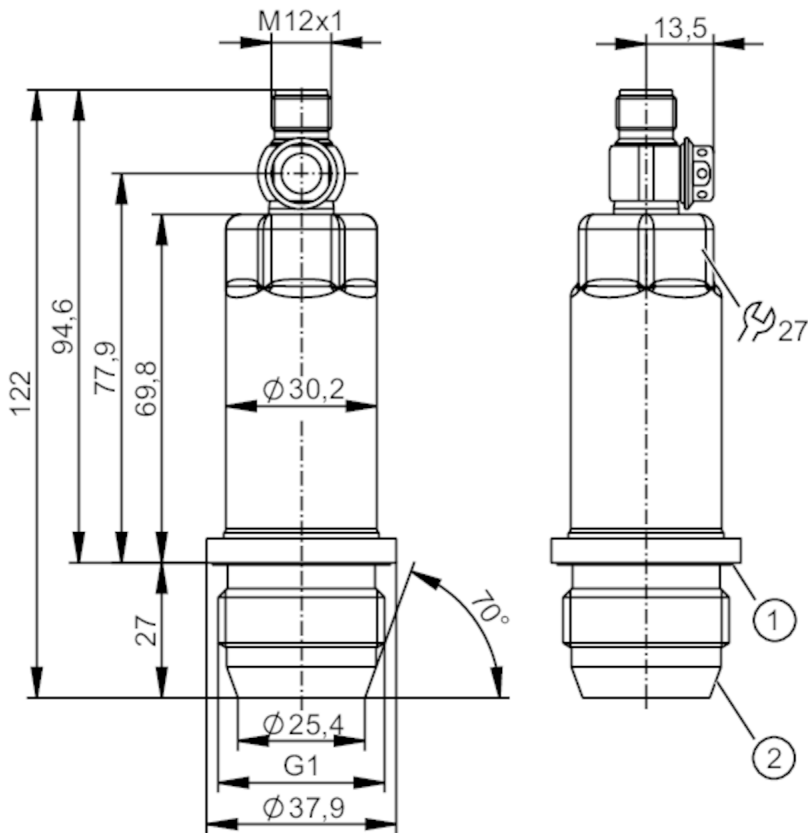


# PM1603



## Flush pressure sensor

PM-025-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...25 bar	-14.6...362.6 psi	-0.1...2.5 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		
Medium temperature [°C]	-25...150		
Min. bursting pressure	350 bar	5075 psi	35 MPa
Pressure rating	100 bar	1450 psi	10 MPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		
MAWP (for applications according to CRN) [bar]	45		

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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; (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
Analogue start point		-1...20 bar	-14.6...290 psi
Analogue end point		4...25 bar	58...362.6 psi
In steps of		0.01 bar	0.2 psi
Factory setting		ASP = 0.00 bar	AEP = 25.00 bar
			0.4...2.5 MPa
			0.001 MPa
Accuracy / deviations			
Repeatability	[% of the span]	< ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)	
Characteristics deviation	[% of the span]	< ± 0,2; (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		<b>Temperature range</b>	<b>total deviation</b>
		-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

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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
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Transmission type	COM2 (38,4 kBaud)
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IO-Link revision	1.1
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SDCI standard	IEC 61131-9
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Profiles	Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)
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SIO mode	no
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Required master port type	A
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Process data analogue	3
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Min. process cycle time	[ms]	3.2
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IO-Link resolution pressure	[bar]	0.005
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IO-Link process data (cyclical)	function	bit length
	pressure	16
	device status	4

IO-Link functions (acyclical)	application specific tag; internal temperature
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Supported DeviceIDs	Type of operation	DeviceID
	default	660

### Operating conditions

Ambient temperature	[°C]	-25...80
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Storage temperature	[°C]	-40...100
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Protection	IP 67; IP 68; IP 69K
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### Tests / approvals

EMC	DIN EN 61000-6-2	
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DIN EN 61000-6-3	
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Shock resistance	DIN EN 60068-2-27	50 g (11 ms)
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Vibration resistance	DIN EN 60068-2-6	20 g (10...2000 Hz)
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MTTF	[years]	323
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Note on approval	factory certificate available as download at <a href="http://www.factory-certificate.ifm">www.factory-certificate.ifm</a>
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UL approval	UL Approval no.	J022
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### Mechanical data

Weight	[g]	340.1
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Materials	stainless steel (1.4404 / 316L); PBT
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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; PTFE
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Min. pressure cycles	100 million
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Tightening torque	[Nm]	20
Process connection		threaded connection G 1 external thread sealing cone

### Remarks

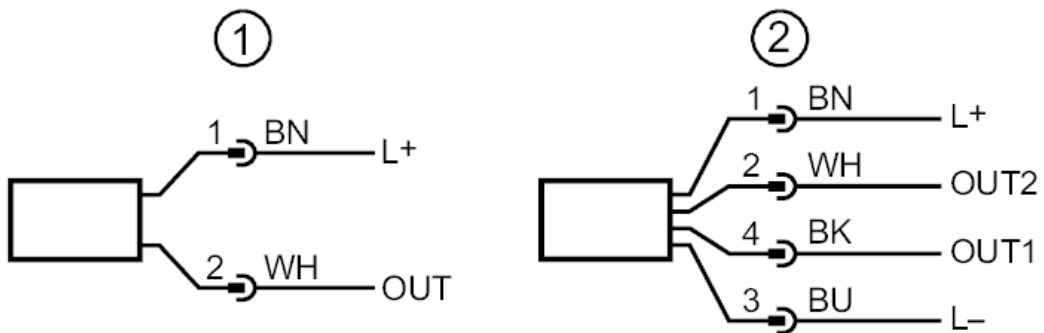
Pack quantity		1 pcs.
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### Electrical connection

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

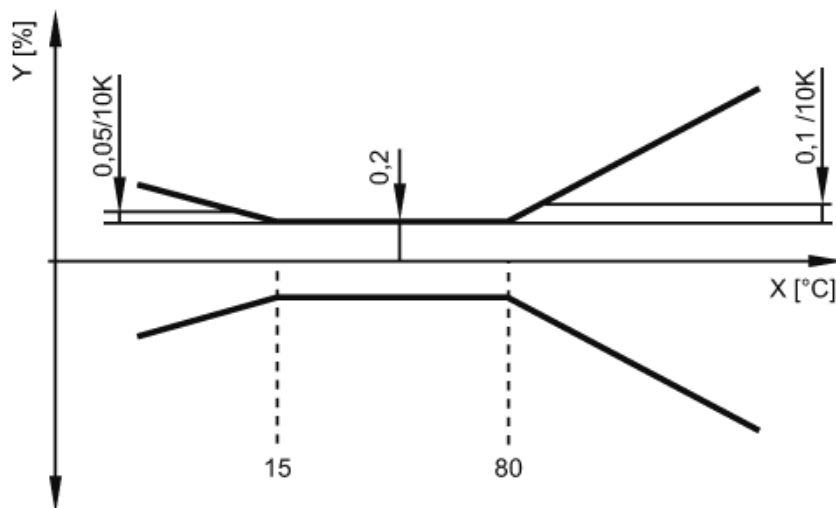


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### Diagrams and graphs

ambient temperature influence on the accuracy



X temperature  
Y total deviation