Baumer
Passion for Sensors

Pressure sensor

PBMN high pressure - Configurator

PBMN-2####R######4#00#0

Overview

- Precision measurement from 60 to 1600 bar
- Excellent temperature stability
- Robust stainless steel housing
- Dry measuring cell
- Optionally available with Ex certification (4 ... 20 mA output signal)
- Relative pressure measurement



Picture similar

Technical data

Performance characteristics	
Pressure type	Relative (gauged)
Compensated temperature range	-40 … 85 °C
Long term stability	≤ 0.1 % FSR/a
Max. measuring error	± 0.1 % FSR ± 0.25 % FSR Including zero-point and span error, non-linearity (by terminal base line), hysteresis and non-repeatability (EN 61298-2) For turndown, multiply this value by the applied turndown ratio
Max. measuring span	1600 bar
Max. turndown ratio	5 : 1
Measuring range	0 … 1600 bar
Standard error of measurement (BFSL)	0.04 % FSR 0.1 % FSR Including non-linearity, hysteresis and non-repeatability according BFSL For turndown, multiply this value by the applied turndown ratio
Min. measuring span	60 bar
Rise time (10 ... 90 %)	≤ 5 ms
Temperature coefficient	≤ 0.03 % FSR/10 K , measuring span ≤ 0.03 % FSR/10 K , zero point
Process conditions	
Process temperature	-40 … 120 °C
Process pressure	Refer to section "Operating conditions"
Process connection	
Connection variants	Refer to section "Dimensional drawings"
Wetted parts material	AISI 304 (1.4301)
Wetted parts material, membrane	AISI 630 (1.4542)

Process connection	
Wetted parts material, gasket	NBR, optional FKM, optional, gaskets require a minimum ambient temperature of -20 °C and a minimum medium temperature of -25 °C
Ambient conditions	
Operating temperature range	-40 … 85 °C
Storage temperature range	-40 … 85 °C
Degree of protection (EN 60529)	IP 65 , with connector DIN EN 175301-803 A (DIN 43650 A), 4-pin IP 67 , with cable outlet IP 67 , with connector M12-A, 4-pin
Insulation resistance	> 100 MΩ , 500 V DC
Shock (EN 60068-2-27)	50 g / 11 ms, 100 g / 6 ms, 10 impulses per axis and direction
Vibration (sinusoidal) (EN 60068-2-6)	1.5 mm p-p (10 … 58 Hz), 10 g (58 Hz … 2 kHz), 10 cycles (2.5 h) per axis
Vibration, broad-band random (EN 60068-2-64)	0.1 g² / Hz, > 10 gRMS (20 Hz … 1 kHz), 30 min. per axis
Output signal	
Current output	4 … 20 mA , 2-wire 20 … 4 mA , 2-wire
Voltage output	0 … 10 V , 3-wire 0 … 5 V , 3-wire 0.5 … 4.5 V , 3-wire 1 … 5 V , 3-wire 10 … 0 V , 3-wire
Load resistance	≥ 5 kΩ
Short circuit protection	Yes
Shunt resistance	Rs ≤ (Vs - 8 V)/0.0205 A Rs ≤ 750 Ω, Vs = 24 V

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Technical data

Housing	
Style	Compact transmitter
Overall size	Refer to section "Dimensional drawings"
Material	AISI 316L (1.4404)
Electrical connection	
Connector	DIN EN 175301-803 A (DIN 43650 A), 4-pin M12-A, 4-pin
Cable outlet	1.5 m, 3-wire, shielded
Power supply	
Voltage supply range	13 … 30 V DC , with voltage output 8 … 30 V DC , with current output
ATEX II 1/2G Ex ia IIC T4/T6 Ga/Gb	
Please note	For the application in Ex zone you have to respect the conditions mentioned in the type examination certificate (SEV 11 ATEX 0129 / IECEx SEV 22.0006).You will find the relevant certificates and instructions at www.baumer.com
Maximum values for barrier selection, Ui	30 V DC , max.
Maximum values for barrier selection, Ii	100 mA
Maximum values for barrier selection, Pi	750 mW
Internal capacitance, Ci	58 nF
Internal inductance, Li	0.22 µH
ATEX II 1D Ex ia IIIC T (200) 107°C IP6X Da	
Please note	For the application in Ex zone you have to respect the conditions mentioned in the type examination certificate (SEV 11 ATEX 0129 / IECEx SEV 22.0006).You will find the relevant certificates and instructions at www.baumer.com

ATEX II 1D Ex ia IIIC T (200) 107°C IP6X Da	
Degree of protection for cable accessories	IP 65
Maximum values for barrier selection, Ui	30 V DC , max.
ATEX II 1G Ex ia IIC T4/T6 Ga	
Please note	For the application in Ex zone you have to respect the conditions mentioned in the type examination certificate (SEV 11 ATEX 0129 / IECEx SEV 22.0006).You will find the relevant certificates and instructions at www.baumer.com
Maximum values for barrier selection, Ui	30 V DC , max.
Maximum values for barrier selection, Ii	100 mA
Maximum values for barrier selection, Pi	750 mW
Internal capacitance, Ci	58 nF
Internal inductance, Li	0.22 µH
Compliance and approvals	
EMC	EN 61000-6-3 2014/30/EU (EMC) 2014/34/EU (EX)
Explosion protection	ATEX II 1/2G Ex ia IIC T4/T6 Ga/Gb ATEX II 1D Ex ia IIIC T (200) 107 °C IP6X Da ATEX II 1G Ex ia IIC T4/T6 Ga

Operating conditions

Measuring range (bar)	Proof pressure (bar)	Burst Pressure (bar)
0 … 60	120	480
0 … 100	200	800
0 … 160	320	1280
0 … 250	500	2000
0 … 400	800	3200
0 … 600	1200	4000
0 … 1000	2000	4000
0 … 1600	3200	4000

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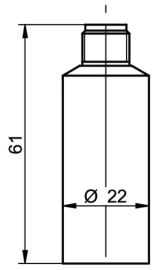
Operating conditions

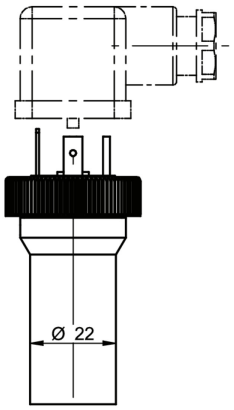
Explosion protection (with 4 … 20 mA output signal only)	Connectors [code]	Order key
ATEX II 1G Ex ia IIC T4/T6 Ga	M12-A [14]	PBMN-######A114######1#
	Connection head [54]	PBMN-######A154######1#
ATEX II 1D Ex ia IIIC T (200) 107 °C IP6X DA	M12-A [14]	PBMN-######A1########1#
	Connection head [54]	
	DIN EN 175301-803 A [44]	
ATEX II 1/2G Ex ia IIC T4/T6 Ga/Gb	DIN EN 175301-803 A [44]	PBMN-######A144######1#

Dimensional drawings (mm)

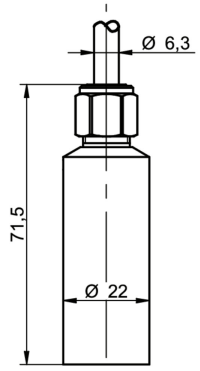
Housing



Housing with connector M12-A, 4-pin

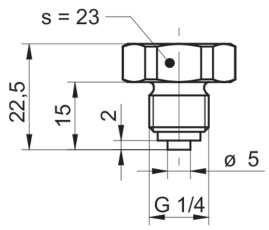


Housing with connector DIN EN 175301-803 A (DIN 43650 A), 4-pin

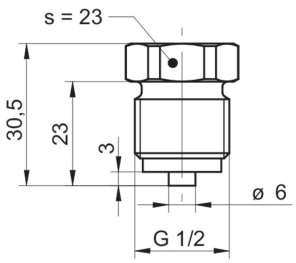


Housing with cable outlet, 3-wire, 1.5 m length

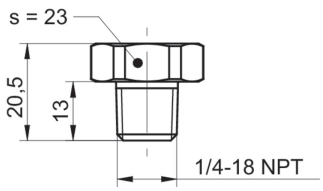
Process connection



G30-02
G 1/4 B EN 837-1 (BCID: G30)



G31-03
G 1/2 B EN 837-1 (BCID: G31)



N01-04
1/4-18 NPT (BCID: N01)

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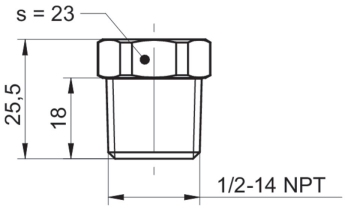
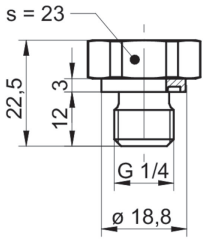
Dimensional drawings (mm)

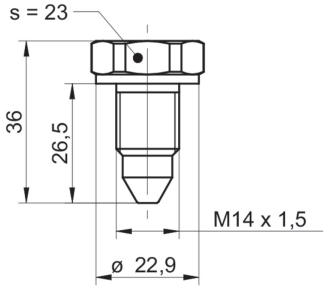
Process connection



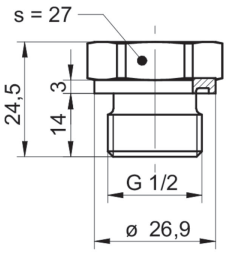
N02-05
1/2-14 NPT (BCID: N02)



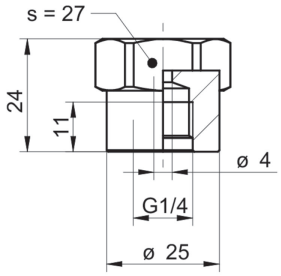
G50-06
G 1/4 A DIN EN ISO 1179-2 (3852-E) (BCID: G50)



M05-08
M14 x 1.5, cone 60° (BCID: M05)



G51-09
G 1/2 A DIN EN ISO 1179-2 (3852-E) (BCID: G51)



G21-12
G 1/4 A ISO 228-1 female thread (BCID: G21)

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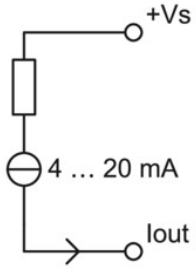
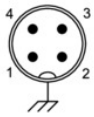
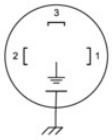
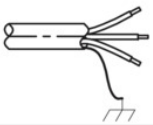
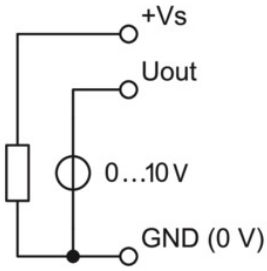
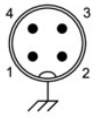
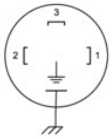
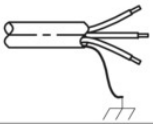
Electrical connection

Output signal	Equivalent circuit	Electrical connection	Function	Pin assignment
4 … 20 mA (2-wire)			+Vs	1
			Iout	3
			Frame Ground	Plug thread
			n.c.	2, 4
			+Vs	1
			Iout	2
			Frame Ground	Grounding lug
			n.c.	3
			+Vs	RD
			Iout	BU
			Frame Ground	Shield
			n.c.	WH
0 … 10 V (3-wire)			+Vs	1
			Uout	2, 4
			GND (0 V)	3
			Frame Ground	Plug thread
			+Vs	1
			Uout	3
			GND (0 V)	2
			Frame Ground	Grounding lug
			+Vs	RD
			Uout	WH
			GND (0 V)	BU
			Frame Ground	Shield

Ordering information

Ordering key - Configuration possibilities see website

	PBMN	-	2	#	###	R	##	##	##	4	#	0	0	#	0
Product															
	PBMN														
Housing material															
Stainless steel 1.4404 AISI 316L			2												
Accuracy															
±0.25 % FS				4											
±0.10 % FS				5											

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Ordering information

Ordering key - Configuration possibilities see website

	PBMN	-	2	#	###	R	##	##	##	4	#	0	0	#	0
Measuring range															
0 ... 60 bar (EN)					B29										
0 ... 100 bar (EN)					B31										
0 ... 160 bar (EN)					B33										
0 ... 200 bar (EN)					B34										
0 ... 250 bar (EN)					B35										
0 ... 400 bar (EN)					B38										
0...600 bar (EN)					B39										
0...1000 bar (EN)					B41										
0...1600 bar (EN)					B42										
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										
0...20000 psi (ANSI)					H42										
Kind of pressure															
Relative (gauged)						R									
Output signal															
20...4 mA							A0								
4...20 mA							A1								
0...10 V							A2								
1...5 V							A3								
0...5 V							A4								
0.5...4.5 V							A5								
10...0 V							A7								
Output Connection															
M12-A, 4-pin								14							
DIN EN 175301-803 A (DIN 43650 A), 4-pin								44							
Cable outlet 1.5 m, 3-wire, shielded								53							

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Ordering information

Ordering key - Configuration possibilities see website

	PBMN	-	2	#	###	R	##	##	##	4	#	0	0	#	0
Process connection															
G 1/4 B EN 837-1 (G30)									02						
G 1/2 B EN 837-1 (G31)									03						
1/4-18 NPT (N01)									04						
1/2-14 NPT (N02)									05						
G 1/4 A DIN EN ISO 1179-2 (3852-E) (G50)									06						
M20 × 1.5 ISO 261 / ISO 965 (M08)									07						
M14 x 1.5, cone 60° (M05)									08						
G 1/2 A DIN EN ISO 1179-2 (3852-E)(G51)									09						
G 1/4 A ISO 228-1 female thread (G21)									12						
G 1/2 B EN 837-1 with integrated damping element (P <= 600 bar) (G31)									23						
1/4-18 NPT with integrated damping element (P <= 1000 bar) (N01)									24						
1/2-14 NPT with integrated damping element (P <= 1000 bar) (N02)									25						
G 1/4 A DIN EN ISO 1179-2 (3852-E) pressure channel Ø 0,6 mm (G50)									26						
G 1/2 A DIN EN ISO 1179-2 (3852-E) with integrated damping element									29						
Process connection material															
Stainl. steel 1.4301 AISI 304										4					
Seal															
None											0				
NBR standard											1				
FKM											3				
Oil filling															
Without												0			
Display															
Without display													0		
Explosion protection															
Without														0	
ATEX according to SEV 11 ATEX 0129														1	
Approvals															
Standard approvals															0

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