

Bourdon tube pressure gauge

Stainless steel version

Models P.22

P.221 , P.222



for further approvals
see page 3

Applications

With liquid-filled case for applications with high dynamic pressure loads or vibrations 1)

For gaseous and liquid aggressive media that are not highly viscous or crystallising, also in aggressive ambience.

Process industry: Chemical/petro-chemical, power stations, mining, on- and offshore, environmental technology, machine building and general plant construction



Special features

Excellent load-cycle stability and shock resistance All stainless steel construction

Taiwan Lloyd approval

Scale ranges up to 0 ... 1,600 bar

Description

Design

EN 837-1

Accuracy class

NS 63: 1.6

NS 100, 160: 1.0

Scale ranges

NS 63: 0 ... 1 to 0 ... 1,000 bar

NS 100: 0 ... 0.6 to 0 ... 1,000 bar

NS 160: 0 ... 0.6 to 0 ... 1,600 bar

or all other equivalent vacuum or combined pressure and vacuum ranges

Bourdon tube pressure gauge model P.22

Pressure limitation

NS 63: Steady: 3/4 x full scale value
Fluctuating: 2/3 x full scale value
Short time: Full scale value

NS 100, 160: Steady: Full scale value
Short time: 1.3 x full scale value

Permissible temperature

Ambient: '-40 ... +60 °C without liquid filling
'-20 ... +60 °C gauges with glycerine filling 1)

Medium: '+200 °C maximum without liquid filling
'+100 °C maximum with liquid filling 1)

Temperature effect

When the temperature of the measuring system deviates from the reference temperature (+20 °C): max. ±0.4 %/10 K of full scale value

Ingress protection

IP65 per EN 60529 / IEC 60529

Standard version**Process connection**

Stainless steel 316L (NS 63: 1.4571), Lower mount (LM) or lower back mount (LBM), NS 63 center back mount (CBM)
NS 63: G ¼ B (male), 14 mm flats
NS 100, 160: G ½ B, 22 mm flats

Pressure element

Stainless steel 316L
C-type or helical type

Movement

Stainless steel

Dial

Aluminium, white, black lettering, NS 63 with pointer stop pin

Pointer

Aluminium, black

Case

Stainless steel, with pressure relief at case circumference, 12 o'clock (NS 63) and on the back of the case (NS 100 and 160), Scale ranges ≤ 0 ... 16 bar with compensating valve to vent case

Window

Laminated safety glass
(NS 63: Polycarbonate)

Ring

Cam ring (bayonet type), stainless steel

Filling liquid (for model 233.50)

Glycerine 99.7 %
(Glycerine 86.5 % for scale range ≤ 0 ... 2.5 bar)

Options

Other process connection
Assembly on diaphragm seals see product review DS
Measuring system Monel (model 26x.50, not with NS 160 back mount connection)
Surface or panel mounting flange, stainless steel, Panel mounting flange, polished stainless steel
Triangular bezel, polished stainless steel, with clamp
Ambient temperatures -40 °C: Silicone oil filling

Special versions

Gauges for ammonia plants (NS 100 and 160) With temperature scale for refrigerant R 717 (NH 3) in °C,
Scale ranges: -1 ... 0 ... 15 bar or -1 ... 0 ... 26 bar

| Logo | Description | Country |
|------|---|-----------------------------|
| | EU declaration of conformity <ul style="list-style-type: none"> ■ Pressure equipment directive PS > 200 bar, module A, pressure accessory ■ ATEX directive (option) Ignition protection type "c" - constructive safety | European Union |
| | EAC (option) <ul style="list-style-type: none"> ■ Pressure equipment directive ■ Hazardous areas | Eurasian Economic Community |
| | GOST (option) Metrology, measurement technology | Russia |
| | KazInMetr (option) Metrology, measurement technology | Kazakhstan |
| - | MTSCHS (option) Permission for commissioning | Kazakhstan |
| | BelGIM (option) Metrology, measurement technology | Belarus |
| | UkrSEPRO (option) Metrology, measurement technology | Ukraine |
| | Uzstandard (option) Metrology, measurement technology | Uzbekistan |
| - | CPA (option) Metrology, measurement technology | China |
| | KCs KOSHA (option) Hazardous areas | South Korea |
| | GL (option) Ships, shipbuilding (e.g. offshore) | International |
| - | CRN Safety (e.g. electr. safety, overpressure, ...) | Canada |

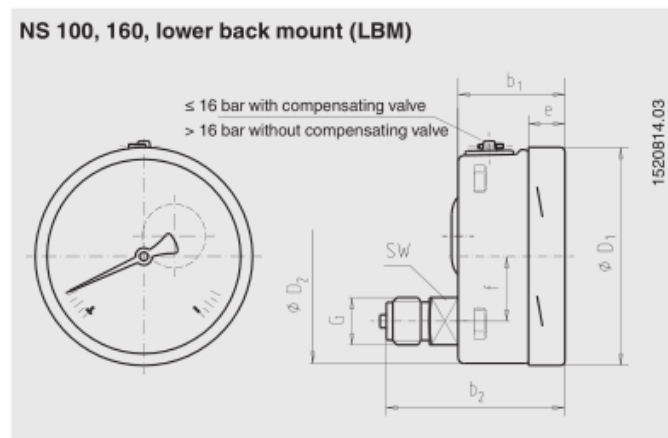
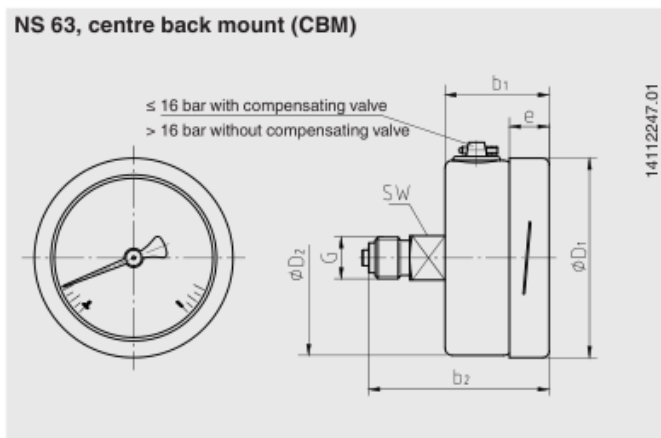
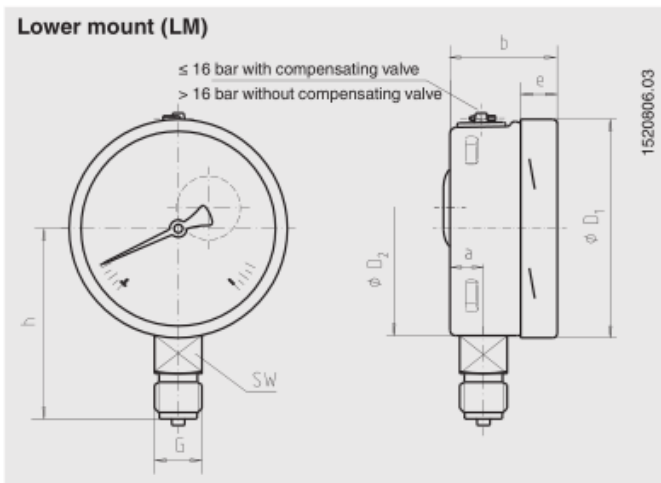
Certificates (option)

2.2 test report

3.1 inspection certificate

Approvals and certificates, see website

Dimensions in mm
Standard version



| NS | Dimensions in mm | | | | | | | | | | | Weight in kg | |
|-----|------------------|--------------------|--------------------|------------------|----------------|----------------|------|----|-------|------|----|--------------|--------------|
| | a | b | b ₁ | b ₂ | D ₁ | D ₂ | e | f | G | h ±1 | SW | Model 232.50 | Model 233.50 |
| 63 | 9.5 | 33 | 33 | 57 | 63 | 62 | 11.5 | - | G ¼ B | 54 | 14 | 0.16 | 0.20 |
| 100 | 15.5 | 49.5 | 49.5 | 83 | 101 | 99 | 17.5 | 30 | G ½ B | 87 | 22 | 0.60 | 0.90 |
| 160 | 15.5 | 49.5 ²⁾ | 49.5 ²⁾ | 83 ¹⁾ | 161 | 159 | 17.5 | 50 | G ½ B | 118 | 22 | 1.10 | 2.00 |

Process connection per EN 837-1 / 7.3

1) Plus 16 mm with scale ranges ≥ 100 bar

2) Plus 16 mm with scale range 1,600 bar

Ordering information

Model / Nominal size / Scale range / Connection size / Connection location / Options