

# DS2

All SS Diaphragm Sealed Pressure Gauge  
With Direct Flange Insert 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	: -1 to 0 kg/cm² & 0 to 70 kg/cm²
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

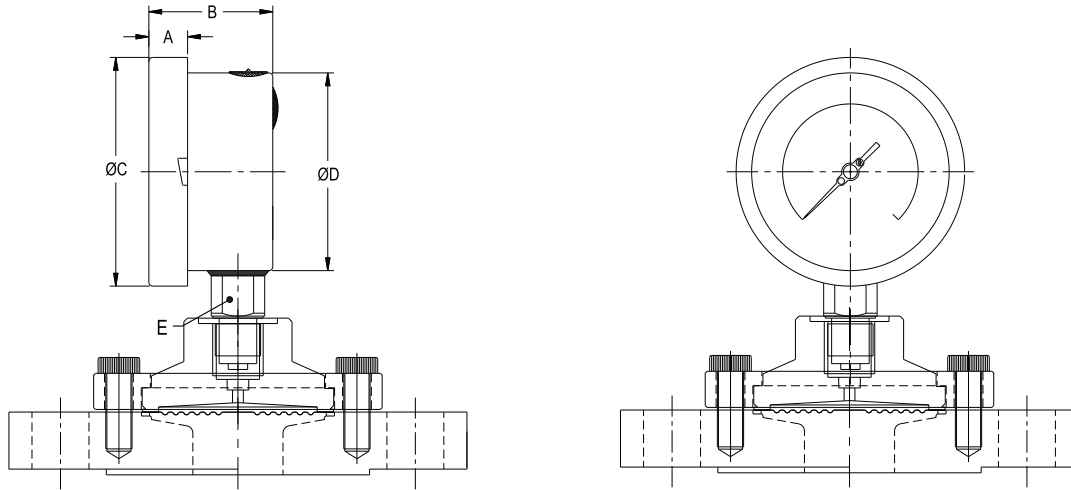
#### Temperature effect:

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 :  $\pm 0.04 \times (t_2 - t_1) \%$  of F. S. where  $t_1$  = reference temperature (+20°C) and  $t_2$  = ambient temperature in °C.



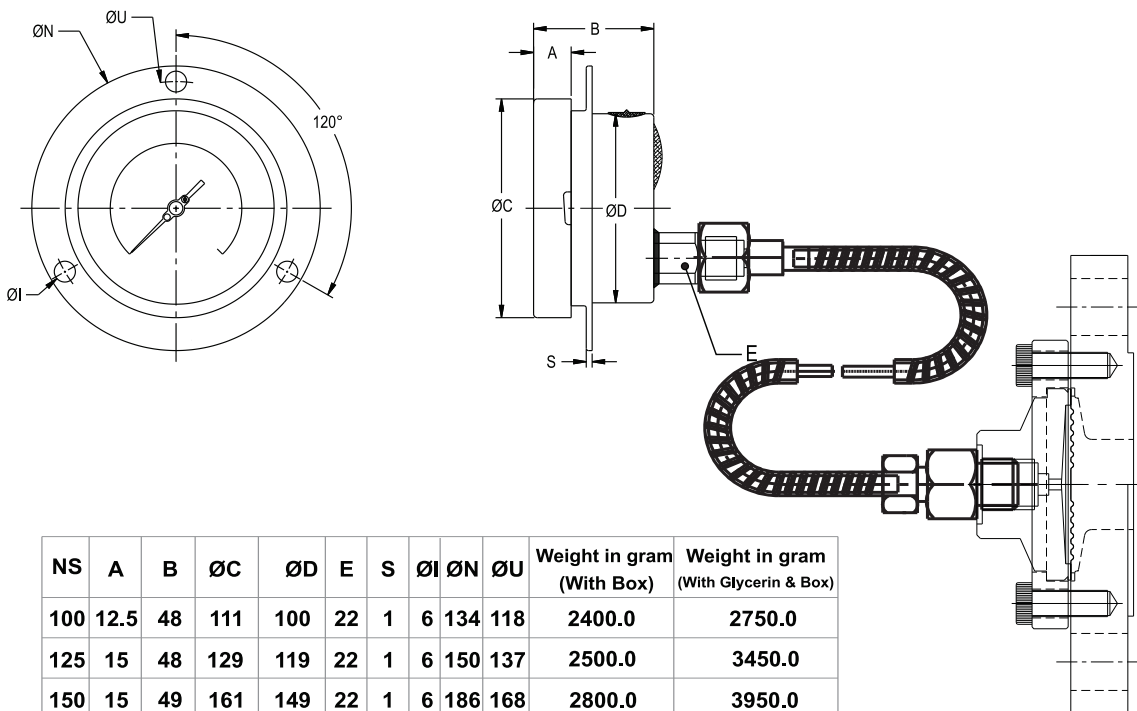
Dimensions - standard version

### 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
	64	A26
25	10	A27
	16	A28
	25	A29
	40	A30
	64	A31
	100	A32
40	160	A33
	250	A34
	400	A35
	6	A36
	10	A37
	16	A38
50	25	A39
	40	A40
	6	A41
	10	A42
	16	A43
	25	A44
65	40	A45
	64	A46
	100	A47
	160	A48
	250	A49
	400	A50
80	6	A51
	10	A52
	16	A53
	25	A54
	40	A55
	64	A56
100	100	A57
	160	A58
	250	A59
	400	A60

### AS PER DIN 2642

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 DIN 2633

DN	PN	CODE
10	10	A81
	15	A82
	20	A83
	25	A84
	32	A85
	40	A86
	50	A87
	65	A88
	80	A89

### AS PER DIN 2635

DN	PN	CODE
10	10	A99
	15	B01
	20	B02
	25	B03
	32	B04
	40	B05
	50	B06
	65	B07
	80	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
	2500	B26
1 1/4"	150	B27
	300	B28
	600	B29
	900	B30
	1500	B31
	2500	B32

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

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

	40	45	60
	100 mm	125 mm	150 mm

XX

### Type of Mounting

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

X

### Process Connection

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

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<sub>2</sub>  
kg/cm<sup>2</sup>

How To Order	OPTIONAL ONLY IF REQUIRED	Example
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**Top Chamber**

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

HC Hastelloy 'C'	TI Titanium	IN Inconel 600		XX
MO MONEL	Si Silver*	TN Tantalum		

**Sealing Gasket**

MT Metal	XX
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**Flange Material**

( Refer Pressure v/s Temperature table below.)

S4 AISI 304 SS	SL AISI 316L SS	TI TITANIUM	MO MONEL	HC Hastelloy 'C'	TN Tantalum	PV PVC*	PD PVDF*	PP Polypropylene*	MOC OF BOTTOM CHAMBER	PRESSURE V/S TEMPERATURE						XX
										20 °C	40 °C	60 °C	80 °C	100 °C	120 °C	
									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>	
									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	
									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	

**Polymer Lining On Flange ( Optional )**

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

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

S1 Silicon DC 200 [-40 to 205°C] (Standard)	SY Syltherm 800 [-40 to 315°C]	
FG Food Grade OIL [-20 to 140°C]		XX
S2 Silicon DC 550 [10 to 400°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.
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**Capillary**

S4 AISI 304 SS	S6 AISI 316 SS		XX
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**Capillary Covered With Armour (Applicable with Capillary is Selected)**

S4 AISI 304 SS	S6 AISI 316 SS	PC PVC (Ambient Temp. Max. 60°C)	XX
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**Optional Extras**

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