Bourdon tube pressure gauge
Stainless steel, safety version
Models 232.30, 233.30

Applications
- Increased safety requirements
- 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
- Safety pressure gauge with solid baffle wall designed in compliance with operational safety requirements of EN 837-1
- Excellent load-cycle stability and shock resistance
- All stainless steel construction
- 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

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
(gauges with back mount: IP 55)

1) Model 233.30
Standard version

Process connection
Stainless steel 316L (NS 63: 1.4571), lower mount (LM) or lower back mount (LBM) 1)
NS 63: G ¼ B (male), 14 mm flats
NS 100, 160: G ½ B (male), 22 mm flats (NS 160 only lower mount)

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, case with solid baffle wall and blow-out back,
scale ranges ≤ 0 ... 16 bar (lower mount) with compensating valve to vent case

Window
Laminated safety glass
(NS 63: Polycarbonate)

Bezel ring
Cam ring (bayonet type), stainless steel

Filling liquid (for model 233.30)
Glycerine 99.7 %
(Glycerine 86.5 % for scale range ≤ 0 ... 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 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 IP 66, IP 67
■ 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
■ Pressure gauge with electrical output signal, see model PGT23.1x0, data sheet PV 12.04

1) Connection location back mount only for gauges NS 63 and 100 without liquid filling
### Approvals

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### Certificates (option)

- 2.2 test report
- 3.1 inspection certificate

Approvals and certificates, see website
**Dimensions in mm**

**Standard version**

**Lower mount (LM)**

- ≤ 16 bar with compensating valve
- > 16 bar without compensating valve

**Lower back mount (LBM)**

1) Connection location back mount only for gauges NS 63 and 100 without liquid filling

### Dimensions in mm

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<th>NS</th>
<th>a</th>
<th>b</th>
<th>b₁</th>
<th>b₂</th>
<th>D₁</th>
<th>D₂</th>
<th>e</th>
<th>f</th>
<th>G</th>
<th>h ±1</th>
<th>SW</th>
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<td>42</td>
<td>42</td>
<td>61</td>
<td>63</td>
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<td>14.5</td>
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<td>93</td>
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<td>100</td>
<td>17</td>
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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 / Connection size / Connection location / Options

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