

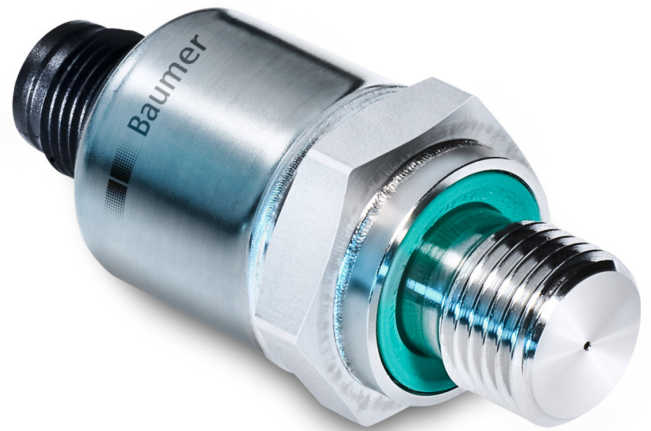
PBM4

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
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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

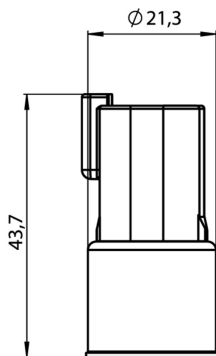
EMC	EN 61000-6-2 EN 61000-6-3
E1 accreditation	E1 accreditation
Safety	UL recognized, UL File number E469449

Operating conditions

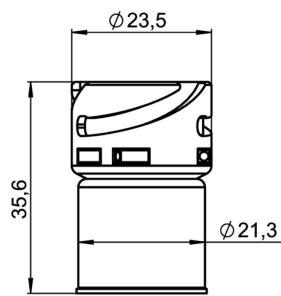
Measuring range (bar)	Proof pressure (bar)	Burst Pressure (bar)
0 ... 10	40	60
0 ... 25	40	60
0 ... 60	100	500
0 ... 100	200	1000
0 ... 160	500	2500
0 ... 250	500	2500
0 ... 400	800	4000
0 ... 600	800	4000
0 ... 1000	1200	> 4000

Dimensional drawings (mm)

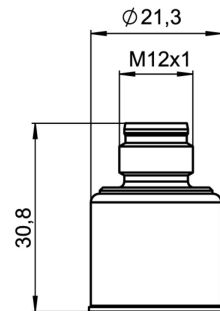
Housing



Housing with connector DT04, 4-pin



Housing with connector Bayonet connection
DIN 72585, 4-pin



Housing with connector M12-A, 5-pin

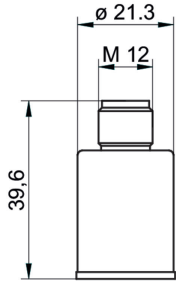
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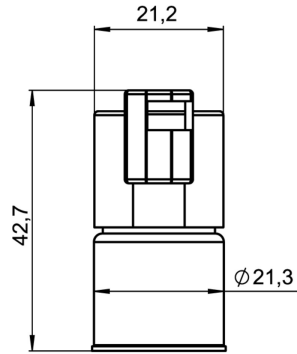
PBM4-13.###R.####.##6#

Dimensional drawings (mm)

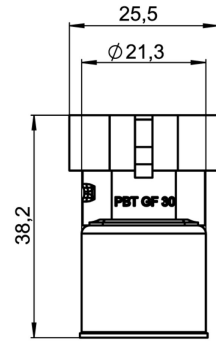
Housing



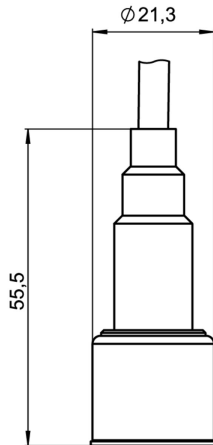
Housing with connector M12-A, 5-pin, stainless steel



Housing with connector DT04, 3-pin

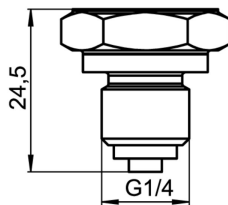


Housing with connector AMP superseal 1.5, 3-pin

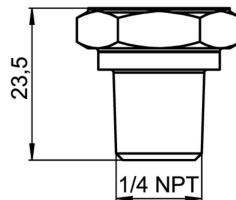


Housing with cable outlet, 3-wire

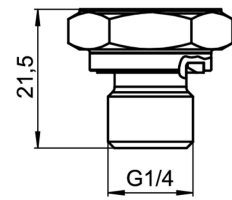
Process connection



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



1/4-18 NPT (BCID: N01)



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

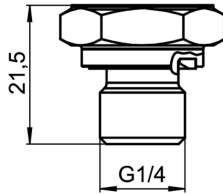
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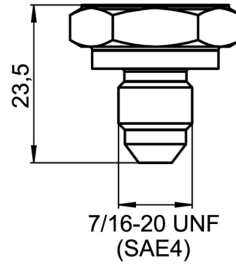
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Dimensional drawings (mm)

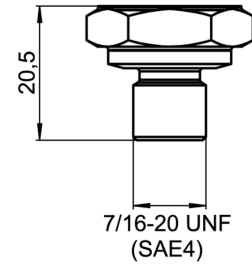
Process connection



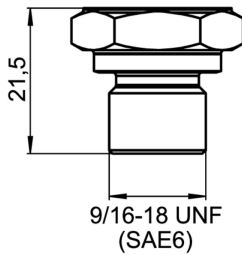
G 1/4 A DIN 3852-E with \varnothing 0,6 mm pressure channel (BCID: G50)



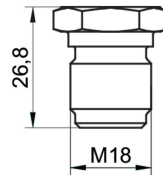
7/16-20 UNF with cone (SAE 4) (BCID: U01)



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



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



M18 \times 1.5 IO 261 / ISO 965 (M07)

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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										
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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				
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Iout	C										
n.c.	B										
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+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				
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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				
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n.c.	3, 4										

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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
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Uout	4										
GND (0 V)	3										
Frame ground	Plug thread										
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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				
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GND (0 V)	C										
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+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				
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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

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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

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Ordering information

Ordering key - Configuration possibilities see website

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

Seal

None	0
FKM (Viton®)	3

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[GSPK1609035TN-7R0.8W-L100](#) [GSPK1003PN-8R0.2W-L100](#) [GSPK151103TN-8R0.2W](#) [GSPK2014035PN-8R0.5W-L100](#) [AS03608MR-LW100-R](#) [24520](#) [SMT-0540-S-2-R](#) [SP570445-4](#) [FS50MS0820-H9.7](#) [FS4014-4-2W](#) [PBM4-13.B38R.A115.2663](#) [9025](#) [9021](#) [1000](#) [3011](#) [HE-31751-000](#) [3698](#) [3708](#) [3806](#) [3808](#) [3810](#) [3812](#) [3814](#) [3816](#) [4477](#) [4532](#) [4605](#) [4613](#) [4622](#) [4634](#) [4642](#) [4645](#) [4670](#) [4898](#)