

## PBMN flush

Fully welded pressure transmitter with flush membrane

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

### Overview

- Flush membrane
- Fully welded version
- Robust stainless steel housing
- External programming of zero point and span with FlexProgrammer 9701
- High overpressure resistance
- Optionally available with Ex certification (4 ... 20 mA output signal)



Picture similar



### 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 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 Including non-linearity, hysteresis and non-repeatability according BFSL
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"
SIP/CIP compatibility	< 60 min, without cooling neck @ medium temperature up to 150 °C Permanent, with cooling neck @ medium temperature up to 200 °C

#### 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	NBR, optional EPDM, optional, 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, optional, gaskets require a minimum ambient temperature of -20 °C and a minimum medium temperature of -25 °C

#### 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 connection head IP 67 , with connector M12-A, 4-pin
Insulation resistance	> 100 MΩ , 500 V DC
Bump (EN 60068-2-27)	100 g / 2 ms, 4000 impulses per axis and direction
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

The product features and technical data specified do not express or imply any warranty. Technical modifications subject to change. 2024-03-05

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### Technical data

#### Ambient conditions

 Vibration, broad-band random (EN 60068-2-64) 0.1 g<sup>2</sup> / 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 = (Vs - 8 V)/20 mA, with current output

Insulation resistance &gt; 100 MΩ, 500 V DC

Short circuit protection Yes

 Shunt resistance Rs ≤ (Vs - 8 V)/0.0205 A  
 Rs ≤ 270 Ω, Vs = 24 V

#### 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

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

#### 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](http://www.baumer.com)

Maximum values for barrier selection, Ui 30 V DC, max.

Maximum values for barrier selection, Ii 100 mA

#### ATEX II 1/2G Ex ia IIC T4/T6 Ga/Gb

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](http://www.baumer.com)

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](http://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 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

### 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

## PBMN flush

Fully welded pressure transmitter with flush membrane

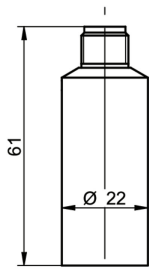
PBMN-2#####2##0#0

### Operating conditions

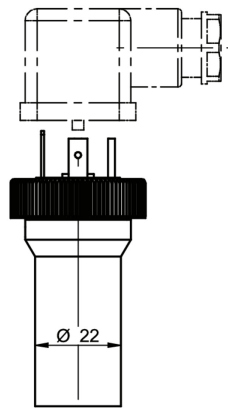
Explosion protection (with 4 ... 20 mA output signal only)	Cooling neck	Connectors [code]	Order key
ATEX II 1G Ex ia IIC T4/T6 Ga	without	M12-A [14]	PBMN-#####A114#####1#
		Connection head [54]	PBMN-#####A154#####1#
ATEX II 1G Ex ia IIC T3/T4/T6 Ga	with	M12-A [14]	PBMN-#####A1147#####1#
		Connection head [54]	PBMN-#####A1547#####1#
ATEX II 1D Ex ia IIIC T (200) 107 °C IP6X DA	all	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	without	DIN EN 175301-803 A [44]	PBMN-#####A144#####1#
ATEX II 1/2G Ex ia IIC T3/T4/T6 Ga/Gb	with	DIN EN 175301-803 A [44]	PBMN-#####A1447#####1#

### Dimensional drawings (mm)

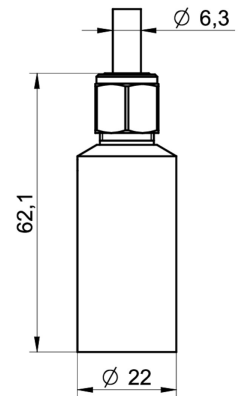
#### Housing



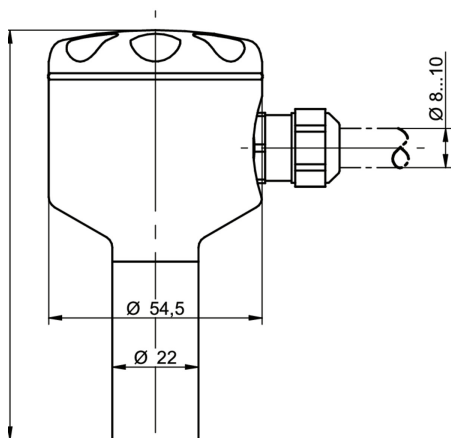
Housing with connector M12-A, 4-pin



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



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



Field housing with cable gland

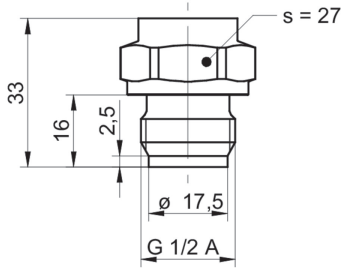
## PBMN flush

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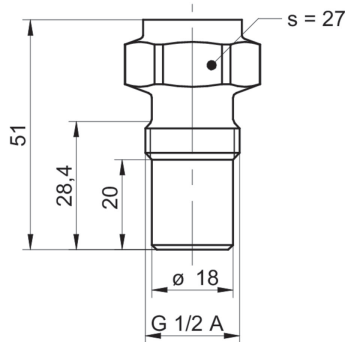
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### Dimensional drawings (mm)

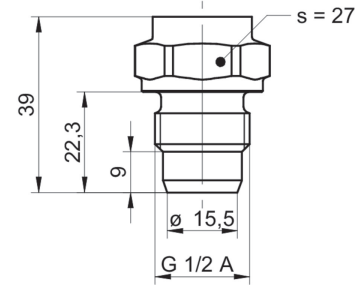
#### Process connection



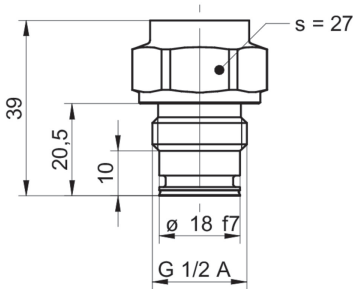
G51-41  
G 1/2 A DIN 3852-E (BCID: G51)



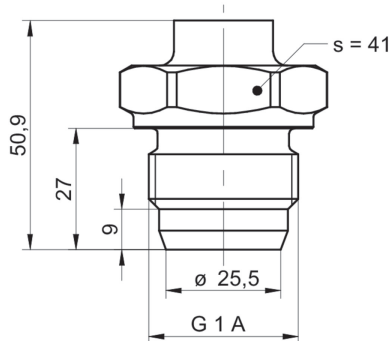
A03-48  
G 1/2 A hygienic (BCID: A03)



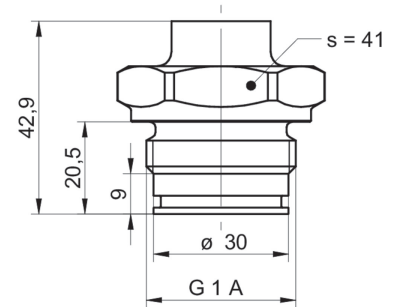
G08-42  
G 1/2 A ISO 228-1 with cone (BCID: G08)



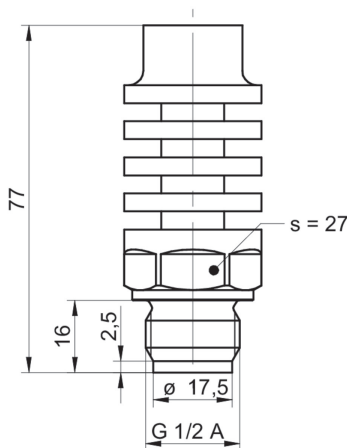
G09-46  
G 1/2 A DIN 3852-E with O-ring at the front  
(BCID: G09)



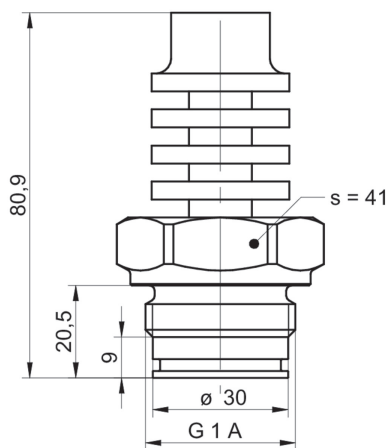
A04-44  
G 1 A hygienic (BCID: A04)



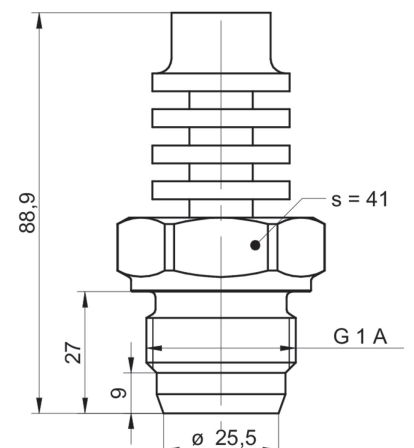
G12-43  
G 1 A DIN 3852-E with O-ring at the front  
(BCID: G12)



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)

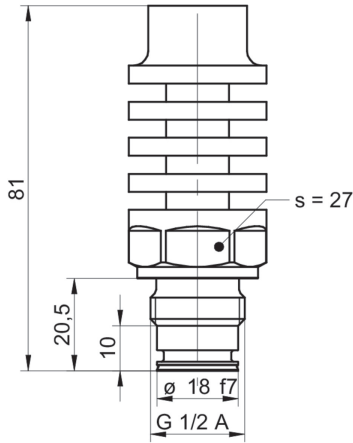
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### Dimensional drawings (mm)

#### 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
0 ... 10 V (3-wire)			+Vs	1
			Uout	2, 4
			GND (0 V)	3
			Frame Ground	Plug thread
4 ... 20 mA (2-wire)			+Vs	1
			Iout	2
			Frame Ground	Grounding lug
			n.c.	3
0 ... 10 V (3-wire)			+Vs	1
			Uout	2
			GND (0 V)	3
			Frame Ground	Grounding lug
4 ... 20 mA (2-wire)			+Vs	1
			Iout	2
			Frame Ground	Shield
			n.c.	3, 4
0 ... 10 V (3-wire)			+Vs	RD
			Uout	BU
			Frame Ground	Shield
			n.c.	WH
4 ... 20 mA (2-wire)			+Vs	1
			Uout	3
			GND (0 V)	2
			Frame Ground	Shield
0 ... 10 V (3-wire)			+Vs	1
			Uout	3
			GND (0 V)	2
			Frame Ground	Shield
4 ... 20 mA (2-wire)			+Vs	RD
			Uout	WH
			GND (0 V)	BU
			Frame Ground	Shield

## Ordering information

Ordering key - Configuration possibilities see website

<b>Product</b>	PBMN	-	2	#	###	#	##	##	##	2	#	#	0	#	0
<b>Housing material</b> Stainless steel 1.4404 AISI 316L	PBMN									2					
<b>Accuracy</b> ±0.25 % FS															4
±0.10 % FS															5
<b>Measuring range</b> 0...0,1 bar (EN)															B08

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### Ordering information

Ordering key - Configuration possibilities see website

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

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### Ordering information

Ordering key - Configuration possibilities see website

	PBMN	-	2	#	###	#	##	##	##	2	#	#	0	#	0	
-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 mH <sub>2</sub> O (EN)																J08
0...1,6 mH <sub>2</sub> O (EN)																J09
0...2,5 mH <sub>2</sub> O (EN)																J10
0...4 mH <sub>2</sub> O (EN)																J11
0...6 mH <sub>2</sub> O (EN)																J12
0...10 mH <sub>2</sub> O (EN)																J15
0...16 mH <sub>2</sub> O (EN)																J16
0...20 mH <sub>2</sub> O (EN)																J17
0...25 mH <sub>2</sub> O (EN)																J18
0...40 mH <sub>2</sub> O (EN)																J19
0...60 mH <sub>2</sub> O (EN)																J20
0...100 mH <sub>2</sub> O (EN)																J22
0...160 mH <sub>2</sub> O (EN)																J24
0...200 mH <sub>2</sub> O (EN)																J25
0...250 mH <sub>2</sub> O (EN)																J26
<b>Kind of pressure</b>																
Relative (gauged)																R
Absolute																A
<b>Output signal</b>																
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
<b>Output Connection</b>																
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
Connection head, cable gland IP67																54



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### Ordering information

Ordering key - Configuration possibilities see website

	PBMN	-	2	#	###	#	##	##	##	2	#	#	0	#	0
<b>Process connection</b>															
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
<b>Process connection material</b>															
Stainless steel 1.4404 AISI 316L															2
<b>Seal</b>															
None															0
NBR standard															1
EPDM															2
FKM															3
<b>Oil filling</b>															
Standard oil															1
NSF H1 listed (FDA approved)															2
<b>Display</b>															
Without display															0
<b>ATEX</b>															
Standard safety															0
ATEX according to SEV 11 ATEX 0129															1
<b>Approvals</b>															
Standard approvals															0