

Pressure gauge with diaphragm seal series MDB

Pressure gauges with diaphragm flanges
assembled with MAX & MBX
Dry or Glycerine / Silicon liquid filled
St. steel case & Diaphragm

General features

- All st. steel pressure gauges
- German movement and sensing element
- Pressure ranges from -1...0 bar to 0...40 bar
- Accuracy class 1.0
- Degree of Protection

Application area

- Diaphragm seals protects the gauges from aggressive, highly viscous or solidifying measurement media as well as from high media temperatures, vapours, measurement pressure fluctuations and pressure spikes as well as increasing the overload capacity.
- Food industry, Pharmaceutical industry, Biotechnology.

General specification

Assembled with pressure gauges with MAX & MBX.

All stainless steel pressure gauges, MAX

MAX.51x, 100mm
MAX.41x, 80mm
MAX.31x, 63mm

Wetted parts of Brass, MBX

MBX.31x, 63mm

Accuracy class

MAX.51x / Class 1.0 per EN 837-1
MAX.41x / Class 1.6 per EN 837-1
MAX.31x / Class 1.6 per EN 837-1
MBX.31x / Class 1.6 per EN 837-1

Pressure ranges

-1...0 to 40 bar

Temperature

operating temperature ranges
(ambient and measured medium)
-20...+60°C
storage temperature
-20...+60°C

Case and bezel ring

Material: St. steel
bayonet ring
with blow-out disc at the top of the case

Type of mounting Bottom connection



Pressure gauge with diaphragm, series MDB

Process Connection

Material of St. steel
MDB connection G1/2, G3/8, PT1/2, PT3/8
others on request

Bourdon Tube

St. steel for MAX
Brass for MBX

Movement

St. steel for MAX
Brass for MBX

Diaphragm

St. steel, 316L

Diaphragm housing

St. steel

Dial

Aluminium, white

Pointer

Aluminium, black

Window

Instrument safety glass

Degree of protection (DIN EN 60 529/IEC 529)

IP 65

Option

Case filling 85%
- glycerine or silicone

Liquid filling

- Standard : Silicon Oil
- Option : Vegetable Oil, High temp. Oil

Teflon Coating or Lining



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Ordering information

Model code

MDB · [] · [] · [] · [] · [] · [] · []

Selection of pressure gauge

all st. steel

MAX.51x / 100mm
MAX.41x / 80mm
MAX.31x / 63mm

wetted parts, brass

MBX.31x / 63mm

Liquid filling

0 : Dry
1 : Glycerin
2 : Silicon

Mounting

1 : Direct mounting with bottom connection
8 : Capillary with SUS protection
9 : Capillary with SUS protection & PVC sheath

Liquid filling

GL : Glycerin
SI : Silicon
VO : Vegetable oil
HT : High Temperature oil

Option

Refer to option table

Pressure range

Refer to pressure range table

Unit of measurement

B : bar
M : MPa
P : psi
D : dual scale
X : others

Process connection

G0 : PF 1"
G2 : PF 1/2"
G3 : PF 3/8"
G4 : PF 1/4"
R2 : PT 1/2"
R4 : PT 1/4"

Pressure range code, unit bar

| Code | Range | Code | Range | Code | Range | Code | Range |
|--------|---------|------|----------|------|---------|------|--------|
| ss 1.6 | -1...24 | R15 | -1...1.5 | R26 | 0...1.6 | R35 | 0...16 |
| ss 1.6 | -1...15 | R17 | -1...0.6 | R28 | 0...2.5 | R37 | 0...25 |
| R09 | -1...9 | R19 | -1...0 | R30 | 0...4 | R39 | 0...40 |
| R11 | -1...5 | R21 | 0...0.6 | R32 | 0...6 | | |
| R13 | -1...3 | R23 | 0...1 | R33 | 0...10 | | |

Option code

| Code | Description | Code | Description |
|------|---|------|--|
| UF | Upper flange 316L | ND | New dial design |
| LF | Lower flange 316L | NF | New dial face printing cost per pcs |
| LPV | Lower flange PCV | GM | Green marking per pcs |
| LPP | Lower flange PP | CD | New dial face design with company logo |
| LPE | Lower flange PE | RS | Restrictor screw in socket hole for high pulsation |
| TC | Diaphragm teflon coating | UC | U-clamp for back connection, steel |
| OR | Other pressure range per pcs | DMCC | Manufacture calibration certificate |
| NO | "USE No OIL" per pcs, at least ≥ 10 pcs | KC | KOLAS Ilac-MRA calibration certificate |
| TP | St. stell tag plate, 60 x 20 x 0.5t | CC | Certificate of conformance / origin |

How to Order

MDB.MAX.511.G2BR39.GM 20...25 bar

MDB.MAX.100mm, Bottom Connection, Glycerine, PF1/2", 0...40 bar, Green marking 20-25 bar

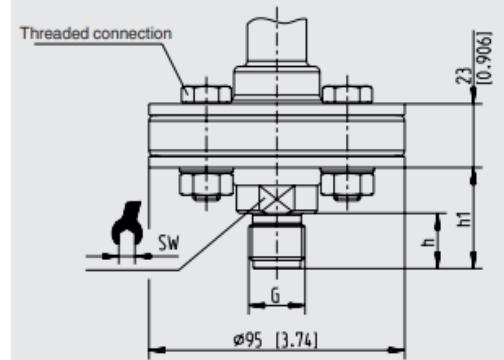
Dimension in mm [inch.]

■ **Threaded flange connection**

Flange per DIN2501

| DN [mm] | PN [bar] | Dimensions [mm] | | | | | | G ₁ | Weight [kg] |
|------------|-------------|-----------------|-----|----------------|----|---|----|----------------|----------------|
| | | D | k | d ₄ | b | f | H | | |
| 15 | 10/40 | 95 | 65 | 45 | 28 | 2 | 56 | 4 x M 12 | 1.56 |
| | 63/100 | 105 | 75 | 45 | 25 | 2 | 53 | 4 x M 12 | 2.00 |
| | 160 | 105 | 75 | 45 | 25 | 2 | 53 | 4 x M 12 | 2.13 |
| | 250 | 130 | 90 | 45 | 26 | 2 | 54 | 4 x M 12 | 3.20 |
| 20 | 10/40 | 105 | 75 | 58 | 25 | 2 | 53 | 4 x M 12 | 1.87 |
| 25 | 10/40 | 115 | 85 | 68 | 22 | 2 | 50 | 4 x M 12 | 2.10 |
| | 63/100 | 140 | 100 | 68 | 24 | 2 | 52 | 4 x M 12 | 3.20 |
| | 160 | 140 | 100 | 68 | 24 | 2 | 52 | 4 x M 12 | 3.60 |
| | 250 | 150 | 105 | 68 | 28 | 2 | 56 | 4 x M 12 | 4.00 |
| 40 | 10/40 | 150 | 110 | 88 | 22 | 2 | 50 | 4 x M 12 | 3.14 |
| | 63/100 | 170 | 125 | 88 | 26 | 2 | 54 | 4 x M 12 | 4.90 |
| | 160 | 170 | 125 | 88 | 28 | 2 | 56 | 4 x M 12 | 5.24 |
| | 250 | 185 | 135 | 88 | 34 | 2 | 62 | 4 x M 12 | 6.94 |

Male thread



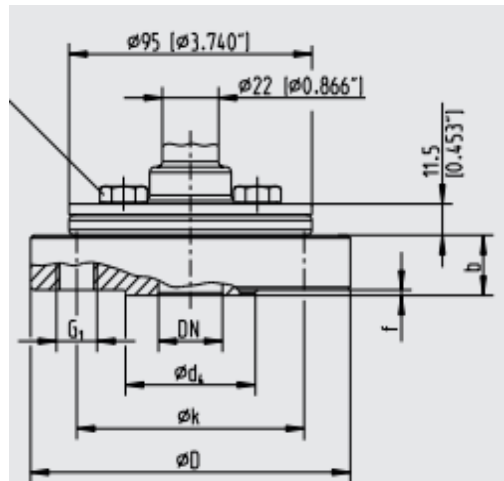
Threaded connections:
 4x to 100 bar
 8x 101 ... 250 bar
 8x with metal sealing to 250 bar

Legend:
 Mb Diameter of diaphragm
 G Thread
 SW Spanner width

■ **Flanged process connection**

Flange per ANSI B 16.5

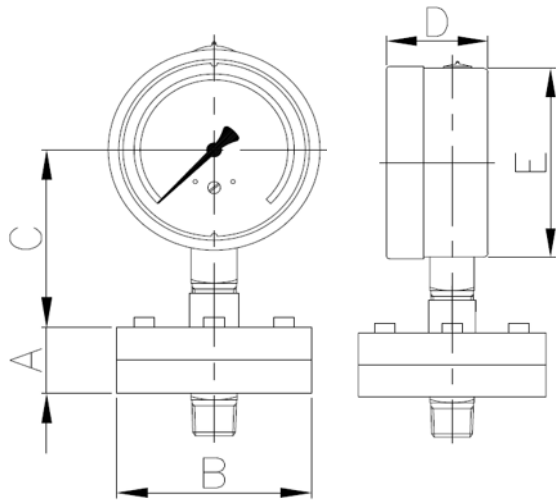
| DN [inch] | PN [class #] | Dimensions [mm] | | | | | | G ₁ |
|--------------|-----------------|-----------------|-----|----------------|----|---|----|----------------|
| | | D | k | d ₄ | b | f | H | |
| 1/2" | 150 | 95 | 61 | 35 | 28 | 2 | 56 | 4 x 1/2" |
| | 300 | 105 | 75 | 45 | 25 | 2 | 53 | 4 x 1/2" |
| | 600 | 105 | 75 | 45 | 25 | 2 | 53 | 4 x 1/2" |
| | 1500 | 130 | 90 | 45 | 26 | 2 | 54 | 4 x 3/4" |
| 3/4" | 150 | 100 | 70 | 43 | 28 | 2 | 56 | 4 x 1/2" |
| | 300 | 120 | 83 | 43 | 22 | 2 | 50 | 4 x 5/8" |
| | 600 | 120 | 83 | 43 | 25 | 7 | 53 | 4 x 5/8" |
| | 1500 | 130 | 89 | 43 | 32 | 7 | 60 | 4 x 3/4" |
| 1" | 150 | 110 | 80 | 51 | 22 | 2 | 56 | 4 x 1/2" |
| | 300 | 125 | 89 | 51 | 22 | 2 | 50 | 4 x 5/8" |
| | 600 | 125 | 89 | 51 | 25 | 7 | 53 | 4 x 5/8" |
| | 1500 | 150 | 102 | 51 | 36 | 7 | 64 | 4 x 7/8" |
| 1 1/2" | 150 | 130 | 99 | 73 | 22 | 2 | 56 | 4 x 1/2" |
| | 300 | 155 | 115 | 73 | 22 | 2 | 50 | 4 x 3/4" |
| | 600 | 155 | 115 | 73 | 30 | 7 | 58 | 4 x 3/4" |
| | 1500 | 180 | 124 | 73 | 39 | 7 | 67 | 4 x 1" |



Threaded connection:
 4x to 100 bar
 8x to 250 bar
 8x with metal sealing

Legend:
 Mb Effective diameter of diaphragm
 D Outer diameter of diaphragm seal
 b Flange thickness
 d₄ Sealing face diameter
 f Height of raised face
 k Pitch circle diameter
 G₁ Thread
 x Number of screws

Outline drawing



Dimension (mm)

| | A | B | C | D | E |
|---------------|----|----|----|----|----|
| Chemical seal | | | | | |
| MDB / 100mm | 19 | 89 | 80 | 48 | 99 |