

## Bourdon Tube Pressure Gauges Stainless Steel Series Model 232.50/233.50, without/with Liquid Filling



WIKA Data Sheet PM 02.02



### Applications

- With liquid-filled case for applications with high dynamic pressure pulsations or vibrations
- For gaseous and liquid aggressive media that are not highly viscous or crystallising, also in aggressive ambience
- Process industries: chemical/petro-chemical, power stations, mining, on- and offshore, environmental technology, machine building and 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 ... 1600 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 ... 1000 bar

NS 100: 0 ... 0.6 to 0 ... 1000 bar

NS 160: 0 ... 0.6 to 0 ... 1600 bar

or all other equivalent vacuum or combined pressure and vacuum ranges



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 |

#### Operating temperature

|          |  |
|----------|--|
| Ambient: | -40 ... +60 °C without liquid filling        |
|          | -20 ... +60 °C gauges with glycerine filling |
| Medium:  | +200 °C maximum without liquid filling       |
|          | +100 °C maximum with liquid filling          |

#### Temperature effect

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

#### Ingress protection

IP 65 per EN 60 529 / IEC 529



## Standard version

### Process connection

Stainless steel 316L,  
lower mount (LM) or lower back mount (LBM)  
NS 63: G ¼ B (male), 14 mm flats  
NS 100, 160: G ½ B (male), 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 in case top (NS 63) or in case back (NS 100 and 160),  
ranges ≤ 16 bar with compensating valve to vent case

**Window:** Laminated safety glass

**Bezel ring:** Cam ring (bayonet type), stainless steel

**Liquid filling (for Model 233.50):** Glycerine 99.7 %

## Special versions

**Ammonia gauges** (NS 100 and 160)

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

## Dimensions in mm

| NS         | Dimensions in mm |                    |                    |                  |                |                |      |      |       |       | Weight in kg |             |             |
|------------|------------------|--------------------|--------------------|------------------|----------------|----------------|------|------|-------|-------|--------------|-------------|-------------|
|            | a                | b                  | b <sub>1</sub>     | b <sub>2</sub>   | D <sub>1</sub> | D <sub>2</sub> | e    | f    | G     | h ± 1 | SW           | Mod. 232.50 | Mod. 233.50 |
| <b>63</b>  | 9.5              | 33                 | 33                 | 57               | 63             | 62             | 11.5 | - 1) | G ¼ B | 54    | 14           | 0.16        | 0.20        |
| <b>100</b> | 15.5             | 49.5               | 49.5               | 83               | 101            | 99             | 17.5 | 30   | G ½ B | 87    | 22           | 0.60        | 0.90        |
| <b>160</b> | 15.5             | 49.5 <sup>3)</sup> | 49.5 <sup>2)</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) NS 63: Centre back pressure entry (CBM)

2) Plus 16 mm with pressure ranges ≥ 100 bar

3) Plus 16 mm with pressure range 1600 bar

### Ordering information

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

Modifications may take place and materials specified may be replaced by others without prior notice.  
Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing.



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## Options

- Other process connection
- Assembly on diaphragm seals see product review DS
- Monel pressure system (model 26X.50, not with NS 160 back connection)
- Pressure system stainless steel 1.4571
- Surface or panel mounting flange, stainless steel
- Panel mounting flange, stainless steel, polished
- Triangular bezel, stainless steel, polished, with clamp
- Ambient temperature -40 °C: silicon oil filling
- Alarm contacts (see data sheet AC 08.01)
- Pressure gauge with electrical output signal, see Model PGT23.100/160, data sheet PV 12.04
- Version per ATEX Ex II 2 GD c

## Standard version

