PA2** = pressure switch, adjustable differential with scale in mbar ***PA3** = pressure switch, adjustable differential with scale in "Wc MT model available with A6, A7, A9 and B9 scale only	**N02** = (1.5 - 15) **N03** = (5 - 25) **N05** = (10 - 50) **N10** = (10 - 100) **N15** = (10 - 150) **N25** = (20 - 250) **N35** = (50 - 350)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements ***B9** = 2SPDT Switching Elements for adjustable differential * For detailed specifications of microswitches, please refer table on page no. 294 & 295	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F) More options available. Please contact sales office.	**0** = Neoprene **1** = PTFE **2** = SS316L

eg. A low range high proof pressure switch, with ½" NPT cable entry in aluminium housing as 1SPDT pressure switch, fixed differential without scale, having 5 mbar to 25 mbar pressure range, with 15 Amp. microswitch, SS316 pressure housing with ¼" 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
☐	MD	1	PF1	N03	A1	S1	0

Please specify full model number to avoid ambiguity.

Bulletin No. KA220802

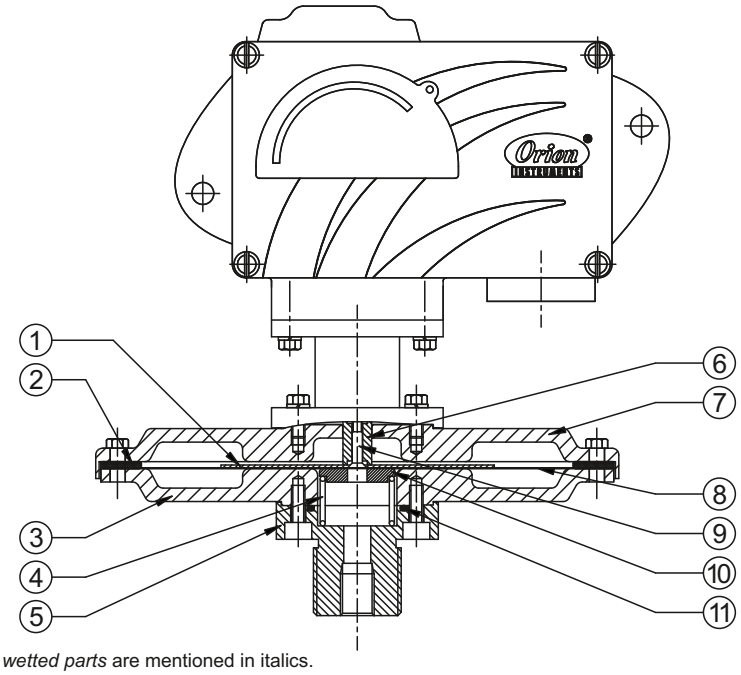
MD/MT ULTRA LOW RANGE PRESSURE SWITCHES

MD

CE

Orion® INSTRUMENTS

PRESSURE CAPSULE DETAILS

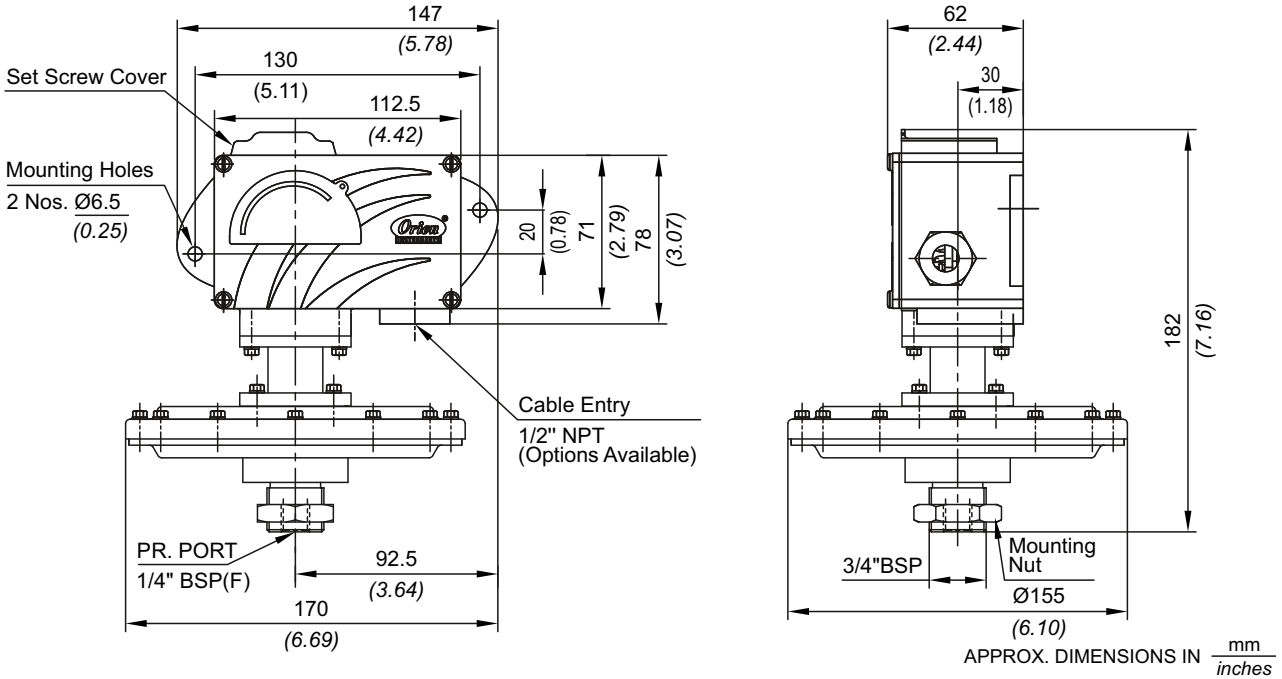


No. Description

1. *Support Plate (SS)*
2. *Gasket (PTFE®)*
3. *Bottom Flange (SS)*
4. *Support Spring (SS)*
5. *Mounting Adapter (SS)*
6. *Transfer Pin (SS)*
7. *Top Flange (SS)*
8. *Diaphragm (Neoprene)*
9. Clamping Screw (CS)
10. *Spring Support (SS)*
11. *O-Ring (Viton)*

Note : *wetted parts* are mentioned in italics.

INSTALLATION DRAWING



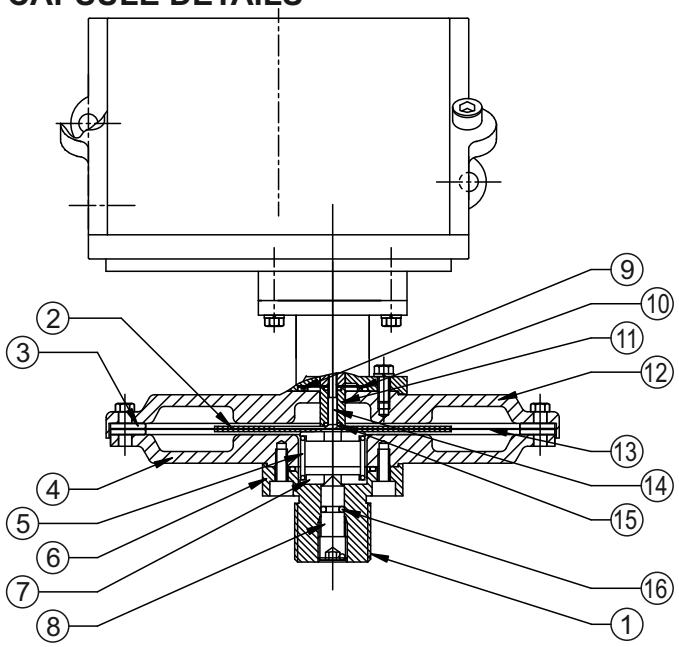
APPROX. DIMENSIONS IN mm / *inches*

Orion® INSTRUMENTS

CE

MT

PRESSURE CAPSULE DETAILS



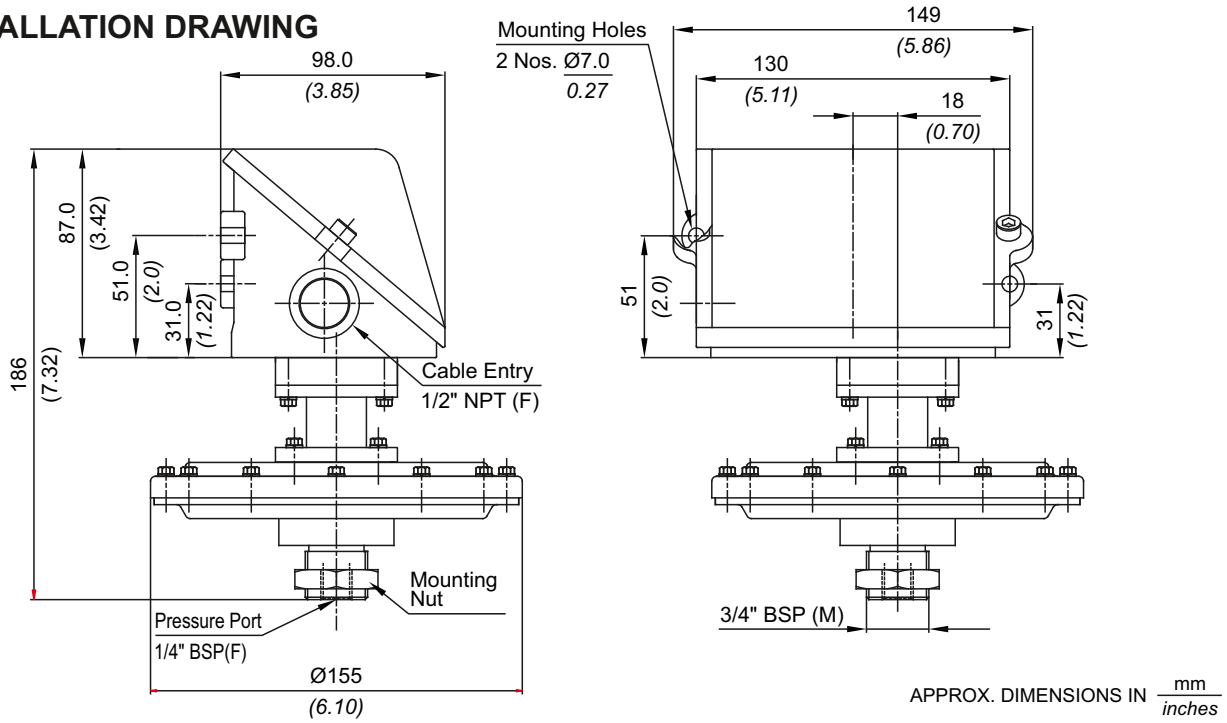
No. Description

1. *Pressure Port (SS)**
2. *Support Plate (SS)*
3. *Gasket (PTFE®)*
4. *Bottom Flange (SS)*
5. *Support Spring (SS)*
6. *Mounting Adaptor (SS)*
7. *Spring Support (SS)*
8. *Spring Locating Pin (SS)*
9. *Sealing Ring (Neoprene)*
10. *Support Ring (CS)*
11. *Transfer Pin (SS)*
12. *Top Flange (Viton)*
13. *Diaphragm (Neoprene)*
14. Clamping Screw (CS)
15. *O-Ring (Viton)*
16. *O-Ring (Viton)*

Note : *wetted parts* are mentioned in italics.

*Pressure ports are welded with flange

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

MD/MT ULTRA LOW RANGE PRESSURE SWITCHES

RANGE SELECTION TABLE

Range Code	Range mbar *("Wc)*	Differential* mbar *("Wc)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A1" microswitch	
U15	0.6 - 1.5 *(0.24 - 0.6)*	0.50 *(0.20)*	0.5 *(7.25)*
U25	0.8 - 2.5 *(0.32 - 1.0)*	0.80 *(0.32)*	0.5 *(7.25)*
U40	1.0 - 4.0 *(0.40 - 1.6)*	1.20 *(0.48)*	0.5 *(7.25)*

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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL ULTRA LOW RANGE PRESSURE 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
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**MD** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529 **MT** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads ***2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads ***8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads *Not available for MT model For dual cable entry contact Sales Office	**PF2** = pressure switch, fixed differential with scale in mbar **PF3** = pressure switch, fixed differential with scale in "Wc ***PA2** = pressure switch, adjustable differential with scale in mbar ***PA3** = pressure switch, adjustable differential with scale in "Wc *Available with A6, A7, A9 & B9 (in group 6) only	**U15** = (0.4 - 1.5) **U25** = (0.5 - 2.5) **U40** = (1.0 - 4.0)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***B7** = 2SPDT Switching Elements * For detailed specifications of microswitches, please refer note under Range Selection Table	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F)	**0** = Neoprene **1** = PTFE

eg. Industrial pressure switch with ½" NPT cable entry in aluminium housing as 1SPDT pressure switch, fixed differential with scale in mbar, having 0.16 to 0.60 "Wc pressure range, with 15 Amp. microswitch, SS316 pressure housing with ¼" 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
☐	MD	1	PF2	U15	A1	S1	0

Please specify full model number to avoid ambiguity.

Bulletin No. KA220802

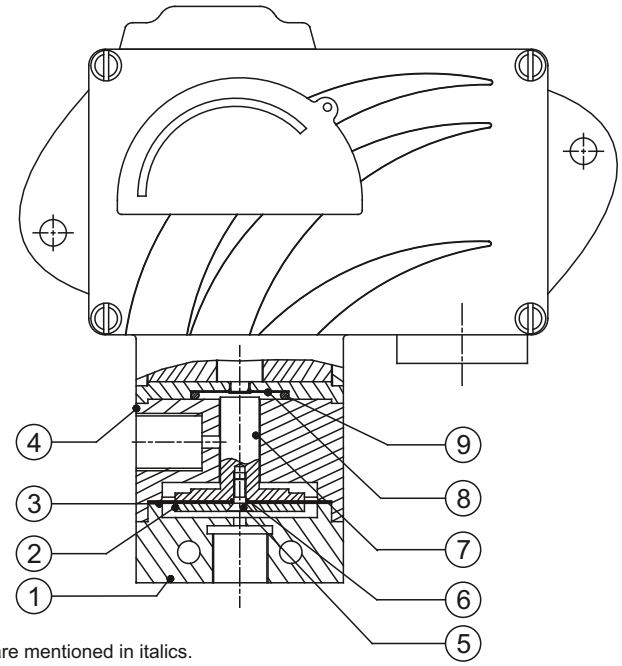
MD/MT HIGH RANGE PRESSURE DIFFERENCE SWITCHES

MD

CE

Orion® INSTRUMENTS

PRESSURE CAPSULE DETAILS

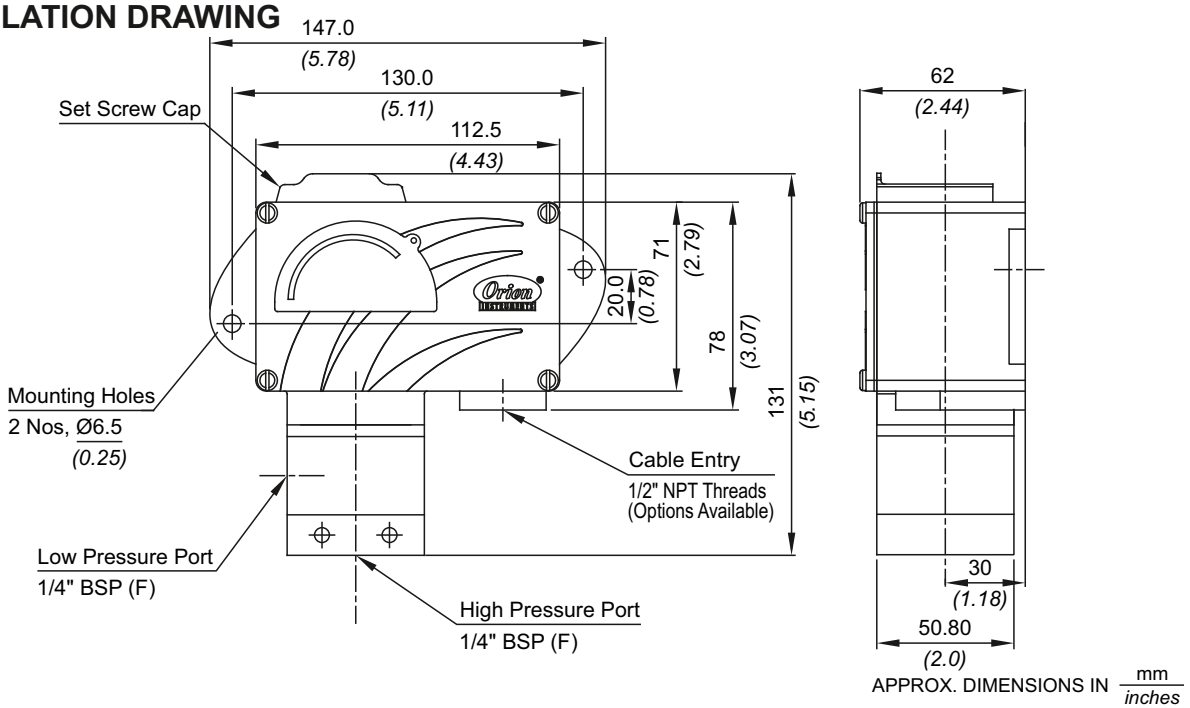


No. Description

1. Pressure Housing
2. *HP Plunger (SS316)*
3. *Diaphragm*
4. *Disc*
5. *CSK Screw (SS)*
6. *O-Ring (PTFE®)*
7. *LP Plunger (SS316)*
8. *Sealing Diaphragm (PTFE®)*
9. *Sealing O-Ring (PTFE®)*

Note : *wetted parts* are mentioned in italics.

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

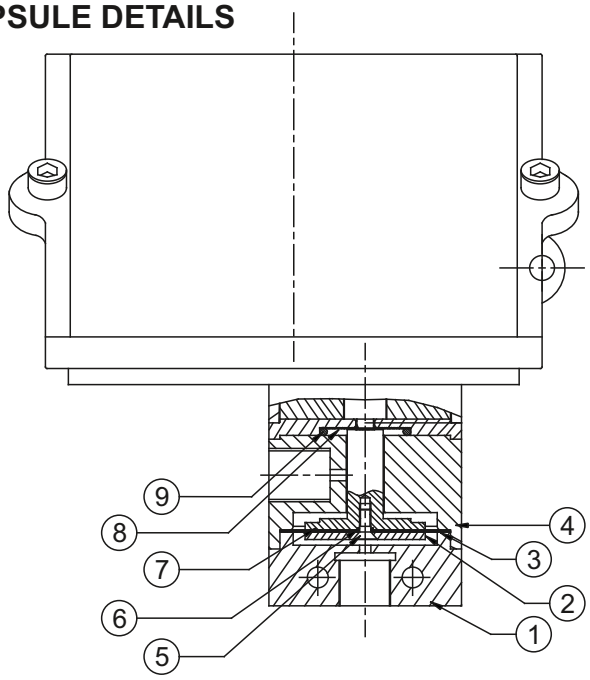
HIGH RANGE PRESSURE DIFFERENCE SWITCHES MD/MT

Orion® INSTRUMENTS

CE

MT

PRESSURE CAPSULE DETAILS



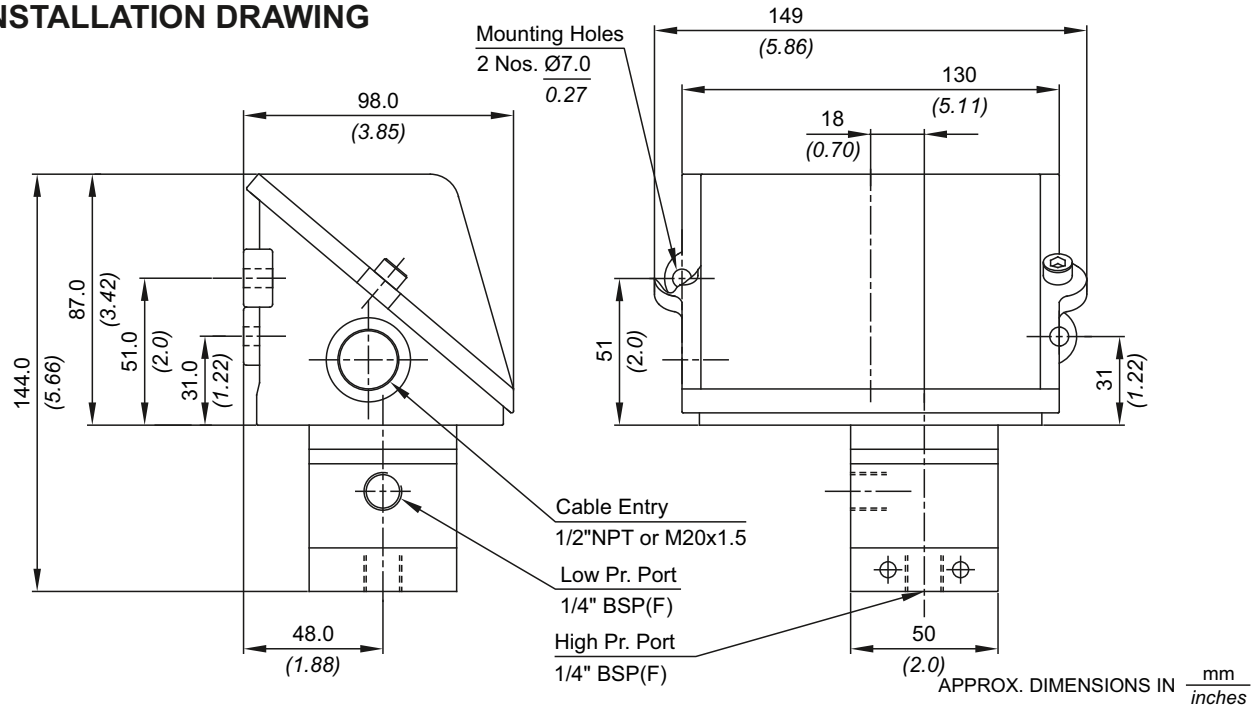
No. Description

1. *Pressure Housing*
2. *HP Plunger (SS316)*
3. *Diaphragm (SS)*
4. *Disc (SS)*
5. *CSK Screw (SS)*
6. *O-Ring (PTFE®)*
7. *LP Plunger (SS316)*
8. *Sealing Diaphragm (PTFE®)*
9. *Sealing O-Ring (PTFE®)*

Note : *wetted parts* are mentioned in italics.

*Pressure ports are brazed with flange

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

MD/MT HIGH RANGE PRESSURE DIFFERENCE SWITCHES

RANGE SELECTION TABLE

Range Code	Range bar *(psi)*	Differential* bar *(psi)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A1" microswitch	
H01	0.1 - 1.0 *(1.45 - 14.50)*	0.12 *(1.74)*	12 *(174.05)*
H02	0.2 - 1.5 *(2.90 - 21.76)*	0.20 *(2.90)*	12 *(174.05)*
H03	0.2 - 2.6 *(2.90 - 37.71)*	0.20 *(2.90)*	12 *(174.05)*
H04	0.2 - 3.6 *(2.90 - 52.21)*	0.30 *(4.35)*	12 *(174.05)*

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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL HIGH RANGE PRESSURE DIFFERENCE 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 bar)	Microswitch Type	Pressure Port Material / Size	Diaphragm
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**MD** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529 **MT** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads ***2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads ***8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads *Not available for MT model For dual cable entry contact Sales Office	**DF1** = pressure difference switch, fixed differential without scale **DF2** = pressure difference switch, fixed differential with scale in bar **DF3** = pressure difference switch, fixed differential with scale in psi ***DA1** = pressure difference switch, adjustable differential without scale ***DA2** = pressure difference switch, adjustable differential with scale in bar ***DA3** = pressure difference switch, adjustable differential with scale in psi *Available with A6, A7, A9 & B9 (in group 6) only	**H01** = (0.1 - 1.0) **H02** = (0.1 - 1.5) **H03** = (0.2 - 2.6) **H04** = (0.2 - 3.6)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements ***B9** = 2SPDT Switching Elements for adjustable differential * For detailed specifications of microswitches, please refer note under Range Selection Table	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F) More options available. Please contact sales office.	**0** = Neoprene **1** = PTFE

eg. A high range pressure difference weatherproof switch, with ½" NPT cable entry in aluminium housing as 1SPDT pressure switch, fixed differential without scale, having 0.1 bar to 1 bar pressure range, with 15 Amp. microswitch, SS316 pressure housing with ¼" 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
☐	MD	1	DF1	H01	A1	S1	0

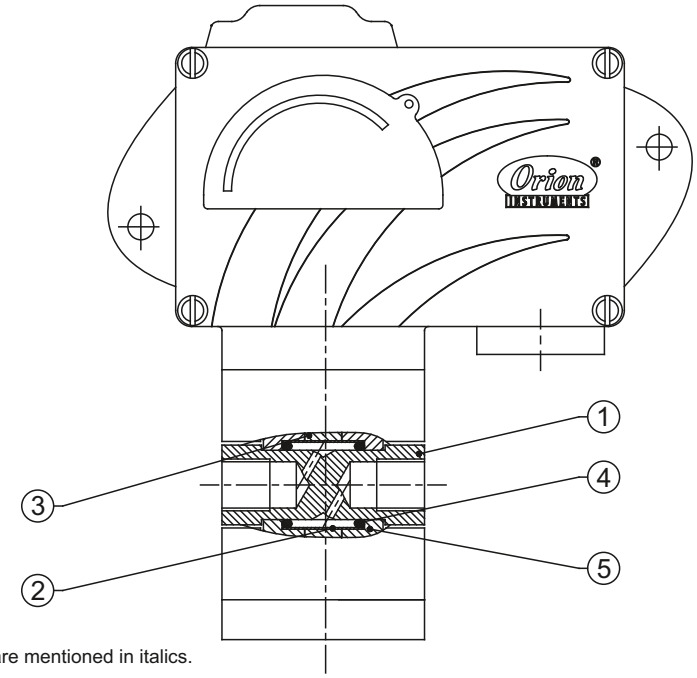
Please specify full model number to avoid ambiguity.

Bulletin No. KA220802

MD/MT HIGH RANGE DP

MD

PRESSURE CAPSULE DETAILS

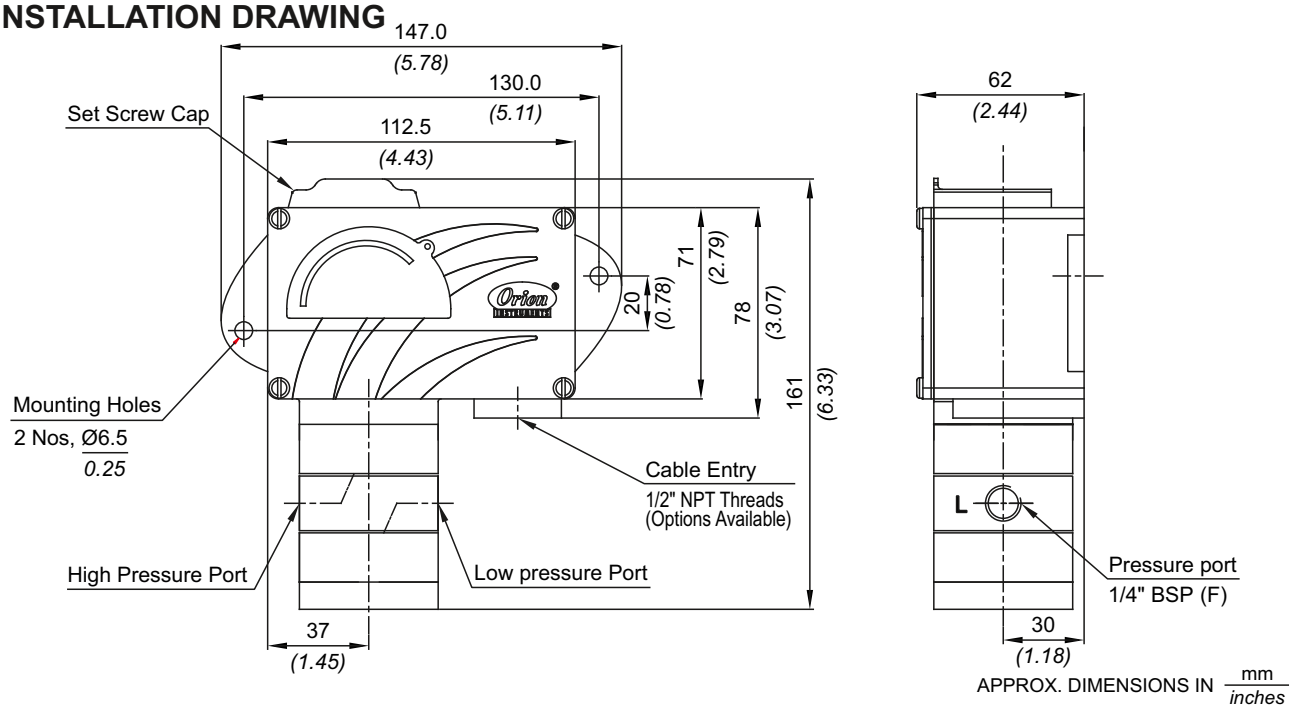


No. Description

1. *Pressure Housing (SS)*
2. *Diaphragm (SS or PTFE®)*
3. Plunger (SS)
4. *O-Ring (Viton)*
5. Disc (Al)

Note : *wetted parts* are mentioned in italics.

INSTALLATION DRAWING



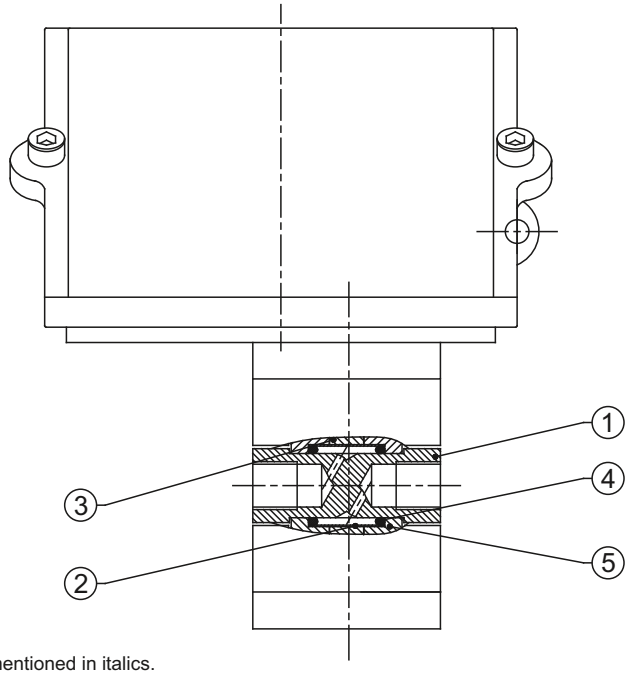
APPROX. DIMENSIONS IN mm / *inches*

Orion® INSTRUMENTS

CE

MT

PRESSURE CAPSULE DETAILS



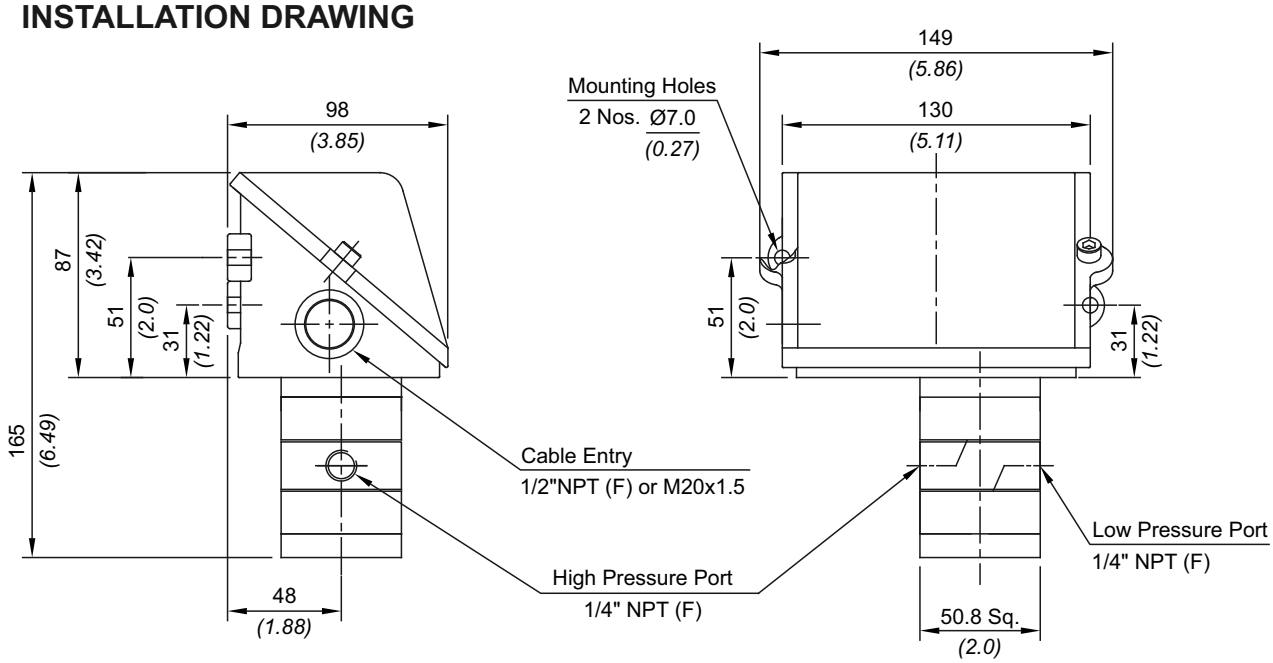
No. Description

1. *Pressure Housing (SS)*
2. *Diaphragm (PTFE®)*
3. Plunger (SS)
4. *O-Ring (Viton)*
5. Disc (Al)

Note : *wetted parts* are mentioned in italics.

*Pressure ports are brazed with flange

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

MD/MT HIGH RANGE DP

RANGE SELECTION TABLE

Range Code	Range bar *(psi)*	Differential* bar *(psi)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A1" microswitch	
D01	0.1 - 1.0 *(1.45 - 14.50)*	0.12 *(1.74)*	70 *(1015.26)*
D02	0.2 - 1.5 *(2.90 - 21.76)*	0.20 *(2.90)*	70 *(1015.26)*
D03	0.2 - 2.6 *(2.90 - 37.71)*	0.20 *(2.90)*	70 *(1015.26)*
D04	0.2 - 3.6 *(2.90 - 52.21)*	0.40 *(5.80)*	70 *(1015.26)*
D07	0.5 - 7.0 *(7.25 - 101.50)*	0.80 *(11.60)*	70 *(1015.26)*
D10	0.5 - 10.0 *(7.25 - 145.04)*	1.00 *(14.50)*	70 *(1015.26)*
D15	1.0 - 15.0 *(14.50 - 217.71)*	1.50 *(21.75)*	70 *(1015.26)*
D30	5.0 - 25.0 *(72.52 - 362.6)*	2.00 *(29.00)*	70 *(1015.26)*

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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL HIGH RANGE DP 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 bar)	Microswitch Type	Pressure Port Material / Size	Diaphragm
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**MD** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529 **MT** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads ***2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads ***8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads *Not available for MT model For dual cable entry contact Sales Office	**DF1** = pressure difference switch, fixed differential without scale **DF2** = pressure difference switch, fixed differential with scale in bar **DF3** = pressure difference switch, fixed differential with scale in psi ***DA1** = pressure difference switch, adjustable differential without scale ***DA2** = pressure difference switch, adjustable differential with scale in bar ***DA3** = pressure difference switch, adjustable differential with scale in psi *Available with A6, A7, A9 & B9 (in group 6) only	**D01** = (0.1 - 1.0) **D02** (0.1 - 1.5) **D03** = (0.2 - 2.6) **D04** = (0.2 - 3.6) **D07** = (0.5 - 7.0) **D10** = (0.5 - 10.0) **D15** = (1.0 - 15.0) **D30** = (5.0 - 25.0)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements ***B9** = 2SPDT Switching Elements for adjustable differential * For detailed specifications of microswitches, please refer note under Range Selection Table	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F) **H1** = Hastelloy C / ¼" BSP(F) **H2** = Hastelloy C / ¼" NPT(F) **N1** = Monel / ¼" BSP(F) **N2** = Monel / ¼" NPT(F) More options available. Please contact sales office.	**0** = Neoprene **1** = PTFE **2** = SS 316L **3** = Hastelloy C **4** = Monel For additional wetted parts please contact sales office

eg. A high range pressure difference industrial switch, with ½" NPT cable entry in aluminium housing as 1SPDT pressure switch, fixed differential without scale, having 0.1 bar to 1 bar pressure range, with 15 Amp. microswitch, SS316 pressure housing with ¼" 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
☐	MD	1	DF1	D01	A1	S1	0

Please specify full model number to avoid ambiguity.

Bulletin No. KA220802

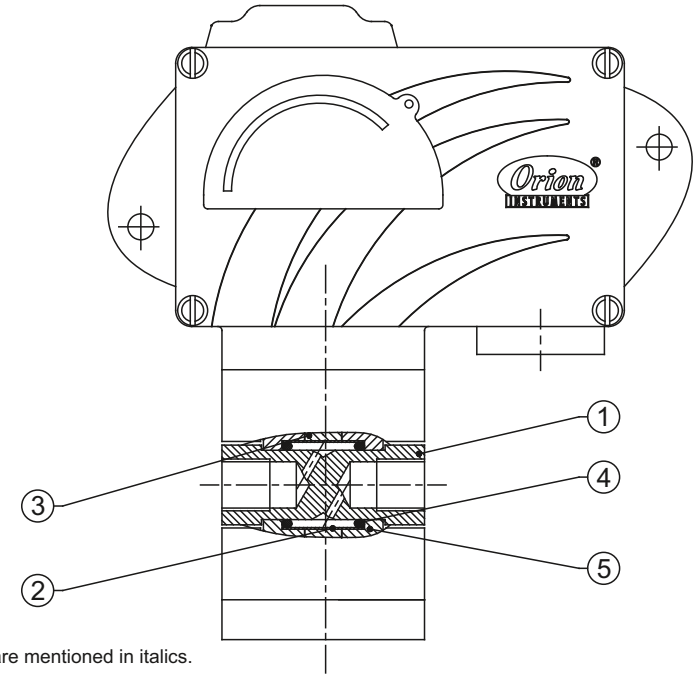
MD/MT HYDRAULIC RANGE DP

MD

CE

Orion® INSTRUMENTS

PRESSURE CAPSULE DETAILS

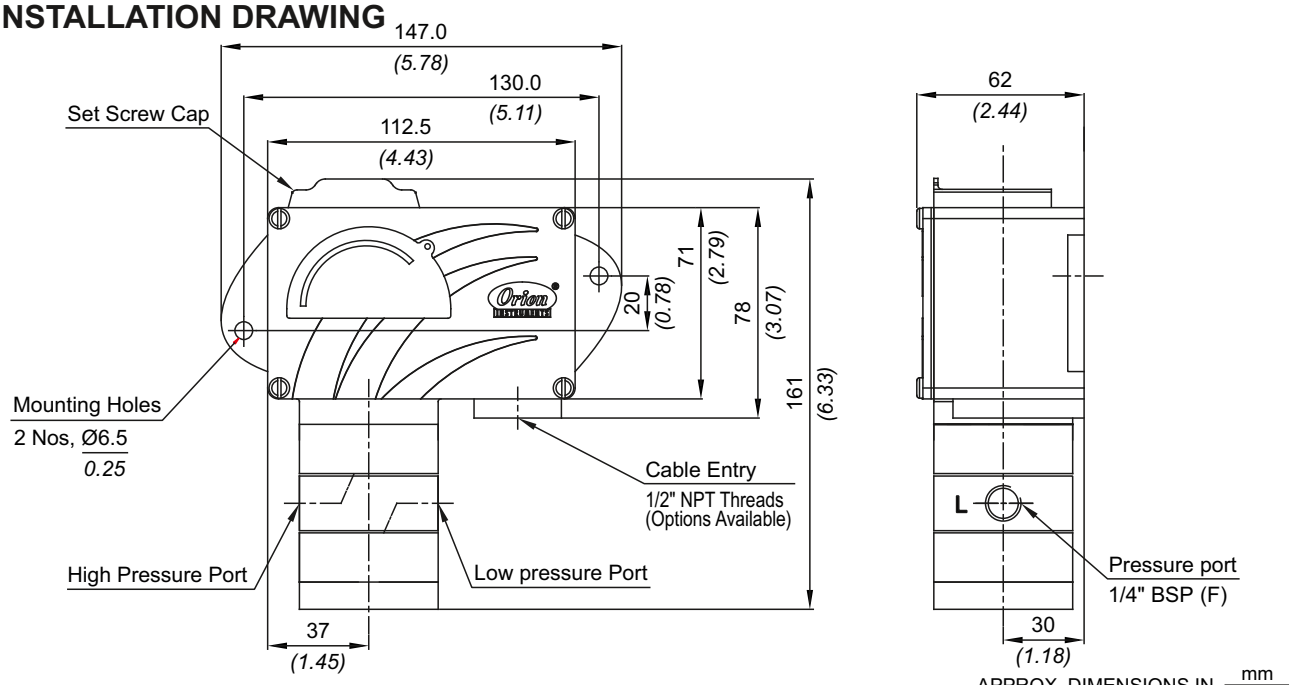


No. Description

1. *Pressure Housing (SS)*
2. *Diaphragm (SS or PTFE®)*
3. Plunger (SS)
4. *O-Ring (Viton)*
5. Disc (Al)

Note : *wetted parts* are mentioned in italics.

INSTALLATION DRAWING



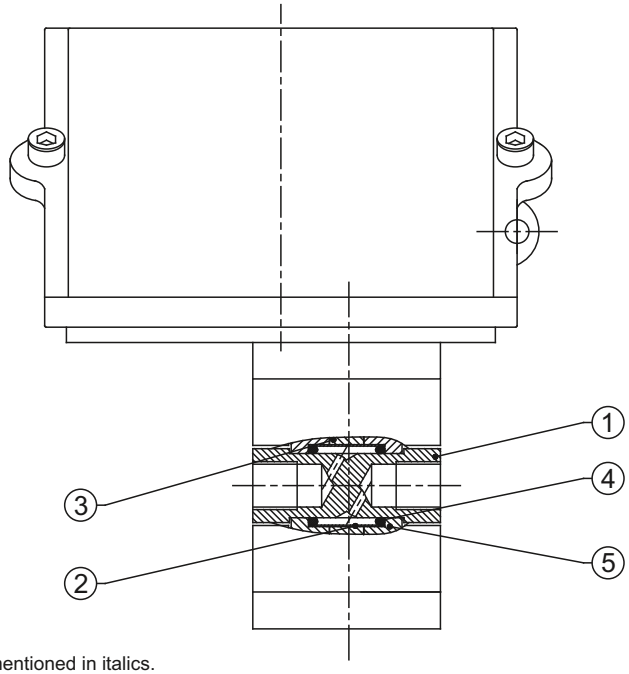
APPROX. DIMENSIONS IN mm / *inches*

Orion® INSTRUMENTS

CE

MT

PRESSURE CAPSULE DETAILS



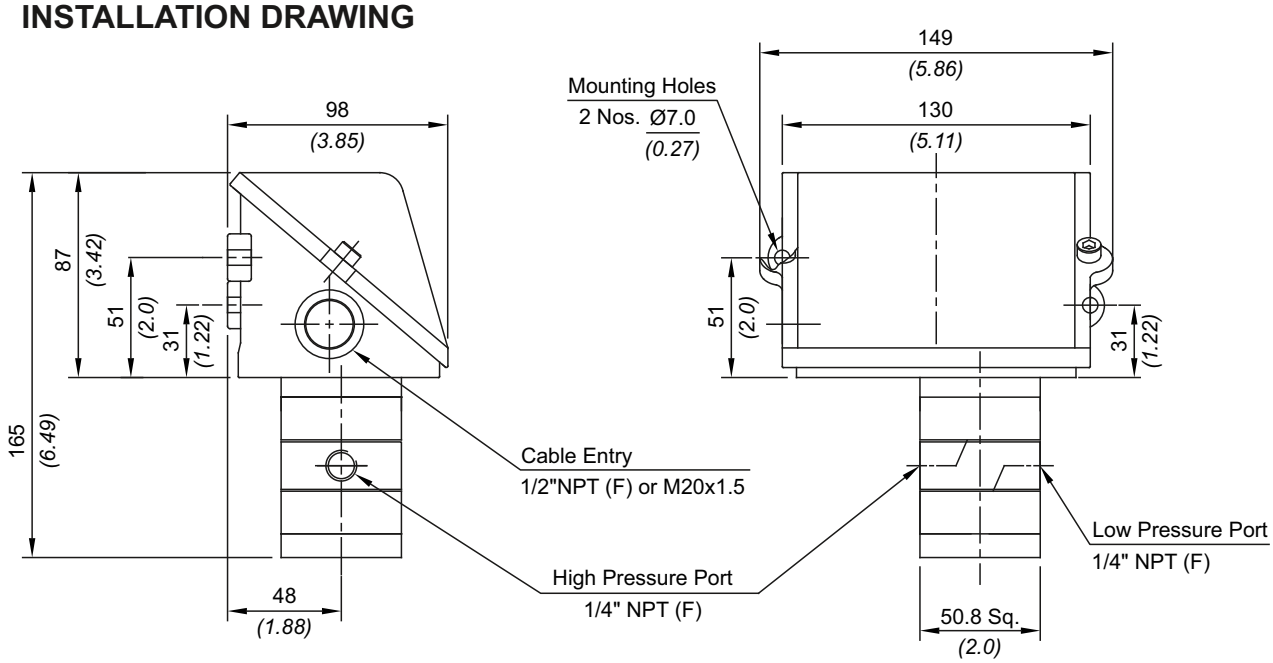
No. Description

1. *Pressure Housing (SS)*
2. *Diaphragm (PTFE®)*
3. Plunger (SS)
4. *O-Ring (Viton)*
5. Disc (Al)

Note : *wetted parts* are mentioned in italics.

*Pressure ports are brazed with flange

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

MD/MT HYDRAULIC RANGE DP

RANGE SELECTION TABLE

Range Code	Range bar *(psi)*	Differential* bar *(psi)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A1" microswitch	
H1U	0.1 - 1.0 *(1.45 - 14.50)*	0.30 *(4.35)*	150 *(2175)*
H2U	0.2 - 1.5 *(2.90 - 21.75)*	0.30 *(4.35)*	150 *(2175)*
H3U	0.2 - 2.6 *(2.90 - 37.7)*	0.40 *(5.8)*	150 *(2175)*
H4U	0.2 - 3.6 *(2.90 - 52.2)*	0.40 *(5.8)*	150 *(2175)*
H7U	0.5 - 7.0 *(7.25 - 101.5)*	0.80 *(11.60)*	150 *(2175)*
D1T	1.0 - 10.0 *(14.50 - 145)*	1.00 *(14.50)*	200 *(2900)*
D2T	2.0 - 20.0 *(29.00 - 290.70)*	2.00 *(29.00)*	200 *(2900)*
D3T	3.0 - 30.0 *(43.51 - 435.11)*	2.50 *(36.25)*	200 *(2900)*
D4T	5.0 - 40.0 *(72.50 - 580)*	4.00 *(58)*	400 *(5800)*
D1H	10 - 100 *(145.00 - 1450)*	10.00 *(145)*	400 *(5800)*
D2H	10.0 - 200 *(145.00 - 2900)*	20.00 *(290)*	400 *(5800)*

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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL HYDRAULIC RANGE DP 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 bar)	Microswitch Type	Pressure Port Material / Size	Diaphragm
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**MD** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529 **MT** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads ***2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads ***8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads *Not available for MT model For dual cable entry contact Sales Office	**DF1** = pressure difference switch, fixed differential without scale **DF2** = pressure difference switch, fixed differential with scale in bar **DF3** = pressure difference switch, fixed differential with scale in psi ***DA1** = pressure difference switch, adjustable differential without scale ***DA2** = pressure difference switch, adjustable differential with scale in bar ***DA3** = pressure difference switch, adjustable differential with scale in psi *Available with A6, A7, A9 & B9 (in group 6) only	**H1U** = (0.1 - 1.0) **H2U** = (0.1 - 1.5) **H3U** = (0.2 - 2.6) **H4U** = (0.2 - 3.6) **H7U** = (0.5 - 7.0) **D1T** = (0.5 - 10.0) **D2T** = (1.0 - 15.0) **D3T** = (5.0 - 25.0) **D4T** = (5.0 - 40.0) **D1H** = (10 - 100) **D2H** = (7.0 - 200)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements ***B9** = 2SPDT Switching Elements for adjustable differential * For detailed specifications of microswitches, please refer note under Range Selection Table	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F) **H1** = Hastelloy C / ¼" BSP(F) **H2** = Hastelloy C / ¼" NPT(F) **N1** = Monel / ¼" BSP(F) **N2** = Monel / ¼" NPT(F) More options available. Please contact sales office.	**0** = Neoprene **1** = PTFE **2** = SS 316L **3** = Hastelloy C **4** = Monel For additional wetted parts please contact sales office

eg. A high range pressure difference industrial switch, with ½" NPT cable entry in aluminium housing as 1SPDT pressure switch, fixed differential without scale, having 0.1 bar to 1 bar pressure range, with 15 Amp. microswitch, SS316 pressure housing with ¼" 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
☐	MD	1	DF1	H1U	A1	S1	0

Please specify full model number to avoid ambiguity.

Bulletin No. KA220802

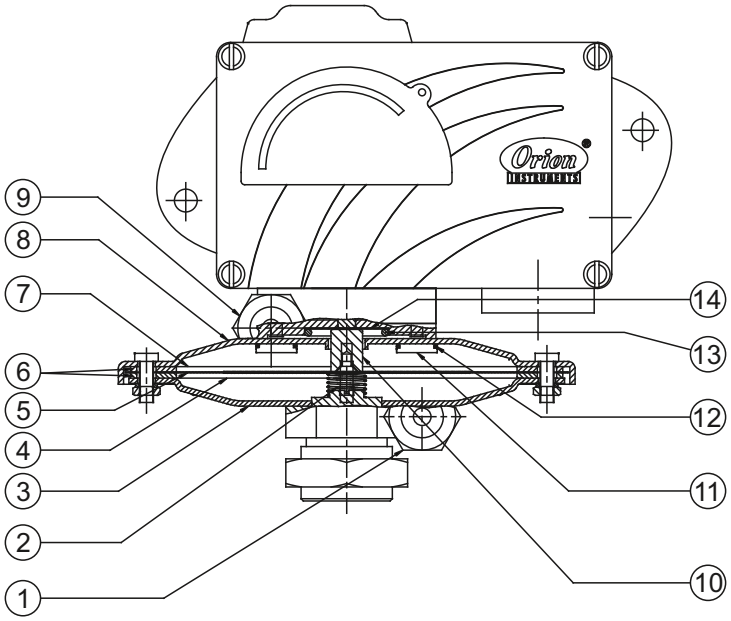
MD/MT LOW RANGE PRESSURE DIFFERENCE SWITCHES

MD

CE

Orion® INSTRUMENTS

PRESSURE CAPSULE DETAILS



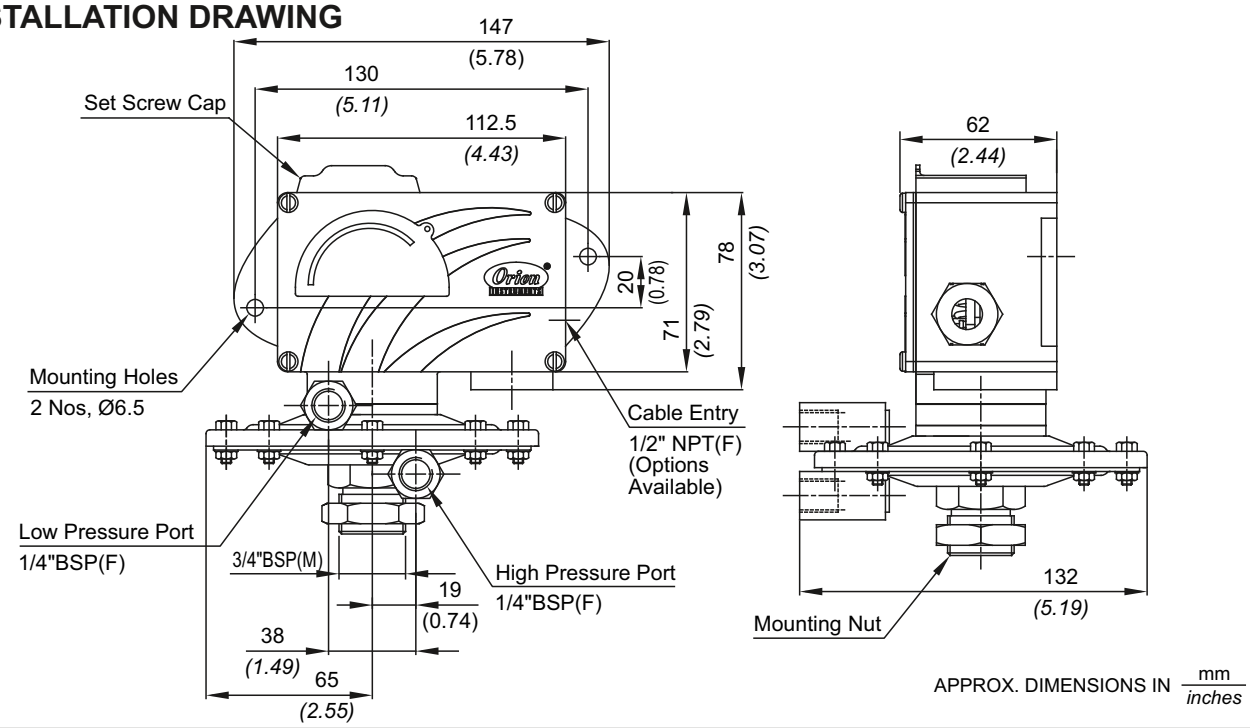
No. Description

1. *High Pressure Port (SS)**
2. *Support Spring (SS)*
3. *Bottom Flange (SS)*
4. *Support Plate (Aluminium)*
5. *Diaphragm (Neoprene)*
6. *Gasket (Nitrile)*
7. *Top Plate (Aluminium)*
8. *Top Flange (SS)**
9. *Low Pressure Port (SS)*
10. *Transfer Pin (Al)*
11. *Top Flange Screw (SS)*
12. *O-Ring (Nitrile)*
13. *O-Ring (Nitrile)*
14. *Sealing Diaphragm (Nitrile)*

Note : *wetted parts* are mentioned in italics.

*Pressure ports are brazed with flange

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

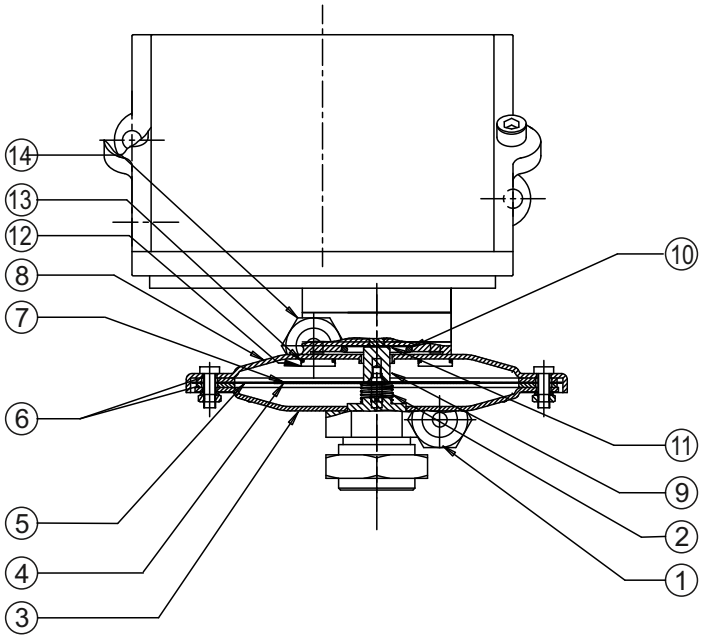
LOW RANGE PRESSURE DIFFERENCE SWITCHES MD/MT

Orion® INSTRUMENTS

CE

MT

PRESSURE CAPSULE DETAILS



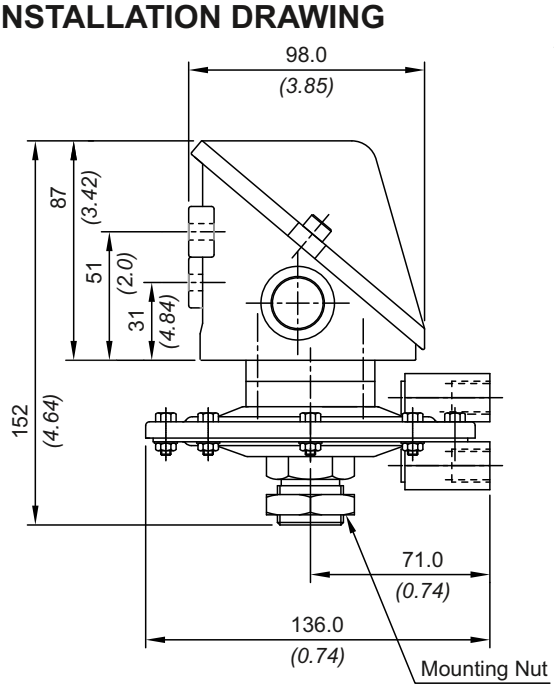
No. Description

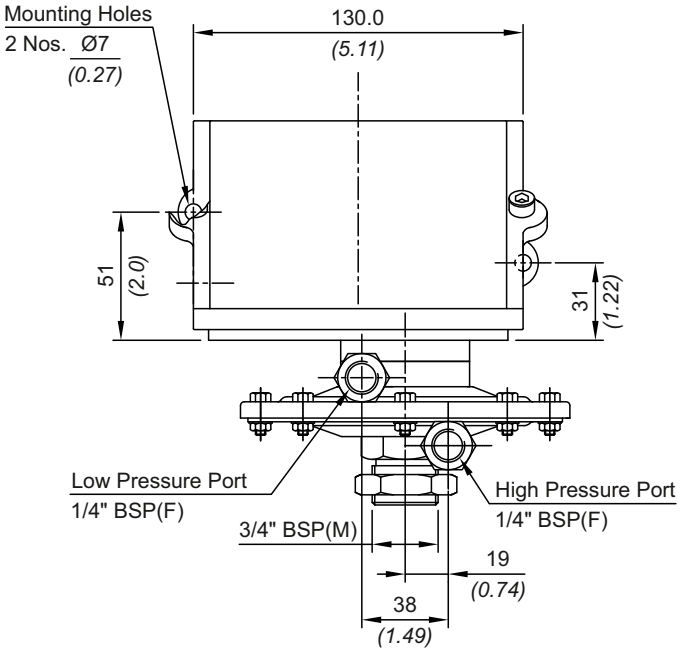
1. *High Pressure Port (SS)**
2. *Support Spring (SS)*
3. *Bottom Flange (SS)*
4. *Support Plate (Aluminium)*
5. *Diaphragm (Neoprene)*
6. *Gasket (Nitrile)*
7. *Top Plate (Aluminium)*
8. *Top Flange (SS)**
9. *Transfer Pin (Aluminium)*
10. *O-Ring (Nitrile)*
11. *Sealing Diaphragm (Nitrile)*
12. *Top Flange Screw (SS)*
13. *Sealing O-Ring (Nitrile)*
14. *Low Pressure Port (SS)**

Note : *wetted parts* are mentioned in italics.

*Pressure ports are brazed with flange

INSTALLATION DRAWING





APPROX. DIMENSIONS IN mm / *inches*

MD/MT LOW RANGE PRESSURE DIFFERENCE SWITCHES

RANGE SELECTION TABLE

Range Code	Range mbar *("wc)*	Differential* mbar *(" wc)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A1" microswitch	
L02	3 - 15 *(1.205 - 6.02)*	3 *(1.204)*	2 *(29.00)*
L03	5 - 25 *(2.007 - 10.037)*	5 *(2.007)*	2 *(29.00)*
L05	10 - 50 *(4.015 - 20.073)*	5 *(2.007)*	2 *(29.00)*
L10	10 - 100 *(4.015 - 40.146)*	10 *(4.015)*	2 *(29.00)*
L15	10 - 150 *(4.015 - 60.22)*	15 *(6.027)*	2 *(29.00)*
L25	20 - 250 *(8.03 - 100.36)*	20 *(8.037)*	2 *(29.00)*
L35	50 - 350 *(20.073 - 140.51)*	35 *(14.05)*	2 *(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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL LOW RANGE PRESSURE DIFFERENCE 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
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**MD** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529 **MT** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads ***2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads ***8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads *Not available for MT model For dual cable entry contact Sales Office	**DF1** = pressure difference switch, fixed differential without scale **DF2** = pressure difference switch, fixed differential with scale in mbar **DF3** = pressure difference switch, fixed differential with scale in "Wc ***DA1** = pressure difference switch, adjustable differential without scale ***DA2** = pressure difference switch, adjustable differential with scale in mbar ***DA3** = pressure difference switch, adjustable differential with scale in "Wc *Available with A6, A7, A9 & B9 (in group 6) only	**L02** = (1.5 - 15) **L03** = (5 - 25) **L05** = (10 - 50) **L10** = (10 - 100) **L15** = (10 - 150) **L25** = (20 - 250) **L35** = (50 - 350)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements ***B9** = 2SPDT Switching Elements for adjustable differential * For detailed specifications of microswitches, please refer note under Range Selection Table	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F) More options available. Please contact sales office.	**0** = Neoprene **1** = PTFE

eg. A low range pressure difference industrial switch, with ½" NPT cable entry in aluminium housing as 1SPDT pressure switch, fixed differential without scale, having 5 mbar to 25 mbar pressure range, with 15 Amp. microswitch, SS316 pressure housing with ¼" 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
☐	MD	1	DF1	L03	A1	S1	0

Please specify full model number to avoid ambiguity.

Bulletin No. KA220802

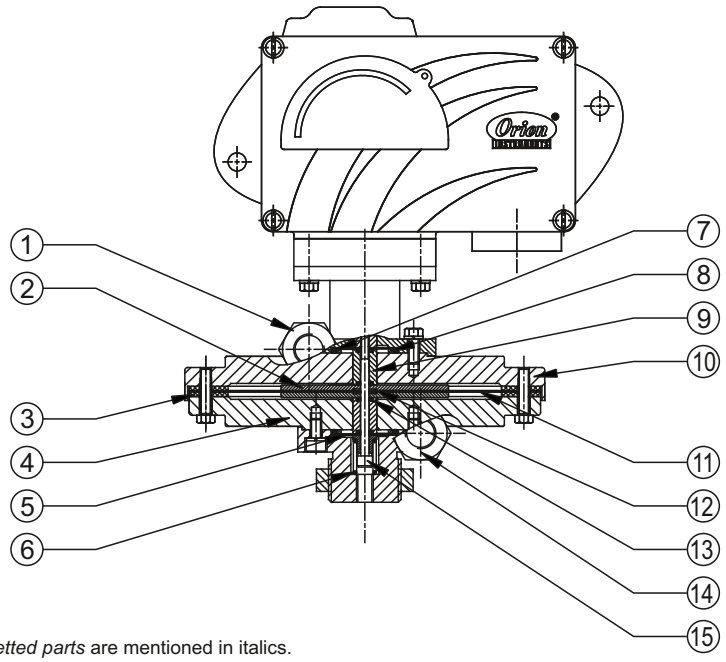
MD/MT LOW DP HIGH PROOF PRESSURE DIFFERENCE SWITCHES

MD

CE

Orion® INSTRUMENTS

PRESSURE CAPSULE DETAILS



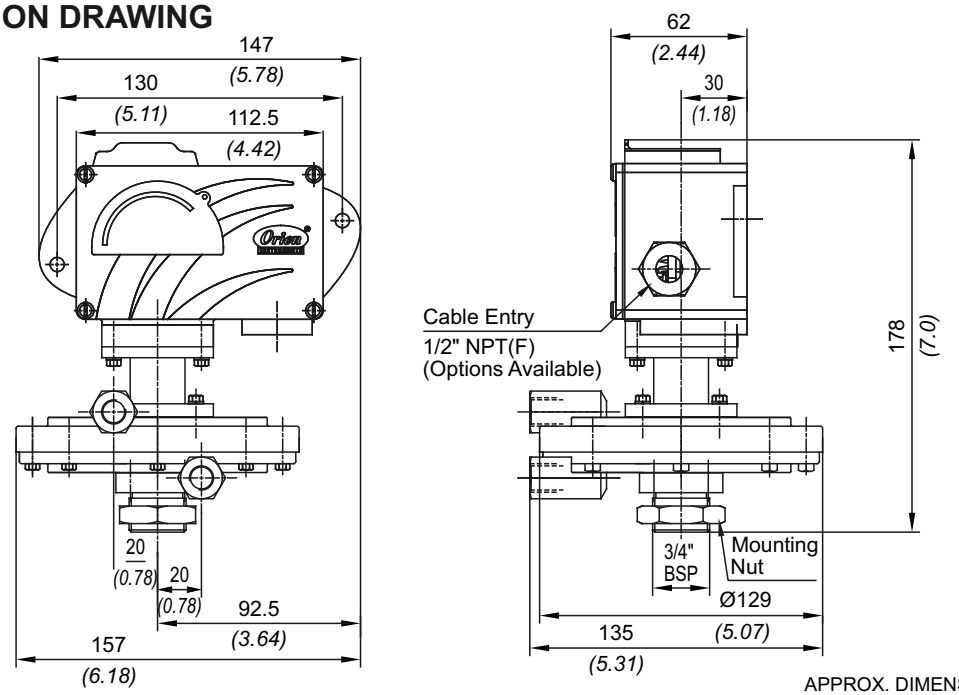
No. Description

1. *Low Pressure Port (SS)**
2. *Support Plate (SS)*
3. *Gasket (PTFE®)*
4. *Bottom Flange (SS)*
5. *Sealing Diaphragm (Neoprene)*
6. Support Spring (SS)
7. *Sealing Ring (PTFE®)*
8. *Support Ring (SS)*
9. *Transfer Pin (SS)*
10. *Top Flange (SS)*
11. *Diaphragm (Neoprene)*
12. *O-Ring (Viton)*
13. *O-Ring (Viton)*
14. *High Pressure Port (SS)**
15. Clamping Screw (CS)

Note : *wetted parts* are mentioned in italics.

*Pressure ports are brazed with flange

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

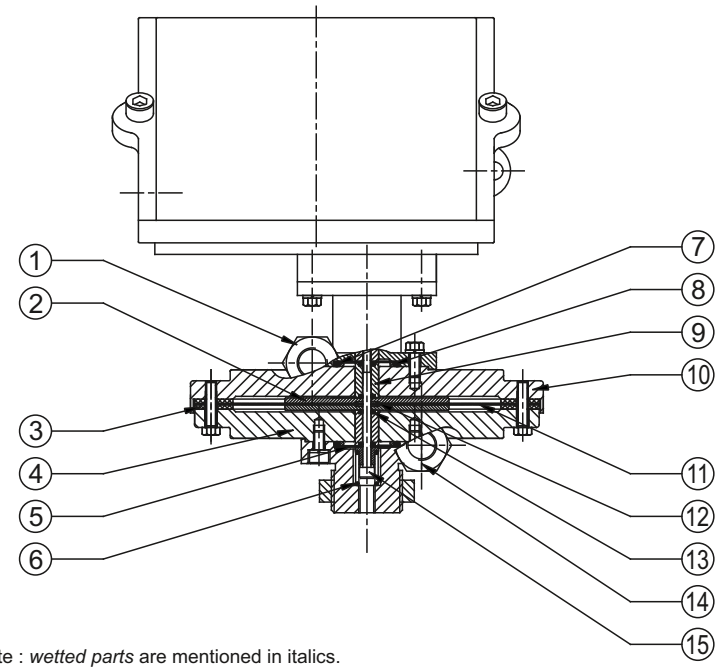
LOW DP HIGH PROOF PRESSURE DIFFERENCE SWITCHES MD/MT

Orion® INSTRUMENTS

CE

MT

PRESSURE CAPSULE DETAILS

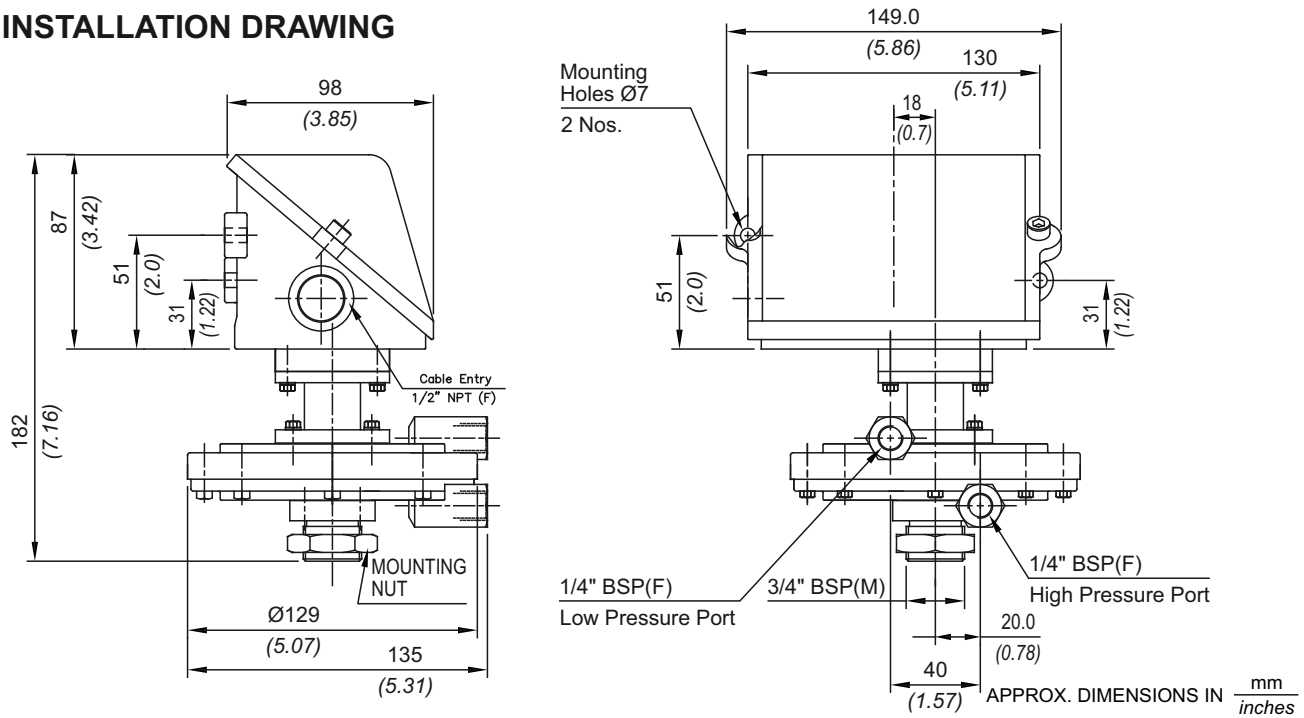


No. Description

1. Low Pressure Port (SS)*
2. *Support Plate (SS)*
3. *Gasket (PTFE®)*
4. *Bottom Flange (SS)*
5. *Sealing Diaphragm (Neoprene)*
6. Support Spring (SS)
7. *Sealing Ring (PTFE®)*
8. *Support Ring (SS)*
9. *Transfer Pin (SS)*
10. *Top Flange (SS)*
11. *Diaphragm (Neoprene)*
12. *O-Ring (Viton)*
13. *O-Ring (Viton)*
14. *High Pressure Port (SS)**
15. Clamping Screw (CS)

Note : *wetted parts* are mentioned in italics.

INSTALLATION DRAWING



MD/MT LOW DP HIGH PROOF PRESSURE DIFFERENCE SWITCHES

RANGE SELECTION TABLE

Range Code	Range mbar *("wc)*	Differential* mbar *(" wc)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A1" microswitch	
N02	1.5 - 15 *(0.602 - 6.02)*	3 *(1.204)*	20 *(290.076)*
N03	5 - 25 *(2.007 - 10.037)*	5 *(2.007)*	20 *(290.076)*
N05	10 - 50 *(4.015 - 20.073)*	5 *(2.007)*	20 *(290.076)*
N10	10 - 100 *(4.015 - 40.146)*	10 *(4.015)*	20 *(290.076)*
N15	10 - 150 *(4.015 - 60.22)*	10 *(4.015)*	20 *(290.076)*
N25	20 - 250 *(8.03 - 100.36)*	15 *(4.015)*	20 *(290.076)*
N35	50 - 350 *(20.073 - 140.51)*	35 *(14.05)*	20 *(290.076)*

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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL LOW DP HIGH PROOF PRESSURE DIFFERENCE 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
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**MD** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529 **MT** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads ***2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads ***8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads *Not available for MT model For dual cable entry contact Sales Office	**DF1** = pressure difference switch, fixed differential without scale **DF2** = pressure difference switch, fixed differential with scale in mbar **DF3** = pressure difference switch, fixed differential with scale in "Wc ***DA1** = pressure difference switch, adjustable differential without scale ***DA2** = pressure difference switch, adjustable differential with scale in mbar ***DA3** = pressure difference switch, adjustable differential with scale in "Wc *Available with A6, A7, A9 & B9 (in group 6) only	**N02** = (1.5 - 15) **N03** = (5 - 25) **N05** = (10 - 50) **N10** = (10 - 100) **N15** = (10 - 150) **N25** = (20 - 250) **N35** = (50 - 350)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements ***B9** = 2SPDT Switching Elements for adjustable differential * For detailed specifications of microswitches, please refer note under Range Selection Table	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F) More options available. Please contact sales office.	**0** = Neoprene **1** = PTFE

eg. A low DP high proof pressure difference switch, with ½" NPT cable entry in aluminium housing as 1SPDT pressure switch, fixed differential without scale, having 5 mbar to 25 mbar pressure range, with 15 Amp. microswitch, SS316 pressure housing with ¼" 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
☐	MD	1	DF1	N03	A1	S1	0

Please specify full model number to avoid ambiguity.

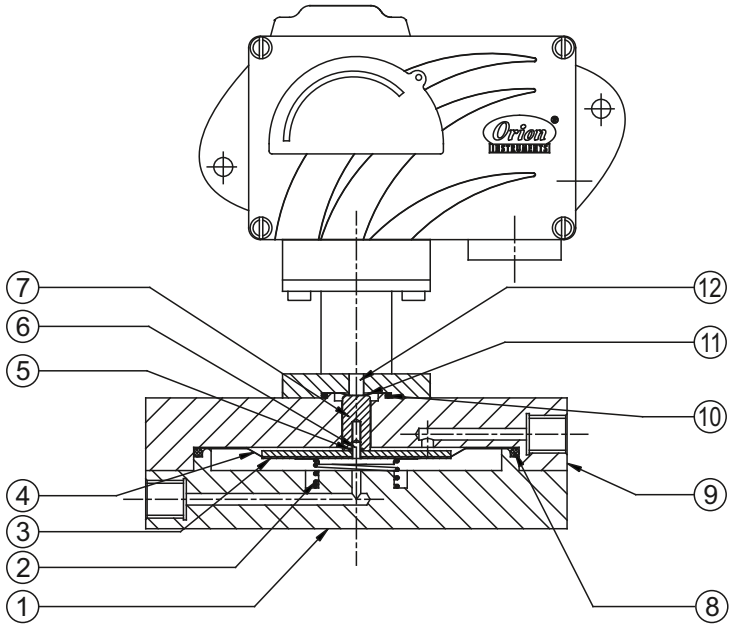
MD/MT LOW ΔP HIGH PROOF PRESSURE DIFFERENCE SWITCHES

MD

CE

Orion® INSTRUMENTS

PRESSURE CAPSULE DETAILS

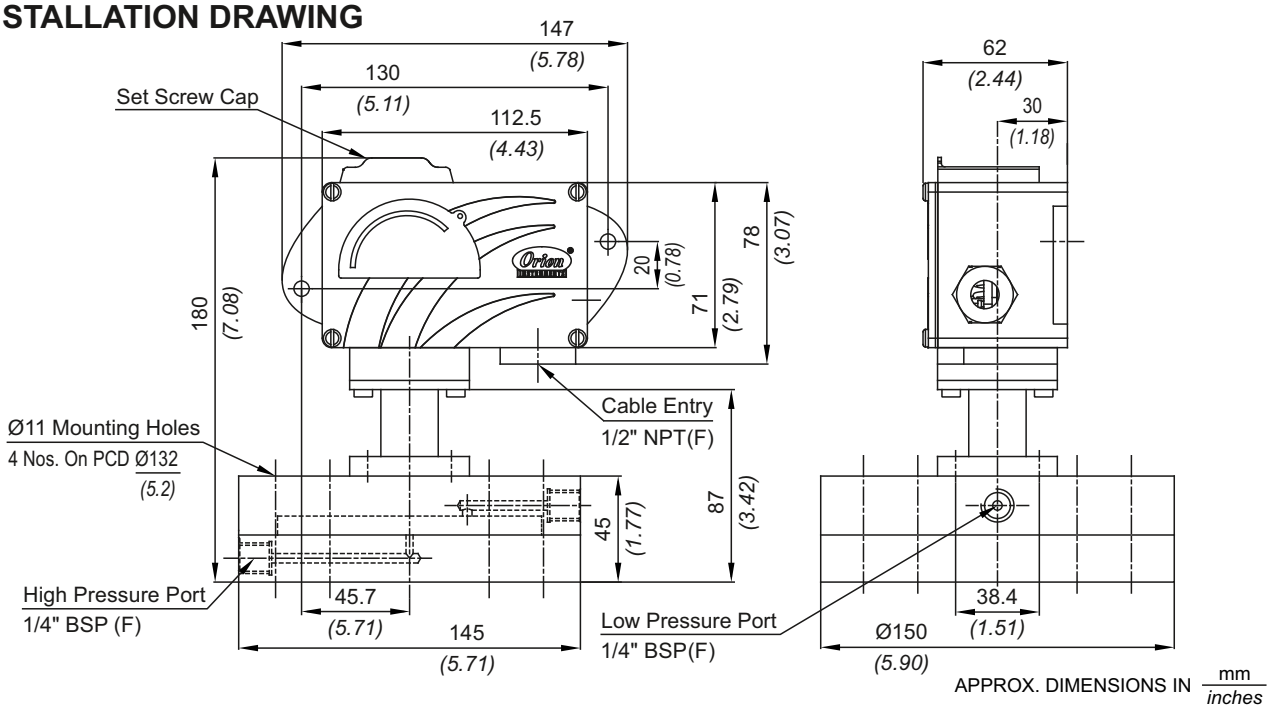


No. Description

1. *High Pressure Housing (SS)*
2. *Spring (SS)*
3. *HP Plunger (SS)*
4. *Diaphragm (PTFE®)*
5. *Plunger O-Ring (Viton)*
6. *Plunger Screw (SS)*
7. *LP Plunger (SS)*
8. *Main Sealing O-Ring (PTFE®)*
9. *Low Pressure Housing (SS)*
10. *Sealing O-Ring (PTFE®)*
11. *Diaphragm (PTFE®)*
12. Small Plunger (SS)

Note : *wetted parts* are mentioned in italics.

INSTALLATION DRAWING



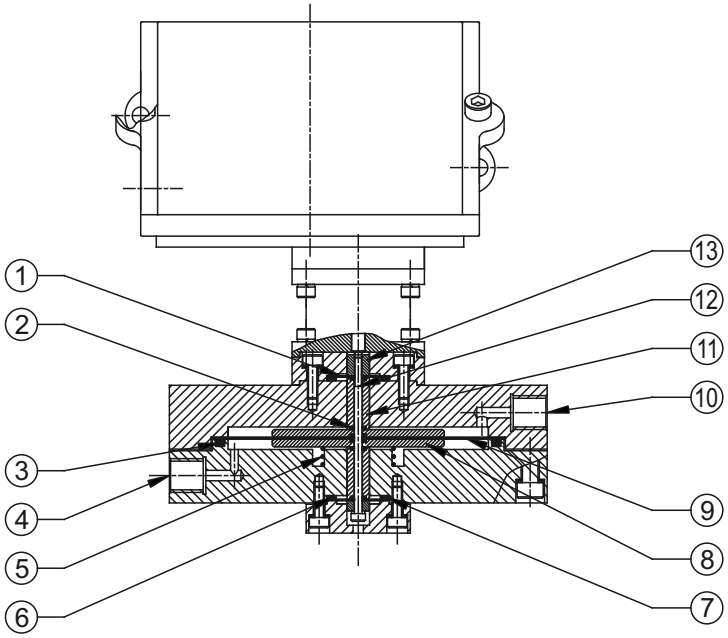
APPROX. DIMENSIONS IN mm / *inches*

Orion® INSTRUMENTS

CE

MT

PRESSURE CAPSULE DETAILS

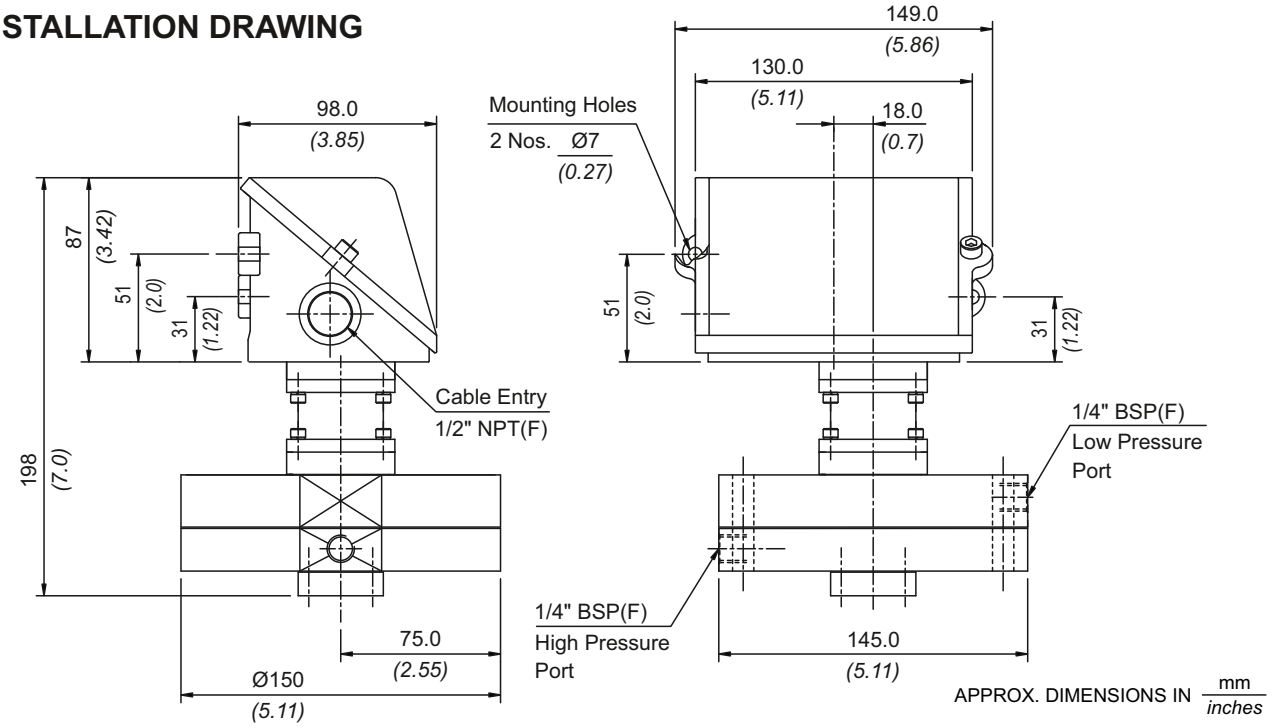


No. Description

1. *Sealing Diaphragm (Neoprene)*
2. *O-Ring (Viton)*
3. *O-Ring (PTFE®)*
4. *High Pr. Flange (SS)*
5. *Support Spring (SS)*
6. *Support Ring (SS)*
7. *Sealing Ring (PTFE®)*
8. *Support Plate (SS)*
9. *Diaphragm (Neoprene)*
10. *Low Pr. Flange (SS)*
11. *Transfer Pin (SS)*
12. Clamping Screw (CS)
13. Lock Nut (SS)

Note : *wetted parts* are mentioned in italics.

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

MD/MT LOW ΔP HIGH PROOF PRESSURE DIFFERENCE SWITCHES

RANGE SELECTION TABLE

Range Code	Range mbar *("wc)*	Differential* mbar *("wc)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A1" microswitch	
M03	5 - 25 *(2.007 - 10.037)*	5 *(2.007)*	100 *(1450.38)*
M05	10 - 50 *(4.015 - 20.073)*	5 *(2.007)*	100 *(1450.38)*
M10	10 - 100 *(4.015 - 40.146)*	10 *(4.015)*	100 *(1450.38)*
M15	10 - 150 *(4.015 - 60.22)*	10 *(4.015)*	100 *(1450.38)*
M25	20 - 250 *(8.03 - 100.36)*	15 *(6.022)*	100 *(1450.38)*
M35	50 - 350 *(20.073 - 140.51)*	35 *(14.05)*	100 *(1450.38)*

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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL LOW ΔP HIGH PROOF PRESSURE DIFFERENCE SWITCHES

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8
Non standard allocation	Gas Group Classification	Cable Entry Size	Switch Type	Range Code (values in mbar)	Microswitch Type	Pressure Port Material / Size	Diaphragm
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**MD** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529 **MT** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads ***2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads ***8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads *Not available for MT model For dual cable entry contact Sales Office	**DF1** = pressure difference switch, fixed differential without scale **DF2** = pressure difference switch, fixed differential with scale in mbar **DF3** = pressure difference switch, fixed differential with scale in "Wc ***DA1** = pressure difference switch, adjustable differential without scale ***DA2** = pressure difference switch, adjustable differential with scale in mbar ***DA3** = pressure difference switch, adjustable differential with scale in "Wc *Available with A6, A7, A9 & B9 (in group 6) only	**M03** = (5 - 25) **M05** = (10 - 50) **M10** = (10 - 100) **M15** = (10 - 150) **M25** = (20 - 250) **M35** = (50 - 350)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements ***B9** = 2SPDT Switching Elements for adjustable differential * For detailed specifications of microswitches, please refer note under Range Selection Table	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F) More options available. Please contact sales office.	**0** = Neoprene **1** = PTFE

eg. A hydraulic diaphragm pressure switch, with ½" NPT cable entry in aluminium housing as 1SPDT pressure switch, fixed differential without scale, having 20 mbar to 250 mbar pressure range, with 15 Amp. microswitch, SS316 pressure housing with ¼" BSP port size shall be specified by

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8
☐	MD	1	PF1	M25	A1	S1	0

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.

Bulletin No. KA220802

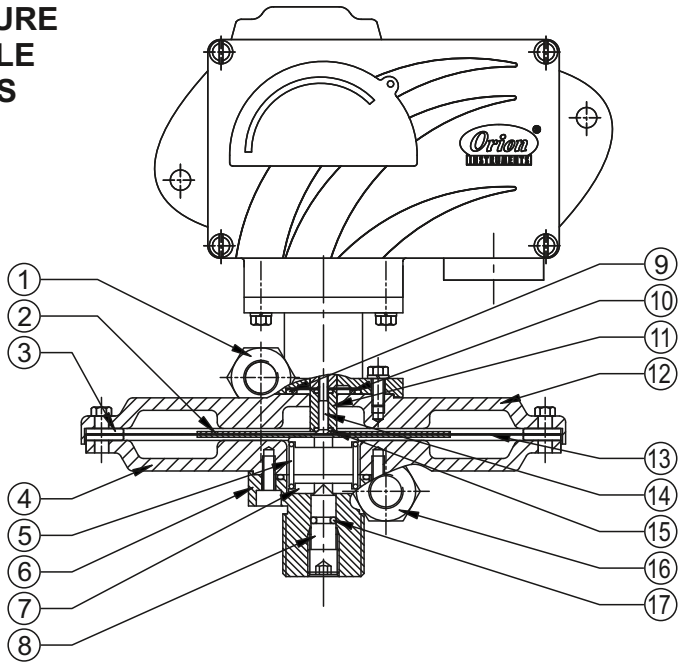
MD/MT ULTRA LOW RANGE PRESSURE DIFFERENCE SWITCHES

MD

CE

Orion® INSTRUMENTS

PRESSURE CAPSULE DETAILS



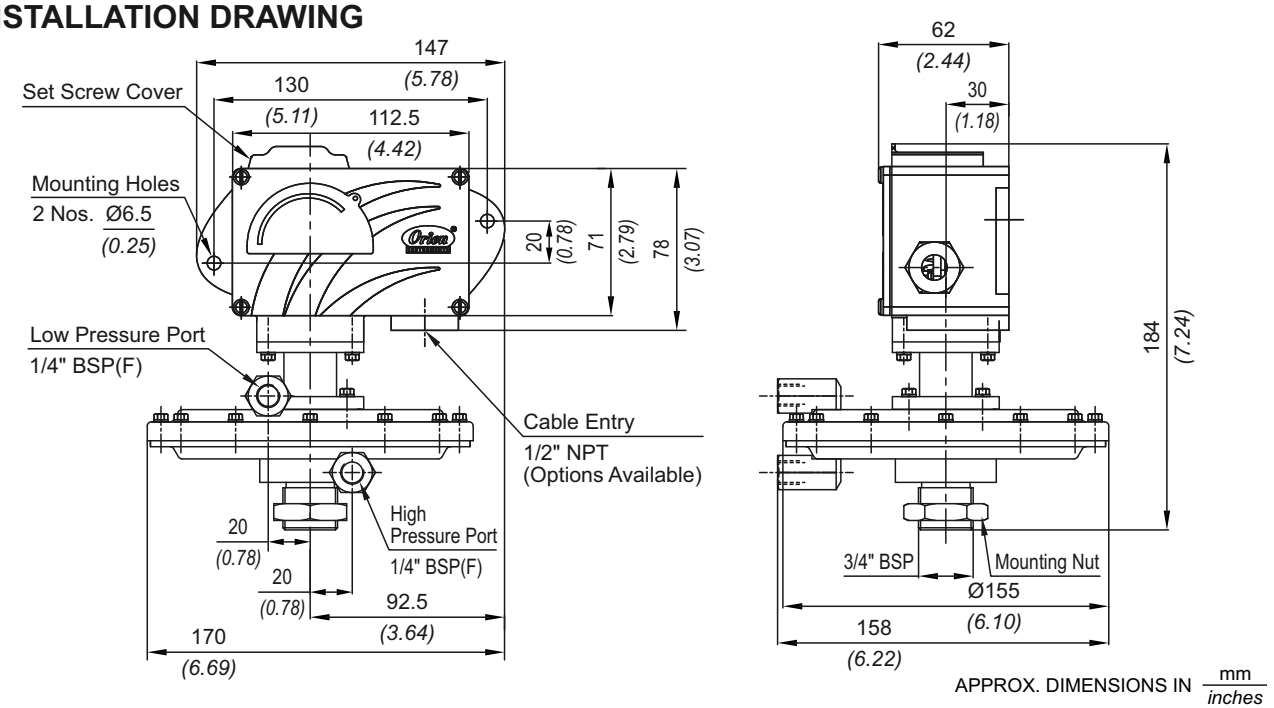
No. Description

1. *Low Pressure Port (SS)**
2. *Support Plate (SS)*
3. *Gasket (PTFE®)*
4. *Bottom Flange (SS)*
5. *Support Spring (SS)*
6. *Mounting Adaptor (SS)*
7. *Spring Support (SS)*
8. *Spring Location Pin (SS)*
9. *Sealing Ring (PTFE®)*
10. *Support Ring (SS)*
11. *Transfer Pin (SS)*
12. *Top Flange (SS)*
13. *Diaphragm (Neoprene)*
14. Clamping Screw (CS)
15. *O-Ring (Viton)*
16. *High Pressure Port (SS)**
17. *O-Ring (Viton)*

Note : *wetted parts* are mentioned in italics.

*Pressure ports are brazed with flange

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

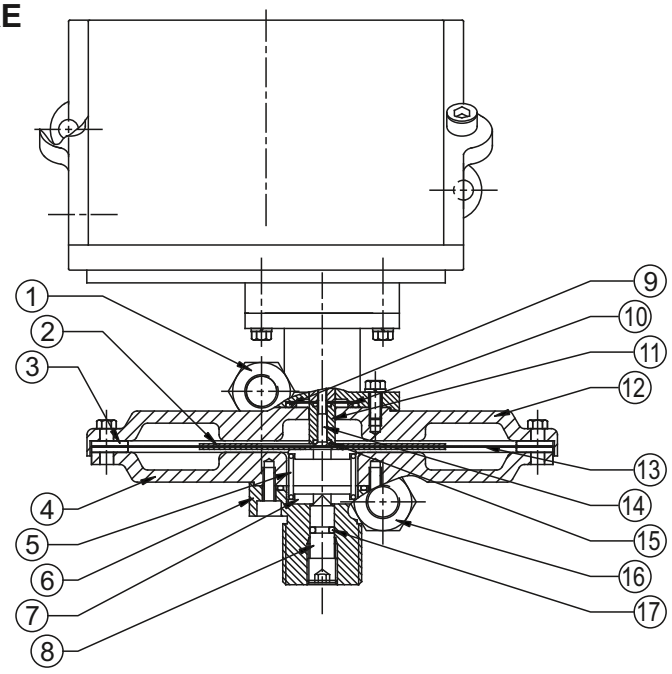
ULTRA LOW RANGE PRESSURE DIFFERENCE SWITCHES MD/MT

Orion® INSTRUMENTS

CE

MT

PRESSURE CAPSULE DETAILS



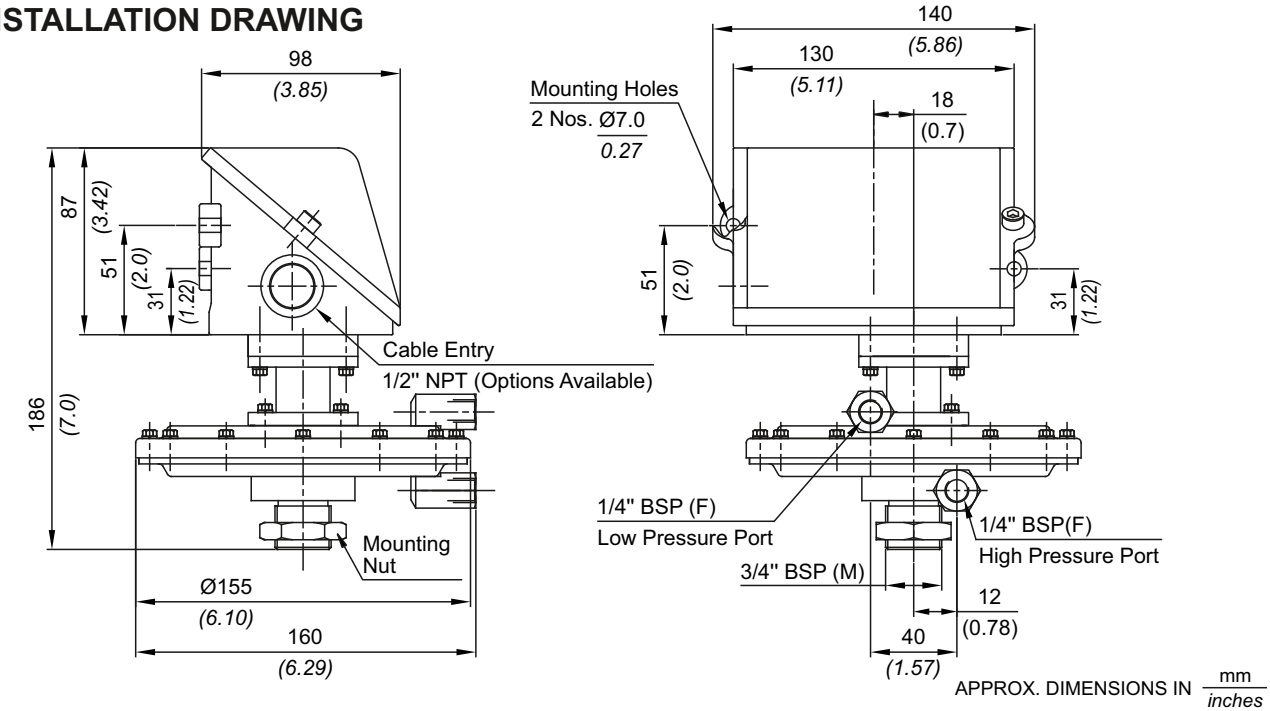
No. Description

1. *Low Pressure Port (SS)**
2. *Support Plate (SS)*
3. *Gasket (PTFE®)*
4. *Bottom Flange (SS)*
5. *Support Spring (SS)*
6. *Mounting Adaptor (SS)*
7. *Spring Support (SS)*
8. *Spring Locating Pin (SS)*
9. *Sealing Ring (PTFE®)*
10. *Support Ring (SS)*
11. *Transfer Pin (SS)*
12. *Top Flange (SS)*
13. *Diaphragm (Neoprene)*
14. Clamping Screw (CS)
15. *O-Ring (Viton)*
16. *High Pressure Port (SS)**
17. *O-Ring (Viton)*

Note : *wetted parts* are mentioned in italics.

*Pressure ports are brazed with flange

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / inches

MD/MT ULTRA LOW RANGE PRESSURE DIFFERENCE SWITCHES

RANGE SELECTION TABLE

Range Code	Range mbar *("Wc)*	Differential* mbar *("Wc)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A1" microswitch	
U15	0.4 - 1.5 *(0.16 - 0.6)*	0.50 *(0.20)*	*0.5 (7.25)*
U25	0.5 - 2.5 *(0.2 - 1.0)*	0.80 *(0.32)*	*0.5 (7.25)*
U40	1.0 - 4.0 *(0.4 - 1.6)*	1.20 *(0.48)*	*0.5 (7.25)*

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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL ULTRA LOW RANGE PRESSURE DIFFERENCE 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
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**MD** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529 **MT** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads ***2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads ***8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads *Not available for MT model For dual cable entry contact Sales Office	***DF2** = pressure difference switch, fixed differential with scale in mbar ***Df3** = pressure difference switch, fixed differential with scale in "Wc **DA2** = pressure difference switch, adjustable differential with scale in **DA3** = pressure difference switch, adjustable differential with scale in "Wc *Available with A6, A7, A9 & B9 (in group 6) only	**U15** = (0.4 - 1.5) **U25** = (0.5 - 2.5) **U40** = (1.0 - 4.0)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements ***B9** = 2SPDT Switching Elements for adjustable differential * For detailed specifications of microswitches, please refer note under Range Selection Table	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F)	**0** = Neoprene **1** = TPTFE

eg. Industrial pressure switch with ½" NPT cable entry in aluminium housing as 1SPDT pressure switch, fixed differential with scale in mbar, having 0.16 to 0.60 "Wc pressure range, with 15 Amp. microswitch, SS316 pressure housing with ¼" 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
☐	MD	1	DF2	U15	A1	S1	0

Please specify full model number to avoid ambiguity.

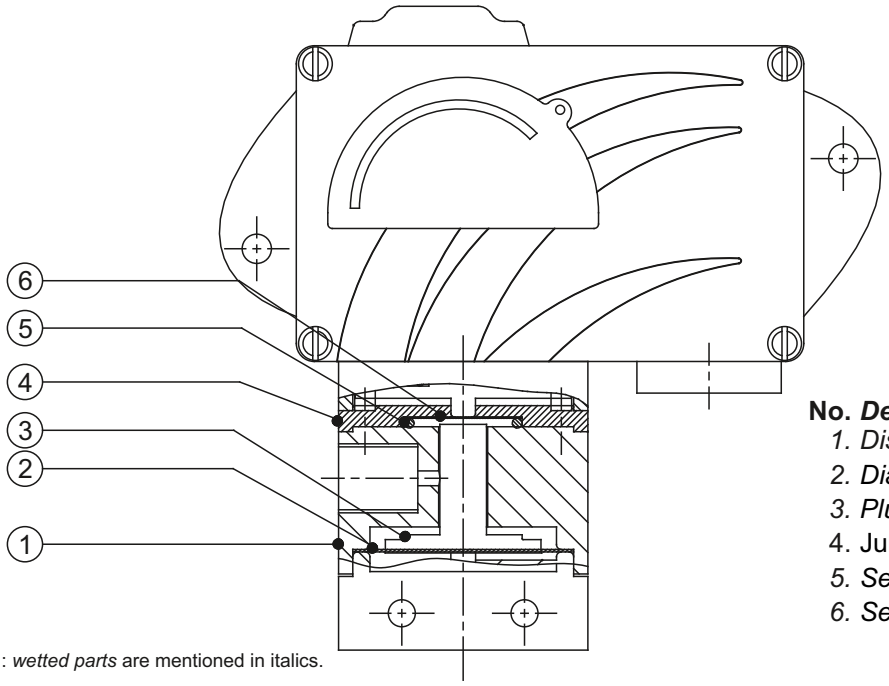
MD/MT VACUUM SWITCHES

MD

CE

Orion® INSTRUMENTS

PRESSURE CAPSULE DETAILS

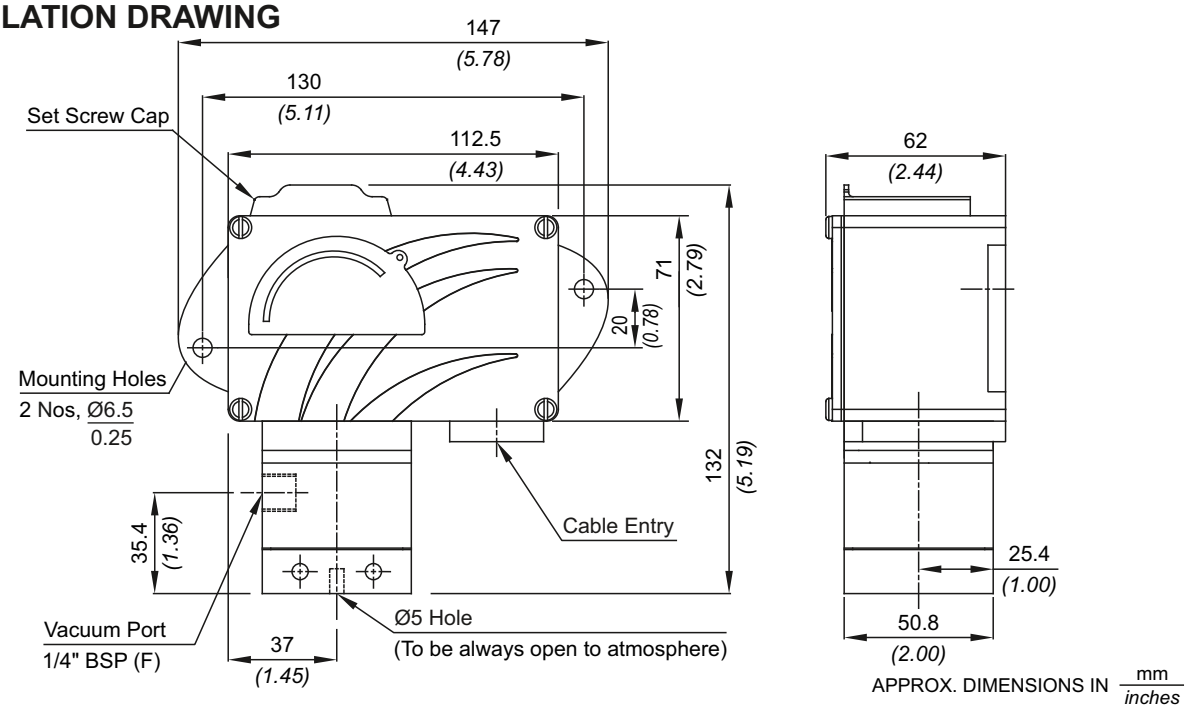


Note : *wetted parts* are mentioned in italics.

No. *Description*

1. *Disc (Al)*
2. *Diaphragm (PTFE®)*
3. *Plunger (SS316)*
4. Junction Plate (Al)
5. *Sealing O-Ring (PTFE®)*
6. *Sealing Diaphragms (PTFE®)*

INSTALLATION DRAWING



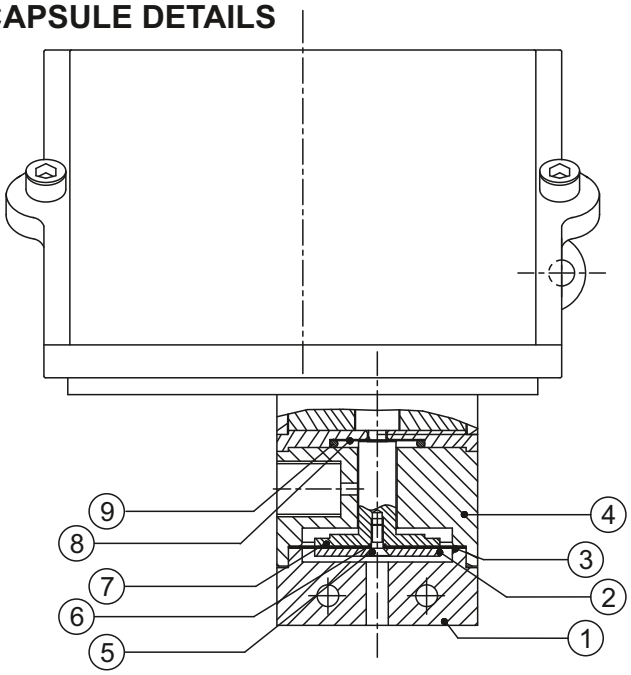
APPROX. DIMENSIONS IN mm / *inches*

Orion® INSTRUMENTS

CE

MT

PRESSURE CAPSULE DETAILS

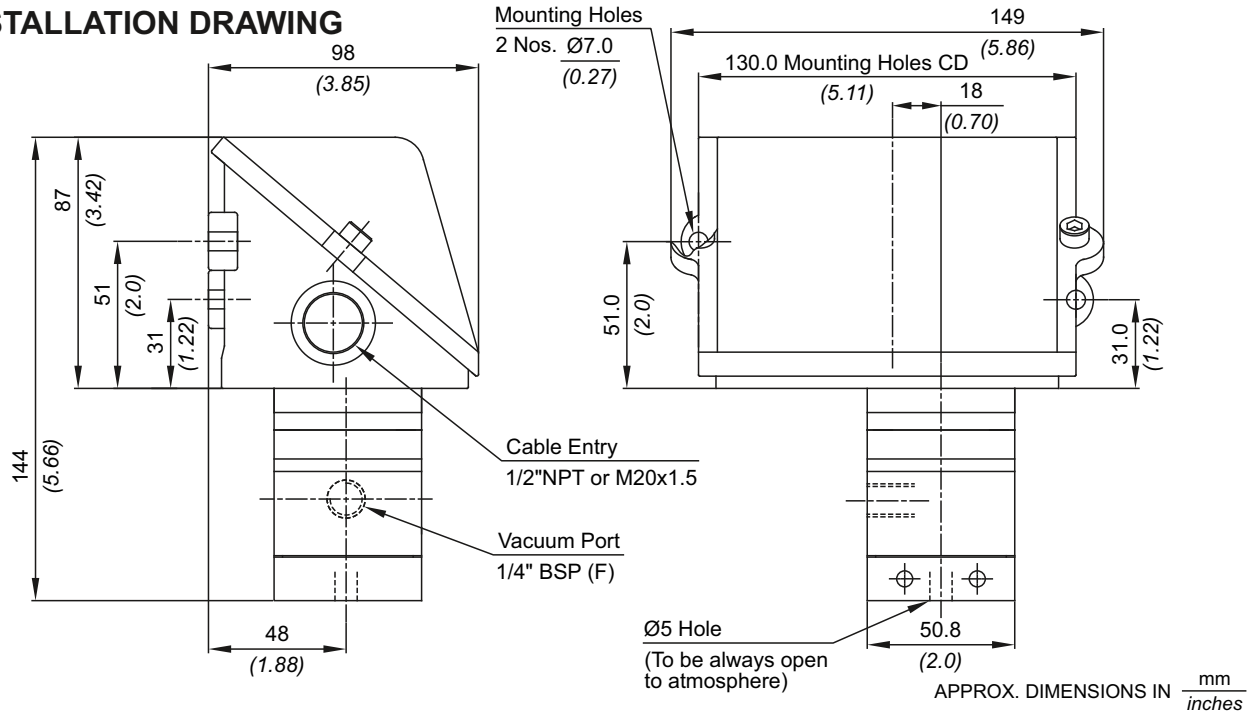


No. Description

1. *Pressure Housing*
2. *HP Plunger (SS316)*
3. *Diaphragm*
4. *Disc*
5. *CSK Screw (SS)*
6. *O-Ring (PTFE®)*
7. *LP Plunger (SS316)*
8. *Sealing Diaphragm (PTFE®)*
9. *Sealing O-Ring (PTFE®)*

Note : *wetted parts* are mentioned in italics.

INSTALLATION DRAWING



MD/MT VACUUM SWITCHES

RANGE SELECTION TABLE

Range Code	Range mm Hg *(" Hg)*	Differential* mm Hg *("Hg)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A1" microswitch	
V00	† 760 - 100 *(29.92 - 3.94)*	30 *(1.181)*	12 *(174.05)*

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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL VACUUM 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 mmHg)	Microswitch Type	Pressure Port Material / Size	Diaphragm
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**MD** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529 **MT** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads ***2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads ***8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads *Not available for MT model For dual cable entry contact Sales Office	**VF1** = vacuum switch, fixed differential without scale **VF2** = vacuum switch, fixed differential with scale in mmHg **VF3** = vacuum switch, fixed differential with scale in "Hg ***VA1** = vacuum switch, adjustable differential without scale ***VA2** = vacuum switch, adjustable differential with scale in mmHg ***VA3** = vacuum switch, adjustable differential with scale in "Hg *Available with A6, A7, A9 & B9 (in group 6) only	**V00** = († 760 - 100)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements ***B9** = 2SPDT Switching Elements for adjustable differential * For detailed specifications of microswitches, please refer note under Range Selection Table	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F) Please refer page no. 290 & 291 for more pressure port options	**0** = Neoprene **1** = PTFE

eg. A vacuum industrial switch, with ½" NPT cable entry in aluminium housing as 1SPDT pressure switch, fixed differential without scale, having 760 mmHg to 100 mmHg vacuum range, with 15 Amp. microswitch, SS316 pressure housing with ¼" 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
☐	MD	1	VF1	V00	A1	S1	0

Please specify full model number to avoid ambiguity.

Bulletin No. KA220802

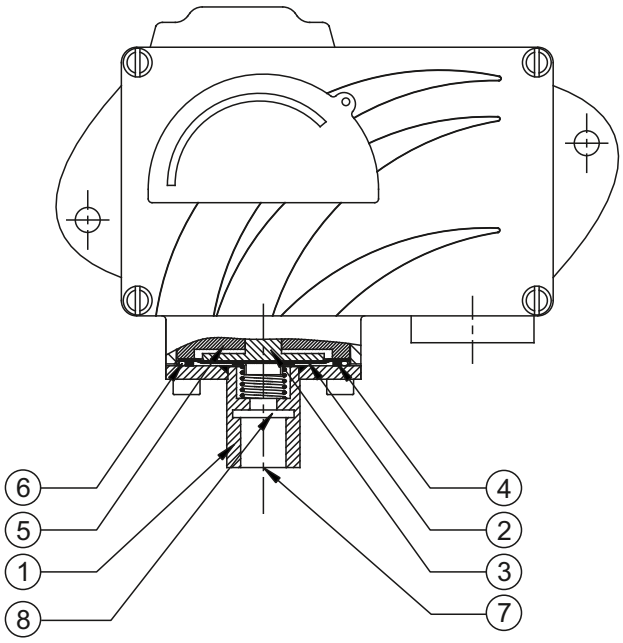
MD/MT HIGH RANGE COMPOUND SWITCHES

MD

CE

Orion® INSTRUMENTS

PRESSURE CAPSULE DETAILS

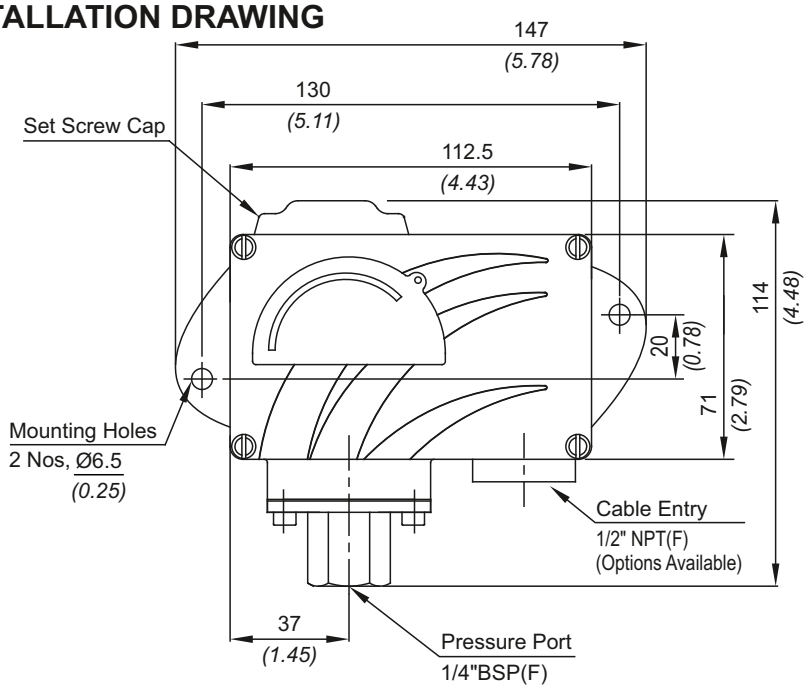


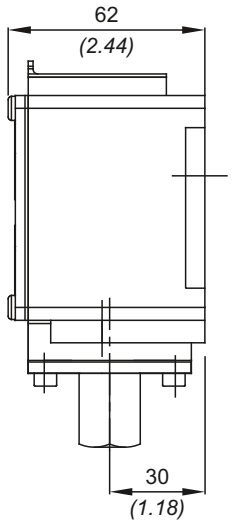
No. Description

1. *Pressure Housing (SS316)*
2. *Diaphragm (PTFE®)*
3. Plunger (SS)
4. *Steel Ring (SS316)*
5. *O-Ring (PTFE®)*
6. Disc (Al)
7. Bottom Spring (SS)
8. Support Plunger (SS)

Note : *wetted parts* are mentioned in italics.

INSTALLATION DRAWING





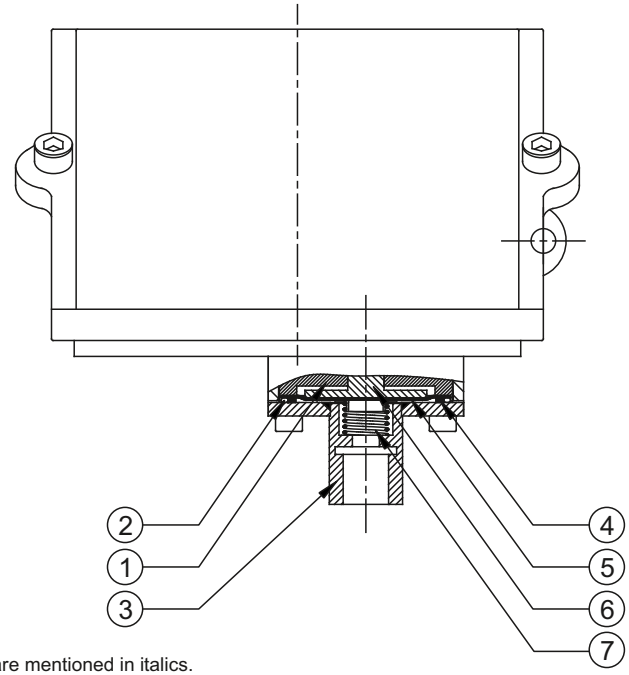
APPROX. DIMENSIONS IN mm / *inches*

Orion® INSTRUMENTS

CE

MT

PRESSURE CAPSULE DETAILS

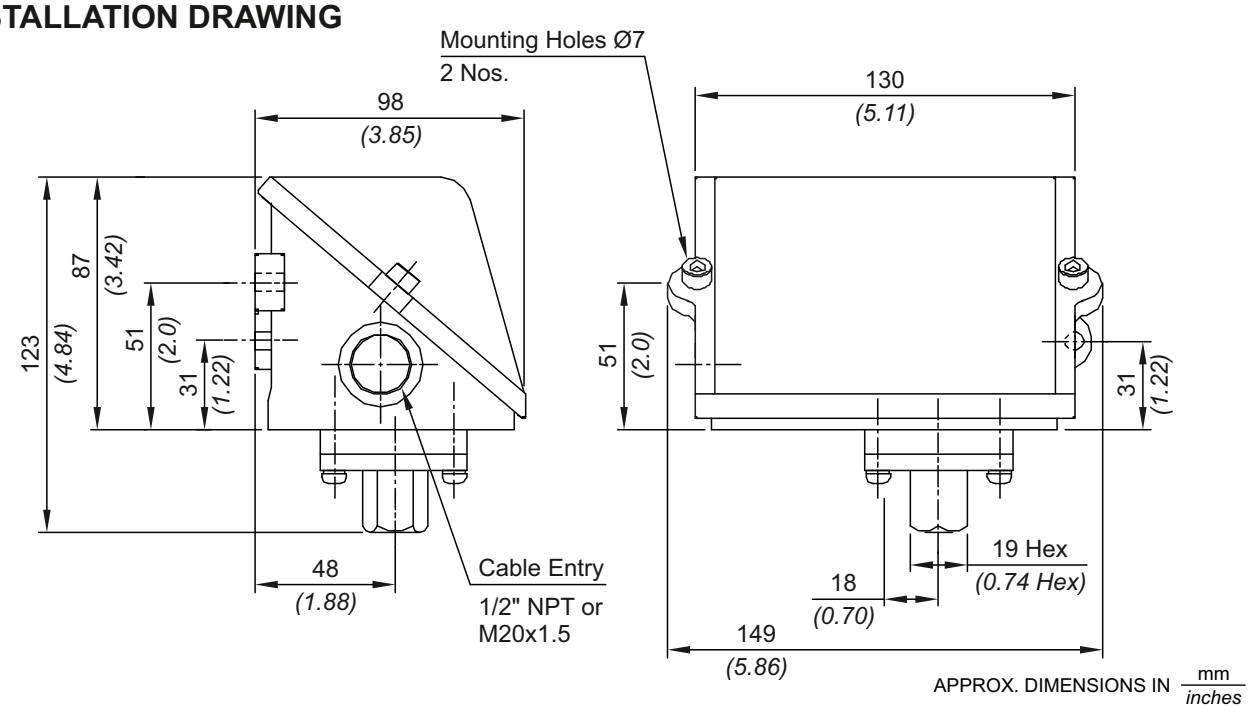


No. Description

1. Disc (Al)
2. *O-Ring (PTFE®)*
3. *Pressure Housing (SS316)*
4. *Steel Ring (SS316)*
5. *Diaphragm (PTFE®)*
6. Plunger (SS)
7. *Spring (SS316)*

Note : *wetted parts* are mentioned in italics.

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

MD/MT HIGH RANGE COMPOUND SWITCHES

RANGE SELECTION TABLE

Range Code	Range bar *(psi)*	Differential* bar *(psi)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A1" microswitch	
C01	-1 to 1.0 *(-14.50 - 14.50)*	0.2 *(2.90)*	12 *(174.05)*
C02	-1 to 1.5 *(-14.50 to 21.75)*	0.3 *(4.35)*	12 *(174.05)*
C03	-1 to 2.6 *(-14.50 - 37.71)*	0.4 *(5.80)*	12 *(174.05)*
C04	-1 to 3.6 *(-14.50 - 52.26)*	0.6 *(8.70)*	12 *(174.05)*
C07	-1 to 7 *(-14.50 - 101.526)*	0.8 *(11.60)*	12 *(174.05)*

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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL HIGH RANGE COMPOUND SWITCHES

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8
Non standard allocation	Gas Group Classification	Cable Entry Size	Switch Type	Range Code (values in bar)	Microswitch Type	Pressure Port Material / Size	Diaphragm
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**MD** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529 **MT** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads ***2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads ***8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads *Not available for MT model For dual cable entry contact Sales Office	**CF1** = compound switch, fixed differential without scale **CF2** = compound switch, fixed differential with scale in bar ***CA1** = compound switch, adjustable differential without scale ***CA2** = compound switch, adjustable differential with scale in bar *Available with A6, A7, A9 & B9 (in group 6) only	**C01** = (-1 to 1.0) **C02** = (-1 to 1.5) **C03** = (-1 to 2.6) **C04** = (-1 to 3.6) **C07** = (-1 to 7)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements ***B9** = 2SPDT Switching Elements for adjustable differential * For detailed specifications of microswitches, please refer note under Range Selection Table	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F) More options available. Please contact sales office.	**0** = Neoprene **1** = PTFE **2** = SS 316L

eg. An industrial switch for gas group IIC, with ½" NPT cable entry in aluminium housing as 1SPDT pressure switch, having -1 bar to +1 bar pressure range, with 15 Amp. microswitch, SS316 pressure housing with ¼" 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
☐	MD	1	CF1	C01	A1	S1	0

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.

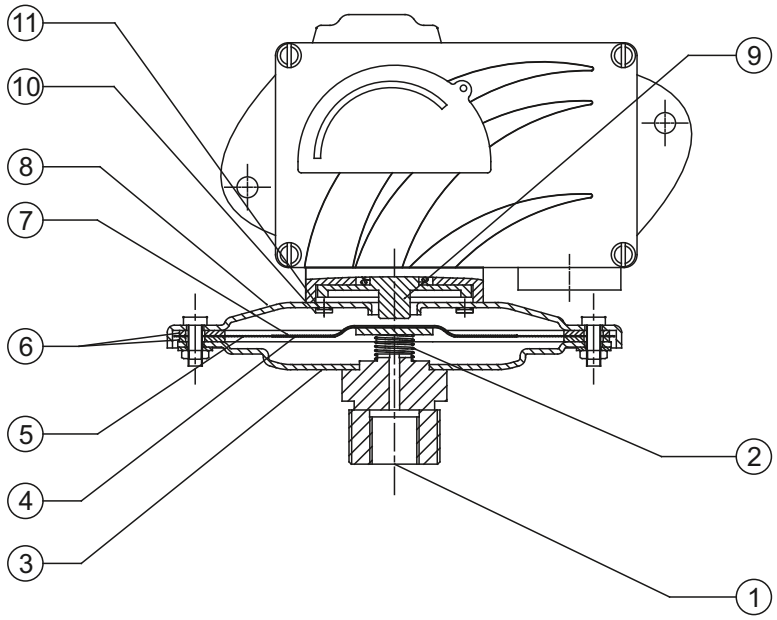
MD/MT LOW RANGE COMPOUND SWITCHES

MD

CE

Orion® INSTRUMENTS

PRESSURE CAPSULE DETAILS



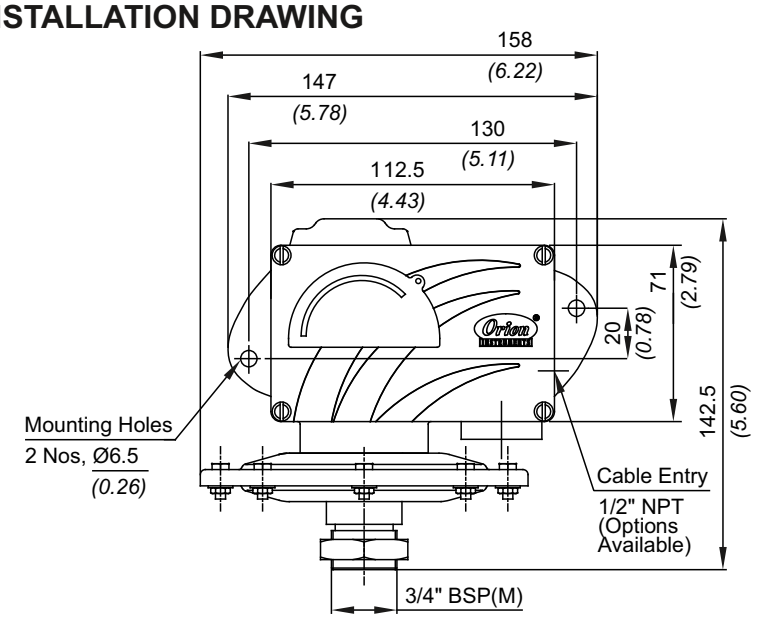
No. Description

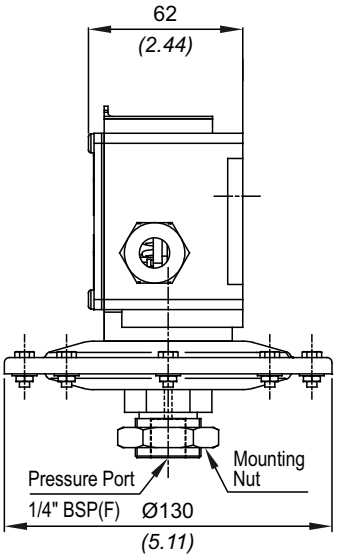
1. *Pressure Port (SS)*
2. *Support Spring (SS)*
3. *Bottom Flange (SS)*
4. *Support Plate (Al)*
5. *Diaphragm (Neoprene)*
6. *Gasket (PTFE)*
7. Top plate (Aluminium)
8. Top flange (SS)
9. Plunger (SS)
10. Top flange screw (SS)
11. Sealing O-ring (Nitrile)

Note : *wetted parts* are mentioned in italics.

*Pressure ports are brazed with flange

INSTALLATION DRAWING





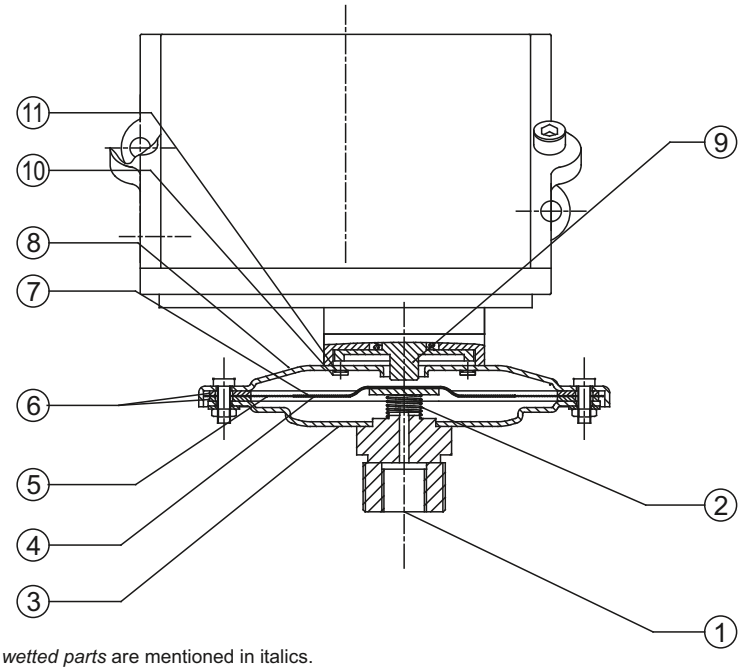
APPROX. DIMENSIONS IN mm / *inches*

Orion® INSTRUMENTS

CE

MT

PRESSURE CAPSULE DETAILS



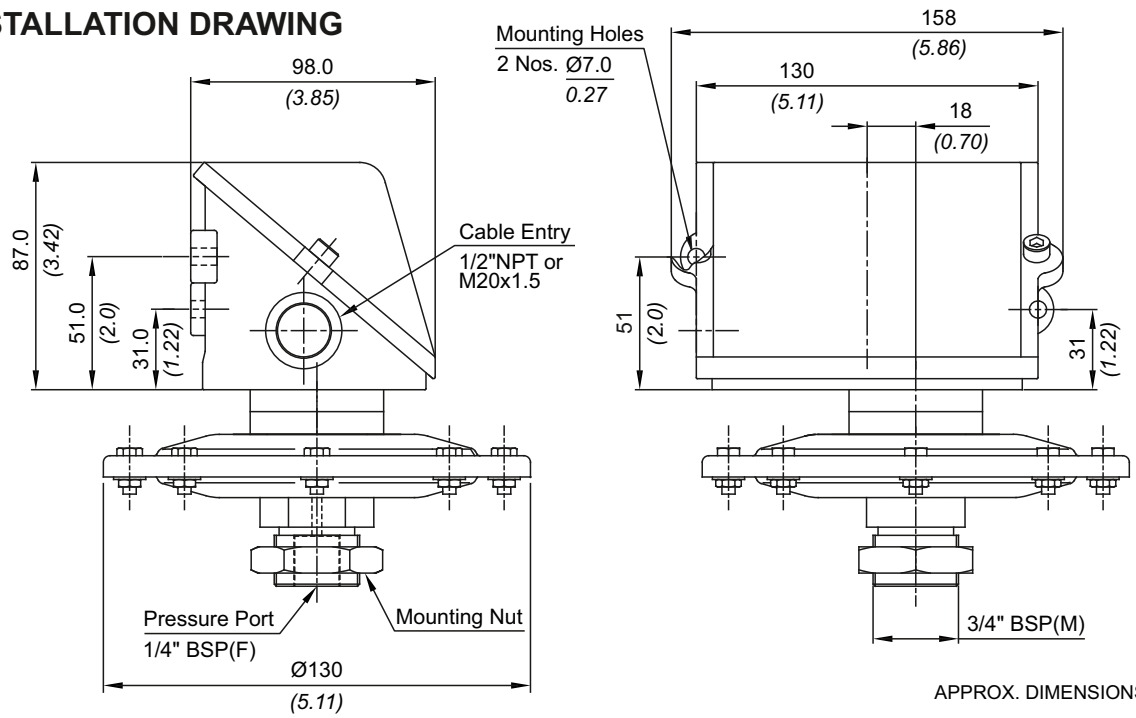
No. Description

1. *Pressure Port (SS)*
2. *Support Spring (SS)*
3. *Bottom Flange (SS)*
4. *Support Plate (Al)*
5. *Diaphragm (Neoprene)*
6. *Gasket (PTFE)*
7. Top Plate (Aluminium)
8. Top Flange (*SS*)
9. Plunger
10. Top Flange Screw (*SS*)
11. Sealing O-Ring (Nitrile)

Note : *wetted parts* are mentioned in italics.

*Pressure ports are brazed with flange

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

MD/MT LOW RANGE COMPOUND SWITCHES

RANGE SELECTION TABLE

Range Code	Range mm wc *("wc)*	Differential* mm wc *("wc)*	Maximum Working Pressure bar *(psi)*
		Approximate Maximum for "A1" microswitch	
CL2	-150 to 150 *(-5.905 to 5.905)*	40 *(1.605)*	2 *(29.00)*
CL3	-250 to 250 *(-9.842 to 9.842)*	60 *(2.410)*	2 *(29.00)*
CL5	-500 to 500 *(-19.685 to 19.685)*	100 *(3.937)*	2 *(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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL LOW RANGE COMPOUND SWITCHES

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8
Non standard allocation	Gas Group Classification	Cable Entry Size	Switch Type	Range Code (values in mm wc)	Microswitch Type	Pressure Port Material / Size	Diaphragm
☐ Reserved for non-standard options not covered in catalogue. Will be given by manufacturer, only after agreement of supply details with customer.	**MD** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529 **MT** = Industrial pressure switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads ***2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads ***8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads *Not available for MT model For dual cable entry contact Sales Office	**CF1** = Compound switch, fixed differential without scale **CF2** = Compound switch, fixed differential with scale in bar ***CA1** = compound switch, adjustable differential without scale ***CA2** = compound switch, adjustable differential with scale in bar *Available with A6, A7, A9 & B9 (in group 6) only	**CL2** = (-150 to 150) **CL3** = (-250 to 250) **CL5** = (-510 to 510)	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch ***B7** = 2SPDT Switching Elements ***B9** = 2SPDT Switching Elements for adjustable differential * For detailed specifications of microswitches, please refer note under Range Selection Table	**S1** = SS316 / ¼" BSP(F) **S2** = SS316 / ¼" NPT(F) More options available. Please contact sales office. For additional wetted parts please contact sales office	**0** = Neoprene **1** = PTFE **2** = SS 316L

eg. An industrial switch for gas group IIC, with ½" NPT cable entry in aluminium housing as 1SPDT pressure switch, having -150 to 150 mm wc pressure range, with 15 Amp. microswitch, SS316 pressure housing with ¼" 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
☐	MD	1	CF1	CL2	A1	S1	0

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.

Bulletin No. KA220802

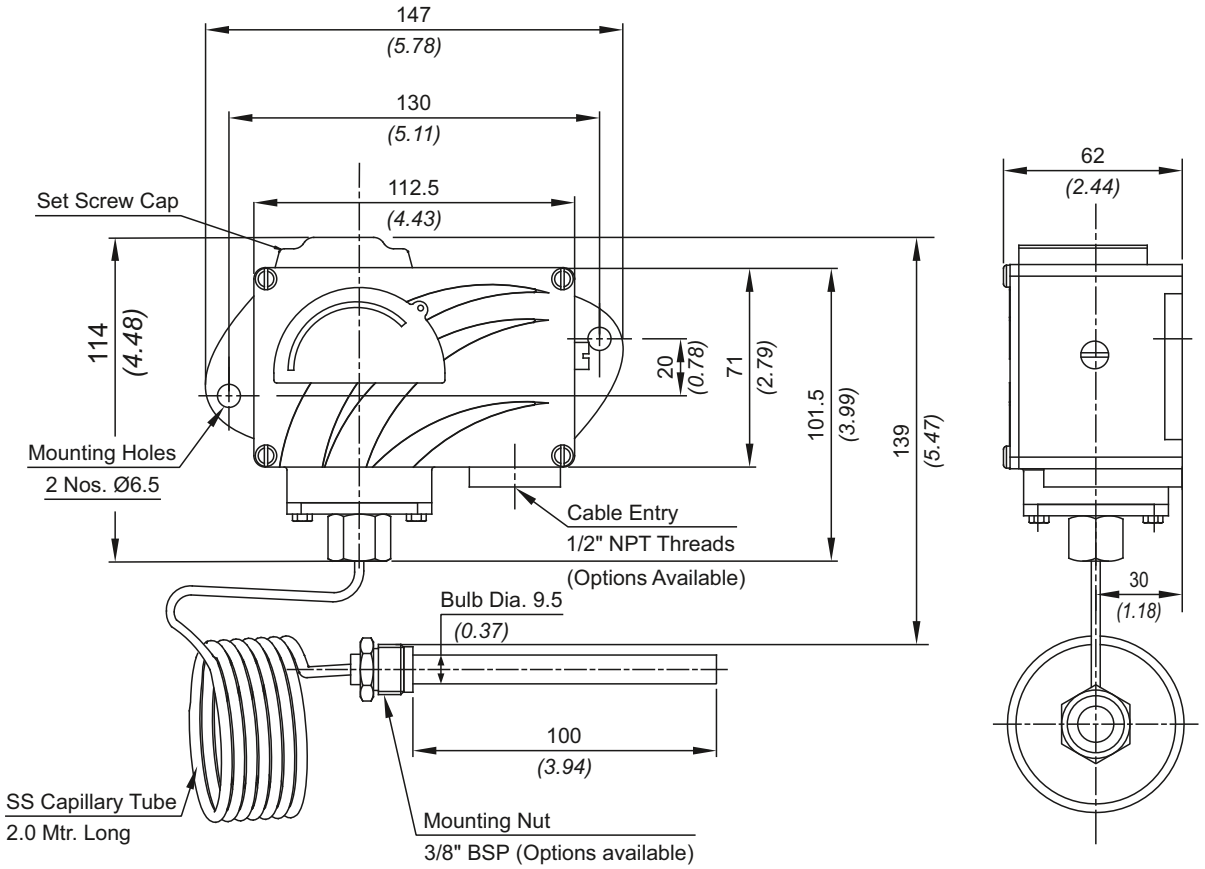
MD/MT TEMPERATURE SWITCHES

MD

CE

Orion® INSTRUMENTS

INSTALLATION DRAWING



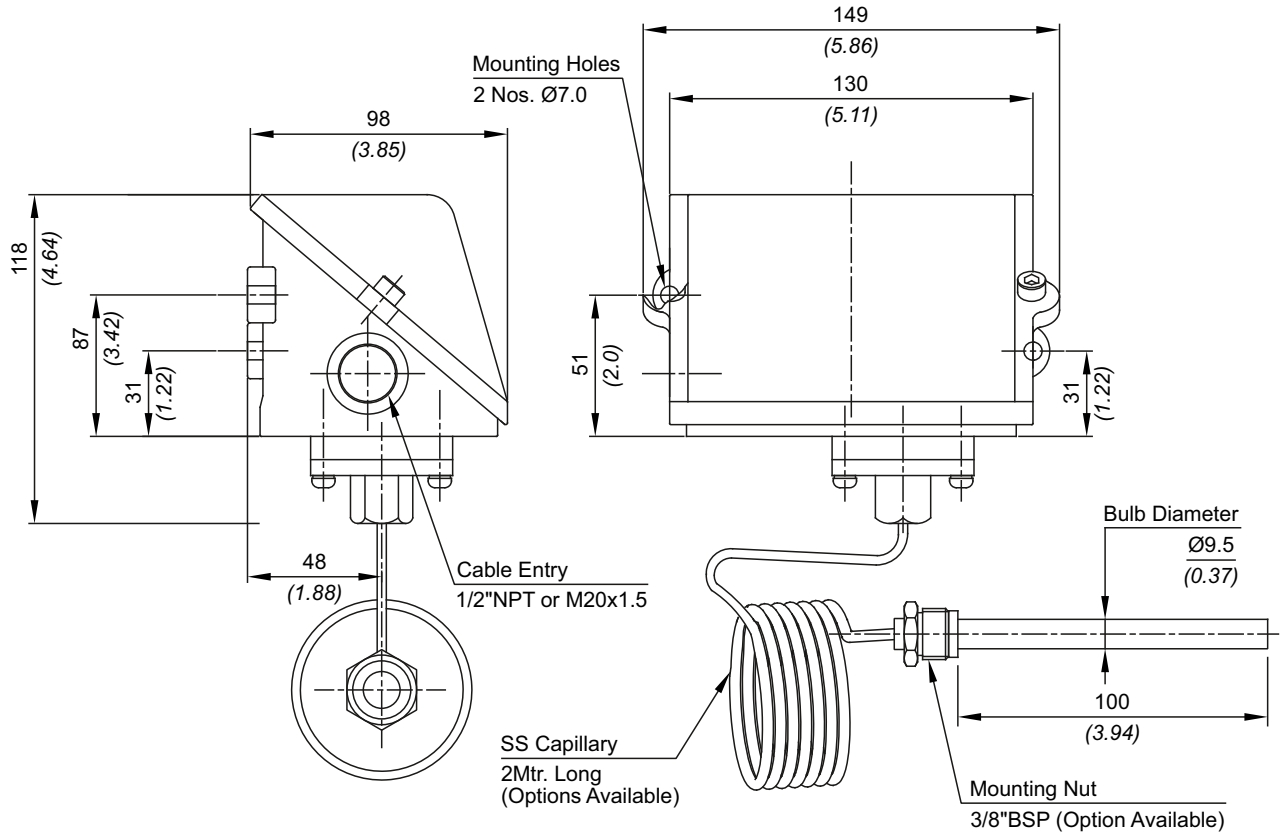
APPROX. DIMENSIONS IN mm / *inches*

Orion INSTRUMENTS

CE

MT

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

MD/MT TEMPERATURE SWITCHES

RANGE SELECTION TABLE

Range Code	Range °C *(°F)*	Differential* °C *(°F)*	Maximum Working Temperature °C *(°F)*
		Approximate Maximum for "A1" microswitch	
T1H	25 - 90 *(77 - 194)*	15 *(59)*	150 *(302)*
T2H	70 - 150 *(158 - 302)*	20 *(68)*	200 *(392)*
T3H	120 - 215 *(248 - 419)*	30 *(86)*	300 *(572)*

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 (hysterisis) 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.

HOW TO ORDER INDUSTRIAL TEMPERATURE SWITCHES

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8
Non standard allocation	Gas Group Classification	Cable Entry Size	Switch Type	Range Code (values in ˚C)	Microswitch Type	Temp. Bulb Material / Size	Capillary Material / Size
☐ Reserved for Non-standard Options not covered in Catalogue. Will Be given by Manufacturer, Only after Agreement of Supply details With customer.	**MD** = Industrial temperature switch with IP66 rated enclosure as per IS/IEC 60529 **MT** = Industrial temperature switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads ***2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads ***8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads *Not available for MT model For dual cable entry contact Sales Office	**TF1** = Temperature Switch, fixed differential without scale **TF2** = Temperature Switch, fixed differential with scale in ˚C ***TA1** = temperature switch, adjustable differential without scale ***TA2** = temperature switch, adjustable differential with scale in ˚C *Available with A6, A7, A9 & B9 (in group 6) only	**T1H** = 25 - 90 **T2H** = 70 - 150 **T3H** = 120 - 215	**A1** = General purpose microswitch, rated at 15 A; 250 VAC ***A6** = Adjustable deadband ***A7** = 2SPDT switching elements ***A8** = General purpose microswitch ***A9** = General purpose microswitch **B**1 = General purpose AC/DC ***B7** = 2SPDT Switching Elements ***B9** = 2SPDT Switching Elements for adjustable differential * For detailed specifications of microswitches, please refer note under Range Selection Table	**B1** = Brass / Dia. 9.5 mm, 123 mm length, with 3/8" BSP (M) thermowell connection **B2** = Brass / Dia. 9.5 mm, 123 mm length, with 3/8" NPT (M) thermowell connection **B3** = Brass / Dia. 9.5 mm, 123 mm length, with 1/2" NPT (M) thermowell connection More options available. Please contact sales office.	**2** = SS316 / 2.0 meter

E.g. An Industrial Temperature Switch, with 1/2"NPT cable entry in aluminum housing as 1 SPDT, fixed differential without scale, having 25˚C to 90˚C temperature range, with 15 Amp. microswitch, with Brass 9.5 mm diameter bulb, having length 123 mm with 3/8"BSP(M),with 2.0 meter SS316 capillary length shall be specified by

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8
☐	MD	1	TF1	T1H	A1	B1	2

Please specify full model number to avoid ambiguity.

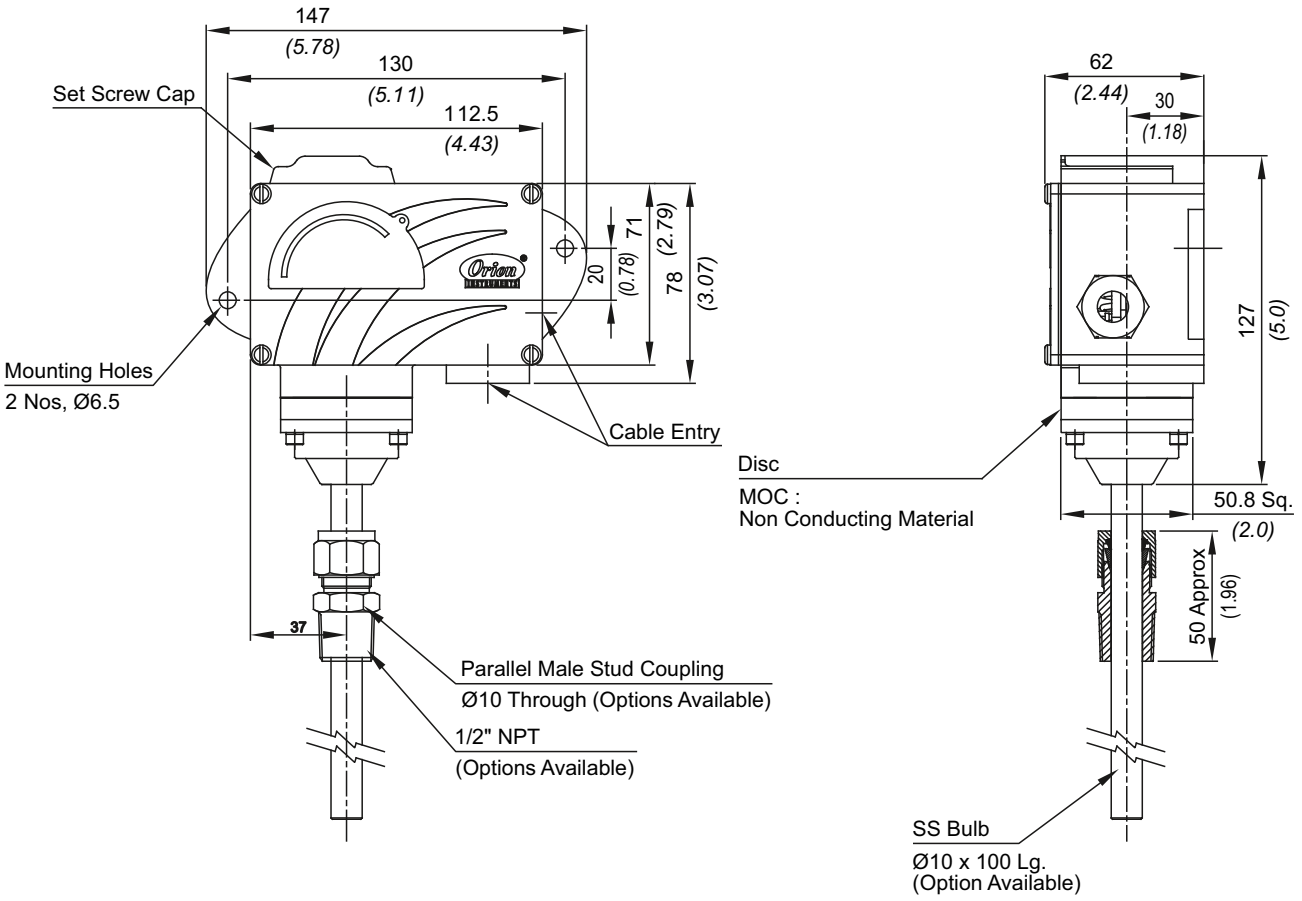
MD/MT DIRECT MOUNTED TEMPERATURE SWITCHES

MD

CE

Orion® INSTRUMENTS

INSTALLATION DRAWING



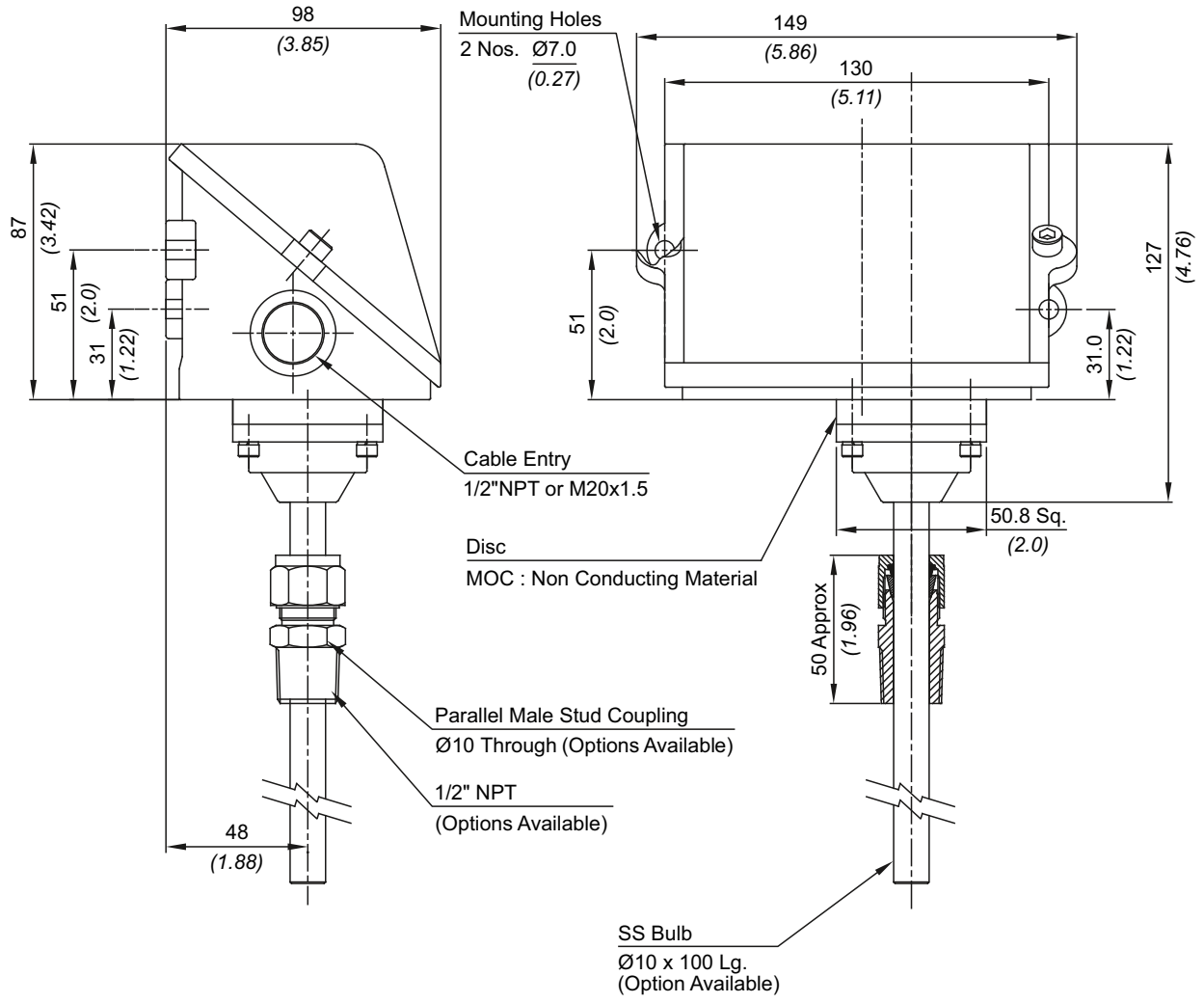
APPROX. DIMENSIONS IN mm / *inches*

Orion INSTRUMENTS

CE

MT

INSTALLATION DRAWING



APPROX. DIMENSIONS IN mm / *inches*

MD/MT DIRECT MOUNTED TEMPERATURE SWITCHES

RANGE SELECTION TABLE

Range Code	Range °C *(°F)*	Differential* °C *(°F)*	Maximum Working Temperature °C *(°F)*
		Approximate Maximum for "A1" microswitch	
T1H	35 - 90 *(77 - 194)*	15 *(59)*	150 *(302)*
T2H	70 - 150 *(158 - 302)*	20 *(68)*	200 *(392)*
T3H	120 - 215 *(248 - 419)*	30 *(86)*	300 *(572)*

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 (hysterisis) 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.

HOW TO ORDER FLAMEPROOF TEMPERATURE 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 Deg. Cen.)	Microswitch Type	Temp. Bulb Dia./Size	MOC of the Bulb
☐ Reserved for Non-standard Options not covered in Catalogue. Will Be given by Manufacturer, Only after Agreement of Supply details With customer.	**MD** = Industrial temperature switch with IP66 rated enclosure as per IS/IEC 60529 **MT** = Industrial temperature switch with IP66 rated enclosure as per IS/IEC 60529	**1** = Al. enclosure ½" NPT threads ***2** = Al. enclosure ¾" NPT threads **3** = Al. enclosure M20 X 1.5 threads **7** = SS enclosure, ½" NPT threads ***8** = SS enclosure, ¾" NPT threads **9** = SS enclosure, M20 X 1.5 threads *Not available for MT model For dual cable entry contact Sales Office	**TF1** = Temperature Switch, fixed differential without scale **TF2** = Temperature Switch, fixed differential with scale in °C ***TA1** = temperature switch, adjustable differential without scale ***TA2** = temperature switch, adjustable differential with scale in °C *Available with A6, A7, A9 & B9 (in group 6) only	**T1H** = 35 - 90 **T2H** = 70 - 150 **T3H** = 120 - 215	**A1** = General purpose microswitch rated at 15 A; 250 VAC **A6** = Elements with adjustable differential **A7** = 2SPDT switching elements **A8** = General purpose microswitch rated at 5 A, 250 VAC; 5 A, 28 VDC ***A9** = General purpose microswitch rated at 15 A; 250 VAC **B6** = Hermetically Sealed Gold Plated contact 2SPDT **B9** = 2SPDT Switching Elements for adjustable differential rated at 15 A; 250 VAC	**D1=** Direct mounted temparature switch with 150mm bulb length; 12mm bulb diameter; 3/8" BSPM connection. **D2 =** Direct mounted temparature switch with 150mm bulb length; 12mm bulb diameter; 3/8" NPTM connection. **D3 =** Direct mounted temparature switch with 150mm bulb length; 12mm bulb diameter; 1/2" NPTM connection. For customised dimensions of the bulb; please contact Sales office	**1** = Brass **2** = SS

E.g. A Direct Mounted industrial Temperature Switch, with 1/2"NPT cable entry in aluminum housing as 1 SPDT, fixed differential without scale, having 25˚C to 90˚C temperature range, with 15 Amp. microswitch, with SS316 10mm diameter bulb of 100mm length with 1/2" NPT(M), shall be specified by

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8
☐	MD	1	TF1	T1H	A1	D1	1

Please specify full model number to avoid ambiguity.

Bulletin No. KA220802

FP ULTRA LOW RANGE PRESSURE DIFFERENCE SWITCHES

Ultra Low Range Pressure Difference Switches with User Adjustable Knob

Salient Features

Easy to See, Easy to Use!

Set Point easily user adjustable with visible scale in Pascal. (no need of pressure gauge)

Enclosure

Robust Gravity Die Cast Aluminum

Long Lasting!

10^6 switching operations

Trusted all over!

Tested and Proven

Technical Specifications

Media: Air, non-flammable gases and non-aggressive gases

Housing Material: IP 66 Gravity Die Cast Aluminium

Protection Category: IP66 with cover.

Ranges: 20 Pa to 4000 Pa

Maximum Working Pressure: 0.1 bar

Electrical Rating: Maximum 1.0A (.4 A) / 250VAC

Electrical Connection: Standard Terminal Strip provided

Cable Entry: ½" NPT

High Pressure and Low Pressure Port: 1/8" BSP(F)

Media Temperature: 80°C max.

Ambient Temperature: -5°C to 60°C

Range Selection Table

Range Code (Orion)	Adjustment Range for Upper Switching Pressure Pa *(mm wg)*	Switching Differential Set to Pa *(mm wg)*
FP80	20-200 *(2.039-20.395)*	*(1.020)*
FP81	40 - 100 *(4.079 - 10.197)*	20 *(2.039)*
FP82	40 - 200 *(4.0479 - 20.395)*	20 *(2.039)*
FP83	50 - 500 *(5.099 - 50.987)*	20 *(2.039)*
FP85	200 - 1000 *(20.395 – 101.974)*	100 *(10.197)*
FP86	500 – 2500 *(50.987 – 254.935)*	150 *(15.296)*
FP87	1000 – 4000 *(101.974 – 407.896)*	250 *(25.494)*

How to order FP series Low Range Pressure Difference Switches

Please specify the Range Code e.g.. FP82 or FP85 as per range selection table.

INSTALLATION AND OPERATING INSTRUCTIONS

Principle of Operation

When the effective force generated by the pressure difference in the lower and upper chamber of the pressure capsule exceeds/falls beyond the balancing spring forces, an electrical element is actuated.

Mounting

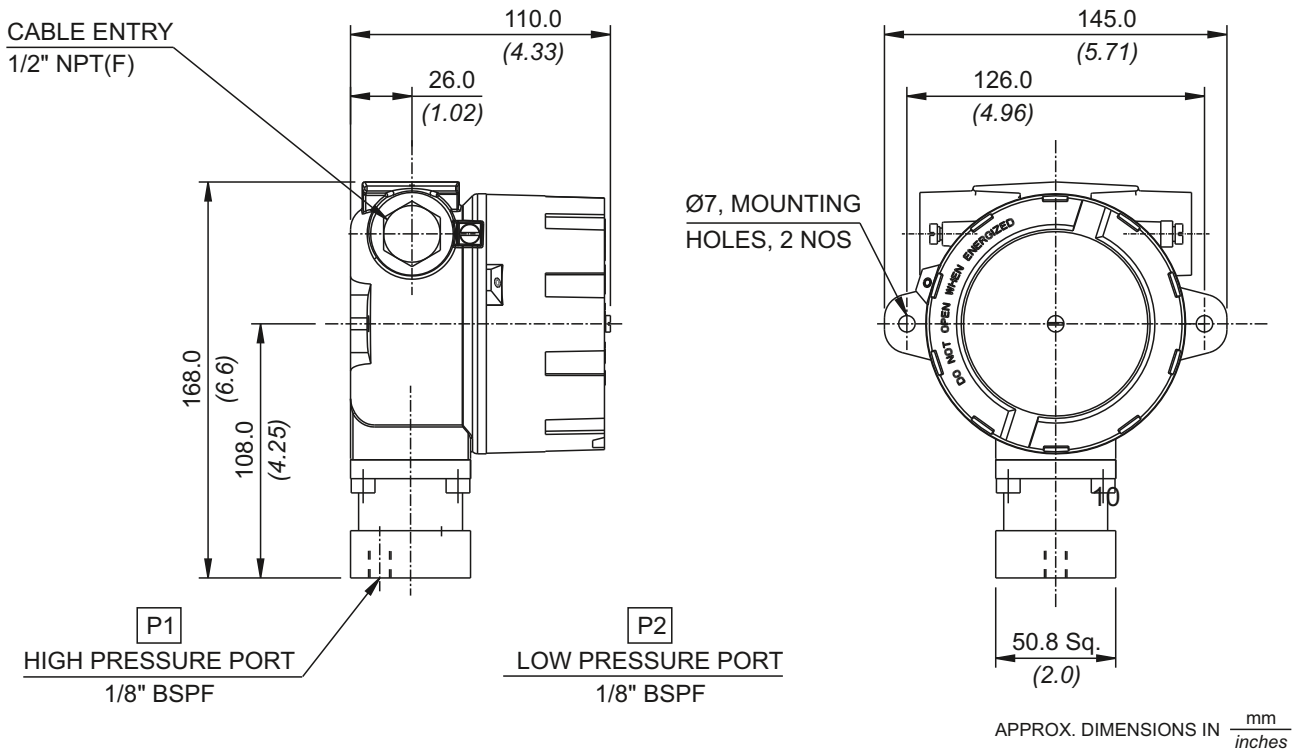
The detailed mounting dimensions are shown in Fig. 1.

1) Pressure Switches can be mounted on a plate/inside a panel using Ø7 mounting holes provided.

2) For any other process connection, please use an adaptor.

Fig. 1

INSTALLATION DRAWING



P1 = High Pressure Port
P2 = Low Pressure Port

Note :1. Use two screws only, for mounting
2. Remove transport protection from P1 and P2

CAUTION :

Install pressure switch vertically. Installing it at an angle more than 30° to vertical may result in malfunction.