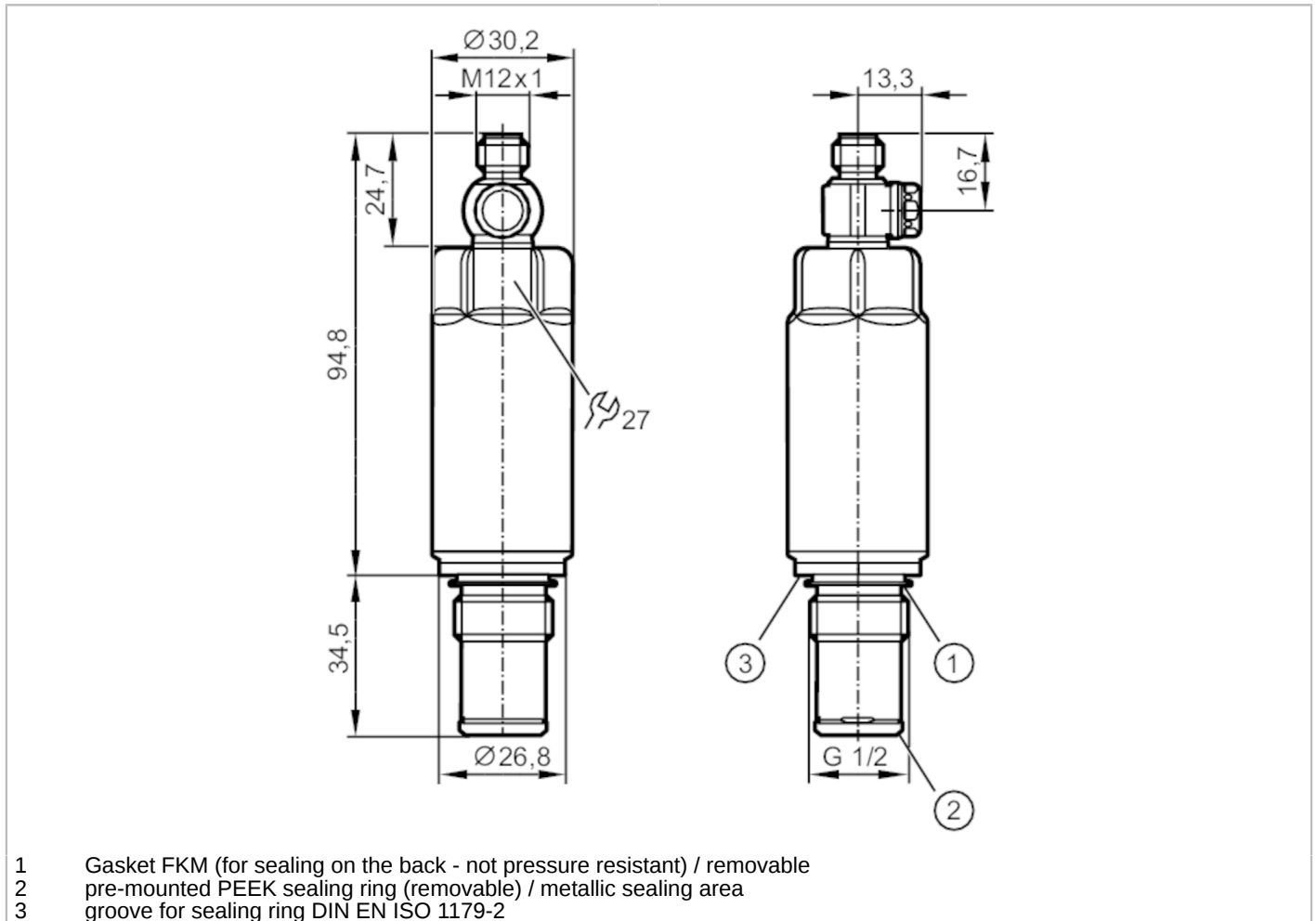


# PM1504



## 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



ACS



CRN



US

EC 1935/2004

EHDG Certified

FCM



IO-Link



Reg31

UK  
CA

### 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	
<b>Electrical data</b>			
Operating voltage	[V]	18...30 DC	
Min. insulation resistance	[MΩ]	100; (500 V DC)	
Protection class		III	
Reverse polarity protection		yes	
Integrated watchdog		yes	
<b>2-wire</b>			
Current consumption	[mA]	3.5...21.5	
Power-on delay time	[s]	< 1	
<b>3-wire</b>			
Current consumption	[mA]	< 45	
Power-on delay time	[s]	< 0.5	
<b>Inputs / outputs</b>			
Number of inputs and outputs		Number of digital outputs: 1; Number of analogue outputs: 1	
<b>Outputs</b>			
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 <sub>b</sub> = 24 V; (U <sub>b</sub> - 9 V) / 21.5 mA)	
Short-circuit proof		yes	
Overload protection		yes	
<b>Measuring/setting range</b>			
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	
<b>Temperature monitoring</b>			
Measuring range	-25...150 °C	-13...302 °F	
<b>Accuracy / deviations</b>			
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	<b>Temperature range</b>		<b>total deviation</b>
	-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		
<b>Temperature monitoring</b>			
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	
<b>Response times</b>			
Damping for the analogue output dAA	[s]	0...4	
<b>2-wire</b>			
Step response time analogue output	[ms]	30	
<b>3-wire</b>			
Step response time analogue output	[ms]	7	
<b>Temperature monitoring</b>			
Dynamic response T05 / T09	[s]	$< 10 / < 45$ ; (DIN EN 60751 water; $> 0,9$ m/s)	
<b>Interfaces</b>			
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)	<b>function</b>	<b>bit length</b>	
	pressure	16	
	temperature	16	
	device status	4	
IO-Link functions (acyclical)	application specific tag; internal temperature		
Supported DeviceIDs	<b>Type of operation</b>	<b>DeviceID</b>	
	default	1021	
<b>Operating conditions</b>			
Ambient temperature	[°C]	-25...80	
Storage temperature	[°C]	-40...100	
Protection	IP 67; IP 68; IP 69K		

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## Flush pressure sensor

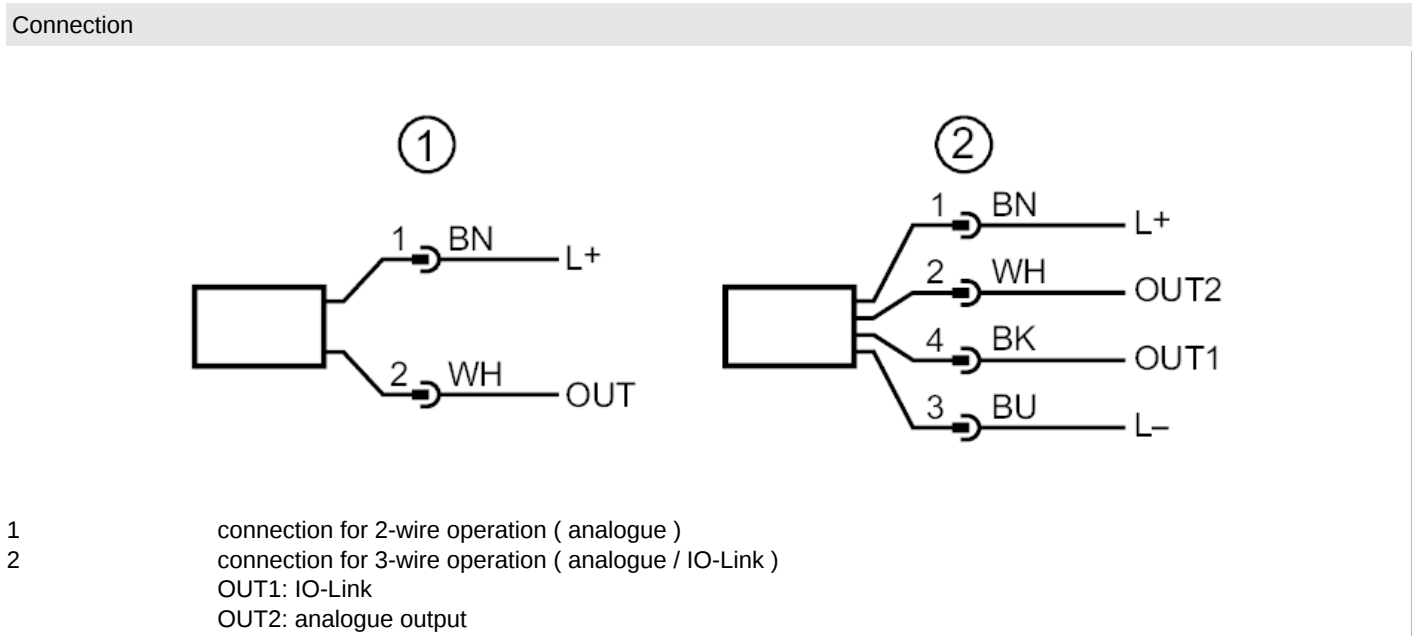
PM-010-REA12-A-ZVG/US

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 <a href="http://www.factory-certificate.ifm">www.factory-certificate.ifm</a>	
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 <sub>2</sub> O <sub>3</sub> ); stainless steel (316L/1.4435) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PEEK; PTFE
Min. pressure cycles		100 million
Tightening torque [Nm]		20
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

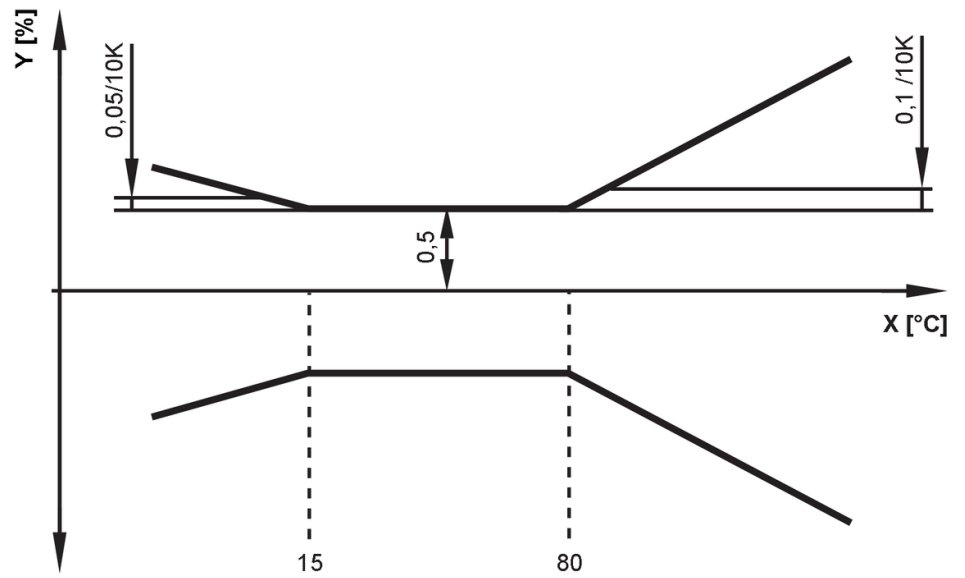
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### Diagrams and graphs



X temperature  
Y total deviation