

NESS

STAINLESS STEEL PRESSURE GAUGE

BOURDON TUBE TYPE

Model- PB

The C-shaped Bourdon tube has a hollow, elliptical cross section. It is closed at one end and is connected to the fluid pressure at the other end. When pressure is applied, its cross section becomes more circular, causing the tube to straighten out, A typical Bourdon tube is coupled mechanically to an indicating needle / pointer on the other end. This end tube which not fixed moves, this movement being a measurement for the pressure. This movement indicated by the pointer.

Special Features :

- Stainless steel case & measuring system
- Socket & case welded
- Protection IP 66
- Fillable or liquid filled
- Accuracy up to 0.6%
- Standard followed in general EN 837-1/ IS 3624 & ANSI / ASME B40.1 for NS 125mm

Applications :

- Food & Beverage
- Pharmaceutical
- Chemical & Petrochemical Industries
- Pumps
- Hydro-cleaning Machines
- Engine compressor, turbines and diesel engine
- Refrigerating Plants



Specifications

STANDARD VERSION : 100mm, 125mm and 150mm

| | |
|---------------------|---|
| Accuracy | : $\pm 1.6\%$ of F.S. |
| Ambient temperature | : -25°C to $+65^{\circ}\text{C}$ |
| Operating pressure | : 75% of the Scale Value |
| Over pressure limit | : 125% of Max. Scale Value for Pressure Ranges up to 100 bar |
| | : 115% of Max. Scale Value for Pressure Ranges from 100 to 600 bar |
| | : 110% of Max. Scale Value for Pressure Ranges from 600 to 1000 bar |
| Case | : AISI 304 SS |
| Ring | : AISI 304 SS, Bayonet Type |
| Bourdon | : AISI 316L SS |
| Socket | : AISI 316L SS (Directly Welded to Case) |
| Movement | : AISI 304 SS |
| Protection | : IP 66 |
| Dial | : Aluminium, black graduation on white background |
| Pointer | : Aluminium, black coloured micrometer zero adjustable |
| Window | : Safety Glass |

GLYCERINE FILLED VERSION (OPTION GF)

| | |
|---------------------|--|
| Accuracy | : 1.6 % of F.S. |
| Ambient Temperature | : Maximum 65° C |
| Process Temperature | : -20° C /65° C |
| Window | : Safety Glass |
| Damping Liquids | : Glycerine 98% (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 t1 = reference temperature (+20° C) and t2 = ambient temperature in ° C.

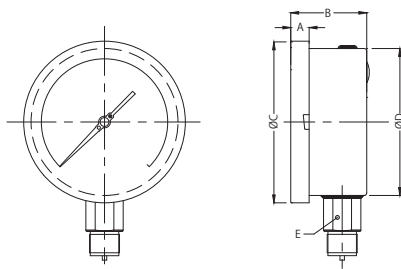
Other Features

DIMENSIONS :- FOR STANDARD MODEL

TYPE 11 TYPE 14 TYPE 21 TYPE 22 TYPE 23 TYPE 31

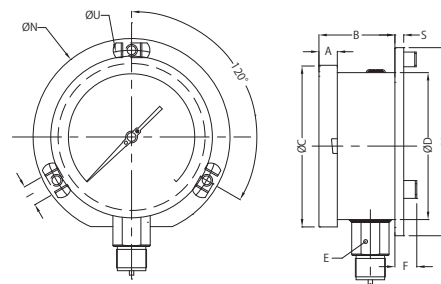
DRAWING OF MODEL (TYPE WISE)

TYPE 11



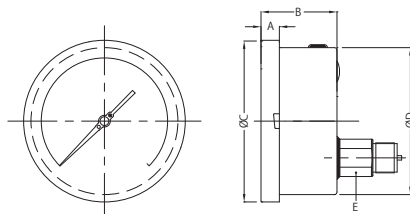
| Size | A | B | ØC | ØD | E |
|------|------|----|-----|-----|----|
| 100 | 12.5 | 47 | 111 | 100 | 22 |
| 125 | 15 | 48 | 129 | 119 | 22 |
| 150 | 15 | 49 | 161 | 149 | 22 |

TYPE 14



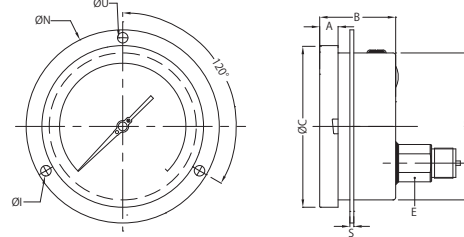
| Size | A | B | ØC | ØD | E | M | S | F | ØI | ØN | ØU |
|------|------|------|-----|-----|----|-------|---|------|----|-----|-----|
| 100 | 12.5 | 45 | 111 | 100 | 22 | 128 | 6 | 14.5 | 6 | 134 | 118 |
| 125 | 15 | 46 | 129 | 119 | 22 | — | 4 | 14.5 | 6 | 150 | 137 |
| 150 | 15 | 46.5 | 161 | 149 | 22 | 174.5 | 6 | 14.5 | 6 | 186 | 168 |

TYPE 21



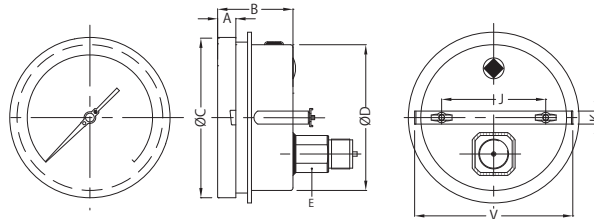
| Size | A | B | ØC | ØD | E |
|------|------|----|-----|-----|----|
| 100 | 12.5 | 47 | 111 | 100 | 22 |
| 125 | 15 | 48 | 129 | 119 | 22 |
| 150 | 15 | 49 | 161 | 149 | 22 |

TYPE 22



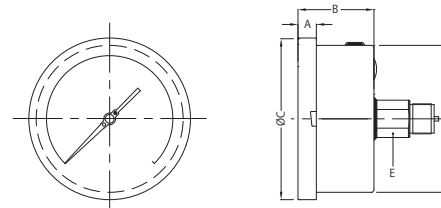
| Size | A | B | ØC | ØD | E | S | ØI | ØN | ØU |
|------|------|----|-----|-----|----|---|----|-----|-----|
| 100 | 12.5 | 47 | 111 | 100 | 22 | 1 | 6 | 134 | 118 |
| 125 | 15 | 48 | 129 | 119 | 22 | 4 | 6 | 150 | 137 |
| 150 | 15 | 49 | 161 | 149 | 22 | 5 | 6 | 186 | 168 |

TYPE 23



| Size | A | B | ØC | ØD | E | J | K | V |
|------|------|----|-----|-----|----|-------|----|-------|
| 100 | 12.5 | 48 | 110 | 100 | 22 | 66.5 | 16 | 106 |
| 125 | 11 | 48 | 131 | 119 | 22 | 80 | 16 | 129.5 |
| 150 | 15 | 49 | 161 | 149 | 22 | 103.5 | 16 | 158 |

TYPE 31



| Size | A | B | ØC | ØD | E |
|------|------|----|-----|-----|----|
| 100 | 12.5 | 47 | 111 | 100 | 22 |

SELECTION OF MODEL

(1) MODEL CODE

(2) DIAL SIZE

| Dial Size | Code |
|-----------|------|
| 100 | 4 |
| 125 | 5 |
| 150 | 6 |



(3) MOUNTING TYPE

| Mounting Type | Code |
|--|------|
| DIRECT BOTTOM ENTRY | 11 |
| WALL / SURFACE / PROJECTION MOUNTING WITH BOTTOM ENTRY | 14 |
| DIRECT LOWER BACK ENTRY | 21 |
| LOWER BACK ENTRY WITH FRONT FLANGE | 22 |
| LOWER BACK ENTRY WITH MOUNTING BRACKET | 23 |
| DIRECT CENTER BACK ENTRY | 31 |

(4) GAUGE CONNECTION SIZE

| | | | |
|---------------|-----|---------------|-----|
| 1/2" BSP (M) | 4BM | 3/8" G (M) | 3GM |
| 1/2" BSPT (M) | 4TM | 3/8" BSP (M) | 3BM |
| 1/2" NPT (M) | 4NM | 3/8" R (M) | 3RM |
| 1/2" G (M) | 4GM | 3/8" BSPT (M) | 3TM |
| 1/2" R (M) | 4RM | 3/8" NPT (M) | 3NM |

Note :- OTHER OPTIONS WILL BE PROVIDED ON REQUEST. CONSULT FACTORY FOR MORE DETAILS

(5) RANGE

| kg/cm ² or bar | |
|---------------------------|--------|
| -1-0 | 0-6 |
| -1-0.6 | 0-10 |
| -1-1.5 | 0-16 |
| -1-4 | 0-25 |
| -1-6 | 0-40 |
| -1-10 | 0-60 |
| -1-16 | 0-100 |
| 0-0.6 | 0-160 |
| 0-1 | 0-250 |
| 0-1.6 | 0-400 |
| 0-2.5 | 0-600 |
| 0-4 | 0-1000 |

REFER TO THE FOLLOWING TABLE

| MPa | |
|----------|-------|
| -0.1-0.3 | 0-2 |
| -0.1-0.6 | 0-2.5 |
| -0.1-0.2 | 0-3.5 |
| -0.1-0 | 0-4 |
| 0-0.2 | 0-6 |
| 0-0.25 | 0-10 |
| 0-0.4 | 0-16 |
| 0-0.6 | 0-25 |
| 0-1 | 0-40 |
| 0-1.6 | 0-60 |
| | 0-100 |

(OTHER UNIT & DUAL SCALE CAN BE ARRANGED ON REQUEST.)

(6) OPTIONS

| | |
|--|---|
| CF AISI 316 CASE & BEZEL | DS INTEGRAL DAMPENING SCREW (AISI 316 SS) |
| TN CALIBRATION CERTIFICATE TRACEABLE TO NATIONAL/ INTERNATIONAL STANDARDS | EZ EXTERNAL ZERO ADJUSTMENT (EXCEPT TYPE 22) |
| TS SS TAG PLATE | PS INTERNAL OVER PRESSURE STOP |
| GF DAMPENING LIQUID GLYCERINE FILLED | VS INTERNAL VACUUM STOP |
| SF DAMPENING LIQUID SILICON OIL FILLED | BM MONEL BOURDON & SOCKET (MONEL VERSION) |
| TD DIAL TAG MARKING | DM INTEGRAL DAMPENING SCREW (MONEL) |
| AC ACCURACY +/- 0.6% OF F.S. | OR OVER RANGE PROTECTION 150% OF F.S. |
| AD ACCURACY +/- 1.0% OF F | |

| Example | 1 | 2 | 3 | 4 | 5 | 6 |
|--------------------|----|---|----|-----|---------|-----------|
| SELECTION OF MODEL | PB | 4 | 11 | 4NM | 0-10bar | Option XX |

PB

4

11

4NM

0-10bar

XX

Below options are provided on request of customer.

| | |
|----|-------------------------------------|
| CE | CE MARKING (AS PER PED 97/23/EC) SS |
| NC | CONFORMITY AS PER NACE MR 0175 |
| CC | FIVE POINT CALIBRATION CERTIFICATE |
| HT | HELIUM LEAK TEST |
| IA | IBR APPROVAL |
| MC | MATERIAL TEST CERTIFICATE |
| WV | ON-OFF TYPE VENT PLUG |
| OS | OXYGEN SERVICE |
| DC | CUSTOM DESIGNED DIAL |

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We reserve the rights to change models and specifications without prior notice.