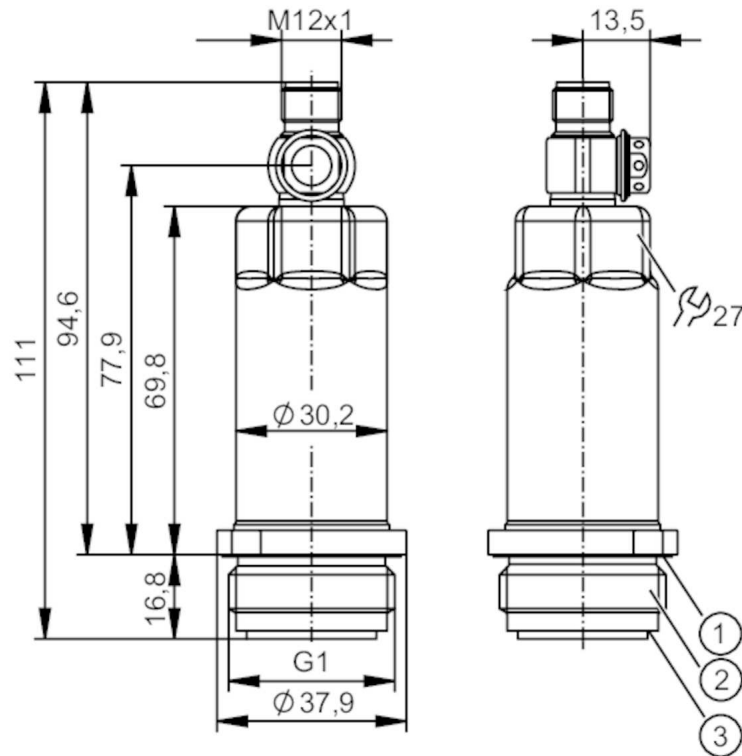


# PM1709



## Flush pressure sensor

PM-1-1BREA01-E-ZVG/US



- 1 groove with sealing ring (DIN EN ISO 1179-2)
- 2 external thread G1 (Aseptoflex Vario)
- 3 groove for sealing ring



### Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1			
Measuring range	-1...1 bar	-1000...1000 mbar	-14.5...14.5 psi	-100...100 kPa
Process connection	threaded connection G 1 external thread Aseptoflex Vario			

### Application

System	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	30000 mbar	435 psi	3000 kPa
Pressure rating	10000 mbar	145 psi	1000 kPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		
MAWP (for applications according to CRN) [bar]	10		

### Electrical data

Operating voltage [V]	18...30 DC
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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)
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...1 bar	-1000...1000 mbar	-14.5...14.5 psi	-100...100 kPa
Analog start point	-1000...600 mbar	-14.5...8.7 psi	-100...60 kPa	
Analog end point	-600...1000 mbar	-8.7...14.5 psi	-60...100 kPa	
In steps of	1 mbar	0.01 psi	0.1 kPa	
Factory setting		ASP = -1000 mbar	AEP = 1000 mbar	

### 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

Notes on the accuracy / deviation	for further details see section Diagrams and graphs
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## Flush pressure sensor

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Reaction times		
Damping for the analog output dAA	[s]	0...4
2-wire		
Step response time analog output	[ms]	30
3-wire		
Step response time analog 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		Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)
SIO mode		no
Required master port class		A
Process data analog		3
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[mbar]	0.5
IO-Link functions (acyclical)		application specific tag; internal temperature
Supported DeviceIDs	<b>Type of operation</b>	<b>DeviceID</b>
	default	667
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 <a href="http://www.factory-certificate.ifm">www.factory-certificate.ifm</a>
UL approval	UL approval number	J021
Mechanical data		
Weight	[g]	306.9
Material		stainless steel (1.4404 / 316L); PBT
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
Min. pressure cycles		100 million
Tightening torque	[Nm]	35
Process connection		threaded connection G 1 external thread Aseptoflex Vario
Remarks		
Pack quantity		1 pcs.

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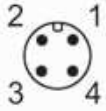


## Flush pressure sensor

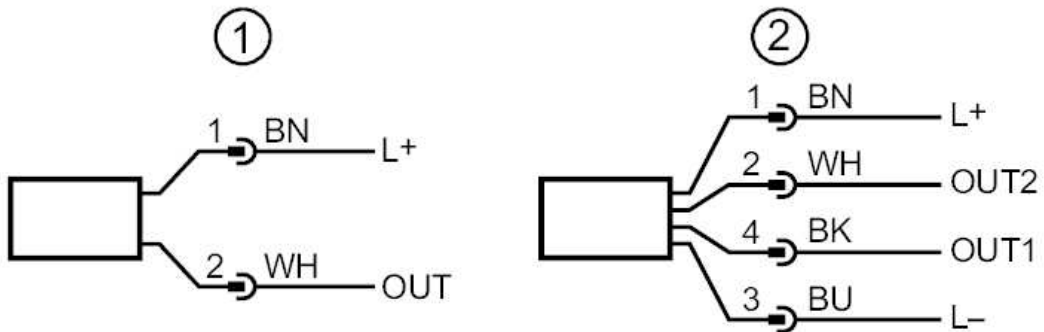
PM-1-1BREA01-E-ZVG/US

### Electrical connection

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



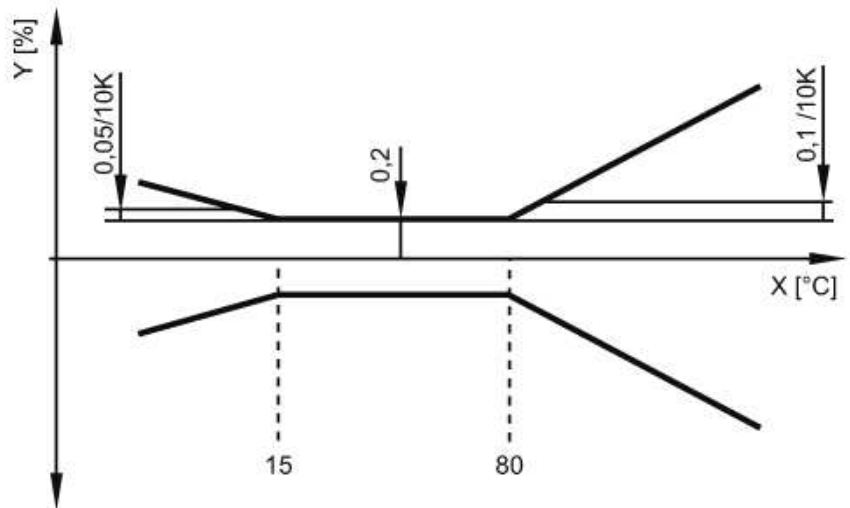
### Connection



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

### Diagrams and graphs

ambient temperature influence on the accuracy



X temperature  
Y total deviation