Bourdon tube pressure gauge, copper alloy
Standard version
Models 111.10, 111.12

Applications
- For gaseous and liquid media that are not highly viscous or crystallising and will not attack copper alloy parts
- Pneumatics
- Heating and air-conditioning technology
- Medical engineering

Special features
- Reliable and cost-effective
- Design per EN 837-1
- Nominal size 40, 50, 63, 80, 100 and 160
- Scale ranges up to 0 ... 400 bar

Description
The model 111 pressure gauges are based on the proven Bourdon tube measuring system. On pressurisation, the deflection of the Bourdon tube, proportional to the incident pressure, is transmitted to the movement via a link and indicated.

The modular design enables a multitude of combinations of case materials, process connections, nominal sizes and scale ranges. Due to this high variance, the instrument is suitable for use in a wide range of applications within industry.

For mounting in control panels, the pressure gauges can, depending on the process connection, be fitted with a surface mounting flange or with a triangular bezel and mounting bracket.

The standard version of the model 111 is manufactured, cost-optimised on modern production lines, in volumes of several million instruments per year.
Specifications

Design
EN 837-1

Nominal size in mm
40, 50, 63, 80, 100
160 only with model 111.10

Accuracy class
2.5

Scale ranges
0 ... 0.6 to 0 ... 400 bar (NS 160: max. 40 bar)
or all other equivalent vacuum or combined pressure and
vacuum ranges

Pressure limitation
Steady: 3/4 x full scale value
Fluctuating: 2/3 x full scale value
Short time: Full scale value

Permissible temperature
Ambient: -20 ... +60 °C
Medium: +60 °C maximum

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

Process connection
Copper alloy
For process connections and spanner widths see page 4

Pressure element
Copper alloy
C-type or helical type

Movement
Copper alloy

Dial
NS 40, 50, 63: Plastic, white, with pointer stop pin
NS 80, 100, 160: Aluminium, white, with pointer stop pin
Black lettering, red mark pointer with measuring ranges
0 ... 0.6 to 0 ... 60 bar

Pointer
Plastic, black
NS 160: Aluminium, black

Case
Plastic, black
Model 111.12, NS 100: Steel, black
Model 111.10, NS 160: Steel, black

Window
Plastic, crystal-clear, snap-fitted in case
Model 111.10, NS 160: Instrument glass

Options

■ Other process connection
■ Accuracy class 1.6
■ Steel case, black
■ Model 111.10: Surface mounting flange
(not with NS 40 and 50)
■ Model 111.12: Triangular bezel with mounting bracket

Special versions

For closed heating systems
NS 63, 80
with red mark pointer and adjustable green sector, scale
ranges 0 ... 4 bar, red mark at 2.5 or 3 bar

For refrigeration plants
NS 63, 80
with additional temperature scale in °C for refrigerants

For water-level indication (hydrometer) and heating
systems
NS 80, 100, 160
Scale ranges 0 ... 0.6 to 0 ... 25 bar, with second scale in
mWS and red mark pointer

For drinking water installations
Material suitability of the wetted parts in accordance
with the evaluation criteria for metallic substances of the
German federal environmental agency and the "4MS
Common Composition List".
### Approvals

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<td>Safety (e.g. electr. safety, overpressure, ...)</td>
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### Certificates (option)

- 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, material proof, indication accuracy)
- 3.1 inspection certificate per EN 10204 (e.g. indication accuracy)
### Dimensions in mm

#### Model 111.10, lower mount (radial)

**NS 40, 50, 63 and 160**

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<th>Weight in kg</th>
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<tr>
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<td>26</td>
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<td>50</td>
<td>10</td>
<td>27.5</td>
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<tr>
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<td>11.5</td>
<td>30</td>
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Process connection per EN 837-1 / 7.3

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#### Model 111.12, back mount

**NS 40, 50, 63, 80 and 100**

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Process connection per EN 837-1 / 7.3