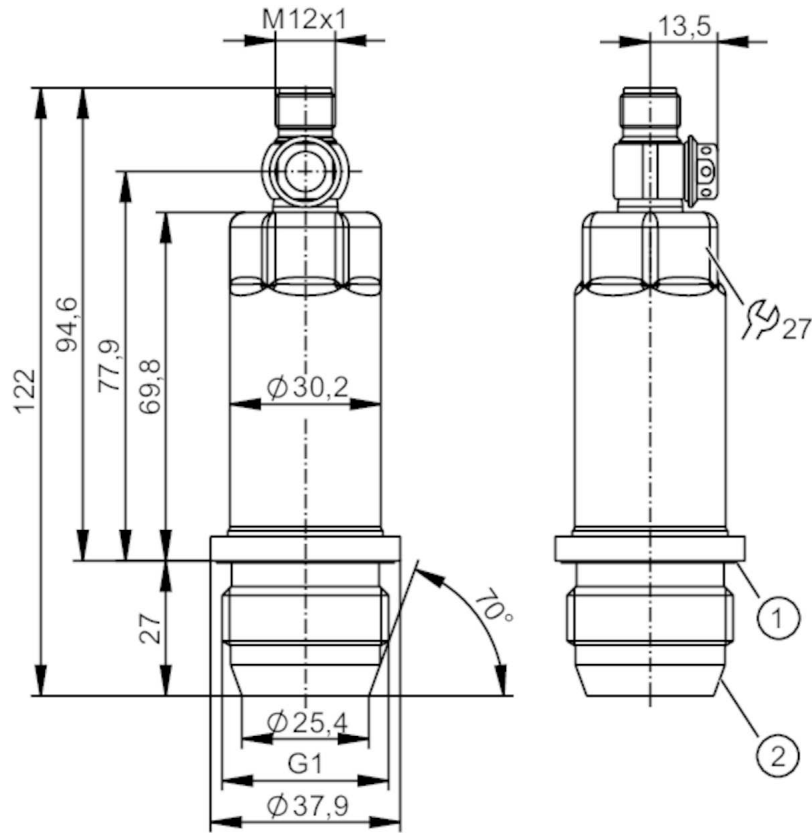


# PM1605



## Flush pressure sensor

PM-004-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...4 bar	-14.5...58 psi	-100...400 kPa
Process connection	threaded connection G 1 external thread sealing cone		

### 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	100 bar	1450 psi	10000 kPa
Pressure rating	30 bar	435 psi	3000 kPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		
MAWP (for applications according to CRN) [bar]	30		

# PM1605



## Flush pressure sensor

PM-004-REA01-E-ZVG/US

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; (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...4 bar	-14.5...58 psi
Analog start point		-1...3.2 bar	-14.5...46.4 psi
Analog end point		-0.2...4 bar	-2.9...58 psi
In steps of		0.002 bar	0.05 psi
Factory setting		ASP = 0.0 bar	AEP = 4.0 bar
			-100...400 kPa
			-100...320 kPa
			-20...400 kPa
			0.2 kPa
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

# PM1605



## Flush pressure sensor

PM-004-REA01-E-ZVG/US

Notes on the accuracy / deviation

for further details see section Diagrams and graphs

### 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	[bar]	0.001
-----------------------------	-------	-------

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	664

### 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	J022
-------------	--------------------	------

### Mechanical data

Weight	[g]	337.55
--------	-----	--------

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
----------------------	-------------

# PM1605



## Flush pressure sensor

PM-004-REA01-E-ZVG/US

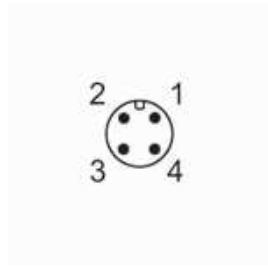
Tightening torque	[Nm]	20
Process connection		threaded connection G 1 external thread sealing cone

### Remarks

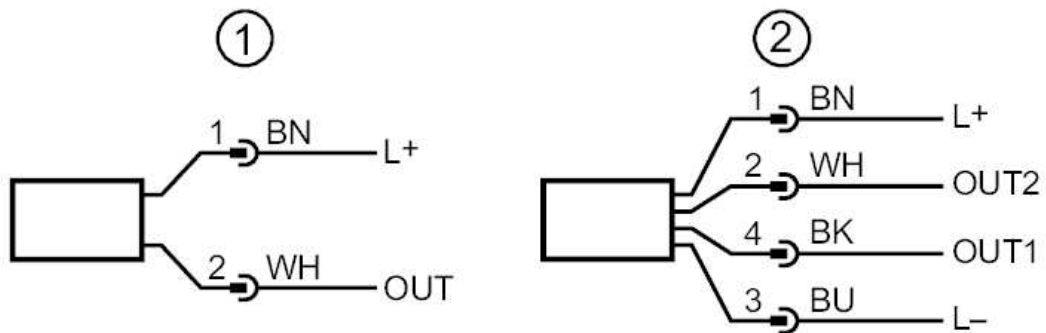
Pack quantity		1 pcs.
---------------	--	--------

### 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

# PM1605

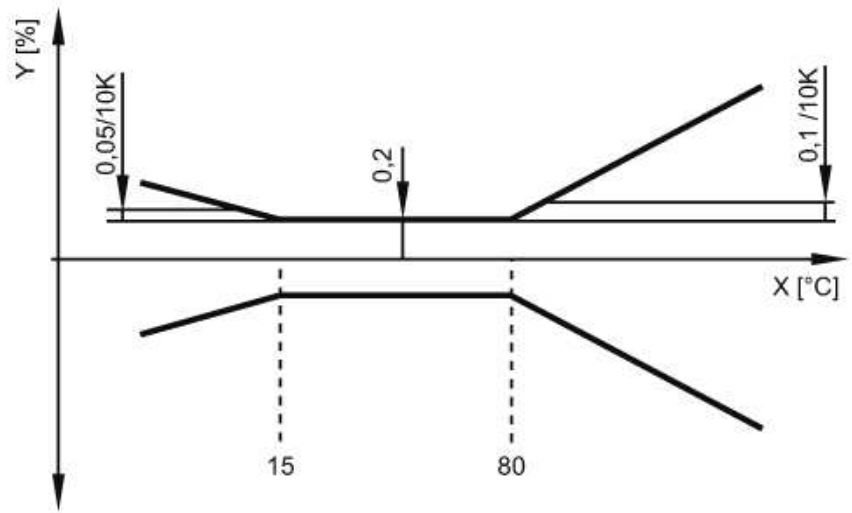


## Flush pressure sensor

PM-004-REA01-E-ZVG/US

### Diagrams and graphs

ambient temperature influence on the accuracy



X temperature  
Y total deviation