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Watts Water Technologies is on the global market with several companies, each with their own history and product line. Within their diversity the companies of the Watts Water Technologies Group share the object of an intense technological development. Each product, designed represents an optimum example of synergy between technology, innovation and protection of the environment.

Watts Water Technologies family with operations in North America, Europe and Asia designs, manufactures and sells an extensive line of flow control products for the water quality, residential plumbing & heating, commercial and OEM markets. For years, Watts Water Technology is quoted at the New York Stock Exchange (NYSE) with symbol WTS performing a continuous and consolidated growth.

Watts Water Technologies, established in 1874 in New England as regulation valves manufacturer for the growing textile industry, has offered, in the last Century, a wide range of high quality and technically innovative products for industrial applications.

In 1987 Watts Water Technologies moved the first step in Europe, beginning an ambitious acquisition program, addressed to integrate companies with a strong technical know-how and with a consolidated customers support under the European company name Watts Industries. All European subsidiaries offer a certified quality system both for local and international markets.

Watts Instrumentation is a subsidiary company of the Watts Industries Group, with experience and skills in design and manufacturing of pressure and temperature gauges dating back more than 30 years.

Watts Instrumentation, with the brands of WATTS and FIMET is now a world leading producer in the gauge business. The range covers all the needs for industrial pressure and temperature measurement, from the simplest to the more sophisticated needs. HVAC, pneumatic, hydraulic and virtually all industries are taking daily benefit from the use of our gauges. The commercial subsidiaries of the Group, present in all continents, are ensuring distribution and support throughout the world.

Watts Industries can provide a wealth of knowledge in instrumentation design, a first class standard product range and world-wide distribution network. In addition we can offer bespoke products made to your requirements.

Millions of our pressure and temperature gauges are already worldwide in use, manufactured to ISO 9001:2000 Quality Standards and special industry standards.
# PRESSURE GAUGES

## BOURDON TUBE PRESSURE GAUGE

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All technical specifications given in this catalogue reflect state of engineering at the time of printing and are subject to modifications which may take place without prior notice.
Pressure gauges
FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M1-ABS 40
Dry Plastic Case DN40 Bottom Entry

Materials
- Case: Black plastic
- Window: Clear plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 12 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type,
  > 60 bar helical type
- Movement: Cu-alloy

Technical Specifications
- Design: EN 837-1
- Working pressure: Steady: 75 % of full scale value
  Fluctuating: 60 % of full scale value
  Short time: full scale value
- Operating temperature: Ambient: -20 ... +60 °C
  Medium: +60 °C maximum
  Storage: -20 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C): ±0.04%/1K of the span
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.042 kg

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Options: see page 11
BOURDON TUBE PRESSURE GAUGE

FOR GENERAL INDUSTRIAL APPLICATIONS, SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCIOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M1-ABS 50
Dry Plastic Case DN50 Bottom Entry

Materials
Case: Black plastic
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure:
Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature:
Ambient: -20...+60 °C
Medium: +60 °C maximum
Storage: -20...+60 °C
Temperature effect:
Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class:
class 2.5, class 1.6 on request
Degree of protection:
IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.073 kg

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<td>PA224050</td>
<td>0-60 bar/psi</td>
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<td>M1-ABS 50</td>
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<td>0-100 bar/psi</td>
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<td>M1-ABS 50</td>
<td>PA22403000</td>
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<tr>
<td>M1-ABS 50</td>
<td>PA22405000</td>
<td>0-400 bar/psi</td>
<td>G 1/4 B</td>
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</tbody>
</table>

Options: see page 11
FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M1-ABS 63
Dry Plastic Case DN63 Bottom Entry

Materials
- Case: Black plastic
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
- Movement: Cu-alloy

Technical Specifications
- Design: EN 837-1
- Working pressure:
  - Steady: 75% of full scale value
  - Fluctuating: 60% of full scale value
  - Short time: full scale value
- Operating temperature:
  - Ambient: -20 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -20 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C):
  - ±0.04%/1K of the span
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.089 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Package</th>
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<tr>
<td>M1-ABS 63</td>
<td>PA3101DJ00</td>
<td>-1/0 bar/inHg</td>
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<td>PA3101DJ01</td>
<td>0-1 bar/psi</td>
<td>G 1/4 B</td>
<td>100/100</td>
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<td>PA3102DJ00</td>
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<td>PA3203DJ00</td>
<td>0-2.5 bar/psi</td>
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<tr>
<td>M1-ABS 63</td>
<td>PA3204DJ00</td>
<td>0-4 bar/psi</td>
<td>G 1/4 B</td>
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<td>M1-ABS 63</td>
<td>PA3206DJ00</td>
<td>0-6 bar/psi</td>
<td>G 1/4 B</td>
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<tr>
<td>M1-ABS 63</td>
<td>PA3210DJ00</td>
<td>0-10 bar/psi</td>
<td>G 1/4 B</td>
<td>100/100</td>
</tr>
<tr>
<td>M1-ABS 63</td>
<td>PA3216DJ00</td>
<td>0-16 bar/psi</td>
<td>G 1/4 B</td>
<td>100/100</td>
</tr>
<tr>
<td>M1-ABS 63</td>
<td>PA3225DJ00</td>
<td>0-25 bar/psi</td>
<td>G 1/4 B</td>
<td>100/100</td>
</tr>
<tr>
<td>M1-ABS 63</td>
<td>PA3240DJ00</td>
<td>0-40 bar/psi</td>
<td>G 1/4 B</td>
<td>100/100</td>
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<td>M1-ABS 63</td>
<td>PA3245DJ00</td>
<td>0-56 bar/psi</td>
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</tr>
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<td>M1-ABS 63</td>
<td>PA3260DJ00</td>
<td>0-100 bar/psi</td>
<td>G 1/4 B</td>
<td>100/100</td>
</tr>
<tr>
<td>M1-ABS 63</td>
<td>PA32100DJ00</td>
<td>0-160 bar/psi</td>
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<td>100/100</td>
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<td>M1-ABS 63</td>
<td>PA32250DJ00</td>
<td>0-250 bar/psi</td>
<td>G 1/4 B</td>
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<td>PA32315DJ00</td>
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<td>G 1/4 B</td>
<td>100/100</td>
</tr>
<tr>
<td>M1-ABS 63</td>
<td>PA32400DJ00</td>
<td>0-400 bar/psi</td>
<td>G 1/4 B</td>
<td>100/100</td>
</tr>
</tbody>
</table>

Options: see page 11
M1-ABS 80
Dry Plastic Case DN80 Bottom Entry

Materials
Case: Black plastic
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure:
- Steady: 75 % of full scale value
- Fluctuating: 60 % of full scale value
- Short time: full scale value
Operating temperature:
- Ambient: -20 ... +60 °C
- Medium: +60 °C maximum
- Storage: -20 ... +60 °C
Temperature effect:
- Deviation from reference temperature (+20°C):
  ±0.04%/1K of the span
Accuracy class:
- cl. 2.5, cl. 1.6 on request
Degree of protection:
- IP 31 per EN 60 529 / IEC 529
Individual Weight:
- 0.128 kg

Type | Part No. | Pressure Range | Connection | Packaging |
-----|---------|----------------|------------|----------|
M1-ABS 80 | -1/0 | bar/inHg | G3/8B | 1/50 |
M1-ABS 80 | 0-1 | bar/psi | G3/8B | 1/50 |
M1-ABS 80 | 0-1.6 | bar/psi | G3/8B | 1/50 |
M1-ABS 80 | 0-2.5 | bar/psi | G3/8B | 1/50 |
M1-ABS 80 | 0-4 | bar/psi | G3/8B | 1/50 |
M1-ABS 80 | 0-6 | bar/psi | G3/8B | 1/50 |
M1-ABS 80 | PA4210DC00 | 0-10 | bar/psi | G3/8B | 1/50 |
M1-ABS 80 | 0-16 | bar/psi | G3/8B | 1/50 |
M1-ABS 80 | 0-25 | bar/psi | G3/8B | 1/50 |
M1-ABS 80 | 0-40 | bar/psi | G3/8B | 1/50 |
M1-ABS 80 | 0-60 | bar/psi | G3/8B | 1/50 |
M1-ABS 80 | 0-100 | bar/psi | G3/8B | 1/50 |
M1-ABS 80 | 0-160 | bar/psi | G3/8B | 1/50 |
M1-ABS 80 | 0-250 | bar/psi | G3/8B | 1/50 |
M1-ABS 80 | 0-315 | bar/psi | G3/8B | 1/50 |
M1-ABS 80 | 0-400 | bar/psi | G3/8B | 1/50 |

Options: see page 11
FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

**BOURDON TUBE PRESSURE GAUGE**

**M1-ABS 100**

**EX F+R 200 DN100**

Dry Plastic Case DN100 Bottom Entry

**Materials**

- Case: Black plastic
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type

**Movement:** Cu-alloy

**Technical Specifications**

- **Design:** EN 837-1
- **Working pressure:**
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- **Operating temperature:**
  - Ambient: -20 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -20 ... +60 °C
- **Temperature effect:** Deviation from reference temperature (+20°C):
  - ±0.04%/1K of the span
- **Accuracy class:** cl. 2.5, cl. 1.6 on request
- **Degree of protection:** IP 31 per EN 60 529 / IEC 529
- **Individual Weight:** 0.175 kg

**Type** | **Part No.** | **Pressure Range** | **Connection** | **Packaging**
---|---|---|---|---
M1-ABS 100 | PA5101DL00 | -10 bar/inHg | G 1/2 B | 1/30
M1-ABS 100 | 0-1 bar/psi | G 1/2 B | 1/30
M1-ABS 100 | 0-1.6 bar/psi | G 1/2 B | 1/30
M1-ABS 100 | PA5204DD01 | 0-2.5 bar/psi | G 1/2 B | 1/30
M1-ABS 100 | 0-4 bar/psi | G 1/2 B | 1/30
M1-ABS 100 | PA5210DD01 | 0-6 bar/psi | G 1/2 B | 1/30
M1-ABS 100 | 0-10 bar/psi | G 1/2 B | 1/30
M1-ABS 100 | PA5216BD01 | 0-16 bar/psi | G 1/2 B | 1/30
M1-ABS 100 | 0-25 bar/psi | G 1/2 B | 1/30
M1-ABS 100 | 0-40 bar/psi | G 1/2 B | 1/30
M1-ABS 100 | 0-60 bar/psi | G 1/2 B | 1/30
M1-ABS 100 | 0-100 bar/psi | G 1/2 B | 1/30
M1-ABS 100 | 0-160 bar/psi | G 1/2 B | 1/30
M1-ABS 100 | 0-250 bar/psi | G 1/2 B | 1/30
M1-ABS 100 | 0-315 bar/psi | G 1/2 B | 1/30
M1-ABS 100 | 0-400 bar/psi | G 1/2 B | 1/30

Options: see page 11
BOURDON TUBE PRESSURE GAUGE

M1-ABS 40/50/63/80/100

Options subject to minimum quantity
AT - PTFE sealing ring on parallel threads only

M1-ABS 40/50/63/80/100
High temperature version c.l. 2.5 only

Options subject to minimum quantity
T2 - 40°C,+90°C - Aluminium dial + aluminium pointer, (QA+I)

M1-ABS 40/50/63/80/100

Options subject to minimum quantity
Z - Restrictor 0.5mm

M1-ABS 50/63/80/100

Options subject to minimum quantity
MS - silicone movement for dampened pointer travel

M1-ABS 40/50/63/80/100

Options subject to minimum quantity
Customized dials, other scale ranges or connections on request
FOR HEATING AND SANITARY SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCIOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M1-ABS 40/R
Dry Plastic Case DN40 Bottom Entry

Materials
Case: Black plastic
Window: Clear plastic with adjustable red mark pointer
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 12 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered C-type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure:
Steady: 75% of full scale value
Fluctuating: 60% of full scale value
Short time: full scale value
Operating temperature:
Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.042 kg

Type | Part No. | Pressure Range | Connection | Packaging
--- | --- | --- | --- | ---
M1-ABS 40/R | 0-2.5 bar | G1/8B | 240/240
M1-ABS 40/R | 0-4 bar | G1/8B | 240/240
M1-ABS 40/R | 0-6 bar | G1/8B | 240/240
M1-ABS 40/R | 0-10 bar | G1/8B | 240/240
M1-ABS 40/R | 0-16 bar | G1/8B | 240/240
M1-ABS 40/R | 0-25 bar | G1/8B | 240/240
M1-ABS 40/R | 0-40 bar | G1/8B | 240/240

EX F+R 201 DN40

Options : see page 17
BOURDON TUBE PRESSURE GAUGE

FOR HEATING AND SANITARY SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M1-ABS 50/R
Dry Plastic Case DN50 Bottom Entry

Materials
Case: Black plastic
Window: Clear plastic with adjustable red mark pointer
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.073 kg

<table>
<thead>
<tr>
<th>Type</th>
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<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
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<tbody>
<tr>
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<td>PA220401</td>
<td>0-2.5 bar</td>
<td>G1/4B</td>
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<td>M1-ABS 50/R</td>
<td>PA220601</td>
<td>0-4 bar</td>
<td>G1/4B</td>
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<td>M1-ABS 50/R</td>
<td>PA221001</td>
<td>0-6 bar</td>
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<td>PA221601</td>
<td>0-16 bar</td>
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<td>M1-ABS 50/R</td>
<td>PA222501</td>
<td>0-25 bar</td>
<td>G1/4B</td>
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<td>M1-ABS 50/R</td>
<td>PA2240BB00</td>
<td>0-40 bar</td>
<td>G1/4B</td>
<td>100/100</td>
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</tbody>
</table>

Options: see page 17
BOURDON TUBE PRESSURE GAUGE

FOR HEATING AND SANITARY SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M1-ABS 63/R
Dry Plastic Case DN63 Bottom Entry

Materials
Case: Black plastic
Window: Clear plastic with adjustable red mark pointer
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure:
Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature:
Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect:
Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class:
class 2.5, class 1.6 on request
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.089 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
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<tbody>
<tr>
<td>M1-ABS 63/R</td>
<td>0-2.5 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M1-ABS 63/R</td>
<td>0-4 bar</td>
<td>G1/4B</td>
<td>100/100</td>
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<tr>
<td>M1-ABS 63/R</td>
<td>0-6 bar</td>
<td>G1/4B</td>
<td>100/100</td>
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<tr>
<td>M1-ABS 63/R</td>
<td>0-10 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
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<tr>
<td>M1-ABS 63/R</td>
<td>0-25 bar</td>
<td>G1/4B</td>
<td>100/100</td>
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<td>G1/4B</td>
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<td>M1-ABS 63/R PA324001</td>
<td>0-40 bar</td>
<td>G1/4B</td>
<td>100/100</td>
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Options: see page 17
BOURDON TUBE PRESSURE GAUGE

FOR HEATING AND SANITARY SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCIOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M1-ABS 80/R

Dry Plastic Case DN80 Bottom Entry

Materials
Case: Black plastic
Window: Clear plastic with adjustable red mark pointer
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C): ±0.04%/1K of the span
Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.128 kg

Options : see page 17

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
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<td>0-2.5 bar</td>
<td>G3/8B</td>
<td>1/50</td>
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</tr>
<tr>
<td>M1-ABS 80/R</td>
<td>0-4 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-ABS 80/R</td>
<td>0-6 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-ABS 80/R</td>
<td>0-10 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-ABS 80/R</td>
<td>0-16 bar</td>
<td>G3/8B</td>
<td>1/50</td>
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<tr>
<td>M1-ABS 80/R</td>
<td>0-25 bar</td>
<td>G3/8B</td>
<td>1/50</td>
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<tr>
<td>M1-ABS 80/R</td>
<td>PA4225BC00</td>
<td>G3/8B</td>
<td>1/50</td>
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<tr>
<td>M1-ABS 80/R</td>
<td>PA4240BC00</td>
<td>G3/8B</td>
<td>1/50</td>
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</tbody>
</table>
FOR HEATING AND SANITARY SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

**BOURDON TUBE PRESSURE GAUGE**

**M1-ABS 100/R  EX F+R 201 DN100**

Dry Plastic Case DN100 Bottom Entry

**Materials**
- Case: Black plastic
- Window: Clear plastic with adjustable red mark pointer
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
- Movement: Cu-alloy

**Technical Specifications**
- Design: EN 837-1
- Working pressure:
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- Operating temperature:
  - Ambient: -20 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -20 ... +60 °C
- Temperature effect:
  - Deviation from reference temperature (+20°C):
    ±0.04%/1K of the span
- Accuracy class:
  - cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.175 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1-ABS 100/R</td>
<td>PA5203BD00</td>
<td>0-2.5 bar</td>
<td>G1/2B</td>
<td>1/50</td>
</tr>
<tr>
<td>M1-ABS 100/R</td>
<td>PA5204BD00</td>
<td>0-4 bar</td>
<td>G1/2B</td>
<td>1/50</td>
</tr>
<tr>
<td>M1-ABS 100/R</td>
<td>PA5206BD00</td>
<td>0-6 bar</td>
<td>G1/2B</td>
<td>1/50</td>
</tr>
<tr>
<td>M1-ABS 100/R</td>
<td>PA5210BD00</td>
<td>0-10 bar</td>
<td>G1/2B</td>
<td>1/50</td>
</tr>
<tr>
<td>M1-ABS 100/R</td>
<td>PA5216BD00</td>
<td>0-16 bar</td>
<td>G1/2B</td>
<td>1/50</td>
</tr>
<tr>
<td>M1-ABS 100/R</td>
<td>PA5225BD00</td>
<td>0-25 bar</td>
<td>G1/2B</td>
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<tr>
<td>M1-ABS 100/R</td>
<td>PA5240BD00</td>
<td>0-40 bar</td>
<td>G1/2B</td>
<td>1/50</td>
</tr>
</tbody>
</table>

Options: see page 17
BOURDON TUBE PRESSURE GAUGE

M1-ABS 50/63/80/100/R

Options subject to minimum quantity
V - adjustable red mark pointer with green sector

M1-ABS 40/50/63/80/100/R

Options subject to minimum quantity
AT - PTFE sealing ring on parallel threads only

M1-ABS 40/50/63/80/100/R
High temperature version c.l. 2.5 only

Options subject to minimum quantity
T2 - 40°C/+90°C - Aluminium dial + aluminium pointer, (QA+I)

M1-ABS 40/50/63/80/100/R

Options subject to minimum quantity
Z - Restrictor 0.5mm

M1-ABS 50/63/80/100/R

Options subject to minimum quantity
MS - silicone movement for dampened pointer travel

M1-ABS 40/50/63/80/100/R

Options subject to minimum quantity
Customized dials, other scale ranges or connections on request
FOR EXPANSION VESSEL TESTING IN HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

BOURDON TUBE PRESSURE GAUGE

PV M1-ABS 63/QG
Dry Plastic Case DN63 Bottom Entry

Materials
Case: Black plastic with black rubber cap
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Valve with rubber hose
Pressure element: Bourdon tube Cu-alloy soft soldered C-type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure:
Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature:
Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect:
Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class: cl. 1.6
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.200 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV M1-ABS 63/QG</td>
<td>PV3112DC00</td>
<td>0-12 bar/psi</td>
<td>V40</td>
<td>50/50</td>
</tr>
</tbody>
</table>

Options: see below

OPTIONAL EXTRAS

280 PV M1-ABS 63/QG

Options subject to minimum order
Customized dials on request
### BOURDON TUBE PRESSURE GAUGE

FOR GENERAL INDUSTRIAL APPLICATIONS, SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

#### M3A-ABS 40/FR

**Dry Plastic Case DN40 Centre Back Entry**

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-ABS 40/FR</td>
<td>190401001694</td>
<td>-1/0 bar</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 40/FR</td>
<td>001401001051</td>
<td>0-1 bar</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 40/FR</td>
<td>106401000190</td>
<td>0-1.6 bar</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 40/FR</td>
<td>205401000234</td>
<td>0-2.5 bar</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 40/FR</td>
<td>004401000274</td>
<td>0-4 bar</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 40/FR</td>
<td>006401000318</td>
<td>0-6 bar</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 40/FR</td>
<td>010401000386</td>
<td>0-10 bar</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 40/FR</td>
<td>016401000046</td>
<td>0-16 bar</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 40/FR</td>
<td>025401000428</td>
<td>0-25 bar</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
</tbody>
</table>

Higher pressure ranges: see M3A-ABS 40 on page 20

#### Technical Specifications

- **Design:** EN 837-1
- **Working pressure:**
  - Steady: 75% of full scale value
  - Fluctuating: 60% of full scale value
  - Short time: full scale value
- **Operating temperature:**
  - Ambient: -20 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -20 ... +60 °C
- **Temperature effect:** Deviation from reference temperature (+20°C):
  - ±0.04%/°K of the span
- **Accuracy class:** cl. 2.5, cl. 1.6 on request
- **Degree of protection:** IP 31 per EN 60 529 / IEC 529
- **Individual Weight:** 0.039 kg

#### Options:

- see page 26
FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCIOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3A-ABS 40
Dry Plastic Case DN40 Centre Back Entry

**Materials**
- Case: Black plastic
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 12 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered, < 60 bar C-type, > 60 bar helical type
- Movement: Cu-alloy

**Technical Specifications**
- Design: EN 837-1
- Working pressure:
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- Operating temperature:
  - Ambient: -20 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -20 ... +60 °C
- Temperature effect:
  - Deviation from reference temperature (+20°C):
    - ±0.04%/1K of the span
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.048 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-ABS 40</td>
<td>0-40 bar/psi</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 40</td>
<td>0-60 bar/psi</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 40</td>
<td>0-100 bar/psi</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 40</td>
<td>0-160 bar/psi</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 40</td>
<td>0-250 bar/psi</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 40</td>
<td>0-315 bar/psi</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 40</td>
<td>0-400 bar/psi</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
</tbody>
</table>

Options: see page 26
BOURDON TUBE PRESSURE GAUGE

FOR GENERAL INDUSTRIAL APPLICATIONS, SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3A-ABS 50/FR

Dry Plastic Case DN50 Centre Back Entry

Materials
Case: Black plastic
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
Movement: Cu-alloy / Polyester combination

Technical Specifications
Design: EN 837-1
Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C): ±0.04%/1K of the span
Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.052 kg

Options: see page 26
FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3A-ABS 50
Dry Plastic Case DN50 Centre Back Entry

Materials
Case: Black plastic
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered, ≤ 60 bar C-type,
> 60 bar helical type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure: Steady: 75 % of full scale value
                Fluctuating: 60 % of full scale value
                Short time: full scale value
Operating temperature: Ambient: -20 ... +60 °C
                      Medium: +60 °C maximum
                      Storage: -20 ... +60 °C
Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.086 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-ABS 50</td>
<td>PB224014</td>
<td>0-40 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 50</td>
<td></td>
<td>0-60 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 50</td>
<td></td>
<td>0-100 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 50</td>
<td></td>
<td>0-160 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 50</td>
<td></td>
<td>0-250 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 50</td>
<td></td>
<td>0-315 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 50</td>
<td></td>
<td>0-400 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
</tbody>
</table>

Options: see page 26
BOURDON TUBE PRESSURE GAUGE

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3A-ABS 63/FR
Dry Plastic Case DN63 Centre Back Entry

Materials
Case: Black plastic
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
Movement: Cu-alloy / Polyester combination

Technical Specifications
Design: EN 837-1
Working pressure:
Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature:
Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class:
cl. 2.5, cl. 1.6 on request
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.060 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-ABS 63/FR</td>
<td>001631001587</td>
<td>0-1 bar</td>
<td>G 1/4 B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 63/FR</td>
<td>106631000219</td>
<td>0-1.6 bar</td>
<td>G 1/4 B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 63/FR</td>
<td>205631000258</td>
<td>0-2.5 bar</td>
<td>G 1/4 B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 63/FR</td>
<td>004631000109</td>
<td>0-4 bar</td>
<td>G 1/4 B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 63/FR</td>
<td>008631000096</td>
<td>0-6 bar</td>
<td>G 1/4 B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 63/FR</td>
<td>010631000002</td>
<td>0-10 bar</td>
<td>G 1/4 B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 63/FR</td>
<td>016631000071</td>
<td>0-16 bar</td>
<td>G 1/4 B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 63/FR</td>
<td>025631000104</td>
<td>0-25 bar</td>
<td>G 1/4 B</td>
<td>100/100</td>
</tr>
</tbody>
</table>

Higher pressure ranges: see M3A-ABS 63 on page 24

Options: see page 26
BOURDON TUBE PRESSURE GAUGE

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3A-ABS 63
Dry Plastic Case DN63 Centre Back Entry

Materials
Case: Black plastic
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered, < 60 bar C-type, > 60 bar helical type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.094 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-ABS 63</td>
<td>PB324014</td>
<td>0-40 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 63</td>
<td>PB326014</td>
<td>0-60 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 63</td>
<td>PB335414</td>
<td>0-100 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 63</td>
<td>PB336014</td>
<td>0-160 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 63</td>
<td>PB336015</td>
<td>0-250 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 63</td>
<td>PB336016</td>
<td>0-315 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 63</td>
<td>PB336017</td>
<td>0-400 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
</tbody>
</table>

Options: see page 26
BOURDON TUBE PRESSURE GAUGE

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3A-ABS 80
Dry Plastic Case DN80 Centre Back Entry

Materials
- Case: Black plastic
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered, ≤ 60 bar C-type, > 60 bar helical type
- Movement: Cu-alloy

Technical Specifications
- Design: EN 837-1
- Working pressure: Steady: 75 % of full scale value
- Operating temperature: Ambient: -20 ... +60 °C
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.109 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-ABS 80</td>
<td>-1/0 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 80</td>
<td>0-1 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 80</td>
<td>0-1.6 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 80</td>
<td>0-2.5 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 80</td>
<td>0-4 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 80</td>
<td>0-6 bar</td>
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<td>0-10 bar</td>
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<tr>
<td>M3A-ABS 80</td>
<td>0-16 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 80</td>
<td>0-25 bar</td>
<td>G3/8B</td>
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<td>0-40 bar</td>
<td>G3/8B</td>
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<tr>
<td>M3A-ABS 80</td>
<td>0-100 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 80</td>
<td>0-160 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 80</td>
<td>0-250 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 80</td>
<td>0-315 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 80</td>
<td>0-400 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
</tbody>
</table>

Options: see page 26
BOURDON TUBE PRESSURE GAUGE

OPTIONAL EXTRAS

M3A-ABS 40/50/63/FR
M3A-ABS 40/50/63/80

Options subject to minimum quantity
AT - PTFE sealing ring on parallel threads only

M3A-ABS 40/50/63/80
High temperature version c.l. 2.5 only

Options subject to minimum quantity
T2 - 40°C/+50°C - Aluminium dial + aluminium pointer, (QA+I)

M3A-ABS 40/50/63/FR

Options subject to minimum quantity
Z3 - Restrictor 0.35 mm

M3A-ABS 40/50/63/80

Options subject to minimum quantity
Z - Restrictor 0.5 mm

M3A-ABS 40/50/63/FR
M3A-ABS 50/63/80

Options subject to minimum quantity
MS - silicone movement for dampened pointer travel

M3A-ABS 40/50/63/FR
M3A-ABS 40/50/63/80

Options subject to minimum quantity
Customized dials, other scale ranges or connections on request
BOURDON TUBE PRESSURE GAUGE

FOR HEATING AND SANITARY SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3A-ABS 40/FR/R  EX F+R 101 DN40
Dry Plastic Case DN40 Centre Back Entry

Materials
Case: Black plastic
Window: Clear plastic with printed red mark pointer
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
Movement: Cu-alloy / Polyester combination

Technical Specifications
Design: EN 837-1
Working pressure:
Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature:
Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect:
Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class:
cl. 2.5, cl. 1.6 on request
Degree of protection:
IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.039 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-ABS 40/FR/R</td>
<td>004401013720</td>
<td>0-4 bar</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 40/FR/R</td>
<td>006401013190</td>
<td>0-6 bar</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 40/FR/R</td>
<td>016401013353</td>
<td>0-10 bar</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 40/FR/R</td>
<td>016401013353</td>
<td>0-16 bar</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 40/FR/R</td>
<td>016401013353</td>
<td>0-25 bar</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
</tbody>
</table>

Options: see page 32
BOURDON TUBE PRESSURE GAUGE

FOR HEATING AND SANITARY SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3A-ABS 50/FR/R

Dry Plastic Case DN50 Centre Back Entry

**Materials**
- Case: Black plastic
- Window: Clear plastic with adjustable red mark pointer
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
- Movement: Cu-alloy / Polyester combination

**Technical Specifications**
- Design: EN 837-1
- Working pressure: Stable: 75 % of full scale value
  Fluctuating: 60 % of full scale value
  Short time: full scale value
- Operating temperature: Ambient: -20 ... +60 °C
  Medium: +60 °C maximum
  Storage: -20 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C):
  ±0.04%/1K of the span
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.052 kg

**Type** | **Part No.** | **Pressure Range** | **Connection** | **Packaging**
--- | --- | --- | --- | ---
M3A-ABS 50/FR/R | | 0-2.5 bar | G1/4B | 100/100
M3A-ABS 50/FR/R | | 0-4 bar | G1/4B | 100/100
M3A-ABS 50/FR/R | 006501013187 | 0-6 bar | G1/4B | 100/100
M3A-ABS 50/FR/R | 010501013188 | 0-10 bar | G1/4B | 100/100
M3A-ABS 50/FR/R | 016501013171 | 0-16 bar | G1/4B | 100/100
M3A-ABS 50/FR/R | | 0-25 bar | G1/4B | 100/100

Higher pressure ranges : see M3A-ABS 50/R on page 29

Options : see page 32
FOR HEATING AND SANITARY SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

**BOURDON TUBE PRESSURE GAUGE**

**M3A-ABS 50/R**

Dry Plastic Case DN50 Centre Back Entry

**Materials**
- Case: Black plastic
- Window: Clear plastic with adjustable red mark pointer
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered, ≤ 60 bar C-type, > 60 bar helical type
- Movement: Cu-alloy

**Technical Specifications**
- Design: EN 837-1
- Working pressure:
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- Operating temperature:
  - Ambient: -20 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -20 ... +60 °C
- Accuracy class:
  - cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.086 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-ABS 50/R</td>
<td>0-40 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 50/R</td>
<td>0-60 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 50/R</td>
<td>0-100 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 50/R</td>
<td>0-160 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 50/R</td>
<td>0-250 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 50/R</td>
<td>0-315 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 50/R</td>
<td>0-400 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
</tbody>
</table>

Options: see page 32
FOR HEATING AND SANITARY SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

**BOURDON TUBE PRESSURE GAUGE**

**M3A-ABS 63/FR/R**

Dry Plastic Case DN63 Centre Back Entry

**Materials**

- **Case:** Black plastic
- **Window:** Clear plastic with adjustable red mark pointer
- **Dial:** White plastic
- **Pointer:** Black plastic
- **Pressure connection:** Cu-alloy, 14 mm flats
- **Pressure element:** Bourdon tube Cu-alloy soft soldered, C-type
- **Movement:** Cu-alloy / Polyester combination

**Technical Specifications**

- **Design:** EN 837-1
- **Working pressure:**
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- **Operating temperature:**
  - Ambient: -20 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -20 ... +60 °C
- **Temperature effect:** Deviation from reference temperature (+20°C):
  - ±0.04%/1K of the span
- **Accuracy class:** cl. 2.5, cl. 1.6 on request
- **Degree of protection:** IP 31 per EN 60 529 / IEC 529
- **Individual Weight:** 0.060 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-ABS 63/FR/R</td>
<td>205631013168</td>
<td>0-2.5 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 63/FR/R</td>
<td>004631013273</td>
<td>0-4 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 63/FR/R</td>
<td>006631016337</td>
<td>0-6 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 63/FR/R</td>
<td>010631016336</td>
<td>0-10 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS 63/FR/R</td>
<td>025631013166</td>
<td>0-25 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
</tbody>
</table>

Higher pressure ranges: see M3A-ABS 63/R on page 31

Options: see page 32
BOURDON TUBE PRESSURE GAUGE

FOR HEATING AND SANITARY SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3A-ABS 63/R
Dry Plastic Case DN63 Centre Back Entry

Materials
Case: Black plastic
Window: Clear plastic with adjustable red mark pointer
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered, ≤ 60 bar C-type, > 60 bar helical type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure:
Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature:
Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.094 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-ABS 63/R</td>
<td>0-40 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 63/R</td>
<td>0-60 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 63/R</td>
<td>0-100 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 63/R</td>
<td>0-160 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 63/R</td>
<td>0-250 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 63/R</td>
<td>0-315 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 63/R</td>
<td>0-400 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
</tbody>
</table>

Options: see page 32
BOURDON TUBE PRESSURE GAUGE

OPTIONAL EXTRAS

**M3A-ABS 50/63/FR/R**
**M3A-ABS 50/63/R**

![ bourdon tube pressure gauge ]

Options subject to minimum quantity

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>Adjustable red mark pointer with green sector</td>
</tr>
</tbody>
</table>

**M3A-ABS 40/50/63/FR/R**
**M3A-ABS 40/R**

![ bourdon tube pressure gauge ]

Options subject to minimum quantity

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT</td>
<td>PTFE sealing ring on parallel threads only</td>
</tr>
</tbody>
</table>

**M3A-ABS 40/50/63/R**

High temperature version c.l. 2.5 only

Options subject to minimum quantity

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>T2</td>
<td>40°C/90°C - Aluminium dial + aluminium pointer, (QA+I)</td>
</tr>
</tbody>
</table>

**M3A-ABS 40/50/63/FR/R**

Options subject to minimum quantity

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z3</td>
<td>Restrictor 0.35 mm</td>
</tr>
</tbody>
</table>

**M3A-ABS 50/63/R**

Options subject to minimum quantity

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>Restrictor 0.5 mm</td>
</tr>
</tbody>
</table>

**M3A-ABS 40/50/63/FR/R**
**M3A-ABS 50/63/80/R**

Options subject to minimum quantity

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS</td>
<td>Silicone movement for dampened pointer travel</td>
</tr>
</tbody>
</table>

**M3A-ABS 40/50/63/FR/R**
**M3A-ABS 40/50/63/R**

Options subject to minimum quantity

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Customized dials, other scale ranges or connections on request</td>
</tr>
</tbody>
</table>
BOURDON TUBE PRESSURE GAUGE

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3A-ABS 40/TP
Dry Plastic Case DN40 Centre Back Entry

Materials
- Case: Black plastic
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Black plastic
- Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
- Movement: Cu-alloy / Polyester combination

Technical Specifications
- Design: EN 837-1
- Working pressure:
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- Operating temperature:
  - Ambient: -20 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -20 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C):
  ±0.04%/1K of the span
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.032 kg

Type | Part No. | Pressure Range | Connection | Packaging |
--- | --- | --- | --- | --- |
M3A-ABS 40/TP | -1/0 bar | G1/8B | 100/100 |
M3A-ABS 40/TP | 0-1 bar | G1/8B | 100/100 |
M3A-ABS 40/TP | 0-1.6 bar | G1/8B | 100/100 |
M3A-ABS 40/TP | 0-2.5 bar | G1/8B | 100/100 |
M3A-ABS 40/TP | 0-4 bar | G1/8B | 100/100 |
M3A-ABS 40/TP | 0-6 bar | G1/8B | 100/100 |
M3A-ABS 40/TP | 010404005561 | 0-10 bar | G1/8B | 100/100 |
M3A-ABS 40/TP | 016404004490 | 0-16 bar | G1/8B | 100/100 |
M3A-ABS 40/TP | 0-25 bar | G1/8B | 100/100 |

Options: see page 35
BOURDON TUBE PRESSURE GAUGE

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCIOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS.

M3A-ABS 50/TP
Dry Plastic Case DN50 Centre Back Entry

Materials
Case: Black plastic
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Black plastic
Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
Movement: Cu-alloy / Polyester combination

Technical Specifications
Design: EN 837-1
Working pressure:
- Steady: 75 % of full scale value
- Fluctuating: 60 % of full scale value
- Short time: full scale value
Operating temperature:
- Ambient: -20 ... +60 °C
- Medium: +60 °C maximum
- Storage: -20 ... +60 °C
Temperature effect:
Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class:
class 2.5, class 1.6 on request
Degree of protection:
IP 31 per EN 60 529 / IEC 529
Individual Weight:
0.046 kg

Options
EX F+R 400 DN50

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-ABS 50/TP</td>
<td>-1/0 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 50/TP</td>
<td>0-1 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 50/TP</td>
<td>0-1.6 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 50/TP</td>
<td>0-2.5 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 50/TP</td>
<td>0-4 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 50/TP</td>
<td>0-6 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 50/TP</td>
<td>0-10 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 50/TP</td>
<td>0-16 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 50/TP</td>
<td>0-25 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
</tbody>
</table>

Options: see page 35
BOURDON TUBE PRESSURE GAUGE

M3A-ABS 40/TP

Options subject to minimum quantity
R - printed red mark pointer

M3A-ABS 50/TP

Options subject to minimum quantity
R - adjustable red mark pointer

M3A-ABS 50/TP

Options subject to minimum quantity
V - adjustable red mark pointer with green sector

M3A-ABS 40/50/TP

Options subject to minimum quantity
Z3 - Restrictor 0.35 mm

M3A-ABS 40/50/TP

Options subject to minimum quantity
Customized dials, other scale ranges on request
FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUSS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS.

M3A-ABS 50/ECC
Dry Plastic Case DN50 Lower Back Entry

Materials
Case: Black plastic
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C): ±0.04%/1K of the span
Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.086 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-ABS 50/ECC</td>
<td>0-4 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 50/ECC</td>
<td>0-6 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 50/ECC</td>
<td>0-10 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS 50/ECC</td>
<td>0-16 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
</tbody>
</table>

Options : see page 37
M3A-ABS 50/ECC

Options subject to minimum quantity
R - adjustable red mark pointer

M3A-ABS 50/ECC

Options subject to minimum quantity
V - adjustable red mark pointer with green sector

M3A-ABS 50/ECC

Options subject to minimum quantity
PTFE - Sealing ring on G1/4B only

M3A-ABS 50/ECC

Options subject to minimum quantity
Z3 - Restrictor 0.5mm

M3A-ABS 50/ECC

Options subject to minimum quantity
Customized dials, other scale ranges or connections on request
FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3A-ABS CLIPS 40
Dry Plastic Case with Clips
DN40 Centre Back Entry

Materials
Case with clips: Black plastic
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
Movement: Cu-alloy / Polyester combination

Technical Specifications
Design: EN 837-1
Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C): ±0.04%/1K of the span
Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection: IP 30 per EN 60 529 / IEC 529
Individual Weight: 0.042 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-ABS CLIPS 40</td>
<td>190401094236</td>
<td>0-1 / 0 bar</td>
<td>G1/8B</td>
<td>50/50</td>
</tr>
<tr>
<td>M3A-ABS CLIPS 40</td>
<td>205401094228</td>
<td>0-2.5 bar</td>
<td>G1/8B</td>
<td>50/50</td>
</tr>
<tr>
<td>M3A-ABS CLIPS 40</td>
<td>010401094242</td>
<td>0-10 bar</td>
<td>G1/8B</td>
<td>50/50</td>
</tr>
</tbody>
</table>

Options : see page 41
BOURDON TUBE PRESSURE GAUGE

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3A-ABS CLIPS 40/M5

Dry Plastic Case with Clips DN40
Plastic Centre Back Entry for Capillary

Materials
Case with clips: Black plastic
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, M5 female for fixing capillary only
Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
Movement: Cu-alloy / Polyester combination

Technical Specifications

- **Design**: EN 837-1
- **Working pressure**: Steady: 75 % of full scale value
  Fluctuating: 60 % of full scale value
  Short time: full scale value
- **Operating temperature**: Ambient: -20 ... +60 °C
  Medium: +60 °C maximum
  Storage: -20 ... +60 °C
- **Temperature effect**: Deviation from reference temperature (+20°C):
  ±0.04%/1K of the span
- **Accuracy class**: cl. 2.5, cl. 1.6 on request
- **Degree of protection**: IP 30 per EN 60 529 / IEC 529
- **Individual Weight**: 0.030 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-ABS CLIPS 40/M5</td>
<td>-1/0 bar</td>
<td>M5 female</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS CLIPS 40/M5</td>
<td>0-1 bar</td>
<td>M5 female</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS CLIPS 40/M5</td>
<td>0-1.6 bar</td>
<td>M5 female</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS CLIPS 40/M5</td>
<td>0-2.5 bar</td>
<td>M5 female</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS CLIPS 40/M5</td>
<td>0-4 bar</td>
<td>M5 female</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS CLIPS 40/M5</td>
<td>0-6 bar</td>
<td>M5 female</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS CLIPS 40/M5</td>
<td>0-10 bar</td>
<td>M5 female</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS CLIPS 40/M5</td>
<td>0-16 bar</td>
<td>M5 female</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS CLIPS 40/M5</td>
<td>0-25 bar</td>
<td>M5 female</td>
<td>50/50</td>
<td></td>
</tr>
</tbody>
</table>

Capillary: see page 40

Options: see page 41
BOURDON TUBE PRESSURE GAUGE

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

COPPER CAPILLARY
for M3A-ABS CLIPS 40/M5

EX F+R 999

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Length</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPPER CAPILLARY</td>
<td>99999994115</td>
<td>500mm</td>
<td>G1/4B rotary</td>
<td>50/50</td>
</tr>
</tbody>
</table>

Options : see page 41
M3A-ABS CLIPS 40

Options subject to minimum quantity
Z3 - Restrictor 0.35mm

M3A-ABS CLIPS 40
M3A-ABS CLIPS 40/M5

Options subject to minimum quantity
Customized dials, other scale ranges or connections on request
Dry Plastic Square Case DN40x40 Centre Back Entry

Materials
Case: Black plastic
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
Movement: Cu-alloy / Polyester combination

Technical Specifications
Design: EN 837-1
Working pressure:
Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature:
Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect:
Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class:
cl. 2.5, cl. 1.6 on request
Degree of protection:
IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.054 kg

Options : see page 46
BOURDON TUBE PRESSURE GAUGE

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3A-ABS QUA 48/CLIPS

Dry Plastic Square Case with Clips DN48x48 Centre Back Entry

Materials
Case with clips: Black plastic
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
Movement: Cu-alloy / Polyester combination

Technical Specifications
Design: EN 837-1
Working pressure:
Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature:
Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection: IP 30 per EN 60 529 / IEC 529
Individual Weight: 0.060 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-ABS QUA 48/CLIPS</td>
<td>190481071545</td>
<td>-1/0 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-ABS QUA 48/CLIPS</td>
<td>0-1 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS QUA 48/CLIPS</td>
<td>0-1.6 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS QUA 48/CLIPS</td>
<td>0-2.5 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS QUA 48/CLIPS</td>
<td>0-4 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS QUA 48/CLIPS</td>
<td>0-6 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS QUA 48/CLIPS</td>
<td>0-10 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS QUA 48/CLIPS</td>
<td>0-16 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS QUA 48/CLIPS</td>
<td>0-25 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
</tbody>
</table>

Options: see page 46
FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

**BOURDON TUBE PRESSURE GAUGE**

M3A-ABS QUA 48/M5 CLIPS  EX F+R 407 DN48x48

Dry Plastic Square Case with Clips DN48x48 M5 Centre Back Entry for Capillary

**Materials**
- Case with clips: Black plastic
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Copper alloy, M 5 female for fixing capillary only
- Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
- Movement: Cu-alloy / Polyester combination

**Technical Specifications**
- Design: EN 837-1
- Working pressure:
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- Operating temperature:
  - Ambient: -20 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -20 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C): ±0.04%/1K of the span
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 30 per EN 60 529 / IEC 529
- Individual Weight: 0.052 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-ABS QUA 48/M5 CLIPS</td>
<td>-1/0 bar</td>
<td>M5 female</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS QUA 48/M5 CLIPS</td>
<td>0-1 bar</td>
<td>M5 female</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS QUA 48/M5 CLIPS</td>
<td>0-1.6 bar</td>
<td>M5 female</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS QUA 48/M5 CLIPS</td>
<td>0-2.5 bar</td>
<td>M5 female</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS QUA 48/M5 CLIPS</td>
<td>0-4 bar</td>
<td>M5 female</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS QUA 48/M5 CLIPS</td>
<td>0-6 bar</td>
<td>M5 female</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS QUA 48/M5 CLIPS</td>
<td>0-10 bar</td>
<td>M5 female</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS QUA 48/M5 CLIPS</td>
<td>0-16 bar</td>
<td>M5 female</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-ABS QUA 48/M5 CLIPS</td>
<td>0-25 bar</td>
<td>M5 female</td>
<td>100/100</td>
<td></td>
</tr>
</tbody>
</table>

**COPPER CAPILLARY**  EX F+R 999

For Nominal dimensions see page 40

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Length</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPPER CAPILLARY</td>
<td>9999999994115</td>
<td>500mm</td>
<td>G1/4B rotary</td>
<td>50/50</td>
</tr>
</tbody>
</table>

Options : see page 46
BOURDON TUBE PRESSURE GAUGE

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3A-ABS QUA 52/CLIPS

Dry Plastic Square Case with Clips DN52x52 Centre Back Entry

Materials
Case with clips: Black plastic
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
Movement: Cu-alloy / Polyester combination

Technical Specifications
Design: EN 837-1
Working pressure:
Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature:
Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect:
Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class:
cl. 2.5, cl. 1.6 on request
Degree of protection:
IP 30 per EN 60 529 / IEC 529
Individual Weight:
0.070 kg

Type | Part No. | Pressure Range | Connection | Packaging |
--- | --- | --- | --- | --- |
M3A-ABS QUA 52/CLIPS | -1/0 bar | G1/4B | 100/100 |
M3A-ABS QUA 52/CLIPS | 0-1 bar | G1/4B | 100/100 |
M3A-ABS QUA 52/CLIPS | 0-1.6 bar | G1/4B | 100/100 |
M3A-ABS QUA 52/CLIPS | 0-2.5 bar | G1/4B | 100/100 |
M3A-ABS QUA 52/CLIPS | 0-4 bar | G1/4B | 100/100 |
M3A-ABS QUA 52/CLIPS | 0-6 bar | G1/4B | 100/100 |
M3A-ABS QUA 52/CLIPS | 0-10 bar | G1/4B | 100/100 |
M3A-ABS QUA 52/CLIPS | 016521071529 | 0-16 bar | G1/4B | 100/100 |
M3A-ABS QUA 52/CLIPS | 0-25 bar | G1/4B | 100/100 |

Options: see page 46
## OPTIONAL EXTRAS

### BOURDON TUBE PRESSURE GAUGE

<table>
<thead>
<tr>
<th>M3A-ABS QUA 40 M3A-ABS QUA CLIPS 48/52</th>
</tr>
</thead>
<tbody>
<tr>
<td>Options subject to minimum quantity</td>
</tr>
<tr>
<td>Z3 - Restrictor 0.35mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M3A-ABS QUA CLIPS 48/M5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Options subject to minimum quantity</td>
</tr>
<tr>
<td>R - adjustable red mark pointer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M3A-ABS QUA 40 M3A-ABS QUA CLIPS 48/52</th>
</tr>
</thead>
<tbody>
<tr>
<td>Options subject to minimum quantity</td>
</tr>
<tr>
<td>AT - PTFE sealing ring on paralell threads only</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>M3A-ABS QUA 40 M3A-ABS QUA CLIPS 48/52 M3A-ABS QUA CLIPS 48/M5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Options subject to minimum quantity</td>
</tr>
<tr>
<td>Customized dials, other scale ranges or connections on request</td>
</tr>
</tbody>
</table>
BOURDON TUBE PRESSURE GAUGE

FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3B-ABS 40/C

EX F+R 106 DN40

Dry Plastic Case DN40 Centre Back Entry with 3-Hole Panel Mounting Flange

Materials
- Case: Black plastic
- 3-hole flange: Chrome-plated plastic
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
- Movement: Cu-alloy / Polyester combination

Technical Specifications
- Design: EN 837-1
- Working pressure:
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- Operating temperature:
  - Ambient: -20 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -20 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C):
  ±0.04%/1K of the span
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 43 per EN 60 529 / IEC 529
- Individual Weight: 0.060 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3B-ABS 40/C</td>
<td>190401062247</td>
<td>-1/0 bar</td>
<td>G1/8B</td>
<td>1/125</td>
</tr>
<tr>
<td>M3B-ABS 40/C</td>
<td>001401062215</td>
<td>0-1 bar</td>
<td>G1/8B</td>
<td>1/125</td>
</tr>
<tr>
<td>M3B-ABS 40/C</td>
<td>106401062273</td>
<td>0-1.6 bar</td>
<td>G1/8B</td>
<td>1/125</td>
</tr>
<tr>
<td>M3B-ABS 40/C</td>
<td>205401062217</td>
<td>0-2.5 bar</td>
<td>G1/8B</td>
<td>1/125</td>
</tr>
<tr>
<td>M3B-ABS 40/C</td>
<td>004401062107</td>
<td>0-4 bar</td>
<td>G1/8B</td>
<td>1/125</td>
</tr>
<tr>
<td>M3B-ABS 40/C</td>
<td>006401062628</td>
<td>0-6 bar</td>
<td>G1/8B</td>
<td>1/125</td>
</tr>
<tr>
<td>M3B-ABS 40/C</td>
<td>010401061707</td>
<td>0-10 bar</td>
<td>G1/8B</td>
<td>1/125</td>
</tr>
<tr>
<td>M3B-ABS 40/C</td>
<td>016401062390</td>
<td>0-16 bar</td>
<td>G1/8B</td>
<td>1/125</td>
</tr>
<tr>
<td>M3B-ABS 40/C</td>
<td>025401062216</td>
<td>0-25 bar</td>
<td>G1/8B</td>
<td>1/125</td>
</tr>
</tbody>
</table>

Options: see page 50
**BOURDON TUBE PRESSURE GAUGE**

For panel mounting in general industrial applications. Suitable for gaseous and liquid media which are not highly viscous, do not crystallize and are not aggressive to copper alloys.

**M3B-ABS 50/C**

Dry Plastic Case DN50 Centre Back Entry with 3-Hole Panel Mounting Flange

**Materials**

- **Case:** Black plastic
- **3-hole flange:** Chrome-plated plastic
- **Window:** Clear plastic
- **Dial:** White plastic
- **Pointer:** Black plastic
- **Pressure connection:** Cu-alloy, 14 mm flats
- **Pressure element:** Bourdon tube Cu-alloy soft soldered, C-type
- **Movement:** Cu-alloy / Polyester combination

**Technical Specifications**

- **Design:** EN 837-1
- **Working pressure:**
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- **Operating temperature:**
  - Ambient: -20 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -20 ... +60 °C
- **Temperature effect:** Deviation from reference temperature (+20°C):
  - ±0.04%/1K of the span
- **Accuracy class:** cl. 2.5, cl. 1.6 on request
- **Degree of protection:** IP 43 per EN 60 529 / IEC 529
- **Individual Weight:** 0.070 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3B-ABS 50/C</td>
<td>-1/0 bar</td>
<td>G1/4B</td>
<td>1/125</td>
<td></td>
</tr>
<tr>
<td>M3B-ABS 50/C</td>
<td>0-1 bar</td>
<td>G1/4B</td>
<td>1/125</td>
<td></td>
</tr>
<tr>
<td>M3B-ABS 50/C</td>
<td>0-1.6 bar</td>
<td>G1/4B</td>
<td>1/125</td>
<td></td>
</tr>
<tr>
<td>M3B-ABS 50/C</td>
<td>0-2.5 bar</td>
<td>G1/4B</td>
<td>1/125</td>
<td></td>
</tr>
<tr>
<td>M3B-ABS 50/C</td>
<td>004501061741 0-4 bar</td>
<td>G1/4B</td>
<td>1/125</td>
<td></td>
</tr>
<tr>
<td>M3B-ABS 50/C</td>
<td>010501060539 0-10 bar</td>
<td>G1/4B</td>
<td>1/125</td>
<td></td>
</tr>
<tr>
<td>M3B-ABS 50/C</td>
<td>025501060728 0-25 bar</td>
<td>G1/4B</td>
<td>1/125</td>
<td></td>
</tr>
</tbody>
</table>

**Options:** see page 50
BOURDON TUBE PRESSURE GAUGE

FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS.

M3B-ABS 63/C

Dry Plastic Case DN63 Centre Back Entry with 3-Hole Panel Mounting Flange

Materials
- Case: Black plastic
- 3-hole flange: Chrome-plated plastic
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
- Movement: Cu-alloy / Polyester combination

Technical Specifications
- Design: EN 837-1
- Working pressure:
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- Operating temperature:
  - Ambient: -20 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -20 ... +60 °C
- Temperature effect:
  - Deviation from reference temperature (+20°C):
    - ±0.04%/1K of the span
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 43 per EN 60 529 / IEC 529
- Individual Weight: 0.080 kg

Type | Part No. | Pressure Range | Connection | Packaging |
--- | --- | --- | --- | --- |
M3B-ABS 63/C | 190631062221 | -1/0 bar | G1/4B | 1/72 |
M3B-ABS 63/C | 106631062223 | 0-1 bar | G1/4B | 1/72 |
M3B-ABS 63/C | 205631062276 | 0-2.5 bar | G1/4B | 1/72 |
M3B-ABS 63/C | 004631060673 | 0-4 bar | G1/4B | 1/72 |
M3B-ABS 63/C | 006631060690 | 0-6 bar | G1/4B | 1/72 |
M3B-ABS 63/C | 010631060691 | 0-10 bar | G1/4B | 1/72 |
M3B-ABS 63/C | 016631060692 | 0-16 bar | G1/4B | 1/72 |
M3B-ABS 63/C | 025631062222 | 0-25 bar | G1/4B | 1/72 |

Options: see page 50
BOURDON TUBE PRESSURE GAUGE

OPTIONAL EXTRAS

M3B-ABS 40/50/63/N

Options subject to minimum quantity
FNA - 3-Hole flange black plastic

M3B-ABS 40/50/63/C

Options subject to minimum quantity
VV = instrument glass

M3B-ABS 50/63/C

Options subject to minimum quantity
R - adjustable red mark pointer for clear plastic window only

M3B-ABS 40/50/63/C

Options subject to minimum quantity
AT - PTFE sealing ring on parallel threads only

M3B-ABS 40/50/63/C

Options subject to minimum quantity
Z3 - Restrictor 0.35mm

M3B-ABS 40/50/63/C

Options subject to minimum quantity
Customized dials, other scale ranges or connections on request
BOURDON TUBE PRESSURE GAUGE

FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS.

M3F-ABS 40/C

EX F+R 111 DN40

Dry Plastic Case DN40 Centre Back Entry with Panel Mounting Fixing Ring

Materials
Case + Fixing ring: Black plastic
Triangular ring: Chrome-plated plastic
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
Movement: Cu-alloy / Polyester combination

Technical Specifications
Design: EN 837-1
Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection: IP 43 per EN 60 529 / IEC 529
Individual Weight: 0.055 kg

Type | Part No. | Pressure Range | Connection | Packaging |
--- | --- | --- | --- | --- |
M3F-ABS 40/C | 190401113358 | -1/0 bar | G1/8B | 1/100 |
M3F-ABS 40/C | 106401112335 | 0-1 bar | G1/8B | 1/100 |
M3F-ABS 40/C | 205401112627 | 0-2.5 bar | G1/8B | 1/100 |
M3F-ABS 40/C | 004401112644 | 0-4 bar | G1/8B | 1/100 |
M3F-ABS 40/C | 006401111711 | 0-6 bar | G1/8B | 1/100 |
M3F-ABS 40/C | 010401112084 | 0-10 bar | G1/8B | 1/100 |
M3F-ABS 40/C | 016401112401 | 0-16 bar | G1/8B | 1/100 |
M3F-ABS 40/C | 025401112338 | 0-25 bar | G1/8B | 1/100 |

Options: see page 54
FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS.

**BOURDON TUBE PRESSURE GAUGE**

**M3F-ABS 50/C**

*EX F+R 111 DN50*

Dry Plastic Case DN50 Centre Back Entry with Panel Mounting Fixing Ring

**Materials**
- Case + Fixing ring: Black plastic
- Triangular ring: Chrome-plated plastic
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
- Movement: Cu-alloy / Polyester combination

**Technical Specifications**
- Design: EN 837-1
- Working pressure:
  - Steady: 75% of full scale value
  - Fluctuating: 60% of full scale value
  - Short time: full scale value
- Operating temperature:
  - Ambient: -20 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -20 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C):
  - ±0.04%/1K of the span
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 43 per EN 60 529 / IEC 529
- Individual Weight: 0.065 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3F-ABS 50/C</td>
<td>190501111938</td>
<td>-1/0 bar</td>
<td>G1/4B</td>
<td>1/125</td>
</tr>
<tr>
<td>M3F-ABS 50/C</td>
<td>0-1 bar</td>
<td>1/125</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3F-ABS 50/C</td>
<td>0-1.6 bar</td>
<td>1/125</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3F-ABS 50/C</td>
<td>205501111175</td>
<td>0-2.5 bar</td>
<td>G1/4B</td>
<td>1/125</td>
</tr>
<tr>
<td>M3F-ABS 50/C</td>
<td>004501111172</td>
<td>0-4 bar</td>
<td>G1/4B</td>
<td>1/125</td>
</tr>
<tr>
<td>M3F-ABS 50/C</td>
<td>006501111170</td>
<td>0-8 bar</td>
<td>G1/4B</td>
<td>1/125</td>
</tr>
<tr>
<td>M3F-ABS 50/C</td>
<td>010501111176</td>
<td>0-10 bar</td>
<td>G1/4B</td>
<td>1/125</td>
</tr>
<tr>
<td>M3F-ABS 50/C</td>
<td>016501111171</td>
<td>0-16 bar</td>
<td>G1/4B</td>
<td>1/125</td>
</tr>
<tr>
<td>M3F-ABS 50/C</td>
<td>0-25 bar</td>
<td>G1/4B</td>
<td>1/125</td>
<td></td>
</tr>
</tbody>
</table>

**Options** : see page 54
BOURDON TUBE PRESSURE GAUGE

FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS.

M3F-ABS 63/C

EX F+R 111 DN63

Dry Plastic Case DN63 Centre Back Entry with Panel Mounting Fixing Ring

Materials:
- Case + Fixing ring: Black plastic
- Triangular ring: Chrome-plated plastic
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
- Movement: Cu-alloy / Polyester combination

Technical Specifications:
Design: EN 837-1
Working pressure:
- Steady: 75 % of full scale value
- Fluctuating: 60 % of full scale value
- Short time: full scale value
Operating temperature:
- Ambient: -20 ... +60 °C
- Medium: +60 °C maximum
- Storage: -20 ... +60 °C
Temperature effect:
Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class:
- cl. 2.5, cl. 1.6 on request
Degree of protection:
IP 43 per EN 60 529 / IEC 529
Individual Weight: 0.075 kg

Type | Part No. | Pressure Range | Connection | Packaging |
--- | --- | --- | --- | --- |
M3F-ABS 63/C | 190631112238 | -1/0 bar | G1/4B | 1/72 |
M3F-ABS 63/C | 106631112271 | 0-1 bar | G1/4B | 1/72 |
M3F-ABS 63/C | 205631113512 | 0-2.5 bar | G1/4B | 1/72 |
M3F-ABS 63/C | 004631114791 | 0-4 bar | G1/4B | 1/72 |
M3F-ABS 63/C | 006631111076 | 0-6 bar | G1/4B | 1/72 |
M3F-ABS 63/C | 010631113726 | 0-10 bar | G1/4B | 1/72 |
M3F-ABS 63/C | 016631111669 | 0-16 bar | G1/4B | 1/72 |
M3F-ABS 63/C | 025631112239 | 0-25 bar | G1/4B | 1/72 |

Options: see page 54
### OPTIONAL EXTRAS

#### M3F-ABS 40/50/63/N

<table>
<thead>
<tr>
<th>Options subject to minimum quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GAN</strong> - triangular ring black plastic</td>
<td></td>
</tr>
</tbody>
</table>

#### M3F-ABS 40/50/63/C

<table>
<thead>
<tr>
<th>Options subject to minimum quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VV</strong> - instrument glass</td>
<td></td>
</tr>
</tbody>
</table>

#### M3F-ABS 40/50/63/C

<table>
<thead>
<tr>
<th>Options subject to minimum quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AT</strong> - PTFE sealing ring on paralell threads only</td>
<td></td>
</tr>
</tbody>
</table>

#### M3F-ABS 40/50/63/C

<table>
<thead>
<tr>
<th>Options subject to minimum quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Z3</strong> - Restrictor 0.35mm</td>
<td></td>
</tr>
</tbody>
</table>

#### M3F-ABS 40/50/63/C

<table>
<thead>
<tr>
<th>Options subject to minimum quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customized dials, other scale ranges or connections on request</td>
<td></td>
</tr>
</tbody>
</table>
BOURDON TUBE PRESSURE GAUGE

FOR GENERAL INDUSTRIAL APPLICATIONS, INDOOR SERVICE. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M1-40

Dry Steel Case DN40 Bottom Entry

Materials
Case: Black steel, powder coated
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 12 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure:
Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature:
Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect:
Deviation from reference temperature (+20°C):
±0.04%/°K of the span
Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.060 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1-40</td>
<td></td>
<td>0-1.6 bar</td>
<td>G1/8B</td>
<td>240/240</td>
</tr>
<tr>
<td>M1-40</td>
<td></td>
<td>0-2.5 bar</td>
<td>G1/8B</td>
<td>240/240</td>
</tr>
<tr>
<td>M1-40</td>
<td>PA150421</td>
<td>0-4 bar</td>
<td>G1/8B</td>
<td>240/240</td>
</tr>
<tr>
<td>M1-40</td>
<td>PA1506B100</td>
<td>0-6 bar</td>
<td>G1/8B</td>
<td>240/240</td>
</tr>
<tr>
<td>M1-40</td>
<td>PA151021</td>
<td>0-10 bar</td>
<td>G1/8B</td>
<td>240/240</td>
</tr>
<tr>
<td>M1-40</td>
<td></td>
<td>0-16 bar</td>
<td>G1/8B</td>
<td>240/240</td>
</tr>
<tr>
<td>M1-40</td>
<td></td>
<td>0-25 bar</td>
<td>G1/8B</td>
<td>240/240</td>
</tr>
<tr>
<td>M1-40</td>
<td></td>
<td>0-40 bar</td>
<td>G1/8B</td>
<td>240/240</td>
</tr>
<tr>
<td>M1-40</td>
<td></td>
<td>0-100 bar</td>
<td>G1/8B</td>
<td>240/240</td>
</tr>
<tr>
<td>M1-40</td>
<td></td>
<td>0-160 bar</td>
<td>G1/8B</td>
<td>240/240</td>
</tr>
<tr>
<td>M1-40</td>
<td></td>
<td>0-250 bar</td>
<td>G1/8B</td>
<td>240/240</td>
</tr>
<tr>
<td>M1-40</td>
<td></td>
<td>0-315 bar</td>
<td>G1/8B</td>
<td>240/240</td>
</tr>
<tr>
<td>M1-40</td>
<td></td>
<td>0-400 bar</td>
<td>G1/8B</td>
<td>240/240</td>
</tr>
</tbody>
</table>

Options : see page 60
FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

**M1-50**

**Dry Steel Case DN50 Bottom Entry**

**Materials**
- **Case:** Black steel, powder coated
- **Window:** Clear plastic
- **Dial:** White plastic
- **Pointer:** Black plastic
- **Pressure connection:** Cu-alloy, 14 mm flats
- **Pressure element:** Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
- **Movement:** Cu-alloy

**Technical Specifications**
- **Design:** EN 837-1
- **Working pressure:**
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- **Operating temperature:**
  - Ambient: -20 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -20 ... +60 °C
- **Temperature effect:** Deviation from reference temperature (+20°C):
  ±0.04%/1K of the span
- **Accuracy class:** cl. 2.5, cl. 1.6 on request
- **Degree of protection:** IP 31 per EN 60 529 / IEC 529
- **Individual Weight:** 0.095 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1-50</td>
<td>PA2401BJ00</td>
<td>-1/0 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M1-50</td>
<td></td>
<td>0-1 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M1-50</td>
<td></td>
<td>0-1.6 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M1-50</td>
<td></td>
<td>0-2.5 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M1-50</td>
<td></td>
<td>0-4 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M1-50</td>
<td></td>
<td>0-6 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M1-50</td>
<td></td>
<td>0-10 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M1-50</td>
<td></td>
<td>0-16 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M1-50</td>
<td></td>
<td>0-25 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M1-50</td>
<td></td>
<td>0-40 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M1-50</td>
<td></td>
<td>0-60 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M1-50</td>
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<td>0-100 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M1-50</td>
<td></td>
<td>0-160 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M1-50</td>
<td></td>
<td>0-250 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M1-50</td>
<td></td>
<td>0-315 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M1-50</td>
<td></td>
<td>0-400 bar</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
</tbody>
</table>

Options: see page 60
bourdon tube pressure gauge

For general industrial applications, suitable for gaseous and liquid media which are not highly viscous, do not crystallize and are not aggressive to copper alloys.

M1-63

Dry Steel Case DN63 Bottom Entry

Materials
Case: Black steel, powder coated
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered < 60 bar C-type, > 60 bar helical type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure: Steady: 75% of full scale value
Fluctuating: 60% of full scale value
Short time: full scale value
Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C):
±0.04% / 1K of the span
Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.115 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1-63</td>
<td>-1/0 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M1-63</td>
<td>0-1 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M1-63</td>
<td>0-1.6 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M1-63</td>
<td>0-2.5 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M1-63</td>
<td>0-4 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M1-63</td>
<td>0-6 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M1-63</td>
<td>0-10 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M1-63</td>
<td>0-16 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M1-63</td>
<td>0-26 bar</td>
<td>G1/4B</td>
<td>100/100</td>
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</tr>
<tr>
<td>M1-63</td>
<td>0-40 bar</td>
<td>G1/4B</td>
<td>100/100</td>
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</tr>
<tr>
<td>M1-63</td>
<td>0-60 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M1-63</td>
<td>0-100 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M1-63</td>
<td>0-160 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M1-63</td>
<td>0-250 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M1-63</td>
<td>0-315 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M1-63</td>
<td>0-400 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
</tbody>
</table>

Options: see page 60
BOURDON TUBE PRESSURE GAUGE

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M1-80
Dry Steel Case DN50 Bottom Entry

Materials
Case: Black steel, powder coated
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type,
> 60 bar helical type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.170 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1-80</td>
<td>-1/0 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80</td>
<td>0-1 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80</td>
<td>0-1.6 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80 PA4403BC01</td>
<td>0-2.5 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80 PA4504BC03</td>
<td>0-4 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80</td>
<td>0-6 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80</td>
<td>0-10 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80</td>
<td>0-16 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80</td>
<td>0-25 bar</td>
<td>G3/8B</td>
<td>1/50</td>
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</tr>
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<td>G3/8B</td>
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<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
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<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80</td>
<td>0-160 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80</td>
<td>0-250 bar</td>
<td>G3/8B</td>
<td>1/50</td>
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<tr>
<td>M1-80</td>
<td>0-315 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80</td>
<td>0-400 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
</tbody>
</table>

EX F+R 250 DN80

Dry Steel Case DN50 Bottom Entry

Material: Black steel, powder coated
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type,
> 60 bar helical type
Movement: Cu-alloy

Type | Part No. | Pressure Range | Connection | Packaging |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>M1-80</td>
<td>-1/0 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80</td>
<td>0-1 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80</td>
<td>0-1.6 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80 PA4403BC01</td>
<td>0-2.5 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80 PA4504BC03</td>
<td>0-4 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80</td>
<td>0-6 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80</td>
<td>0-10 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80</td>
<td>0-16 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80</td>
<td>0-25 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80</td>
<td>0-40 bar</td>
<td>G3/8B</td>
<td>1/50</td>
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<tr>
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<td>0-60 bar</td>
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<tr>
<td>M1-80</td>
<td>0-100 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80</td>
<td>0-160 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80</td>
<td>0-250 bar</td>
<td>G3/8B</td>
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<td></td>
</tr>
<tr>
<td>M1-80</td>
<td>0-315 bar</td>
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<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M1-80</td>
<td>0-400 bar</td>
<td>G3/8B</td>
<td>1/50</td>
<td></td>
</tr>
</tbody>
</table>

Options: see page 60
BOURDON TUBE PRESSURE GAUGE

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M1-100

EX F+R 250 DN100

Dry Steel Case DN63 Bottom Entry

Materials
Case: Black steel, powder coated
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.255 kg

Type Part No. Pressure Range Connection Packaging
M1-100 -1/0 bar G1/2B 1/30
M1-100 0-1 bar G1/2B 1/30
M1-100 0-1.6 bar G1/2B 1/30
M1-100 0-2.5 bar G1/2B 1/30
M1-100 0-4 bar G1/2B 1/30
M1-100 0-6 bar G1/2B 1/30
M1-100 PA5510BD00 0-10 bar G1/2B 1/30
M1-100 0-16 bar G1/2B 1/30
M1-100 0-25 bar G1/2B 1/30
M1-100 0-40 bar G1/2B 1/30
M1-100 0-60 bar G1/2B 1/30
M1-100 0-100 bar G1/2B 1/30
M1-100 0-160 bar G1/2B 1/30
M1-100 0-250 bar G1/2B 1/30
M1-100 0-315 bar G1/2B 1/30
M1-100 0-400 bar G1/2B 1/30

Options : see page 60
### Optional Extras

#### M1-50/63/80/100

![M1-50/63/80/100](image)

<table>
<thead>
<tr>
<th>Options subject to minimum quantity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>R - adjustable red mark pointer</td>
<td></td>
</tr>
</tbody>
</table>

#### M1-40/50/63/80/100

**High temperature version c.i. 2.5 only**

<table>
<thead>
<tr>
<th>Options subject to minimum quantity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>T2 - 40°C/90°C - Aluminium dial + aluminium pointer (QA+I)</td>
<td></td>
</tr>
<tr>
<td>T1 - 40°C/120°C - Aluminium dial + aluminium pointer + bezel ring + instrument glass (QA+I+V+VV)</td>
<td></td>
</tr>
</tbody>
</table>

#### M1-40/50/63/80/100

![M1-40/50/63/80/100](image)

<table>
<thead>
<tr>
<th>Options subject to minimum quantity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Z - Restrictor 0.5mm</td>
<td></td>
</tr>
</tbody>
</table>

#### M1-40/50/63/80/100

![M1-40/50/63/80/100](image)

<table>
<thead>
<tr>
<th>Options subject to minimum quantity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A+VV - Chrome-plated bezel ring + instrument glass window</td>
<td></td>
</tr>
</tbody>
</table>

#### M1-40/50/63/80/100

![M1-40/50/63/80/100](image)

<table>
<thead>
<tr>
<th>Options subject to minimum quantity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AT - PTFE sealing ring on parallel threads only</td>
<td></td>
</tr>
</tbody>
</table>

#### M1-40/50/63/80/100

![M1-40/50/63/80/100](image)

<table>
<thead>
<tr>
<th>Options subject to minimum quantity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Customized dials, other scale ranges or connections on request</td>
<td></td>
</tr>
</tbody>
</table>
BOURDON TUBE PRESSURE GAUGE

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3A-40
Dry Steel Case DN40 Centre Back Entry

Materials
Case: Black steel, powder coated
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 12 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure:
Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature:
Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect:
Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class:
class 2.5, class 1.6 on request
Degree of protection:
IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.069 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-40</td>
<td>-1/0 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40</td>
<td>0-1 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40</td>
<td>0-1.6 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40</td>
<td>0-2.5 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40</td>
<td>PB150421</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40</td>
<td>0-4 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40</td>
<td>0-6 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40</td>
<td>0-10 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40</td>
<td>0-16 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40</td>
<td>0-25 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40</td>
<td>0-40 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40</td>
<td>0-60 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40</td>
<td>0-100 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40</td>
<td>0-160 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40</td>
<td>0-250 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40</td>
<td>0-315 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40</td>
<td>0-400 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
</tbody>
</table>

Options: see page 66
FOR GENERAL INDUSTRIAL APPLICATIONS, INDOOR SERVICE. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS.

**M3A-50**

**Dry Steel Case DN50 Centre Back Entry**

**Materials**
- **Case:** Black steel, powder coated
- **Window:** Clear plastic
- **Dial:** White plastic
- **Pointer:** Black plastic
- **Pressure connection:** Cu-alloy, 14 mm flats
- **Pressure element:** Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
- **Movement:** Cu-alloy

**Technical Specifications**
- **Design:** EN 837-1
- **Working pressure:**
  - Steady: 75% of full scale value
  - Fluctuating: 60% of full scale value
  - Short time: full scale value
- **Operating temperature:**
  - Ambient: -20 °C ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -20 °C ... +60 °C
- **Temperature effect:** Deviation from reference temperature (+20°C):
  - ±0.04%/1K of the span
- **Accuracy class:** cl. 2.5, cl. 1.6 on request
- **Degree of protection:** IP 31 per EN 60 529 / IEC 529
- **Individual Weight:** 0.116 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-50</td>
<td>-1/0 bar</td>
<td></td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-50</td>
<td>0-1 bar</td>
<td></td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-50</td>
<td>0-1.6 bar</td>
<td></td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-50</td>
<td>0-2.5 bar</td>
<td></td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-50</td>
<td>PB2504BB00</td>
<td></td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-50</td>
<td>0-4 bar</td>
<td></td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-50</td>
<td>0-6 bar</td>
<td></td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-50</td>
<td>0-10 bar</td>
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<td>G1/4B</td>
<td>100/100</td>
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<td>M3A-50</td>
<td>0-16 bar</td>
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<td>G1/4B</td>
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<tr>
<td>M3A-50</td>
<td>0-25 bar</td>
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<td>G1/4B</td>
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<td>0-40 bar</td>
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<td>G1/4B</td>
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<tr>
<td>M3A-50</td>
<td>0-100 bar</td>
<td></td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-50</td>
<td>0-160 bar</td>
<td></td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-50</td>
<td>0-250 bar</td>
<td></td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-50</td>
<td>0-315 bar</td>
<td></td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3A-50</td>
<td>0-400 bar</td>
<td></td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
</tbody>
</table>

Options: see page 66
BOURDON TUBE PRESSURE GAUGE

FOR GENERAL INDUSTRIAL APPLICATIONS, INDOOR SERVICE. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3A-63
Dry Steel Case DN63 Centre Back Entry

Materials
Case: Black steel, powder coated
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure:
Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature:
Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.126 kg

Type | Part No. | Pressure Range | Connection | Packaging
--- | --- | --- | --- | ---
M3A-63 | -1/0 bar | G1/4B | 100/100
M3A-63 | 0-1 bar | G1/4B | 100/100
M3A-63 | 0-1.6 bar | G1/4B | 100/100
M3A-63 | 0-2.5 bar | G1/4B | 100/100
M3A-63 | 0-4 bar | G1/4B | 100/100
M3A-63 | 0-6 bar | G1/4B | 100/100
M3A-63 | 0-10 bar | G1/4B | 100/100
M3A-63 | PB351622 | 0-16 bar | G1/4B | 100/100
M3A-63 | 0-25 bar | G1/4B | 100/100
M3A-63 | 0-40 bar | G1/4B | 100/100
M3A-63 | 0-60 bar | G1/4B | 100/100
M3A-63 | 0-100 bar | G1/4B | 100/100
M3A-63 | 0-160 bar | G1/4B | 100/100
M3A-63 | 0-250 bar | G1/4B | 100/100
M3A-63 | 0-315 bar | G1/4B | 100/100
M3A-63 | 0-400 bar | G1/4B | 100/100

Options: see page 66
FOR GENERAL INDUSTRIAL APPLICATIONS, INDOOR SERVICE. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

BOURDON TUBE PRESSURE GAUGE

M3A-80
Dry Steel Case DN80 Centre Back Entry

Materials
Case: Black steel, powder coated
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Operating temperature: Ambient -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.156 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-80</td>
<td>-1/0 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-80</td>
<td>0-1 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-80</td>
<td>0-1.6 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-80</td>
<td>0-2.5 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-80</td>
<td>0-4 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-80</td>
<td>0-6 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-80</td>
<td>0-10 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-80</td>
<td>0-16 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-80</td>
<td>0-25 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-80</td>
<td>0-40 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-80</td>
<td>0-60 bar</td>
<td>G3/8B</td>
<td>50/50</td>
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</tr>
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<td>M3A-80</td>
<td>0-100 bar</td>
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<td>0-250 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
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<tr>
<td>M3A-80</td>
<td>0-315 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>M3A-80</td>
<td>0-400 bar</td>
<td>G3/8B</td>
<td>50/50</td>
<td></td>
</tr>
</tbody>
</table>

Options: see page 66
BOURDON TUBE PRESSURE GAUGE

FOR GENERAL INDUSTRIAL APPLICATIONS, INDOOR SERVICE. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3A-100

Dry Steel Case DN100 Centre Back Entry

Materials
Case: Black steel, powder coated
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C): ±0.04%/1K of the span
Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.176 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-100</td>
<td>-1/0 bar</td>
<td>G1/2B</td>
<td>1/30</td>
<td></td>
</tr>
<tr>
<td>M3A-100</td>
<td>0-1 bar</td>
<td>G1/2B</td>
<td>1/30</td>
<td></td>
</tr>
<tr>
<td>M3A-100</td>
<td>0-1.6 bar</td>
<td>G1/2B</td>
<td>1/30</td>
<td></td>
</tr>
<tr>
<td>M3A-100</td>
<td>0-2.5 bar</td>
<td>G1/2B</td>
<td>1/30</td>
<td></td>
</tr>
<tr>
<td>M3A-100</td>
<td>0-4 bar</td>
<td>G1/2B</td>
<td>1/30</td>
<td></td>
</tr>
<tr>
<td>M3A-100</td>
<td>0-6 bar</td>
<td>G1/2B</td>
<td>1/30</td>
<td></td>
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<tr>
<td>M3A-100</td>
<td>0-10 bar</td>
<td>G1/2B</td>
<td>1/30</td>
<td></td>
</tr>
<tr>
<td>M3A-100</td>
<td>0-16 bar</td>
<td>G1/2B</td>
<td>1/30</td>
<td></td>
</tr>
<tr>
<td>M3A-100</td>
<td>0-25 bar</td>
<td>G1/2B</td>
<td>1/30</td>
<td></td>
</tr>
<tr>
<td>M3A-100</td>
<td>0-40 bar</td>
<td>G1/2B</td>
<td>1/30</td>
<td></td>
</tr>
<tr>
<td>M3A-100</td>
<td>0-60 bar</td>
<td>G1/2B</td>
<td>1/30</td>
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</tr>
<tr>
<td>M3A-100</td>
<td>0-100 bar</td>
<td>G1/2B</td>
<td>1/30</td>
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</tr>
<tr>
<td>M3A-100</td>
<td>0-160 bar</td>
<td>G1/2B</td>
<td>1/30</td>
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</tr>
<tr>
<td>M3A-100</td>
<td>0-250 bar</td>
<td>G1/2B</td>
<td>1/30</td>
<td></td>
</tr>
<tr>
<td>M3A-100</td>
<td>0-315 bar</td>
<td>G1/2B</td>
<td>1/30</td>
<td></td>
</tr>
<tr>
<td>M3A-100</td>
<td>0-400 bar</td>
<td>G1/2B</td>
<td>1/30</td>
<td></td>
</tr>
</tbody>
</table>

Options : see page 66
## Optional Extras

### M3A-50/63/80/100

**Options subject to minimum quantity**

- **R** - adjustable red mark pointer

### M3A-40/50/63/80/100

**Options subject to minimum quantity**

- **Z** - Restrictor 0.5mm

### M3A-40/50/63/80/100

**High temperature version c.l. 2.5 only**

**Options subject to minimum quantity**

- **T2** - 40°C/+90°C - Aluminium dial + aluminium pointer (QA+I)
- **T1** - 40°C/+120°C - Aluminium dial + aluminium pointer + bezel ring + instrument glass (QA+I+A+VV)

### M3A-40/50/63/80/100

**Options subject to minimum quantity**

- **A+VV** - Chrome-plated bezel ring + instrument glass window

### M3A-40/50/63/80/100

**Options subject to minimum quantity**

- **AT** - PTFE sealing ring on parallel threads only

### M3A-40/50/63/80/100

**Options subject to minimum quantity**

- Customized dials, other scale ranges or connections on request
BOURDON TUBE PRESSURE GAUGE

FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCIOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3B-40
Dry Steel Case DN40 Centre Back Entry with 3-Hole Panel Mounting Flange

Materials
Case: Black steel, powder coated
3-hole flange: Chrome-plated steel
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 12 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered C-type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure:
Steady: 75% of full scale value
Fluctuating: 60% of full scale value
Short time: full scale value
Operating temperature:
Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect:
Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class:
class 2.5, class 1.6 on request
Degree of protection: IP 43 per EN 60529 / IEC 529
Individual Weight: 0.086 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
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</thead>
<tbody>
<tr>
<td>M3B-40</td>
<td>PC1401EI00</td>
<td>-1/0 bar/inHg</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3B-40</td>
<td>PC1503DI00</td>
<td>0-2.5 bar/psi</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3B-40</td>
<td>PC1504DI00</td>
<td>0-4 bar/psi</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3B-40</td>
<td>PC1506DI00</td>
<td>0-6 bar/psi</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3B-40</td>
<td>PC1510DI00</td>
<td>0-10 bar/psi</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3B-40</td>
<td>PC1516DI00</td>
<td>0-16 bar/psi</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3B-40</td>
<td>PC1525DI00</td>
<td>0-25 bar/psi</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
<tr>
<td>M3B-40</td>
<td>PC1540DI00</td>
<td>0-40 bar/psi</td>
<td>G1/8B</td>
<td>100/100</td>
</tr>
</tbody>
</table>

Options: see page 70
BOURDON TUBE PRESSURE GAUGE

FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3B-50
Dry Steel Case DN50 Centre Back Entry with 3-Hole Panel Mounting Flange

Materials
Case: Black steel, powder coated
3-hole flange: Chrome-plated steel
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered C-type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure:
Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature:
Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect:
Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class:
cl. 2.5, cl. 1.6 on request
Degree of protection: IP 43 per EN 60 529 / IEC 529
Individual Weight: 0.126 kg

Type | Part No. | Pressure Range | Connection | Packaging |
-----|---------|----------------|------------|-----------|
M3B-50 | -1/0 bar/lnHg G1/4B | 100/100 |
M3B-50 | 0-1 bar/psi G1/4B | 100/100 |
M3B-50 | 0-1.6 bar/psi G1/4B | 100/100 |
M3B-50 | 0-2.5 bar/psi G1/4B | 100/100 |
M3B-50 | 0-4 bar/psi G1/4B | 100/100 |
M3B-50 | 0-10 bar/psi G1/4B | 100/100 |
M3B-50 | 0-16 bar/psi G1/4B | 100/100 |
M3B-50 | 0-25 bar/psi G1/4B | 100/100 |
M3B-50 | 0-40 bar/psi G1/4B | 100/100 |

Options: see page 70
**BOURDON TUBE PRESSURE GAUGE**

**FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS**

---

**M3B-63**

**EX F+R 152 DN63**

**Dry Steel Case DN63 Centre Back Entry with 3-Hole Panel Mounting Flange**

**Materials**
- Case: Black steel, powder coated
- 3-hole flange: Chrome-plated steel
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered C-type
- Movement: Cu-alloy

**Technical Specifications**
- Design: EN 837-1
- Working pressure: Steady: 75 % of full scale value
  Fluctuating: 60 % of full scale value
- Short time: full scale value
- Operating temperature: Ambient: -20 ... +60 °C
  Medium: +60 °C maximum
  Storage: -20 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C):
  ±0.04%/1K of the span
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 43 per EN 60 529 / IEC 529
- Individual Weight: 0.126 kg

---

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3B-63</td>
<td>PC3401EJ00</td>
<td>-1/0 bar/inHg</td>
<td>G1/4B</td>
<td>1/50</td>
</tr>
<tr>
<td>M3B-63</td>
<td>PC3503DJ00</td>
<td>0-2.5 bar/psi</td>
<td>G1/4B</td>
<td>1/50</td>
</tr>
<tr>
<td>M3B-63</td>
<td>PC3516DJ00</td>
<td>0-16 bar/psi</td>
<td>G1/4B</td>
<td>1/50</td>
</tr>
<tr>
<td>M3B-63</td>
<td>PC3525DB00</td>
<td>0-40 bar/psi</td>
<td>G1/4B</td>
<td>1/50</td>
</tr>
</tbody>
</table>

---

Options: see page 70
**BOURDON TUBE PRESSURE GAUGE**

**OPTIONAL EXTRAS**

**M3B-50/63**

- Optional extras subject to minimum quantity
- **R** - adjustable red mark pointer

**M3B-40/50/63**

- Optional extras subject to minimum quantity
- **Z** - Restrictor 0.5mm

**M3B-40/50/63**

- High temperature version c.l. 2.5 only
- Optional extras subject to minimum quantity
- **T2** - 40°C/+90°C - Aluminium dial + aluminium pointer (QA+I)
- **T1** - 40°C/+120°C - Aluminium dial + aluminium pointer + bezel ring + instrument glass (QA+I+VV)

**M3B-40/50/63**

- Optional extras subject to minimum quantity
- **AT** - PTFE sealing ring on parallel threads only

**M3B-40/50/63**

- Optional extras subject to minimum quantity
- Customized dials, other scale ranges or connections on request
BOURDON TUBE PRESSURE GAUGE

FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS.

M3F-40 EX F+R 152 DN40
Dry Steel Case DN40 Centre Back Entry with Panel Mounting Brackets

Materials
Case and brackets: Zinc-plated steel
Triangular ring: Chrome-plated steel
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 12 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered C-type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection: IP 43 per EN 60 529 / IEC 529
Individual Weight: 0.094 kg

Options: see page 76
BOURDON TUBE PRESSURE GAUGE

FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3F-50
Dry Steel Case DN50 Centre Back Entry with Panel Mounting Brackets

Materials
Case and brackets: Zinc-plated steel
Triangular ring: Chrome-plated steel
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered C-type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C): ±0,04%/1K of the span
Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection: IP 43 per EN 60 529 / IEC 529
Individual Weight: 0.108 kg

Options: see page 76

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3F-50</td>
<td>PD2401EJ00</td>
<td>-1/0 bar/inHg</td>
<td>G1/4B</td>
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<tr>
<td>M3F-50</td>
<td></td>
<td>0-1 bar/psi</td>
<td>G1/4B</td>
<td>1/50</td>
</tr>
<tr>
<td>M3F-50</td>
<td></td>
<td>0-1.6 bar/psi</td>
<td>G1/4B</td>
<td>1/50</td>
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<tr>
<td>M3F-50</td>
<td>PD250314</td>
<td>0-2.5 bar/psi</td>
<td>G1/4B</td>
<td>1/50</td>
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<tr>
<td>M3F-50</td>
<td></td>
<td>0-4 bar/psi</td>
<td>G1/4B</td>
<td>1/50</td>
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<tr>
<td>M3F-50</td>
<td>PD2506DJ00</td>
<td>0-6 bar/psi</td>
<td>G1/4B</td>
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<td>M3F-50</td>
<td>PD2510DJ00</td>
<td>0-10 bar/psi</td>
<td>G1/4B</td>
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<td>M3F-50</td>
<td>PD2516DJ00</td>
<td>0-16 bar/psi</td>
<td>G1/4B</td>
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<tr>
<td>M3F-50</td>
<td></td>
<td>0-25 bar/psi</td>
<td>G1/4B</td>
<td>1/50</td>
</tr>
<tr>
<td>M3F-50</td>
<td></td>
<td>0-40 bar/psi</td>
<td>G1/4B</td>
<td>1/50</td>
</tr>
</tbody>
</table>

EX F+R 152 DN50

28 ±0.5
33 ±1
BOURDON TUBE PRESSURE GAUGE

FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3F-63 EX F+R 152 DN63
Dry Steel Case DN63 Centre Back Entry with Panel Mounting Brackets

Materials
Case and brackets: Zinc-plated steel
Triangular ring: Chrome-plated steel
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered C-type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure:
Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature:
Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect:
Deviation from reference temperature (+20°C): ±0.04%/1K of the span
Accuracy class:
cl. 2.5, cl. 1.6 on request
Degree of protection:
IP 43 per EN 60 529 / IEC 529
Individual Weight: 0.146 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
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</tr>
<tr>
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<td>0-1 bar/psi</td>
<td>G1/4B</td>
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<td></td>
</tr>
<tr>
<td>M3F-63 PD3503DJ00</td>
<td>0-2.5 bar/psi</td>
<td>G1/4B</td>
<td>1/50</td>
<td></td>
</tr>
<tr>
<td>M3F-63 PD3504DJ00</td>
<td>0-4 bar/psi</td>
<td>G1/4B</td>
<td>1/50</td>
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</tr>
<tr>
<td>M3F-63 PD3506DJ00</td>
<td>0-6 bar/psi</td>
<td>G1/4B</td>
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</tr>
<tr>
<td>M3F-63 PD3510DJ00</td>
<td>0-10 bar/psi</td>
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<td>0-40 bar/psi</td>
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<td>1/50</td>
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</table>

Options: see page 76
FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3F-80
Dry Steel Case DN80 Centre Back Entry with Panel Mounting Brackets

Materials
Case and brackets: Zinc-plated steel
Triangular ring: Chrome-plated steel
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered C-type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure:
Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature:
Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect:
Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class:
cl. 2.5, cl. 1.6 on request
Degree of protection:
IP 43 per EN 60 529 / IEC 529
Individual Weight:
0.248 kg

Options : see page 76
BOURDON TUBE PRESSURE GAUGE

FOR PANEL MOUNTING IN GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCIOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3F-100
Dry Steel Case DN100 Centre Back Entry with Panel Mounting Brackets

**Materials**
- Case and brackets: Zinc-plated steel
- Triangular ring: Chrome-plated steel
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered C-type
- Movement: Cu-alloy

**Technical Specifications**
- Design: EN 837-1
- Working pressure:
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- Operating temperature:
  - Ambient: -20 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -20 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C):
  ±0.04%/1K of the span
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 43 per EN 60 529 / IEC 529
- Individual Weight: 0.181 kg

**Type** | **Part No.** | **Pressure Range** | **Connection** | **Packaging**
--- | --- | --- | --- | ---
M3F-100 | -1/0 bar | G1/4B | 1/18
M3F-100 | 0-1 bar | G1/4B | 1/18
M3F-100 | 0-1.6 bar | G1/4B | 1/18
M3F-100 | 0-2.5 bar | G1/4B | 1/18
M3F-100 | 0-4 bar | G1/4B | 1/18
M3F-100 | 0-6 bar | G1/4B | 1/18
M3F-100 | 0-10 bar | G1/4B | 1/18
M3F-100 | 0-16 bar | G1/4B | 1/18
M3F-100 | 0-25 bar | G1/4B | 1/18
M3F-100 | 0-40 bar | G1/4B | 1/18

**Options**: see page 76
BOURDON TUBE PRESSURE GAUGE

OPTIONAL EXTRAS

M3F-40/50/63/80/100

Options subject to minimum quantity
Z - Restrictor 0.5mm

M3F-40/50/63/80/100

High temperature version c.l. 2.5 only

Options subject to minimum quantity
T2 - 40°C/+90°C - Aluminium dial + aluminium pointer (QA+I)
T1 - 40°C/+120°C - Aluminium dial + aluminium pointer + bezel ring + instrument glass (QA+I+VV)

M3F-40/50/63/80/100

Options subject to minimum quantity
AT - PTFE sealing ring on parallel threads only

M3F-40/50/63/80/100

Options subject to minimum quantity
Customized dials, other scale ranges or connections on request
BOURDON TUBE PRESSURE GAUGE

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCIOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M1-40 INOX
Dry Stainless Steel DN40 Bottom Entry

Materials
Case: Stainless steel 1.4301
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 12 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure:
Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature:
Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect:
Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class: cl. 2.5, cl. 1.6 on request
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.065 kg

Type | Part No. | Pressure Range | Connection | Packaging |
--- | --- | --- | --- | --- |
M1-40 INOX | 0-1.6 bar | G1/8B | 240/240 |
M1-40 INOX | 0-2.5 bar | G1/8B | 240/240 |
M1-40 INOX | 0-4 bar | G1/8B | 240/240 |
M1-40 INOX | 0-6 bar | G1/8B | 240/240 |
M1-40 INOX | 0-10 bar | G1/8B | 240/240 |
M1-40 INOX | 0-16 bar | G1/8B | 240/240 |
M1-40 INOX | 0-25 bar | G1/8B | 240/240 |
M1-40 INOX | 0-40 bar | G1/8B | 240/240 |
M1-40 INOX | 0-60 bar | G1/8B | 240/240 |
M1-40 INOX | 0-100 bar | G1/8B | 240/240 |
M1-40 INOX | 0-160 bar | G1/8B | 240/240 |
M1-40 INOX | 0-250 bar | G1/8B | 240/240 |
M1-40 INOX | 0-315 bar | G1/8B | 240/240 |
M1-40 INOX | 0-400 bar | G1/8B | 240/240 |

Options: see page 79
FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

**M1-50 INOX**

Dry Stainless Steel DN50 Bottom Entry

**Materials**
- **Case:** Stainless steel 1.4301
- **Window:** Clear plastic
- **Pointer:** Black plastic
- **Pressure connection:** Cu-alloy, 14 mm flats
- **Pressure element:** Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
- **Movement:** Cu-alloy

**Technical Specifications**
- **Design:** EN 837-1
- **Working pressure:**
  - Steady: 75% of full scale value
  - Fluctuating: 60% of full scale value
  - Short time: full scale value
- **Operating temperature:**
  - Ambient: -20...+60 °C
  - Medium: +60 °C maximum
  - Storage: -20...+60 °C
- **Temperature effect:** Deviation from reference temperature (+20°C): ±0.04%/1K of the span
- **Accuracy class:** cl. 2.5, cl. 1.6 on request
- **Degree of protection:** IP 31 per EN 60 529 / IEC 529
- **Individual Weight:** 0.105 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
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<td>-1/0 bar</td>
<td>G1/4B</td>
<td>100/100</td>
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<tr>
<td>M1-50 INOX</td>
<td>0-1 bar</td>
<td>G1/4B</td>
<td>100/100</td>
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<tr>
<td>M1-50 INOX</td>
<td>0-1.6 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
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<tr>
<td>M1-50 INOX</td>
<td>0-2.5 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M1-50 INOX</td>
<td>0-4 bar</td>
<td>G1/4B</td>
<td>100/100</td>
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<tr>
<td>M1-50 INOX</td>
<td>0-6 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
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<tr>
<td>M1-50 INOX</td>
<td>0-10 bar</td>
<td>G1/4B</td>
<td>100/100</td>
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</tr>
<tr>
<td>M1-50 INOX</td>
<td>0-16 bar</td>
<td>G1/4B</td>
<td>100/100</td>
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</tr>
<tr>
<td>M1-50 INOX</td>
<td>0-25 bar</td>
<td>G1/4B</td>
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<tr>
<td>M1-50 INOX</td>
<td>0-40 bar</td>
<td>G1/4B</td>
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<tr>
<td>M1-50 INOX</td>
<td>0-60 bar</td>
<td>G1/4B</td>
<td>100/100</td>
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<tr>
<td>M1-50 INOX</td>
<td>0-100 bar</td>
<td>G1/4B</td>
<td>100/100</td>
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</tr>
<tr>
<td>M1-50 INOX</td>
<td>0-160 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M1-50 INOX</td>
<td>0-250 bar</td>
<td>G1/4B</td>
<td>100/100</td>
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</tr>
<tr>
<td>M1-50 INOX</td>
<td>0-315 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M1-50 INOX</td>
<td>0-400 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
</tbody>
</table>

**Options:** see page 79
**OPTIONAL EXTRAS**

**M1- 50 INOX**

- Options subject to minimum quantity
- **R** - adjustable red mark pointer

**M1- 40/50 INOX**

- Options subject to minimum quantity
- **Z** - Restrictor 0.5mm

**M1- 40/50 INOX**

High temperature version c.l. 2.5 only

- Options subject to minimum quantity
- **T2** - 40°C/+90°C - Aluminium dial + aluminium pointer (QA+I)
- **T1** - 40°C/+120°C - Aluminium dial + aluminium pointer + bezel ring + instrument glass (QA+I+AX+VV)

**M1- 40/50 INOX**

- Options subject to minimum quantity
- **AX+VV** - Bezel ring + instrument glass

**M1- 40/50 INOX**

- Options subject to minimum quantity
- **AT** - PTFE sealing ring on parallel threads only

**M1- 40/50 INOX**

- Options subject to minimum quantity
- Customized dials, other scale ranges or connections on request
M3A-40 INOX

Dry Stainless Steel DN40 Centre Back Entry

**Materials**
- Case: Stainless steel 1.4301
- Window: Clear plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 12 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type

**Technical Specifications**
- Design: EN 837-1
- Working pressure:
  - Steady: 75% of full scale value
  - Fluctuating: 60% of full scale value
  - Short time: full scale value
- Operating temperature:
  - Ambient: -20...+60 °C
  - Medium: +60 °C maximum
  - Storage: -20...+60 °C
- Temperature effect: Deviation from reference temperature (+20°C):
  - ±0.04%/1K of the span
- Accuracy class: cl. 2.5, cl. 1.6 on request
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.069 kg

**Type**

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
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</thead>
<tbody>
<tr>
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<td>-1/0 bar</td>
<td>G1/8B</td>
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<tr>
<td>M3A-40 INOX</td>
<td>0-1 bar</td>
<td>G1/8B</td>
<td>240/240</td>
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</tr>
<tr>
<td>M3A-40 INOX</td>
<td>0-1.6 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40 INOX</td>
<td>0-2.5 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40 INOX</td>
<td>0-4 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40 INOX</td>
<td>0-6 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40 INOX</td>
<td>0-10 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40 INOX</td>
<td>0-16 bar</td>
<td>G1/8B</td>
<td>240/240</td>
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<tr>
<td>M3A-40 INOX</td>
<td>PK1825B100</td>
<td>0-25 bar</td>
<td>G1/8B</td>
<td>240/240</td>
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<tr>
<td>M3A-40 INOX</td>
<td>0-40 bar</td>
<td>G1/8B</td>
<td>240/240</td>
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<tr>
<td>M3A-40 INOX</td>
<td>0-60 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
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<tr>
<td>M3A-40 INOX</td>
<td>0-100 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40 INOX</td>
<td>0-160 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>M3A-40 INOX</td>
<td>0-250 bar</td>
<td>G1/8B</td>
<td>240/240</td>
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<tr>
<td>M3A-40 INOX</td>
<td>0-315 bar</td>
<td>G1/8B</td>
<td>240/240</td>
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<tr>
<td>M3A-40 INOX</td>
<td>0-400 bar</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
</tbody>
</table>

Options: see page 82
**BOURDON TUBE PRESSURE GAUGE**

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

---

**M3A-50 INOX**  
Dry Stainless Steel DN50 Centre Back Entry

**Materials**
- **Case:** Stainless steel 1.4301
- **Window:** Clear plastic
- **Pointer:** Black plastic
- **Pressure connection:** Cu-alloy, 14 mm flats
- **Pressure element:** Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
- **Movement:** Cu-alloy

---

**Technical Specifications**
- **Design:** EN 837-1
- **Working pressure:**
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- **Operating temperature:**
  - Ambient: -20 °C ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -20 °C ... +60 °C
- **Temperature effect:** Deviation from reference temperature (+20°C):
  ±0.04%/1K of the span
- **Accuracy class:** cl. 2.5, cl. 1.6 on request
- **Degree of protection:** IP 31 per EN 60 529 / IEC 529
- **Individual Weight:** 0.119 kg

---

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
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</thead>
<tbody>
<tr>
<td>M3A-50 INOX</td>
<td>-1/0 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-50 INOX</td>
<td>0-1 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-50 INOX</td>
<td>0-1.6 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-50 INOX</td>
<td>0-2.5 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-50 INOX</td>
<td>0-4 bar</td>
<td>G1/4B</td>
<td>100/100</td>
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<tr>
<td>M3A-50 INOX</td>
<td>0-6 bar</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>M3A-50 INOX</td>
<td>0-10 bar</td>
<td>G1/4B</td>
<td>100/100</td>
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<td>0-16 bar</td>
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<td>0-25 bar</td>
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<td>0-40 bar</td>
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<td>0-100 bar</td>
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<td>0-160 bar</td>
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<td>0-315 bar</td>
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<td>M3A-50 INOX</td>
<td>0-400 bar</td>
<td>G1/4B</td>
<td>100/100</td>
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</tbody>
</table>

---

**Options:** see page 82
BOURDON TUBE PRESSURE GAUGE

OPTIONAL EXTRAS

M3A-50 INOX

Options subject to minimum quantity
R - adjustable red mark pointer

M3A-40/50 INOX

High temperature version c.l. 2.5 only

Options subject to minimum quantity
T2 - 40°C+50°C - Aluminium dial + aluminium pointer (QA+I)
T1 - 40°C+120°C - Aluminium dial + aluminium pointer + bezel ring + instrument glass (QA+I+AX+VV)

M3A-40/50 INOX

Options subject to minimum quantity
Z - Restrictor 0.5mm

M3A- 40/50 INOX

Options subject to minimum quantity
AX+VV - Bezel ring + instrument glass

M3A-40/50 INOX

Options subject to minimum quantity
AT - PTFE sealing ring on parallel threads only

M3A-40/50 INOX

Options subject to minimum quantity
Customized dials, other scale ranges or connections on request
BOURDON TUBE PRESSURE GAUGE

FOR TYRE INFLATING

M1-ABS 63/QG
Dry Plastic Case DN63 Bottom Entry

Materials
- Case: Black plastic
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered C-type
- Movement: Cu-alloy

Technical Specifications
- Design: EN 837-1
- Working pressure:
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- Operating temperature:
  - Ambient: -20 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -20 ... +60 °C
- Temperature effect:
  - Deviation from reference temperature (+20 °C): ±0.04%/1K of the span
- Accuracy class: cl. 1.6
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.089 kg

Table:

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
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</thead>
<tbody>
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<td>0-12 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
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</tbody>
</table>

Options: see page 86
BOURDON TUBE PRESSURE GAUGE

FOR TYRE INFLATING

M3A-ABS 63/QG
Dry Plastic Case DN63 Centre Back Entry

Materials
Case: Black plastic
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered C-type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature: Ambient: -20 ... +60 °C
Medium: +60°C maximum
Storage: -20 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class: cl. 1.6
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.109 kg

Type Part No. Pressure Range Connection Packaging
M3A-ABS 63/QG 0-10 bar/psi G1/4B 100/100

Options : see page 86
BOURDON TUBE PRESSURE GAUGE

FOR TYRE INFLATING

M3A-ABS 80/QG

Dry Plastic Case DN80 Centre Back Entry

Materials
Case: Black plastic
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered C-type
Movement: Cu-alloy

Technical Specifications
Design: EN 837-1
Working pressure:
   Steady: 75 % of full scale value
   Fluctuating: 60 % of full scale value
   Short time: full scale value
Operating temperature:
   Ambient: -20 ... +60 °C
   Medium: +60°C maximum
   Storage: -20 ... +60 °C
Temperature effect:
   Deviation from reference temperature (+20°C):
   ±0.04%/°K of the span
Accuracy class: cl. 1.6
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.109 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-ABS 80/QG</td>
<td>0-10 bar/psi</td>
<td>G1/4B</td>
<td>1/50</td>
<td></td>
</tr>
</tbody>
</table>

Options: see page 86
BOURDON TUBE PRESSURE GAUGE

OPTIONAL EXTRAS

### M1-ABS 63/QG
### M3A-ABS 63/QG

![Image of a bourdon tube pressure gauge]

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP M1-63</td>
<td>PCUSGOM001</td>
<td>Protective rubber cap</td>
</tr>
<tr>
<td>CP M3A-63</td>
<td>PCUSGOM002</td>
<td>Protective rubber cap</td>
</tr>
</tbody>
</table>

### M1-ABS 63/QG
### M3A-ABS 63/80/QG

Options subject to minimum quantity

Customized dials, other connections on request
BOURDON TUBE PRESSURE GAUGE
FOR TYRE INFLATING EEC CERTIFIED

M1-ABS 63/CEE EX F+R 280 DN63
Dry Plastic Case DN63 Bottom Entry

Materials
- Case: Black plastic
- Window: Clear plastic, Ultra-Sonic welded
- Dial: White plastic, without pointer stopper
- Pointer: Black aluminium, knife-edge type
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered C-type
- Movement: Cu-alloy

Technical Specifications
- Design: EEC No. 83/575
- Approval: No.00,04,01,002
- Working pressure: Steady: 75 % of full scale value
- Fluctuating: 60 % of full scale value
- Short time: full scale value
- Operating temperature: Ambient: -10 ... +40 °C
- Medium: +40 °C maximum
- Storage: -20 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C): ±0.04%/1K of the span
- Accuracy class: cl. 0.08
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.089 kg

Options: see page 89
BOURDON TUBE PRESSURE GAUGE

FOR TYRE INFLATING EEC CERTIFIED

M3A-ABS 63/Cee

EX F+R 180 DN63

Dry Plastic Case DN63 Centre Back Entry

Materials
Case: Black plastic
Window: Clear plastic, Ultra-Sonic welded
Dial: White plastic, without pointer stopper
Pointer: Black aluminium, knife-edge type
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered C-type
Movement: Cu-alloy

Technical Specifications
Design: EEC No. 83/575
Approval: No.00.04.01.002
Working pressure:
Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature:
Ambient: -10 ... +40 °C
Medium: +40 °C maximum
Storage: -20 ... +60 °C
Temperature effect:
Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class:
cl. 0.08
Degree of protection:
IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.094 kg

Type | Part No. | Pressure Range | Connection | Packaging
--- | --- | --- | --- | ---
M3A-ABS 63/Cee | 0-10 bar/psi | G1/4B | 100/100

Options: see page 89
BOURDON TUBE PRESSURE GAUGE

FOR TYRE INFLATING EEC CERTIFIED

M3A-80/CEE

EX F+R 180 DN80

Dry Steel Case DN80 Centre Back Entry

Materials
- Case + bezel ring: Black steel, powder coated, sealed by rivets
- Window: Clear plastic
- Dial: White plastic, without pointer stopper
- Pointer: Black aluminium, knife edge type
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered C-type
- Movement: Cu-alloy

Technical Specifications
- Design: EEC No. 83/575
- Approval: No.00,04,01,002
- Working pressure:
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- Operating temperature:
  - Ambient: -10 ... +40 °C
  - Medium: +40 °C maximum
  - Storage: -20 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C):
  ±0.04%/1K of the span
- Accuracy class: cl. 0.08
  - 4 bar, cl. 1.6
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.156 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-80/CEE</td>
<td></td>
<td>0-10 bar</td>
<td>G1/4B</td>
<td>1/50</td>
</tr>
</tbody>
</table>

Options: see below

M1-ABS 63/CEE
M3A-ABS 63/CEE
M3A-80/CEE

Options subject to minimum quantity
- Company logo on the dial, other connections on request
FOR PNEUMATIC APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOS DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

BOURDON TUBE PRESSURE GAUGE

M3A-OTT 23
Dry Brass Case DN23 Centre Back Entry

Materials
Case/connection: Cu-alloy, in one-piece
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 22 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
Movement: Cu-alloy/polyester combination

Technical Specifications
Design: According to EN 837-1
Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C): ±0.04%/1K of the span
Accuracy class: cl. 4.0
Degree of protection: IP 54 per EN 60 529 / IEC 529
Individual Weight: 0.020 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-OTT 23</td>
<td>004231234317</td>
<td>0-4 bar</td>
<td>G1/8B</td>
<td>500/500</td>
</tr>
<tr>
<td>M3A-OTT 23</td>
<td>006231234318</td>
<td>0-6 bar</td>
<td>G1/8B</td>
<td>500/500</td>
</tr>
<tr>
<td>M3A-OTT 23</td>
<td>010231234319</td>
<td>0-10 bar</td>
<td>G1/8B</td>
<td>500/500</td>
</tr>
<tr>
<td>M3A-OTT 23</td>
<td>016231236507</td>
<td>0-16 bar</td>
<td>G1/8B</td>
<td>500/500</td>
</tr>
</tbody>
</table>

Options : see page 92
BOURDON TUBE PRESSURE GAUGE

FOR PNEUMATIC APPLICATIONS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

M3A-ABS 23
Dry Plastic Case DN23 Centre Back Entry

Materials
Case/connection: Black plastic, in one-piece
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Plastic, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
Movement: Cu-alloy/polyester combination

Technical Specifications
Design: According to EN 837-1
Working pressure:
Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature:
Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect:
Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class: cl. 4.0
Degree of protection:
IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.010 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3A-ABS 23</td>
<td>006234235662</td>
<td>0...6 bar</td>
<td>G1/8B</td>
<td>500/500</td>
</tr>
<tr>
<td>M3A-ABS 23</td>
<td>010234235642</td>
<td>0...10 bar</td>
<td>G1/8B</td>
<td>500/500</td>
</tr>
<tr>
<td>M3A-ABS 23</td>
<td>016234235498</td>
<td>0...16 bar</td>
<td>G1/8B</td>
<td>500/500</td>
</tr>
</tbody>
</table>

Options: see page 92
BOURDON TUBE PRESSURE GAUGE

OPTIONAL EXTRAS

M3A-OTT 23/NIC

Options subject to minimum quantity
Brass nickel-plated

M3A-OTT 23
M3A-ABS 23

Options subject to minimum quantity
Z3 – Restrictor 0.35mm

M3A-OTT 23

Options subject to minimum quantity
Customized dials, other scale ranges or connections on request

M3A-ABS 23

Options subject to minimum quantity
Customized dials, other scale ranges on request
**BOURDON TUBE PRESSURE GAUGE**

For applications subject to vibrations, pulsations and high dynamic pressure loads. Suitable for gaseous and liquid media which are not highly viscous, do not crystallize and are not aggressive to copper alloys.

**MG1-ABS 63**

Glycerine Filled Plastic Case DN63 Bottom Entry

**Materials**
- **Case:** ABS black with blow out/ranges ≤ 16 bar to be vented by cutting the rubber nipple at the top
- **Window:** PMMA, Ultra-Sonic welded
- **Dial:** White plastic
- **Pointer:** Black plastic
- **Pressure connection:** Cu-alloy, 14 mm flats, > 40 bar restrictor 0.5mm
- **Pressure element:** Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
- **Movement:** Cu-alloy
- **Liquid filling:** Glycerine 86.5%

**Technical Specifications**
- **Design:** EN 837-1
- **Working pressure:**
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- **Operating temperature:**
  - Ambient: -10 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -10 ... +60 °C
- **Temperature effect:** Deviation from reference temperature (+20°C): ±0.04%/1K of the span
- **Accuracy class:** cl. 1.6
- **Degree of protection:** IP 65 per EN 60 529 / IEC 529
- **Individual Weight:** 0.154 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>MG1-ABS 63</td>
<td>-1/0 bar/inHg</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>MG1-ABS 63</td>
<td>0-1 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>MG1-ABS 63</td>
<td>0-1.6 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>MG1-ABS 63</td>
<td>0-2.5 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
<td></td>
</tr>
<tr>
<td>MG1-ABS 63</td>
<td>PE3204DJ01</td>
<td>0-4 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>MG1-ABS 63</td>
<td>PE3206DJ00</td>
<td>0-6 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>MG1-ABS 63</td>
<td>PE321014</td>
<td>0-10 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>MG1-ABS 63</td>
<td>PE321414</td>
<td>0-16 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>MG1-ABS 63</td>
<td>PE321814</td>
<td>0-25 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>MG1-ABS 63</td>
<td>PE322014</td>
<td>0-40 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>MG1-ABS 63</td>
<td>PE322514</td>
<td>0-60 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>MG1-ABS 63</td>
<td>PE3354DJ00</td>
<td>0-100 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>MG1-ABS 63</td>
<td>PE3362DJ00</td>
<td>0-250 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>MG1-ABS 63</td>
<td>PE3366DJ00</td>
<td>0-315 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>MG1-ABS 63</td>
<td>PE3370DJ00</td>
<td>0-400 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
<tr>
<td>MG1-ABS 63</td>
<td>PE3375DJ00</td>
<td>0-600 bar/psi</td>
<td>G1/4B</td>
<td>100/100</td>
</tr>
</tbody>
</table>

**Options**
- see page 94
### BOURDON TUBE PRESSURE GAUGE

#### OPTIONAL EXTRAS

<table>
<thead>
<tr>
<th>MG1-ABS 63</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Options subject to minimum quantity</strong></td>
</tr>
<tr>
<td>Z - Restrictor 0.5mm for ranges &lt; 40 bar</td>
</tr>
<tr>
<td>Z0 - Without restrictor for ranges ≥ 40 bar</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MG1-ABS 63</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Options subject to minimum quantity</strong></td>
</tr>
<tr>
<td>Customized dials, other scale ranges or connections on request</td>
</tr>
</tbody>
</table>
BOURDON TUBE PRESSURE GAUGE

FOR APPLICATIONS SUBJECT TO VIBRATIONS, PULSATIONS AND HIGH DYNAMIC PRESSURE LOADS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS.

MG3A-ABS 40 EX F+R 104 DN40
Glycerine Filled Plastic Case DN40 Centre Back Entry

Materials
Case: ABS black with blow out/ranges ≤ 16bar to be vented by piercing a hole on the rear side
Window: PMMA, Ultra-Sonic welded
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats, ≥ 40 bar restrictor 0.5mm
Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement: Cu-alloy
Liquid filling: Glycerine 86.5%

Technical Specifications
Design: EN 837-1
Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature: Ambient: -10 ... +60 °C
Medium: +60 °C maximum
Storage: -10 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class: cl. 2.5
Degree of protection: IP 65 per EN 60 529 / IEC 529
Individual Weight: 0.075 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>MG3A-ABS 40</td>
<td>0-4 bar/psi</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 40</td>
<td>0-6 bar/psi</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 40</td>
<td>0-10 bar/psi</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 40</td>
<td>0-16 bar/psi</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 40</td>
<td>0-25 bar/psi</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 40</td>
<td>0-100 bar/psi</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 40</td>
<td>0-160 bar/psi</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 40</td>
<td>0-250 bar/psi</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 40</td>
<td>0-315 bar/psi</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 40</td>
<td>0-400 bar/psi</td>
<td>G1/8B</td>
<td>240/240</td>
<td></td>
</tr>
</tbody>
</table>

Options: see page 98
FOR APPLICATIONS SUBJECT TO VIBRATIONS, PULSATIONS AND HIGH DYNAMIC PRESSURE LOADS. 
SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOS, DO NOT CRYSTALLIZE 
AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

**BOURDON TUBE PRESSURE GAUGE**

**MG3A-ABS 50**

Glycerine Filled Plastic Case DN50 Centre Back Entry

**Materials**
- **Case:** ABS black with blow out/ranges ≤ 16 bar to be vented by cutting the rubber nipple at the top
- **Window:** PMMA, Ultra-Sonic welded
- **Dial:** White plastic
- **Point:** Black plastic
- **Pressure connection:** Cu-alloy, 14 mm flats, > 40 bar restrictor 0.5mm
- **Pressure element:** Bourdon tube Cu-alloy soft soldered < 60 bar C-type, > 60 bar helical type
- **Movement:** Cu-alloy
- **Liquid filling:** Glycerine 86.5%

**Technical Specifications**
- **Design:** EN 837-1
- **Working pressure:**
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- **Operating temperature:**
  - Ambient: -10 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -10 ... +60 °C
- **Temperature effect:** Deviation from reference temperature (+20°C): ±0.04%/1K of the span
- **Accuracy class:** cl. 1.6
- **Degree of protection:** IP 65 per EN 60 529 / IEC 529
- **Individual Weight:** 0.126 kg

**Options:** see page 98

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>MG3A-ABS 50</td>
<td>-1/0 bar/Hg</td>
<td>G1/4B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 50</td>
<td>0-1 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 50</td>
<td>0-1.6 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 50</td>
<td>0-2.5 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 50</td>
<td>0-4 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 50</td>
<td>0-6 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 50</td>
<td>0-10 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 50</td>
<td>0-16 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 50</td>
<td>0-25 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 50</td>
<td>0-40 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 50</td>
<td>0-60 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
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</tr>
<tr>
<td>MG3A-ABS 50</td>
<td>0-100 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 50</td>
<td>0-160 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 50</td>
<td>0-250 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 50</td>
<td>0-315 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 50</td>
<td>PF2366DB00</td>
<td>0-400 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
</tr>
<tr>
<td>MG3A-ABS 50</td>
<td>PF2366DB00</td>
<td>0-600 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
</tr>
</tbody>
</table>
BOURDON TUBE PRESSURE GAUGE

FOR APPLICATIONS SUBJECT TO VIBRATIONS, PULSATIONS AND HIGH DYNAMIC PRESSURE LOADS.
SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

MG3A-ABS 63  EX F+R 104 DN63
Glycerine Filled Plastic Case DN63 Centre Back Entry

Materials
Case: ABS black with blow out ranges ≤ 16 bar to be vented by cutting the rubber nipple at the top
Window: PMMA, Ultra-Sonic welded
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats, ≥ 40 bar restrictor 0.5mm
Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement: Cu-alloy
Liquid filling: Glycerine 86.5%

Technical Specifications
Design: EN 837-1
Working pressure:
Steady: 75% of full scale value
Fluctuating: 60% of full scale value
Short time: full scale value
Operating temperature:
Ambient: -10 ... +60 °C
Medium: +60 °C maximum
Storage: -10 ... +60 °C
Temperature effect:
Deviation from reference temperature (+20°C):
±0.04%/1K of the span
Accuracy class: cl. 1.6
Degree of protection: IP 65 per EN 60 529 / IEC 529
Individual Weight: 0.166 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>MG3A-ABS 63</td>
<td>-1/0 bar/mHg</td>
<td>G1/4B</td>
<td>50/50</td>
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<tr>
<td>MG3A-ABS 63</td>
<td>0-1 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
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<tr>
<td>MG3A-ABS 63</td>
<td>0-1.6 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
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</tr>
<tr>
<td>MG3A-ABS 63</td>
<td>0-2.5 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 63</td>
<td>0-4 bar/psi</td>
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<tr>
<td>MG3A-ABS 63</td>
<td>0-6 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
<td></td>
</tr>
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<td>MG3A-ABS 63</td>
<td>0-10 bar/psi</td>
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<tr>
<td>MG3A-ABS 63</td>
<td>0-16 bar/psi</td>
<td>G1/4B</td>
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<td>MG3A-ABS 63</td>
<td>0-25 bar/psi</td>
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<tr>
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<td>0-160 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
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</tr>
<tr>
<td>MG3A-ABS 63</td>
<td>0-250 bar/psi</td>
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<tr>
<td>MG3A-ABS 63</td>
<td>0-315 bar/psi</td>
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<tr>
<td>MG3A-ABS 63</td>
<td>0-400 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
<td></td>
</tr>
<tr>
<td>MG3A-ABS 63</td>
<td>0-600 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
<td></td>
</tr>
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</table>

Options: see page 98
BOURDON TUBE PRESSURE GAUGE

OPTIONAL EXTRAS

MG3A-ABS 50
MG3A-ABS 63

<table>
<thead>
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<th>Type</th>
<th>Part No.</th>
<th>Description</th>
<th>DN</th>
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<tbody>
<tr>
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<td>PMINACC048</td>
<td>Mounting Bracket - Supplied separately</td>
<td>50</td>
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<tr>
<td>S ABS 63</td>
<td>PMINACC046</td>
<td>Mounting Bracket - Supplied separately</td>
<td>63</td>
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</tbody>
</table>

MG3A-ABS 63

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F ABS 63</td>
<td>PMINABS048</td>
<td>3-hole flange supplied separately</td>
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<tr>
<td>FM</td>
<td></td>
<td>3-hole flange supplied mounted</td>
</tr>
</tbody>
</table>

MG3A-ABS 40/50/63

Options subject to minimum quantity

- Z - Restrictor 0.5mm for ranges < 40 bar
- Z0 - Without restrictor for ranges ≥ 40 bar

MG3A-ABS 40/50/63

Options subject to minimum quantity

Customized dials, other scale ranges or connections on request
BOURDON TUBE PRESSURE GAUGE

HIGHLY DURABLE, FOR APPLICATIONS SUBJECT TO VIBRATIONS, PULSATIONS AND HIGH DYNAMIC PRESSURE LOADS, PROTECTS AGAINST AMBIENT CORROSIVES AND CONDENSATION. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

MG1-INOX 63
Glycerine Filled Stainless Steel Case DN63 Bottom Entry

Technical Specifications

Design: EN 837-1
Working pressure:
Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature:
Ambient: -10 ... +60 °C
Medium: +60 °C maximum
Storage: -10 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C): ±0.04%/1K of the span
Accuracy class: cl. 1.6
Degree of protection: IP 65 per EN 60 529 / IEC 529
Individual Weight: 0.206 kg

Materials
Case + roll on bezel: Stainless Steel 1.4301 with blow out ranges ≤ 16 bar to be vented by cutting the rubber nipple at the top
Window: Clear plastic
Dial: White plastic
Pointer: Black plastic
Pressure connection: Cu-alloy, 14 mm flats, ≥ 40 bar restrictor 0.5mm
Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement: Cu-alloy
Liquid filling: Glycerine 86.5%

Type | Part No. | Pressure Range | Connection | Packaging |
--- | --- | --- | --- | --- |
MG1-INOX 63 | PE3401DJ03 | -1/0 bar/mHg | G1/4B | 100/100 |
MG1-INOX 63 | PE340214 | 0-1.6 bar/psi | G1/4B | 100/100 |
MG1-INOX 63 | PE3504DJ03 | 0-4 bar/psi | G1/4B | 100/100 |
MG1-INOX 63 | PE3510DJ07 | 0-10 bar/psi | G1/4B | 100/100 |
MG1-INOX 63 | PE3516DJ06 | 0-16 bar/psi | G1/4B | 100/100 |
MG1-INOX 63 | PE3525DJ03 | 0-25 bar/psi | G1/4B | 100/100 |
MG1-INOX 63 | PE354014 | 0-40 bar/psi | G1/4B | 100/100 |
MG1-INOX 63 | PE364414 | 0-60 bar/psi | G1/4B | 100/100 |
MG1-INOX 63 | PE364814 | 0-100 bar/psi | G1/4B | 100/100 |
MG1-INOX 63 | PE365414 | 0-160 bar/psi | G1/4B | 100/100 |
MG1-INOX 63 | PE366014 | 0-250 bar/psi | G1/4B | 100/100 |
MG1-INOX 63 | PE366214 | 0-315 bar/psi | G1/4B | 100/100 |
MG1-INOX 63 | PE366614 | 0-400 bar/psi | G1/4B | 100/100 |
MG1-INOX 63 | PE367014 | 0-600 bar/psi | G1/4B | 100/100 |

Options: see page 101
HIGHLY DURABLE, FOR APPLICATIONS SUBJECT TO VIBRATIONS, PULSATIONS AND HIGH DYNAMIC PRESSURE LOADS, PROTECTS AGAINST AMBIENT CORROSIVES AND CONDENSATION. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS.

**BOURDON TUBE PRESSURE GAUGE**

**MG1-INOX 100**

**Glycerine Filled Stainless Steel Case DN100 Bottom Entry**

**Materials**
- Case + roll on bezel: Stainless Steel 1.4301 with blow out/ranges < 16bar to be vented by cutting the rubber nipple at the top
- Window: White plastic
- Dial: Black plastic
- Pointer: Clear plastic
- Pressure connection: Cu-alloy, 21 mm flats, > 40 bar restrictor 0.5mm
- Pressure element: Bourdon tube Cu-alloy soft soldered < 60 bar C-type, > 60 bar helical type
- Movement: Cu-alloy
- Liquid filling: Glycerine 86.5%

**Technical Specifications**
- Design: EN 837-1
- Working pressure: Steady: 75 % of full scale value, Fluctuating: 60 % of full scale value, Short time: full scale value
- Operating temperature: Ambient: -10 ... +60 °C, Medium: +60 °C maximum, Storage: -10 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C): ±0.04%/1K of the span
- Accuracy class: cl. 1.6
- Degree of protection: IP 65 per EN 60 529 / IEC 529
- Individual Weight: 0.526 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>MG1-INOX 100</td>
<td>PE509916</td>
<td>-1/0 bar/inHg</td>
<td>G1/2B</td>
<td>1/30</td>
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<tr>
<td>MG1-INOX 100</td>
<td>PE540116</td>
<td>0-1 bar/psi</td>
<td>G1/2B</td>
<td>1/30</td>
</tr>
<tr>
<td>MG1-INOX 100</td>
<td>PE540216</td>
<td>0-1.6 bar/psi</td>
<td>G1/2B</td>
<td>1/30</td>
</tr>
<tr>
<td>MG1-INOX 100</td>
<td>PE550316</td>
<td>0-2.5 bar/psi</td>
<td>G1/2B</td>
<td>1/30</td>
</tr>
<tr>
<td>MG1-INOX 100</td>
<td>PE550416</td>
<td>0-4 bar/psi</td>
<td>G1/2B</td>
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<tr>
<td>MG1-INOX 100</td>
<td>PE5510D01</td>
<td>0-10 bar/psi</td>
<td>G1/2B</td>
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<td>MG1-INOX 100</td>
<td>PE5510D01</td>
<td>0-16 bar/psi</td>
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<td>MG1-INOX 100</td>
<td>PE5510D01</td>
<td>0-25 bar/psi</td>
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<td>1/30</td>
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<tr>
<td>MG1-INOX 100</td>
<td>PE554016</td>
<td>0-40 bar/psi</td>
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<tr>
<td>MG1-INOX 100</td>
<td>PE554416</td>
<td>0-60 bar/psi</td>
<td>G1/2B</td>
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<td>MG1-INOX 100</td>
<td>PE564816</td>
<td>0-100 bar/psi</td>
<td>G1/2B</td>
<td>1/30</td>
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<tr>
<td>MG1-INOX 100</td>
<td>PE565416</td>
<td>0-160 bar/psi</td>
<td>G1/2B</td>
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<tr>
<td>MG1-INOX 100</td>
<td>PE566016</td>
<td>0-250 bar/psi</td>
<td>G1/2B</td>
<td>1/30</td>
</tr>
<tr>
<td>MG1-INOX 100</td>
<td>PE566216</td>
<td>0-315 bar/psi</td>
<td>G1/2B</td>
<td>1/30</td>
</tr>
<tr>
<td>MG1-INOX 100</td>
<td>PE5666616</td>
<td>0-400 bar/psi</td>
<td>G1/2B</td>
<td>1/30</td>
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<tr>
<td>MG1-INOX 100</td>
<td>PE567016</td>
<td>0-600 bar/psi</td>
<td>G1/2B</td>
<td>1/30</td>
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Options: see page 101
## Optional Extras

### MG1-INOX 63/100

<table>
<thead>
<tr>
<th>Options subject to minimum quantity</th>
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</thead>
<tbody>
<tr>
<td>Z - Restrictor 0.5mm for ranges &lt; 40 bar</td>
</tr>
<tr>
<td>Z0 - Without restrictor for ranges ≥ 40 bar</td>
</tr>
</tbody>
</table>

### MG1-INOX 63/100

<table>
<thead>
<tr>
<th>Options subject to minimum quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicone Oil filling for temperatures -40+90°C (Aluminium dial + Aluminium pointer)</td>
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</tbody>
</table>

### MG1-INOX 63/100

<table>
<thead>
<tr>
<th>Options subject to minimum quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customized dials, other scale ranges or connections on request</td>
</tr>
</tbody>
</table>
HIGHLY DURABLE, FOR APPLICATIONS SUBJECT TO VIBRATIONS, PULSATIONS AND HIGH DYNAMIC PRESSURE LOADS, PROTECTS AGAINST AMBIENT CORROSIVES AND CONDENSATION. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

**MG3A-INOX 63**

**EX F+R 114 DN63**

**Glycerine Filled Stainless Steel Case DN63 Centre Back Entry**

**Materials**
- Case + roll on bezel: Stainless Steel 1.4301 with blow out/ranges < 16 bar to be vented by cutting the rubber nipple at the top
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats, > 40 bar restrictor 0.5mm
- Pressure element: Bourdon tube Cu-alloy soft soldered < 60 bar C-type, > 60 bar helical type
- Movement: Cu-alloy
- Liquid filling: Glycerine 86.5%

**Technical Specifications**
- Design: EN 837-1
- Working pressure:
  - Steady: 75% of full scale value
  - Fluctuating: 60% of full scale value
  - Short time: full scale value
- Operating temperature:
  - Ambient: -10 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -10 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C):
  - ±0.04%/1K of the span
- Accuracy class:
  - cl. 1.6
- Degree of protection: IP 65 per EN 60 529 / IEC 529
- Individual Weight: 0.209 kg

**Type** | **Part No.** | **Pressure Range** | **Connection** | **Packaging**
---|---|---|---|---
MG3A-INOX 63 | PF340114 | 0-1 bar/psi G1/4B | 50/50
MG3A-INOX 63 | PF350114 | 0-1.6 bar/psi G1/4B | 50/50
MG3A-INOX 63 | PF352514 | 0-2.5 bar/psi G1/4B | 50/50
MG3A-INOX 63 | PF354014 | 0-6 bar/psi G1/4B | 50/50
MG3A-INOX 63 | PF354814 | 0-10 bar/psi G1/4B | 50/50
MG3A-INOX 63 | PF355414 | 0-16 bar/psi G1/4B | 50/50
MG3A-INOX 63 | PF356014 | 0-25 bar/psi G1/4B | 50/50
MG3A-INOX 63 | PF364414 | 0-40 bar/psi G1/4B | 50/50
MG3A-INOX 63 | PF364514 | 0-60 bar/psi G1/4B | 50/50
MG3A-INOX 63 | PF366014 | 0-100 bar/psi G1/4B | 50/50
MG3A-INOX 63 | PF366214 | 0-160 bar/psi G1/4B | 50/50
MG3A-INOX 63 | PF366614 | 0-250 bar/psi G1/4B | 50/50
MG3A-INOX 63 | PF370114 | 0-600 bar/psi G1/4B | 50/50

Options : see page 104
BOURDON TUBE PRESSURE GAUGE

HIGHLY DURABLE, FOR APPLICATIONS SUBJECT TO VIBRATIONS, PULSATIONS AND HIGH DYNAMIC PRESSURE LOADS, PROTECTS AGAINST AMBIENT CORROSIVES AND CONDENSATION. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS.

MG3A-INOX 100

Glycerine Filled Stainless Steel Case DN100 Centre Back Entry

Materials
Case + roll on bezel: Stainless Steel 1.4301 with blow out ranges ≤ 16bar to be vented by cutting the rubber nipple at the top
Window: White plastic
Dial: Black plastic
Pressure connection: Cu-alloy, 21 mm flats, ≥ 40 bar restrictor 0.5mm
Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
Movement: Cu-alloy
Liquid filling: Glycerine 86.5%

Technical Specifications
Design: EN 837-1
Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature: Ambient: -10 ... +60 °C
Medium: +60 °C maximum
Storage: -10 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C): ±0.04%/1K of the span
Accuracy class: cl. 1.6
Degree of protection: IP 65 per EN 60 529 / IEC 529
Individual Weight: 0.506 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
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<tbody>
<tr>
<td>MG3A-INOX 100</td>
<td>PF509916</td>
<td>-1/0 bar/mHg</td>
<td>G1/2B</td>
<td>1/12</td>
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<td>MG3A-INOX 100</td>
<td>PF540116</td>
<td>0-1 bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
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<td>MG3A-INOX 100</td>
<td>PF5402DL00</td>
<td>0-1.6 bar/psi</td>
<td>G1/2B</td>
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<tr>
<td>MG3A-INOX 100</td>
<td>PF551016</td>
<td>0-2.5 bar/psi</td>
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<td>MG3A-INOX 100</td>
<td>PF551616</td>
<td>0-16 bar/psi</td>
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<td>MG3A-INOX 100</td>
<td>PF564416</td>
<td>0-25 bar/psi</td>
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<td>1/12</td>
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<td>MG3A-INOX 100</td>
<td>PF564816</td>
<td>0-40 bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
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<tr>
<td>MG3A-INOX 100</td>
<td>PF565416</td>
<td>0-60 bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
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<tr>
<td>MG3A-INOX 100</td>
<td>PF566016</td>
<td>0-250 bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
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<tr>
<td>MG3A-INOX 100</td>
<td>PF566216</td>
<td>0-315 bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
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<tr>
<td>MG3A-INOX 100</td>
<td>PF566616</td>
<td>0-400 bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
</tr>
<tr>
<td>MG3A-INOX 100</td>
<td>PF567016</td>
<td>0-600 bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
</tr>
</tbody>
</table>

Options: see page 104
### BOURDON TUBE PRESSURE GAUGE

#### OPTIONAL EXTRAS

**MG3A-INOX 63**

![Image of MG3A-INOX 63]

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S INOX 63</td>
<td>PMINACC047</td>
<td>Mounting bracket - Supplied separately</td>
</tr>
</tbody>
</table>

**MG3A-INOX 63/100**

| Options subject to minimum quantity |  
|------------------------------------|---
| Z - Restrictor 0.5mm for ranges < 40 bar |
| Z0 - Without restrictor for ranges ≥ 40 bar |

**MG3A-INOX 63/100**

| Options subject to minimum quantity |  
|------------------------------------|---
| Silicone Oil filling for temperatures -40+90°C (Aluminium dial + Aluminium pointer) |

**MG3A-INOX 63/100**

| Options subject to minimum quantity |  
|------------------------------------|---
| Customized dials, other scale ranges or connections on request |
**BOURDON TUBE PRESSURE GAUGE**

HIGHLY DURABLE, FOR APPLICATIONS SUBJECT TO VIBRATIONS, PULSATIONS AND HIGH DYNAMIC PRESSURE LOADS, PROTECTS AGAINST AMBIENT CORROSIVES AND CONDENSATION. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

**MG3B-INOX 63**

Glycerine Filled Stainless Steel Case DN63 Centre Back Entry with 3-Hole Panel Mounting Flange

**Materials**
- Case + 3-hole flange: Stainless Steel 1.4301 with blow out/ranges ≤ 16bar
to be vented by cutting the rubber nipple at the top
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats, > 40 bar restrictor 0.5mm
- Pressure element: Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type,> 60 bar helical type
- Movement: Cu-alloy
- Liquid filling: Glycerine 86.5%

**Technical Specifications**
- Design: EN 837-1
- Working pressure: Steady: 75 % of full scale value
- Fluctuating: 60 % of full scale value
- Short time: full scale value
- Operating temperature: Ambient: -10 ... +60 °C
- Medium: +60 °C maximum
- Storage: -10 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C): ±0.04%/1K of the span
- Accuracy class: cl. 1.6
- Degree of protection: IP 65 per EN 60 529 / IEC 529
- Individual Weight: 0.224 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>MG3B-INOX 63</td>
<td>PG309914</td>
<td>-1/0 bar/mHg</td>
<td>G1/4B</td>
<td>50/50</td>
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<tr>
<td>MG3B-INOX 63</td>
<td>PG340114</td>
<td>0-1 bar/psi</td>
<td>G1/4B</td>
<td>50/50</td>
</tr>
<tr>
<td>MG3B-INOX 63</td>
<td>PG350314</td>
<td>0-2.5 bar/psi</td>
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<td>MG3B-INOX 63</td>
<td>PG350414</td>
<td>0-4 bar/psi</td>
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</tr>
<tr>
<td>MG3B-INOX 63</td>
<td>PG350614</td>
<td>0-6 bar/psi</td>
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<td>MG3B-INOX 63</td>
<td>PG360314</td>
<td>0-10 bar/psi</td>
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<tr>
<td>MG3B-INOX 63</td>
<td>PG360414</td>
<td>0-16 bar/psi</td>
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<tr>
<td>MG3B-INOX 63</td>
<td>PG360614</td>
<td>0-25 bar/psi</td>
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<tr>
<td>MG3B-INOX 63</td>
<td>PG354014</td>
<td>0-40 bar/psi</td>
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<tr>
<td>MG3B-INOX 63</td>
<td>PG364414</td>
<td>0-60 bar/psi</td>
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<tr>
<td>MG3B-INOX 63</td>
<td>PG364814</td>
<td>0-100 bar/psi</td>
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</tr>
<tr>
<td>MG3B-INOX 63</td>
<td>PG365414</td>
<td>0-160 bar/psi</td>
<td>G1/4B</td>
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<tr>
<td>MG3B-INOX 63</td>
<td>PG366014</td>
<td>0-250 bar/psi</td>
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<tr>
<td>MG3B-INOX 63</td>
<td>PG366214</td>
<td>0-315 bar/psi</td>
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<tr>
<td>MG3B-INOX 63</td>
<td>PG366614</td>
<td>0-400 bar/psi</td>
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<tr>
<td>MG3B-INOX 63</td>
<td>PG367014</td>
<td>0-600 bar/psi</td>
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<td>50/50</td>
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</tbody>
</table>

Options: see page 107
HIGHLY DURABLE FOR APPLICATIONS SUBJECT TO VIBRATIONS, PULSATIONS AND HIGH DYNAMIC PRESSURE LOADS, PROTECTS AGAINST AMBIENT CORROSIVES AND CONDENSATION. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

**MG3B-INOX 100**

**EX F+R 125 DN100**

**Glycerine Filled Stainless Steel Case DN100 Centre Back Entry with 3-Hole Panel Mounting Flange**

**Materials**

- **Case + 3-hole flange:** Stainless Steel 1.4301 with blow out/ranges ≤ 16 bar to be vented by cutting the rubber nipple at the top
- **Window:** Clear plastic
- **Dial:** White plastic
- **Pointer:** Black plastic
- **Pressure connection:** Cu-alloy, 21 mm flats, > 40 bar restrictor 0.5mm
- **Pressure element:** Bourdon tube Cu-alloy soft soldered ≤ 60 bar C-type, > 60 bar helical type
- **Movement:** Cu-alloy
- **Liquid filling:** Glycerine 86.5%

**Technical Specifications**

- **Design:** EN 837-1
- **Working pressure:**
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- **Operating temperature:**
  - Ambient: -10 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -10 ... +60 °C
- **Temperature effect:** Deviation from reference temperature (+20°C): ±0.04%/1K of the span
- **Accuracy class:** cl. 1.6
- **Degree of protection:** IP 65 per EN 60 529 / IEC 529
- **Individual Weight:** 0.585 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>MG3B-INOX 100</td>
<td>PG509916</td>
<td>-1/0 bar/inHg</td>
<td>G1/2B</td>
<td>1/12</td>
</tr>
<tr>
<td>MG3B-INOX 100</td>
<td>0-1</td>
<td>bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
</tr>
<tr>
<td>MG3B-INOX 100</td>
<td>0-1.6</td>
<td>bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
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<tr>
<td>MG3B-INOX 100</td>
<td>0-2.5</td>
<td>bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
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<tr>
<td>MG3B-INOX 100</td>
<td>0-4</td>
<td>bar/psi</td>
<td>G1/2B</td>
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<tr>
<td>MG3B-INOX 100</td>
<td>PG550616</td>
<td>0-6 bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
</tr>
<tr>
<td>MG3B-INOX 100</td>
<td>PG551016</td>
<td>0-10 bar/psi</td>
<td>G1/2B</td>
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</tr>
<tr>
<td>MG3B-INOX 100</td>
<td>PG551616</td>
<td>0-16 bar/psi</td>
<td>G1/2B</td>
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</tr>
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<td>MG3B-INOX 100</td>
<td>PG552516</td>
<td>0-25 bar/psi</td>
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</tr>
<tr>
<td>MG3B-INOX 100</td>
<td>PG554016</td>
<td>0-40 bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
</tr>
<tr>
<td>MG3B-INOX 100</td>
<td>PG564416</td>
<td>0-60 bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
</tr>
<tr>
<td>MG3B-INOX 100</td>
<td>PG564816</td>
<td>0-100 bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
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<tr>
<td>MG3B-INOX 100</td>
<td>PG565416</td>
<td>0-160 bar/psi</td>
<td>G1/2B</td>
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</tr>
<tr>
<td>MG3B-INOX 100</td>
<td>PG566016</td>
<td>0-250 bar/psi</td>
<td>G1/2B</td>
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<tr>
<td>MG3B-INOX 100</td>
<td>PG566216</td>
<td>0-315 bar/psi</td>
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<td>1/12</td>
</tr>
<tr>
<td>MG3B-INOX 100</td>
<td>PG566616</td>
<td>0-400 bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
</tr>
<tr>
<td>MG3B-INOX 100</td>
<td>PG567016</td>
<td>0-600 bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
</tr>
</tbody>
</table>

Options: see page 107
MG3B-INOX 63/100

Options subject to minimum quantity

<table>
<thead>
<tr>
<th>Z</th>
<th>Restrictor 0.5mm for ranges &lt; 40 bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z0</td>
<td>Without restrictor for ranges &gt; 40 bar</td>
</tr>
</tbody>
</table>

MG3B-INOX 63/100

Options subject to minimum quantity

Silicone Oil filling for temperatures -40+90°C (Aluminium dial + Aluminium pointer)

MG3B-INOX 63/100

Options subject to minimum quantity

Customized dials, other scale ranges or connections on request
HIGHLY DURABLE, FOR APPLICATIONS SUBJECT TO VIBRATIONS, PULSATIONS AND HIGH DYNAMIC PRESSURE LOADS, PROTECTS AGAINST AMBIENT CORROSIVES AND CONDENSATION. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOYS

**BOURDON TUBE PRESSURE GAUGE**

**MG3F-INOX 100**

_Glycerine Filled Stainless Steel Case DN100 Centre Back Entry with Panel Mounting Brackets_

**Materials**
- Case + roll on bezel: Stainless Steel 1.4301 with blow out/ranges up to 16 bar to be vented by cutting the rubber nipple at the top.
- Mounting brackets: Zinc-plated steel
- Window: Clear plastic
- Dial: White plastic
- Pointer: Black plastic
- Pressure connection: Cu-alloy, 21 mm flats, > 40 bar restrictor 0.5mm
- Pressure element: Bourdon tube Cu-alloy soft soldered < 60 bar C-type, > 60 bar helical type
- Movement: Cu-alloy
- Liquid filling: Glycerine 86.5%

**Technical Specifications**
- Design: EN 837-1
- Working pressure: Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- Operating temperature: Ambient: -10 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -10 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C): ±0.04%/1K of the span
- Accuracy class: cl. 1.6
- Degree of protection: IP 65 per EN 60 529 / IEC 529
- Individual Weight: 0.535 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
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<tbody>
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<td>MG3F-INOX 100</td>
<td>-10 bar/inHg</td>
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<tr>
<td>MG3F-INOX 100</td>
<td>0-1 bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
<td></td>
</tr>
<tr>
<td>MG3F-INOX 100</td>
<td>0-1.6 bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
<td></td>
</tr>
<tr>
<td>MG3F-INOX 100</td>
<td>0-2.5 bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
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<tr>
<td>MG3F-INOX 100</td>
<td>0-4 bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
<td></td>
</tr>
<tr>
<td>MG3F-INOX 100</td>
<td>PH550616</td>
<td>0-6 bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
</tr>
<tr>
<td>MG3F-INOX 100</td>
<td>PH551016</td>
<td>0-10 bar/psi</td>
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<td>MG3F-INOX 100</td>
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<td>0-16 bar/psi</td>
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</tr>
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<td>MG3F-INOX 100</td>
<td>PH552516</td>
<td>0-25 bar/psi</td>
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<tr>
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<td>0-40 bar/psi</td>
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<td>MG3F-INOX 100</td>
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<td>0-60 bar/psi</td>
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<td>0-100 bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
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<tr>
<td>MG3F-INOX 100</td>
<td>PH566016</td>
<td>0-160 bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
</tr>
<tr>
<td>MG3F-INOX 100</td>
<td>PH566216</td>
<td>0-250 bar/psi</td>
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<td>1/12</td>
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<tr>
<td>MG3F-INOX 100</td>
<td>PH566616</td>
<td>0-315 bar/psi</td>
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<td>1/12</td>
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<tr>
<td>MG3F-INOX 100</td>
<td>PH567016</td>
<td>0-600 bar/psi</td>
<td>G1/2B</td>
<td>1/12</td>
</tr>
</tbody>
</table>

**Options**: see page 109
BOURDON TUBE PRESSURE GAUGE

MG3F-INOX 100

Options subject to minimum quantity
Z - Restrictor 0.5mm for ranges < 40 bar
Z0 - Without restrictor for ranges > 40 bar

MG3F-INOX 100

Options subject to minimum quantity
Silicone Oil filling for temperatures -40+90°C (Aluminium dial + Aluminium pointer)

MG3F-INOX 100

Options subject to minimum quantity
Customized dials, other scale ranges or connections on request
MG1-ABS 63/QF
Glycerine Filled Plastic Case DN63 Bottom Entry

**Materials**
- **Case:** ABS black with blow out/ranges ≤ 16bar to be vented by cutting the rubber nipple at the top
- **Window:** PMMA, Ultra-Sonic welded
- **Dial:** White plastic
- **Pointer:** Black aluminium, knife edge type
- **Pressure connection:** Cu-alloy, 14 mm flats, with restrictor 0.5mm
- **Pressure element:** Bourdon tube Cu-alloy soft soldered, C-type
- **Movement:** Cu-alloy
- **Liquid filling:** Glycerine 86.5%

**Technical Specifications**
- **Design:** EN 837-1
- **Working pressure:**
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- **Operating temperature:**
  - Ambient: -10 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -10 ... +60 °C
- **Temperature effect:** Deviation from reference temperature (+20°C):
  ±0.04%/1K of the span
- **Accuracy class:** cl. 1.6
- **Degree of protection:** IP 65 per EN 60 529 / IEC 529
- **Individual Weight:** 0.154 kg

**Type | Part No. | Pressure Range | Connection | Packaging**
--- | --- | --- | --- | ---
MG1-ABS 63/QF | -1 + 15 bar | 1/4 SAE | 100/100
MG1-ABS 63/QF | -1 + 30 bar | 1/4 SAE | 100/100

Options: see page 112
BOURDON TUBE PRESSURE GAUGE

FOR REFRIGERATION TECHNOLOGY (FREON GASES). ABSORPTION OF HEAVY VIBRATIONS AND PULSATIONS, PROTECTS AGAINST AMBIENT CORROSIVES AND CONDENSATION

MG3A-ABS 63/QF

Glycerine Filled Plastic Case DN63 Centre Back Entry

Materials
Case: ABS black with blow out/ranges < 16bar to be vented by cutting the rubber nipple at the top
Window: PMMA, Ultra-Sonic welded
Dial: White plastic
Pointer: Black aluminium, knife edge type
Pressure connection: Cu-alloy, 14 mm flats, with restrictor 0.5mm
Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
Movement: Cu-alloy
Liquid filling: Glycerine 86.5%

Technical Specifications
Design: EN 837-1
Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: full scale value
Operating temperature: Ambient: -10 ... +60 °C
Medium: +60 °C maximum
Storage: -10 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C): ±0.04%/1K of the span
Accuracy class: cl. 1.6
Degree of protection: IP 65 per EN 60 529 / IEC 529
Individual Weight: 0.166 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>MG3A-ABS 63/QF</td>
<td>-1 + 13 bar</td>
<td>1/4 SAE</td>
<td>50/50</td>
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</tr>
<tr>
<td>MG3A-ABS 63/QF</td>
<td>-1 + 30 bar</td>
<td>1/4 SAE</td>
<td>50/50</td>
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</table>

Options: see page 112
### MG1-ABS 63/QF

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S ABS 63</td>
<td>PMINACC046</td>
<td>Mounting bracket - Supplied separately</td>
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### MG1-ABS 63/QF

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F ABS 63</td>
<td>PMINABS048</td>
<td>3-hole flange supplied separately</td>
</tr>
<tr>
<td>FM</td>
<td></td>
<td>3-hole flange supplied mounted</td>
</tr>
</tbody>
</table>

### MG1-ABS 63/QF - MG3A-ABS 63/QF

- Options subject to minimum quantity
- Customized dials, other scale ranges or connections on request
MG1-INOX 63/QF

Glycerine Filled Stainless Steel Case DN63 Bottom Entry

Materials
- Case + roll on bezel: Stainless Steel 1.4301 with blow out/ranges ≤ 16bar to be vented by cutting the rubber nipple at the top
- Window: Clear plastic
- Dial: White aluminium
- Pointer: Black aluminium, knife edge type
- Pressure connection: Cu-alloy, 14 mm flats, with restrictor 0.5mm
- Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
- Movement: Cu-alloy
- Liquid filling: Glycerine 86.5%

Technical Specifications
- Design: EN 837-1
- Working pressure:
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- Operating temperature:
  - Ambient: -10 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -10 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C):
  ± 0,04%/1K of the span
- Accuracy class: cl. 1.6
- Degree of protection: IP 65 per EN 60 529 / IEC 529
- Individual Weight: 0.206 kg

Options: see page 115
MG3A-INOX 63/QF  EX F+R 115 DN63
Glycerine Filled Stainless Steel Case DN63 Centre Back Entry

Materials
- Case + roll on bezel: Stainless Steel 1.4301 with blow out/ranges ≤ 16bar
to be vented by cutting the rubber nipple at the top
- Window: Clear plastic
- Dial: White aluminium
- Pointer: Black aluminium, knife edge type
- Pressure connection: Cu-alloy, 14 mm flats, with restrictor 0.5mm
- Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
- Movement: Cu-alloy
- Liquid filling: Glycerine 86.5%

Technical Specifications
- Design: EN 837-1
- Working pressure:
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: full scale value
- Operating temperature:
  - Ambient: -10 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -10 ... +60 °C
- Temperature effect:
  - Deviation from reference temperature (+20°C):
    ± 0.04%/1K of the span
- Accuracy class: cl. 1.6
- Degree of protection: IP 65 per EN 60 529 / IEC 529
- Individual Weight: 0.209 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
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<td>-1+15 bar</td>
<td>1/4 SAE</td>
<td></td>
<td>50/50</td>
</tr>
<tr>
<td>MG3A-INOX 63/QF</td>
<td>-1+30 bar</td>
<td>1/4 SAE</td>
<td></td>
<td>50/50</td>
</tr>
</tbody>
</table>

Options: see page 115
MG3A-INOX 63/QF

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S INOX 63</td>
<td>PMINACC047</td>
<td>Mounting bracket - Supplied separately</td>
</tr>
</tbody>
</table>

MG1-INOX 63/QF

Options subject to minimum quantity
Silicone Oil filling for temperatures -40+90°C

MG1-INOX 63/QF

Options subject to minimum quantity
Customized dials, other scale ranges or connections on request
MG3B-INOX 63/QF

Glycerine Filled Stainless Steel Case DN63 Centre Back Entry with 3-Hole Panel Mounting Flange

Materials
- Case + 3-hole flange: Stainless Steel 1.4301 with blow out/ranges ≤ 16 bar to be vented by cutting the rubber nipple at the top
- Window: Clear plastic
- Dial: White aluminium
- Pointer: Black aluminium, knife edge type
- Pressure connection: Cu-alloy, 14 mm flats, with restrictor 0.5 mm
- Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
- Movement: Cu-alloy
- Liquid filling: Glycerine 86.5%

Technical Specifications
- Design: EN 837-1
- Working pressure: Steady: 75% of full scale value
- Fluctuating: 60% of full scale value
- Short time: full scale value
- Operating temperature: Ambient: -10 ... +60 °C
- Medium: +60 °C maximum
- Storage: -10 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C): ± 0.04%/1K of the span
- Accuracy class: cl. 1.6
- Degree of protection: IP 65 per EN 60 529 / IEC 529

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Pressure Range</th>
<th>Connection</th>
<th>Packaging</th>
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<td>MG3B-INOX 63/QF</td>
<td>-1+15 bar</td>
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<td>-1+30 bar</td>
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Options: see below

MG3B-INOX 63/QF

Options subject to minimum quantity
- Silicone Oil filling for temperatures -40+90°C

MG3B-INOX 63/QF

Options subject to minimum quantity
- Customized dials, other scale ranges or connections on request
CAPSULE PRESSURE GAUGE

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR DRY AND CLEAN GASEOUS MEDIA WHICH ARE NOT AGGRESSIVE TO COPPER ALLOYS

MP1-63
Dry Steel Case DN63 Bottom Entry

Materials
Case: Chrome-plated steel
Window: Clear plastic
Dial: Aluminium white
Pointer: Aluminium black
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Capsule Cu-alloy, O-ring Perbunan
Movement: Cu-alloy

Technical Specifications
Design: EN 837-3
Working pressure: Steady: 75 % of full scale value
Fluctuating: 60 % of full scale value
Short time: 125% of full scale value
Operating temperature: Ambient: -20 ... +60 °C
Medium: +60 °C maximum
Storage: -20 ... +60 °C
Temperature effect: Deviation from reference temperature (+20°C): ±0,06%/1K of the span
Accuracy class: cl. 2.5 with zero point adjustment
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.175 kg

Type | Part No. | Pressure Range | Connection | Packaging |
--- | --- | --- | --- | --- |
MP1-63 | PP35441003 | 0-60 mbar/mmH₂O | G1/4B | 1/50 |
MP1-63 | PP35481001 | 0-100 mbar/mmH₂O | G1/4B | 1/50 |
MP1-63 | PP35601000 | 0-250 mbar/mmH₂O | G1/4B | 1/50 |
MP1-63 | PP35661000 | 0-400 mbar/mmH₂O | G1/4B | 1/50 |
MP1-63 | PP35701000 | 0-600 mbar/mmH₂O | G1/4B | 1/50 |

Options: see page 119
MP1-80

Dry Steel Case DN63 Bottom Entry

**Materials**
- Case: Chrome-plated steel
- Window: Clear plastic
- Pointer: Aluminium black
- Pressure connection: Cu-alloy, 18 mm flats
- Pressure element: Capsule Cu-alloy, O-ring Perbunan
- Movement: Cu-alloy

**Technical Specifications**
- Design: EN 837-3
- Working pressure:
  - Steady: 75% of full scale value
  - Fluctuating: 60% of full scale value
  - Short time: 125% of full scale value
- Operating temperature:
  - Ambient: -20 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -20 ... +60 °C
- Temperature effect: Deviation from reference temperature (+20°C):
  ±0.06%/1K of the span
- Accuracy class: cl. 2.5 with zero point adjustment
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.265 kg

**Type** | **Part No.** | **Pressure Range** | **Connection** | **Packaging**
---|---|---|---|---
MP1-80 | PP45441100 | 0-60 mbar/mmH₂O | G3/8B | 1/50
MP1-80 | PP45481101 | 0-100 mbar/mmH₂O | G3/8B | 1/50
MP1-80 | PP45601100 | 0-250 mbar/mmH₂O | G3/8B | 1/50
MP1-80 | PP45661100 | 0-400 mbar/mmH₂O | G3/8B | 1/50
MP1-80 | PP45701100 | 0-600 mbar/mmH₂O | G3/8B | 1/50

EX F+R 260 DN80

**Options**: see page 119
CAPSULE PRESSURE GAUGE

FOR GENERAL INDUSTRIAL APPLICATIONS. SUITABLE FOR DRY AND CLEAN GASEOUS MEDIA WHICH ARE NOT AGGRESSIVE TO COPPER ALLOYS

MP1-100
Dry Steel Case DN100 Bottom Entry

**Materials**
- Case + Bezel ring: Chrome-plated steel
- Window: Clear plastic
- Dial: Aluminium white
- Pointer: Aluminium black
- Pressure connection: Cu-alloy, 21 mm flats
- Pressure element: Capsule Cu-alloy, O-ring Perbunan
- Movement: Cu-alloy

**Technical Specifications**
- Design: EN 837-3
- Working pressure:
  - Steady: 75 % of full scale value
  - Fluctuating: 60 % of full scale value
  - Short time: 125% of full scale value
- Operating temperature:
  - Ambient: -20 ... +60 °C
  - Medium: +60 °C maximum
  - Storage: -20 ... +60 °C
- Temperature effect:
  - Deviation from reference temperature (+20°C):
    - ±0.06%/1K of the span
- Accuracy class: cl. 2.5
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.440 kg

**Type** | **Part No.** | **Pressure Range** | **Connection** | **Packaging**
--- | --- | --- | --- | ---
MP1-100 | PP554412 | 0-60 mbar/mmH₂O | G1/2B | 1/12
MP1-100 | PP554812 | 0-100 mbar/mmH₂O | G1/2B | 1/12
MP1-100 | PP556012 | 0-250 mbar/mmH₂O | G1/2B | 1/12
MP1-100 | PP556612 | 0-400 mbar/mmH₂O | G1/2B | 1/12
MP1-100 | PP557012 | 0-600 mbar/mmH₂O | G1/2B | 1/12

Options: see below

MP1-63/80/100
Options subject to minimum quantity
Customized dials, other connections on request
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</table>

**CAUTION!** The EN 837 standard specifies: “BAR is the preferred unit of pressure.”
Combined temperature and pressure gauges
**TIRM-ABS 80**

**Plastic Case DN80 bottom entry**

**Materials**
- Case: Black plastic
- Window: Clear plastic with adjustable red mark pointer
- Dial: Aluminium white
- Pointers: Black plastic
- Pressure connection: Cu-alloy, 14 mm flats
- Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
- Movement: Cu-alloy
- Temperature element: Bimetal spiralled
- Automatic valve: Cu-alloy / Polypropylene combination, 21 mm flats

**Technical Specifications**
- Design: According to EN 837-1 & EN 13190
- Working pressure:
  - Steady: 75 % of full scale value
  - Fluctuating: not applicable
  - Short time: not applicable
- Operating temperature:
  - Ambient: +5 ... +60 °C
  - Medium: +120 °C maximum
  - Storage: -20 ... +60 °C
- Temperature effect:
  - For pressure only: Deviation from reference temperature (+20°C): ± 0,04%/1K of the span
- Accuracy class: cl. 2.5 (Pressure), cl. 2 (Temperature)
- Degree of protection: IP 31 per EN 60 529 / IEC 529
- Individual Weight: 0.135 kg

**Type** | **Part No.** | **Scale Range** | **Connection** | **Packaging**
---|---|---|---|---
TIRM-ABS 80 | PL4203BD00 | 0-2.5 bar / 0-120° C | G1/2B | 1/50
TIRM-ABS 80 | PL4204BD00 | 0-4 bar / 0-120° C | G1/2B | 1/50
TIRM-ABS 80 | PL4206BD00 | 0-6 bar / 0-120° C | G1/2B | 1/50

Options: see page 124
COMBINED TEMPERATURE AND PRESSURE GAUGES

FOR WATER HEATING SYSTEMS, BOILERS, POOLS AND SPAS

TIM-ABS 63

Plastic Case DN63 Centre Back Entry

Materials
Case: Black plastic
Window: Clear plastic with adjustable red mark pointer
Dial: Aluminium white
Pointers: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
Movement: Cu-alloy
Temperature element: Bimetal spiralled
Automatic valve: Cu-alloy / Polypropylene combination, 21 mm flats

Technical Specifications
Design: According to EN 837-1 & EN 13190
Working pressure: Steady: 75 % of full scale value
Fluctuating: not applicable
Short time: not applicable
Operating temperature: Ambient: +5 ... +60 °C
Medium: +120 °C maximum
Storage: -20 ... +60 °C
Temperature effect: For pressure only: Deviation from reference temperature (+20°C): ± 0.04%/1K of the span
Accuracy class: cl. 2.5 (Pressure), cl. 2 (Temperature)
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.125 kg

Type | Part No. | Scale Range | Connection | Packaging |
--- | --- | --- | --- | --- |
TIM-ABS 63 |  | 0-2.5 bar / 0-120° C | G1/2B | 1/50 |
TIM-ABS 63 | PN3204BD00 | 0-4 bar / 0-120° C | G1/2B | 1/50 |
TIM-ABS 63 |  | 0-6 bar / 0-120° C | G1/2B | 1/50 |

Options : see page 124
COMBINED TEMPERATURE AND PRESSURE GAUGES
FOR WATER HEATING SYSTEMS, BOILERS, POOLS AND SPAS

TIM-ABS 80
Plastic Case DN80 Centre Back Entry

Materials
Case: Black plastic
Window: Clear plastic with adjustable red mark pointer
Dial: Aluminium white
Pointers: Black plastic
Pressure connection: Cu-alloy, 14 mm flats
Pressure element: Bourdon tube Cu-alloy soft soldered, C-type
Movement: Cu-alloy
Temperature element: Bimetal spiralled
Automatic valve: Cu-alloy / Polypropylene combination, 21 mm flats

Technical Specifications
Design: According to EN 837-1 & EN 13190
Working pressure: Steady: 75 % of full scale value
Fluctuating: not applicable
Short time: not applicable
Operating temperature: Ambient: +5 ... +60 °C
Medium: +120 °C maximum
Storage: -20 ... +60 °C
Temperature effect: For pressure only: Deviation from reference temperature (+20°C): ± 0.04%/1K of the span
Accuracy class: cl. 2.5 (Pressure), cl. 2 (Temperature)
Degree of protection: IP 31 per EN 60 529 / IEC 529
Individual Weight: 0.165 kg

Options: see below

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<th>Scale Range</th>
<th>Connection</th>
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<td>PN4204BD01</td>
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<td>TIM-ABS 80</td>
<td>PN4206BD01</td>
<td>0-6 bar / 0-120° C</td>
<td>G1/2B</td>
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TIRM-ABS 80
TIM-ABS 63/80

Options subject to minimum quantity
Customized dials, other scale ranges on request
BIMETAL THERMOMETER

FOR DOMESTIC AND INDUSTRIAL HEATING SYSTEMS, SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCIOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY

TBR-80/VE

Chrome-Plated Steel Case DN80 Bottom Entry

Materials
Case: Chrome-plated steel
Window: Clear plastic
Dial: White aluminium
Pointer: Black plastic
Stem: Cu-alloy Ø 9mm with O-Ring for clamping
Temperature element: Bimetal, spiralled
Movement: Cu-alloy / Polyester combination
Pocket: Cu-alloy, 19 mm flats

Technical Specifications
Design: EN 13190
Temperature limits: Ambient: -20 ... +60 °C
Medium: as per scale indication
Storage: -20 ... +60 °C
Operating temperature: As per scale indication
Temperature effect: Not applicable
Accuracy class: cl. 2
Degree of protection: IP 31 per EN 60 529/IEC 529
Individual Weight: 0.202 kg

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<th>L (mm)</th>
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<th>Connection</th>
<th>Packaging</th>
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<td>0-120 °C</td>
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Options: see below

TBR-80/VE

Options subject to minimum quantity
Customized dials, other scale ranges on request

OPTIONAL EXTRAS
BIMETAL THERMOMETER

FOR DOMESTIC AND INDUSTRIAL HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY

TB-40/VE

Zinc-Plated Steel Case DN40 Centre Back Entry

Materials
Case: Zinc-plated steel
Window: Clear plastic
Dial: White aluminium
Pointer: Black plastic
Stem: Zinc-plated steel Ø 9mm
Temperature element: Bimetal, spiralled
Pocket: Cu-alloy, 19mm flats with fixing screw

Technical Specifications
Design: EN 13190
Temperature limits: Ambient: -20 ... +60 °C
Medium: as per scale indication
Storage: -20 ... +60 °C
Operating temperature: As per scale indication
Temperature effect: Not applicable
Accuracy class: cl. 2
Degree of protection: IP 41 per EN 60 529/IEC 529
Individual Weight: 0.059 kg

Type | Part No.  | L (mm) | Scale Range | Connection | Packaging |
--- | --- | --- | --- | --- | --- |
TB-40/VE | PT1A457002 | 30 | 0-80 °C | G3/8B | 240/240 |
TB-40/VE | PT1A507001 | 30 | 0-120 °C | G3/8B | 240/240 |
TB-40/VE | PT1A447000 | 50 | 30+50 °C | G1/2B | 240/240 |
TB-40/VE | PT1A447000 | 50 | 0-60 °C | G1/2B | 240/240 |
TB-40/VE | PT1A447000 | 50 | 0-80 °C | G1/2B | 240/240 |
TB-40/VE | PT1A447000 | 50 | 0-120 °C | G1/2B | 240/240 |

Options: see page 131
FOR DOMESTIC AND INDUSTRIAL HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY.

### Zinc-Plated Steel Case DN63 Centre Back Entry

#### Materials
- **Case:** Zinc-plated steel
- **Window:** Clear plastic
- **Dial:** White aluminium
- **Pointer:** Black plastic
- **Stem:** Zinc-plated steel Ø 9mm
- **Temperature element:** Bimetal, spiralled
- **Pocket:** Cu-alloy up to length 100mm, above cu-alloy-copper, 19mm flats with fixing screw

#### Technical Specifications
- **Design:** EN 13190
- **Temperature limits:** Ambient: -20 ... +60 °C
- **Medium:** as per scale indication
- **Storage:** -20 ... +60 °C
- **Operating temperature:** As per scale indication
- **Temperature effect:** Not applicable
- **Accuracy class:** cl. 2
- **Degree of protection:** IP 41 per EN 60 529/IEC 529
- **Individual Weight:** 0.112 kg

### Types and Specifications

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Options: see page 131
BIMETAL THERMOMETER

FOR DOMESTIC AND INDUSTRIAL HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCIOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY

**TB-80/VE**

**Zinc-Plated Steel Case DN80 Centre Back Entry**

**Materials**
- **Case:** Zinc-plated steel
- **Window:** Clear plastic
- **Dial:** White aluminium
- **Pointer:** Black plastic
- **Stem:** Zinc-plated steel Ø 9mm
- **Temperature element:** Bimetal, spiralled
- **Pocket:** Cu-alloy up to length 100mm, above cu-alloy-copper, 19mm flats with fixing screw

**Technical Specifications**
- **Design:** EN 13190
- **Temperature limits:**
  - Ambient: -20 ... +60 °C
  - Medium: as per scale indication
  - Storage: -20 ... +60 °C
- **Operating temperature:** As per scale indication
- **Temperature effect:** Not applicable
- **Accuracy class:** cl. 2
- **Degree of protection:** IP 41 per EN 60 529/IEC 529
- **Individual Weight:** 0.130 kg

**Type** | **Part No.** | **L (mm)** | **Scale Range** | **Connection** | **Packaging**
--- | --- | --- | --- | --- | ---
TB-80/VE | PT4A987001 | 50 | -30+50 °C | G1/2B | 50/50
TB-80/VE | PT4A447001 | 50 | 0-80 °C | G1/2B | 50/50
TB-80/VE | PT4A507003 | 50 | 0-120 °C | G1/2B | 50/50
TB-80/VE | PT4B987001 | 100 | -30+50 °C | G1/2B | 50/50
TB-80/VE | PT4B447001 | 100 | 0-60 °C | G1/2B | 50/50
TB-80/VE | 100 | 0-80 °C | G1/2B | 50/50
TB-80/VE | PT4B507004 | 100 | 0-120 °C | G1/2B | 50/50
TB-80/VE | 150 | -30+50 °C | G1/2B | 50/50
TB-80/VE | 150 | 0-60 °C | G1/2B | 50/50
TB-80/VE | 150 | 0-80 °C | G1/2B | 50/50
TB-80/VE | PT4C507001 | 150 | 0-120 °C | G1/2B | 50/50
TB-80/VE | 200 | -30+50 °C | G1/2B | 50/50
TB-80/VE | 200 | 0-60 °C | G1/2B | 50/50
TB-80/VE | 200 | 0-80 °C | G1/2B | 50/50
TB-80/VE | 200 | 0-120 °C | G1/2B | 50/50
TB-80/VE | 300 | -30+50 °C | G1/2B | 50/50
TB-80/VE | 300 | 0-60 °C | G1/2B | 50/50
TB-80/VE | 300 | 0-80 °C | G1/2B | 50/50
TB-80/VE | 300 | 0-120 °C | G1/2B | 50/50

Options : see page 131
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TB-100/VE

Zinc-Plated Steel Case DN100 Centre Back Entry

Materials
Case: Zinc-plated steel
Window: Clear plastic
Dial: White aluminium
Pointer: Black plastic
Stem: Zinc-plated steel Ø 9mm
Temperature element: Bimetal, spiralled
Pocket: Cu-alloy up to length 100mm, above cu-alloy-copper, 19mm flats with fixing screw

Technical Specifications
Design: EN 13190
Temperature limits: Ambient: -20 ... +60 °C
Medium: as per scale indication
Storage: -20 ... +60 °C
Operating temperature: As per scale indication
Temperature effect: Not applicable
Accuracy class: cl. 2
Degree of protection: IP 41 per EN 60 529/IEC 529
Individual Weight: 0.175 kg

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Options: see page 131
**TB-40-63-80-100/VE**

Options subject to minimum quantity

**GSS** - Stainless steel pocket

See accessories

**TB-40-63-80-100/VE**

Options subject to minimum quantity

Customized dials, other scale ranges on request
BIMETAL THERMOMETER

FOR DOMESTIC AND INDUSTRIAL HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCIOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY

TB-33
Zinc-Plated Steel Case DN33 With Chrome-Plated Bezel Centre Back Entry

Materials
Case: Zinc-plated steel
Bezel ring: Chrome-plated steel
Window: Clear plastic
Dial: White aluminium
Pointer: Black plastic
Stem: Zinc-plated steel Ø 9mm
Temperature element: Bimetal, spiralled
Pocket: Cu-alloy, 19mm flats with fixing screw

Technical Specifications
Design: EN 13190
Temperature limits: Ambient: -20 ... +60 °C
Medium: as per scale indication
Operating temperature: As per scale indication
Temperature effect: Not applicable
Accuracy class: cl. 2
Degree of protection: IP 41 per EN 60 529/IEC 529
Individual Weight: 0.046 kg

Type | Part No. | L (mm) | Scale Range | Connection | Packaging |
--- | --- | --- | --- | --- | --- |
TB-33 | PT10447000 | 30 | 0-60 °C | G3/8B | 240/240 |
TB-33 | 30 | 0-80 °C | G3/8B | 240/240 |
TB-33 | PT10507003 | 30 | 0-120 °C | G3/8B | 240/240 |
TB-33 | 50 | -30+50 °C | G1/2B | 240/240 |
TB-33 | 50 | 0-60 °C | G1/2B | 240/240 |
TB-33 | 50 | 0-80 °C | G1/2B | 240/240 |
TB-33 | 50 | 0-120 °C | G1/2B | 240/240 |

Options: see page 138
BIMETAL THERMOMETER

FOR DOMESTIC AND INDUSTRIAL HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY

TB-40

Zinc-Plated Steel Case DN40 With Chrome-Plated Bezel Centre Back Entry

Materials
- Case: Zinc-plated steel
- Bezel ring: Chrome-plated steel
- Window: Clear plastic
- Dial: White aluminium
- Pointer: Black plastic
- Stem: Zinc-plated steel Ø 9mm
- Temperature element: Bimetal, spiralled
- Pocket: Cu-alloy, 19mm flats with fixing screw

Tecnical Specifications
- Design: EN 13190
- Temperature limits:
  - Ambient: -20 ... +60 °C
  - Medium: as per scale indication
  - Storage: -20 ... +60 °C
- Operating temperature: As per scale indication
- Temperature effect: Not applicable
- Accuracy class: cl. 2
- Degree of protection: IP 41 per EN 60 529/IEC 529
- Individual Weight: 0.060 kg

Options: see page 138
FOR DOMESTIC AND INDUSTRIAL HEATING SYSTEMS, SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY

TB-52
Zinc-Plated Steel Case DN52 With Chrome-Plated Bezel Centre Back Entry

Materials
Case: Zinc-plated steel
Bezel ring: Chrome-plated steel
Window: Clear plastic, 120°C instrument glass
Dial: White aluminium
Pointer: Black plastic, 120°C black aluminium
Stem: Zinc-plated steel Ø 9mm
Temperature element: Bimetal, spiralled
Pocket: Cu-alloy, 19mm flats with fixing screw

Technical Specifications
Design: EN 13190
Temperature limits: Ambient: -20 ... +60 °C
Medium: as per scale indication
Storage: -20 ... +60 °C
Operating temperature: As per scale indication
Temperature effect: Not applicable
Accuracy class: cl. 2
Degree of protection: IP 41 per EN 60 529/IEC 529
Individual Weight: 0.100 kg

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Options: see page 138
BIMETAL THERMOMETER

FOR DOMESTIC AND INDUSTRIAL HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY.

**Materials**
- Case: Zinc-plated steel
- Bezel ring: Chrome-plated steel
- Window: Clear plastic, > 120°C instrument glass
- Dial: White plastic, > 120°C aluminium
- Pointer: Black plastic, > 120°C black aluminium
- Stem: Zinc-plated steel Ø 9mm
- Temperature element: Bimetal, spiralled
- Pocket: Cu-alloy, up to length 100 mm, above Cu-alloy-copper 19 mm flats with fixing screw

**Technical Specifications**
- Design: EN 13190
- Temperature limits:
  - Ambient: -20 ... +60 °C
  - Medium: as per scale indication
  - Storage: -20 ... +60 °C
- Operating temperature: As per scale indication
- Temperature effect: Not applicable
- Accuracy class: cl. 2
- Degree of protection: IP 41 per EN 60 529/IEC 529
- Individual Weight: 0.110 kg

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<td>G1/2B</td>
<td>50/50</td>
</tr>
<tr>
<td>TB-63</td>
<td>PT3360700</td>
<td>200</td>
<td>0-250 °C</td>
<td>G1/2B</td>
<td>50/50</td>
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<td>TB-63</td>
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<td>G1/2B</td>
<td>50/50</td>
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<td>TB-63</td>
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<td>0-500 °C</td>
<td>G1/2B</td>
<td>50/50</td>
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<tr>
<td>TB-63</td>
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<td>G1/2B</td>
<td>50/50</td>
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<td>TB-63</td>
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<td>0-120 °C</td>
<td>G1/2B</td>
<td>50/50</td>
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<td>G1/2B</td>
<td>50/50</td>
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<td>TB-63</td>
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<td>200</td>
<td>0-250 °C</td>
<td>G1/2B</td>
<td>50/50</td>
</tr>
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<td>TB-63</td>
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<td>200</td>
<td>0-350 °C</td>
<td>G1/2B</td>
<td>50/50</td>
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<td>TB-63</td>
<td>PT3360700</td>
<td>200</td>
<td>0-500 °C</td>
<td>G1/2B</td>
<td>50/50</td>
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</tbody>
</table>

**Options:** see page 138
FOR DOMESTIC AND INDUSTRIAL HEATING SYSTEMS, SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY

BIMETAL THERMOMETER

TB-80
Zinc-Plated Steel Case DN80 With Chrome-Plated Bezel Centre Back Entry

Materials
Case: Zinc-plated steel
Bezel ring: Chrome-plated steel
Window: Clear plastic, > 120°C instrument glass
Dial: White plastic, > 120°C aluminium
Pointer: Black plastic, > 120°C black aluminium
Stem: Zinc-plated steel Ø 9mm
Temperature element: Bimetal, spiralled
Pocket: Cu-alloy, up to length 100 mm, above Cu-alloy-copper 19 mm flats with fixing screw

Technical Specifications
Design: EN 13190
Temperature limits:
Ambient: -20 ... +60 °C
Medium: as per scale indication
Storage: -20 ... +60 °C
Operating temperature: As per scale indication
Temperature effect: Not applicable
Accuracy class: cl. 2
Degree of protection: IP 41 per EN 60 529/IEC 529
Individual Weight: 0.150 kg

Type Part No. L (mm) Scale Range Connection Packaging
TB-80 PT409870 50 -30+50 °C G1/2B 50/50
TB-80 PT404470 50 0-80 °C G1/2B 50/50
TB-80 PT40507007 50 0-120 °C G1/2B 50/50
TB-80 PT406170 50 0-200 °C G1/2B 50/50
TB-80 PT40507007 50 0-250 °C G1/2B 50/50
TB-80 PT40507007 50 0-350 °C G1/2B 50/50
TB-80 PT419870 100 -30+50 °C G1/2B 50/50
TB-80 PT414470 100 0-80 °C G1/2B 50/50
TB-80 PT41457001 100 0-80 °C G1/2B 50/50
TB-80 PT41507002 100 0-120 °C G1/2B 50/50
TB-80 PT415870 100 0-200 °C G1/2B 50/50
TB-80 PT41607001 100 0-250 °C G1/2B 50/50
TB-80 PT41647000 100 0-500 °C G1/2B 50/50
TB-80 PT479870 150 -30+50 °C G1/2B 50/50
TB-80 PT424670 150 0-80 °C G1/2B 50/50
TB-80 PT424670 150 0-120 °C G1/2B 50/50
TB-80 PT42507001 150 0-200 °C G1/2B 50/50
TB-80 PT42607001 150 0-250 °C G1/2B 50/50
TB-80 PT42687000 150 0-200 °C G1/2B 50/50
TB-80 PT43687001 150 0-500 °C G1/2B 50/50
TB-80 PT44687000 150 0-500 °C G1/2B 50/50
TB-80 PT45807000 150 0-500 °C G1/2B 50/50
TB-80 PT46807000 150 0-500 °C G1/2B 50/50
TB-80 PT479870 200 -30+50 °C G1/2B 50/50
TB-80 PT42607001 200 0-250 °C G1/2B 50/50
TB-80 PT42687000 200 0-200 °C G1/2B 50/50
TB-80 PT43647001 200 0-250 °C G1/2B 50/50
TB-80 PT43687001 200 0-500 °C G1/2B 50/50
TB-80 PT44687000 200 0-500 °C G1/2B 50/50
TB-80 PT45807000 200 0-500 °C G1/2B 50/50
TB-80 PT46807000 200 0-500 °C G1/2B 50/50
TB-80 PT47807000 200 0-500 °C G1/2B 50/50
TB-80 PT44687000 300 0-500 °C G1/2B 50/50

Options: see page 138
BIMETAL THERMOMETER
FOR DOMESTIC AND INDUSTRIAL HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOUS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY

TB-100 EX F+R 801 DN100
Zinc-Plated Steel Case DN100 With Chrome-Plated Bezel Centre Back Entry

Materials
Case: Zinc-plated steel
Bezel ring: Chrome-plated steel
Window: Clear plastic, > 120°C instrument glass
Dial: White plastic, > 120°C aluminium
Pointer: Black plastic, > 120°C black aluminium
Stem: Zinc-plated steel Ø 9mm
Temperature element: Bimetal, spiralled
Pocket: Cu-alloy, up to length 100mm, above Cu-alloy-copper 19 mm flats with fixing screw

Technical Specifications
Design: EN 13190
Temperature limits: Ambient: -20 ... +60 °C
Medium: as per scale indication
Storage: -20 ... +60 °C
Operating temperature: As per scale indication
Temperature effect: Not applicable
Accuracy class: cl. 2
Degree of protection: IP 41 per EN 60 529/IEC 529
Individual Weight: 0.220 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>L (mm)</th>
<th>Scale Range</th>
<th>Connection</th>
<th>Packaging</th>
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<tr>
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<td>TB-100</td>
<td>PT504470</td>
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<td>0-60 °C</td>
<td>G1/2B</td>
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<td>G1/2B</td>
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<tr>
<td>TB-100</td>
<td>PT519870</td>
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<td>0-350 °C</td>
<td>G1/2B</td>
<td>32/32</td>
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<tr>
<td>TB-100</td>
<td>PT514470</td>
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<td>0-80 °C</td>
<td>G1/2B</td>
<td>32/32</td>
</tr>
<tr>
<td>TB-100</td>
<td>PT51507003</td>
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<td>0-120 °C</td>
<td>G1/2B</td>
<td>32/32</td>
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<td>PT51507003</td>
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<td>0-250 °C</td>
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<td>G1/2B</td>
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<tr>
<td>TB-100</td>
<td>PT539870</td>
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<td>0-350 °C</td>
<td>G1/2B</td>
<td>32/32</td>
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<td>TB-100</td>
<td>PT539870</td>
<td>200</td>
<td>0-500 °C</td>
<td>G1/2B</td>
<td>32/32</td>
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<tr>
<td>TB-100</td>
<td>PT539870</td>
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<td>0-60 °C</td>
<td>G1/2B</td>
<td>32/32</td>
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<tr>
<td>TB-100</td>
<td>PT5447001</td>
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<td>0-80 °C</td>
<td>G1/2B</td>
<td>32/32</td>
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<td>PT5447001</td>
<td>300</td>
<td>0-120 °C</td>
<td>G1/2B</td>
<td>32/32</td>
</tr>
<tr>
<td>TB-100</td>
<td>PT5447001</td>
<td>300</td>
<td>0-200 °C</td>
<td>G1/2B</td>
<td>32/32</td>
</tr>
<tr>
<td>TB-100</td>
<td>PT5447001</td>
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<td>0-250 °C</td>
<td>G1/2B</td>
<td>32/32</td>
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<tr>
<td>TB-100</td>
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<td>0-350 °C</td>
<td>G1/2B</td>
<td>32/32</td>
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<tr>
<td>TB-100</td>
<td>PT5447001</td>
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<td>0-500 °C</td>
<td>G1/2B</td>
<td>32/32</td>
</tr>
</tbody>
</table>

Options: see page 138
## BIMETAL THERMOMETER

### OPTIONAL EXTRAS

**TB-33-40-52-63-80-100**

<table>
<thead>
<tr>
<th>Options subject to minimum quantity</th>
<th>GSS - Stainless steel pocket</th>
<th>See accessories</th>
</tr>
</thead>
</table>

**TB-33-40-52-63-80-100**

<table>
<thead>
<tr>
<th>Options subject to minimum quantity</th>
<th>Customized dials, other scale ranges on request</th>
</tr>
</thead>
</table>
TCM-63

**Black Steel Case DN63**

**With Chrome-Plated Bezel and Fixing Spring**

**Materials**
- Case: Black steel, powder coated
- Bezel ring: Chrome-plated steel
- Window: Clear plastic
- Dial: White aluminium
- Pointer: Black plastic
- Fixing spring: Spring steel, for pipe connections from Ø 30 to 65 mm
- Temperature element: Bimetal, spiralled
- Temperature connection: By contact on the rear surface

**Technical Specifications**
- Design: According EN 13190
- Temperature limits:
  - Ambient: -20 ... +60 °C
  - Medium: as per scale indication
  - Storage: -20 ... +60 °C
- Operating temperature: As per scale indication
- Temperature effect: Not applicable
- Accuracy class: cl. 2
- Degree of protection: IP 31 per EN 60 529/IEC 529
- Individual Weight: 0.065 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Scale Range</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCM-63</td>
<td>PT055070</td>
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</tr>
<tr>
<td>TCM-63</td>
<td></td>
<td>0-60 °C</td>
<td>100/100</td>
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</tbody>
</table>

**Options**: see page 140
BIMETAL THERMOMETER

FOR SURFACE MOUNTING ON PIPES IN DOMESTIC AND INDUSTRIAL HEATING SYSTEMS

TCF-63
Black Steel Case DN63 With Chrome-Plated Bezel and Fixing Strip

Materials
- Case: Black steel, powder coated
- Bezel ring: Chrome-plated steel
- Window: Clear plastic
- Dial: White aluminium
- Pointer: Black plastic
- Fixing strip: Copper, for pipe connections from Ø 30 to 76 mm
- Temperature element: Bimetal, spiralled
- Temperature connection: By contact on the rear surface

Technical Specifications
- Design: According EN 13190
- Temperature limits: Ambient: -20 ... +60 °C
- Medium: as per scale indication
- Storage: -20 ... +60 °C
- Operating temperature: As per scale indication
- Temperature effect: Not applicable
- Accuracy class: cl. 2
- Degree of protection: IP 31 per EN 60 529/IEC 529
- Individual Weight: 0.065 kg

Type | Part No. | Scale Range | Packaging
--- | --- | --- | ---
TCF-63 | | 0-60 °C | 50/50
TCF-63 | PT065070 | 0-120°C | 50/50

Options: see below

TCM-63
TCF-63

Options subject to minimum quantity
Customized dials on request
BIMETAL THERMOMETER

FOR CHIMNEY SYSTEMS (EXHAUST GASES)

TB-63/FUMI

EX F+R 801 DN63

Zinc-plated Steel Case DN63 With Chrome-Plated Bezel Centre Back Entry

**Materials**
- Case: Zinc-plated steel
- Bezel ring: Chrome-plated steel
- Window: Instrument glass
- Dial: White aluminium
- Pointer: Black aluminium
- Stem: Zinc-plated steel Ø 9mm, without pocket
- Temperature element: Bimetal, spiralled

**Technical Specifications**
- Design: EN 13190
- Temperature limits:
  - Ambient: -20 ... +60 °C
  - Medium: as per scale indication
  - Storage: -20 ... +60 °C
- Operating temperature: As per scale indication
- Temperature effect: Not applicable
- Accuracy class: cl. 2
- Degree of protection: IP 41 per EN 60 529/IEC 529
- Individual Weight: 0.095 kg

**Type** | **Part No.** | **L (mm)** | **Scale Range** | **Packaging**
---|---|---|---|---
TB-63/FUMI | PT366870 | 100 | 0-500°C | 50/50
TB-63/FUMI | PT376870 | 150 | 0-500°C | 50/50
TB-63/FUMI | PT386870 | 200 | 0-500°C | 40/40
TB-63/FUMI | PT396870 | 300 | 0-500°C | 20/20

Options: see below

**TB-63/FUMI**

Options subject to minimum quantity
- Customized dials on request
FOR APPLICATIONS SUBJECT TO VIBRATIONS IN INDUSTRIAL HEATING SYSTEMS. SUITABLE FOR GASEOUS AND LIQUID MEDIA WHICH ARE NOT HIGHLY VISCOS, DO NOT CRYSTALLIZE AND ARE NOT AGGRESSIVE TO COPPER ALLOY.

**GLASS THERMOMETER**

**TV**

**Straight Glass Thermometer**

**Materials**
- Case: Glass tube with stem
- Dial: White plastic
- Temperature element: Xylen-filled bulb

**Technical Specifications**
- Temperature limits: Ambient: -20 ... +60 °C
- Medium: as per scale indication
- Storage: -20 ... +60 °C
- Operating temperature: As per scale indication
- Temperature effect: Not applicable
- Accuracy class: cl. 2
- Degree of protection: IP 41 per EN 60 529/IEC 529
- Individual Weight: 0.020 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part Number</th>
<th>Length (mm)</th>
<th>Scale range</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>TV</td>
<td>PZ185070</td>
<td>200</td>
<td>-10+120 °C</td>
<td>20/20</td>
</tr>
<tr>
<td>TV</td>
<td>PZ205070</td>
<td>250</td>
<td>-10+120 °C</td>
<td>20/20</td>
</tr>
<tr>
<td>TV</td>
<td>PZ225070</td>
<td>300</td>
<td>-10+120 °C</td>
<td>20/20</td>
</tr>
</tbody>
</table>

**C**

**Straight Case with pocket for Glass Thermometer TV**

**Materials**
- Case + cap: Cu-alloy
- Pocket: Cu-alloy, 50 mm
- Connection: Cu-alloy 25 mm flats

**Technical Specifications**
- Individual Weight: 0.120 kg

<table>
<thead>
<tr>
<th>Type</th>
<th>Part Number</th>
<th>Length (mm)</th>
<th>Scale range</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>PZ050000</td>
<td>200</td>
<td>-10+120 °C</td>
<td>50/50</td>
</tr>
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<td>C</td>
<td>PZ060000</td>
<td>250</td>
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</tr>
<tr>
<td>C</td>
<td>PZ070000</td>
<td>300</td>
<td>-10+120 °C</td>
<td>50/50</td>
</tr>
</tbody>
</table>
GLASS THERMOMETER

For applications subject to vibrations in industrial heating systems. Suitable for gaseous and liquid media which are not highly viscous, do not crystallize and are not aggressive to copper alloy.

**TVA**

### Bent Glass Thermometer

**Materials**
- **Case:** Glass tube with stem at 90° angle
- **Dial:** White plastic
- **Temperature element:** Xylen-filled bulb

**Technical Specifications**
- **Temperature limits:** Ambient: -20 ... +60 °C
- **Medium:** as per scale indication
- **Storage:** -20 ... +60 °C
- **Operating temperature:** As per scale indication
- **Temperature effect:** Not applicable
- **Accuracy class:** cl. 2
- **Degree of protection:** IP 41 per EN 60 529/IEC 529
- **Individual Weight:** 0.023 kg

**Type** | **Part Number** | **Length (mm)** | **Scale range** | **Packaging**
--- | --- | --- | --- | ---
TVA | PZ265070 | 200 | -10 to +120 °C | 20/20
TVA | PZ275070 | 250 | -10 to +120 °C | 20/20
TVA | PZ285070 | 300 | -10 to +120 °C | 20/20

**EX F+R 804**

### Bent Case with pocket for Glass Thermometer TVA

**Materials**
- **Case + cap:** Cu-alloy
- **Pocket:** Cu-alloy, 50 mm
- **Connection:** Cu-alloy 25 mm flats at 90° angle

**Technical Specifications**
- **Individual Weight:** 0.220 kg

**Type** | **Part Number** | **Length (mm)** | **Scale range** | **Packaging**
--- | --- | --- | --- | ---
CA | PZ080000 | 200 | -10 to +120 °C | 10/10
CA | PZ090000 | 250 | -10 to +120 °C | 10/10

**EX F+R 998**
Accessories
**ACCESSORIES**

**FOR PRESSURE GAUGES AND THERMOMETERS**

### AM

**Pressure Dampener**

**Materials**

- **Body:** Cu-alloy
- **Thread Connection:** Cu-alloy, male-female

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Connection</th>
<th>Weight (kg)</th>
<th>Packaging</th>
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<td>PZ020000</td>
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<td>0.060</td>
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<td>PZ030000</td>
<td>G1/2B</td>
<td>0.060</td>
<td>20/20</td>
</tr>
</tbody>
</table>

### RF

**Ball Valve With Test Flange**

**Materials**

- **Body:** Cu-alloy, three-way
- **Thread Connection:** Cu-alloy, male-female
- **Test flange:** Cu-alloy, DN40

**Technical Specifications**

- **Temperature limits:** Max. 80°C
- **Working pressure:** PN 16 max.

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Connection</th>
<th>Weight (kg)</th>
<th>Packaging</th>
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<td>RF</td>
<td>PZ130000</td>
<td>G1/2B</td>
<td>0.200</td>
<td>20/20</td>
</tr>
</tbody>
</table>
RS

**Ball Valve**

**Materials**
- Body: Cu-alloy, two-way
- Thread Connection: Cu-alloy, male-female

**Technical Specifications**
- Temperature limits: Max. 80°C
- Working pressure: PN 16 max

**RS**

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Connection</th>
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<th>Packaging</th>
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<td>PZ132000</td>
<td>G1/2B</td>
<td>0.130</td>
<td>20/20</td>
</tr>
</tbody>
</table>

EX F+R 998

**Manual Shut Off Valve With Stainless Steel Test Flange**

**Materials**
- Body: Stainless steel AISI 316, three-way
- Thread Connection: Stainless steel, male-female
- Test flange: Stainless steel, DN40

**Technical Specifications**
- Temperature limits: Max. 220°C
- Working pressure: PN 210 max.

**RFX**

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Connection</th>
<th>Weight (kg)</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFX</td>
<td>PZ11010000</td>
<td>G1/4B</td>
<td>1.120</td>
<td>20/20</td>
</tr>
<tr>
<td>RFX</td>
<td>PZ12010000</td>
<td>G3/8B</td>
<td>1.120</td>
<td>20/20</td>
</tr>
<tr>
<td>RFX</td>
<td>PZ13010000</td>
<td>G1/2B</td>
<td>1.120</td>
<td>20/20</td>
</tr>
</tbody>
</table>
FOR PRESSURE GAUGES AND THERMOMETERS

ACCESSORIES

SRN

Copper Nickel-plated Syphon (Trumpet form)

Materials
- Tube: Copper, nickel-plated
- Thread Connection: Copper, nickel-plated, male-female

Technical Specifications
- Temperature limits: Max. 120°C
- Working pressure: PN 25 max

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Connection</th>
<th>Weight (kg.)</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRN</td>
<td>407D14</td>
<td>G1/4B</td>
<td>0.090</td>
<td>20/20</td>
</tr>
<tr>
<td>SRN</td>
<td>407D38</td>
<td>G3/8B</td>
<td>0.090</td>
<td>20/20</td>
</tr>
<tr>
<td>SRN</td>
<td>407D12</td>
<td>G1/2B</td>
<td>0.090</td>
<td>20/20</td>
</tr>
</tbody>
</table>

SRX

Stainless Steel Syphon (Trumpet form)

Materials
- Tube: Stainless steel AISI 316
- Thread Connection: Stainless steel AISI 316, male-female

Technical Specifications
- Temperature limits: Max. 200°C
- Working pressure: PN 100 max

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Connection</th>
<th>Weight (kg.)</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRX</td>
<td>PZ16100000</td>
<td>G1/2B</td>
<td>0.011</td>
<td>20/20</td>
</tr>
</tbody>
</table>
**RP**

**Push Button Valve**

**Materials**
- **Body:** Cu-alloy, nickel-plated with button for pressure release
- **Thread Connection:** Cu-alloy, nickel-plated, male-male

**Technical Specifications**
- **Temperature limits:** Max. 80°C
- **Working pressure:** PN 4 max.

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Connection</th>
<th>Weight (kg)</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>RP</td>
<td>PZ110000</td>
<td>G1/4B</td>
<td>0.220</td>
<td>20/20</td>
</tr>
<tr>
<td>RP</td>
<td>PZ120000</td>
<td>G3/8B</td>
<td>0.220</td>
<td>20/20</td>
</tr>
<tr>
<td>RP</td>
<td>PZ130000</td>
<td>G1/2B</td>
<td>0.220</td>
<td>20/20</td>
</tr>
</tbody>
</table>

**VR**

**Automatic Valve**

**Materials**
- **Body:** Cu-alloy
- **Thread Connection:** Cu-alloy, with O-Ring, male-female

**Technical Specifications**
- **Temperature limits:** Max. 120°C
- **Working pressure:** PN 10 max.

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Connection</th>
<th>Weight (kg)</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>VR</td>
<td>PZ200000K00</td>
<td>G3/8B x G3/8B</td>
<td>0.100</td>
<td>20/20</td>
</tr>
<tr>
<td>VR</td>
<td>PZ200000D00</td>
<td>G1/2B x G1/4B</td>
<td>0.100</td>
<td>20/20</td>
</tr>
</tbody>
</table>
FOR PRESSURE GAUGES AND THERMOMETERS

**Pocket For Thermometers**

**Materials**
- Body: Cu-alloy up to length 100mm, above cu-alloy-copper, 19 mm flats with fixing screw (TBR with O-Ring)
- Connection: Brass

**Technical Specifications**
- Temperature limits: Max. 500°C
- Working pressure: PN 10 max.

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>L (mm)</th>
<th>Connection</th>
<th>Weight (kg)</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>G-30 for TB</td>
<td>PGUAOTT011</td>
<td>30</td>
<td>G3/8B</td>
<td>0.029</td>
<td>20/20</td>
</tr>
<tr>
<td>G-50 for TB</td>
<td>PGUAOTT002</td>
<td>50</td>
<td>G1/2B</td>
<td>0.042</td>
<td>20/20</td>
</tr>
<tr>
<td>G-100 for TB</td>
<td>PGUAOTT005</td>
<td>100</td>
<td>G1/2B</td>
<td>0.051</td>
<td>20/20</td>
</tr>
<tr>
<td>G-150 for TB</td>
<td>PGUAOTT006</td>
<td>150</td>
<td>G1/2B</td>
<td>0.057</td>
<td>20/20</td>
</tr>
<tr>
<td>G-200 for TB</td>
<td>PGUAOTT007</td>
<td>200</td>
<td>G1/2B</td>
<td>0.080</td>
<td>20/20</td>
</tr>
<tr>
<td>G-300 for TB</td>
<td>PGUAOTT008</td>
<td>300</td>
<td>G1/2B</td>
<td>0.091</td>
<td>20/20</td>
</tr>
<tr>
<td>G-50 push type for TBR</td>
<td>PGUAOTT019</td>
<td>50</td>
<td>G1/2B</td>
<td>0.035</td>
<td>20/20</td>
</tr>
<tr>
<td>G-75 push type for TBR</td>
<td>PGUAOTT023</td>
<td>75</td>
<td>G1/2B</td>
<td>0.040</td>
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<tr>
<td>G-100 push type for TBR</td>
<td>PGUAOTT020</td>
<td>100</td>
<td>G1/2B</td>
<td>0.050</td>
<td>20/20</td>
</tr>
</tbody>
</table>
**G-INOX**

**Stainless Steel Pocket For Thermometers**

**Materials**

- **Body:** Stainless steel AISI 304, 10mm hole for stem Ø 9 mm
- **Connection:** Stainless steel AISI 304

**Technical Specifications**

- **Temperature limits:** Max. 500°C
- **Working pressure:** PN 25 max.

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Length</th>
<th>Connection</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>G-INOX-50</td>
<td>PGUAINX006</td>
<td>50</td>
<td>G1/2B</td>
<td>20/20</td>
</tr>
<tr>
<td>G-INOX-100</td>
<td>PGUAINX004</td>
<td>100</td>
<td>G1/2B</td>
<td>20/20</td>
</tr>
<tr>
<td>G-INOX-150</td>
<td>PGUAINX013</td>
<td>150</td>
<td>G1/2B</td>
<td>20/20</td>
</tr>
<tr>
<td>G-INOX-200</td>
<td>PGUAINX011</td>
<td>200</td>
<td>G1/2B</td>
<td>20/20</td>
</tr>
</tbody>
</table>
**ACCESSORIES**

FOR PRESSURE GAUGES AND THERMOMETERS

---

**SC**

Bracket For Thermometer Stem  
(for Ventilation Ducts)

**Materials**

Case and fixing screw: Zinc-plated steel

---

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Weight (kg)</th>
<th>Packaging</th>
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</thead>
<tbody>
<tr>
<td>SC</td>
<td>PMINACC034</td>
<td>0.025</td>
<td>20/20</td>
</tr>
</tbody>
</table>

---

**MC**

Spring For Thermometer Stem

**Materials**

Spring: Bluish zinc-plated steel for stem ≥ 50 mm

---

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Weight (kg)</th>
<th>Packaging</th>
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</thead>
<tbody>
<tr>
<td>MC</td>
<td>PMINACC037</td>
<td>0.010</td>
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</tbody>
</table>
**MCL**

Spring Clips For Thermometer Stem

**Materials**

Spring: Zinc-plated steel for stem 30 mm

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Weight (kg)</th>
<th>Packaging</th>
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<tr>
<td>MCL</td>
<td>PMINACC049</td>
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</table>

**S INOX 63**

Mounting Bracket For MG3A-INOX 63

**Materials**

U-clamp and fixing screws: Zinc-plated steel

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Weight (kg)</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>S INOX 63</td>
<td>PMINACC047</td>
<td>0.040</td>
<td>20/20</td>
</tr>
</tbody>
</table>
# Accessories

## FOR PRESSURE GAUGES AND THERMOMETERS

### S ABS 50

**Mounting Bracket For MG3A-ABS 50**

**Materials**

U-clamp and fixing screws: Zinc-plated steel

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Weight (kg)</th>
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</table>

### S ABS 63

**Mounting Bracket For MG3A-ABS 63**

**Materials**

U-clamp and fixing screws: Zinc-plated steel

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Weight (kg)</th>
<th>Packaging</th>
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</thead>
<tbody>
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</table>
### F ABS 63

**3-Hole Front Flange For MG3A-ABS 63**

**Materials**
- Flange: Black plastic

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Weight (kg)</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>F ABS 63</td>
<td>PMINABS048</td>
<td>0.003</td>
<td>20/20</td>
</tr>
</tbody>
</table>

### CP

**Protective rubber cap for Gauges DN63**

**Materials**
- Black rubber

<table>
<thead>
<tr>
<th>Type</th>
<th>Part No.</th>
<th>Connection</th>
<th>Weight (kg)</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP M1-63</td>
<td>PCUSGOM001</td>
<td>Bottom Entry</td>
<td>0.060</td>
<td>20/20</td>
</tr>
<tr>
<td>CP M3A-63</td>
<td>PCUSGOM002</td>
<td>Back entry</td>
<td>0.060</td>
<td>20/20</td>
</tr>
</tbody>
</table>
**CHECKLIST FOR ENQUIRIES**

**PRESSURE GAUGES**

<table>
<thead>
<tr>
<th>Company :</th>
<th>Project / Enquire No :</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Quantity :</th>
<th>Per year :</th>
<th>Per order :</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Application :</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medium :</th>
<th>Gaseous</th>
<th>Liquid</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Temperature medium :</th>
<th>Min :</th>
<th>Max :</th>
</tr>
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<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>Temperature ambient :</th>
<th>Min :</th>
<th>Max :</th>
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<tr>
<td></td>
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<table>
<thead>
<tr>
<th>Working pressure :</th>
<th>Steady at :</th>
<th>Fluctuating from :</th>
<th>to :</th>
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<td></td>
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<table>
<thead>
<tr>
<th>Pressure :</th>
<th>Range :</th>
<th>Units :</th>
<th>/</th>
<th>/</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th>Dial :</th>
<th>Customized :</th>
</tr>
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<tbody>
<tr>
<td></td>
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</tr>
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<table>
<thead>
<tr>
<th>Accuracy class :</th>
<th>2,5</th>
<th>1,6</th>
</tr>
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<table>
<thead>
<tr>
<th>Connecting thread size :</th>
<th>G .......... /.......B</th>
<th>R .......... /....Din2999</th>
<th>.......... /......Npt</th>
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<tbody>
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<td></td>
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<table>
<thead>
<tr>
<th>Location :</th>
<th>Bottom</th>
<th>Centre Back</th>
<th>Lower Back</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material of wetted parts :</th>
<th>Copper alloy</th>
<th>Stainless steel 1.4571</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diameter nominal :</th>
<th>40</th>
<th>50</th>
<th>63</th>
<th>80</th>
<th>100</th>
<th>160</th>
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<tbody>
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<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Case material :</th>
<th>Plastic</th>
<th>Steel</th>
<th>Stainless steel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
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<table>
<thead>
<tr>
<th>Mounting :</th>
<th>Direct</th>
<th>Panel</th>
<th>Surface</th>
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<tbody>
<tr>
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<table>
<thead>
<tr>
<th>Case design :</th>
<th>Dry</th>
<th>Liquid filled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>Degree of protection :</th>
<th>31</th>
<th>54</th>
<th>65</th>
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<tr>
<td></td>
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</tbody>
</table>

*In case of special features, please contact our sales service*

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<table>
<thead>
<tr>
<th>Company</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Project / Enquire No :</td>
<td></td>
</tr>
<tr>
<td>Quantity :</td>
<td>Per year : Per order :</td>
</tr>
<tr>
<td>Application :</td>
<td></td>
</tr>
<tr>
<td>Medium :</td>
<td>☐ Gaseous ☐ Liquid</td>
</tr>
<tr>
<td>Medium pressure :</td>
<td></td>
</tr>
<tr>
<td>Working temperature :</td>
<td>Min : Max :</td>
</tr>
<tr>
<td>Temperature :</td>
<td>Range : ☐ °C ☐ °F</td>
</tr>
<tr>
<td>Dial :</td>
<td>Customized :</td>
</tr>
<tr>
<td>Accuracy class :</td>
<td>☐ 2 ☐ 1</td>
</tr>
<tr>
<td>Stem location :</td>
<td>☐ Centre Back ☐ Bottom (DN80)</td>
</tr>
<tr>
<td>Stem material :</td>
<td>☐ Zinc-plated steel ☐ Brass (DN80)</td>
</tr>
<tr>
<td>Stem length :</td>
<td>☐ 30 mm ☐ 50 mm ☐ 100 mm ☐ 150 mm ☐ 200 mm ☐ 300 mm</td>
</tr>
<tr>
<td>Pocket material :</td>
<td>☐ Brass ☐ Stainless steel</td>
</tr>
<tr>
<td>Pocket fixation :</td>
<td>☐ Fixing screw ☐ Cramped</td>
</tr>
<tr>
<td>Diameter Nominal :</td>
<td>☐ 33 ☐ 40 ☐ 52 ☐ 63 ☐ 80 ☐ 100</td>
</tr>
<tr>
<td>Case material :</td>
<td>☐ Zinc-plated steel ☐ Stainless steel</td>
</tr>
</tbody>
</table>

In case of special features, please contact our sales service
1 Scope · Conclusion of contract

1. Our terms and conditions of sale apply only to enterprise (Section 14 BGB). They also apply to all future transactions with the purchaser.

2. Only our terms and conditions of sale apply. Conditions of the purchaser which conflict with or differ from our conditions of sale will not be recognised; this also applies if the contract is performed without reservation.

3. All agreements made between us and the purchaser for purposes of carrying out this contract must be made in writing in this contract or in an amending contract.

4. Inssofar as nothing else arises from these conditions, the terms and definitions of INCOTERMS 2000 apply.

2 Offer · Offer documentation

1. Documents pertaining to the offer such as drawings, weight details etc. are only approximately definitive, unless they are expressly designated as binding. Prices are without engagement and cost estimates are not binding.

2. In the case of cost estimates, drawings and other documents, the supplier reserves the rights of ownership and copyright. These may only be made available to third parties with our consent.

3. If the order is deemed to be an offer pursuant to Section 145 BGB (German Civil Code), we are entitled to accept it within 15 working days.

4. Details within the meaning of paragraph 1 and also in public statements by us, by the manufacturer and his/her qualified assistants (Section 434, 1, 3 BGB) only become part of the performance description when expressly referred to in this contract.

3 Prices · Conditions of payment

1. The scope of the delivery is derived solely from this contract. Alterations in construction, form and colour based on technological improvements or legal requirements are reserved, inssofar as the alterations are not material or in any other way unacceptable to the purchaser.

2. In the case of defective, incorrect or delayed supply of materials, the purchaser bears the costs and damage thus caused to the supplier.

4 Passage of risk · Supply of materials

1. Risk passes to the purchaser at the latest with the delivery of the delivery items to the persons entrusted with carrying out their dispatch. If dispatch is delayed owing to circumstances for which the purchaser is responsible, the risk passes to the purchaser from the date on which the shipment is ready for dispatch.

2. In the cases of defective, incorrect or delayed supply of materials, the purchaser bears the costs and damage thus caused to the supplier.

5 Execution of delivery · Delivery time · Cooperation duties

1. The scope of our duty to deliver is derived solely from this contract. Alterations in construction, form and colour based on technological improvements or legal requirements are reserved, inssofar as the alterations are not material or in any other way unacceptable to the purchaser.

2. If part deliveries are reasonable to expect from the purchaser, these may take place and be invoiced.

3. Our duty to deliver is under reservation as to complete and correct own delivery, unless the non-delivery or delay is caused by us. If we do not receive our delivery in this respect, although we have placed congruent orders with reliable suppliers, we are freed from our obligation to deliver and may rescind the contract.

4. The naming of delivery periods is in principle subject to the reservation of cooperation by the purchaser in conformity with the contract. Compliance with our obligation to deliver presupposes the fulfilment of the purchaser’s duties in a timely and orderly fashion.

5. The commencement of the delivery time stated by us presupposes the clarification of all technical questions.

6. Delivery periods begin with the date of our order confirmation. In the event of an industrial conflict, delivery periods are extended for the duration of the disruption caused thereby. This applies analogously to delivery dates.

7. Compliance with delivery periods and dates is determined by the time of dispatch from the factory or warehouse. They are deemed to have been kept in the event of notification of readiness for shipping if the goods cannot be dispatched on time through no fault of ours.

8. If it turns out after conclusion of the contract that the purchaser is not able to
8 Reservation of ownership

1. Ownership of the goods delivered remains reserved until such time as all our claims on the purchaser arising from the business relationship, including any future claims arising from contracts concluded simultaneously or at a later date, have been settled. This also applies where claims have been posted to a current account and the balance has been struck and is recognised.

2. The purchaser is entitled to sell or process the goods in the ordinary course of business. Any processing is undertaken on our behalf, without duties ensuing for us therefrom. In the case of processing, joining or commingling of the goods subject to reservation of ownership with other goods, our joint ownership in the new corporeal thing arises in principle, in the case of processing in the proportion of the value (- gross invoiced value including incidental expenses and taxes) of the goods subject to reservation of ownership to the value of the other goods. The purchaser holds the sole ownership or joint ownership in safe custody for us.

3. The purchaser hereby assigns to us all claims against a customer or third parties which accrue to him/her from the resale. The purchaser remains empowered to collect such receivables also after their assignment. Our right to collect such receivables is not affected thereby; however, we undertake not to collect such receivables as long as the customer meets his payment and other commitments in the proper manner. The purchaser is required on request to disclose to us the assigned receivables and the names of the debtors, supply all particulars necessary for collection, make available the records pertaining thereto, and inform the debtors of the assignment.

4. In the case of conduct in violation of the contract by the purchaser, in particular in the case of late payment, we are entitled to rescind the contract and recover the goods. For purposes of recovery of the goods, the purchaser hereby irrevocably allows us to enter his/her business and warehouse premises unimpeded and take the goods away.

5. The purchaser is not permitted to assign for security or pledge goods or items manufactured with them without our consent, so long as the reservation of ownership subsists. The conclusion of financing agreements (e.g. leasing) which include the assignment of our rights of reservation require our prior written consent, unless the agreement binds the financing institution to pay us directly the purchase price portion due to us.

6. In the event of attachment and other intervention by third parties, the customer is required to notify us in writing without delay. He/she is forbidden to make arrangements with his/her customers which could interfere with our rights.

7. We undertake to release the collateral we are entitled to at the request of the purchaser to the extent that the realisable value of the collateral exceeds the value of the receivables to be secured by more than 20%, or their nominal value exceeds the value of the receivables by more than 50%.

9 Industrial property rights, tools, models and drawings

If deliveries are made according to drawings or other details provided by the purchaser, the latter bears the responsibility for their correctness and that property rights of third parties are not infringed. He/she is obliged to indemnify us against all claims by third parties in this respect. Chills, models, tools and equipment required for the purchased goods may be invoiced by us on behalf of the purchaser and/or the purchaser has paid for them in full or in part. They remain our property, even if we have manufactured them on behalf of the purchaser and/or the purchaser has paid for them in full or in part. If they have been manufactured according to instructions from the purchaser, they will be used exclusively for deliveries to the purchaser, as long as the latter meets his/her acceptance and payment obligations and the business relationship subsists.
10 Material defects

1. With respect to material defects, the purchaser is in the first instance subject to the statutory inspection and complaint duties pursuant to section 377 HGB (German Commercial Code).

2. The purchaser may not derive any further rights from material defects which do not or do not materially impair the value of the goods and their suitability for the purpose recognisable to us.

3. If the goods exhibit a material defect at the time of the passing of risk, we are entitled and bound to subsequent performance. Subsequent performance takes place by rectification or substitute delivery, at our choice. The costs of subsequent performance, in particular transport, travel, labour and materials costs are for our account. If the costs amount to more than 50% of the value of the delivery, we are entitled to refuse subsequent performance.

4. To the extent that the subsequent performance is unsuccessful, does not take place within a reasonable period granted by the purchaser, or is refused, the purchaser is entitled, at his/her choice, to rescind the contract, to demand a reduction of the purchase price (abatement) corresponding to the impairment in value or - within the limits of the following paragraphs - compensation for damages instead of performance.

5. If a material defect leads to damage, we are liable in accordance with the statutory regulations, insofar as injury to a person is concerned, the damage is covered by the Product Liability Law or is based on intent or gross negligence.

6. Inssofar as the damage is based on a culpable breach of a main contractual obligation or cardinal obligation, we are otherwise only liable for damages typical for the type of contract.

7. More far-reaching claims by the purchaser in contract or in tort are excluded. In particular we are not liable for damages which have not occurred in connection with the delivered item itself; nor for loss of prospective profits or other economic loss by the purchaser.

8. The above regulations do not apply to used goods. We are only liable for material defects in the event of express acceptance of a guarantee, intent or gross negligence, not otherwise.

9. No guarantee can be given for damages arising for any of the following reasons:
   - unsuitable or improper use,
   - incorrect installation, non-observance of existing guidelines and test specifications on installation of our goods in plant,
   - erroneous assembly and/or commissioning, repair or maintenance by the purchaser or third parties,
   - erroneous, forcible or careless treatment,
   - unsuitable expendables,
   - components damaging to materials or excessive pollution of the water, gas, oil or other media used,
   - and also natural wear and tear.

10. Section 478 BGB remains unaffected by the above-mentioned paragraphs 2 to 9.

11 Other liability for compensation in damages

1. The above-mentioned regulations in paragraph 10 also apply to claims for compensation in damages on account of other breaches of obligations.

2. In the event of breach of a pre-contractual obligation or of an obstacle to performance already in existence on conclusion of the contract (sections 311 II, 311a BGB), our obligation to compensate is limited to the negative interest.

3. The regulations in the above-mentioned in paragraphs 10 apply analogously to our liability in tort.

4. Inssofar as our liability is excluded or limited, this also applies to the personal liability of our staff, workers, employees, representatives, executive bodies and vicarious agents.

12 Limitation

1. The purchaser's entitlement to subsequent performance is statute-barred, subject to sections 438, 479 BGB, one year after delivery of the goods. Guarantee is excluded in the case of used goods. There are correspondingly no guarantee rights in used items.

2. In the case of compensation for damages, the period of limitation is one year, subject to sections 438, 479 BGB. In the cases of claims under Product Liability Law and of intent and gross negligence, the statutory limitations apply.

13 Place of performance · Place of jurisdiction for domestic contracts

1. Unless otherwise apparent from the order confirmation, the place of performance is the registered office of our Company.

2. Insofar as the purchaser is a fully qualified merchant, the place of jurisdiction is our registered office; however, we are entitled to bring an action against the purchaser at his/her registered office.

3. The law relating to the legal relationships of domestic parties at our registered office applies to all legal relationships between us and the purchaser.

14 International business dealings


2. In cases of doubt, the INCOTERMS 2000 are definitive for the interpretation of trade terms.

3. Our above-mentioned conditions presented in sections 1 to 13 inclusive also apply to international business dealings, subject to the application of German law.

15 General

1. The purchaser's rights under this contract are not transfерable.

2. The invalidity of individual provisions does not affect the validity of the remaining provisions.
### Our European Presence

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