

Bourdon tube pressure gauge Stainless steel version Models 232.50, 233.50

WIKA data sheet PM 02.02



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
- German Lloyd and Gosstandart approval
- Scale ranges up to 0 ... 1,600 bar

Description

Design

EN 837-1

Nominal size in mm

63, 100, 160

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

¹⁾ Model 233.50



Bourdon tube pressure gauge model 232.50

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 |
| | Fluctuating: | 0.9 x 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

IP 65 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 centre
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 $\leq 0 \dots 16$ 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 %
(Glyzerine 86.5 % for scale range $\leq 0 \dots 2.5$ bar)

Options









- Other process connection
- Sealings (model 910.17, see data sheet AC 09.08)
- 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
- Limit indicator at NS 100 and 160, see data sheet
SP 09.03
- Pressure gauge with switch contacts, see model
PGS23.1x0, data sheet PV 22.02
- Pressure gauge with electrical output signal, see model
PGT23.100/160, data sheet PV 12.04

Special versions

Gauges for ammonia plants (NS 100 and 160)

With temperature scale for refrigerant R 717 (NH₃) in °C,
Scale ranges: $-1 \dots 0 \dots 15$ bar or $-1 \dots 0 \dots 26$ bar

Approvals

| Logo | Description | Country |
|---|---|-----------------------------|
|  | EC declaration of conformity <ul style="list-style-type: none"> ■ Pressure equipment directive 97/23/EC PS > 200 bar, module A, pressure accessory ■ ATEX directive 94/9/EC (option) Ignition protection type "c" - constructive safety | European Community |
|  | EAC (option) <ul style="list-style-type: none"> ■ Pressure equipment directive ■ Hazardous areas | Eurasian Economic Community |
|  | GOST Metrology, measurement technology | Russia |
|  | KazInMetr Metrology, measurement technology | Kazakhstan |
| - | MTSCHS Permission for commissioning | Kazakhstan |
|  | BelGIM Metrology, measurement technology | Belarus |
|  | Uzstandard Metrology, measurement technology | Uzbekistan |
| - | CPA Metrology, measurement technology | China |
|  | KOSHA (option) Hazardous areas | South Korea |
|  | GL (option) Ships, shipbuilding (e.g. offshore) | International |
| - | CRN Safety (e.g. electr. safety, overpressure, ...) | Canada |

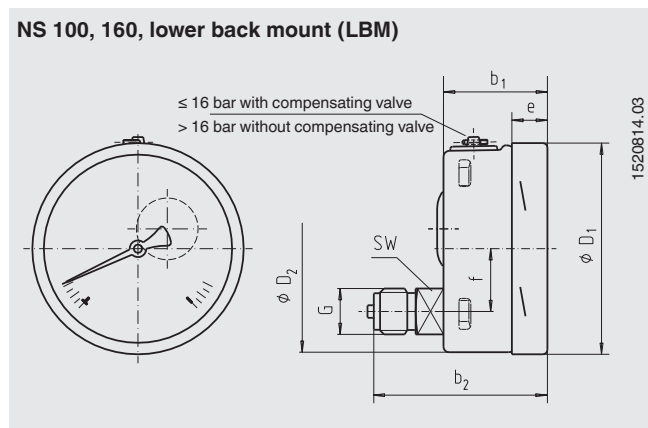
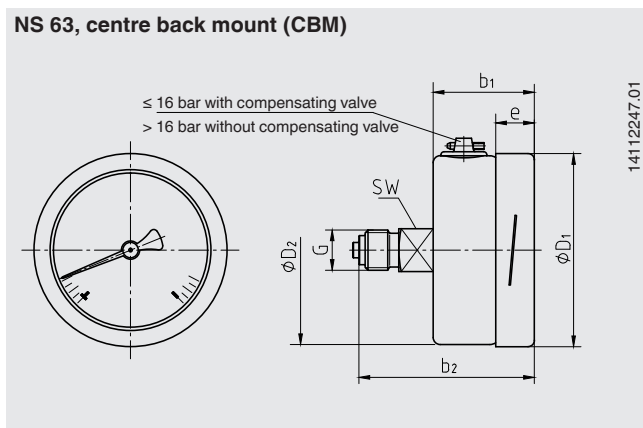
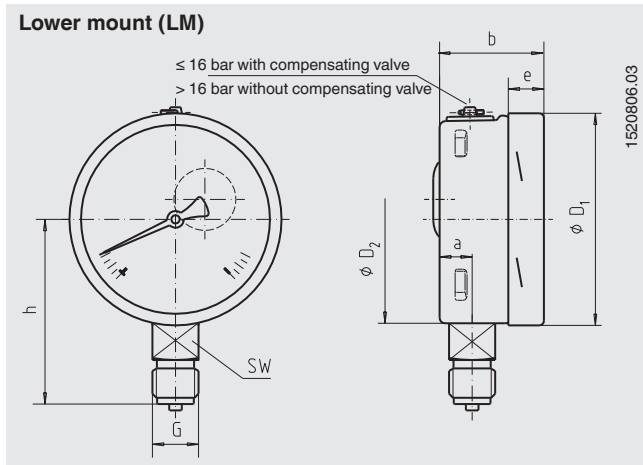
Certificates (option)

- 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

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