

PBMH hygienic Piezoresistive pressure transmitter with hygienic approved design

Main features

- Flush membrane with hygienic approval
- SIP/CIP compatible
- 3-A and EHEDG certified
- Surface roughness of process connection $\leq 0.8 \text{ Ra}$
- Compact design
- External programming of zero point and span with FlexProgrammer 9701
- Excellent temperature characteristics
- Available with optional ATEX approval



Applications

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

Main characteristics (20 °C)

Pressure range	-1 ... 0 bar up to 0 ... 40 bar
Accuracy (linearity, hysteresis and repeatability)	0.25% FS / 0.1% FS
Maximum medium temperature range	-40 ... +125 °C (without cooling neck) -40 ... +200 °C (with cooling neck)
SIP / CIP compatible	Medium temperature up to 150 °C (< 60 minutes) without cooling neck Medium temperature up to 200 °C (permanent) with cooling neck

Model - PBMH hygienic
Technical specification

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

Environment

Temperature	
Storage	-40 ... +85 °C
Medium (without cooling neck)	-40 ... +125 °C
Medium (with cooling neck)	-40 ... +200 °C
Ambient	-40 ... +85 °C
Protection rating	IP65 (EN 60529) up to IP67 depending on electrical connection
Vibration IEC60068-2-6	1.5 mm p-p (10 – 57 Hz), 10 g (58 Hz – 2 KHz) 10 cycles within 2.5 h per axis
Shock IEC60068-2-27	50 g/11 ms 100 g/6 ms 10 x Imp. per Axis and direction
Bump IEC60068-2-29	100 g/2 ms 4000 x Imp. per Axis and direction
Random IEC60068-2-64	0.1 g ² /Hz (20 Hz – 1 KHz) 30 min per axis (>10 g RMS)

Electrical specification

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

Material

Process connection and housing	SS 1.4404 AISI 316L or Hastelloy-C
Diaphragm	SS 1.4435 AISI 316L or Hastelloy-C
Sealing	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
Cable	PUR

Approvals

CE conformity	EMC directive 2004/108/CE in accordance with EN61000-6-2, EN 61000-6-3, Pressure directive 97/23/CE
Hygienic	3-A 74-03 EHEDG, EL Class I or EL Aseptic

ATEX

ATEX II 1G Ex ia IIC T4/T6 Ga	All versions without cooling neck, DIN connector and with output signal code A1
ATEX II 1/2G Ex ia IIC T4/T6 Ga/Gb	All versions without cooling neck, with DIN connector and output signal code A1
ATEX II 1G Ex ia IIC T3/T4/T6 Ga	All versions with cooling neck, output signal code A1 and without DIN connector
ATEX II 1/2G Ex ia IIC T3/T4/T6 Ga/Gb	All versions with cooling neck, DIN connector and output signal code A1
ATEX II 1D Ex ia IIIC T107°C IP6X DA	All versions with output signal code A1
Barrier data	Ui ≤ 30 V Ii ≤ 100 mA Pi ≤ 750 mW
Capacity	Ci ≤ 17 nF C _{Cable} ≤ 0.12 nF/m
Inductivity	Li ≤ 3 μH L _{Cable} ≤ 1.1 μH/m
Temperature class <small>(ambient temperature)</small>	T1 ... T3: -40 <T _{amb} < 45/70/75/85 °C T1 ... T4: -40 <T _{amb} < 85 °C T1 ... T6: -40 <T _{amb} < 70 °C
Temperature class <small>(medium temperature)</small>	T1 ... T3: -40 <T _{med} < 130/150/160/170/200 °C T1 ... T4: -40 <T _{med} < 115/130 °C T1 ... T6: -40 <T _{med} < 75/80 °C

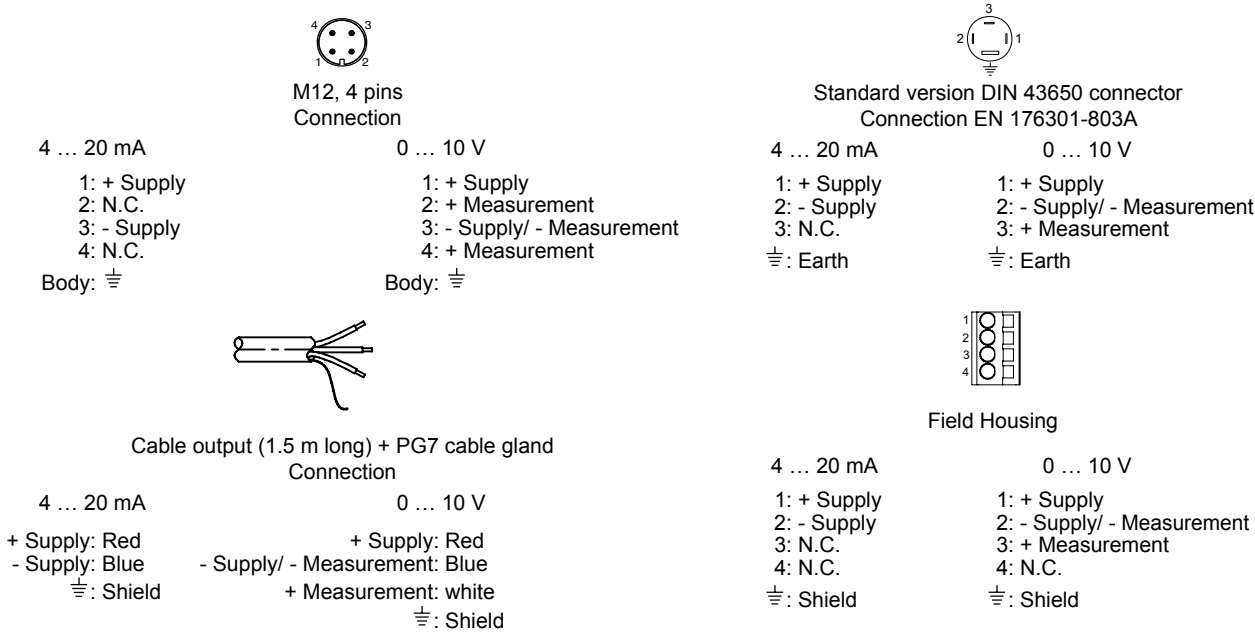
For the application in Ex zone you have to respect the conditions mentioned in the ATEX Type Examination Certificate (SEV 11 ATEX 0129).
You find the certificates and manuals under <http://www.baumer.com/>

Measuring Ranges

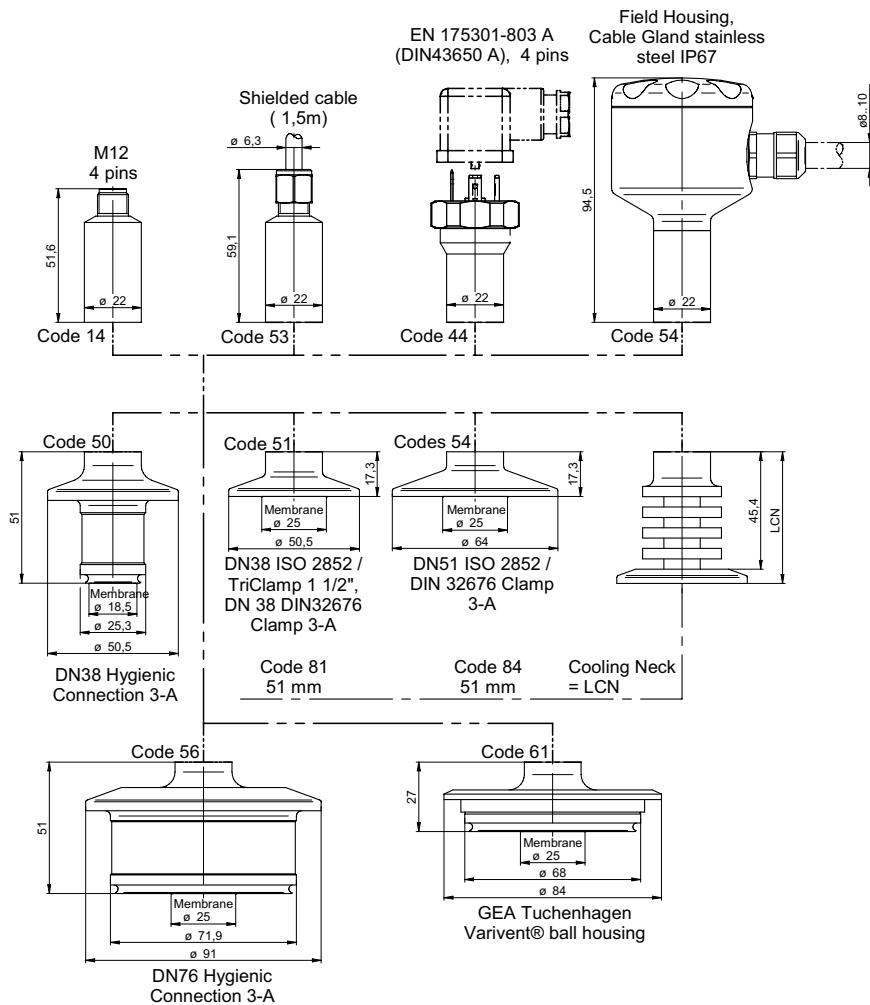
Pressure range	Pressure in bar						
	-0.1 ... +0.1 0 ... 0.1 0 ... 0.16 0 ... 0.25	-0.2 ... +0.2 0 ... 0.4 0 ... 0.6	0 ... 1 -1 ... 0 -1 ... 0.6	0 ... 1.6 0 ... 2 0 ... 2.5 -1 ... 1.5 0 ... 4 0 ... 5 -1 ... 3 -1 ... 5	0 ... 6 0 ... 10 -1 ... 9 0 ... 16 -1 ... 15	0 ... 20 0 ... 25 -1 ... 24	0 ... 40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

Model - PBMH hygienic

Electrical connections



Dimensions (mm)



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