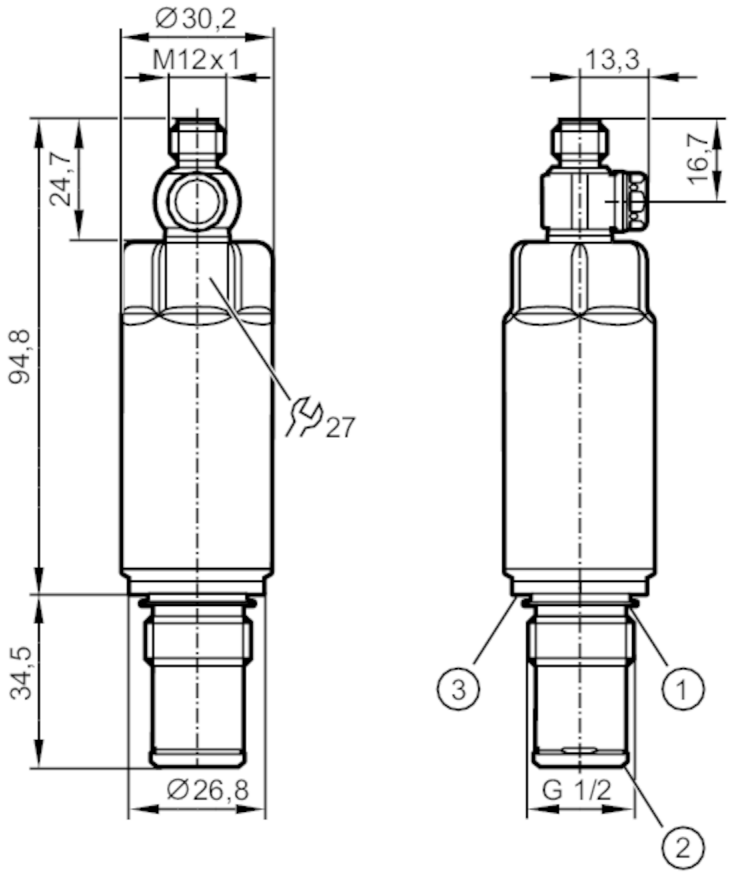
PM1504

Flush pressure sensor

PM-010-REA12-A-ZVG/US



1 Gasket FKM (for sealing on the back - not pressure resistant) / removable
2 pre-mounted PEEK sealing ring (removable) / metallic sealing area
3 groove for sealing ring DIN EN ISO 1179-2

Product characteristics			
Number of inputs and outputs	Number of digital outputs: 1; Number of analogue outputs: 1		
Measuring range	-1...10 bar	-14.5...145 psi	-0.1...1 MPa
Process connection	threaded connection G 1/2 external thread sealing cone - 34,5 mm		
Application			
Special feature	Gold-plated contacts		
Measuring element	ceramic-capacitive pressure measuring cell		
Temperature monitoring	yes		
Application	flush mountable for the food and beverage industry		
Media	viscous media and liquids with suspended particles; liquids and gases		
Conditionally suitable for	use in gases at pressures > 25 bar only on request		
Medium temperature [°C]	-25...150		
Min. burst pressure	175 bar	2538 psi	17 MPa
Pressure rating	75 bar	1100 psi	7.5 MPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		

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No dead space		yes		
MAWP for applications according to CRN	[bar]	43		
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; 1:5)		
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...10 bar	-14.5...145 psi	-0.1...1 MPa
Analogue start point		-1...8 bar	-14.5...116 psi	-0.1...0.8 MPa
Analogue end point		1...10 bar	14.5...145 psi	0.1...1 MPa
In steps of		0.005 bar	0.1 psi	0.0005 MPa
Factory setting		ASP = 0.0 bar	AEP = 10.0 bar	
Temperature monitoring				
Measuring range		-25...150 °C	-13...302 °F	
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)		
Zero-point stabilisation	[% of the span]	IO-Link, analogue output	0,15; (see operating instructions zero-point behaviour)	
Hysteresis deviation	[% of the span]	< ± 0,15; (Turn down 1:1)		

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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		
Temperature monitoring			
Accuracy [K]	± 2.5 K + (0.045 x (ambient temperature - medium temperature))		
Repeatability [K]	± 0,2		
Resolution [K]	0.2		
Response times			
Damping for the analogue output dAA [s]	0...4		
2-wire			
Step response time analogue output [ms]	30		
3-wire			
Step response time analogue output [ms]	7		
Temperature monitoring			
Dynamic response T05 / T09 [s]	< 10 / < 45; (DIN EN 60751 water; > 0,9 m/s)		
Interfaces			
Communication interface	IO-Link		
Transmission type	COM2 (38,4 kBaud)		
IO-Link revision	1.1		
SDCI standard	IEC 61131-9		
Profiles	Common - I&D	Identification and Diagnosis	
	Function	Measurement data, standard resolution	
SIO mode	no		
Required master port type	A; (when pin 2 not connected: B)		
Min. process cycle time [ms]	4.5		
IO-Link resolution pressure [bar]	0.002		
IO-Link resolution temperature [K]	0.2		
IO-Link process data (cyclical)	**function**	**bit length**	
	pressure	16	
	temperature	16	
	device status	4	
IO-Link functions (acyclical)	application specific tag; internal temperature		
Supported DeviceIDs	**Type of operation**	**DeviceID**	
	default	1021	
Operating conditions			
Ambient temperature [°C]	-25...80		

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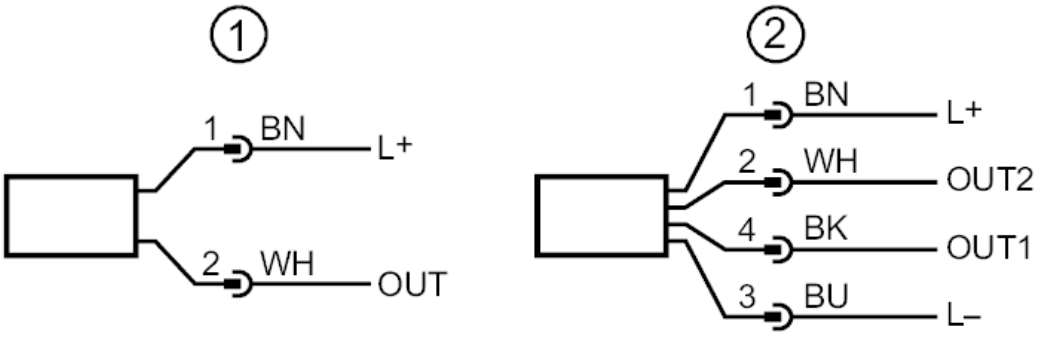
Storage temperature	[°C]	-40...100	
Protection		IP 67; IP 68; IP 69K	
Tests / approvals			
EMC		DIN EN 61326-1	
Shock resistance		DIN EN 60068-2-27	50 g (11 ms)
Vibration resistance		DIN EN 60068-2-6	20 g (10...2000 Hz)
MTTF	[years]	322	
Note on approval		factory certificate available as download at www.factory-certificate.ifm	
UL approval		UL approval no.	J024
		File number UL	E174189
Mechanical data			
Weight	[g]	307.4	
Housing		cylindrical	
Dimensions	[mm]	Ø 30.2 / L = 129.3	
Materials		stainless steel (316L/1.4404); PTFE; FKM	
Materials (wetted parts)		ceramics (99.9 % Al2O3); stainless steel (316L/1.4435) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PEEK; PTFE	
Min. pressure cycles		100 million	
Tightening torque	[Nm]	25	
Process connection		threaded connection G 1/2 external thread sealing cone - 34,5 mm	
Remarks			
Pack quantity		1 pcs.	

Electrical connection

Connector: 1 x M12; coding: A; Contacts: 4, gold-plated



Connection



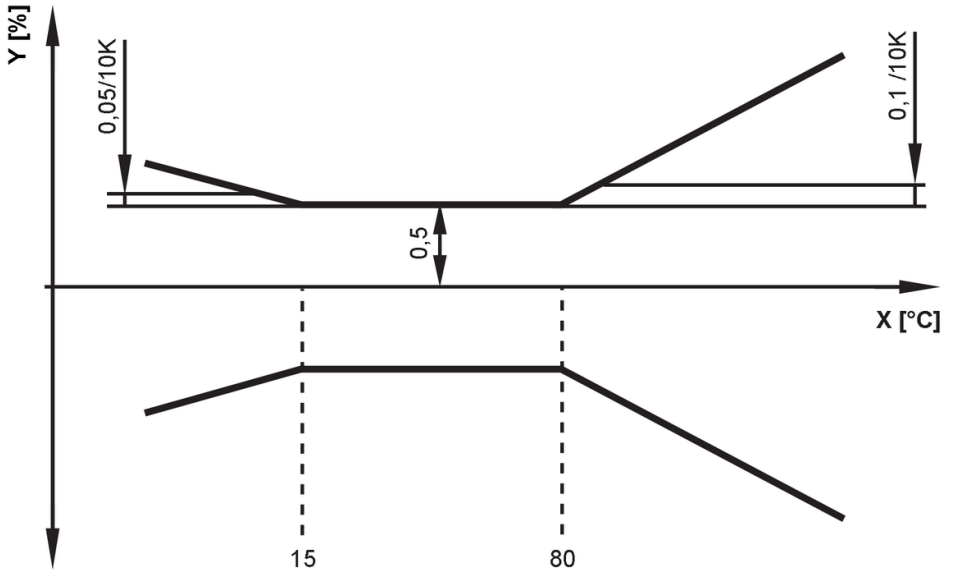
1	connection for 2-wire operation (analogue)
2	connection for 3-wire operation (analogue / IO-Link) OUT1: IO-Link OUT2: analogue output

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Diagrams and graphs



X temperature

Y total deviation