

## PBMN industrial Low Pressure Industrial pressure transmitter with fully welded metal sensor

### Main features

- -1 ... 0 bar up to 0 ... 40 bar
- 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



### Applications

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>■ <b>Process technic</b></li> <li><input type="checkbox"/> Hydraulic</li> <li><input type="checkbox"/> Pneumatic</li> <li><input type="checkbox"/> Refrigeration</li> <li>■ <b>Water treatment</b></li> <li><input type="checkbox"/> Car industry</li> <li><input type="checkbox"/> Test benches</li> <li>■ <b>Safety</b></li> <li><input type="checkbox"/> Aerospace</li> <li><input type="checkbox"/> Railways</li> <li>■ <b>Shipbuilding</b></li> <li><input type="checkbox"/> Heavy vehicles</li> </ul> | <ul style="list-style-type: none"> <li>■ <b>Health care</b></li> <li>■ <b>Biotechnology</b></li> <li>■ <b>Food</b></li> <li>■ <b>Beverage</b></li> <li>■ <b>Pharmaceutical</b></li> <li><input type="checkbox"/> Petro-chemical</li> <li>■ <b>Chemical</b></li> <li><input type="checkbox"/> HVAC</li> <li><input type="checkbox"/> Energy</li> <li>■ <b>Medical gas</b></li> <li><input type="checkbox"/> Agriculture vehicles</li> <li><input type="checkbox"/> Pumps and compressors</li> </ul> |
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### Main characteristics (20 °C)

Pressure range	-1 ... 0 bar up to 0 ... 40 bar
Accuracy (linearity, hysteresis and repeatability)	0.5% FS / 0.25% FS / 0.1% FS

**Ordering details - PBMN industrial Low Pressure**

	PBMN	2	3	B22	R	A1	14	02	2	0	2	0	0	0	0
<b>Housing material</b>															
Stainless steel			1.4404 AISI 316L												
				2											
<b>Accuracy</b>															
0.50% FS															3
0.25% FS															4
0.10% FS			P ≥ 250 mbar												5
<b>Pressure range and unit in bar</b>															
-0.1 ... 0.1			Only pressure type relative												B2H
-0.2 ... 0.2			Only pressure type relative												B4G
-1 ... 0			Only pressure type relative												B59
-1 ... 0.6			Only pressure type relative												B72
-1 ... 1.5			Only pressure type relative												B74
-1 ... 3			Only pressure type relative												B76
-1 ... 5			Only pressure type relative												B77
-1 ... 9			Only pressure type relative												B79
-1 ... 15			Only pressure type relative												B81
-1 ... 24			Only pressure type relative												B82
-1 ... 39			Only pressure type relative												B1L
0 ... 0.1			Only pressure type relative												B08
0 ... 0.16			Only pressure type relative												B09
0 ... 0.25			Only pressure type relative												B10
0 ... 0.4			Only pressure type relative												B11
0 ... 0.6			Only pressure type relative												B12
0 ... 1			Only pressure type relative												B15
0 ... 1.6			Only pressure type relative												B16
0 ... 2.5			Only pressure type relative												B18
0 ... 4			Only pressure type relative												B19
0 ... 6			Only pressure type relative												B20
0 ... 10			Only pressure type relative												B22
0 ... 16			Only pressure type relative												B24
0 ... 25			Only pressure type relative												B26
0 ... 40			Only pressure type relative												B27
<b>Kind of pressure</b>															
Relative															R
Absolute															A
<b>Output signal</b>															
4 ... 20 mA															A1
0 ... 10 V															A2
<b>Output connection</b>															
M12, 4 pins															14
DIN 43650, 4 pins															44
Shielded PUR cable (1.5 m)															53
<b>Process connection</b>															
G 1/4 EN 837															02
G 1/2 EN 837															03
1/4 NPT															04
1/2 NPT															05
G 1/4 DIN 3852															06
G 1/2 DIN 3852															09
G 1/4 female															12
<b>Process connection material</b>															
Stainless steel			1.4404 AISI 316L												2
<b>Sealing</b>															
Without															0
NBR			In combination with process connection code 06/09												1
FKM (Viton®)			In combination with process connection code 06/09												3
<b>Oil filling</b>															
Silicon oil															1
FDA approved white oil			T ≥ -10 °C												2
<b>Display</b>															
Without															0
<b>ATEX</b>															
Without															0
ATEX according to SEV 11 ATEX 0129			In combination with output signal code A1												1
<b>Approvals</b>															
CE certified															0

**Model - PBMN industrial Low Pressure**
**Technical specification**

<b>Measuring principle</b>	Piezoresistive silicon sensor
<b>Measuring ranges</b>	-1 ... 0 bar up to 0 ... 40 bar
<b>Type of pressure</b>	Relative / Absolute
<b>Accuracy (20 °C)</b> <small>(linearity, hysteresis, repeatability)</small>	0.5% FS, 0.25% FS, 0.1% FS
<b>Zero thermal drift</b>	≤ ± 0.03% FS/10 K
<b>Span thermal drift</b>	≤ ± 0.03% FS/10 K
<b>Annual stability</b>	0.1 % FS
<b>Response time (10 ... 90%)</b>	≤ 5 ms
<b>Process connections</b>	See page 4

**Environment**

<b>Temperature</b>	
<b>Storage</b>	-40 ... +85 °C
<b>Medium</b>	-40 ... +120 °C
<b>Ambient</b>	-40 ... +85 °C
<b>Protection rating</b>	IP65 (EN 60529) up to IP67 depending on electrical connection
<b>Vibration IEC60068-2-6</b>	1.5 mm p-p (10 – 57 Hz), 10 g (58 Hz – 2 KHz) 10 cycles within 2.5 h per axis
<b>Shock IEC60068-2-27</b>	50 g/11 ms 100 g/6 ms 10 x Imp. per Axis and direction
<b>Bump IEC60068-2-29</b>	100 g/2 ms 4000 x Imp. per Axis and direction
<b>Random IEC60068-2-64</b>	0.1 g <sup>2</sup> /Hz (20 Hz – 1 KHz) 30 min per axis (>10 g RMS)

**Electrical specification**

<b>Output signal / Power Supply</b>	4 ... 20 mA / 8 ... 30 VDC 0...10 V / 13 ... 30 VDC
<b>Load impedance</b>	
<b>Current output</b>	$R_{\Omega} = (U_{supply} - 8 V) / 20 mA$
<b>Voltage output</b>	> 5 K $\Omega$
<b>Insulation resistance</b>	>100 M $\Omega$ at 750 VDC
<b>Electrical connections</b>	See page 4

**Material**

<b>Process connection and housing</b>	SS 1.4404 AISI 316L
<b>Diaphragm</b>	SS 1.4435 AISI 316L
<b>Sealing</b>	NBR or FKM (Viton®)
<b>Cable</b>	PUR

**Approvals**

<b>CE conformity</b>	EMC directive 2004/108/CE in accordance with EN61000-6-2, EN 61000-6-3, Pressure directive 97/23/CE
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**ATEX**

<b>ATEX II 1G</b>	All versions without DIN connector and with output signal code A1
<b>Ex ia IIC T4/T6 Ga</b>	
<b>ATEX II 1/2G</b>	All versions with DIN connector and output signal code A1
<b>Ex ia IIC T4/T6 Ga/Gb</b>	
<b>ATEX II 1D</b>	All versions with output signal code A1
<b>Ex ia IIIC T107°C IP6X Da</b>	
<b>Barrier data</b>	U <sub>i</sub> ≤ 30 V I <sub>i</sub> ≤ 100 mA P <sub>i</sub> ≤ 750 mW
<b>Capacity</b>	C <sub>i</sub> ≤ 17 nF C <sub>Cable</sub> ≤ 0.12 nF/m
<b>Inductivity</b>	L <sub>i</sub> ≤ 3 $\mu$ H L <sub>Cable</sub> ≤ 1.1 $\mu$ H/m
<b>Temperature class</b> <small>(ambient temperature)</small>	T1 ... T4: -40 < T <sub>amb</sub> < 85 °C T1 ... T6: -40 < T <sub>amb</sub> < 70 °C
<b>Temperature class</b> <small>(medium temperature)</small>	T1 ... T4: -40 < T <sub>med</sub> < 115 °C T1 ... T6: -40 < T <sub>med</sub> < 75 °C

For the application in Ex zone you have to respect the conditions mentioned in the ATEX Type Examination Certificate (SEV 11 ATEX 0129).

You find the certificates and manuals under <http://www.baumer.com/>

**Measuring Ranges**

Pressure range	Pressure in bar						
	-0.1 ... +0.1	-0.2 ... +0.2	0 ... 1	0 ... 1.6	0 ... 6	0 ... 20	0 ... 40
	0 ... 0.1	0 ... 0.4	-1 ... 0	0 ... 2	0 ... 10	0 ... 25	-1 ... 39
	0 ... 0.16	0 ... 0.6	-1 ... 0.6	0 ... 2.5	-1 ... 9	-1 ... 24	
	0 ... 0.25			-1 ... 1.5	0 ... 16		
				0 ... 4	-1 ... 15		
				0 ... 5			
				-1 ... 3			
				-1 ... 5			
<b>Overpressure</b>	1	3	3	15	60	70	135
<b>Burst pressure</b>	2	6	6	30	120	140	270

**Model - PBMN industrial Low Pressure**

**Electrical connections**



M12, 4 pins

Connection

4-20 mA      0-10 V

- |                |                             |
|----------------|-----------------------------|
| 1 : + Supply   | 1 : + Supply                |
| 2 : N.C.       | 2 : + Measurement           |
| 3 : - Supply   | 3 : - Supply/ - Measurement |
| 4 : N.C.       | 4 : + Measurement           |
| Body : $\perp$ | Body : $\perp$              |

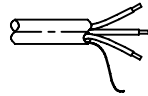


Standard version DIN 43650 connector

Connection EN 176301-803A

4-20 mA      0-10 V

- |                 |                             |
|-----------------|-----------------------------|
| 1 : + Supply    | 1 : + Supply                |
| 2 : - Supply    | 2 : - Supply/ - Measurement |
| 3 : N.C.        | 3 : + Measurement           |
| $\perp$ : Earth | $\perp$ : Earth             |



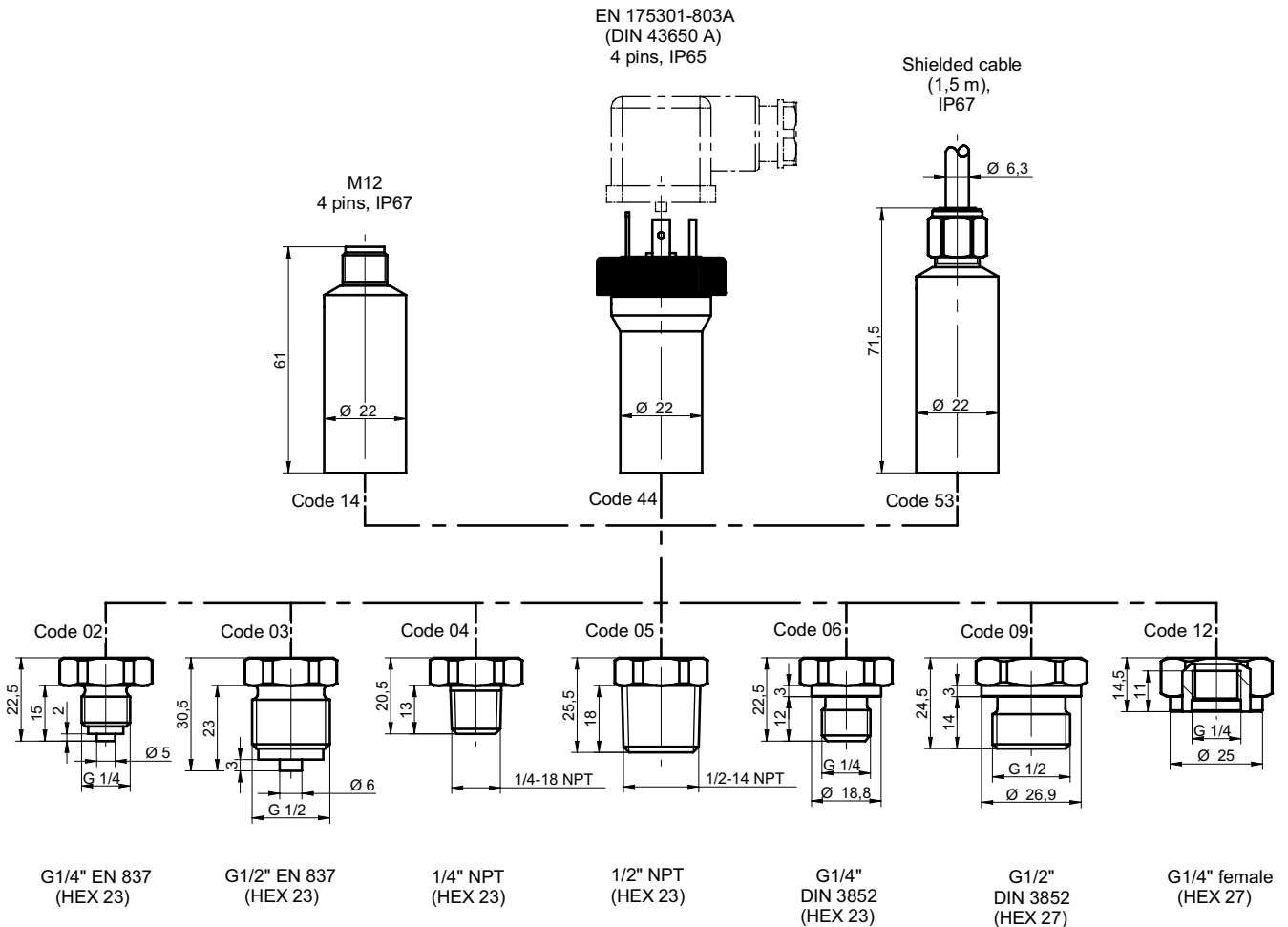
Cable output (1.5m long) + PG7 cable gland

Connection

4-20 mA      0-10 V

- |                  |                |          |
|------------------|----------------|----------|
| + Supply : Red   | + Supply       | : Red    |
| - Supply : Blue  | - Supply/Meas. | : Blue   |
| $\perp$ : Shield | + Measurement  | : White  |
|                  |                | : Shield |

**Dimensions (mm), Connections**



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