DIAPHRAGM INSTRUMENTS

300 DGC

Small Convoluted Diaphragm Instruments

SALIENT FEATURES

Cost effective and reliable.
Simple and compact design.
Easy to read dial gauge el im in at es th e accumulated errors of two instrument installations.
Working pressure up to 100 bar.
Differential pressure range up to 4bar.
Adjustable reed contact switching.
Indicating mechanism isolated from pressure chamber.
Wide applications in air, gas and liquid media.
Zero migration between high and low pressures.
Only switch is also available.
Manufactured in ISO certified plant.
Exported worldwide.

Hirlekar Precision manufactures quality differential pressure instruments designed to measure the difference in pressure between two points in a system and show it on a single dial instrument. A magnetic movement senses the differential pressure. The instrument has separate pressure and indicating chambers.

These diaphragm 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.

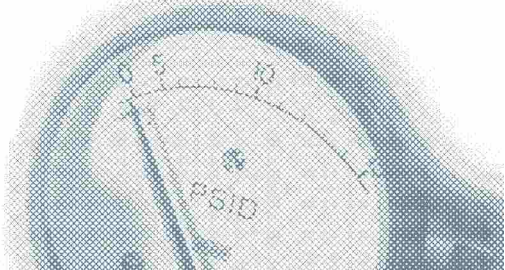
APPLICATIONS :

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. Detect abnormal and reverse flow conditions. Measure flow rates with venturi, orifice, or pitot tube. Balance and adjust flow rates in piping system. Monitor liquid levels in tanks.

HIRLEKAR
PRECISION

Hirlekar Precision Engineering Private Limited
67 Industrial Town planning scheme II,
Ramtekadi, Pune 411 013 INDIA
Phone : +91 20 26823648 / 26823649
Fax : +91 20 26871153
Email : hirlekar@vsnl.com
website : www.hirlekarprecision.com

MAGNETIC PRINCIPLE

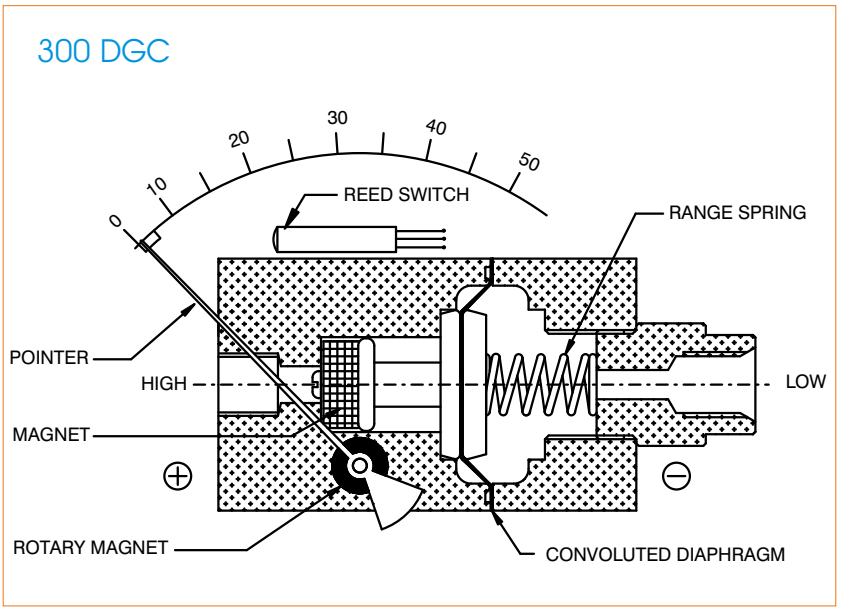


OPERATING PRINCIPLE

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 (MODEL 300 DGC)

Ranges	:	0-0.075 to 0-4 bar
Units of calibration	:	Kg/cm^2, mbar, mm H_2O, IN H_2O, psi
Operating principle	:	Magnetic coupling with a convoluted diaphragm sensor.
Working pressure	:	100 bar / 1500 psi
Accuracy	:	± 2 % of FSD (Ascending)
Dial sizes	:	2.5"(63 mm), 3.5"(80 mm), 4"(100 mm), 4.5"(115 mm)& 6"(150 mm)
Body Material	:	Aluminium, Brass & SS-316.
Temperature	:	80°C Max. for the media.
Protection	:	IP 65 for gauge
Migration of media	:	Zero migration between high and low pressures.
Connections	:	¼" NPT(Female) or ¼" BSP(Female-on request).
Wetted parts	:	Diaphragm, ceramic magnet, SS 304 spring. Other internal parts in Aluminium, Brass, or SS-316 as per the gauge body.
Seals	:	Buna-N, (Standard), Viton
Porting	:	In line (standard), Bottom or Back.
Switch	:	SPST or SPDT, one or two. Switches are field adjustable. The set points can be increased or decreased externally with simple screwdriver adjustments. When two switches are used, either switch can be adjusted independently.
Dial case	:	Stainless steel case and flange
Window	:	Glass (Standard), Acrylic, Toughened glass on request.
Other options	:	Glycerine filling, red resettable follower pointer, dual scale, strainer in (+) connection

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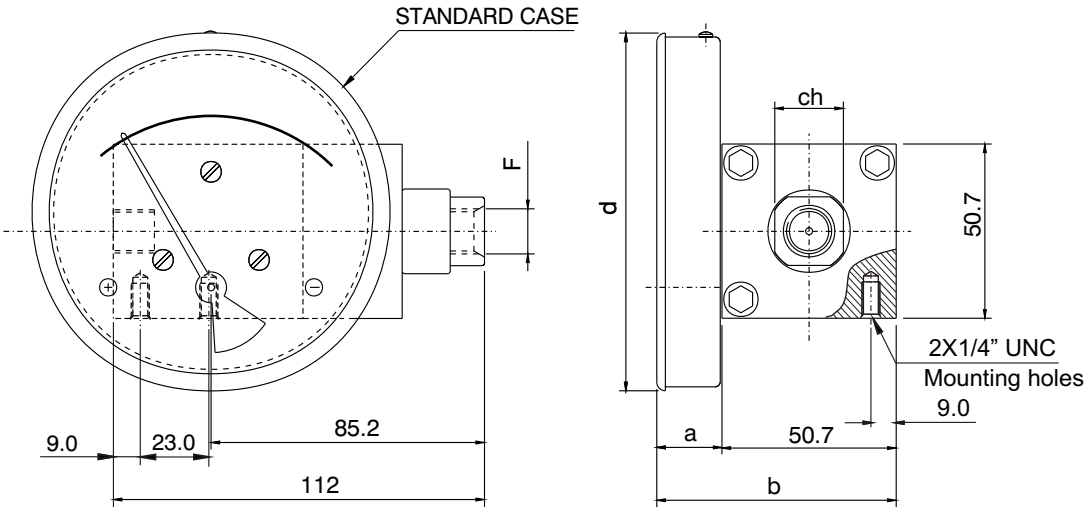
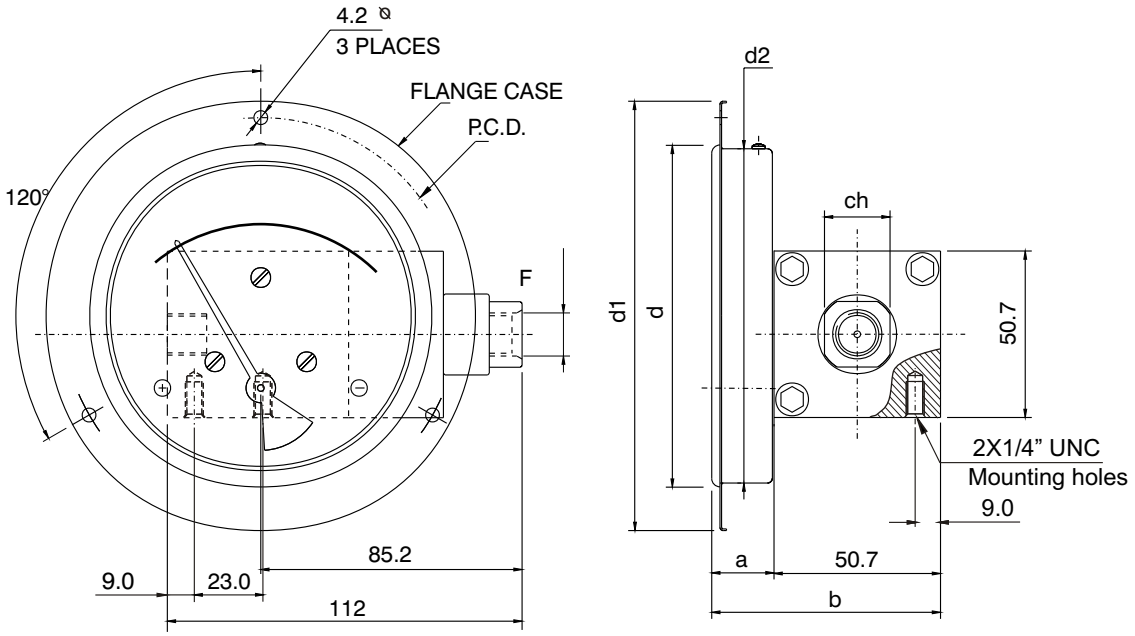
STANDARD DIMENSIONS (MODEL 300 DGC)



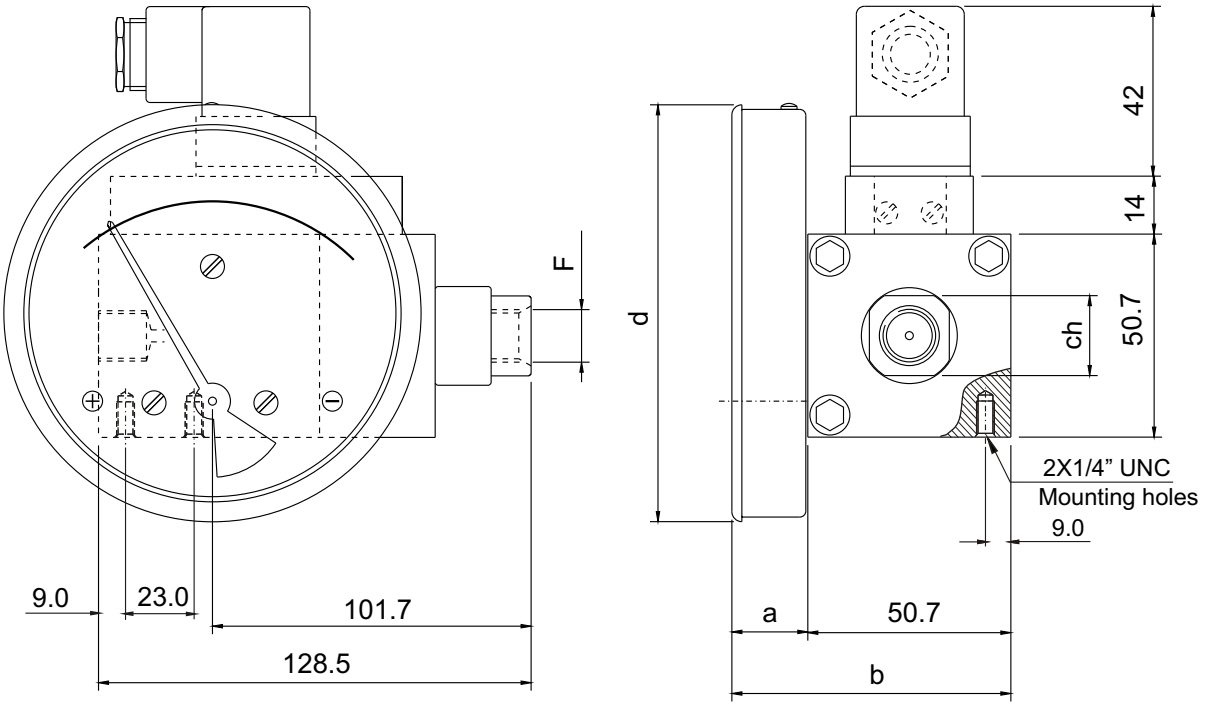
DIAL Ø	F	a	b	d	ch
63 (2.5")	1/4"BSP - 1/4"NPT	19	69.7	66	20
80 (3.5")	1/4"BSP - 1/4"NPT	19	69.7	83	20
100 (4")	1/4"BSP - 1/4"NPT	19	69.7	104.3	20
115(4.5")	1/4"BSP - 1/4"NPT	19	69.7	119.7	20
150(6")	1/4"BSP - 1/4"NPT	19	69.7	154.3	20



DIAL Ø	F	a	b	d1	d2	ch	p.c.d.	d *
63(2.5")	1/4"BSP - 1/4"NPT	19	69.7	93	65	20	83	66
80(3.5")	1/4"BSP - 1/4"NPT	19	69.7	109	82	20	99	83
100(4")	1/4"BSP - 1/4"NPT	19	69.7	131	102	20	121	104.3
115(4.5")	1/4"BSP - 1/4"NPT	19	69.7	146	117	20	136	119.7
150(6")	1/4"BSP - 1/4"NPT	19	69.7	181	152.5	20	171	154.3

* PANEL CUTOUT = d +1

GAUGE + SWITCH WITH REED CONTACTS WITH DIN PLUG AND TERMINAL STRIP (MODEL 300 DGC)



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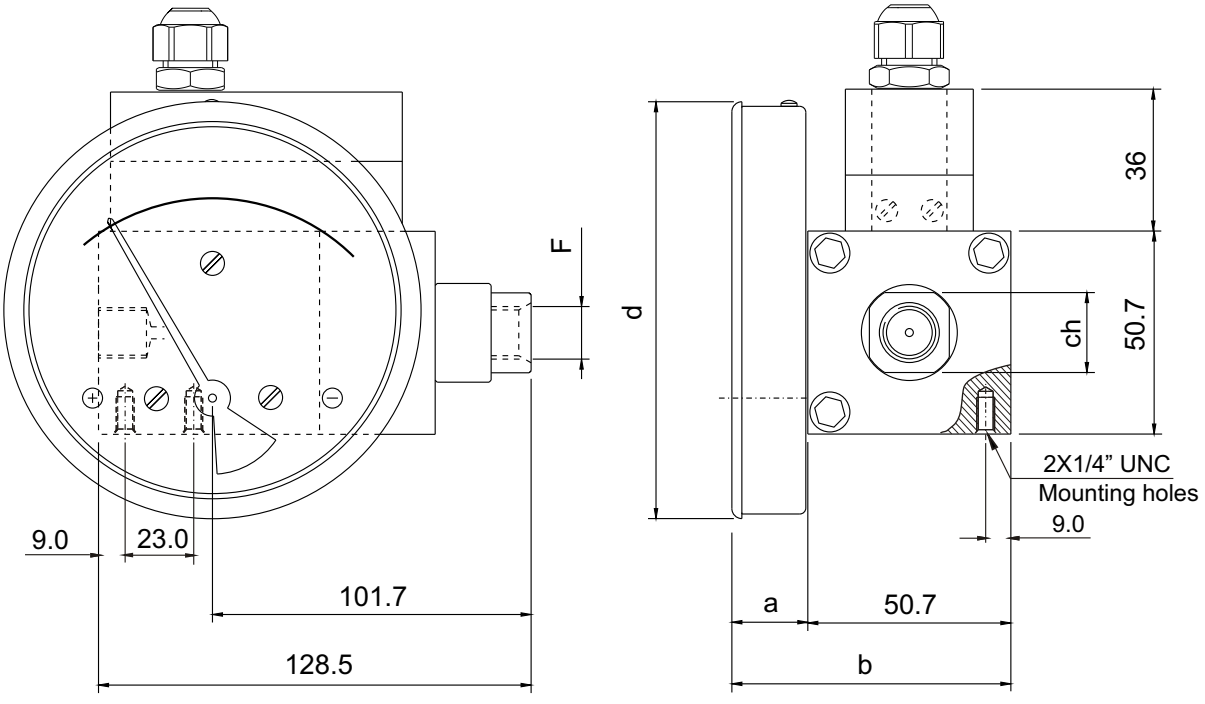
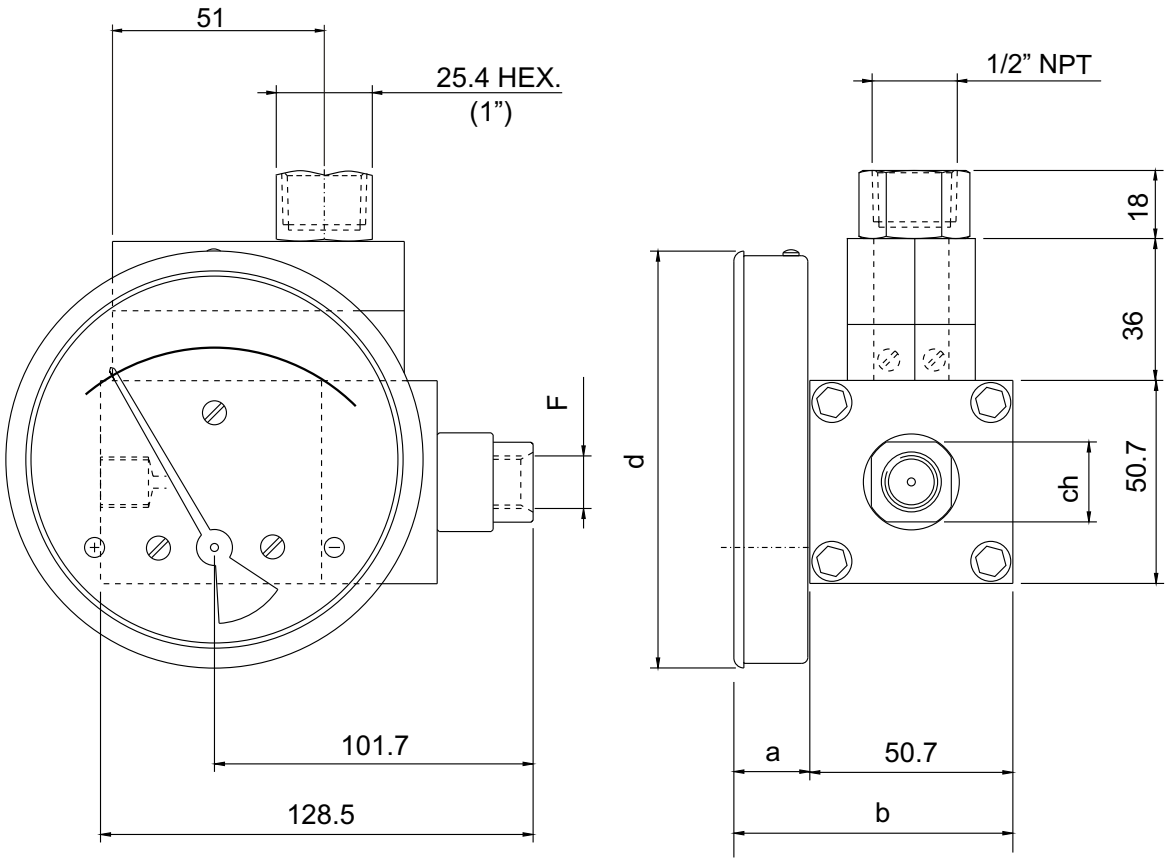
100	1/4"BSP - 1/4"NPT	19	69.7	104.3	20
115	1/4"BSP - 1/4"NPT	19	69.7	119.7	20
150	1/4"BSP - 1/4"NPT	19	69.7	154.3	20



GAUGE + SWITCH WITH REED CONTACTS WITH TERMINAL STRIP & 1/2” NPT CONDUIT CONNECTION (MODEL 300 DGC)



DIAL Ø	F	a	b	d	ch
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80	1/4"BSP - 1/4"NPT	19	69.7	83	20
100	1/4"BSP - 1/4"NPT	19	69.7	104.3	20
115	1/4"BSP - 1/4"NPT	19	69.7	119.7	20
150	1/4"BSP - 1/4"NPT	19	69.7	154.3	20

HOW TO ORDER A DIFFERENTIAL PRESSURE INSTRUMENT, MODEL 300 DGC

	Example	Code	Descriptions
Series	300 DGC		
Type	GS	G	Gauge
		S	Switch
		GS	Gauge + Switch
Body material	B	A	Aluminium *(anodized semi hard)*
		B	Brass *(Long delivery time)*
		S	SS-316 *(Long delivery time)*
		N	Nylon *(Long delivery time)*
Dial size	3.5	2.5	2.5" (63 mm)
		3.5	3.5" (80 mm)
		4.0	4.0" (100 mm)
		4.5	4.5" (115 mm)
		6.0	6.0" (150 mm)
Connection	4N	4B	¼" BSP (Female)(on request)
		4N	¼" NPT (Female)
		ZZ	Special connection sizes using adaptor
Porting	1	1	In-line (Standard)
		2	Rear / Back
		3	Bottom
		4	Bottom & Vent
		5	Inline & Vent
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
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

SPST Specifications :
10 VA AC or DC (max)
150 V AC or DC (max)
0.5 Amp AC or DC (max)

SPDT Specifications :
5 VA AC or DC (max)
175 V AC or DC (max)
0.25 Amp AC or DC (max)

Built in relay :
230 V AC, 1 Amps.

* ***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 30 to 100% of the range & mounted at the back. Switches are in a plastic enclosure, they are factory set, field adjustable.

Standard Ranges 0-15 psi

Kg/cm²	0.075	0.25	-	0.5	0.75	1	-	1.6	2	2.5	3	-	4
bar	0.075	0.25	-	0.5	0.75	1	-	1.6	2	2.5	3	-	4
Mbar	75	250	-	-	750	-	-	-	-	-	-	-	-
psi	1	-	5	8	-	15	20	25	30	-	40	50	60
kPa	-	25	-	50	75	100	-	160	200	250	300	-	400

Other ranges on request.

Options	BC	0	None
		A	Glycerine filling *(Affects accuracy)*
		B	Red follower pointer on acrylic window *(Affects accuracy)*
		C	Customer Logo
		D	Dual scale
		E	Colour band
		F	Strainer in (+) connection

Ordering Sequence Code (Example)

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.