

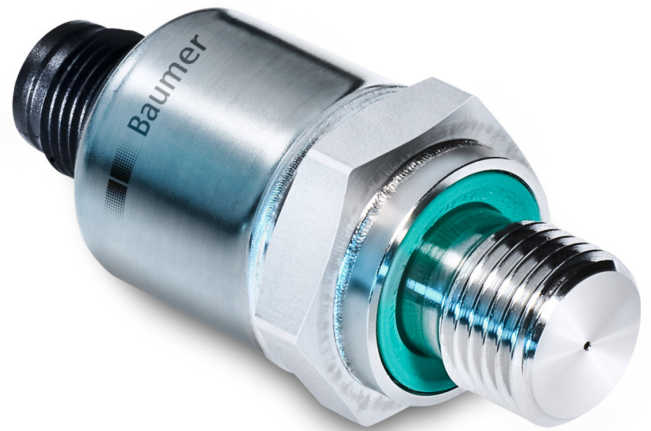
PBM4

Pressure sensor for industrial and mobile hydraulic applications

PBM4-13.###R.####.#6#

Overview

- Standard use in hydraulics from 10 to 2000 bar
- Robust stainless steel housing
- Compact design
- Fully welded, dry measuring cell
- Relative pressure measurement
- E1 approval for mobile hydraulics
- CANopen as option



Technical data

Performance characteristics

| | |
|--------------------------------------|---|
| Pressure type | Relative (gauged) |
| Compensated temperature range | 0 ... 80 °C |
| Long term stability | ≤ 0.2 % FSR/a |
| Max. measuring error | ± 0.5 % FSR ± 1 % FSR, 0 ... 105 °C ± 1.5 % FSR, 105 ... 125 °C ± 1.5 % FSR, -40 ... 0 °C Including zero-point and span error, non-linearity (by terminal base line), hysteresis and non-repeatability (EN 61298-2) |
| Max. measuring span | 2000 bar |
| Measuring range | 0 ... 2000 bar |
| Standard error of measurement (BFSL) | ± 0.2 % FSR ± 0.5 % FSR, 0 ... 105 °C ± 0.8 % FSR, -40 ... 0 °C ± 0.8 % FSR, 105 ... 125 °C Including non-linearity, hysteresis and non-repeatability according BFSL |
| Min. measuring span | 10 bar |
| Rise time (10 ... 90 %) | ≤ 1 ms |

Process conditions

| | |
|---------------------|---|
| Process temperature | -40 ... 150 °C |
| Process pressure | Refer to section "Operating conditions" |

Process connection

| | |
|---|---|
| Connection variants | Refer to section "Dimensional drawings" |
| Wetted parts material, process connection | AISI 630 (1.4548) |
| Wetted parts material, membrane | AISI 630 (1.4548) |
| Wetted parts material, gasket | FKM (Viton®), optional FKM (Viton®) gaskets require a minimum ambient temperature of -20 °C and a minimum medium temperature of -25 °C |

Ambient conditions

| | |
|-----------------------------|--|
| Operating temperature range | -40 ... 125 °C -25 ... 85 °C, with cable outlet |
|-----------------------------|--|

Ambient conditions

| | |
|---------------------------------------|---|
| Storage temperature range | -40 ... 125 °C -25 ... 85 °C, with cable outlet |
| Degree of protection (EN 60529) | IP 67 |
| Shock (EN 60068-2-27) | 500 g |
| Vibration (sinusoidal) (EN 60068-2-6) | 20 g |
| Output signal | |
| Current output | 4 ... 20 mA, 2-wire |
| Output signal | CANopen |
| Voltage output | 0 ... 10 V, 3-wire 0 ... 5 V, 3-wire 0.5 ... 4.5 V, 3-wire 0.5 ... 4.5 V DC ratiometric, 3-wire 1 ... 6 V, 3-wire |
| Short circuit protection | Yes |

Housing

| | |
|--------------|---|
| Style | Compact transmitter |
| Overall size | Refer to section "Dimensional drawings" |
| Material | AISI 304 (1.4301) |

Electrical connection

| | |
|--------------|--|
| Connector | AMP superseal 1.5, 3-pin Bayonet connection DIN 72585, 4-pin DT04, 3-pin M12-A, 5-pin M12-A, 5-pin, stainless steel DT04, 4-pin |
| Cable outlet | 2 m, 3-wire |

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Technical data

Power supply

| | |
|----------------------|---|
| Voltage supply range | 9 ... 36 V DC , with 4 ... 20 mA output signal |
| | 14 ... 36 V DC , with 0 ... 10 V output signal |
| | 9 ... 36 V DC , with 1 ... 6 V output signal |
| | 9 ... 36 V DC , with 0 ... 5 V output signal |
| | 9 ... 36 V DC , with 0.5 ... 4.5 V output signal |
| | 5 V DC ratiometric , with 0.5 ... 4.5 V output signal |

Compliance and approvals

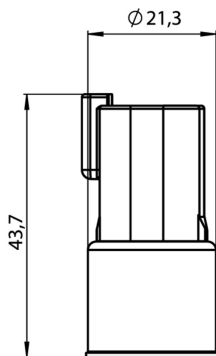
| | |
|------------------|---------------------------------------|
| EMC | EN 61000-6-2 EN 61000-6-3 |
| E1 accreditation | E1 accreditation |
| Safety | UL recognized, UL File number E469449 |

Operating conditions

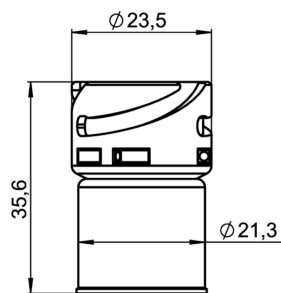
| Measuring range (bar) | Proof pressure (bar) | Burst Pressure (bar) |
|--------------------------|-------------------------|-------------------------|
| 0 ... 10 | 40 | 60 |
| 0 ... 25 | 40 | 60 |
| 0 ... 60 | 100 | 500 |
| 0 ... 100 | 200 | 1000 |
| 0 ... 160 | 500 | 2500 |
| 0 ... 250 | 500 | 2500 |
| 0 ... 400 | 800 | 4000 |
| 0 ... 600 | 800 | 4000 |
| 0 ... 1000 | 1200 | > 4000 |

Dimensional drawings (mm)

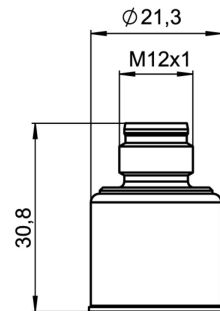
Housing



Housing with connector DT04, 4-pin



Housing with connector Bayonet connection
DIN 72585, 4-pin



Housing with connector M12-A, 5-pin

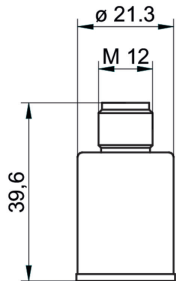
PBM4

Pressure sensor for industrial and mobile hydraulic applications

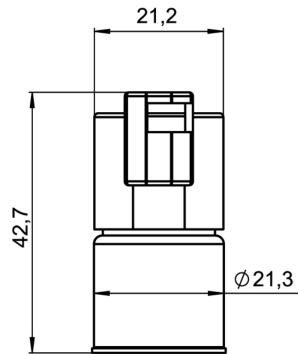
PBM4-13.###R.####.##6#

Dimensional drawings (mm)

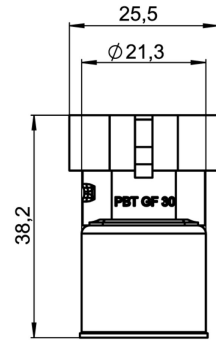
Housing



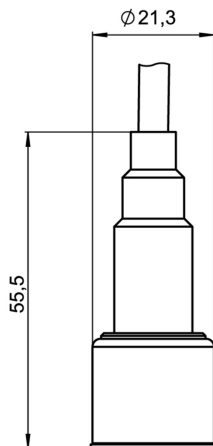
Housing with connector M12-A, 5-pin, stainless steel



Housing with connector DT04, 3-pin

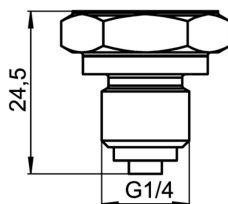


Housing with connector AMP superseal 1.5, 3-pin

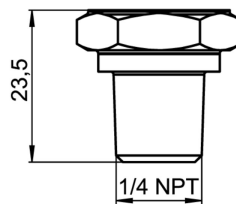


Housing with cable outlet, 3-wire

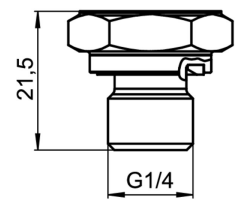
Process connection



G 1/4 B EN 837-1 (BCID: G30)



1/4-18 NPT (BCID: N01)



G 1/4 A DIN 3852-E (BCID: G50)

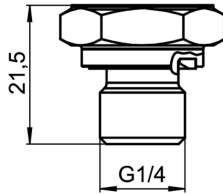
PBM4

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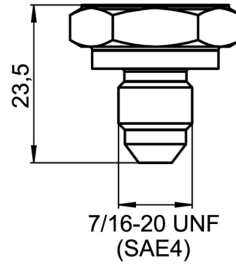
PBM4-13.###R.####.##6#

Dimensional drawings (mm)

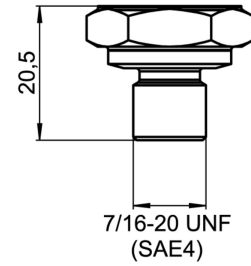
Process connection



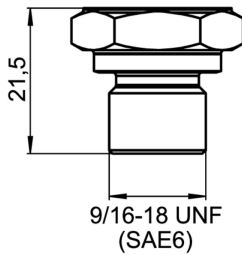
G 1/4 A DIN 3852-E with \varnothing 0,6 mm pressure channel (BCID: G50)



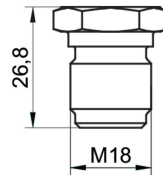
7/16-20 UNF with cone (SAE 4) (BCID: U01)



7/16-20 UNF with O-ring (SAE 4) (BCID: U02)



9/16-18 UNF with O-ring (SAE 6) (BCID: U04)



M18 x 1.5 IO 261 / ISO 965 (M07)

PBM4

Pressure sensor for industrial and mobile hydraulic applications

PBM4-13.###R.####.##6#

Electrical connection

| Output signal | Equivalent circuit | Electrical connection | Function | Pin assignment | | | | | | | |
|--|--|-----------------------|--|----------------|----|------|------|--------------|-------------|------|---------|
| Current output, 2-wire (e.g. 4 ... 20 mA) | | | <table border="1"> <tr><td>+Vs</td><td>1</td></tr> <tr><td>Iout</td><td>3</td></tr> <tr><td>n.c.</td><td>2, 4, 5</td></tr> </table> | +Vs | 1 | Iout | 3 | n.c. | 2, 4, 5 | | |
| | | +Vs | 1 | | | | | | | | |
| | | Iout | 3 | | | | | | | | |
| | | n.c. | 2, 4, 5 | | | | | | | | |
| | | | <table border="1"> <tr><td>+Vs</td><td>1</td></tr> <tr><td>Iout</td><td>3</td></tr> <tr><td>Frame ground</td><td>Plug thread</td></tr> <tr><td>n.c.</td><td>2, 4, 5</td></tr> </table> | +Vs | 1 | Iout | 3 | Frame ground | Plug thread | n.c. | 2, 4, 5 |
| | | +Vs | 1 | | | | | | | | |
| | | Iout | 3 | | | | | | | | |
| Frame ground | Plug thread | | | | | | | | | | |
| n.c. | 2, 4, 5 | | | | | | | | | | |
| | <table border="1"> <tr><td>+Vs</td><td>1</td></tr> <tr><td>Iout</td><td>2</td></tr> <tr><td>n.c.</td><td>3, 4</td></tr> </table> | +Vs | 1 | Iout | 2 | n.c. | 3, 4 | | | | |
| +Vs | 1 | | | | | | | | | | |
| Iout | 2 | | | | | | | | | | |
| n.c. | 3, 4 | | | | | | | | | | |
| | <table border="1"> <tr><td>+Vs</td><td>A</td></tr> <tr><td>Iout</td><td>C</td></tr> <tr><td>n.c.</td><td>B</td></tr> </table> | +Vs | A | Iout | C | n.c. | B | | | | |
| +Vs | A | | | | | | | | | | |
| Iout | C | | | | | | | | | | |
| n.c. | B | | | | | | | | | | |
| | <table border="1"> <tr><td>+Vs</td><td>3</td></tr> <tr><td>Iout</td><td>1</td></tr> <tr><td>n.c.</td><td>2</td></tr> </table> | +Vs | 3 | Iout | 1 | n.c. | 2 | | | | |
| +Vs | 3 | | | | | | | | | | |
| Iout | 1 | | | | | | | | | | |
| n.c. | 2 | | | | | | | | | | |
| | <table border="1"> <tr><td>+Vs</td><td>BN</td></tr> <tr><td>Iout</td><td>BU</td></tr> <tr><td>n.c.</td><td>BK</td></tr> </table> | +Vs | BN | Iout | BU | n.c. | BK | | | | |
| +Vs | BN | | | | | | | | | | |
| Iout | BU | | | | | | | | | | |
| n.c. | BK | | | | | | | | | | |
| | <table border="1"> <tr><td>+Vs</td><td>1</td></tr> <tr><td>Iout</td><td>2</td></tr> <tr><td>n.c.</td><td>3, 4</td></tr> </table> | +Vs | 1 | Iout | 2 | n.c. | 3, 4 | | | | |
| +Vs | 1 | | | | | | | | | | |
| Iout | 2 | | | | | | | | | | |
| n.c. | 3, 4 | | | | | | | | | | |

PBM4

Pressure sensor for industrial and mobile hydraulic applications

PBM4-13.###R.###.##6#

Electrical connection

| Output signal | Equivalent circuit | Electrical connection | Function | Pin assignment | | | | | | | | | |
|---|---|-----------------------|---|----------------|----|-----------|----|-----------|---|--------------|-------------|------|------|
| Voltage output, 3-wire (e.g. 0 ... 10 V) | | | <table border="1"> <tr><td>+Vs</td><td>1</td></tr> <tr><td>Uout</td><td>4</td></tr> <tr><td>GND (0 V)</td><td>3</td></tr> <tr><td>n.c.</td><td>2, 5</td></tr> </table> | +Vs | 1 | Uout | 4 | GND (0 V) | 3 | n.c. | 2, 5 | | |
| | | +Vs | 1 | | | | | | | | | | |
| | | Uout | 4 | | | | | | | | | | |
| | | GND (0 V) | 3 | | | | | | | | | | |
| | | n.c. | 2, 5 | | | | | | | | | | |
| | | | <table border="1"> <tr><td>+Vs</td><td>1</td></tr> <tr><td>Uout</td><td>4</td></tr> <tr><td>GND (0 V)</td><td>3</td></tr> <tr><td>Frame ground</td><td>Plug thread</td></tr> <tr><td>n.c.</td><td>2, 5</td></tr> </table> | +Vs | 1 | Uout | 4 | GND (0 V) | 3 | Frame ground | Plug thread | n.c. | 2, 5 |
| | | +Vs | 1 | | | | | | | | | | |
| Uout | 4 | | | | | | | | | | | | |
| GND (0 V) | 3 | | | | | | | | | | | | |
| Frame ground | Plug thread | | | | | | | | | | | | |
| n.c. | 2, 5 | | | | | | | | | | | | |
| | <table border="1"> <tr><td>+Vs</td><td>1</td></tr> <tr><td>Uout</td><td>3</td></tr> <tr><td>GND (0 V)</td><td>2</td></tr> <tr><td>n.c.</td><td>4</td></tr> </table> | +Vs | 1 | Uout | 3 | GND (0 V) | 2 | n.c. | 4 | | | | |
| +Vs | 1 | | | | | | | | | | | | |
| Uout | 3 | | | | | | | | | | | | |
| GND (0 V) | 2 | | | | | | | | | | | | |
| n.c. | 4 | | | | | | | | | | | | |
| | <table border="1"> <tr><td>+Vs</td><td>A</td></tr> <tr><td>Uout</td><td>B</td></tr> <tr><td>GND (0 V)</td><td>C</td></tr> </table> | +Vs | A | Uout | B | GND (0 V) | C | | | | | | |
| +Vs | A | | | | | | | | | | | | |
| Uout | B | | | | | | | | | | | | |
| GND (0 V) | C | | | | | | | | | | | | |
| | <table border="1"> <tr><td>+Vs</td><td>3</td></tr> <tr><td>Uout</td><td>2</td></tr> <tr><td>GND (0 V)</td><td>1</td></tr> </table> | +Vs | 3 | Uout | 2 | GND (0 V) | 1 | | | | | | |
| +Vs | 3 | | | | | | | | | | | | |
| Uout | 2 | | | | | | | | | | | | |
| GND (0 V) | 1 | | | | | | | | | | | | |
| | <table border="1"> <tr><td>+Vs</td><td>BN</td></tr> <tr><td>Uout</td><td>BK</td></tr> <tr><td>GND (0 V)</td><td>BU</td></tr> </table> | +Vs | BN | Uout | BK | GND (0 V) | BU | | | | | | |
| +Vs | BN | | | | | | | | | | | | |
| Uout | BK | | | | | | | | | | | | |
| GND (0 V) | BU | | | | | | | | | | | | |
| | <table border="1"> <tr><td>+Vs</td><td>1</td></tr> <tr><td>Uout</td><td>3</td></tr> <tr><td>GND (0 V)</td><td>2</td></tr> <tr><td>n.c.</td><td>4</td></tr> </table> | +Vs | 1 | Uout | 3 | GND (0 V) | 2 | n.c. | 4 | | | | |
| +Vs | 1 | | | | | | | | | | | | |
| Uout | 3 | | | | | | | | | | | | |
| GND (0 V) | 2 | | | | | | | | | | | | |
| n.c. | 4 | | | | | | | | | | | | |

Ordering information

Ordering key - Configuration possibilities see website

| | |
|---|-------------------------------------|
| Product | PBM4 - 1 3 . ### R . ## ## . ## 6 # |
| Housing material SS 1.4301 AISI 304 | PBM4 1 |
| Accuracy ±0.5 % FS | 3 |

PBM4

Pressure sensor for industrial and mobile hydraulic applications

PBM4-13.###R.###.##6#

Ordering information

Ordering key - Configuration possibilities see website

| | PBM4 | - | 1 | 3 | . | ### | R | . | ## | ## | . | ## | 6 | # |
|---|------|---|---|---|---|-----|---|---|----|----|---|----|---|-----|
| Measuring range | | | | | | | | | | | | | | |
| 0 ... 10 bar (EN) | | | | | | | | | | | | | | B22 |
| 0...25 bar (EN) | | | | | | | | | | | | | | B26 |
| 0 ... 60 bar (EN) | | | | | | | | | | | | | | B29 |
| 0 ... 100 bar (EN) | | | | | | | | | | | | | | B31 |
| 0 ... 160 bar (EN) | | | | | | | | | | | | | | B33 |
| 0 ... 250 bar (EN) | | | | | | | | | | | | | | B35 |
| 0 ... 400 bar (EN) | | | | | | | | | | | | | | B38 |
| 0...600 bar (EN) | | | | | | | | | | | | | | B39 |
| 0...1000 bar (EN) | | | | | | | | | | | | | | B41 |
| 0...2000 bar (EN) | | | | | | | | | | | | | | B47 |
| 0...400 psi (ANSI) | | | | | | | | | | | | | | H26 |
| 0...1000 psi (ANSI) | | | | | | | | | | | | | | H30 |
| 0...1500 psi (ANSI) | | | | | | | | | | | | | | H31 |
| 0...3000 psi (ANSI) | | | | | | | | | | | | | | H34 |
| 0...6000 psi (ANSI) | | | | | | | | | | | | | | H38 |
| 0...9000 psi (ANSI) | | | | | | | | | | | | | | H39 |
| 0...15000 psi (ANSI) | | | | | | | | | | | | | | H41 |
| Kind of pressure | | | | | | | | | | | | | | |
| Relative (gauged) | | | | | | | | | | | | | | R |
| Output signal | | | | | | | | | | | | | | |
| 4...20 mA | | | | | | | | | | | | | | A1 |
| 0...10 V | | | | | | | | | | | | | | A2 |
| 0...5 V | | | | | | | | | | | | | | A4 |
| 0.5...4.5 V | | | | | | | | | | | | | | A5 |
| 0.5...4.5 V ratiometric | | | | | | | | | | | | | | A6 |
| 1...6 V | | | | | | | | | | | | | | A8 |
| CANopen | | | | | | | | | | | | | | C2 |
| Output Connection | | | | | | | | | | | | | | |
| M12-A, 5-pin | | | | | | | | | | | | | | 15 |
| M12-A, 5-pin, stainless steel | | | | | | | | | | | | | | 16 |
| Cable (2 m) | | | | | | | | | | | | | | 52 |
| Bayonet connection DIN 72585, 4-pin | | | | | | | | | | | | | | 85 |
| AMP Superseal 1.5, 3-pin | | | | | | | | | | | | | | 86 |
| DT04, 4-pin | | | | | | | | | | | | | | 87 |
| DT04, 3-pin | | | | | | | | | | | | | | 88 |
| Process connection | | | | | | | | | | | | | | |
| G 1/4 B EN 837-1 (G30) | | | | | | | | | | | | | | 02 |
| 1/4-18 NPT (N01) | | | | | | | | | | | | | | 04 |
| G 1/4 A DIN 3852-E (G50) | | | | | | | | | | | | | | 06 |
| M18 × 1.5 ISO 261 / ISO 965 (M07) | | | | | | | | | | | | | | 14 |
| G 1/4 A DIN 3852-E, pressure channel 0.6 mm (G50) | | | | | | | | | | | | | | 26 |
| 7/16-20 UNF cone (SAE 4) (U01) | | | | | | | | | | | | | | 34 |
| 7/16-20 UNF o-ring (SAE 4) (U02) | | | | | | | | | | | | | | 35 |
| 9/16-18 UNF o-ring (SAE 6) (U04) | | | | | | | | | | | | | | 36 |
| Process connection material | | | | | | | | | | | | | | |
| SS 1.4548 AISI 630 | | | | | | | | | | | | | | 6 |

PBM4

Pressure sensor for industrial and mobile hydraulic applications

PBM4-13.###R.###.##6#

Ordering information

Ordering key - Configuration possibilities see website

PBM4 - 1 3 . ### R . ## ## . ## 6 #

Seal

| | |
|--------------|---|
| None | 0 |
| FKM (Viton®) | 3 |

X-ON Electronics

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