

DIAPHRAGM INSTRUMENTS



200 DGR

Rolling Diaphragm Instruments

SALIENT FEATURES

- Cost effective and reliable.
- Uses diaphragm sensor.
- Easy to read dial instrument eliminates the accumulated errors of two instruments installations.
- **High operating pressure up to 200 bar.**
- **Differential pressure range up to 7 bar.**
- Indicating mechanism isolated from pressure chamber.
- Wide applications in air, gas and liquid media.
- Reed contact switches optional.
- Zero migration between high and low pressures.
- Only switch is also available.
- Manufactured in ISO certified plant.

Switching Facility : Instruments can be supplied with reed switches to initiate alarms, activate other equipment, or shut the system down. Two switches are used when high and low limits are desired. Gauge-switch models provide the user with both, gauge readout and switch operation.

APPLICATIONS :

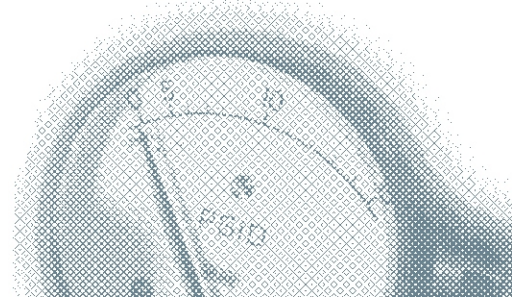
Monitor filter conditions, set filter by-pass, or initiate filter cleaning cycle. Determine obstructions in process lines. Check condition of pumps, heat exchangers, and other processing equipment. Adjust flow rates in piping systems. Monitor liquid levels in storage tanks.



Differential Pressure Plus, Inc.

16 Carriage Hill Drive
Branford, CT 06405
Phone : 203-481-2545
Fax : 203-483-7169
Email : DPGauge@AOL.com
Website : www.differentialpressure.com

MAGNETIC PRINCIPLE

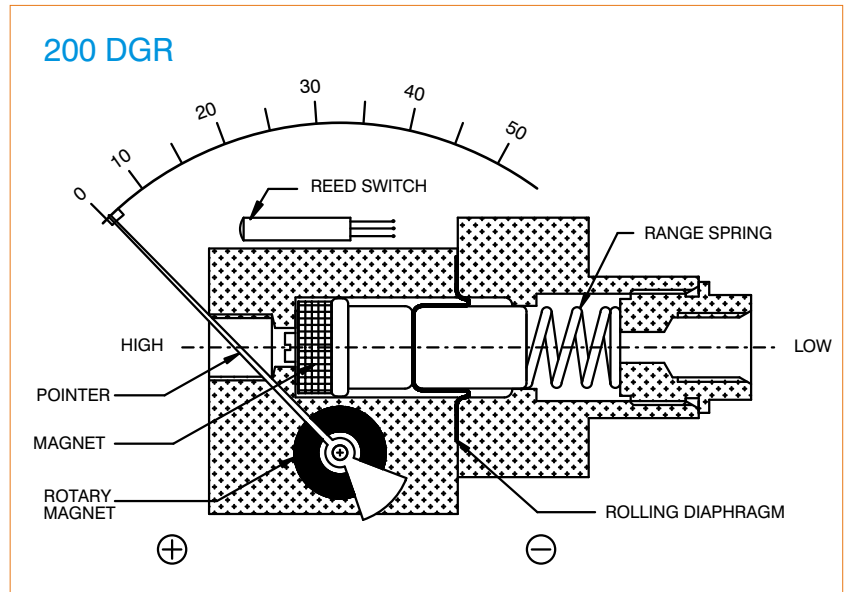


OPERATING PRINCIPLE

High and Low pressures are separated by a sensor assembly consisting of a magnet, diaphragm, and a range spring. The difference in pressure causes the sensor assembly to move in proportion to the change against a range spring.

A rotary magnet, located in a separate body cavity and isolated from the acting pressures, is rotated by magnetic coupling as per the linear movement of the sensor assembly. A pointer attached to the rotary magnet indicates differential pressure on the dial.

Switch : Reed switches are located adjacent to the pressure chamber and are activated by the magnetic field of the sensor assembly.



TECHNICAL DATA

Specifications

Accuracy	: $\pm 2\%$ of the FSD (Ascending)
Migration	: No migration, Zero leakage from high to low port
Range	: 0-0.25 to 0-7 bar or equivalent range in other units
First marking on the scale	: 15% of the FSD
Sensing element	: Diaphragm
Wetted parts	: Diaphragm, Body material, SS 302 spring & ceramic magnet
Case material	: Stainless steel (SS 304)
Dial size in inch /mm	: 2.5", 3.5", 4", 4.5", 6" / 63, 80, 100, 115, 150
Mounting	: Direct, front flange & 2" pipe mounting
Max. working pressure	: 200 / 3000 psi.
Max process temperature	: 80° C / 175° F
Body material	: Aluminum, Brass, SS 316
Seals	: Buna-N, Viton & EPDM diaphragm & 'O' rings
Window	: Float glass (Std.), toughened glass, acrylic glass & safety glass on request.
Connection	: 1/4" NPT(F) Std. optional 1/4" BSP(F) with adaptor on high side.
Porting	: In-line, rear, bottom
Over range protection	: Up to the max. working pressure from high side.
Protection for gauge & switch	: IP 65 / NEMA-4

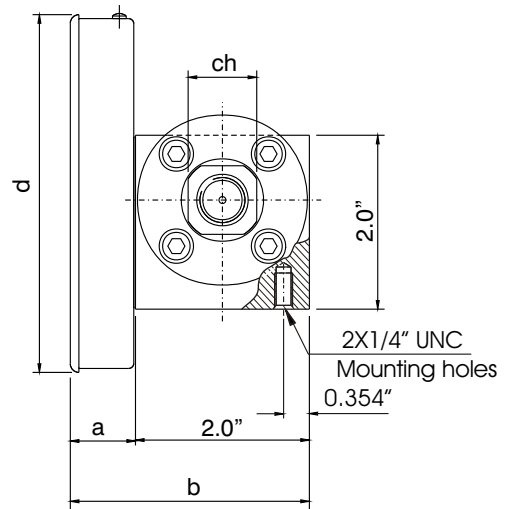
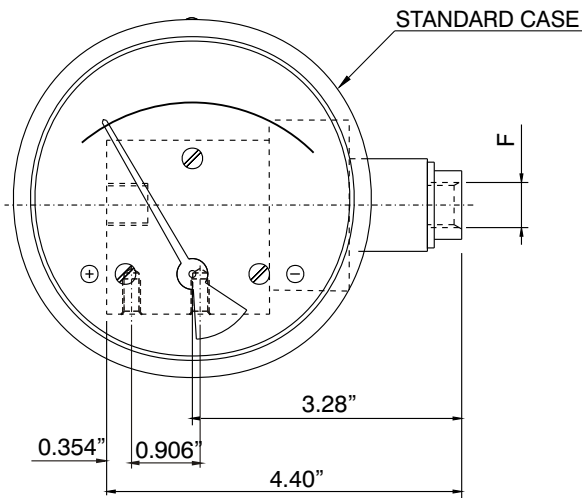
Options

Glycerine filling
 Red follower pointer (except 2" & 6")
 Customer logo
 Dual scale
 Colour band
 Filter mesh in (+) connection
 Descending calibration

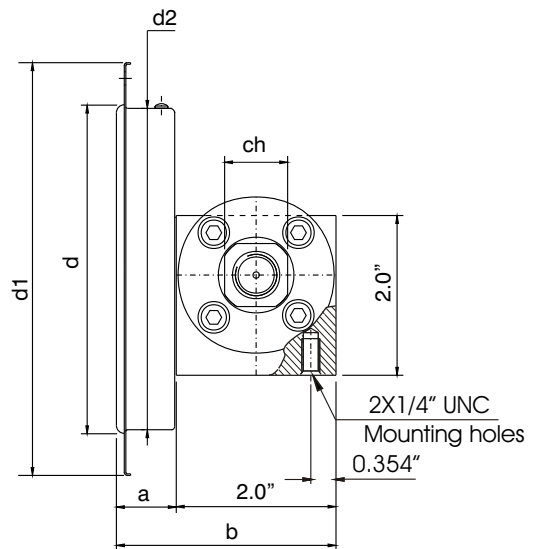
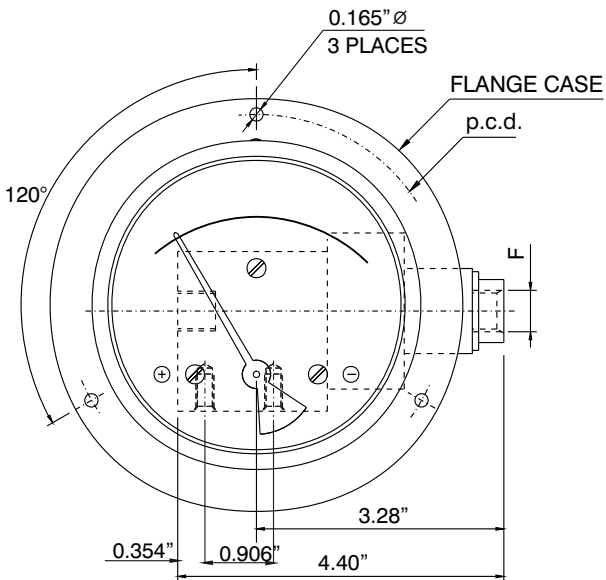
Switches (Adjustable in 30-100% of FSD)

1 or 2 SPSTs with a DIN plug
 1 or 2 SPSTs with a terminal strip
 1 or 2 SPSTs with a built in relay
 1 or 2 SPDTs with a terminal strip
 1 or 2 SPDTs with a DIN plug

STANDARD DIMENSIONS, IN-LINE PORTING (MODEL 200 DGR)



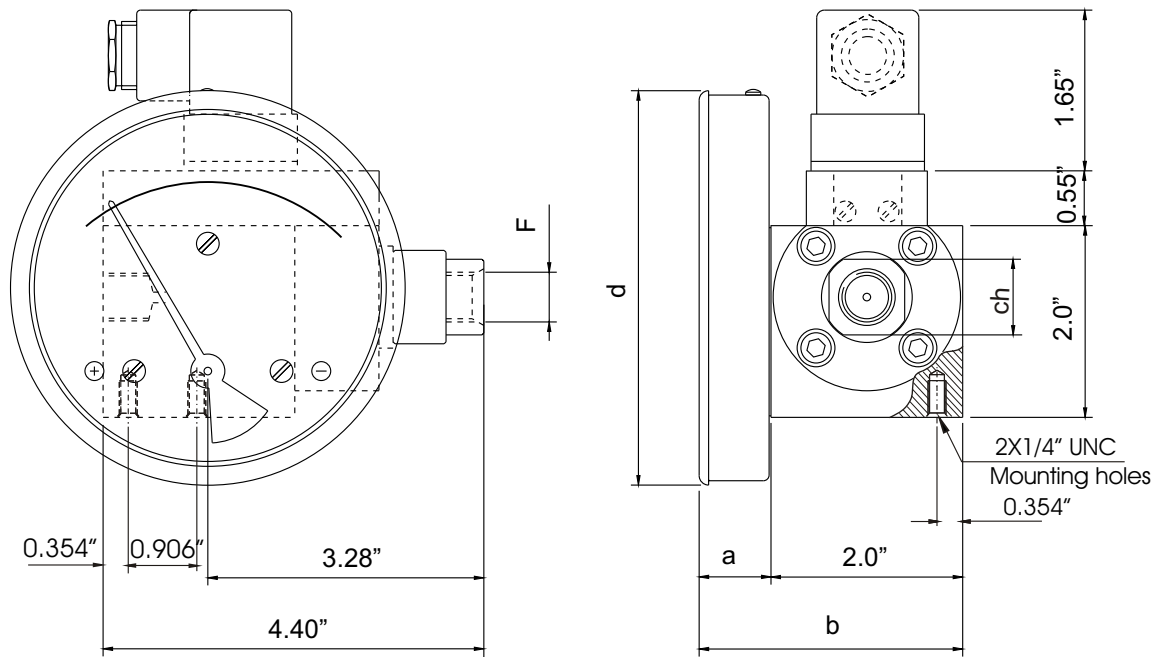
DN	F	a	b	d	ch
2.5"	1/4" NPT	0.75"	2.75"	2.59"	0.75" SQ.
3.5"	1/4" NPT	0.75"	2.75"	3.26"	0.75" SQ.
4.0"	1/4" NPT	0.75"	2.75"	4.10"	0.75" SQ.
4.5"	1/4" NPT	0.75"	2.75"	4.71"	0.75" SQ.
6.0"	1/4" NPT	0.75"	2.75"	6.07"	0.75" SQ.



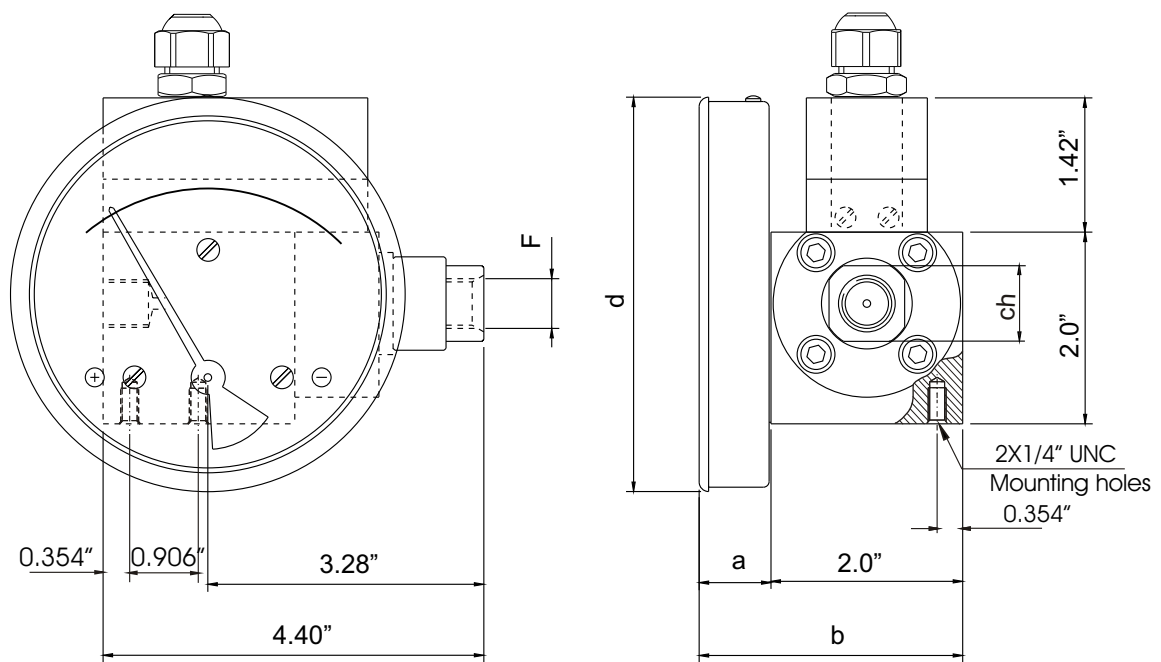
DN	F	a	b	d1	d2	ch	p.c.d.	d *
2.5"	1/4" NPT	0.75"	2.75"	3.66"	2.55"	0.75" SQ.	3.26"	2.59"
3.5"	1/4" NPT	0.75"	2.75"	4.29"	3.22"	0.75" SQ.	3.89"	3.26"
4.0"	1/4" NPT	0.75"	2.75"	5.15"	4.01"	0.75" SQ.	4.76"	4.10"
4.5"	1/4" NPT	0.75"	2.75"	5.74"	4.60"	0.75" SQ.	5.35"	4.71"
6.0"	1/4" NPT	0.75"	2.75"	7.12"	6.0"	0.75" SQ.	6.73"	6.07"

* PANEL CUT OUT = d + 0.04"

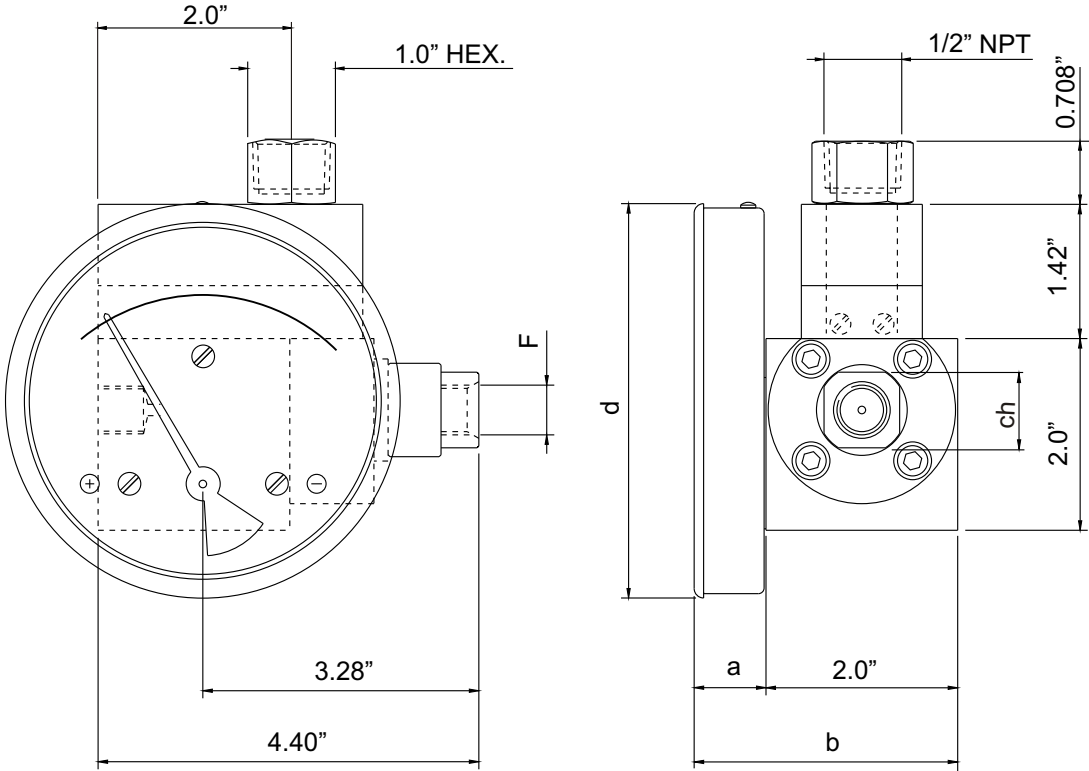
**GAUGE + SWITCH WITH REED CONTACTS WITH DIN PLUG AND TERMINAL STRIP
(MODEL 200 DGR)**



DN	F	a	b	d	ch
2.5"	1/4" NPT	0.75"	2.75"	2.59"	0.75" SQ.
3.5"	1/4" NPT	0.75"	2.75"	3.26"	0.75" SQ.
4.0"	1/4" NPT	0.75"	2.75"	4.10"	0.75" SQ.
4.5"	1/4" NPT	0.75"	2.75"	4.71"	0.75" SQ.
6.0"	1/4" NPT	0.75"	2.75"	6.07"	0.75" SQ.



GAUGE + SWITCH WITH REED CONTACTS WITH TERMINAL STRIP & 1/2" CONDUIT CONNECTION (MODEL 200 DGR)

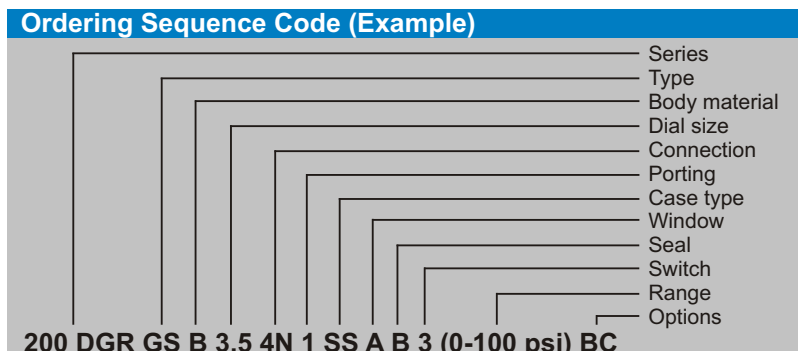


DN	F	a	b	d	ch
2.5"	1/4" NPT	0.75"	2.75"	2.59"	0.75" SQ.
3.5"	1/4" NPT	0.75"	2.75"	3.26"	0.75" SQ.
4.0"	1/4" NPT	0.75"	2.75"	4.10"	0.75" SQ.
4.5"	1/4" NPT	0.75"	2.75"	4.71"	0.75" SQ.
6.0"	1/4" NPT	0.75"	2.75"	6.07"	0.75" SQ.

HOW TO ORDER A DIFFERENTIAL PRESSURE INSTRUMENT, MODEL 200 DGR

Example	Code	Descriptions																																																												
Series	200 DGR																																																													
Type	GS	G Gauge S Switch GS Gauge + Switch																																																												
Body material	B	A Aluminium (Anodized) B Brass S SS-316																																																												
Dial size	3.5	2.5 2.5" (63 mm) 4.5 4.5" (115 mm) 3.5 3.5" (80 mm) 6.0 6.0" (150 mm) 4.0 4.0" (100 mm)																																																												
Connection	4N	4B ¼" BSP (Female) 4N ¼" NPT (Female) ZZ Special connection sizes using adaptor																																																												
Porting	1	1 In-line (Standard) 2 Rear / Back 3 Bottom 6 In-line & Bottom																																																												
Case type	SS	SS SS 304 with a rubber ring (standard) SF SS 304 flange with a rubber ring (standard flange)																																																												
Window	A	F Glass (standard) A Acrylic T Toughened glass L Safety glass																																																												
Seal	B	B Buna-N (standard) V Viton E EPDM																																																												
Switch	3	0 None 1 One SPST, with a DIN plug* 2 One SPST, with a terminal strip 2A One SPST, with built in relay 3 Two SPSTs, with a DIN plug* 4 Two SPSTs, with a terminal strip 5 One SPDT, with a DIN plug* 6 One SPDT, with a terminal strip 7 Two SPDTs, with two DIN plugs* 8 Two SPDTs, with a terminal strip																																																												
		<table border="1"> <tr> <td>SPST Specifications :</td> <td>SPDT Specifications :</td> </tr> <tr> <td>10 VA AC or DC (max)</td> <td>3 VA AC or DC (max)</td> </tr> <tr> <td>100 V AC or DC (max)</td> <td>30 V AC or DC (max)</td> </tr> <tr> <td>0.5 Amp AC or DC (max)</td> <td>0.3 Amp AC or DC (max)</td> </tr> </table>	SPST Specifications :	SPDT Specifications :	10 VA AC or DC (max)	3 VA AC or DC (max)	100 V AC or DC (max)	30 V AC or DC (max)	0.5 Amp AC or DC (max)	0.3 Amp AC or DC (max)																																																				
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		<p>* DIN plug : we mount it on the top, on the plastic switch cover. However we can give it at the back as a request.</p> <p>Switch applicable for "S" & "GS" types only. Switches operate from 30 to 100% of the range & mounted at the back. Switches are in a plastic enclosure, they are factory set, field adjustable.</p>																																																												
Standard Ranges	0-100 psi	<table border="1"> <tr> <td>Kg/cm²</td> <td>0.25</td> <td>-</td> <td>0.5</td> <td>0.75</td> <td>1</td> <td>-</td> <td>2</td> <td>2.5</td> <td>-</td> <td>4</td> <td>7</td> </tr> <tr> <td>bar</td> <td>0.25</td> <td>-</td> <td>0.5</td> <td>0.75</td> <td>1</td> <td>-</td> <td>2</td> <td>2.5</td> <td>-</td> <td>4</td> <td>7</td> </tr> <tr> <td>Mbar</td> <td>250</td> <td>-</td> <td>-</td> <td>750</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>psi</td> <td>-</td> <td>5</td> <td>7</td> <td>-</td> <td>15</td> <td>25</td> <td>30</td> <td>-</td> <td>40</td> <td>60</td> <td>100</td> </tr> <tr> <td>kPa</td> <td>25</td> <td>-</td> <td>50</td> <td>75</td> <td>100</td> <td>-</td> <td>200</td> <td>250</td> <td>-</td> <td>400</td> <td>700</td> </tr> </table> <p>Other ranges on request.</p>	Kg/cm ²	0.25	-	0.5	0.75	1	-	2	2.5	-	4	7	bar	0.25	-	0.5	0.75	1	-	2	2.5	-	4	7	Mbar	250	-	-	750	-	-	-	-	-	-	-	psi	-	5	7	-	15	25	30	-	40	60	100	kPa	25	-	50	75	100	-	200	250	-	400	700
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psi	-	5	7	-	15	25	30	-	40	60	100																																																			
kPa	25	-	50	75	100	-	200	250	-	400	700																																																			
Options	BC	0 None A Glycerine* B Red follower pointer on acrylic window* C Customer Logo D Dual scale E Colour band F Strainer in (+) connection H Descending calibration (longer delivery time) N NACE S Silicone oil *																																																												

* Affects accuracy



Limitations for making combinations:

- Glycerine filling will not have follower pointer.
- No follower pointer available in 6" (150 mm).

Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing, modifications may take place and materials specified may be replaced by others without prior notice.