

# DS3

All SS Diaphragm Sealed Pressure Gauge  
With Direct Coupled 'I' Section Flange Type



CE

## Special Features

- External zero adjustment (optional)
- Stainless steel case & measuring system
- Socket directly welded to case
- Dry and liquid filled version
- Standard followed EN 837-3 (for NS 100, 150)
- CE marking (as per PED 97/23/EC) (for NS 100 mm & 150 mm)
- The diaphragm is welded to the body to ensure separation of the filling fluid from the process medium

## Application

- Diaphragm seals are designed to isolate the sensing element of pressure gauges and pressure switches from process fluids that they may be corrosive, viscous, sedimentous and / or with a high temperature.
- Chemical & Petrochemical industries
- For aggressive, hot, corrosive, environmentally hazardous or toxic media
- Food & beverage
- Pharmaceutical
- Process industry

## Gauge Specifications

### Standard Version : 100 mm, 125 mm & 150 mm

Accuracy	: ±1.0% of F. S.
Ambient temperature	: -25°C to +65°C
Process temperature	: -40°C to 200°C or as per fill fluid
Operating pressure range	: 75% of Scale Value
Over pressure limit	: < 100 bar : 125% of Max. Scale Value
	: > 100 to < 250 bar : 115% of Max. Scale Value

Case & Bezel	: AISI 304 SS (Bayonet Type)
Bourdon	: AISI 316L SS
Socket	: AISI 316 SS (Directly Welded to Case) or AISI 316L SS if NACE Option Select
Movement	: AISI 304 SS
Joints	: Tig Argon Arc Welding

Protection	: IP 68 as per IS/IEC 60529:2001
Dial	: Aluminium, black graduation on white background
Pointer	: Aluminium, black coloured Micrometer zero adjustable
Window	: Toughened Glass
Blow off Disc	: Neoprene
Gasket & Filling Plug	: Neoprene

## Sealed Unit Specifications

Seal type & Range	: S53 = -1 to 0 kg/cm <sup>2</sup> & 0 to 7 kg/cm <sup>2</sup> S38 = 10 kg/cm <sup>2</sup> to 250 kg/cm <sup>2</sup>
Instrument connection	: 3/8" BSP (F)
Process connection	: Flange
Fill fluid	: Silicon Oil - DC 200
Mounting	: Direct (without capillary) or Remote Mounting With Capillary Option

Diaphragm	: AISI 316L SS
Top Flange / Top Chamber	: AISI 304 SS
Bottom Flange	: AISI 316 SS
Nuts / bolts	: AISI 304 SS
Sealing gasket	: PTFE

### Dry But Fillable Version (Option DFG)

Fillable Dampening Liquid	: Glycerine 99.7% (Option - DFG)
Ambient Temperature	: Maximum 65°C
Process Temperature	: Maximum 65°C
Window	: Toughened Glass
Other Features	: Refer Specification of Standard Version

### Glycerine Filled Version (Option LFG)

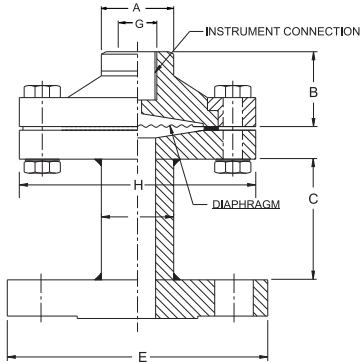
Accuracy	: ±1.0% of F.S.
Ambient Temperature	: Maximum 65°C
Process Temperature	: Maximum 65°C
Window	: Toughened Glass
Dampening Liquids	: Glycerine 99.7% (others available as option)
Other Features	: Refer Specification of Standard Version

### Temperature effect:

The variation of indication caused by effects of temperature is to be calculated by below formula; which is to be added in the specified accuracy while measurement :- Formula :  $\pm 0.04 \times (t_2 - t_1) \% \text{ of F. S.}$  where  $t_1$  = reference temperature (+20°C) and  $t_2$  = ambient temperature in °C.

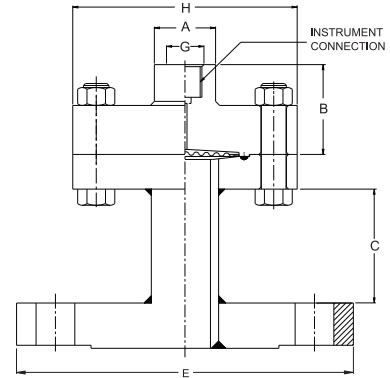
## Dimensions - Flanged Seal Type

TYPE "S53"



Seal Type	Ranges	A	~ B	~ C	E	H	G
S53	-1 to 0 kg/cm <sup>2</sup> 0 to 7 kg/cm <sup>2</sup>	30	31	50	*	85	3/8" BSP (F)

TYPE "S38"

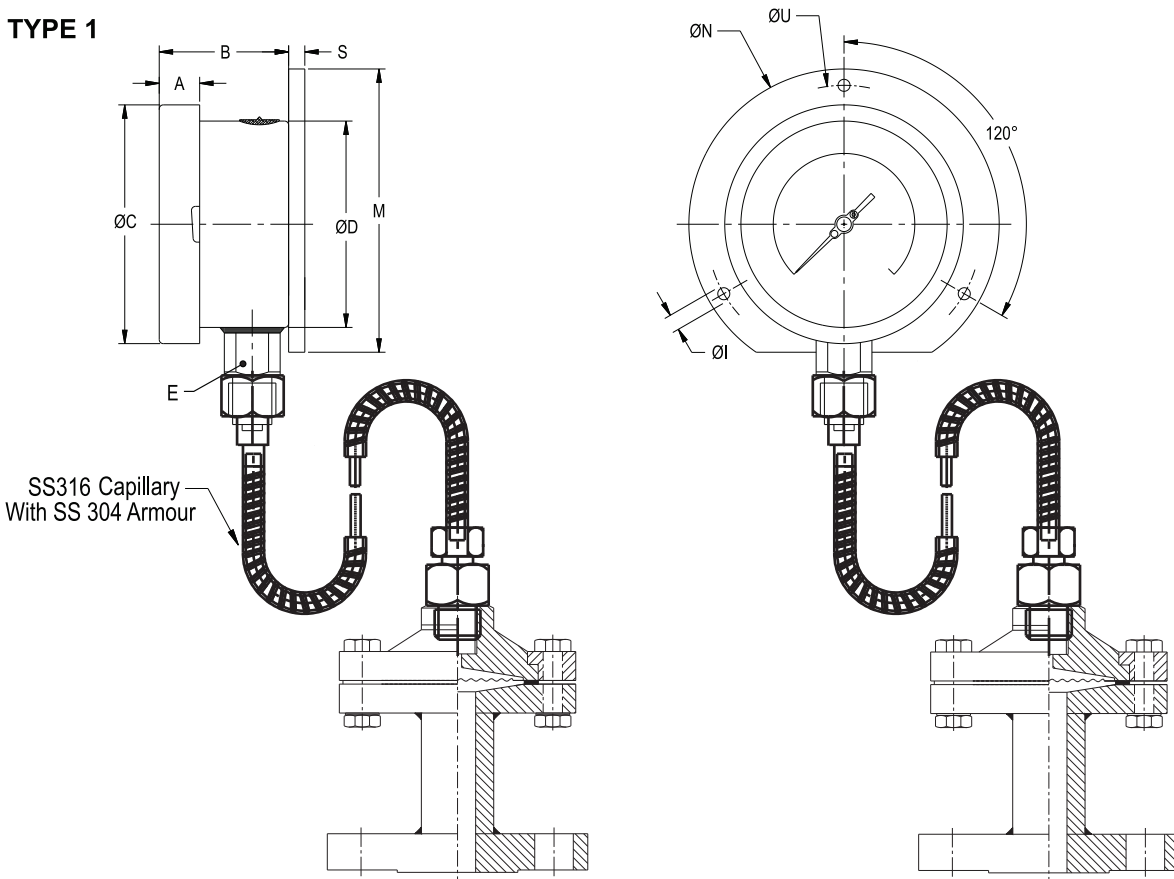


Seal Type	Ranges	A	~ B	~ C	E	H	G
S38	10 to 250 kg/cm <sup>2</sup>	30	41	50	*	66	3/8" BSP (F)

\*\* As per standard flange table ANSI, DIN, BS, JIS, Etc.,

## Dimensions - Standard Version

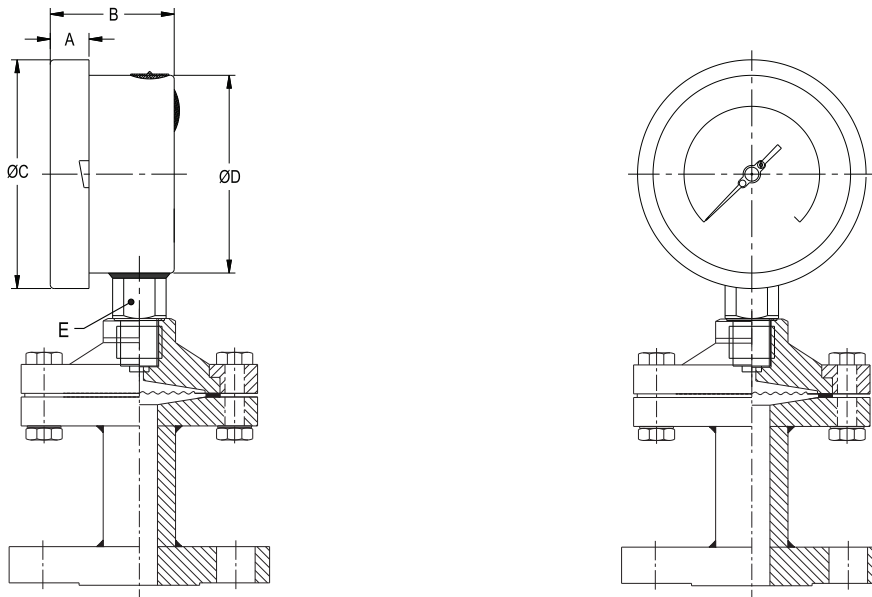
TYPE 1



NS	A	B	ØC	ØD	E	M	S	ØI	ØN	ØU	Weight in gram (With Box)	Weight in gram (With Glycerin & Box)
100	12.5	45	111	100	22	128	5	6	134	118	2400.0	2750.0
125	15	46	129	119	22	143	5	6	150	137	2500.0	3450.0
150	15	47	161	149	22	174.5	5	6	186	168	2800.0	3950.0
200	18	49	216	200	22	229	1.5	7	245	230	3500.0	4450.0
250	18	55	262	247	22	286.5	1.5	7	290	276	3950.0	4950.0

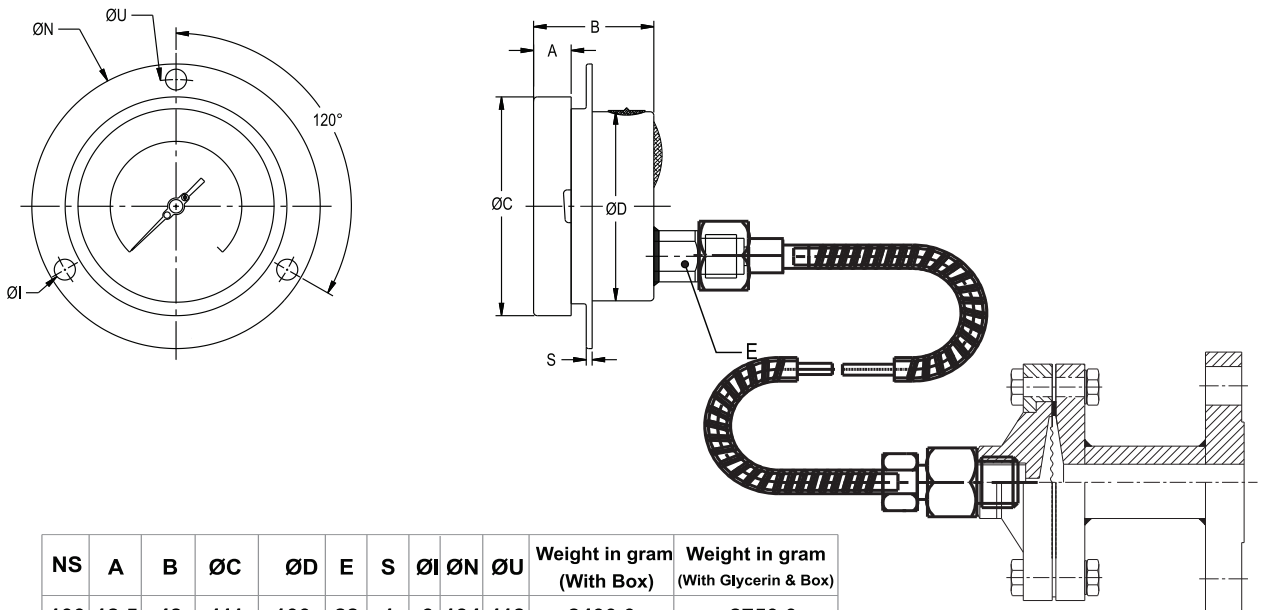
**Dimensions - standard version**

**TYPE 2**



NS	A	B	ØC	ØD	E	Weight in gram (With Box)	Weight in gram (With Glycerin & Box)
100	12.5	48	111	100	22	1950.0	2300.0
125	15	48	129	119	22	2050.0	3000.0
150	15	49	161	149	22	2350.0	3500.0
200	18	49	216	200	22	3050.0	4000.0
250	18	55	263	248	22	3500.0	4500.0

**TYPE 5**



NS	A	B	ØC	ØD	E	S	ØI	ØN	ØU	Weight in gram (With Box)	Weight in gram (With Glycerin & Box)
100	12.5	48	111	100	22	1	6	134	118	2400.0	2750.0
125	15	48	129	119	22	1	6	150	137	2500.0	3450.0
150	15	49	161	149	22	1	6	186	168	2800.0	3950.0
200	18	49	216	200	22	1.5	7	245	230	3500.0	4450.0
250	18	52	263	248	22	1.5	7	290	276	3950.0	4950.0

Notes : • Drawings are not to scale. • All Dimensions are in mm . • NS = Nominal size  
• Weights mentioned are approximate and for standard product. Weight can be different after selection of options.

## Flange Table With Ordering Codes

### How To Select

E.g. For flange size of 1-1/2" as per BS-10 table e with raised face : C10 - FF

**RF** Raised Face

**FF** Flat Face

Flange Finish shall be 125 - 250 AARH as a standard. For other finish, please consult factory.

### AS PER DIN 2527

DN	PN	CODE
10	6	A01
	10	A02
	16	A03
	25	A04
	40	A05
	64	A06
	100	A07
	160	A08
	250	A09
	400	A10
15	6	A11
	10	A12
	16	A13
	25	A14
	40	A15
	64	A16
	100	A17
	160	A18
	250	A19
	400	A20
20	6	A21
	10	A22
	16	A23
	25	A24
	40	A25
25	6	A26
	10	A27
	16	A28
	25	A29
	40	A30
	64	A31
	100	A32
160	A33	
250	A34	
400	A35	
32	6	A36
	10	A37
	16	A38
	25	A39
	40	A40
	64	A41
	100	A42
160	A43	
250	A44	
400	A45	
40	6	A46
	10	A47
	16	A48
	25	A49
	40	A50
	64	A51
	100	A52
	160	A53
	250	A54
	400	A55
50	6	A56
	10	A57
	16	A58
	25	A59
	40	A60
	64	A61
	100	A62
	160	A63
250	A64	
400	A65	

DN	PN	CODE
65	6	A61
	10	A62
	16	A63
	25	A64
	40	A65
	64	A66
	100	A67
	160	A68
	250	A69
	400	A70
80	6	A71
	10	A72
	16	A73
	25	A74
	40	A75
	64	A76
	100	A77
	160	A78
	250	A79
	400	A80

### AS PER JIS - B 2210

NOMINAL SIZE	RATING /CLASS	CODE
10A	5K	B57
	10K	B58
	40K	B59
15A	5K	B60
	10K	B61
	40K	B62
20A	5K	B63
	10K	B64
	40K	B65
25A	5K	B66
	10K	B67
	40K	B68
	40K	B69
32A	5K	B70
	10K	B71
	40K	B72
40A	5K	B73
	10K	B74
	40K	B74
50A	5K	B75
	10K	B76
	40K	B77
65A	5K	B78
	10K	B79
	40K	B80
80A	5K	B81
	10K	B82
	40K	B83

### AS PER DIN 2642

DN	PN	CODE
10	10	A90
		A91
		A92
		A93
		A94
		A95
		A96
		A97
		A98

### AS PER DIN 2633

DN	PN	CODE
10	16	A81
		A82
		A83
		A84
		A85
		A86
		A87
		A88
		A89

### AS PER DIN 2635

DN	PN	CODE
10	40	A99
		B01
		B02
		B03
		B04
		B05
		B06
		B07
		B08

### AS PER ANSI B 16.5

NOMINAL SIZE	RATING/CLASS	CODE
1/2"	150	B09
	300	B10
	600	B11
	900	B12
	1500	B13
	2500	B14
3/4"	150	B15
	300	B16
	600	B17
	900	B18
	1500	B19
	2500	B20

NOMINAL SIZE	RATING /CLASS	CODE
1"	150	B21
	300	B22
	600	B23
	900	B24
	1500	B25
1 1/4"	2500	B26
	150	B27
	300	B28
	600	B29
	900	B30
1 1/2"	1500	B31
	2500	B32

NOMINAL SIZE	RATING /CLASS	CODE
1 1/2"	150	B33
	300	B34
	600	B35
	900	B36
	1500	B37
2"	2500	B38
	150	B39
	300	B40
	600	B41
	900	B42
2 1/2"	1500	B43
	2500	B44

NOMINAL SIZE	RATING /CLASS	CODE
2 1/2"	150	B45
	300	B46
	600	B47
	900	B48
	1500	B49
3"	2500	B50
	150	B51
	300	B52
	600	B53
	900	B54
3 1/2"	1500	B55
	2500	B56

### AS PER BS - 10

NOMINAL SIZE	TABLE	CODE
1/2"	D	B84
	E	B85
	F	B86
	H	B87
	J	B88
	K	B89
3/4"	D	B90
	E	B91
	F	B92
	H	B93
	J	B94
	K	B95

NOMINAL SIZE	TABLE	CODE
1"	D	B96
	E	B97
	F	B98
	H	B99
	J	C01
	K	C02
1 1/4"	D	C03
	E	C04
	F	C05
	H	C06
	J	C07
	K	C08

NOMINAL SIZE	TABLE	CODE
1 1/2"	D	C09
	E	C10
	F	C11
	H	C12
	J	C13
	K	C14
2"	D	C15
	E	C16
	F	C17
	H	C18
	J	C19
	K	C20

NOMINAL SIZE	TABLE	CODE
2 1/2"	D	C21
	E	C22
	F	C23
	H	C24
	J	C25
	K	C26
3"	D	C27
	E	C28
	F	C29
	H	C30
	J	C31
	K	C32

## Range Table

Note : We offer National / International Scales like kPa, MPa, bar, psi, kg/cm<sup>2</sup> & Dual Scale like kPa with psi, kPa with bar, bar with psi or Equivalent scales as per the requirement can be provided on request. Following are the example tables for kg/cm<sup>2</sup> & psi scales.

### Pressure

#### Single Scale (kg/cm<sup>2</sup> or bar)

0/0.6	0/4	0/25
0/1	0/6	0/40
0/1.6	0/10	0/60
0/2.5	0/16	

#### Dual Scale (psi with kg/cm<sup>2</sup>)

psi	kg/cm <sup>2</sup>	psi	kg/cm <sup>2</sup>	psi	kg/cm <sup>2</sup>
0/15	0/1	0/400	0/28		
0/30	0/2	0/500	0/35		
0/60	0/4	0/600	0/40		
0/100	0/7	0/1000	0/70		
0/150	0/10				
0/230	0/16				
0/300	0/20				

### Vacuum & Compound

#### Dual Scale (inHg with psi & mmHg with kg/cm<sup>2</sup>)

inHg with psi	mmHg with kg/cm <sup>2</sup>	inHg with psi	mmHg with kg/cm <sup>2</sup>	inHg with psi	mmHg with kg/cm <sup>2</sup>
- 30/0	- 760/0	- 30/60	- 760/4	- 30/200	- 760/14
- 30/15	- 760/1	- 30/100	- 760/7	- 30/300	- 760/21
- 30/30	- 760/2	- 30/150	- 760/10	- 30/350	- 760/25

#### Single Scale (kg/cm<sup>2</sup>)

- 1/0	- 1/1.5	- 1/5	- 1/15
- 1/0.6	- 1/3	- 1/9	- 1/24

### Accessories (refer datasheet for complete specifications)

**CT** Cooling tower      **GS** Over load protector (gauge saver)\*\*      **SN** In-Built Snubber

Note : For Any Non Standard or Special Scale Marking Consult Factory

## HOW TO ORDER

## Example

### Basic Model

#### Code

DS2

#### Nominal Size

	<b>40</b>	<b>45</b>	<b>60</b>	
	100 mm	125 mm	150 mm	XX

### Type of Mounting

<b>1</b>	Wall / surface / projection mounting with bottom entry	
<b>2</b>	Direct bottom entry	X
<b>5</b>	Lower back entry with front flange	

### Process Connection

As Per DIN / BS / ANSI / JIS (select Code From Flange Table)

XXX

### Flange Seal Type

**S53** For Ranges upto 7 bar      **S38** For Range Above 7 bar      XXX

### Standard Option for Sealed Unit

**IF Any Other MOC Required Use Options given on Next Page & DO NOT USE THIS OPTION "STD" In Model Coding**

STD

Top Chamber : SS 304, Diaphragm : SS 316L, Flange : SS 316, Gasket : PTFE, Filling Fluid : Silicon DC 200

### Range

Refer range table

0/10  
kg/cm<sup>2</sup>

## How To Order      OPTIONAL ONLY IF REQUIRED      Example

### Top Chamber

<b>S4</b> AISI 304 SS (Standard)	<b>SL</b> AISI 316L SS	<b>S6</b> AISI 316 SS	<b>TI</b> Titanium	XX
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### Diaphragm (\* Range up to 21 kg/cm<sup>2</sup>)

<b>SL</b> AISI 316L SS (Standard)	<b>HC</b> Hastelloy 'C'	<b>TI</b> Titanium	<b>IN</b> Inconel 600	XX
<b>MO</b> MONEL	<b>SL</b> Silver*	<b>TN</b> Tantalum		

### Sealing Gasket

<b>TF</b> PTFE (Standard)	<b>MT</b> Metal	XX
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### Flange Material

( Refer Pressure v/s Temperature table below.)

S4 AISI 304 SS	HC Hastelloy 'C'	MOC OF BOTTOM CHAMBER	PRESSURE V/S TEMPERATURE						XX
			20 °C	40 °C	60 °C	80 °C	100 °C	120 °C	
S6 AISI 316 SS (Standard)	TN Tantalum	PVDF	10 kg/cm <sup>2</sup>	10 kg/cm <sup>2</sup>	10 kg/cm <sup>2</sup>	7 kg/cm <sup>2</sup>	4 kg/cm <sup>2</sup>	2 kg/cm <sup>2</sup>	
SL AISI 316L SS	PV PVC*	PP	10 kg/cm <sup>2</sup>	10 kg/cm <sup>2</sup>	6 kg/cm <sup>2</sup>	4 kg/cm <sup>2</sup>	1 kg/cm <sup>2</sup>	NA	
TI TITANIUM	PD PVDF*	PVC	10 kg/cm <sup>2</sup>	10 kg/cm <sup>2</sup>	4 kg/cm <sup>2</sup>	1 kg/cm <sup>2</sup>	NA	NA	
MO MONEL	PP Polypropylene*								

### Polymer Lining On Flange ( Optional )

<b>PL</b> PTFE Lining On Bottom Chamber - 2 to 3 mm THICK (Max. Up to 150°C) (Diaphragm PTFE Coated is Standard)	
<b>PT</b> PTFE Protection Only For Diaphragm (Max. Up to 150°C) (Suitable for Pressure Ranges only)	
<b>PC</b> PTFE Coating Only Diaphragm (Max. Up to 315°C)	
<b>FC</b> PTFE Coating on Flange & Diaphragm Both (Max. Up to 315°C)	XX

### Filling Fluids (\* Consult factory for specifications, price and delivery.)

<b>S1</b> Silicon DC 200 [-40 to 205°C] (Standard)	<b>S3</b> Silicon DC 710 [7 to 371°C]	
<b>FG</b> Food Grade OIL [-20 to 140°C]	<b>SY</b> Syltherm 800 [-40 to 315°C]	XX
<b>S2</b> Silicon DC 704 [10 to 337°C]		

### Remote Mounting (With capillary of Max. Up to 6 Mtrs.) Please Consult Factory if Required Length Above 6 Meter)

Specify In Meters (e.g. 1.5 = 1.5 METERS 2.0 = 2 METERS) 3Mtr.

### Capillary

<b>S4</b> AISI 304 SS	<b>S6</b> AISI 316 SS	XX
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Capillary Covered With Armour (Applicable with Capillary is Selected)

<b>S4</b> AISI 304 SS	<b>S6</b> AISI 316 SS	<b>PC</b> PVC (Ambient Temp. Max. 60°C)	XX
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### Optional Extras

<b>AC5</b> Accuracy ±0.5% of F. S. (for dry version)	<b>MTC</b> Material test certificates***	<b>OXS</b> Oxygen service (for dry version)	
<b>MBS</b> Monel bourdon & socket (Monel version)	<b>VPO</b> ON - OFF type vent plug	<b>CDD</b> Custom designed dial	
<b>LGF</b> Dampening liquid glycerine filled	<b>APM</b> Anti parallax mirror band dial ##	<b>IOS</b> Internal over pressure stop	XXX
<b>LSI</b> Dampening liquid silicon oil filled*	<b>EZA</b> External zero adjustment	<b>IVS</b> Internal vacuum stop	
<b>PLG</b> Plexi glass	<b>STP</b> SS tag plate	<b>CBS</b> AISI 316 SS case & bezel	
<b>STG</b> Shatterproof/safety glass	<b>TND</b> Tag No. marking on Dial	<b>MOS</b> AISI 316 SS movement	
<b>MDJ</b> Movement with dampening jelly	<b>HLT</b> Helium leak test	<b>DFG</b> Dry But Fillable Version (Glycerin)	
<b>KEP</b> Knife edge pointer	<b>CNS</b> Conformity as per NACE Standard	<b>DFS</b> Dry But Fillable Version (Silicon)	
<b>PED</b> CE marking (as per PED 97/23/EC)◆			

\* Gasket & Filling plug of Viton.

\*\*\*Material test certificates will be provided for wetted parts only with chemical composition testing. For others, please consult factory.

Scale shall be marked in kg/cm<sup>2</sup> or bar single Scale Only Consult factory for any Other scale requirement.

## For NS 150 mm & Above. ◆ For NS 100 mm to 150 mm.

**Ordering Example: DS2 - XX - X - XXX - XXX - STD- 0/10 kg/cm<sup>2</sup> + Options if any Required.**

**For other optional items, please contact factory for delivery and minimum order quantity.**

Note : Specifications and dimensions given in this product catalogue represents the state of engineering at the time of printing. Modifications may take place and materials specified may be replaced by others without prior notice.