

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/cm² & 0 to 7 kg/cm² S38 = 10 kg/cm² to 250 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)

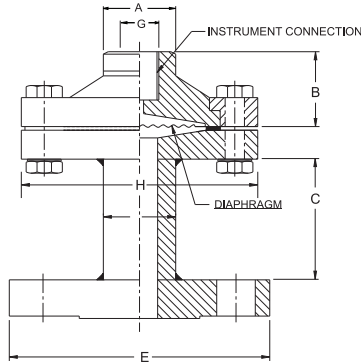
| | |
|---------------------|--|
| Accuracy | : ±1.0% of F.S. |
| Ambient Temperature | : Maximum 65°C |
| Process Temperature | : Maximum 65°C |
| Window | : Toughened Glass |
| Dampening Liquids | : Glycerine 99.7% (others available as option) |
| Other Features | : Refer Specification of Standard 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 : $\pm 0.04 \times (t_2 - t_1) \% \text{ of F. S.}$ where t_1 = reference temperature (+20°C) and t_2 = ambient temperature in °C.

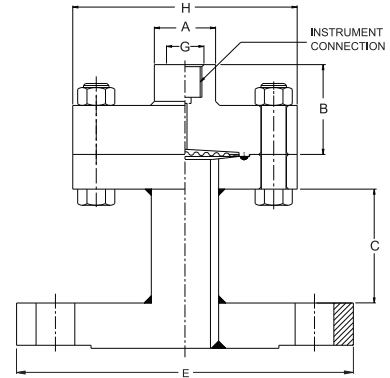
Dimensions - Flanged Seal Type

TYPE "S53"



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

TYPE "S38"

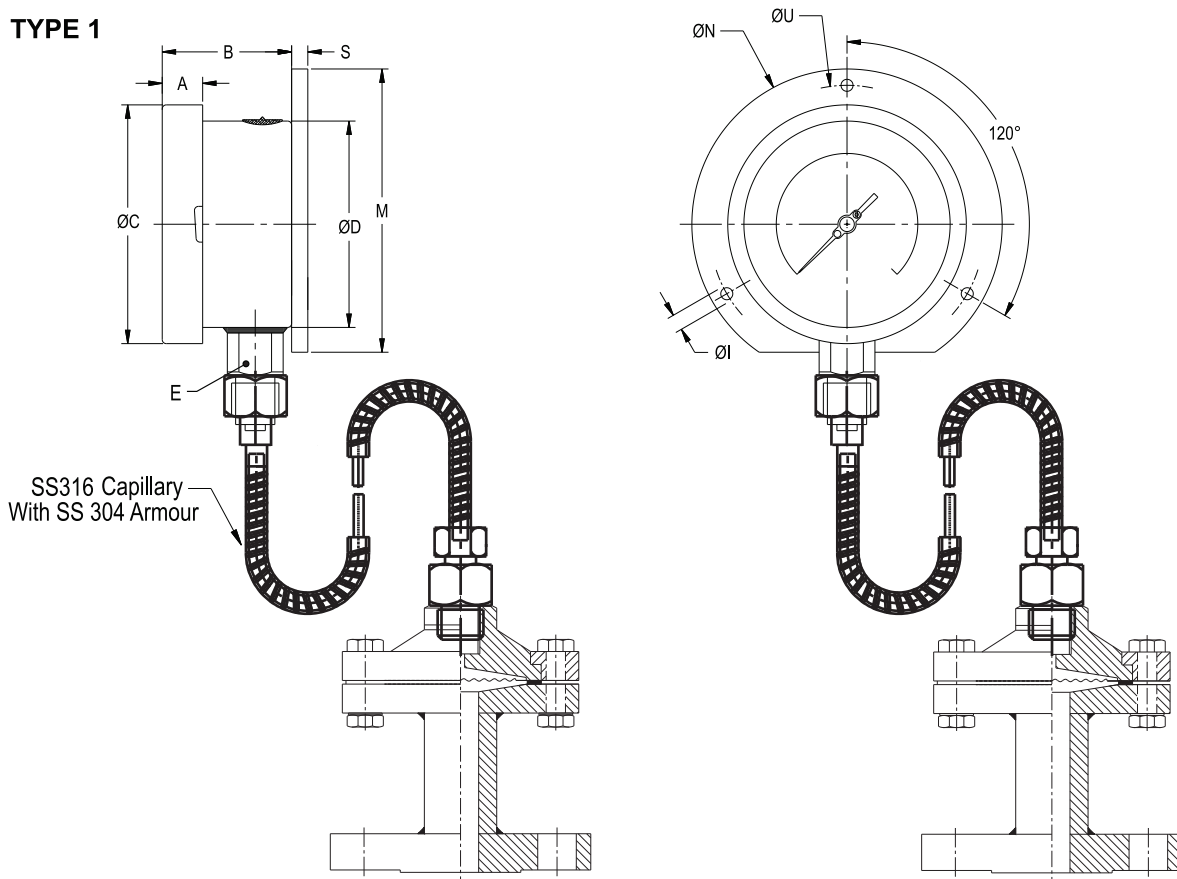


| Seal Type | Ranges | A | ~ B | ~ C | E | H | G |
|-----------|------------------------------|----|-----|-----|---|----|--------------|
| S38 | 10 to 250 kg/cm ² | 30 | 41 | 50 | * | 66 | 3/8" BSP (F) |

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

Dimensions - Standard Version

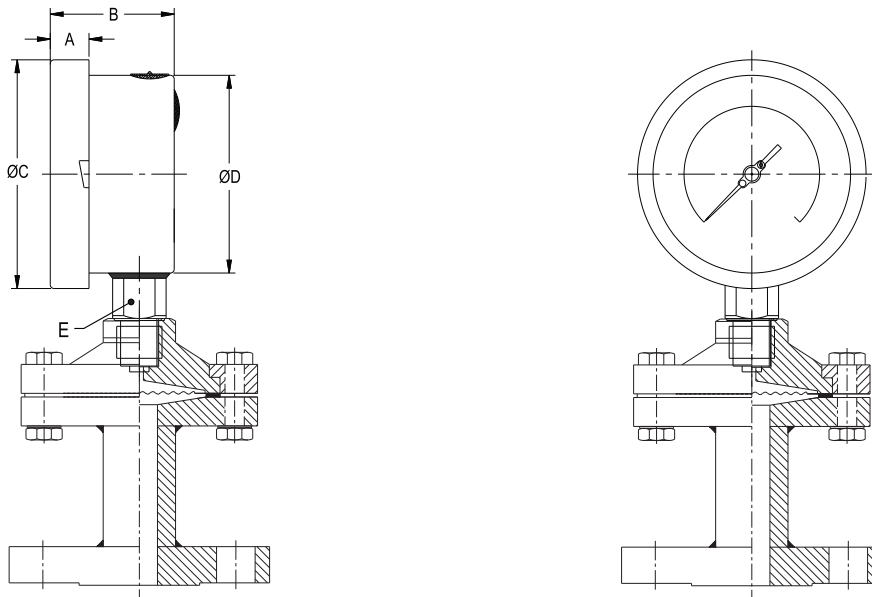
TYPE 1



| 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 |

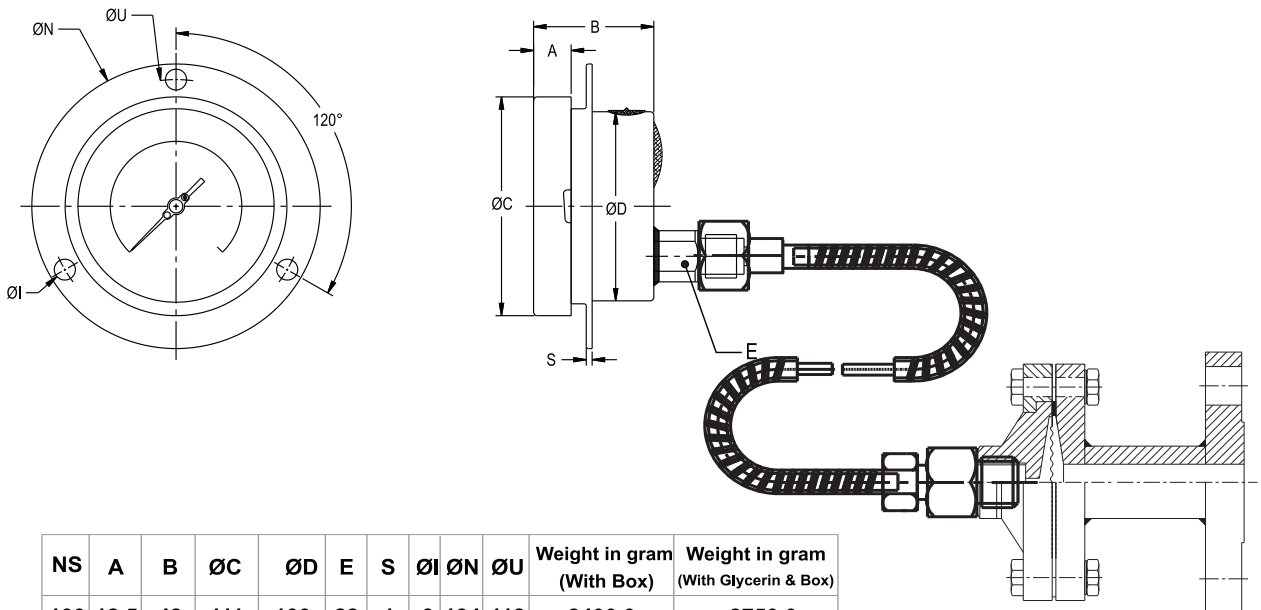
Dimensions - standard version

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 | |
| 40 | 100 | A32 | |
| | 160 | A33 | |
| | 250 | A34 | |
| | 400 | A35 | |
| | 32 | 6 | A36 |
| | | 10 | A37 |
| 16 | | A38 | |
| 25 | | A39 | |
| 40 | | A40 | |
| 64 | | A41 | |
| 40 | 10 | A42 | |
| | 16 | A43 | |
| | 25 | A44 | |
| | 40 | A45 | |
| | 64 | A46 | |
| | 100 | A47 | |
| 50 | 160 | A48 | |
| | 250 | A49 | |
| | 400 | A50 | |
| | 6 | A51 | |
| | 10 | A52 | |
| | 16 | A53 | |
| 50 | 25 | A54 | |
| | 40 | A55 | |
| | 64 | A56 | |
| | 100 | A57 | |
| | 160 | A58 | |
| | 250 | A59 | |
| 400 | A60 | | |

| 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 |
| 32A | 5K | B69 |
| | 10K | B70 |
| | 40K | B71 |
| 40A | 5K | B72 |
| | 10K | B73 |
| | 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 |
| 15 | | A91 |
| 20 | | A92 |
| 25 | | A93 |
| 32 | | A94 |
| 40 | | A95 |
| 50 | | A96 |
| 65 | | A97 |
| 80 | | A98 |

AS PER DIN 2633

| DN | PN | CODE |
|----|----|------|
| 10 | 16 | 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 | 40 | 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 |
| 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/cm² & 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/cm² & psi scales.

Pressure

Single Scale (kg/cm² 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/cm²)

| psi | kg/cm ² | psi | kg/cm ² | psi | kg/cm ² |
|-------|--------------------|--------|--------------------|-----|--------------------|
| 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/cm²)

| inHg with psi | mmHg with kg/cm ² | inHg with psi | mmHg with kg/cm ² | inHg with psi | mmHg with kg/cm ² |
|---------------|------------------------------|---------------|------------------------------|---------------|------------------------------|
| - 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/cm²)

| | | | |
|---------|---------|-------|--------|
| - 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 | | | | DS2 |
| Code | | | | |
| Nominal Size | 40 | 45 | 60 | XX |
| | 100 mm | 125 mm | 150 mm | |
| Type of Mounting | | | | X |
| 1 | Wall / surface / projection mounting with bottom entry | | | |
| 2 | Direct bottom entry | | | |
| 5 | Lower back entry with front flange | | | |
| Process Connection | | | | XXX |
| As Per DIN / BS / ANSI / JIS (select Code From Flange Table) | | | | |
| Flange Seal Type | | | | XXX |
| S53 | For Ranges upto 7 bar | | S38 For Range Above 7 bar | |
| Standard Option for Sealed Unit | | | | STD |
| IF Any Other MOC Required Use Options given on Next Page & DO NOT USE THIS OPTION "STD" In Model Coding | | | | |
| Top Chamber : SS 304, Diaphragm : SS 316L, Flange : SS 316, Gasket : PTFE, Filling Fluid : Silicon DC 200 | | | | |
| Range | | | | 0/10 |
| Refer range table | | | | kg/cm ² |

| How To Order | OPTIONAL ONLY IF REQUIRED | Example |
|--------------|---------------------------|---------|
|--------------|---------------------------|---------|

Top Chamber

| | | | |
|------------------------|-----------------------|--------------------|----|
| SL AISI 316L SS | S6 AISI 316 SS | TI Titanium | XX |
|------------------------|-----------------------|--------------------|----|

Diaphragm (* Range up to 21 kg/cm²)

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

Sealing Gasket

| | |
|-----------------|----|
| MT Metal | XX |
|-----------------|----|

Flange Material

(Refer Pressure v/s Temperature table below.)

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

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) | XX |
| FC PTFE Coating on Flange & Diaphragm Both (Max. Up to 315°C) | |

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] | XX |
| FG Food Grade OIL [-20 to 140°C] | | |
| 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. |
|--|-------|

Capillary

| | | |
|-----------------------|-----------------------|----|
| S4 AISI 304 SS | S6 AISI 316 SS | XX |
|-----------------------|-----------------------|----|

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 |
|-----------------------|-----------------------|---|----|

Optional Extras

| | | | |
|--|--|--|-----|
| AC5 Accuracy ±0.5% of F. S. (for dry version) | MTC Material test certificates*** | OXS Oxygen service (for dry version) | XXX |
| MBS Monel bourdon & socket (Monel version) | VPO ON - OFF type vent plug | CDD Custom designed dial | |
| 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/cm² 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/cm² + 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.