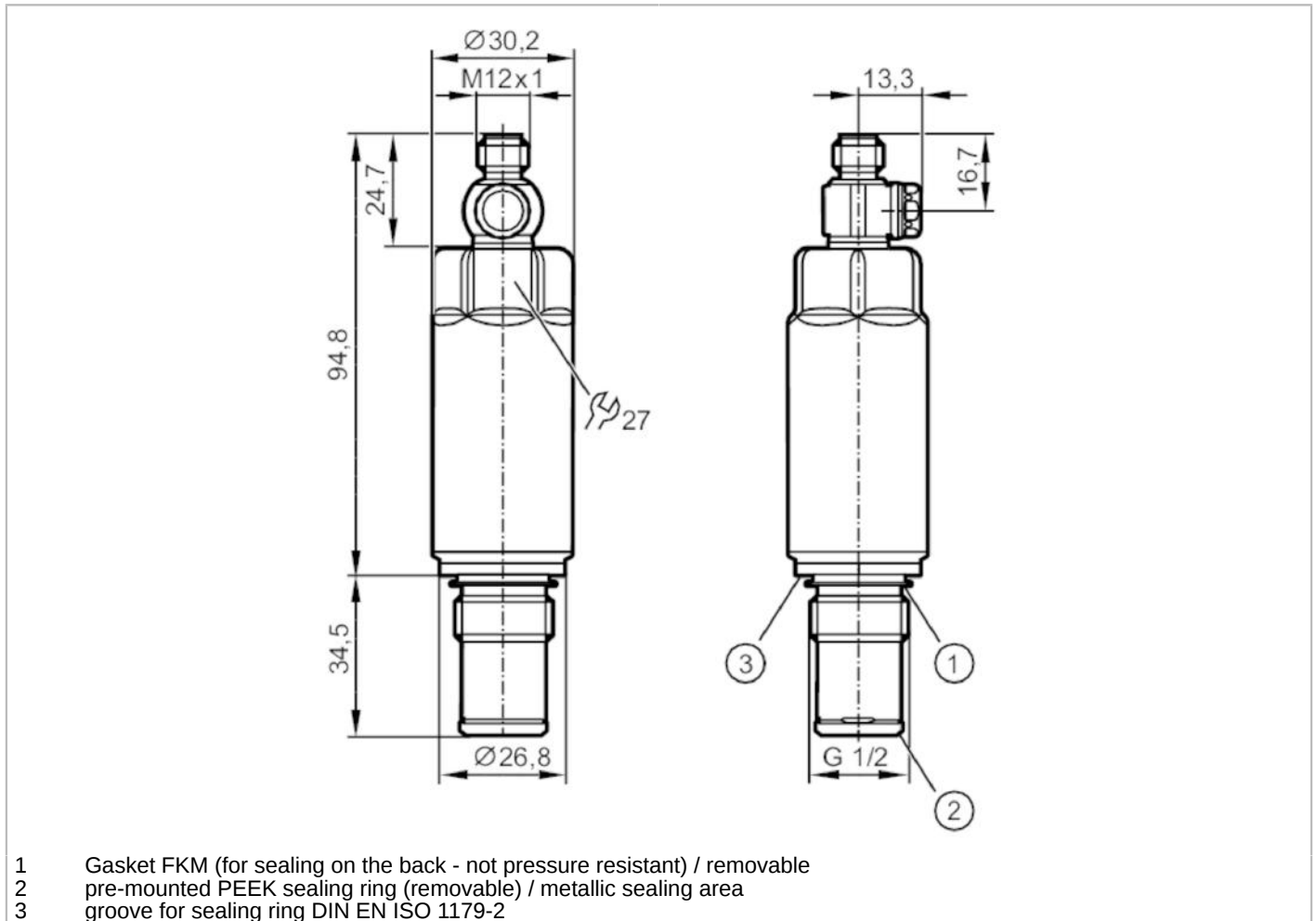


PM1504



Flush pressure sensor

PM-010-REA12-A-ZVG/US



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		

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. bursting 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		
No dead space	yes		

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MAWP (for applications according to CRN)	[bar]	43
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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
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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; (U _b = 24 V; (U _b - 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
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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)

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Total deviation over temperature range	Temperature range		total deviation
	-25...15 °C		Characteristics deviation $\pm 0,05$ % of the span / 10 K
	15...80 °C		Characteristics deviation
	80...150 °C		Characteristics deviation $\pm 0,1$ % of the span / 10 K
Notes on the accuracy / deviation	for further details see section Diagrams and graphs		
Temperature monitoring			
Accuracy	[K]	$\pm 2.5 \text{ K} + (0.045 \times (\text{ambient temperature} - \text{medium temperature}))$	
Repeatability	[K]	$\pm 0,2$	
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]	$< 10 / < 25$; (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		Smart Sensor ED2: Identification and Diagnosis (0x4000), Measurement Data Channel (0x800A)	
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	
Storage temperature	[°C]	-40...100	
Protection		IP 67; IP 68; IP 69K	

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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 % Al ₂ O ₃); stainless steel (316L/1.4435); surface characteristics: Ra < 0,4 / Rz 4; PEEK; PTFE
Min. pressure cycles		100 million
Tightening torque [Nm]		20
Process connection		threaded connection G 1/2 external thread sealing cone

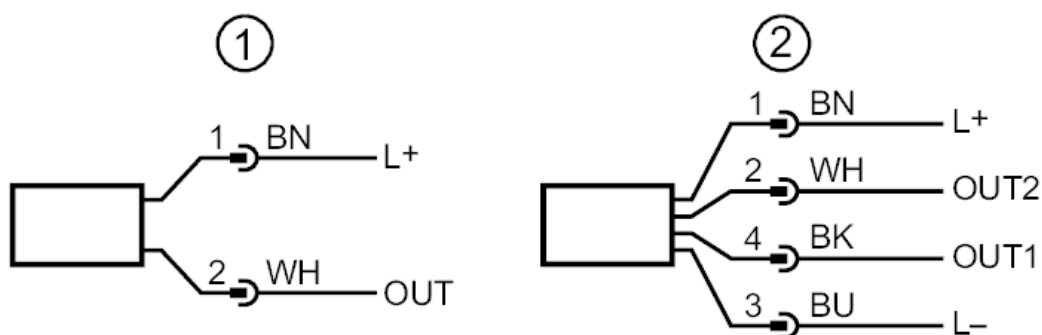
Remarks	
Pack quantity	1 pcs.

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

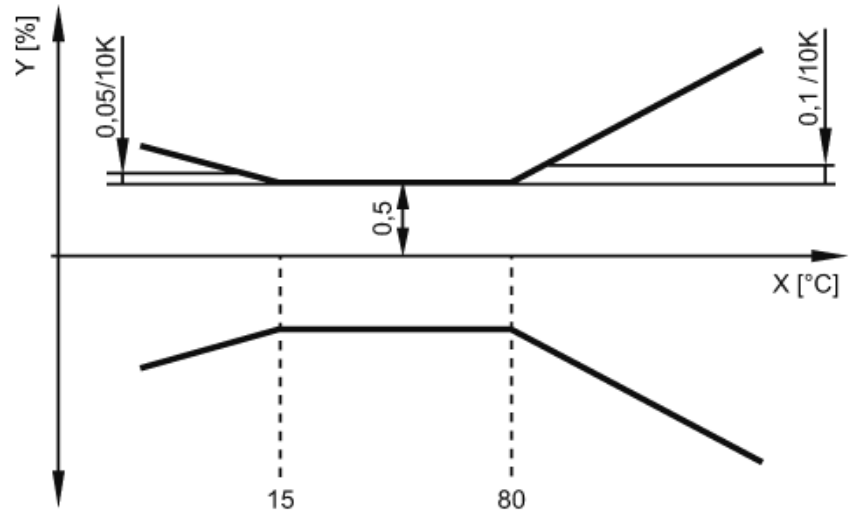
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Diagrams and graphs



X temperature
Y total deviation