

# Bourdon tube pressure gauge, stainless steel

## For the process industry, safety version, NS 63, 100 and 160

### Models 232.30, 233.30

WIKA data sheet PM 02.04



for further approvals  
see page 3

#### Applications

- Increased safety requirements for personal protection
- With liquid-filled case for applications with high dynamic pressure loads or vibrations (model 233.30)
- For gaseous and liquid aggressive media that are not highly viscous or crystallising, also in aggressive environments
- Oil and gas industry, chemical and petrochemical industries, power engineering and also water and wastewater technology

#### Special features

- Safety version with solid baffle wall designed in compliance with the requirements and test conditions of EN 837-1
- Excellent load-cycle stability and shock resistance
- Completely from stainless steel
- Scale ranges from 0 ... 0.6 to 0 ... 1,600 bar



Bourdon tube pressure gauge, model 232.30

#### Description

This high-quality Bourdon tube pressure gauge has been designed especially for increased safety requirements within the process industry.

The use of high-quality stainless steel materials and the robust design are geared to applications in the chemical and process engineering industries. Thus the instrument is suitable for liquid and gaseous media, also in aggressive environments.

Scale ranges of 0 ... 0.6 to 0 ... 1,600 bar ensure the measuring ranges required for a wide variety of applications.

WIKA manufactures and qualifies the pressure gauge in accordance with the requirements of the EN 837-1 European standard in the "S3" safety version. The safety version is made up of a non-splintering window, a solid baffle wall between measuring system and dial and a blow-out back. In the event of a failure, the operator is protected at the front side, as media or components can only be ejected via the back of the case.

For harsh operating conditions (e.g. vibrations), all instruments are also available with an optional liquid filling.

## 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 with unfilled instruments  
-20 ... +60 °C with instruments with glycerine filling <sup>1)</sup>

Medium: +200 °C maximum with unfilled instruments  
+100 °C maximum with filled instruments <sup>1)</sup>

### Temperature effect

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

### Ingress protection per IEC/EN 60529

IP65 (instruments with back mount connection: IP54)

### Process connection

Stainless steel 316L (NS 63: 1.4571)

Lower mount (radial) or lower back mount

NS 63: G 1/4 B (male), SW 14

NS 100, 160: G 1/2 B (male), SW 22

### 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 solid baffle wall (Solidfront) and blow-out back, scale ranges  $\leq 0 \dots 16$  bar (lower mount) with compensating valve to vent case

### Window

Laminated safety glass (NS 63: Polycarbonate)

### Ring

Bayonet ring, stainless steel

### Filling liquid (for model 233.30)

Glycerine










(glycerine-water mixture for scale ranges  $\leq 0 \dots 2.5$  bar)

## Options

- Other process connection
- Sealings (model 910.17, see data sheet AC 09.08)
- Assembly on diaphragm seals, see product review diaphragm seals
- Measuring system Monel (model 262.30)
- Panel mounting flange, stainless steel or polished stainless steel
- Surface mounting lugs on the back, stainless steel
- Ambient temperatures -40 °C: Silicone oil filling
- Ingress protection IP66, IP67
- Bourdon tube pressure gauge with switch contacts, see model PGS23.1x0, data sheet PV 22.02 or see model 232.30.063, data sheet PV 22.03
- Bourdon tube pressure gauge with electrical output signal, see model PGT23.1x0, data sheet PV 12.04

1) Model 233.30

## Approvals

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

## Certificates (option)

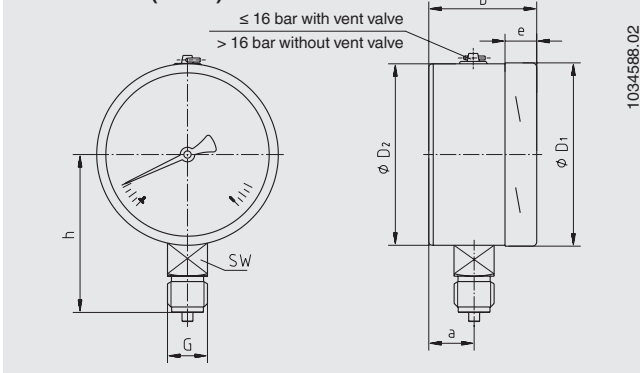
- 2.2 test report per EN 10204
- 3.1 inspection certificate per EN 10204

Approvals and certificates, see website

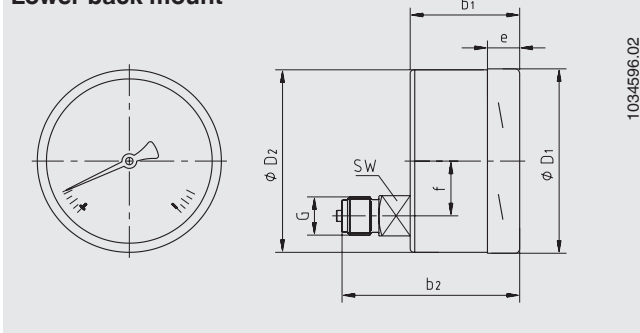
# Dimensions in mm

## Standard version

### Lower mount (radial)



### Lower back mount



| 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 232.30 | Model 233.30 |
| 63  | 17.5             | 42               | 42             | 61             | 63             | 63             | 14.5 | 18.5 | G ¼ B | 54   | 14 | 0.20         | 0.26         |
| 100 | 25               | 59.5             | 59.5           | 93             | 101            | 100            | 17   | 30   | G ½ B | 87   | 22 | 0.65         | 1.08         |
| 160 | 27 <sup>3)</sup> | 65 <sup>4)</sup> | -              | -              | 161            | 159            | 17.5 | -    | G ½ B | 118  | 22 | 1.30         | 2.34         |

Process connection per EN 837-1 / 7.3

3) With scale ranges ≥ 100 bar: 41.5 mm

4) With scale ranges ≥ 100 bar: 79 mm

## Ordering information

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

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