

# 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 ... 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

<sup>1)</sup> 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 <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

## 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 %

## 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

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	Model 232.50	Model 233.50
63	9.5	33	33	57	63	62	11.5	- 1)	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 1600 bar

## Ordering information

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

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We reserve the right to make modifications to the specifications and materials.

## 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)
- 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
- Overload indicator at NS 100 and 160
- 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

## Standard version

