

# Bourdon tube pressure gauge Stainless steel version Models 232.50, 233.50

WIKA data sheet PM 02.02



## Applications

- With liquid-filled case for applications with high dynamic pressure loads or vibrations <sup>1)</sup>
- 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, Gosstandart and DVGW approval
- Scale ranges up to 0 ... 1,600 bar



**Bourdon tube pressure gauge model 232.50**

## 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

### 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 <sup>1)</sup>

Medium: +200 °C maximum without liquid filling

+100 °C maximum with liquid filling <sup>1)</sup>

### 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 529

<sup>1)</sup> Model 233.50

## Standard version

### Process connection

Stainless steel 316L (NS 63: 1.4571),  
Lower mount (LM) or lower back mount (LBM) <sup>1)</sup>  
NS 63: G ¼ B (male), 14 mm flats  
NS 100, 160: G ½ B, 22 mm flats

### Pressure element

Stainless steel 316L  
< 100 bar: C-type  
≥ 100 bar: 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 %

## 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)
- Measuring system stainless steel 1.4571
- 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
- Version per ATEX Ex II 2 GD c TX
- DVGW conformity certificate for building services and  
systems engineering

## Special versions

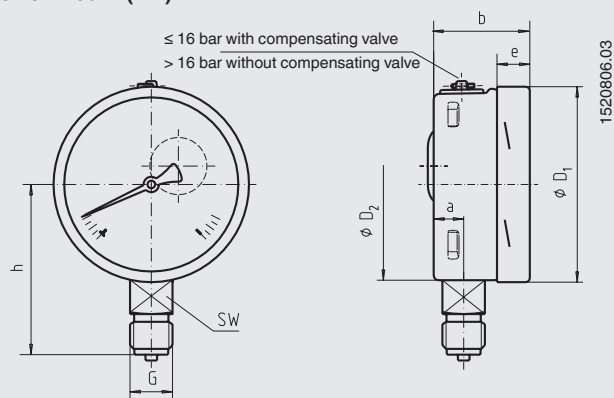
### Gauges for ammonia plants (NS 100 and 160)

With temperature scale for refrigerant R 717 (NH<sub>3</sub>) in °C,  
Scale ranges: -1 ... 0 ... 15 bar or -1 ... 0 ... 26 bar

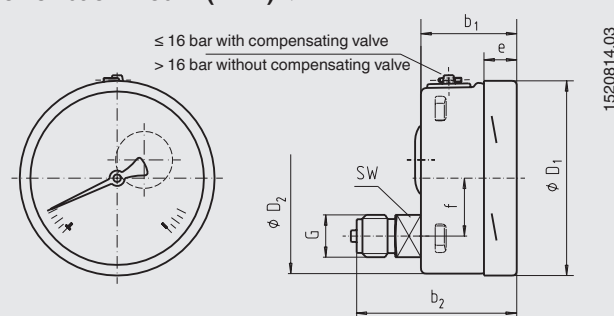
## Dimensions in mm

### Standard version

#### Lower mount (LM)



#### Lower back mount (LBM) <sup>1)</sup>



| NS  | Dimensions in mm |                    |                    |                  |                |                |      |                 | G     | h ±1 | SW | Weight in kg |              |
|-----|------------------|--------------------|--------------------|------------------|----------------|----------------|------|-----------------|-------|------|----|--------------|--------------|
|     | a                | b                  | b <sub>1</sub>     | b <sub>2</sub>   | D <sub>1</sub> | D <sub>2</sub> | e    | f               |       |      |    | Model 232.50 | Model 233.50 |
| 63  | 9.5              | 33                 | 33                 | 57               | 63             | 62             | 11.5 | - <sup>1)</sup> | 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 <sup>3)</sup> | 49.5 <sup>3)</sup> | 83 <sup>2)</sup> | 161            | 159            | 17.5 | 50              | G ½ B | 118  | 22 | 1.10         | 2.00         |

Process connection per EN 837-1 / 7.3

1) With NS 63: Centre back mount (CBM)

2) Plus 16 mm with scale ranges ≥ 100 bar

3) 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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