PSMN
Pressure transmitter for hydrostatic level measurement

Main features

- **Excellent long term stability**
- **Wide range of medium compatibility**
- **External programming of zero point and span with Flexprogrammer 9701**
- **Piezoresistive silicon sensor**
- **Available with optional ATEX approval**

Applications

■ **Process technic**	□ Health care
□ Hydraulic	□ Biotechnology
□ Pneumatic	■ **Food**
□ Refrigeration	■ **Beverage**
■ **Water treatment**	□ Pharmaceutical
□ Car industry	■ **Petro-chemical**
□ Test benches	■ **Chemical**
■ **Safety**	□ HVAC
□ Aerospace	■ **Energy**
□ Railways	□ Medical gas
■ **Shipbuilding**	□ Agriculture vehicules
□ Heavy vehicule	■ **Pumps and compressors**

Main characteristics (20 °C)

Pressure range	0 … 1 mH_2O to 0 … 250 mH_2O 0 … 0.1 bar to 0 … 25 bar
Accuracy (Linearity, hysteresis, repeatability, error of span and zero point)	0.25% FS / 0.1% FS
Maximum medium temperature range	-5 … 80 °C

Ordering details - PSMN

		PSMN	2	4	J15	R	A1	U3	91	2	1	1	0	0	0
Housing accuracy															
Stainless steel	1.4404 AISI 316L		2												
Stainless steel for seawater applications	AISI 904L		4												
Accuracy															
0.25 % FS				4											
0.10 % FS	P > 2.5 mH_2O / 250 mbar			5											
Pressure range															
0 … 1 mH_2O	Only for relative pressure				J08										
0 … 1.6 mH_2O	Only for relative pressure				J09										
0 … 2.5 mH_2O	Only for relative pressure				J10										
0 … 4 mH_2O					J11										
0 … 6 mH_2O					J12										
0 … 10 mH_2O					J15										
0 … 16 mH_2O					J16										
0 … 20 mH_2O					J17										
0 … 25 mH_2O					J18										
0 … 40 mH_2O					J19										
0 … 60 mH_2O					J20										
0 … 100 mH_2O					J22										
0 … 160 mH_2O					J24										
0 … 200 mH_2O					J25										
0 … 250 mH_2O					J26										
0 … 0.1 bar	Only for relative pressure				B08										
0 … 0.16 bar	Only for relative pressure				B09										
0 … 0.25 bar	Only for relative pressure				B10										
0 … 0.4 bar					B11										
0 … 0.6 bar					B12										
0 … 1 bar					B15										
0 … 1.6 bar					B16										
0 … 2 bar					B17										
0 … 2.5 bar					B18										
0 … 4 bar					B19										
0 … 6 bar					B20										
0 … 10 bar					B22										
0 … 16 bar					B24										
0 … 20 bar					B25										
0 … 25 bar					B26										
Kind of pressure															
Relative						R									
Absolute						A									
Output signal															
4 ... 20 mA							A1								
0 … 10 VDC							A2								
Cable															
PUR 5 meter								U0							
PUR 10 meter								U1							
PUR 20 meter								U3							
PUR 25 meter								U4							
PUR xxx meter	Additional code / 9001 and cable length in meter, max. 250 meter, mini. 30 meter							U9							
ETFE 5 meter								F0							
ETFE 5 meter								F1							
ETFE 20 meter								F3							
ETFE 25 meter								F4							
ETFE xxx meter	Additional code / 9001 and cable length in meter, max. 250 meter, mini. 30 meter							F9							
Versions															
G1/2 flush diaphragm, protection cap closed (POM)									91						
G1/2 flush diaphragm, protection cap open (POM)									92						
G1/2 flush diaphragm, protection cap closed (POM) with ballast weight 300 gr									93						
G1/2 flush diaphragm, with hex 27 mm									96						
Material diaphragm															
Stainless steel	1.4435 AISI 316L									2					
Hastelloy-C 276										H					
Sealing of the cable															
NBR	Standard with cable type PUR										1				
FKM (Viton®)	Standard with cable type ETFE										3				
Oil filling															
Silicon oil												1			
FDA approved white oil												2			
Display															
Without													0		
ATEX															
Without														0	
ATEX according to SEV 11 ATEX 0129	In combination with output signal code A1													1	
Approvals															
CE certified															0

Model - PSMN

Technical specification

Measuring principle	Piezoresistive silicon sensor
Measuring ranges	0 … 1 mH_2O to 0 … 250 mH_2O 0 … 0.1 bar to 0 … 25 bar
Type of pressure	Relative / Absolute
Accuracy (20°) (Linearity, hysteresis, repeatability, error of span and zero point)	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
Versions	See page 4

Weight

Transmitter	0.200 kg
Cable	
PUR	0.048 kg / meter
ETFE	0.051 kg / meter

Environment

Temperature	
Medium	-5 … 80 °C
Storage	-25 … 85 °C (Silicon oil) -10 … 85 °C (FDA approved white oil)
Protection rating	IP 68
Vibration IEC60068-2-6	1.5 mm p.p (10-57Hz), 10 g (58 Hz – 2 KHz) 10 cycles within 2.5 h per axis
Shock IEC60068-2-27	50 g / 11ms 100g / 6ms 10 x Imp. per axis and direction
Bump IEC60068-2-27	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 and direction (> 10 g RMS)

Electrical specification

Output signal / Power Supply	4 … 20 mA / 8 … 30 VDC 0 … 10 V / 13 … 30 VDC
Load impedance	
Current ouput	$R_\Omega = (U_{supply}$-8 V) / 20 mA
Voltage ouput	> 5 KΩ
Insulation resistance	>100 MΩ at 500 VDC
Electrical connections	PUR or ETFE Cable with capillary tube (max. 250 meter)

Material

Process connection and housing	Stainless steel 1.4404 AISI 316L or stainless steel 904L suitable for seawater applications
Diaphragm	Stainless steel 1.4435 AISI 316L or Hastelloy-C
Sealing cable gland	NBR or FKM (Viton®)
Cable	PUR or ETFE black (standard) and blue (ATEX version) with integrated humidity filter

Approvals

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

ATEX

ATEX II 1G **Ex ia IIC T4/T6 Ga**	All versions with output signal code A1
Barrier data	Ui ≤ 30 V Ii ≤ 100 mA Pi ≤ 750 mW
Capacity	Ci ≤ 31 nF C_{Cable} ≤ 0.12 nF/m
Inductivity	Li ≤ 3 µH L_{Cable} ≤ 1.1 µH/m
Temperature class (ambient and medium temperature)	T1 ... T4: -5 <$T_{amb/med}$ < 85 °C T1 ... T6: -5 <$T_{amb/med}$ < 75 °C

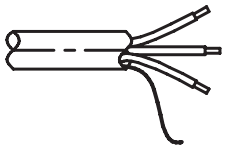
For the application in Ex zone you have to respect the conditions mentioned in the ATEX Type Examination Certificate (SEV 11 ATEX 0129).
You find the certificates and manuals under **http://www.baumer.com/**

Measuring Ranges

	Pressure				
Pressure range (mH_2O)	0 … 1 0 … 1.6 0 … 2.5	0 … 4 0 … 6 0 … 10	0 … 16 0 … 20 0 … 25 0 … 40	0 … 60 0 … 100 0 … 160	0 … 200 0 ... 250
Pressure range (bar)	0 … 0.1 0 … 0.16 0 … 0.25	0…0.4 0…0.6 0 … 1	0 … 1.6 0 … 2 0 … 2.5 0 … 4	0 … 6 0 … 10 0 … 16	0 … 20 0 ... 25
Overpressure (bar)	1	3	15	60	70
Burst pressure (bar)	2	6	30	120	140

Model - PSMN

Electrical connections



Cable Output with integrated capillary tube
(length according to the ordering code)

Connection

4-20 mA	0-10 V
+ Supply : Red	+ Supply : Red
– Supply : Blue	– Supply/Meas. : Blue
⏚ : Shield	+ Measurement : White
	⏚ : Shield

Dimensions (mm)