Electronic pressure sensor PM1607

URL:https://www.sxplc.com/electronic-pressure-sensor-pm1607

Product data sheet

Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1			
Measuring range	-0.05...1 bar	-50...1000 mbar	-0.73...14.5 psi	-5...100 kPa
Process connection	threaded connection G 1 external thread sealing cone			

Application

System	gold-plated contacts		
Measuring element	ceramic-capacitive pressure measuring cell		
Temperature monitoring	no		
Application	flush mountable for the food and beverage industry		
Media	viscous media and liquids with suspended particles; liquids and gases		
Medium temperature [°C]	-25...150		
Min. bursting pressure	30000 mbar	435 psi	3000 kPa
Pressure rating	10000 mbar	145 psi	1000 kPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure		
No dead space	yes		
MAWP (for applications according to CRN) [bar]	10		

Electrical data

Operating voltage [V]	18...30 DC
Min. insulation resistance [MΩ]	100; (500 V DC)
Protection class	III
Reverse polarity protection	yes
Measuring principle	hydrostatic
Integrated watchdog	yes

2-wire	
Current consumption [mA]	3.5...21.5
Power-on delay time [s]	1

3-wire	
Current consumption [mA]	< 45
Power-on delay time [s]	0.5

Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1

Outputs

Total number of outputs	2
Output signal	analog signal; IO-Link; (configurable)
Number of digital outputs	1; (IO-Link)
Number of analog outputs	1
Analog current output [mA]	4...20; (scalable)
Max. load [Ω]	700; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)
Short-circuit proof	yes
Overload protection	yes

Measuring/setting range

Measuring range	-0.05...1 bar	-50...1000 mbar	-0.73...14.5 psi	-5...100 kPa
Analog start point	-50...800 mbar	-0.73...11.6 psi		-5...80 kPa
Analog end point	150...1000 mbar	2.18...14.5 psi		15...100 kPa
In steps of	0.5 mbar	0.01 psi		0.05 kPa
Factory setting	ASP = 0.0 bar	AEP = 1000 mbar		

Accuracy / deviations

Repeatability [% of the span]	< ± 0,1; (with temperature fluctuations < 10 K, Turn down 1:1)
Characteristics deviation [% of the span]	< ± 0,2; (linearity incl. hysteresis and repeatability, limit value setting to DIN EN IEC 62828-1)
Linearity deviation [% of the span]	< ± 0,15; (Turn down 1:1)
Hysteresis deviation [% of the span]	< ± 0,15; (Turn down 1:1)
Long-term stability [% of the span]	< ± 0,1; (Turn down 1:1; per year)
Total deviation over temperature range	**Temperature range** / **total deviation** -25...15 °C / Characteristics deviation ± 0,05 % of the span / 10 K 15...80 °C / Characteristics deviation 80...150 °C / Characteristics deviation ± 0,1 % of the span / 10 K
Notes on the accuracy / deviation	for further details see section Diagrams and graphs

Reaction times

Damping for the analog output dAA [s]	0...4

2-wire	
Step response time analog output [ms]	30

3-wire	
Step response time analog output [ms]	7

Interfaces

Communication interface	IO-Link
Transmission type	COM2 (38,4 kBaud)
IO-Link revision	1.1
SDCI standard	IEC 61131-9
Profiles	Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)
SIO mode	no
Required master port class	A
Process data analog	3
Min. process cycle time [ms]	3.2
IO-Link resolution pressure [mbar]	0.2
IO-Link process data (cyclical)	**Function** / **bit length** pressure / 16 device status / 4
IO-Link functions (acyclical)	application specific tag; internal temperature
Supported DeviceIDs	**Type of operation** / **DeviceID** default / 668

Operating conditions

Ambient temperature [°C]	-25...80
Storage temperature [°C]	-40...100
Protection	IP 67; IP 68; IP 69K

Tests / approvals

EMC	DIN EN 61000-6-2 DIN EN 61000-6-3	
Shock resistance	DIN EN 60068-2-27	50 g (11 ms)
Vibration resistance	DIN EN 60068-2-6	20 g (10...2000 Hz)
MTTF [years]	323	
Note on approval	Factory certificate available as download at www.factory-certificate.ifm	
UL approval	UL approval number	J022

Mechanical data

Weight [g]	339.45
Material	stainless steel (1.4404 / 316L); PBT
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L); surface characteristics: Ra < 0,4 / Rz 4; PTFE
Min. pressure cycles	100 million
Tightening torque [Nm]	20
Process connection	threaded connection G 1 external thread sealing cone

Remarks