














200 DPG

Piston Instruments

SALIENT FEATURES

-  Cost effective and reliable.
-  Simple and compact design.
-  Easy to read dial instrument eliminates accumulated errors of two instrument installations.
-  **High operating pressure up to 200 bar.**
-  **Differential pressure range up to 10 bar.**
-  Over pressure safe from either side to maximum working pressure.
-  Adjustable reed contact switching.
-  Indicating mechanism isolated from pressure chamber.
-  Only switch is also available.
-  Wide applications in air, gas and liquid media.
-  Manufactured in ISO certified plant.

These piston instruments can indicate small values of differential pressure even when used at high line pressures. They provide instantaneous and continuous information regarding system conditions helping in eliminating premature servicing of equipment, avoid unscheduled down time of costly processes and detect abnormal system conditions.

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 :

Filters, Hydraulic systems, Water treatment plants, Chemical plants, Natural gas processing, Heat exchangers, Gasoline / Diesel engine filters, Pumps and Valves, Compressors.

MAGNETIC PRINCIPLE

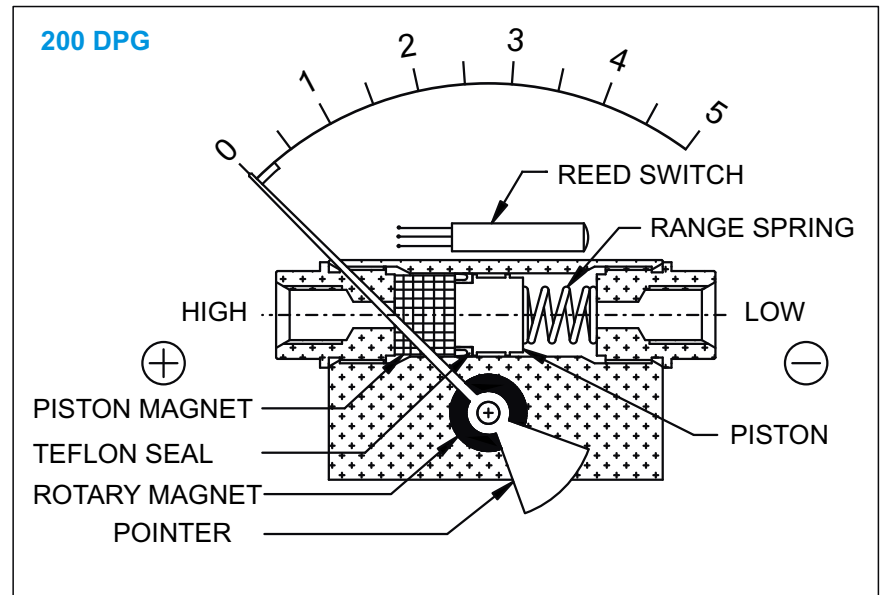


OPERATING PRINCIPLE

High and Low pressures are separated by a sensor assembly consisting of a magnet, piston, Teflon seal 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	: Minor from high to low port
Range	: 0-0.25 to 0-70 bar or equivalent range in other units
First marking on the scale	: 20% of the FSD
Sensing element	: Piston
Wetted parts	: Body material, SS 302 spring, Teflon, & ceramic magnet
Case material	: Stainless steel (SS 304)
Dial size in inch /mm	: 2", 2.5", 3.5", 4", 4.5", 6" / 50, 63, 80, 100, 115, 150
Mounting	: Direct, front flange & 2" pipe mounting
Max. working pressure	: 200/400 bar. 200 bar for Alu, Brass & 400 bar for SS body
Max process temperature	: 200F
Body material	: Aluminum, Brass, SS 316 & Monel
Seals	: Buna-N, Viton & EPDM 'O' rings
Window	: Float glass(Std.), toughened glass & acrylic on request.
Connection	: 1/4" NPT(F) Std. optional 1/4" BSP(F)
Porting	: In-line, rear, bottom
Over range protection	: Up to the max. working pressure from high & low side
Protection for gauge & switch	: IP 65 / NEMA-4

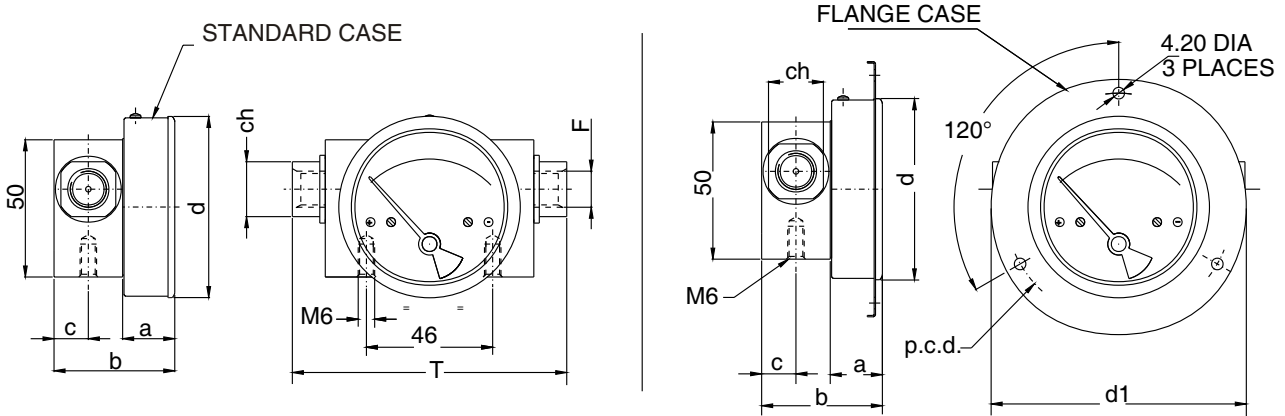
Options

Glycerine filling
 Red follower pointer (except 2" & 6")
 Customer logo
 Dual scale
 Colour band
 Filter mesh in (+) connection
 Reverse port (Pointer moves from right to left)
 Descending calibration

Switches (Adjustable in 20-100% 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

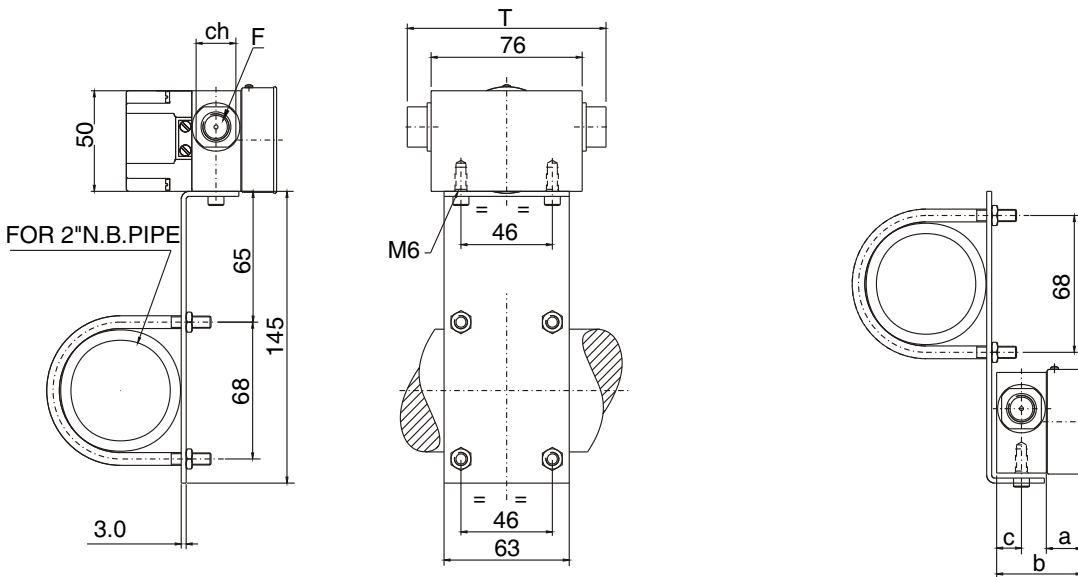
STANDARD DIMENSIONS (MODEL 200 DPG)



DIAL Ø	F	a	b	c	d	d1	T	ch	p.c.d.
50 (2")	1/4"BSP - 1/4"NPT	18	43	12.5	53	79	100	20	69
63 (2.5")	1/4"BSP - 1/4"NPT	19	44	12.5	66	93	100	20	83
80 (3.5")	1/4"BSP - 1/4"NPT	19	44	12.5	83	109	100	20	99
100 (4")	1/4"BSP - 1/4"NPT	19	44	12.5	104.3	131	100	20	121
115 (4.5")	1/4"BSP - 1/4"NPT	19	44	12.5	119.7	146	100	20	136
150 (6")	1/4"BSP - 1/4"NPT	19	44	12.5	154.3	181	100	20	171

* PANEL CUT OUT = d+ 1

MOUNTING BRACKETS (MODEL 200 DPG)



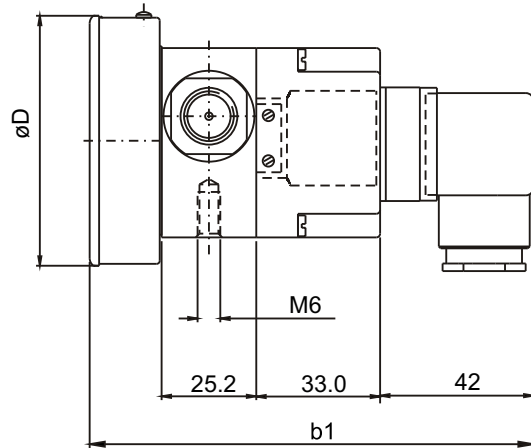
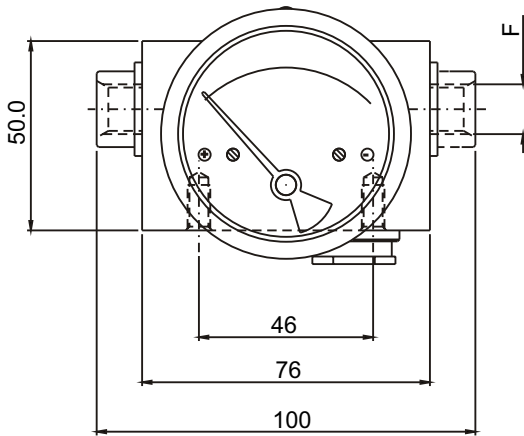
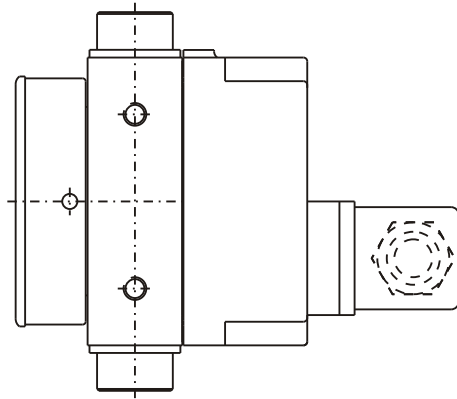
BRACKET MOUNTING FOR GAUGE+ SWITCH

BRACKET MOUNTING FOR GAUGE

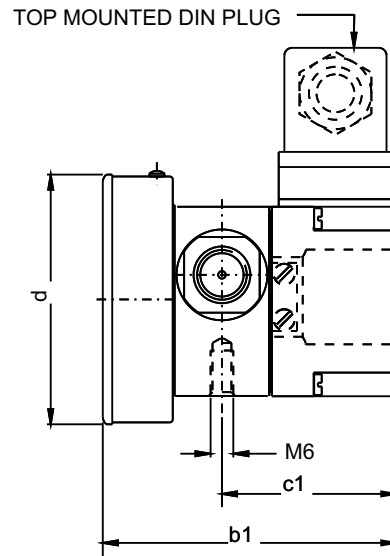
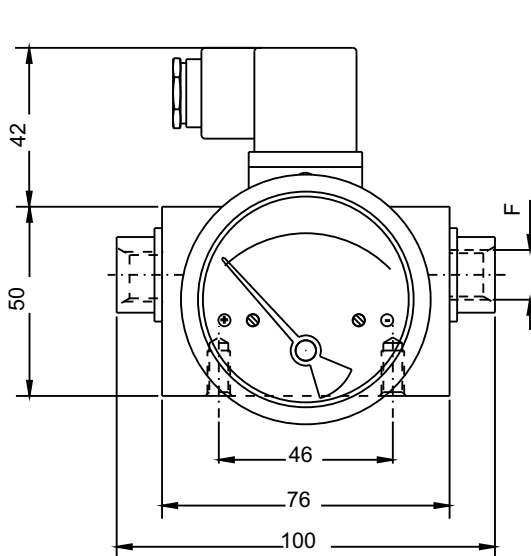
DIAL Ø	F	a	b	c	T	ch
50 (2")	1/4"BSP - 1/4"NPT	18	43	12.5	100	20
63 (2.5")	1/4"BSP - 1/4"NPT	19	44	12.5	100	20
80 (3.5")	1/4"BSP - 1/4"NPT	19	44	12.5	100	20
100 (4")	1/4"BSP - 1/4"NPT	19	44	12.5	100	20
115 (4.5")	1/4"BSP - 1/4"NPT	19	44	12.5	100	20
150 (6")	1/4"BSP - 1/4"NPT	19	44	12.5	100	20

GAUGE + SWITCH WITH REED CONTACTS WITH DIN PLUG AT BACK (MODEL 200 DPG)

DIAL \varnothing	F	d	b1
50 (2")	1/4"BSP - 1/4"NPT	53	102.5
63 (2.5")	1/4"BSP - 1/4"NPT	66	103.5
80 (3.5")	1/4"BSP - 1/4"NPT	83	103.5
100 (4")	1/4"BSP - 1/4"NPT	104.3	103.5
115 (4.5")	1/4"BSP - 1/4"NPT	119.7	103.5
150 (6")	1/4"BSP - 1/4"NPT	154.3	103.5



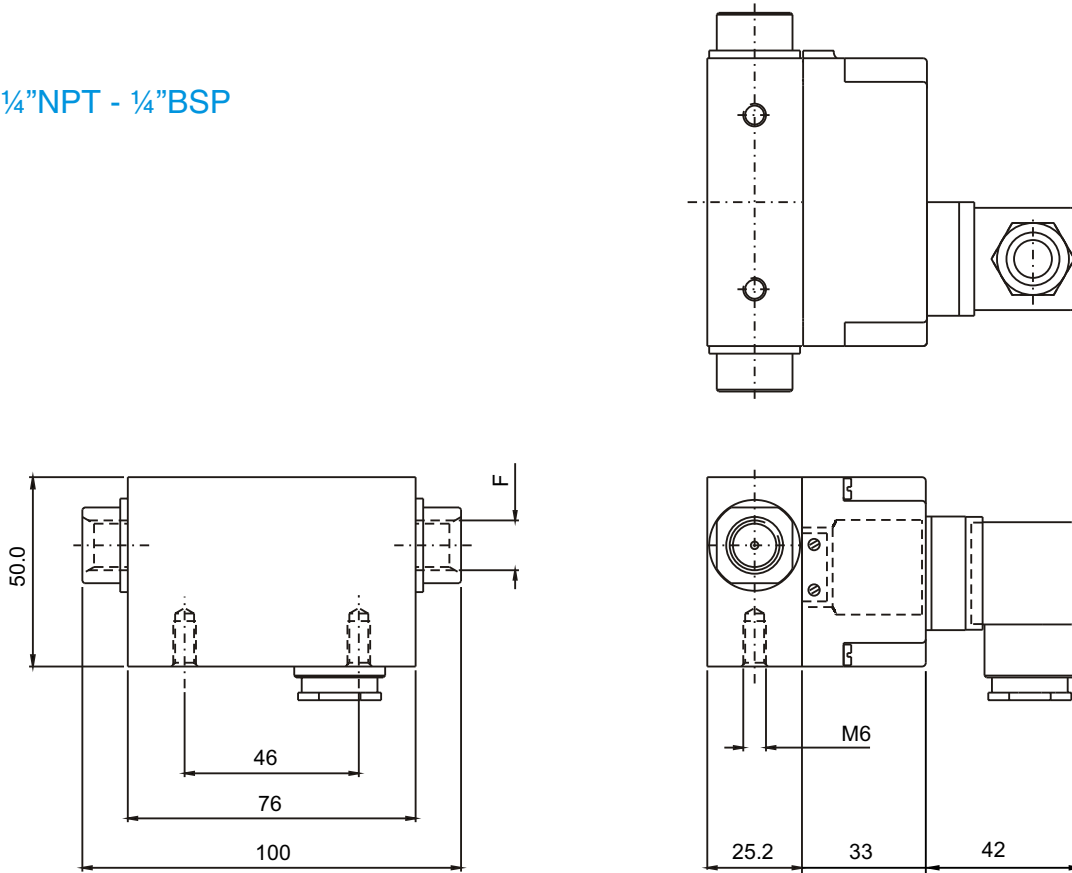
GAUGE + SWITCH WITH REED CONTACTS WITH DIN PLUG ON TOP (MODEL 200 DPG)



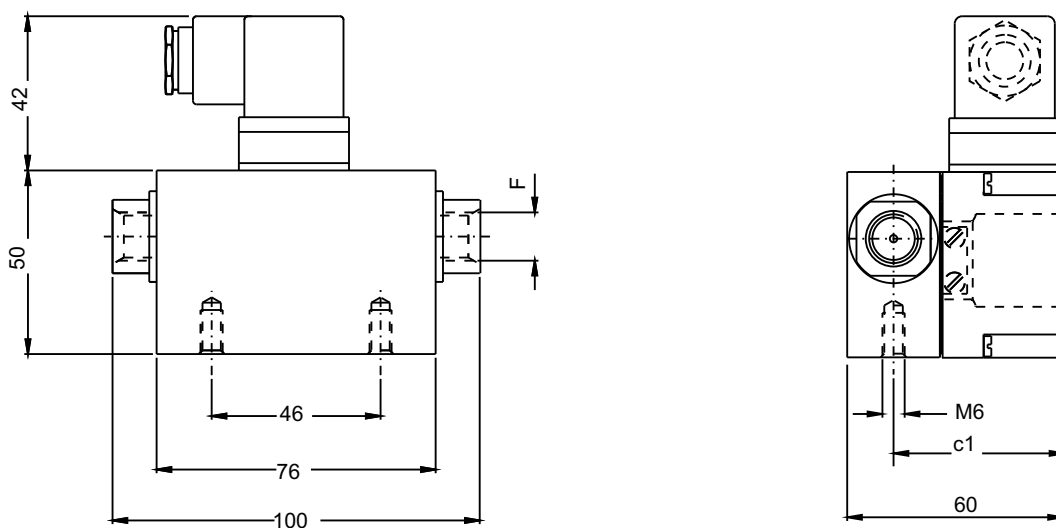
DIAL \varnothing	F	b1	c1	d
50 (2")	1/4"BSP - 1/4"NPT	78	47.5	53
63 (2.5")	1/4"BSP - 1/4"NPT	79	47.5	66
80 (3.5")	1/4"BSP - 1/4"NPT	79	47.5	83
100 (4")	1/4"BSP - 1/4"NPT	79	47.5	104.3
115 (4.5")	1/4"BSP - 1/4"NPT	79	47.5	119.7
150 (6")	1/4"BSP - 1/4"NPT	79	47.5	154.3

SWITCH WITH DIN PLUG AT BACK (MODEL 200 DPG)

F=1/4"NPT - 1/4"BSP

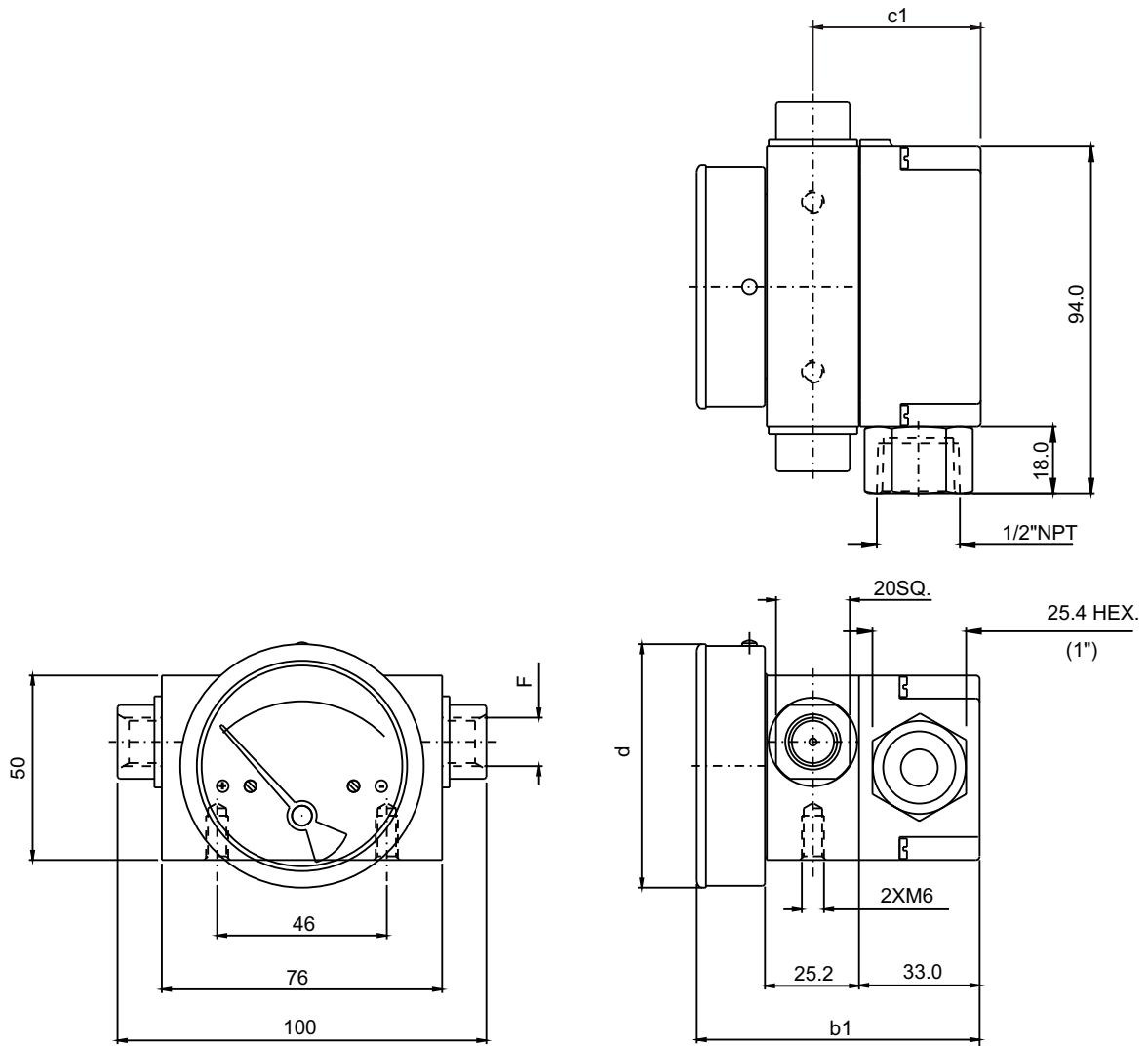


SWITCH WITH DIN PLUG ON TOP (MODEL 200 DPG)



F=1/4"NPT - 1/4"BSP , C1=47.5

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



DIAL \varnothing	F	b1	c1	d
50 (2")	1/4"BSP - 1/4"NPT	78	47.5	53
63 (2.5")	1/4"BSP - 1/4"NPT	79	47.5	66
80 (3.5")	1/4"BSP - 1/4"NPT	79	47.5	83
100 (4")	1/4"BSP - 1/4"NPT	79	47.5	104.3
115 (4.5")	1/4"BSP - 1/4"NPT	79	47.5	119.7
150 (6")	1/4"BSP - 1/4"NPT	79	47.5	154.3

HOW TO ORDER A DIFFERENTIAL PRESSURE INSTRUMENT, MODEL 200 DPG

Example	Code	Descriptions
Series	200 DPG	
Type	GS	G S GS Gauge + Switch
Body material	B	A Aluminium (anodized) B Brass S SS-316 H Heavy duty Aluminium. (5000 psi) with 32mm thick body. M Monel
Dial size	3.5	2.0 2.0" (50 mm) 4.0 4.0" (100 mm) 2.5 2.5" (63 mm) 4.5 4.5" (115 mm) 3.5 3.5" (80 mm) 6.0 6.0" (150 mm)
Connection	4N	4B 1/4" BSP (Female) 4N 1/4" 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 4A Two SPSTs, with built in relay 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

SPST Specifications :
10 VA AC or DC (max)
100 V AC or DC (max)
0.5 Amp AC or DC (max)
Built in relay :
230 V AC, 1 Amps.

SPDT Specifications :
3 VA AC or DC (max)
30 V AC or DC (max)
0.30 Amp AC or DC (max)

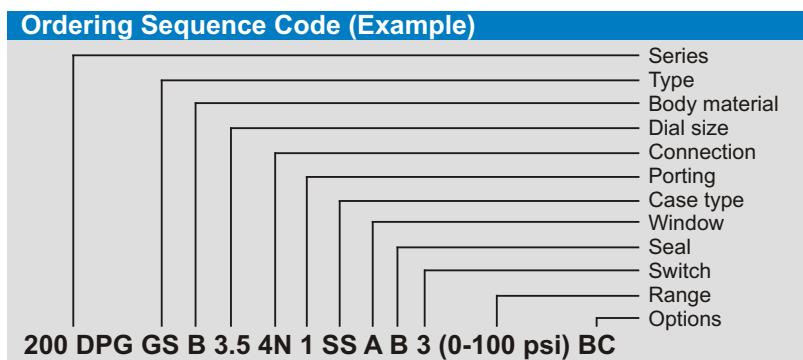
* **DIN plug** : we mount it on the top, on the plastic switch cover. However we can give it at the back as a request.
Switch applicable for "S" & "GS" types only. Switches operate from 20 to 100% of the range & mounted at the back. Switches are in a plastic enclosure, they are factory set, field adjustable.

Standard Ranges	0-100 psi	Kg/cm ²	0.25 - 0.5 0.75 1 - 1.6 2 2.5 3 3.5 4 5 - 6 7 9 10
		bar	0.25 - 0.5 0.75 1 - 1.6 2 2.5 3 3.5 4 5 - 6 7 9 10
		Mbar	250 - 500 750 1000 - - - - - - - - - - - - - - - -
		psi	- 5 8 - 15 20 25 30 - 40 50 60 - 80 - 100 - - -
		Kpa	25 - 50 75 100 - 160 200 250 300 350 400 500 - 600 700 900 1000

Other ranges on request.

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 G Reverse port** H Descending calibration (longer delivery time) N NACE
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* Affects accuracy
** Pointer moves from right to left



- Limitations for making combinations:**
- Glycerine filling will not have follower pointer.
 - For bottom or back porting no mounting holes are given and hence can not be mounted using a bracket.
 - Gauge with back porting cannot have a switch. (However, only switch with back porting is available.)
 - Toughened glass and follower pointer not available in 2" (50 mm) dial.
 - 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.