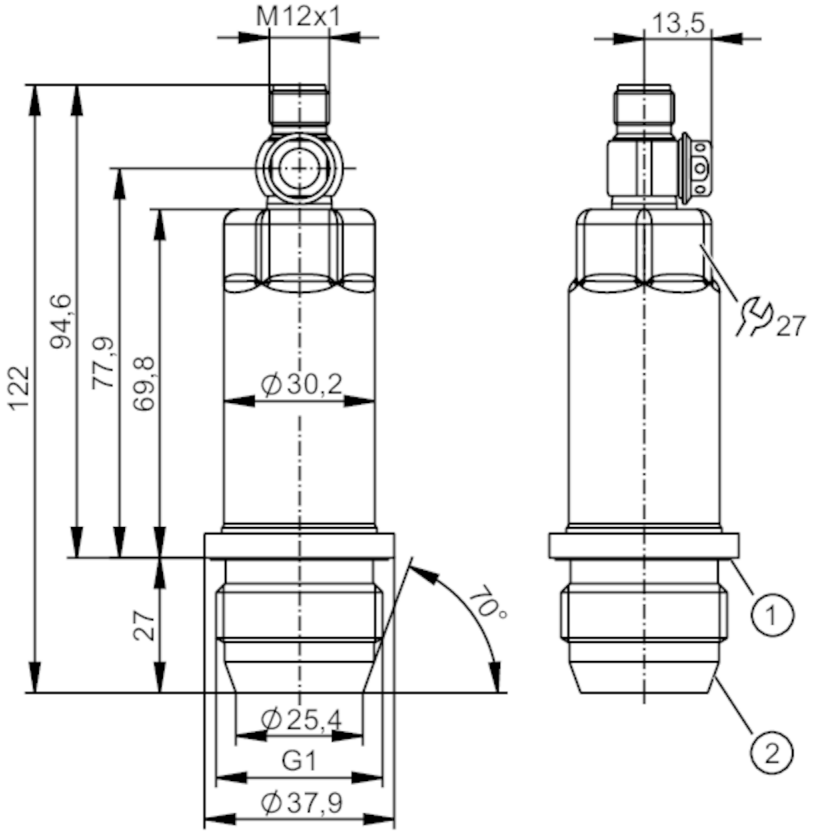
PM1689

Flush pressure sensor

PM-,10BREA01-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	-0.005...0.1 bar	-5...100 mbar	-0.073...1.45 psi	-0.5...10 kPa
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	30000 mbar	435 psi	3000 kPa	
Pressure rating	4000 mbar	58 psi	400 kPa	
Vacuum resistance [mbar]	-1000			
Type of pressure	relative pressure			
No dead space	yes			

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MAWP for applications according to CRN	[bar]	4			
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; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)			
Short-circuit proof		yes			
Overload protection		yes			
Measuring/setting range					
Measuring range		-0.005...0.1 bar	-5...100 mbar	-0.073...1.45 psi	-0.5...10 kPa
Analogue start point		-5...80 mbar	-0.073...1.16 psi	-0.5...8 kPa	
Analogue end point		15...100 mbar	0.218...1.45 psi	1.5...10 kPa	
In steps of		0.05 mbar	0.001 psi	0.005 kPa	
Factory setting		ASP = 0.0 mbar	AEP = 100 mbar		
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]	< ± 0,25; (Turn down 1:1)			
Hysteresis deviation	[% of the span]	< ± 0,2; (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 ± 0,15 % of the span / 10 K	
	15...80 °C	Characteristics deviation	
	80...150 °C	Characteristics deviation ± 0,2 % of the span / 10 K	
Notes on the accuracy / deviation	for further details see section Diagrams and graphs		
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		
Interfaces			
Communication interface	IO-Link		
Transmission type	COM2 (38,4 kBaud)		
IO-Link revision	1.1		
SDCI standard	IEC 61131-9		
Profiles	Smart Sensor - SSP 3.1	Measuring Sensor	
	Common - I&D	Identification and Diagnosis	
SIO mode	no		
Required master port type	A		
Process data analogue	3		
Min. process cycle time [ms]	3.2		
IO-Link resolution pressure [mbar]	0.02		
IO-Link process data (cyclical)	**function**	**bit length**	
	pressure	16	
	device status	4	
IO-Link functions (acyclical)	application specific tag; internal temperature		
Supported DeviceIDs	**Type of operation**	**DeviceID**	
	default	670	
Operating conditions			
Ambient temperature [°C]	-25...80		
Storage temperature [°C]	-40...100		
Protection	IP 67; IP 68; IP 69K		
Tests / approvals			
EMC	DIN EN 61000-6-2		
	DIN EN 61000-6-3		
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]	323		
Note on approval	factory certificate available as download at www.factory-certificate.ifm		
UL approval	UL approval no.	J022	

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Mechanical data		
Weight	[g]	337.4
Housing		cylindrical
Dimensions	[mm]	Ø 30.2 / L = 122
Materials		stainless steel (316L/1.4404); PBT
Materials (wetted parts)		ceramics (99.9 % Al2O3); stainless steel (316L/1.4435) 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

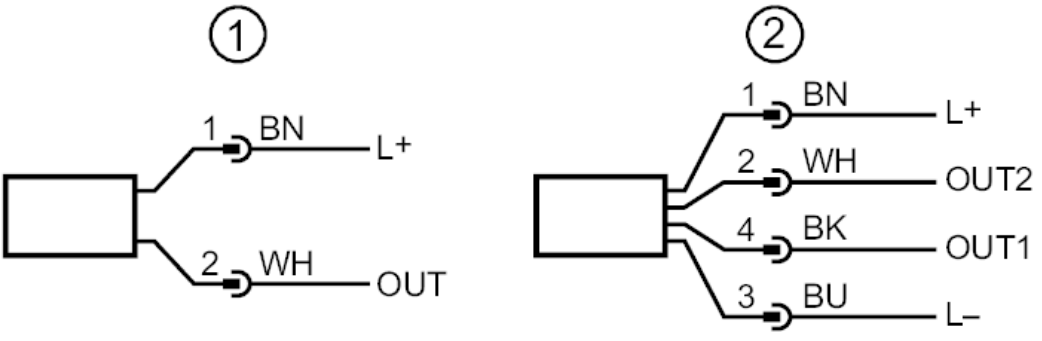
Remarks	
Pack quantity	1 pcs.

Electrical connection

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



Connection



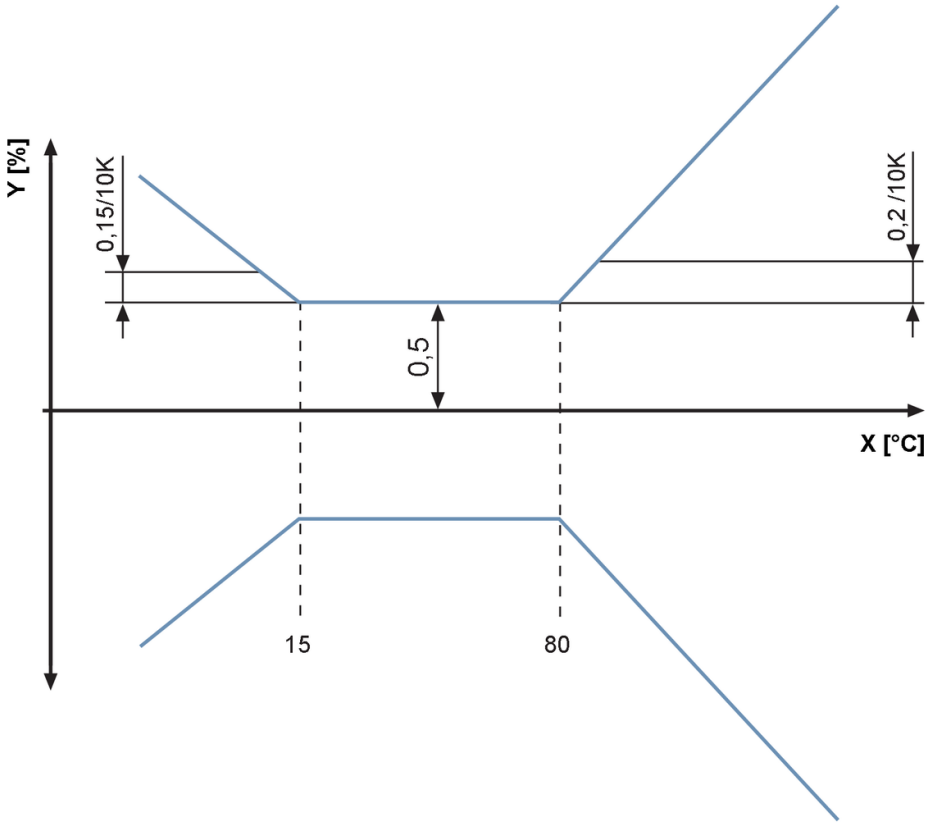
1	connection for 2-wire operation (analogue)
2	connection for 3-wire operation (analogue / IO-Link) OUT1 : IO-Link OUT2 : analogue output

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Diagrams and graphs



X temperature

Y total deviation