Diaphragm pressure gauge
For the process industry
Models 432.50, 433.50, up to 10-fold overload safety, max. 40 bar

Applications
- For measuring points with increased overload
- With liquid-filled case suitability for high dynamic pressure loads and vibrations (model 433.50)
- For gaseous, liquid and aggressive media, also in aggressive environments
- With the open connecting flange also suitable for contaminated and viscous media
- Process industry: Chemical, petrochemical, power plants, mining, on/offshore, environmental technology, machine building and general plant construction

Special features
- Case and wetted parts from stainless steel
- Wide choice of special materials
- High overload safety up to the 10-fold full scale value
- Process connection thread or open flange
- Scale ranges from 0 … 16 mbar

Description
Diaphragm pressure gauges are preferably used for low pressure ranges. Through the large working surface of the circular, corrugated diaphragm element, small pressure ranges can be measured reliably.

The model 432.50 diaphragm pressure gauge is manufactured in accordance with EN 837-3. The high-quality design is particularly suitable for applications in the chemical and petrochemical industry, oil and gas industry and power engineering.

The case and wetted parts from stainless steel fulfil high requirements for resistance against aggressive media. For especially high resistance requirements, the pressure chamber can be designed with a wide variety of special materials such as PTFE, tantalum or Hastelloy.

For the measurement of highly viscous, crystallising or contaminated media, the use of an open connecting flange is recommended. The open connecting flange has the advantage over a threaded connection that the pressure port cannot become blocked. With an additional flushing bore on the open connecting flange, the pressure chamber can be easily cleaned.

Measuring systems with diaphragm elements, on the grounds of their design, offer good protection from overpressure, since the diaphragm can support itself against the upper flange. As standard, the model 432.50 diaphragm pressure gauge already features an overload safety of 5 times the full scale value. Versions with higher overload safeties can be realised.
**Specifications**

**Design**
EN 837-3

**Nominal size in mm**
100, 160

**Accuracy class**
1.6

**Scale ranges**
- 0 ... 16 mbar to 0 ... 250 mbar (flange Ø 160 mm)
- 0 ... 400 mbar to 0 ... 25 bar (flange Ø 100 mm)
- or all other equivalent vacuum or combined pressure and vacuum ranges

**Pressure limitation**
- Steady: Full scale value
- Fluctuating: 0.9 x full scale value

**Overload safety**
5 x full scale value, however max. 40 bar

**Permissible temperature**
- Ambient: -20 ... +60 °C
- Medium: +100 °C maximum
- Storage: -40 ... +70 °C
  (scale ranges ≤ 60 mbar: -20 ... +70 °C)

**Temperature effect**
When the temperature of the measuring system deviates from the reference temperature (+20 °C): max. ±0.8 %/10 K of the span

**Ingress protection per IEC/EN 60529**
- Model 432.50: IP54
- Model 433.50: IP65 (with liquid filling)

**Process connection with lower measuring flange**
Stainless steel 316L, G ½ B (male), SW 22

**Pressure element**
- ≤ 0.25 bar: Stainless steel 316L
- > 0.25 bar: NiCr-alloy (Inconel)

**Pressure chamber sealing**
FPM/FKM

**Movement**
Stainless steel

**Dial**
Aluminium, white, black lettering

**Pointer**
Aluminium, black

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**Case with upper measuring flange**
Stainless steel, safety level “S1” per EN 837:
With blow-out device
Instruments with liquid filling with compensating valve to vent case

**Window**
Laminated safety glass

**Ring**
Bayonet ring, stainless steel

**Filling liquid (for model 433.50)**
Glycerine-water mixture

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**Other versions**
- Other process connection
- Safety level “S3” per EN 837: With solid baffle wall and blow-out back, model 43x.30
- Overload safety: 10 x full scale value, max. 40 bar
- Vacuum resistant to -1 bar
- Max. medium temperature +200 °C
- Permissible ambient temperature -40 ... +60 °C (silicone oil filling)
- Higher indication accuracy, class 1.0
- Open connecting flanges per DIN/ASME from DN 15 to DN 80 (preferred nominal widths DN 25 and 50 or DN 1” and 2” per data sheet IN 00.10)
- Wetted parts lined/coated with special materials such as PTFE (model 45x.50), Hastelloy, Monel, nickel, tantalum, titanium, silver (accuracy class 2.5, overload safety on request)
- With a flushing bore on the open connecting flange
- Diaphragm pressure gauge with switch contacts, model PGS43.1x0, see data sheet PV 24.03
- Pressure gauge with output signal, model PGT43.1x0, see data sheet PV 14.03

**Accessories**
Sealings, model 910.17, see data sheet AC 09.08
Approvals

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<th>Country</th>
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<td>EU declaration of conformity</td>
<td>ATEX directive (option) Hazardous areas - Ex c Gas II 2 G c IIC TX X ¹</td>
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<td>-</td>
<td>CRN Safety (e.g. electr. safety, overpressure, ...)</td>
<td>Canada</td>
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¹ For instruments with PTFE lining, measures must be taken in the lining area, if necessary, in order to exclude electrostatic charging.

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. material proof for wetted metal parts, indication accuracy)
- Others on request

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

#### Standard version

[Image of a pressure gauge diagram]

<table>
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<tr>
<th>NS</th>
<th>Scale range</th>
<th>Dimensions in mm</th>
<th>Weight in kg</th>
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<tr>
<td></td>
<td>in bar</td>
<td>d</td>
<td>a</td>
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<tr>
<td>100</td>
<td>≤ 0.25</td>
<td>160</td>
<td>15.5</td>
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<tr>
<td>160</td>
<td>≤ 0.25</td>
<td>160</td>
<td>15.5</td>
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<tr>
<td>100</td>
<td>&gt; 0.25</td>
<td>100</td>
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</tr>
<tr>
<td>160</td>
<td>&gt; 0.25</td>
<td>100</td>
<td>15.5</td>
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*Process connection per EN 837-3 / 7.3*

**Ordering information**

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

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