Baumer
Passion for Sensors

Pressure measurement

PBM4

Pressure sensor for industrial and mobile hydraulic applications

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

Overview

- Standard use in hydraulics from 10 to 1000 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	1000 bar
Measuring range	0… 1000 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 DT04, 4-pin
Cable outlet	2 m, 3-wire
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

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Technical data

Compliance and approvals

EMC	EN 61000-6-2 EN 61000-6-3

Compliance and approvals

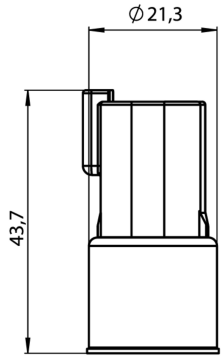
E1 accreditation	E1 accreditation

Operating conditions

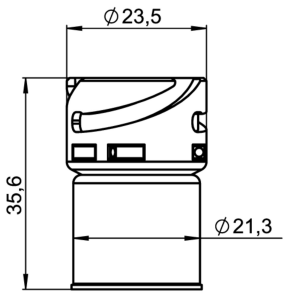
Measuring range (bar)	Proof pressure (bar)	Burst Pressure (bar)
0 … 10	40	60
0 … 25	40	60
0 … 60	100	500
0 … 100	200	1000
0 … 160	500	2500
0 … 250	500	2500
0 … 400	800	4000
0 … 600	800	4000
0 … 1000	1200	> 4000

Dimensional drawings (mm)

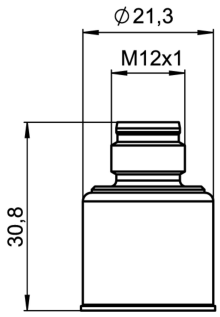
Housing



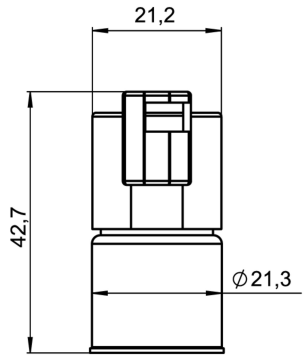
Housing with connector DT04, 4-pin



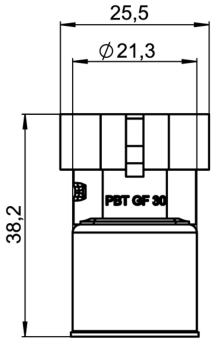
Housing with connector Bayonet connection DIN 72585, 4-pin



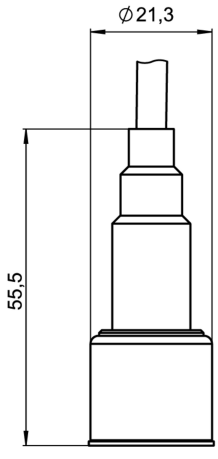
Housing with connector M12-A, 5-pin



Housing with connector DT04, 3-pin



Housing with connector AMP superseal 1.5, 3-pin

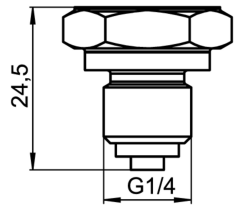


Housing with cable outlet, 3-wire

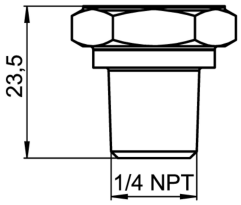
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Dimensional drawings (mm)

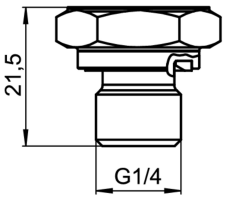
Process connection



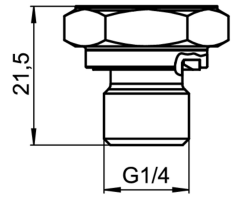
G 1/4 B EN 837-1 (BCID: G30)



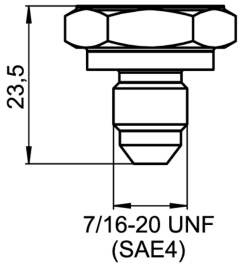
1/4-18 NPT (BCID: N01)



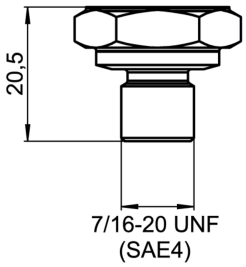
G 1/4 A DIN 3852-E (BCID: G50)



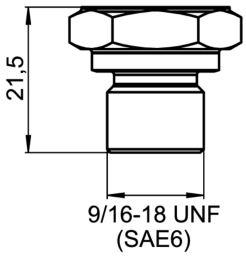
G 1/4 A DIN 3852-E with Ø 0,6 mm pressure channel (BCID: G50)



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



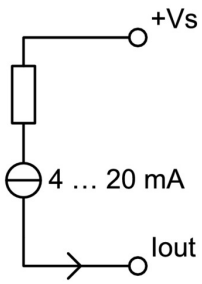
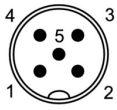
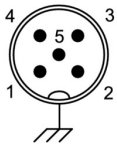
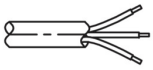
7/16-20 UNF with O-ring (SAE 4) (BCID: U02)



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

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Electrical connection

Output signal	Equivalent circuit	Electrical connection	Function	Pin assignment
Current output, 2-wire (e.g. 4 … 20 mA)			+Vs Iout n.c.	1 3 2, 4, 5
			+Vs Iout Frame ground n.c.	1 3 Plug thread 2, 4, 5
			+Vs Iout n.c.	1 2 3, 4
			+Vs Iout n.c.	A C B
			+Vs Iout n.c.	3 1 2
			+Vs Iout n.c.	BN BU BK
			+Vs Iout n.c.	1 2 3, 4

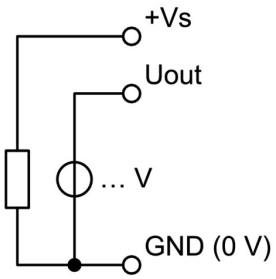
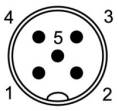
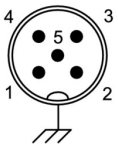
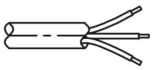
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Electrical connection

Output signal	Equivalent circuit	Electrical connection	Function	Pin assignment
Voltage output, 3-wire (e.g. 0 … 10 V)			+Vs Uout GND (0 V) n.c.	1 4 3 2, 5
			+Vs Uout GND (0 V) Frame ground n.c.	1 4 3 Plug thread 2, 5
			+Vs Uout GND (0 V) n.c.	1 3 2 4
			+Vs Uout GND (0 V)	A B C
			+Vs Uout GND (0 V)	3 2 1
			+Vs Uout GND (0 V)	BN BK BU
			+Vs Uout GND (0 V) n.c.	1 3 2 4

Ordering information

Ordering key - Configuration possibilities see website

	PBM4	-	1	3	.	###	R	.	##	##	.	##	6	#
Product														
	PBM4													
Housing material														
SS 1.4301 AISI 304			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...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		
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	
Seal														
None														0
FKM (Viton®)														3

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