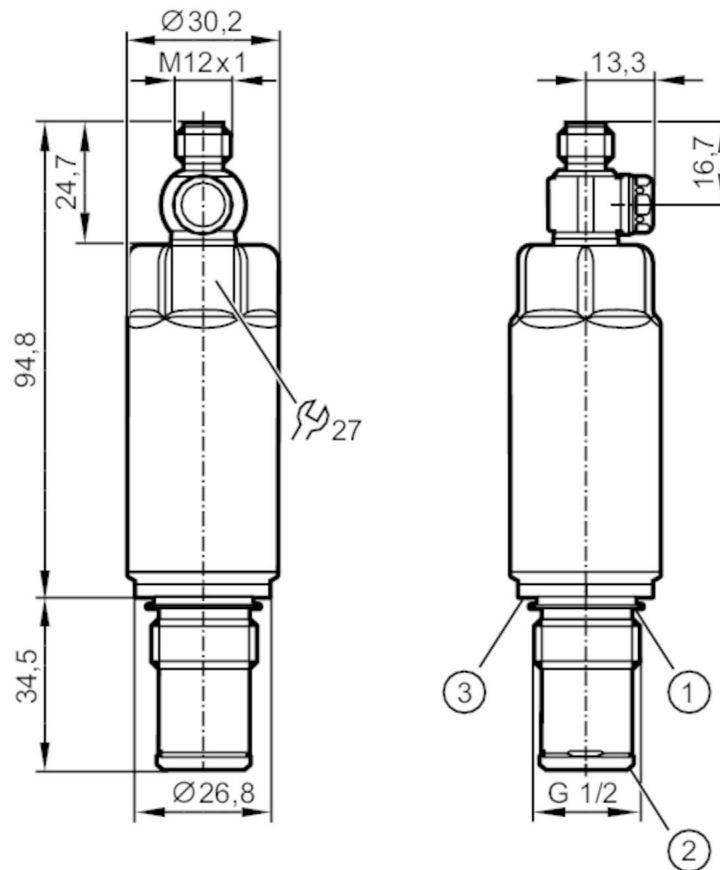


# PM1503



## Flush pressure sensor

PM-025-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 analog outputs: 1		
Measuring range	-1...25 bar	-14.6...362.6 psi	-0.1...2.5 MPa
Process connection	threaded connection G 1/2 external thread sealing cone		

### Application

System	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	280 bar	3600 psi	28 MPa
Pressure rating	160 bar	2300 psi	16 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 analog outputs: 1
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### 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; 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

### Measuring/setting range

Measuring range	-1...25 bar	-14.6...362.6 psi	-0.1...2.5 MPa
Analog start point	-1...20 bar	-14.6...290 psi	-0.1...2 MPa
Analog end point	4...25 bar	58...362.6 psi	0.4...2.5 MPa
In steps of	0.01 bar	0.2 psi	0.001 MPa
Factory setting	ASP = 0.0 bar	AEP = 25.0 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	<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>Reaction times</b>				
Damping for the analog output dAA	[s]	0...4		
<b>2-wire</b>				
Step response time analog output	[ms]	30		
<b>3-wire</b>				
Step response time analog output	[ms]	7		
<b>Temperature monitoring</b>				
Dynamic response T05 / T09	[s]	$< 10 / < 25$ ; (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	Smart Sensor ED2: Identification and Diagnosis (0x4000), Measurement Data Channel (0x800A)			
SIO mode	no			
Required master port class	A; (when pin 2 not connected: B)			
Min. process cycle time	[ms]	4.5		
IO-Link resolution pressure	[bar]	0.005		
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	1019		
<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

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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 <a href="http://www.factory-certificate.ifm">www.factory-certificate.ifm</a>	
UL approval	UL approval number	J024
	File number UL	E174189

Mechanical data		
Weight [g]		268.1
Material	stainless steel (1.4404 / 316L); PTFE; FKM	
Materials (wetted parts)	ceramics (99.9 % Al <sub>2</sub> O <sub>3</sub> ); stainless steel (1.4435 / 316L); 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	

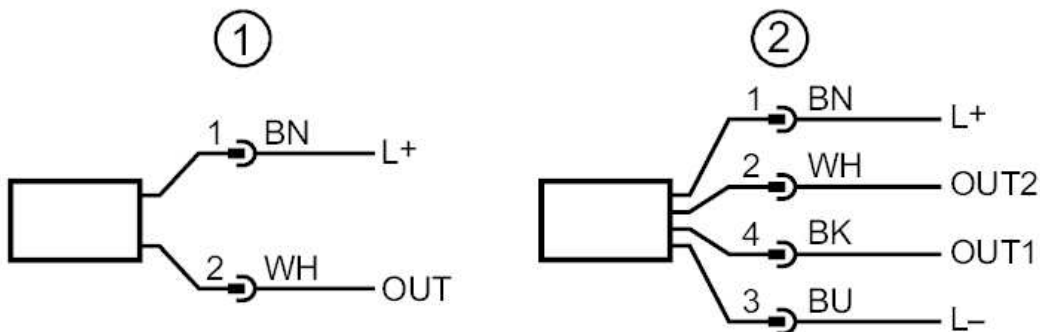
Remarks		
Pack quantity		1 pcs.

### Electrical connection

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



### Connection



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

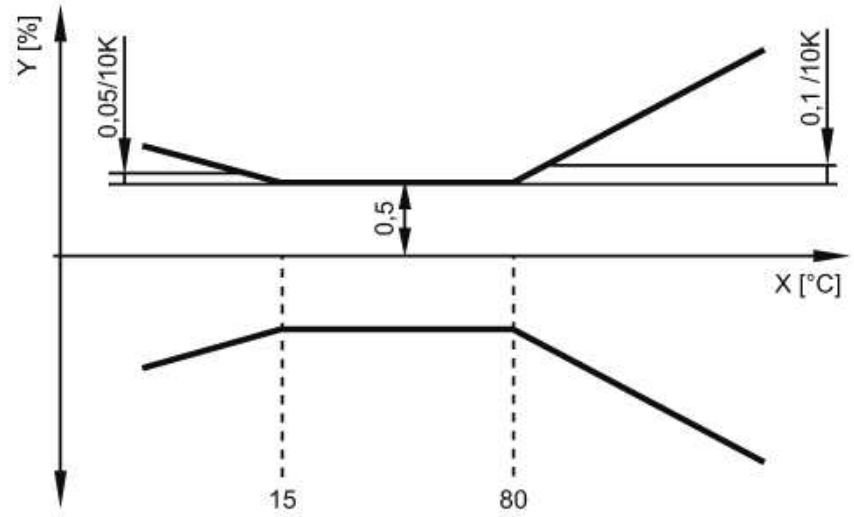
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### Diagrams and graphs



X temperature  
Y total deviation