

PM1604

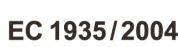


Flush pressure sensor

PM-010-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 analog outputs: 1			
Measuring range	-1...10 bar	-14.5...145 psi	-100...1000 kPa	-0.1...1 MPa
Process connection	threaded connection G 1 external thread sealing cone - 27 mm			

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. burst pressure	150 bar	2175 psi	15 MPa
Pressure rating	50 bar	725 psi	5 MPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		
MAWP (for applications according to CRN) [bar]	50		

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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		
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)		
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	-100...1000 kPa -0.1...1 MPa
Analog start point		-1...8 bar	-14.5...116 psi	-0.1...0.8 MPa
Analog 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	
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		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



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Notes on the accuracy /
deviation

for further details see section Diagrams and graphs

Reaction times

Damping for the analog output dAA	[s]	0...4
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2-wire

Step response time analog output	[ms]	30
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3-wire

Step response time analog 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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis

SIO mode	no
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Required master port class	A
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Process data analog	3
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Min. process cycle time	[ms]	3.2
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IO-Link resolution pressure	[bar]	0.002
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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	662

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	
	DIN EN 61000-6-3	

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 www.factory-certificate.ifm	
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UL approval	UL approval number	J022
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Mechanical data

Weight	[g]	337.7
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Housing	tubular
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Dimensions	[mm]	Ø 30.2 / L = 122
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Material	stainless steel (1.4404 / 316L); PBT
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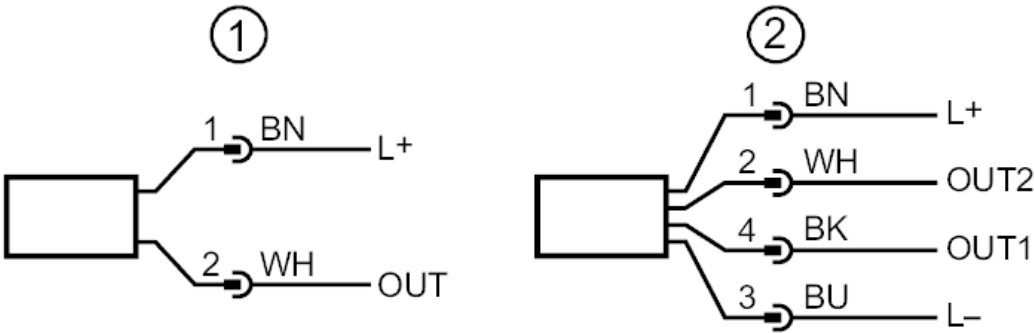
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE
Min. pressure cycles	100 million
Tightening torque [Nm]	20
Process connection	threaded connection G 1 external thread sealing cone - 27 mm
Remarks	
Pack quantity	1 pcs.

Electrical connection

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



Connection



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

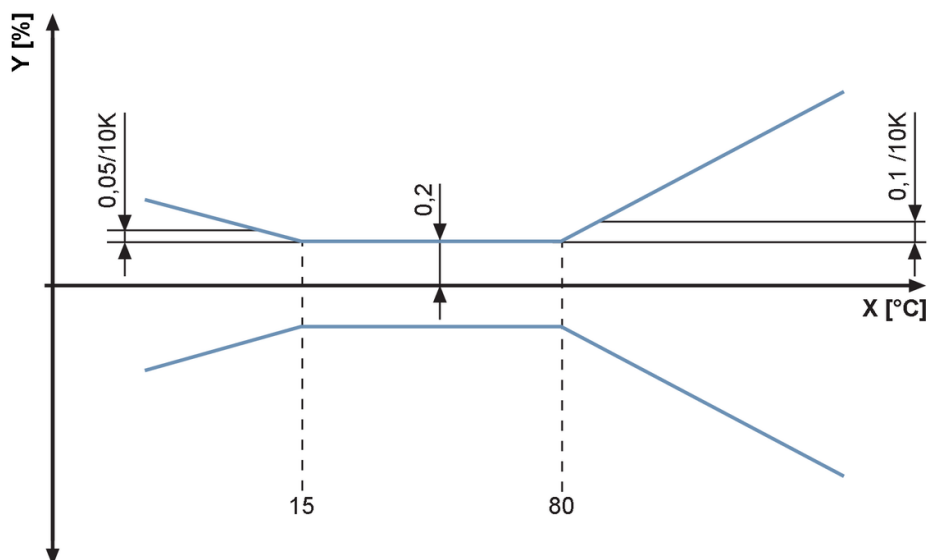


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Diagrams and graphs

ambient temperature influence on the accuracy



X temperature
Y total deviation