

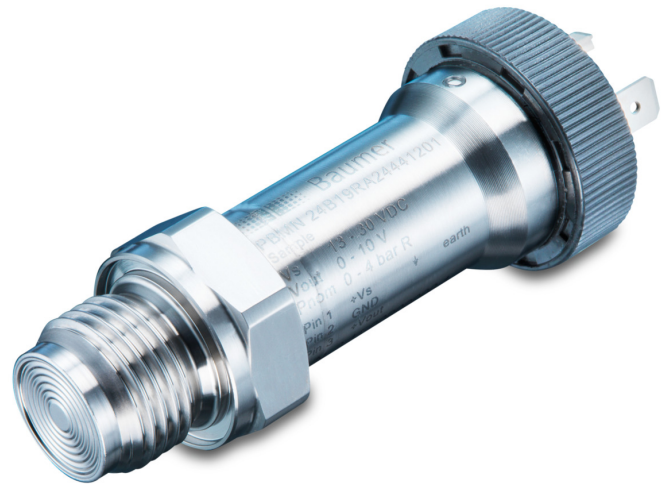
PBMN flush

Fully welded pressure transmitter with flush membrane

PBMN-2#####2##0##

Overview

- Flush membrane
- Fully welded version
- Robust stainless steel housing
- External programming of zero point and span with FlexProgrammer 9701
- High overpressure resistance
- Available with optional ATEX approval (4 ... 20 mA output signal)



Technical data

Performance characteristics

Pressure type	Absolute Relative (gauged)
Compensated temperature range	-40 ... 85 °C
Long term stability	≤ 0.1 % FSR/a , measuring range > 1 bar ≤ 1 mbar , measuring range ≤ 1 bar
Max. measuring error	± 0.1 % FSR ± 0.25 % FSR ± 0.5 % 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	400 bar
Max. turndown ratio	5 : 1
Measuring range	-1 ... 400 bar
Standard error of measurement (BFSL)	± 0.04 % FSR ± 0.1 % FSR ± 0.2 % FSR Including non-linearity, hysteresis and non-repeatability according BFSL For turndown, multiply this value by the applied turndown ratio
Min. measuring span	0.1 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 ... 125 °C , without cooling neck -40 ... 200 °C , with cooling neck
Process pressure	Refer to section "Operating conditions"

Process conditions

SIP/CIP compatibility	< 60 min, without cooling neck @ medium temperature up to 150 °C Permanent, with cooling neck @ medium temperature up to 200 °C
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Process connection

Connection variants	Refer to section "Dimensional drawings"
Wetted parts material	AISI 316L (1.4404)
Wetted parts material, membrane	AISI 316L (1.4435)
Wetted parts material, gasket	EPDM, optional EPDM O-rings are conform to 3-A Sanitary Standard 18-03 Class II, EPDM gaskets are conform to 3-A Sanitary Standard 18-03 Class I (8% milk fat max.) FKM (Viton®), optional FKM (Viton®) gaskets require a minimum ambient temperature of -20 °C and a minimum medium temperature of -25 °C NBR, optional

Surface roughness (in contact with medium)

Membrane	Ra ≤ 0.4 µm
Weld joint	Ra ≤ 0.8 µm

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 IP 67 , with shielded cable
Insulation resistance	> 100 MΩ , 500 V DC
Bump (EN 60068-2-27)	100 g / 2 ms, 4000 impulses per axis and direction

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Ambient conditions

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 g ² / 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, with voltage output R = (U _{ver} - 8 V) / 20 mA, with current output
Insulation resistance	> 100 MΩ, 500 V DC
Short circuit protection	Yes
Shunt resistance	R _s ≤ (V _s - 8 V) / 0.0205 A R _s ≤ 270 Ω, V _s = 24 V

IO-Link interface

IO-Link version	1.1
IO-Link port type	Class A
Baud rate	38,4 kbaud (COM2)
Cycle time	≥ 2.3 ms
Process data length	24 bit
SIO-mode	No
Process data (cyclic)	Process pressure
Diagnostic data (acyclic)	Process temperature

Housing

Style	Compact transmitter Connection head
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 M12-A, 5-pin, stainless steel, IO-Link output
Cable gland	Cable Ø 8 ... 10, stainless steel
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 18 ... 30 V DC, with IO-Link
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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 ATEX Type Examination Certificate (SEV 11 ATEX 0129). You will find the relevant certificates and instructions at www.baumer.com
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Maximum values for barrier selection, Ui	30 V DC
Maximum values for barrier selection, Ii	100 mA
Maximum values for barrier selection, Pi	750 mW
Internal capacitance, Ci	31 nF
Internal inductance, Li	3 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 ATEX Type Examination Certificate (SEV 11 ATEX 0129). You will find the relevant certificates and instructions at www.baumer.com
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Voltage supply range, Un	30 V DC
Degree of protection for cable accessories	IP 65

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 ATEX Type Examination Certificate (SEV 11 ATEX 0129). You will find the relevant certificates and instructions at www.baumer.com
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Maximum values for barrier selection, Ui	30 V DC
Maximum values for barrier selection, Ii	100 mA
Maximum values for barrier selection, Pi	750 mW
Internal capacitance, Ci	31 nF
Internal inductance, Li	3 µH

Compliance and approvals

EMC	EN 61000-6-2 EN 61000-6-3
Explosion protection	ATEX II 1/2G Ex ia IIC T4/T6 Ga/Gb ATEX II 1/2G Ex ia IIC T3/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 ATEX II 1G Ex ia IIC T3/T4/T6 Ga

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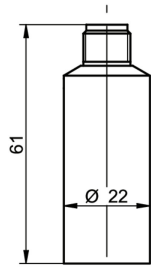
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Operating conditions

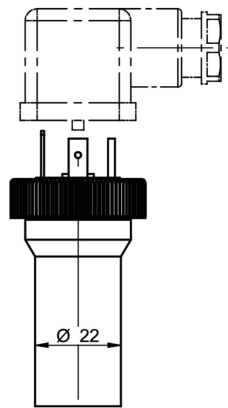
Measuring range (bar)								Proof pressure (bar)	Burst Pressure (bar)
0 ... 0,1 0 ... 0,16 0 ... 0,25								1	2
-0,1 ... 0,1 -0,2 ... 0,2 -1 ... 0	-1 ... 0,6	0 ... 0,4	0 ... 0,6	0 ... 1				3	6
-1 ... 1,5	-1 ... 3	-1 ... 5	0 ... 1,6	0 ... 2	0 ... 2,5	0 ... 4		15	30
	-1 ... 9	-1 ... 15	0 ... 6	0 ... 10	0 ... 16	0 ... 20		60	120
		-1 ... 24	0 ... 25					70	140
		-1 ... 39	0 ... 40					135	270
			0 ... 100					400	800
			-1 ... 399	0 ... 400				690	1350

Dimensional drawings (mm)

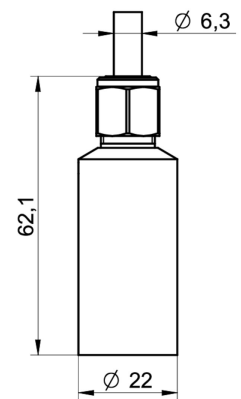
Housing



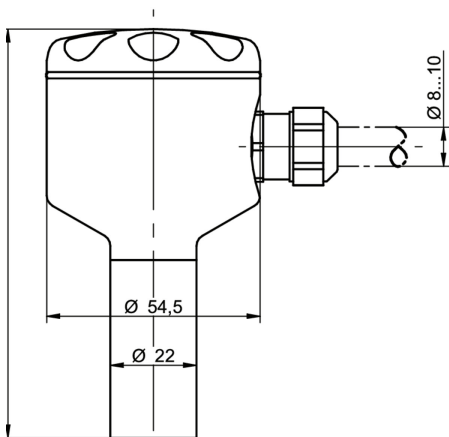
Housing with connector M12-A, 4-pin



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



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



Field housing with cable gland

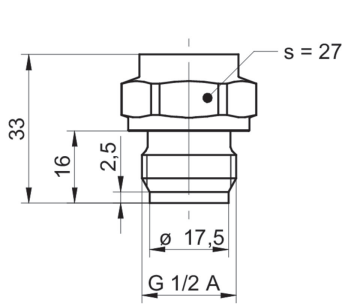
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Fully welded pressure transmitter with flush membrane

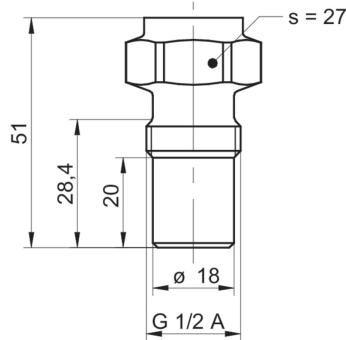
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Dimensional drawings (mm)

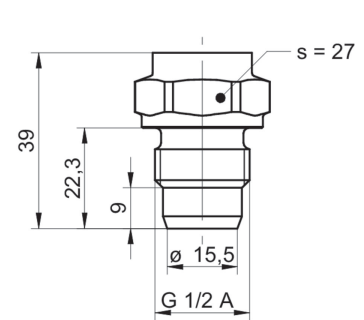
Process connection



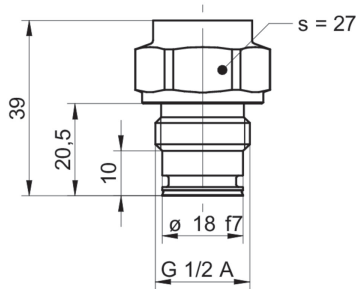
G51-41
G 1/2 A DIN 3852-E (BCID: G51)



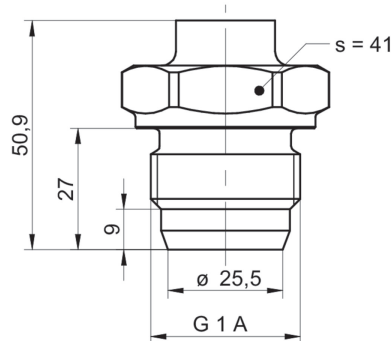
A03-48
G 1/2 A hygienic (BCID: A03)



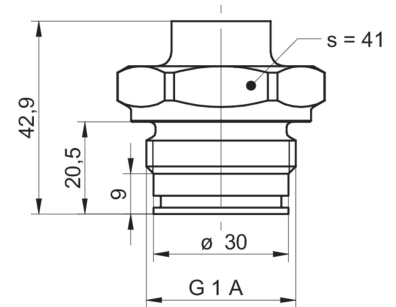
G08-42
G 1/2 A ISO 228-1 with cone (BCID: G08)



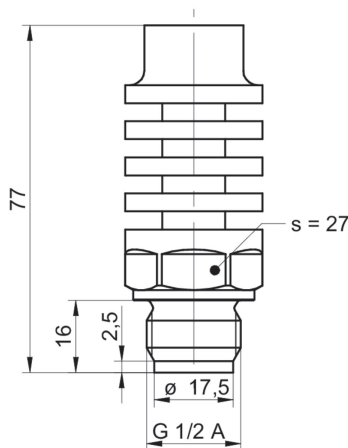
G09-46
G 1/2 A DIN 3852-E with O-ring at the front
(BCID: G09)



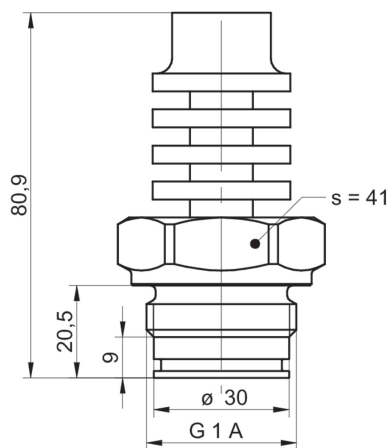
A04-44
G 1 A hygienic (BCID: A04)



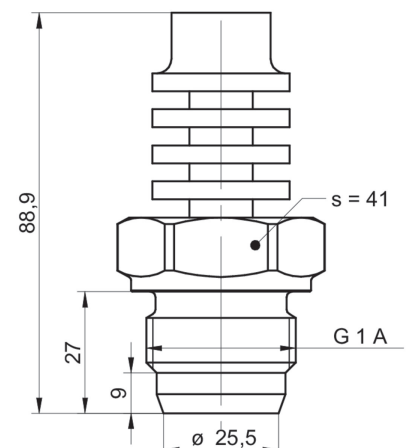
G12-43
G 1 A DIN 3852-E with O-ring at the front
(BCID: G12)



G51-71
G 1/2 A DIN 3852-E with cooling neck (BCID: G51)



G12-73
G 1 A DIN 3852-E with O-ring at the front with
cooling neck (BCID: G12)



A04-74
G 1 A hygienic with cooling neck (BCID: A04)

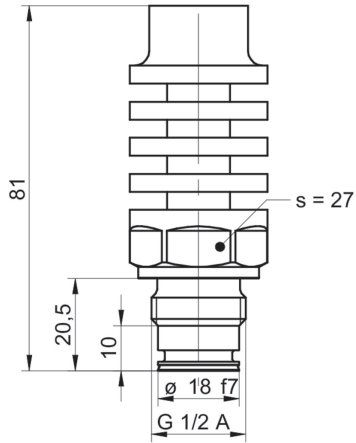
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Dimensional drawings (mm)

Process connection



G09-76

G 1/2 A DIN 3852-E with O-ring at the front
with cooling neck (BCID: G09)

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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	1
			Iout	2
			Frame Ground	Shield
			n.c.	3, 4
			+Vs	RD
			Iout	BU
			Frame Ground	Shield
			n.c.	WH
			+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
			n.c.	4
			+Vs	1
			Uout	3
			GND (0 V)	2
			Frame Ground	Shield
			n.c.	4
			+Vs	RD
			Uout	WH
			GND (0 V)	BU
			Frame Ground	Shield
			n.c.	4
			+Vs	1
			GND (0 V)	3
			SW1, IO-Link	4
			Iout	2
			Frame Ground	Plug thread
			n.c.	5

Ordering information

Ordering key - Configuration possibilities see website

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Ordering information

Ordering key - Configuration possibilities see website

	PBMN	-	2	#	###	#	##	##	##	2	#	#	0	#	#
Product	PBMN														
Housing material															
Stainless steel 1.4404 AISI 316L			2												
Accuracy															
±0.25 % FS				4											
±0.10 % FS				5											
Measuring range															
0...0,1 bar (EN)					B08										
0...0,16 bar (EN)					B09										
0 ... 0.25 bar (EN)					B10										
0 ... 0.4 bar (EN)					B11										
0...0,6 bar (EN)					B12										
0...1 bar (EN)					B15										
0...1,6 bar (EN)					B16										
0...2 bar (EN)					B17										
0 ... 2.5 bar (EN)					B18										
0 ... 4 bar (EN)					B19										
0...12 bar (EN)					B1K										
-1...39 bar (EN)					B1L										
0 ... 6 bar (EN)					B20										
0 ... 10 bar (EN)					B22										
0 ... 16 bar (EN)					B24										
0...20 bar (EN)					B25										
0...25 bar (EN)					B26										
0 ... 40 bar (EN)					B27										
-0,1...0,1 bar (EN)					B2H										
0 ... 100 bar (EN)					B31										
0 ... 400 bar (EN)					B38										
-0,2...0,2 bar (EN)					B4G										
-0,6...0 bar (EN)					B58										
-1...0 bar (EN)					B59										
-1...0,6 bar (EN)					B72										
-1...1 bar (EN)					B73										
-1 ... 1,5 bar (EN)					B74										
-1...2 bar (EN)					B75										
-1...3 bar (EN)					B76										
-1...5 bar (EN)					B77										
-1...9 bar (EN)					B79										
-1...15 bar (EN)					B81										
-1...24 bar (EN)					B82										
0...5 bar (EN)					B98										
0...1.5 psi (ANSI)					H08										
0...4 psi (ANSI)					H10										
0...6 psi (ANSI)					H11										
0...10 psi (ANSI)					H13										
0...15 psi (ANSI)					H15										
0...25 psi (ANSI)					H16										
0...30 psi (ANSI)					H17										
0...60 psi (ANSI)					H19										
0...20 psi (ANSI)					H1C										

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Ordering information

Ordering key - Configuration possibilities see website

	PBMN	-	2	#	###	#	##	##	##	2	#	#	0	#	#
0...500 psi (ANSI)						H1E									
-30Hg...600 psi (ANSI)						H1L									
0...100 psi (ANSI)						H21									
0...160 psi (ANSI)						H22									
0...200 psi (ANSI)						H23									
0...250 psi (ANSI)						H24									
0...300 psi (ANSI)						H25									
0...400 psi (ANSI)						H26									
0...600 psi (ANSI)						H27									
-30HG...60 psi (ANSI)						H2C									
0...5 psi (ANSI)						H2N									
0...2 psi (ANSI)						H2Y									
0...1500 psi (ANSI)						H31									
0...6000 psi (ANSI)						H38									
-30HG...0 (ANSI)						H59									
-30HG...15 psi (ANSI)						H73									
-30HG...30 psi (ANSI)						H75									
-30HG...100 psi (ANSI)						H78									
-30HG...150 psi (ANSI)						H79									
-30HG...220 psi (ANSI)						H81									
-30HG...300 psi (ANSI)						H82									
0...3 psi (ANSI)						H93									
0...1 mH2O (EN)						J08									
0...1,6 mH2O (EN)						J09									
0...2,5 mH2O (EN)						J10									
0...4 mH2O (EN)						J11									
0...6 mH2O (EN)						J12									
0...10 mH2O (EN)						J15									
0...16 mH2O (EN)						J16									
0...20 mH2O (EN)						J17									
0...25 mH2O (EN)						J18									
0...40 mH2O (EN)						J19									
0...60 mH2O (EN)						J20									
0...100 mH2O (EN)						J22									
0...160 mH2O (EN)						J24									
0...200 mH2O (EN)						J25									
0...250 mH2O (EN)						J26									
Kind of pressure															
Relative (gauged)														R	
Absolute														A	
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	
IO-Link or 4...20 mA V1														M1	

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Ordering information

Ordering key - Configuration possibilities see website

	PBMN	-	2	#	###	#	##	##	##	2	#	#	0	#	#
Output Connection															
M12-A, 4-pin															14
M12-A, 5-pin															15
DIN EN 175301-803 A (DIN 43650 A), 4-pin															44
Cable outlet 1.5 m, 3-wire, shielded															53
Connection head, cable gland IP67															54
Process connection															
G 1/2 A DIN 3852-E (G51)															41
G 1/2 A ISO 228-1 with cone (G08)															42
G 1 A DIN 3852-E with O-ring at the front (G12)															43
G 1 A hygienic (A04)															44
G 1/2 A DIN 3852-E with O-ring at the front (G09)															46
G 1/2 A hygienic (A03)															48
G 1/2 A DIN 3852-E with cooling neck (G51)															71
G 1 A DIN 3852-E with O-ring at the front with cooling neck (G12)															73
G 1 A hygienic with cooling neck (A04)															74
G 1/2 A DIN 3852-E with O-ring at the front with cooling neck (G09)															76
Process connection material															
Stainless steel 1.4404 AISI 316L															2
Seal															
None															0
NBR standard															1
EPDM															2
FKM (Viton®)															3
Oil filling															
Standard oil															1
NSF H1 listed (FDA approved)															2
Display															
Without display															0
ATEX															
Standard safety															0
ATEX according to SEV 11 ATEX 0129															1
Approvals															
Standard approvals															0
EAC															7