

PBSN

Abrasive and chemical resistant pressure transmitter for industrial applications

PBSN-1.#.###.#.#.#.#.#.2.#

Overview

- Robust stainless housing for harsh environment conditions
- Standard use from -1 to 400 bar
- Robust ceramic measuring cell
- Abrasive resistant due to ceramic measurement cell
- Absolute pressure, relative pressure and vacuum measurement



Technical data

Performance characteristics

Pressure type	Absolute Relative (gauged)
Compensated temperature range	-20 ... 60 °C
Long term stability	≤ 0.2 % FSR/a
Max. measuring error	± 0.5 % FSR , available for measuring spans > 1 bar ± 1 % FSR Including zero-point and span error, nonlinearity (by terminal base line), hysteresis and non-repeatability (EN 61298-2)
Max. measuring span	400 bar
Measuring range	-1 ... 400 bar
Standard error of measurement (BFSL)	± 0.3 % FSR , available for measuring spans > 1 bar ± 0.4 % FSR Including non-linearity, hysteresis and non-repeatability according BFSL
Min. measuring span	1.0 bar
Rise time (10 ... 90 %)	≤ 5 ms
Temperature coefficient	≤ 0.08 % FSR/10 K , measuring span ≤ 0.08 % FSR/10 K , zero point

Process conditions

Process temperature	-20 ... 100 °C , with FKM (Viton®) gasket -30 ... 100 °C , with NBR gasket -40 ... 100 °C , with EPDM gasket
Process pressure	Refer to section "Operating conditions"

Process connection

Connection variants	Refer to section "Dimensional drawings"
Wetted parts material, process connection	AISI 316L (1.4404)
Wetted parts material, membrane	Ceramic, 96% AL2O3

Process connection

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
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Ambient conditions

Operating temperature range	-20 ... 85 °C
Storage temperature range	-40 ... 100 °C
Degree of protection (EN 60529)	IP 65 , with connector DIN EN 175301-803 A (DIN 43650 A), 4-pin IP 67 , with connector M12-A, 4-pin IP 67 , with shielded cable
Shock and vibration tests (EN 61373:1999, 2010)	Category 1, class B

Output signal

Current output	4 ... 20 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
Load resistance	≥ 5 kΩ $R = (U_{ver} - 8 V)/20 \text{ mA}$, with current output
Insulation resistance	> 100 MΩ , 500 V DC
Short circuit protection	Yes
Shunt resistance	$R_s \leq (V_s - 8 V)/0.0205 \text{ A}$ $R_s \leq 750 \Omega$, $V_s = 24 \text{ V}$

Housing

Style	Compact transmitter
Overall size	Refer to section "Dimensional drawings"
Material	AISI 304 (1.4301)

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Technical data

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 15 ... 30 V DC , with voltage output
8 ... 30 V DC , with current output

Compliance and approvals

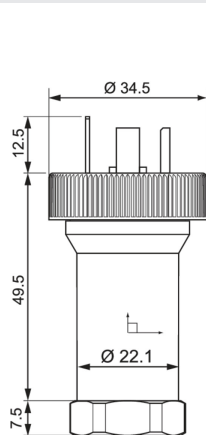
EMC EN 61000-6-2
EN 61000-6-3
EN 61326-1

Operating conditions

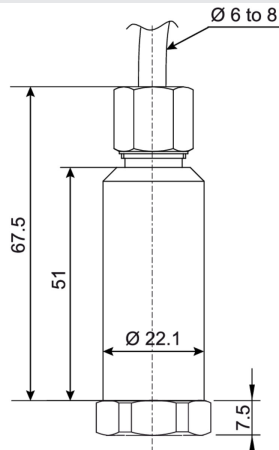
Measuring range (bar)				Proof pressure (bar)	Burst Pressure (bar)
-1 ... 0	-1 ... 0,6	0 ... 1	0 ... 1,6	2	3
-1 ... 1,5	0 ... 2,5			4	7
-1 ... 3	0 ... 4			8	12
-1 ... 5	0 ... 6			12	18
-1 ... 9	0 ... 10			20	30
-1 ... 15	0 ... 16			32	48
-1 ... 24	0 ... 25			50	75
-1 ... 39	0 ... 40			80	120
	0 ... 60			120	180
	0 ... 100			200	300
	0 ... 160			320	480
	0 ... 250			360	480
	0 ... 400			600	800

Dimensional drawings (mm)

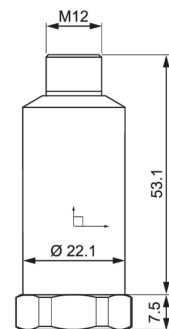
Housing



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



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



Housing with connector M12-A, 4-pin

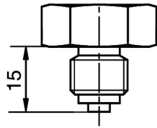
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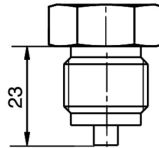
PBSN-1.#.###.#.#.#.#.#.2.#

Dimensional drawings (mm)

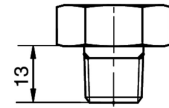
Process connection



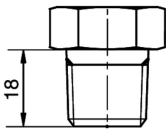
G30-2
G 1/4 B EN 837-1 (BCID: G30)



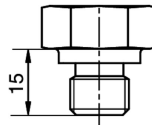
G31-3
G 1/2 B EN 837-1 (BCID: G31)



N01-5
1/4-18 NPT (BCID: N01)



N02-6
1/2-14 NPT (BCID: N02)



G50-B
G 1/4 A DIN 3852-E (BCID: G50)

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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
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

Product	PBSN	-	1	.	#	.	###	.	#	.	##	.	##	.	##	.	2	.	#
Housing material	PBSN																		
SS 1.4301 AISI 304			1																
Accuracy																			
±1.0 % FS																			1
±0.7 % FS																			2
±0.5 % FS																			3
Measuring range																			
0...1 bar (EN)																			B15
0...1,6 bar (EN)																			B16
0 ... 2.5 bar (EN)																			B18
0 ... 4 bar (EN)																			B19
-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

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Ordering information

Ordering key - Configuration possibilities see website

	PBSN	-	1	.	#	.	###	.	#	.	##	.	##	.	##	.	2	.	#	
0 ... 40 bar (EN)																				B27
0 ... 60 bar (EN)																				B29
0 ... 100 bar (EN)																				B31
0 ... 160 bar (EN)																				B33
0 ... 250 bar (EN)																				B35
0 ... 400 bar (EN)																				B38
-1...0 bar (EN)																				B59
-1...0,6 bar (EN)																				B72
-1 ... 1,5 bar (EN)																				B74
-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...100 kPa (EN)																				D15
0...160 kPa (EN)																				D16
0...250 kPa (EN)																				D18
0...400 kPa (EN)																				D19
-100...3900 kPa (EN)																				D1L
0...600 kPa (EN)																				D20
0...1000 kPa (EN)																				D22
0...1600 kPa (EN)																				D24
0...2000 kPa (EN)																				D25
0...2500 kPa (EN)																				D26
0...4000 kPa (EN)																				D27
0...6000 kPa (EN)																				D29
0...10000 kPa (EN)																				D31
0...16000 kPa (EN)																				D33
0...25000 kPa (EN)																				D35
0...40000 kPa (EN)																				D38
-100...0 kPa (EN)																				D59
-100...60 kPa (EN)																				D72
-100...150 kPa (EN)																				D74
-100...300 kPa (EN)																				D76
-100...500 kPa (EN)																				D77
-100...900 kPa (EN)																				D79
-100...1500 kPa (EN)																				D81
-100...2400 kPa (EN)																				D82
0...1 kg/cm2 (EN)																				F15
0...1,6 kg/cm2 (EN)																				F16
0...2,5 kg/cm2 (EN)																				F18
0...4 kg/cm2 (EN)																				F19
-1...39 kg/cm2																				F1L
0...6 kg/cm2 (EN)																				F20
0...10 kg/cm2 (EN)																				F22
0...16 kg/cm2 (EN)																				F24
0...20 kg/cm2 (EN)																				F25
0...25 kg/cm2 (EN)																				F26
0...40 kg/cm2 (EN)																				F27
0...60 kg/cm2 (EN)																				F29
0...100 kg/cm2 (EN)																				F31

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Ordering information

Ordering key - Configuration possibilities see website

	PBSN	-	1	.	#	.	###	.	#	.	##	.	##	.	##	.	2	.	#
0...160 kg/cm2 (EN)																			F33
0...250 kg/cm2 (EN)																			F35
0...400 kg/cm2 (EN)																			F38
-1...0 kg/cm2 (EN)																			F59
-1...0,6 kg/cm2 (EN)																			F72
-1...1,5 kg/cm2 (EN)																			F74
-1...3 kg/cm2 (EN)																			F76
-1...5 kg/cm2 (EN)																			F77
-1...9 kg/cm2 (EN)																			F79
-1...15 kg/cm2 (EN)																			F81
-1...24 kg/cm2 (EN)																			F82
0...15 psi (ANSI)																			H15
0...30 psi (ANSI)																			H17
0...60 psi (ANSI)																			H19
0...20 psi (ANSI)																			H1C
-30Hg...600 psi (ANSI)																			H1L
0...100 psi (ANSI)																			H21
0...160 psi (ANSI)																			H22
0...200 psi (ANSI)																			H23
0...300 psi (ANSI)																			H25
0...400 psi (ANSI)																			H26
0...600 psi (ANSI)																			H27
-30HG...60 psi (ANSI)																			H2C
0...1000 psi (ANSI)																			H30
0...1500 psi (ANSI)																			H31
0...3000 psi (ANSI)																			H34
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
Kind of pressure																			
Relative (gauged)																			R
Absolute																			A
Output signal																			
4...20 mA																			A1
0...10 V																			A2
1...5 V																			A3
0...5 V																			A4
0.5...4.5 V																			A5
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

PBSN - 1 . # . ### . # . ## . ## . ## . 2 . #

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 3852-E (G50)	06
G 1/2 A DIN 3852-E (G51)	09

Process connection material

Stainless steel 1.4404 AISI 316L	2
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Seal

NBR standard	1
EPDM	2
FKM (Viton®)	3