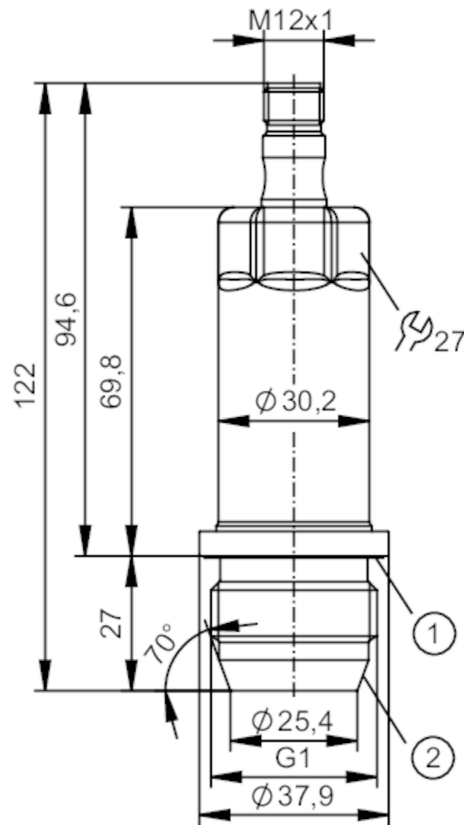


PM1602



Flush pressure sensor

PM-100-REA01-E-ZVG/US



- 1 groove with sealing ring (DIN EN ISO 1179-2)
2 G1 sealing cone external thread



Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analogue outputs: 1		
Measuring range	-1...100 bar	-15...1450 psi	-0.1...10 MPa
Process connection	threaded connection G 1 external thread sealing cone		

Application

Special feature	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; use in gases at pressures > 25 bar only on request		
Medium temperature [°C]	-25...150		
Min. bursting pressure	650 bar	9425 psi	65 MPa
Pressure rating	200 bar	2900 psi	20 MPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		



Flush pressure sensor

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Electrical data			
Operating voltage	[V]	18...30 DC	
Min. insulation resistance	[MΩ]	100; (500 V DC)	
Protection class		III	
Reverse polarity protection		yes	
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 analogue outputs: 1	
Outputs			
Total number of outputs		2	
Output signal		analogue signal; IO-Link; (configurable)	
Number of digital outputs		1; (IO-Link)	
Number of analogue outputs		1	
Analogue 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		-1...100 bar	-15...1450 psi -0.1...10 MPa
Analogue start point		-1...80 bar	-15...1160 psi -0.1...8 MPa
Analogue end point		19...100 bar	276...1450 psi 1.9...10 MPa
In steps of		0.05 bar	1 psi 0.005 MPa
Factory setting		ASP = 0.0 bar	AEP = 100.0 bar
Accuracy / deviations			
Repeatability	[% of the span]	< ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)	
Characteristics deviation	[% of the span]	< ± 0,5; (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 ± 0,15 % of the span / 10 K
	15...80 °C		Characteristics deviation
	80...150 °C		Characteristics deviation ± 0,2 % of the span / 10 K



Flush pressure sensor

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Notes on the accuracy /
deviation

for further details see section Diagrams and graphs

Response times

Damping for the analogue output dAA	[s]	0...4
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2-wire

Step response time analogue output	[ms]	30
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3-wire

Step response time analogue output	[ms]	7
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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 type	A	
Process data analogue	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[bar]	0.02
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	659

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 no.	J023

Mechanical data

Weight	[g]	330.15
Housing	cylindrical	
Dimensions	[mm]	Ø 30.2 / L = 122
Materials	stainless steel (316L/1.4404); PBT	

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Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (316L/1.4435); 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

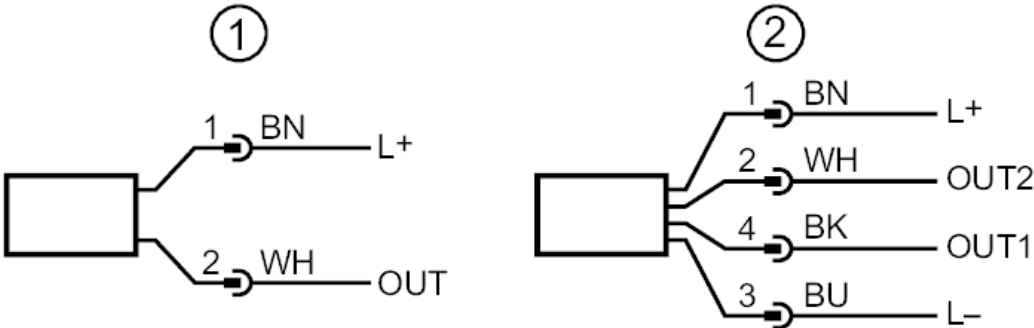
Pack quantity	1 pcs.
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Electrical connection

Connector: 1 x M12; coding: A; Contacts: gold-plated



Connection



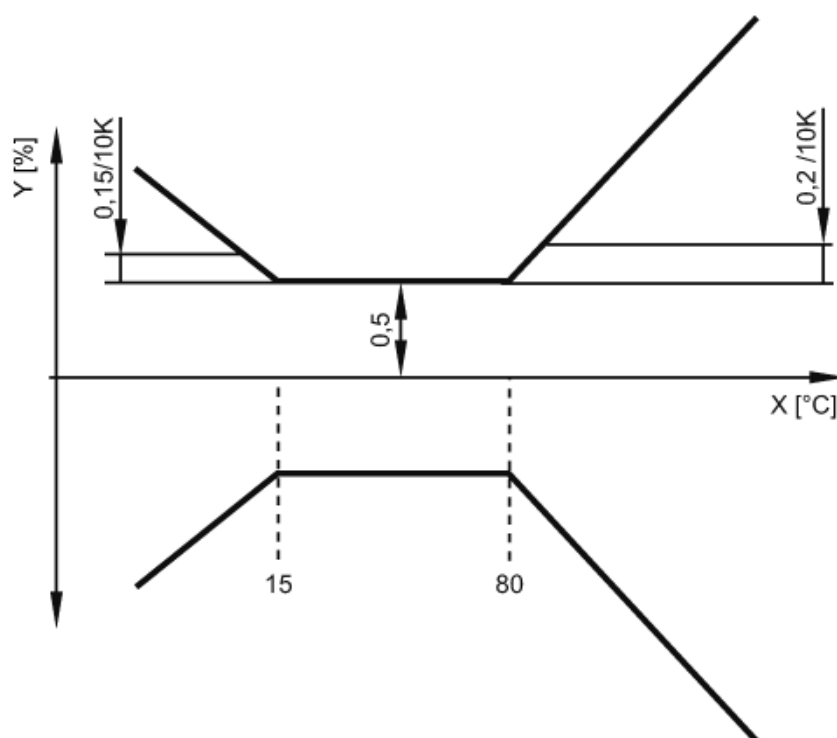
- 1
- connection for 2-wire operation (analogue)
- 2
- connection for 3-wire operation (analogue / IO-Link)
OUT1 : IO-Link
OUT2 : analogue output



Flush pressure sensor

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Diagrams and graphs



X temperature
Y total deviation