

PM1103



Flush pressure sensor

PM-025-REZ01-E-ZVG/US



- 1 clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)
the seal for the Triclap process connection must have an inner diameter of at least 22 mm



ACS



CRN



EC 1935/2004

EHEDG Certified

FCM

FDA

IO-Link

NSF

Reg31

UK

CA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1		
Measuring range	-1...25 bar	-14.6...362.6 psi	-0.1...2.5 MPa
Process connection	Clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)		

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. burst pressure	150 bar	2175 psi	15 MPa
Pressure rating	100 bar	1450 psi	10 MPa
Note on pressure rating	take into account the pressure resistance of the bracket and the seal used for clamp connection		
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		
MAWP (for applications according to CRN)	25 bar	2.5 MPa	



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PM-025-REZ01-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; (Ub = 24 V; (Ub - 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 -0.1...2.5 MPa
Analog start point		-1...20 bar	-14.6...290 psi -0.1...2 MPa
Analog end point		4...25 bar	58...362.6 psi 0.4...2.5 MPa
In steps of		0.01 bar	0.2 psi 0.001 MPa
Factory setting		ASP = 0.0 bar	AEP = 25.0 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]	0.005
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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 www.factory-certificate.ifm
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UL approval	UL approval number	J054
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	File number UL	E174189
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Mechanical data

Weight	[g]	369.57
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Housing	tubular
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Dimensions	[mm]	Ø 30.2 / L = 111.4
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Material	stainless steel (1.4404 / 316L); PBT
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
Process connection	Clamp DN25...DN40 (1...1,5") DIN 32676 (ISO 2852)

Remarks

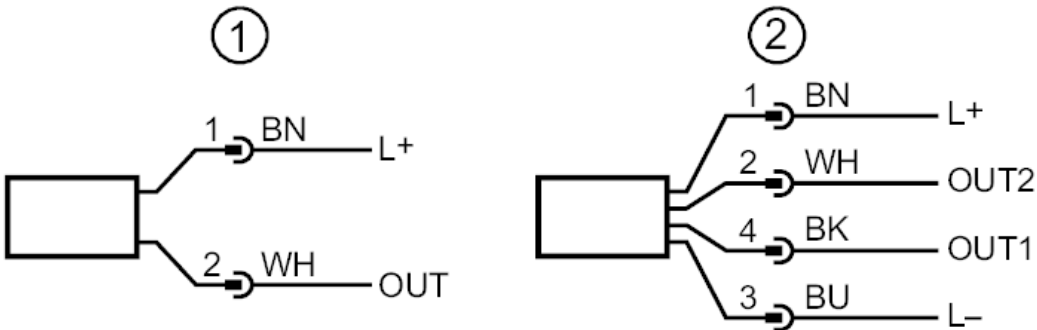
Pack quantity	1 pcs.
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Electrical connection

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



Connection



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

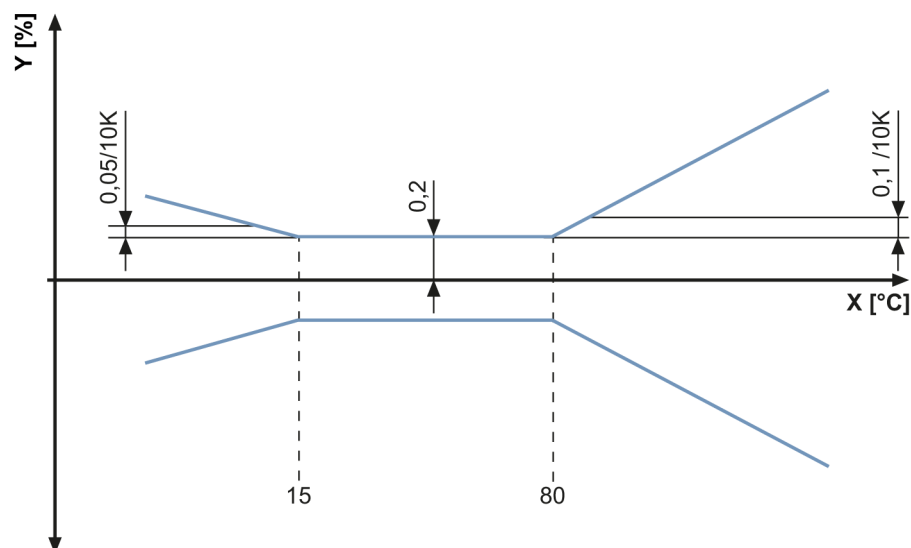


Flush pressure sensor

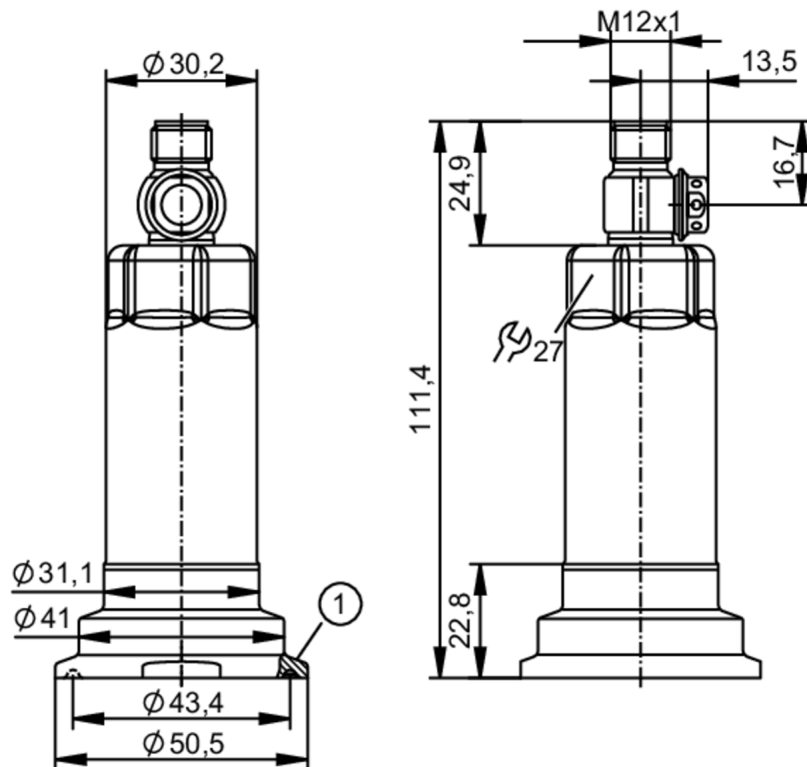
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Diagrams and graphs

ambient temperature influence on the accuracy



X temperature
Y total deviation



1 clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)
the seal for the Triclamp process connection must have an inner diameter of at least 22 mm



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	Clamp DN25...DN40 (1...1,5") DIN 32676 (ISO 2852)			

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. burst pressure	150 bar	2175 psi	15 MPa
Pressure rating	50 bar	725 psi	5 MPa
Note on pressure rating	take into account the pressure resistance of the bracket and the seal used for clamp connection		
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		
MAWP (for applications according to CRN)	10 bar	1 MPa	



Flush pressure sensor

PM-010-REZ01-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; (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	
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 class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[bar]	0.002
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	662

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 number	J055
	File number UL	E174189

Mechanical data

Weight	[g]	369.35
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 111.4

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Material	stainless steel (1.4404 / 316L); PBT
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
Process connection	Clamp DN25...DN40 (1...1,5") DIN 32676 (ISO 2852)

Remarks

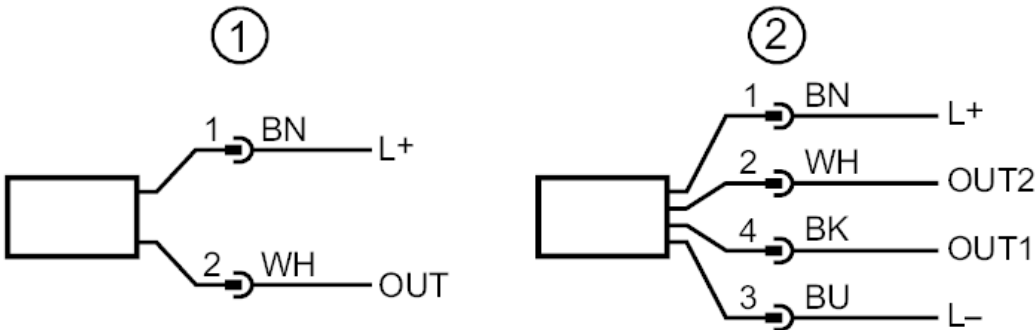
Pack quantity	1 pcs.
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Electrical connection

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



Connection



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

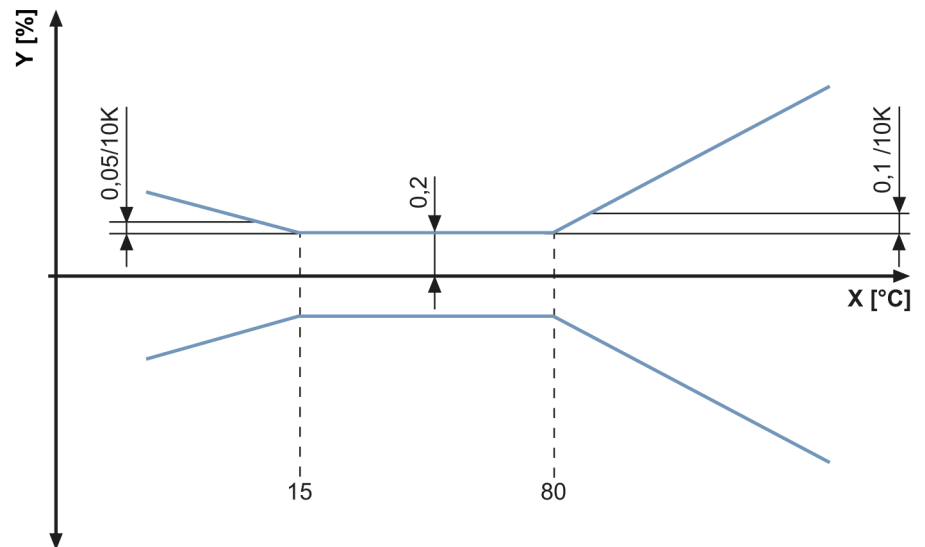


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Diagrams and graphs

ambient temperature influence on
the accuracy

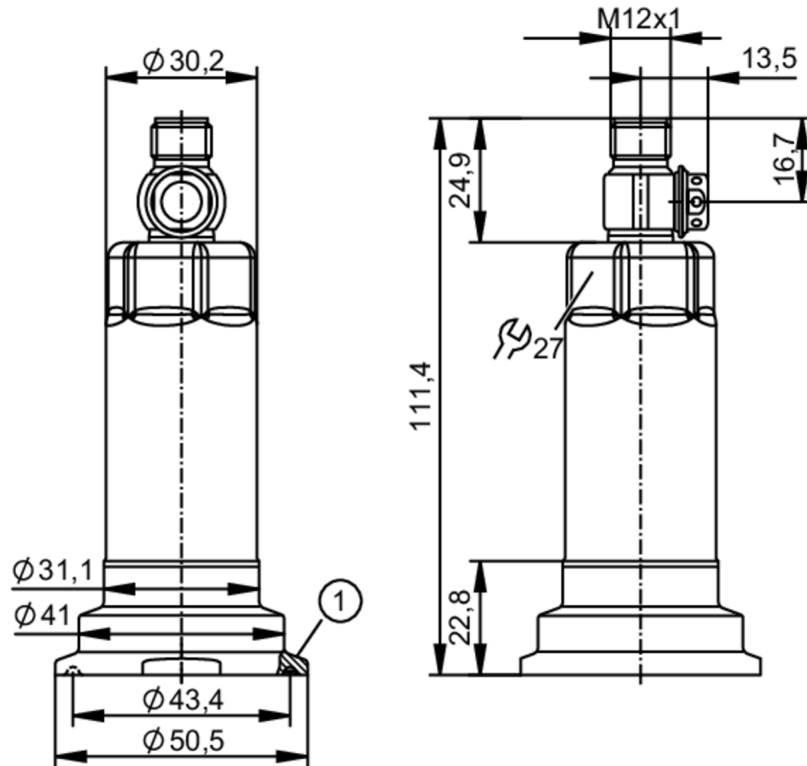


X temperature
Y total deviation



Flush pressure sensor

PM-004-REZ01-E-ZVG/US



- 1 clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)
the seal for the Triclamp process connection must have an inner diameter of at least 22 mm



ACS

**CRN**

s EC

935 / 2004

EHEDG Certified

FCM



D-Link



Reg31



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	Clamp DN25...DN40 (1...1,5") DIN 32676 (ISO 2852)		

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. burst pressure	100 bar	1450 psi	10000 kPa
Pressure rating	30 bar	435 psi	3000 kPa
Note on pressure rating	take into account the pressure resistance of the bracket and the seal used for clamp connection		
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		
MAWP (for applications according to CRN)	4 bar	0.4 MPa	



Flush pressure sensor

PM-004-REZ01-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; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)	
Short-circuit proof		yes	
Overload protection		yes	
Measuring/setting range			
Measuring range	-1...4 bar	-14.5...58 psi	-100...400 kPa
Analog start point	-1...3.2 bar	-14.5...46.4 psi	-100...320 kPa
Analog end point	-0.2...4 bar	-2.9...58 psi	-20...400 kPa
In steps of	0.002 bar	0.05 psi	0.2 kPa
Factory setting	ASP		0.0 bar
	AEP		4.0 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)	

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PM-004-REZ01-E-ZVG/US

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	
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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
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 www.factory-certificate.ifm	

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Flush pressure sensor

PM-004-REZ01-E-ZVG/US

UL approval	UL approval number	J055
	File number UL	E174189

Mechanical data		
Weight	[g]	392.55
Housing		tubular
Dimensions	[mm]	Ø 30.2 / L = 111.4
Material		stainless steel (1.4404 / 316L); PBT
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
Process connection		Clamp DN25...DN40 (1...1,5") DIN 32676 (ISO 2852)

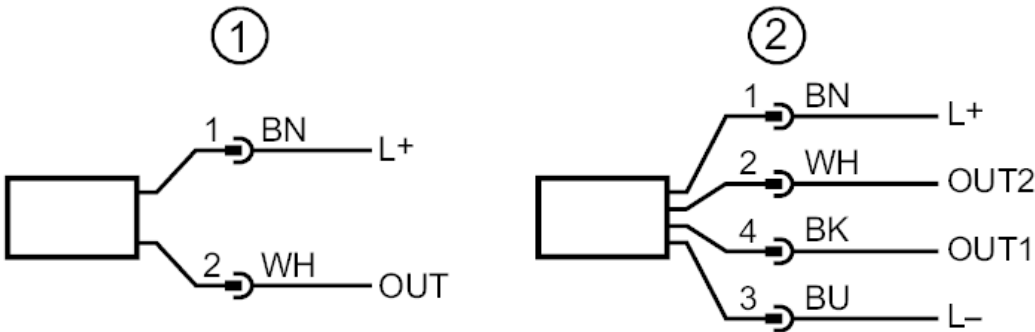
Remarks	
Pack quantity	1 pcs.

Electrical connection

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



Connection



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

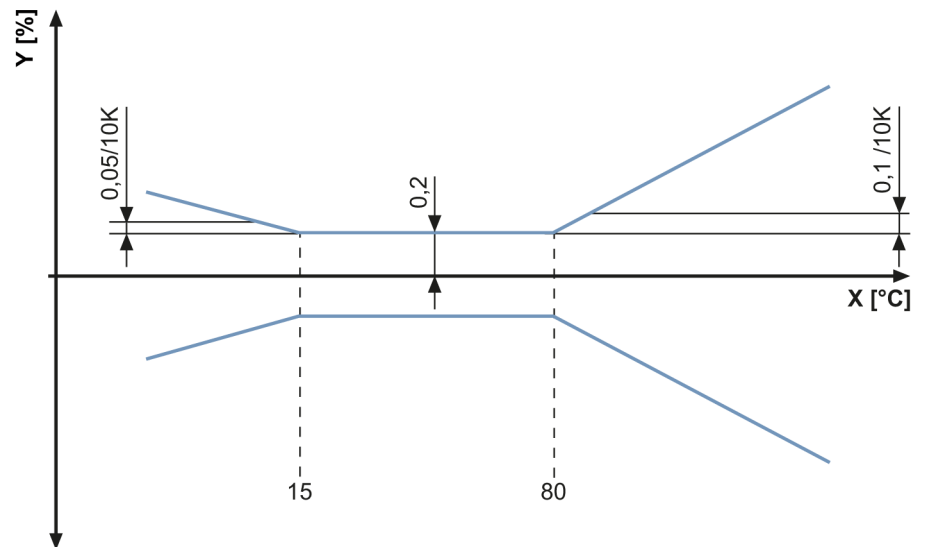


Flush pressure sensor

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Diagrams and graphs

ambient temperature influence on the accuracy



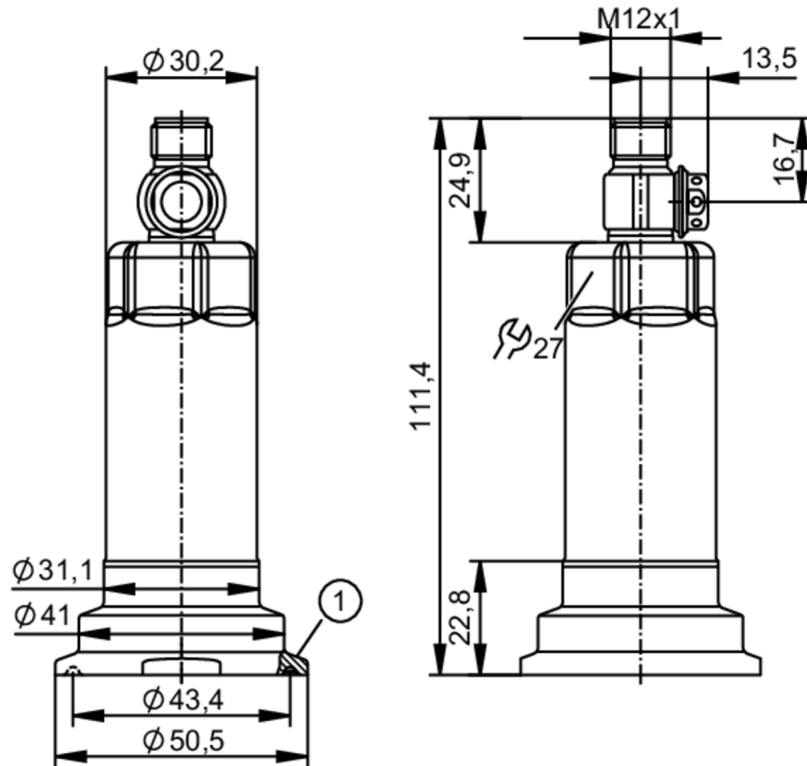
X temperature
Y total deviation

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Flush pressure sensor

PM-2,5BREZ01-E-ZVG/US



- 1 clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)
the seal for the Triclamp process connection must have an inner diameter of at least 22 mm



ACS



CRN



EC 1935/2004

EHEDG Certified

FCM

FDA

IO-Link

NSF

Reg31

UK

CA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1			
Measuring range	-0.125...2.5 bar	-125...2500 mbar	-1.82...36.26 psi	-12.5...250 kPa
Process connection	Clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)			

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. burst pressure	50000 mbar	725 psi	5000 kPa
Pressure rating	20000 mbar	290 psi	2000 kPa
Note on pressure rating	take into account the pressure resistance of the bracket and the seal used for clamp connection		
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		
MAWP (for applications according to CRN)	2.5 bar	0.25 MPa	

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Flush pressure sensor

PM-2,5BREV01-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; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)		
Short-circuit proof		yes		
Overload protection		yes		
Measuring/setting range				
Measuring range		-0.125...2.5 bar	-125...2500 mbar	-1.82...36.26 psi -12.5...250 kPa
Analog start point		-125...2000 mbar	-1.82...29 psi	-12.5...200 kPa
Analog end point		375...2500 mbar	5.44...36.26 psi	-37.5...250 kPa
In steps of		1 mbar	0.02 psi	0.1 kPa
Factory setting		ASP = 0.0 mbar	AEP = 2500 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



Flush pressure sensor

PM-2,5BREV01-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
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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
----------------------------------	------	---

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 class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[mbar]	0.5
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	665

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 number	J055
	File number UL	E174189

Mechanical data

Weight	[g]	391.9
Housing		tubular
Dimensions	[mm]	Ø 30.2 / L = 111.4

PM1106



Flush pressure sensor

PM-2,5BREV01-E-ZVG/US

Material	stainless steel (1.4404 / 316L); PBT
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
Process connection	Clamp DN25...DN40 (1...1,5") DIN 32676 (ISO 2852)

Remarks

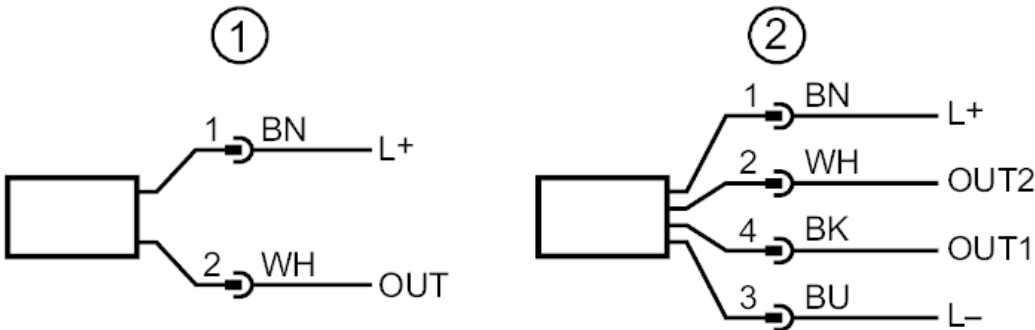
Pack quantity	1 pcs.
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Electrical connection

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



Connection



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

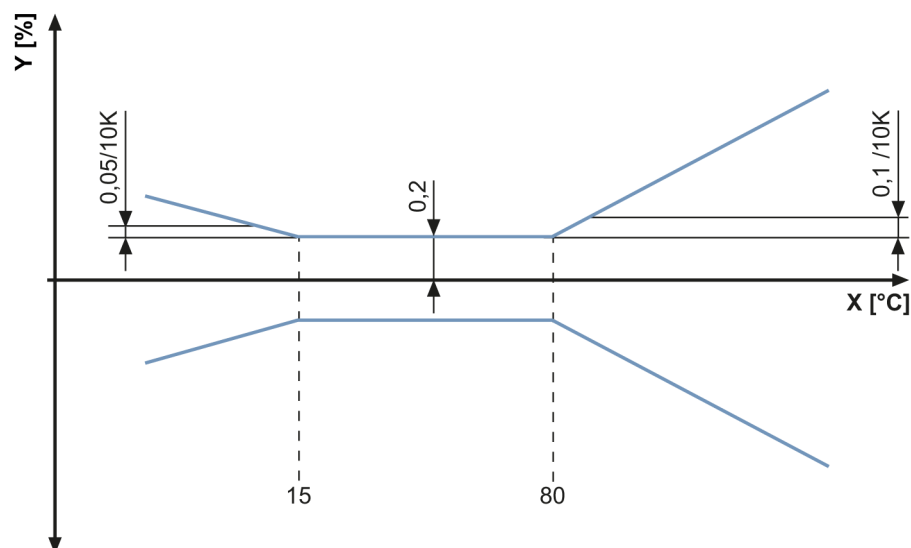


Flush pressure sensor

PM-2,5BREZ01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy



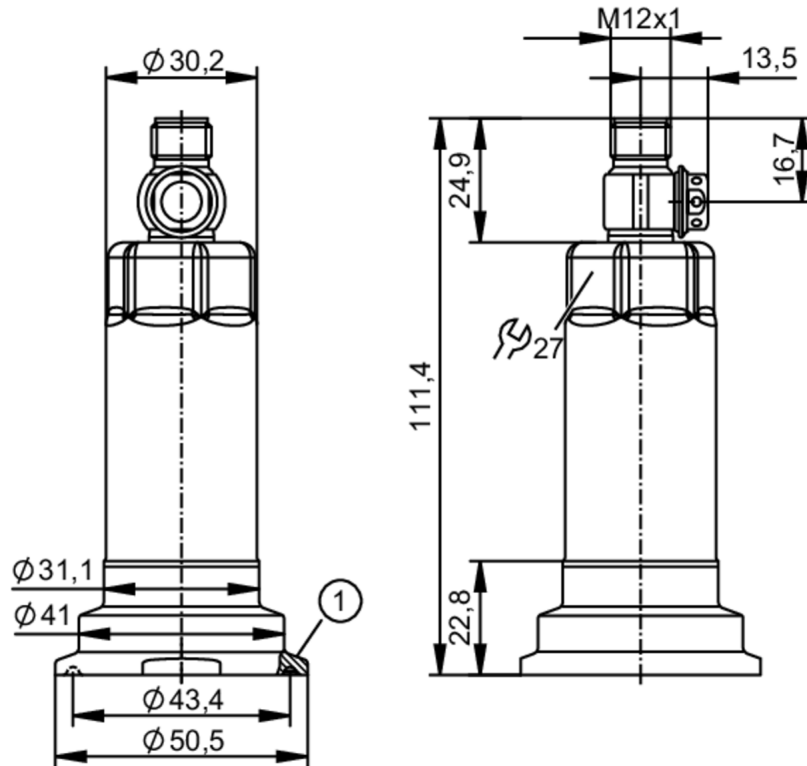
X temperature
Y total deviation

PM1107



Flush pressure sensor

PM-001BREZ01-E-ZVG/US



- 1 clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)
the seal for the Triclap process connection must have an inner diameter of at least 22 mm



ACS



CRN



EC 1935/2004

EHEDG Certified

FCM

FDA

IO-Link

NSF

Reg31

UK

CA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1			
Measuring range	-0.05...1 bar	-50...1000 mbar	-0.73...14.5 psi	-5...100 kPa
Process connection	Clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)			

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. burst pressure	30000 mbar	435 psi	3000 kPa
Pressure rating	10000 mbar	145 psi	1000 kPa
Note on pressure rating	take into account the pressure resistance of the bracket and the seal used for clamp connection		
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure		
No dead space	yes		
MAWP (for applications according to CRN)	1 bar	0.1 MPa	

PM1107



Flush pressure sensor

PM-001BREZ01-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; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)		
Short-circuit proof		yes		
Overload protection		yes		
Measuring/setting range				
Measuring range		-0.05...1 bar	-50...1000 mbar	-0.73...14.5 psi -5...100 kPa
Analog start point		-50...800 mbar	-0.73...11.6 psi	-5...80 kPa
Analog end point		150...1000 mbar	2.18...14.5 psi	15...100 kPa
In steps of		0.5 mbar	0.01 psi	0.05 kPa
Factory setting		ASP = 0.0 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



Flush pressure sensor

PM-001BREZ01-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
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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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
SIO mode	no	
Required master port class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[mbar]	0.2
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	668

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 number	J055
	File number UL	E174189

Mechanical data

Weight	[g]	358.2
Housing		tubular
Dimensions	[mm]	Ø 30.2 / L = 111.4

PM1107



Flush pressure sensor

PM-001BREZ01-E-ZVG/US

Material	stainless steel (1.4404 / 316L); PBT
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
Process connection	Clamp DN25...DN40 (1...1,5") DIN 32676 (ISO 2852)

Remarks

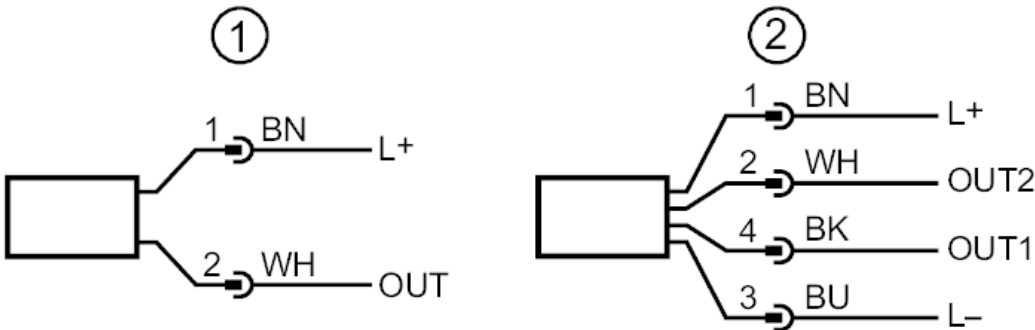
Pack quantity	1 pcs.
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Electrical connection

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



Connection



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

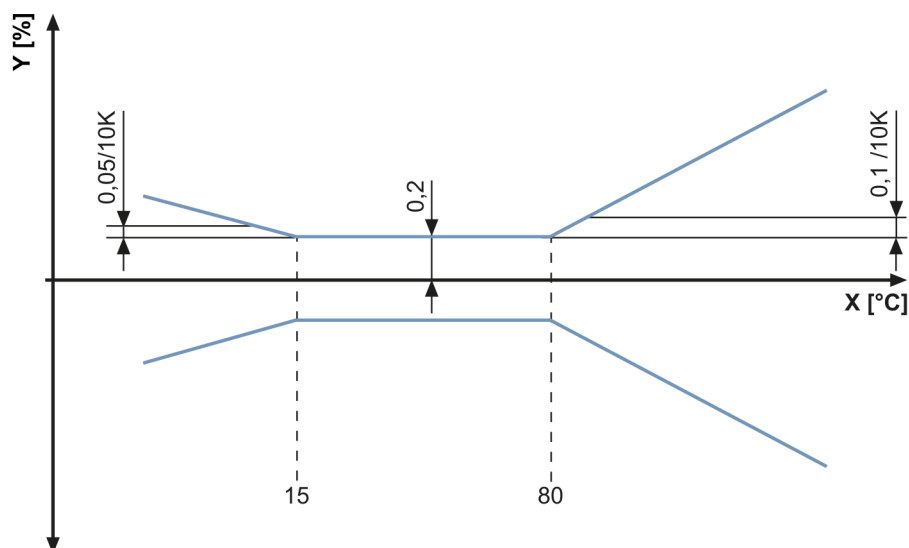


Flush pressure sensor

PM-001BREZ01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy



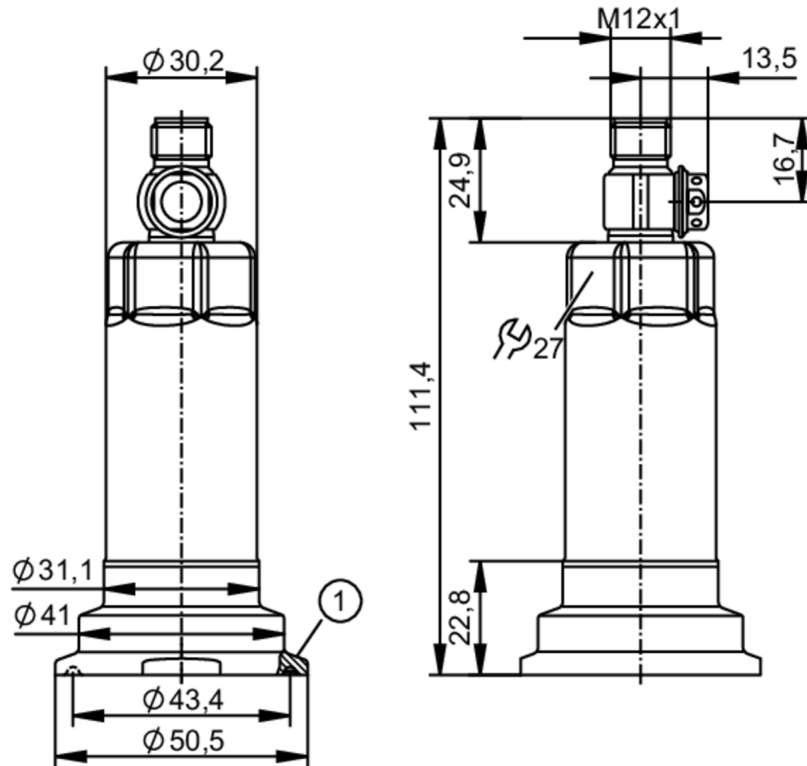
X temperature
Y total deviation

PM1108



Flush pressure sensor

PM-,25BREZ01-E-ZVG/US



- 1 clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)
the seal for the Triclamp process connection must have an inner diameter of at least 22 mm



ACS



CRN



EC 1935/2004

EHEDG Certified

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FDA

IO-Link

NSF

Reg31

UK CA

ifm

PM1108

13.02.2023

EN-US

PM1108-00

Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1			
Measuring range	-0.0125...0.25 bar	-12.5...250 mbar	-0.182...3.626 psi	-1.25...25 kPa
Process connection	Clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)			

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. burst pressure	30000 mbar	435 psi	3000 kPa
Pressure rating	5000 mbar	73 psi	500 kPa
Note on pressure rating	take into account the pressure resistance of the bracket and the seal used for clamp connection		
Vacuum resistance	-1000 mbar	-0.1 MPa	
Type of pressure	relative pressure		
No dead space	yes		
MAWP (for applications according to CRN)	0.25 bar	0.025 MPa	



Flush pressure sensor

PM-,25BREZ01-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; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)		
Short-circuit proof		yes		
Overload protection		yes		
Measuring/setting range				
Measuring range		-0.0125...0.25 bar	-12.5...250 mbar	-0.182...3.626 psi -1.25...25 kPa
Analog start point		-12.5...200 mbar	-0.182...2.9 psi	-1.25...20 kPa
Analog end point		37.5...250 mbar	0.544...3.626 psi	3.75...25 kPa
In steps of		0.1 mbar	0.002 psi	0.01 kPa
Factory setting		ASP = 0.0 mbar	AEP = 250 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 ± 0,1 % of the span / 10 K
		15...80 °C		Characteristics deviation
		80...150 °C		Characteristics deviation ± 0,15 % of the span / 10 K



Flush pressure sensor

PM-,25BREZ01-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
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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
----------------------------------	------	---

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 class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[mbar]	0.05
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	669

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 number	J055
	File number UL	E174189

Mechanical data

Weight	[g]	390.8
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 111.4

PM1108



Flush pressure sensor

PM-,25BREZ01-E-ZVG/US

Material	stainless steel (1.4404 / 316L); PBT
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
Process connection	Clamp DN25...DN40 (1...1,5") DIN 32676 (ISO 2852)

Remarks

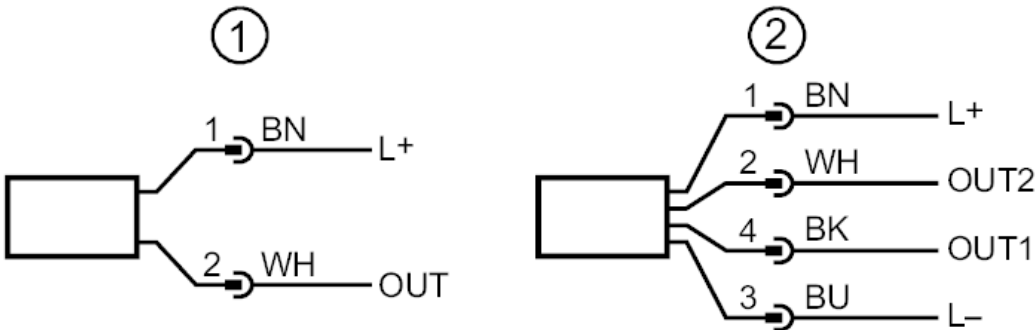
Pack quantity	1 pcs.
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Electrical connection

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



Connection



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

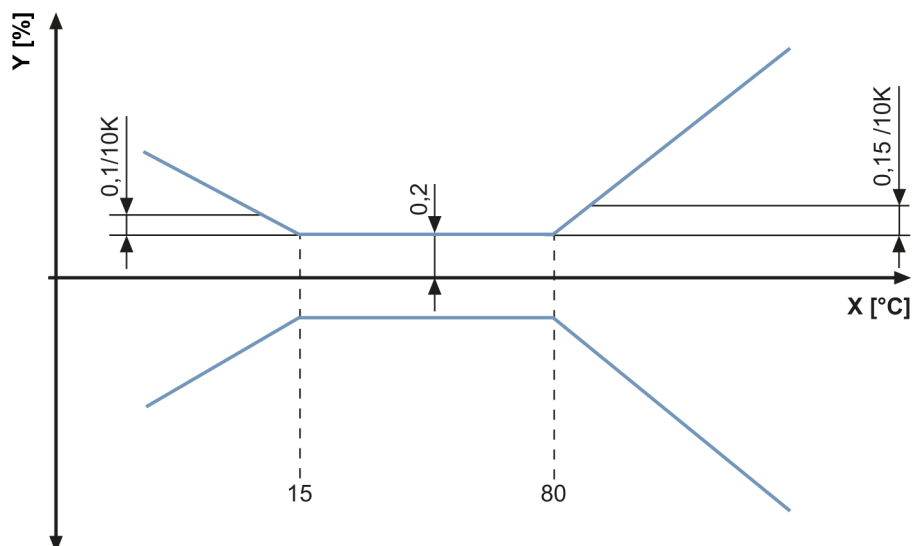


Flush pressure sensor

PM-,25BREZ01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy



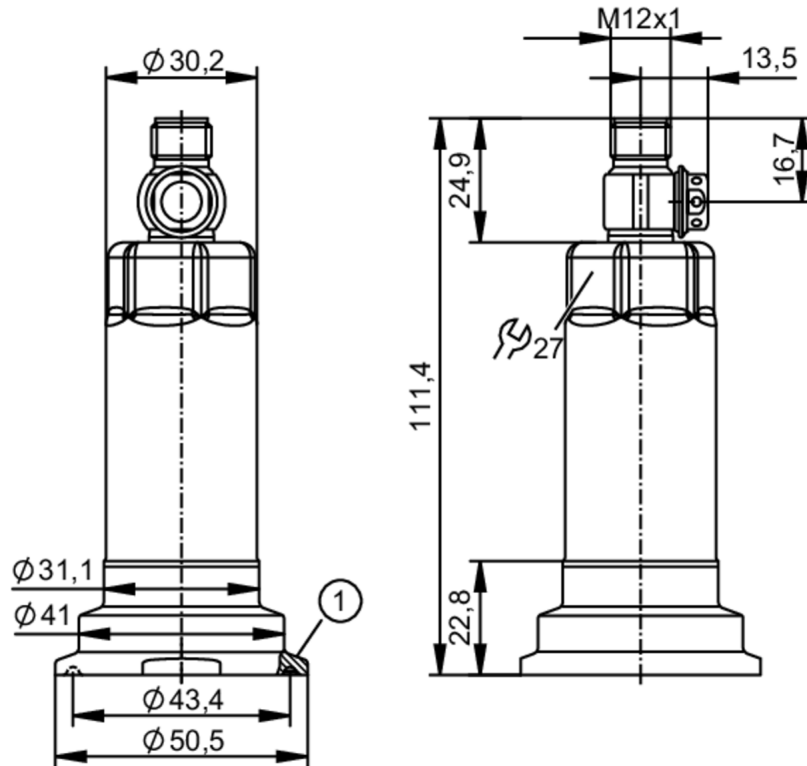
X temperature
Y total deviation

PM1114



Flush pressure sensor

PM-016-REZ01-E-ZVG/US



- 1 clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)
the seal for the Triclamp process connection must have an inner diameter of at least 22 mm



ACS



CRN



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IO-Link

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UK

CA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1		
Measuring range	-1...16 bar	-14.6...232 psi	-0.1...1.6 MPa
Process connection	Clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)		

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. burst pressure	150 bar	2175 psi	15 MPa
Pressure rating	75 bar	1085 psi	7.5 MPa
Note on pressure rating	take into account the pressure resistance of the bracket and the seal used for clamp connection		
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		
MAWP (for applications according to CRN)	16 bar	1.6 MPa	

PM1114



Flush pressure sensor

PM-016-REZ01-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; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)	
Short-circuit proof		yes	
Overload protection		yes	
Measuring/setting range			
Measuring range	-1...16 bar	-14.6...232 psi	-0.1...1.6 MPa
Analog start point	-1...12.8 bar	-14.6...185.6 psi	-0.1...1.28 MPa
Analog end point	2.2...16 bar	32...232 psi	0.22...1.6 MPa
In steps of	0.01 bar	0.2 psi	0.001 MPa
Factory setting		ASP = 0.0 bar	AEP = 16.0 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)	
Temperature coefficient zero point	[% of the span / 10 K]	0...70 °C	
Temperature coefficient span	[% of the span / 10 K]	0...70 °C	

PM1114



Flush pressure sensor

PM-016-REZ01-E-ZVG/US

Total deviation over temperature range	Temperature range	total deviation
	-25...15 °C	Characteristics deviation $\pm 0,05$ % of the span / 10 K
	15...80 °C	Characteristics deviation
	80...150 °C	Characteristics deviation $\pm 0,1$ % of the span / 10 K
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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
SIO mode	no	
Required master port class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[bar]	0.005
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	661

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	

PM1114



Flush pressure sensor

PM-016-REZ01-E-ZVG/US

UL approval	UL approval number	J055
	File number UL	E174189

Mechanical data		
Weight	[g]	392
Housing		tubular
Dimensions	[mm]	Ø 30.2 / L = 111.4
Material		stainless steel (1.4404 / 316L); PBT
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
Process connection		Clamp DN25...DN40 (1...1,5") DIN 32676 (ISO 2852)

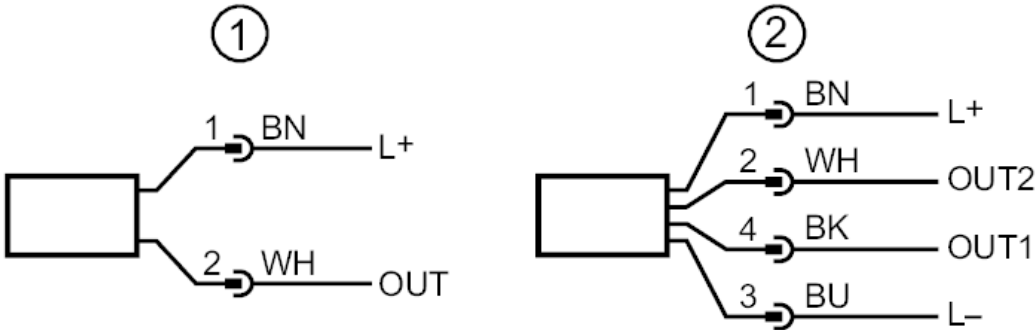
Remarks	
Pack quantity	1 pcs.

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

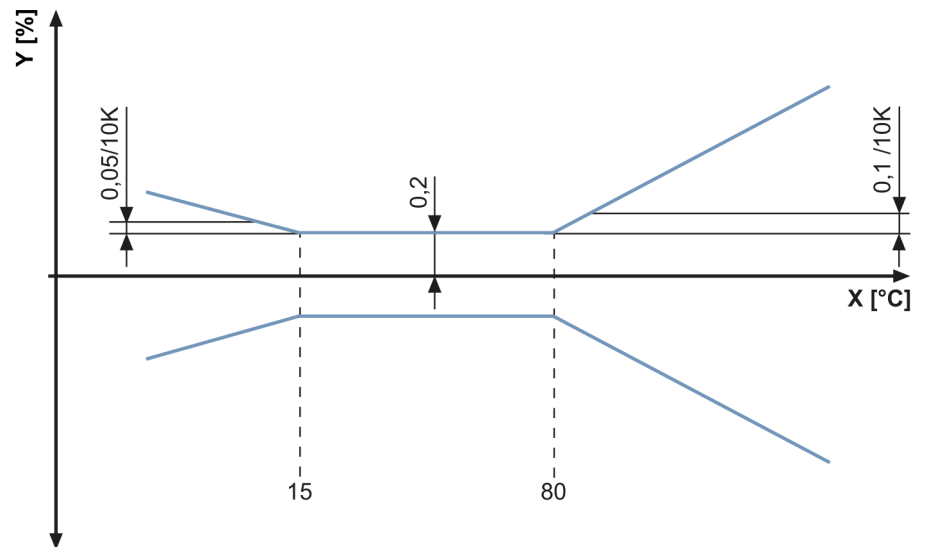


Flush pressure sensor

PM-016-REZ01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on
the accuracy



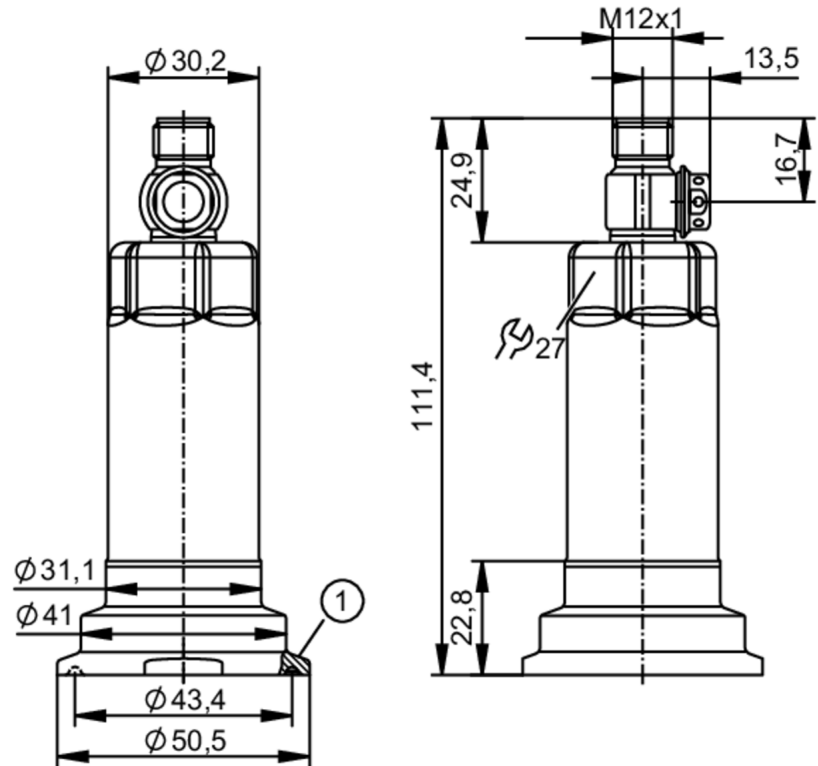
X temperature
Y total deviation

PM1115



Flush pressure sensor

PM-006-REZ01-E-ZVG/US



- 1 clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)
the seal for the Triclamp process connection must have an inner diameter of at least 22 mm



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IO-Link

NSF

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UK

CA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1		
Measuring range	-1...6 bar	-14.5...87 psi	-100...600 kPa
Process connection	Clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)		

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. burst pressure	100 bar	1450 psi	10000 kPa
Pressure rating	30 bar	435 psi	3000 kPa
Note on pressure rating	take into account the pressure resistance of the bracket and the seal used for clamp connection		
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		
MAWP (for applications according to CRN)	6 bar	0.6 MPa	

PM1115



Flush pressure sensor

PM-006-REZ01-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; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)	
Short-circuit proof		yes	
Overload protection		yes	
Measuring/setting range			
Measuring range		-1...6 bar	-14.5...87 psi -100...600 kPa
Analog start point		-1...4.8 bar	-14.5...69.6 psi -100...480 kPa
Analog end point		0.2...6 bar	2.9...87 psi 20...600 kPa
In steps of		0.02 bar	0.05 psi 0.2 kPa
Factory setting			ASP = 0.0 bar AEP = 6.0 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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Flush pressure sensor

PM-006-REZ01-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
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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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis

SIO mode	no
----------	----

Required master port class	A
----------------------------	---

Process data analog	3
---------------------	---

Min. process cycle time	[ms]	3.2
-------------------------	------	-----

IO-Link resolution pressure	[bar]	0.002
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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	663

Operating conditions

Ambient temperature	[°C]	-25...80
---------------------	------	----------

Storage temperature	[°C]	-40...100
---------------------	------	-----------

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

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	J055
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	File number UL	E174189
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Mechanical data

Weight	[g]	393.6
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Housing	tubular
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Dimensions	[mm]	Ø 30.2 / L = 111.4
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PM1115



Flush pressure sensor

PM-006-REZ01-E-ZVG/US

Material	stainless steel (1.4404 / 316L); PBT
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
Process connection	Clamp DN25...DN40 (1...1,5") DIN 32676 (ISO 2852)

Remarks

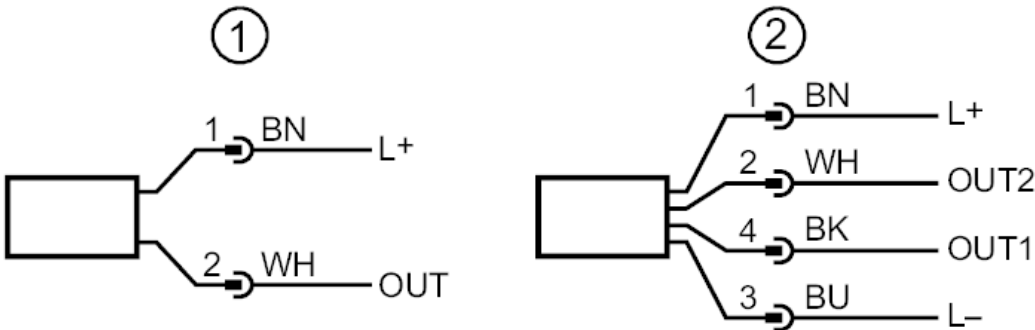
Pack quantity	1 pcs.
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Electrical connection

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



Connection



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

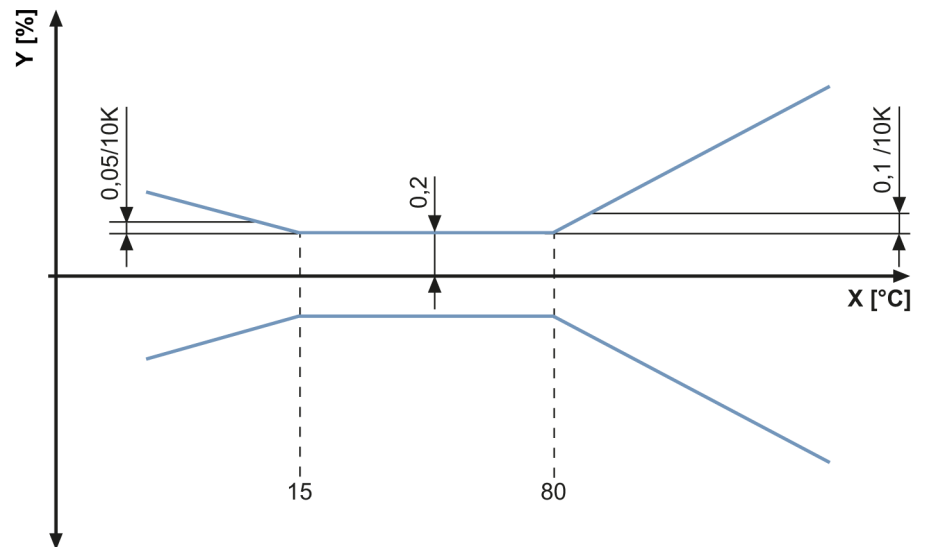


Flush pressure sensor

PM-006-REZ01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy



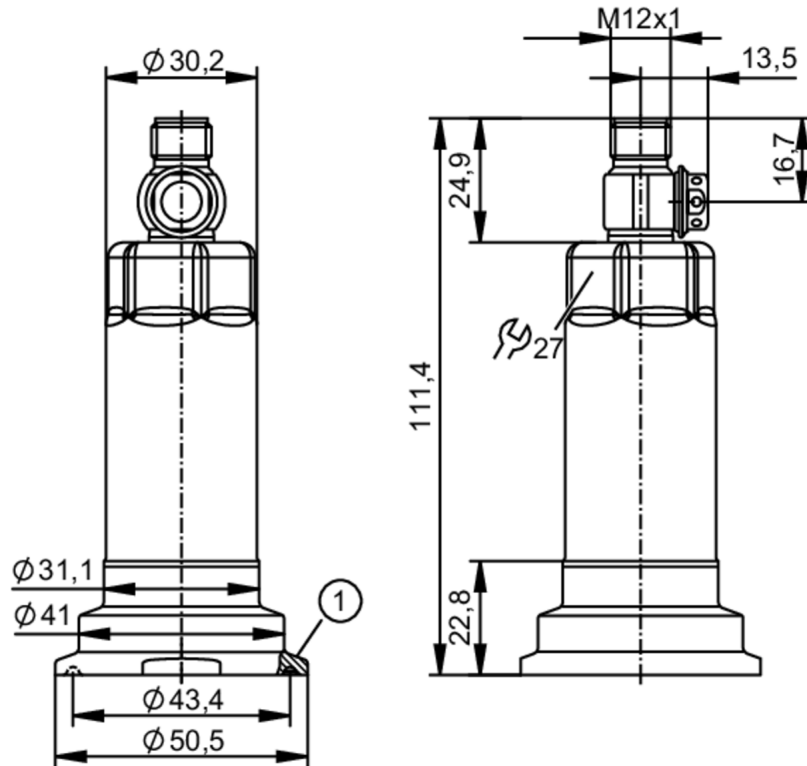
X temperature
Y total deviation

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Flush pressure sensor

PM-1,6BREZ01-E-ZVG/US



- 1 clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)
the seal for the Triclamp process connection must have an inner diameter of at least 22 mm



ACS



CRN



EC 1935/2004

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FDA

IO-Link

NSF

Reg31

UK

CA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1			
Measuring range	-0.1...1.6 bar	-100...1600 mbar	-1.45...23.21 psi	-10...160 kPa
Process connection	Clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)			

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. burst pressure	40000 mbar	580 psi	4000 kPa
Pressure rating	15000 mbar	215 psi	1500 kPa
Note on pressure rating	take into account the pressure resistance of the bracket and the seal used for clamp connection		
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure		
No dead space	yes		
MAWP (for applications according to CRN)	1.6 bar	0.16 MPa	



Flush pressure sensor

PM-1,6BREZ01-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; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)		
Short-circuit proof		yes		
Overload protection		yes		
Measuring/setting range				
Measuring range		-0.1...1.6 bar	-100...1600 mbar	-1.45...23.21 psi -10...160 kPa
Analog start point		-100...1280 mbar	-1.45...18.56 psi	-10...128 kPa
Analog end point		220...1600 mbar	3.19...23.21 psi	22...160 kPa
In steps of		1 mbar	0.01 psi	0.1 kPa
Factory setting		ASP		0.0 mbar
		AEP		1600 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)		
Temperature coefficient zero point	[% of the span / 10 K]	< ± 0,05; (0...70 °C)		
Temperature coefficient span	[% of the span / 10 K]	< ± 0,15; (0...70 °C)		

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Flush pressure sensor

PM-1,6BREZ01-E-ZVG/US

Total deviation over temperature range	Temperature range	total deviation
	-25...15 °C	Characteristics deviation $\pm 0,05$ % of the span / 10 K
	15...80 °C	Characteristics deviation
	80...150 °C	Characteristics deviation $\pm 0,1$ % of the span / 10 K
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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
SIO mode	no	
Required master port class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[bar]	0.5
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	666

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	

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Flush pressure sensor

PM-1,6BREZ01-E-ZVG/US

UL approval	UL approval number	J055
	File number UL	E174189

Mechanical data		
Weight	[g]	394.6
Housing		tubular
Dimensions	[mm]	Ø 30.2 / L = 111.4
Material		stainless steel (1.4404 / 316L); PBT
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
Process connection		Clamp DN25...DN40 (1...1,5") DIN 32676 (ISO 2852)

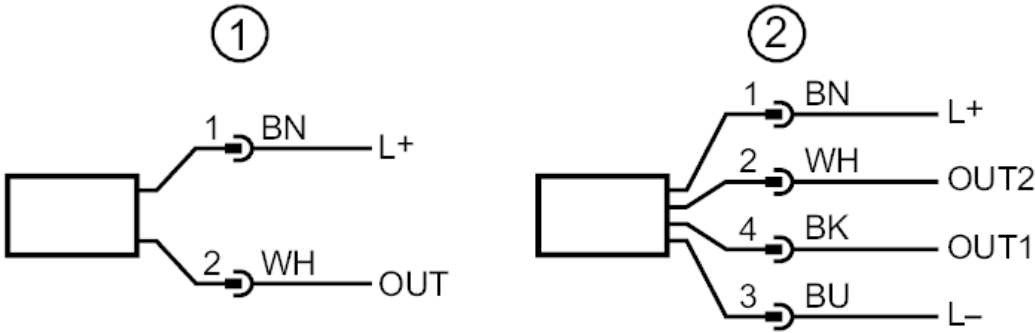
Remarks	
Pack quantity	1 pcs.

Electrical connection

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



Connection



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

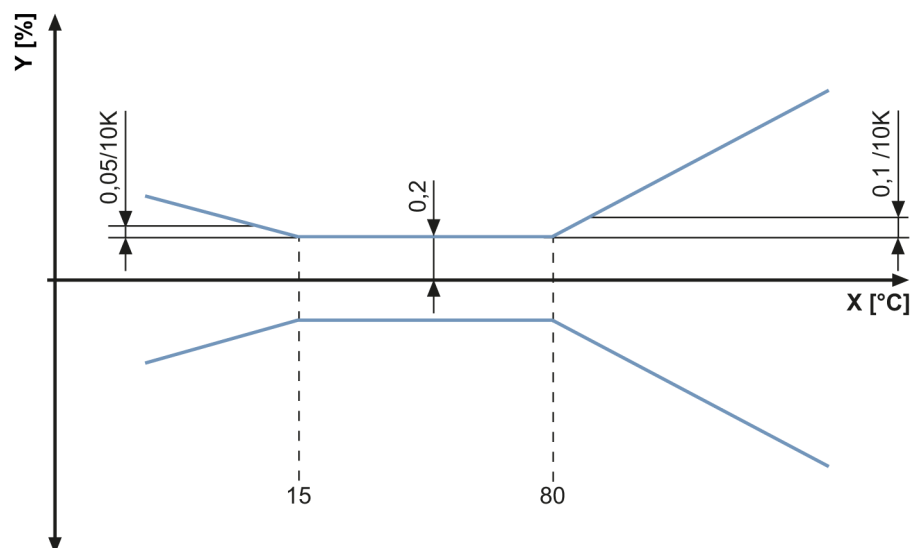


Flush pressure sensor

PM-1,6BREZ01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on
the accuracy



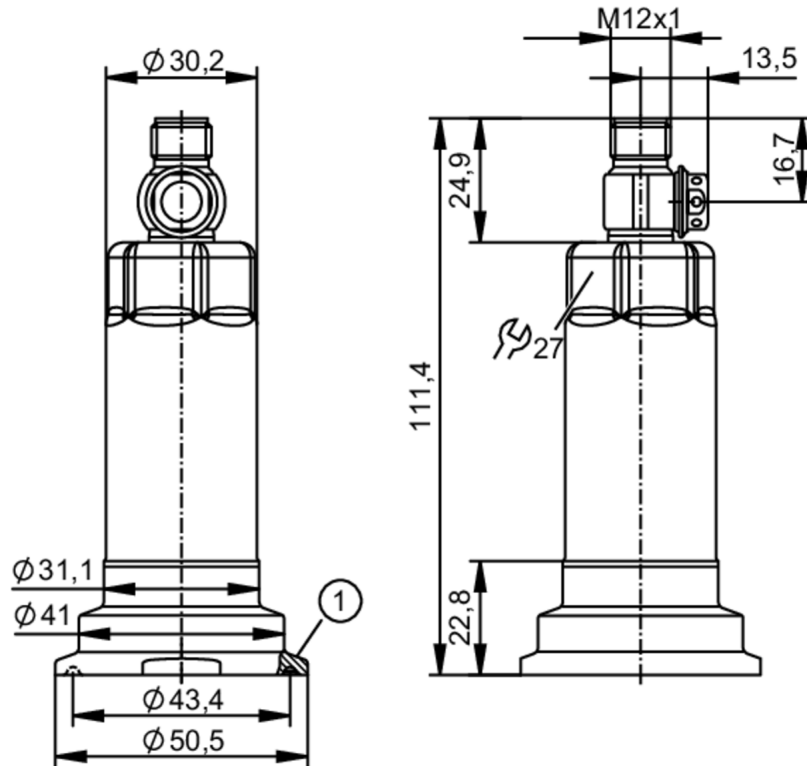
X temperature
Y total deviation

PM1118



Flush pressure sensor

PM-,40BREZ01-E-ZVG/US



- 1 clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)
the seal for the Triclamp process connection must have an inner diameter of at least 22 mm



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IO-Link

NSF

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UK

CA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1			
Measuring range	-0.05...0.4 bar	-50...400 mbar	-0.725...5.8 psi	-5...40 kPa
Process connection	Clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)			

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. burst pressure	30000 mbar	435 psi	3000 kPa
Pressure rating	8000 mbar	116 psi	800 kPa
Note on pressure rating	take into account the pressure resistance of the bracket and the seal used for clamp connection		
Vacuum resistance	-1000 mbar	-0.1 MPa	
Type of pressure	relative pressure		
No dead space	yes		
MAWP (for applications according to CRN)	0.4 bar	0.04 MPa	

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Flush pressure sensor

PM-,40BREZ01-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; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)		
Short-circuit proof		yes		
Overload protection		yes		
Measuring/setting range				
Measuring range		-0.05...0.4 bar	-50...400 mbar	-0.725...5.8 psi -5...40 kPa
Analog start point		-50...320 mbar	-0.725...4.641 psi	-5...32 kPa
Analog end point		30...400 mbar	0.435...5.802 psi	3...40 kPa
In steps of		0.1 mbar	0.001 psi	0.01 kPa
Factory setting		ASP = 0.0 mbar	AEP = 400 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 (DIN EN 61298-2); (incl. zero point and span error, non-linearity, hysteresis; Turn down 1:1)		
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 ± 0,1 % of the span / 10 K
		15...80 °C		Characteristics deviation
		80...150 °C		Characteristics deviation ± 0,15 % of the span / 10 K



Flush pressure sensor

PM-,40BREZ01-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	
Profiles	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
SIO mode	no	
Required master port class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
Supported DeviceIDs	Type of operation	DeviceID
	default	1410

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 number	J055
	File number UL	E174189

Mechanical data

Weight	[g]	392.4
Housing		tubular
Dimensions	[mm]	Ø 30.2 / L = 111.4
Material		stainless steel (1.4404 / 316L); PBT
Materials (wetted parts)		ceramics (99.9 % Al ₂ O ₃); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE
Min. pressure cycles		100 million
Process connection		Clamp DN25...DN40 (1...1,5") DIN 32676 (ISO 2852)

PM1118



Flush pressure sensor

PM-,40BREZ01-E-ZVG/US

Displays / operating elements

Display unit	mbar; psi; kPa; mmWS; inH2O
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Remarks

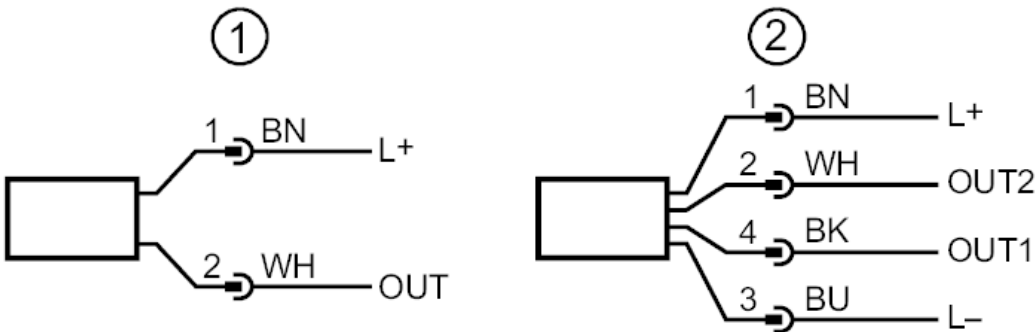
Pack quantity	1 pcs.
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Electrical connection

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



Connection



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

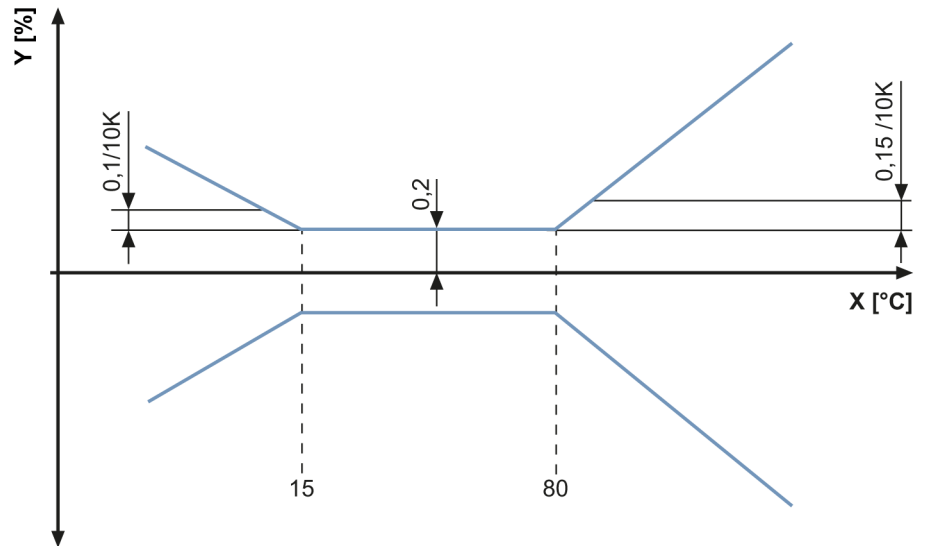


Flush pressure sensor

PM-,40BREZ01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy



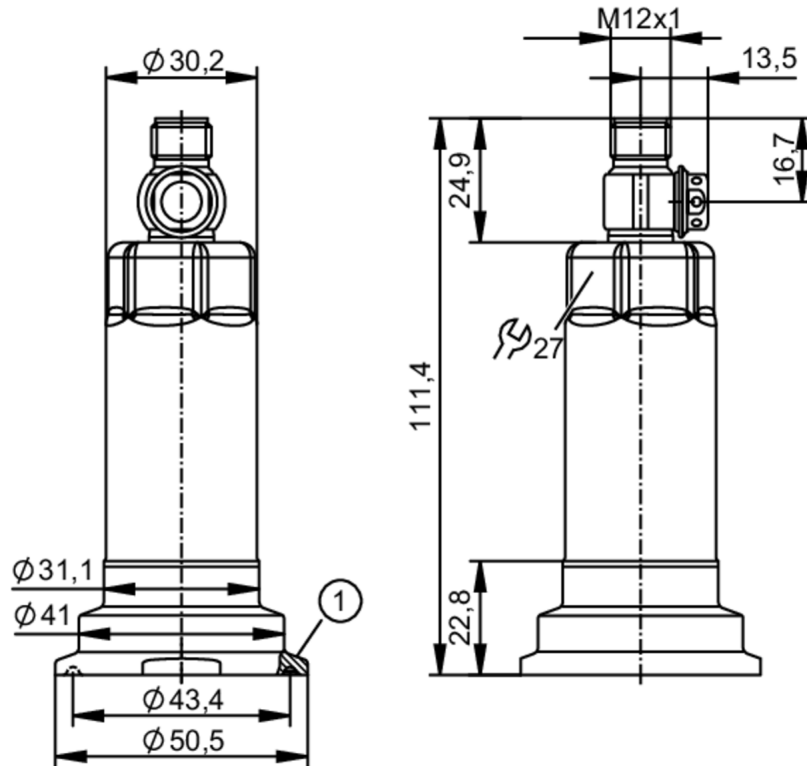
X temperature
Y total deviation

PM1143



Flush pressure sensor

PM-040-REZ01-E-ZVG/US



- 1 clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)
the seal for the Triclamp process connection must have an inner diameter of at least 22 mm



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ifm

PM1143

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EN-US

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Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1		
Measuring range	-1...40 bar	-14.6...580 psi	-0.1...4 MPa
Process connection	Clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)		

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		
Conditionally suitable for	use in gases at pressures > 25 bar only on request		
Medium temperature [°C]	-25...150		
Min. burst pressure	150 bar	2175 psi	15 MPa
Pressure rating	125 bar	1800 psi	12.5 MPa
Note on pressure rating	take into account the pressure resistance of the bracket and the seal used for clamp connection		
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		
MAWP (for applications according to CRN)	40 bar	4 MPa	



Flush pressure sensor

PM-040-REZ01-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; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)	
Short-circuit proof		yes	
Overload protection		yes	
Measuring/setting range			
Measuring range	-1...40 bar	-14.6...580 psi	-0.1...4 MPa
Analog start point	-1...32 bar	-14.6...464.2 psi	-0.1...3.2 MPa
Analog end point	7...40 bar	101.4...580.2 psi	0.7...4 MPa
In steps of	0.02 bar	0.2 psi	0.002 MPa
Factory setting	ASP = 0.0 bar	AEP = 40.0 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



Flush pressure sensor

PM-040-REZ01-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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
SIO mode	no	
Required master port class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[bar]	0.01
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	1641

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]	320
Note on approval	Factory certificate available as download at www.factory-certificate.ifm	
UL approval	UL approval number	J054
	File number UL	E174189

Mechanical data

Weight	[g]	391.7
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 111.4

PM1143



Flush pressure sensor

PM-040-REZ01-E-ZVG/US

Material	stainless steel (1.4404 / 316L); PBT
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
Process connection	Clamp DN25...DN40 (1...1,5") DIN 32676 (ISO 2852)

Remarks

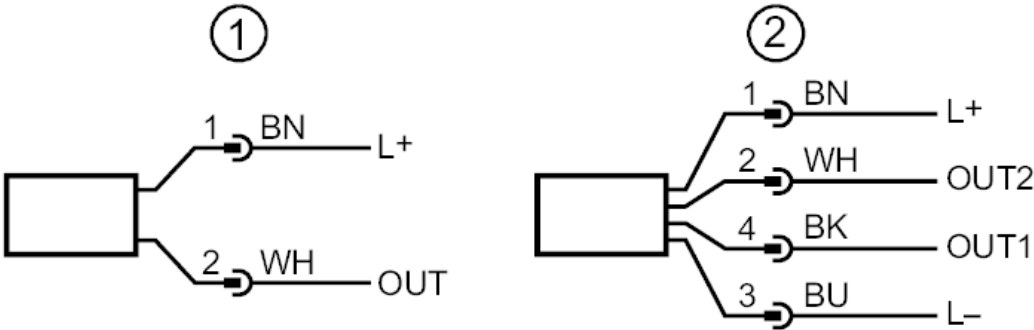
Pack quantity	1 pcs.
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Electrical connection

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



Connection



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

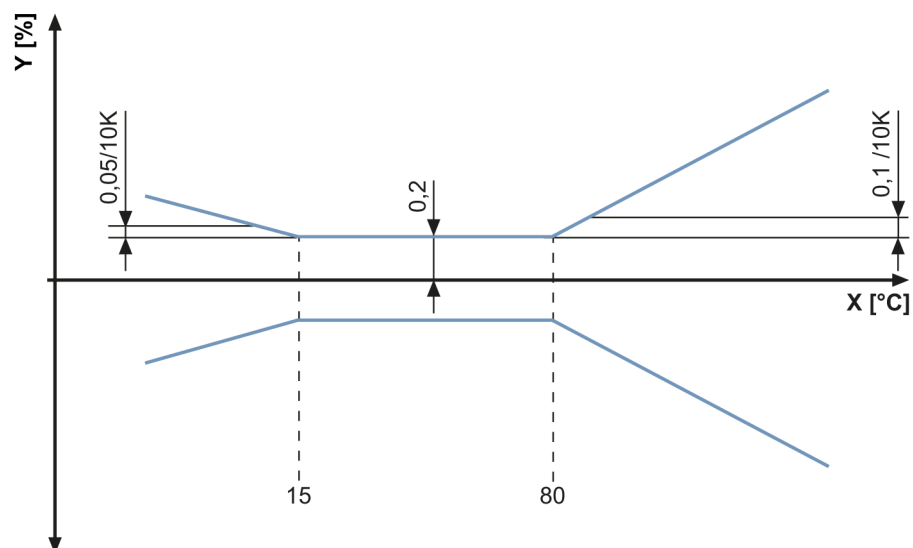


Flush pressure sensor

PM-040-REZ01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on
the accuracy



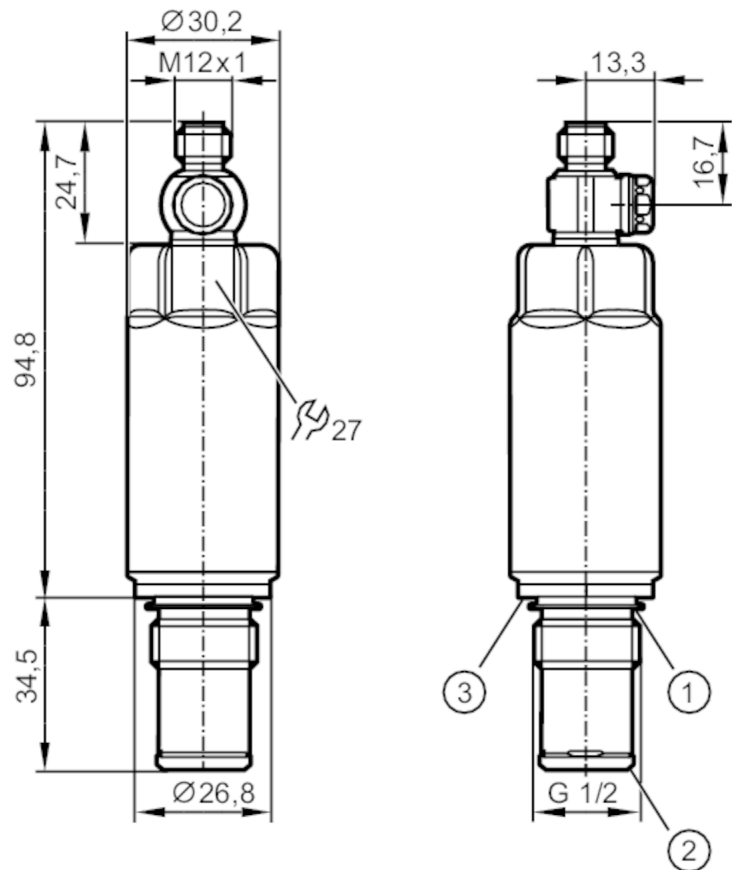
X temperature
Y total deviation

PM1503



Flush pressure sensor

PM-025-REA12-A-ZVG/US



- 1 Gasket FKM (for sealing on the back - not pressure resistant) / removable
- 2 pre-mounted PEEK sealing ring (removable) / metallic sealing area
- 3 groove for sealing ring DIN EN ISO 1179-2



Product characteristics			
Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1		
Measuring range	-1...25 bar	-14.6...362.6 psi	-0.1...2.5 MPa
Process connection	threaded connection G 1/2 external thread sealing cone		
Application			
System	gold-plated contacts		
Measuring element	ceramic-capacitive pressure measuring cell		
Temperature monitoring	yes		
Application	flush mountable for the food and beverage industry		
Media	viscous media and liquids with suspended particles; liquids and gases		
Conditionally suitable for	use in gases at pressures > 25 bar only on request		
Medium temperature [°C]	-25...150		
Min. burst pressure	280 bar	3600 psi	28 MPa
Pressure rating	160 bar	2300 psi	16 MPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		

PM1503



Flush pressure sensor

PM-025-REA12-A-ZVG/US

MAWP (for applications according to CRN)	[bar]	43	
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; 1:5)	
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...25 bar	-14.6...362.6 psi	-0.1...2.5 MPa
Analog start point	-1...20 bar	-14.6...290 psi	-0.1...2 MPa
Analog end point	4...25 bar	58...362.6 psi	0.4...2.5 MPa
In steps of	0.01 bar	0.2 psi	0.001 MPa
Factory setting	ASP = 0.0 bar	AEP = 25.0 bar	
Temperature monitoring			
Measuring range	-25...150 °C		-13...302 °F
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]	< ± 0,15; (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)	

PM1503



Flush pressure sensor

PM-025-REA12-A-ZVG/US

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		
Temperature monitoring			
Accuracy	[K]	± 2.5 K + (0.045 x (ambient temperature - medium temperature))	
Repeatability	[K]	± 0,2	
Resolution	[K]	0.2	
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	Common - I&D	Identification and Diagnosis	
	Function	Measurement data, standard resolution	
SIO mode	no		
Required master port class	A; (when pin 2 not connected: B)		
Min. process cycle time	[ms]	4.5	
IO-Link resolution pressure	[bar]	0.005	
IO-Link resolution temperature	[K]	0.2	
IO-Link process data (cyclical)	Function	bit length	
	pressure	16	
	temperature	16	
	device status	4	
IO-Link functions (acyclical)	application specific tag; internal temperature		
Supported DeviceIDs	Type of operation	DeviceID	
	default	1019	
Operating conditions			
Ambient temperature	[°C]	-25...80	
Storage temperature	[°C]	-40...100	
Protection	IP 67; IP 68; IP 69K		
Tests / approvals			
EMC	DIN EN 61326-1		

PM1503



Flush pressure sensor

PM-025-REA12-A-ZVG/US

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]	322	
Note on approval	Factory certificate available as download at www.factory-certificate.ifm	
UL approval	UL approval number	J024
	File number UL	E174189

Mechanical data		
Weight [g]	268.1	
Housing	tubular	
Dimensions [mm]	Ø 30.2 / L = 129.3	
Material	stainless steel (1.4404 / 316L); PTFE; FKM	
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PEEK; PTFE	
Min. pressure cycles	100 million	
Tightening torque [Nm]	20	
Process connection	threaded connection G 1/2 external thread sealing cone	

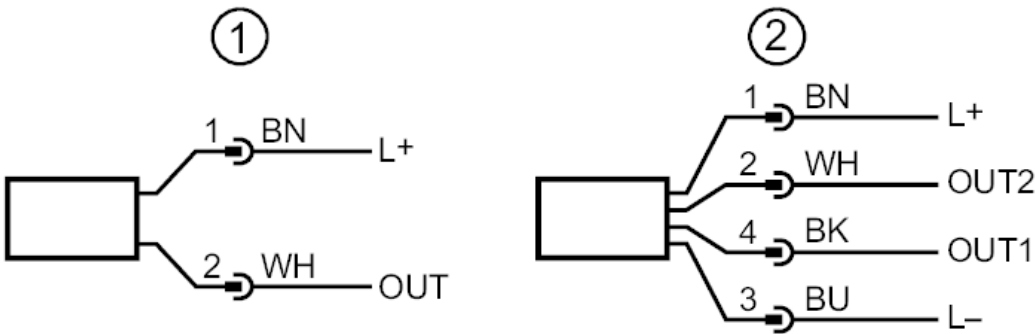
Remarks	
Pack quantity	1 pcs.

Electrical connection

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



Connection



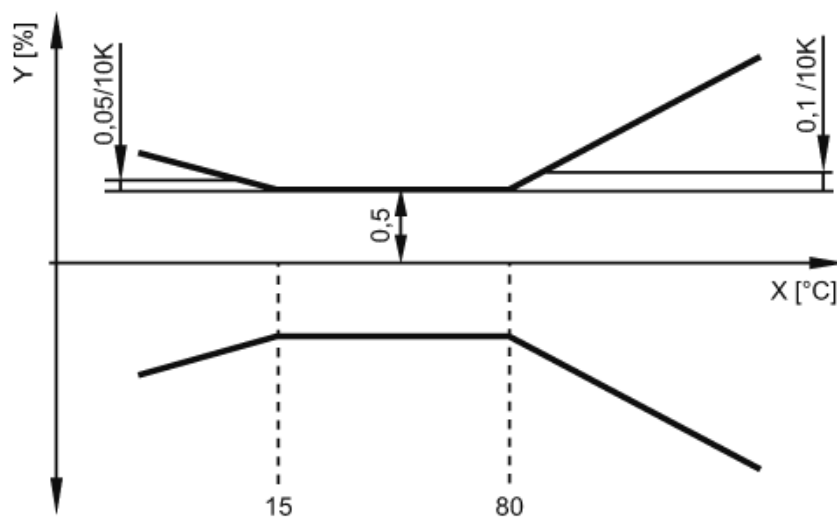
- 1
- connection for 2-wire operation (analog)
- 2
- connection for 3-wire operation (analog / IO-Link)
OUT1: IO-Link
OUT2: analog output



Flush pressure sensor

PM-025-REA12-A-ZVG/US

Diagrams and graphs



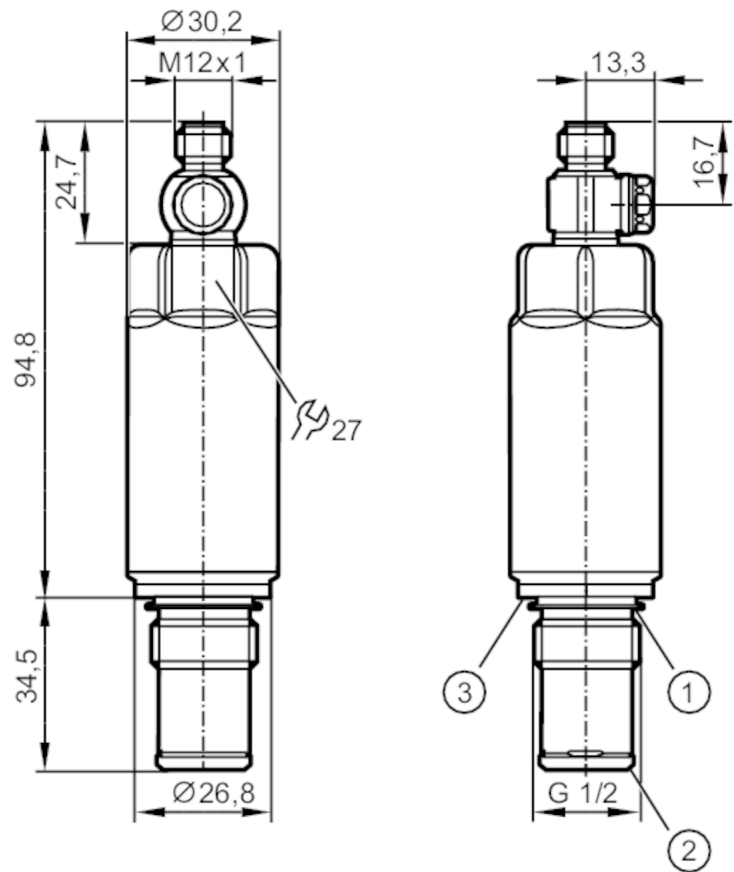
X temperature
Y total deviation

PM1504



Flush pressure sensor

PM-010-REA12-A-ZVG/US



- 1 Gasket FKM (for sealing on the back - not pressure resistant) / removable
- 2 pre-mounted PEEK sealing ring (removable) / metallic sealing area
- 3 groove for sealing ring DIN EN ISO 1179-2



ACS



CRN



EC 1935/2004

EHEDG

Certified

FCM

FDA

IO-Link

NSF

Reg31

UK

CA

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	-0.1...1 MPa
Process connection	threaded connection G 1/2 external thread sealing cone		

Application

System	gold-plated contacts		
Measuring element	ceramic-capacitive pressure measuring cell		
Temperature monitoring	yes		
Application	flush mountable for the food and beverage industry		
Media	viscous media and liquids with suspended particles; liquids and gases		
Conditionally suitable for	use in gases at pressures > 25 bar only on request		
Medium temperature [°C]	-25...150		
Min. burst pressure	175 bar	2538 psi	17 MPa
Pressure rating	75 bar	1100 psi	7.5 MPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		

PM1504



Flush pressure sensor

PM-010-REA12-A-ZVG/US

No dead space		yes	
MAWP (for applications according to CRN)	[bar]	43	
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; 1:5)	
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	-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	
Temperature monitoring			
Measuring range	-25...150 °C		-13...302 °F
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]	< ± 0,15; (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)	

PM1504



Flush pressure sensor

PM-010-REA12-A-ZVG/US

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		
Temperature monitoring			
Accuracy	[K]	± 2.5 K + (0.045 x (ambient temperature - medium temperature))	
Repeatability	[K]	± 0,2	
Resolution	[K]	0.2	
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	Common - I&D	Identification and Diagnosis	
	Function	Measurement data, standard resolution	
SIO mode	no		
Required master port class	A; (when pin 2 not connected: B)		
Min. process cycle time	[ms]	4.5	
IO-Link resolution pressure	[bar]	0.002	
IO-Link resolution temperature	[K]	0.2	
IO-Link process data (cyclical)	Function	bit length	
	pressure	16	
	temperature	16	
	device status	4	
IO-Link functions (acyclical)	application specific tag; internal temperature		
Supported DeviceIDs	Type of operation	DeviceID	
	default	1021	
Operating conditions			
Ambient temperature	[°C]	-25...80	
Storage temperature	[°C]	-40...100	
Protection	IP 67; IP 68; IP 69K		
Tests / approvals			
EMC	DIN EN 61326-1		

PM1504



Flush pressure sensor

PM-010-REA12-A-ZVG/US

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]	322	
Note on approval	Factory certificate available as download at www.factory-certificate.ifm	
UL approval	UL approval number	J024
	File number UL	E174189

Mechanical data		
Weight [g]	307.4	
Housing	tubular	
Dimensions [mm]	Ø 30.2 / L = 129.3	
Material	stainless steel (1.4404 / 316L); PTFE; FKM	
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PEEK; PTFE	
Min. pressure cycles	100 million	
Tightening torque [Nm]	20	
Process connection	threaded connection G 1/2 external thread sealing cone	

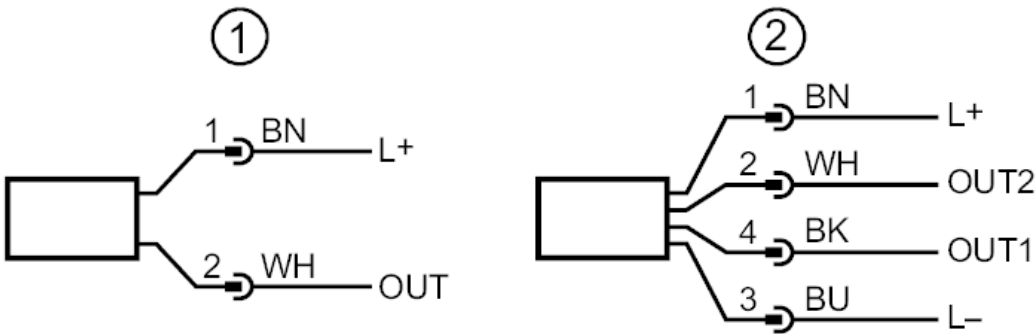
Remarks	
Pack quantity	1 pcs.

Electrical connection

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



Connection



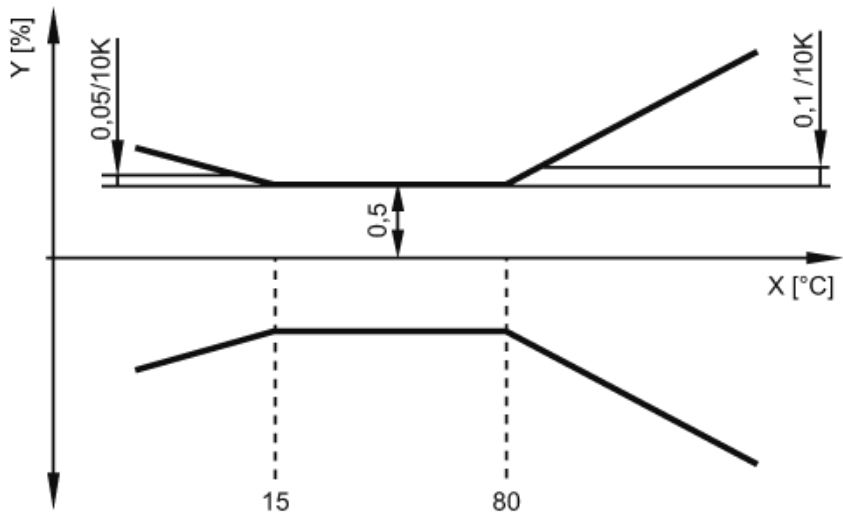
- 1
- connection for 2-wire operation (analog)
- 2
- connection for 3-wire operation (analog / IO-Link)
OUT1: IO-Link
OUT2: analog output



Flush pressure sensor

PM-010-REA12-A-ZVG/US

Diagrams and graphs



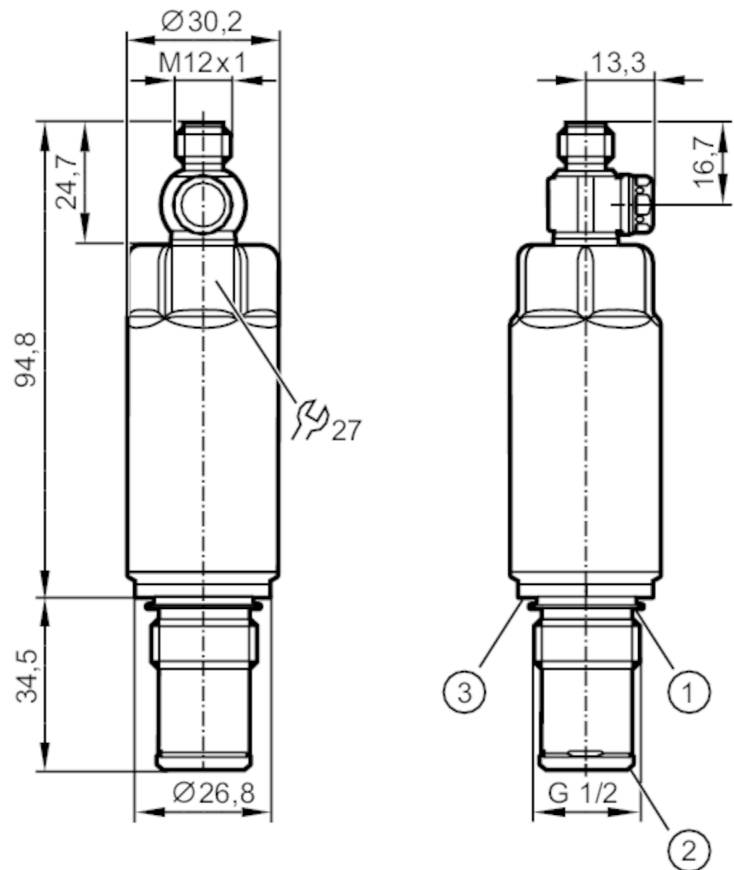
X temperature
Y total deviation

PM1505



Flush pressure sensor

PM-004-REA12-A-ZVG/US



- 1 Gasket FKM (for sealing on the back - not pressure resistant) / removable
- 2 pre-mounted PEEK sealing ring (removable) / metallic sealing area
- 3 groove for sealing ring DIN EN ISO 1179-2



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 1/2 external thread sealing cone		
Application			
System	gold-plated contacts		
Measuring element	ceramic-capacitive pressure measuring cell		
Temperature monitoring	yes		
Application	flush mountable for the food and beverage industry		
Media	viscous media and liquids with suspended particles; liquids and gases		
Conditionally suitable for	use in gases at pressures > 25 bar only on request		
Medium temperature [°C]	-25...150		
Min. burst pressure	80 bar	1200 psi	8000 kPa
Pressure rating	40 bar	580 psi	4000 kPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		

PM1505



Flush pressure sensor

PM-004-REA12-A-ZVG/US

MAWP (for applications according to CRN)	[bar]	40	
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; 1:5)	
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...4 bar	-14.5...58 psi	-100...400 kPa
Analog start point	-1...3.2 bar	-14.5...46.4 psi	-100...320 kPa
Analog end point	0.2...4 bar	-2.9...58 psi	-20...400 kPa
In steps of	0.002 bar	0.05 psi	0.2 kPa
Factory setting	ASP = 0.0 bar	AEP = 4.0 bar	
Temperature monitoring			
Measuring range	-25...150 °C		-13...302 °F
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]	< ± 0,15; (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)	

PM1505



Flush pressure sensor

PM-004-REA12-A-ZVG/US

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		
Temperature monitoring			
Accuracy	[K]	± 2.5 K + (0.045 x (ambient temperature - medium temperature))	
Repeatability	[K]	± 0,2	
Resolution	[K]	0.2	
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	Common - I&D	Identification and Diagnosis	
	Function	Measurement data, standard resolution	
SIO mode	no		
Required master port class	A; (when pin 2 not connected: B)		
Min. process cycle time	[ms]	4.5	
IO-Link resolution pressure	[bar]	0.001	
IO-Link resolution temperature	[K]	0.2	
IO-Link process data (cyclical)	Function	bit length	
	pressure	16	
	temperature	16	
	device status	4	
IO-Link functions (acyclical)	application specific tag; internal temperature		
Supported DeviceIDs	Type of operation	DeviceID	
	default	1023	
Operating conditions			
Ambient temperature	[°C]	-25...80	
Storage temperature	[°C]	-40...100	
Protection	IP 67; IP 68; IP 69K		
Tests / approvals			
EMC	DIN EN 61326-1		

PM1505



Flush pressure sensor

PM-004-REA12-A-ZVG/US

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]		322
UL approval	UL approval number	J024
	File number UL	E174189

Mechanical data

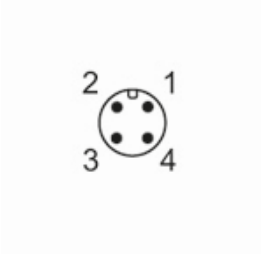
Weight [g]	307.8
Housing	tubular
Dimensions [mm]	Ø 30.2 / L = 129.3
Material	stainless steel (1.4404 / 316L); PTFE; FKM
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PEEK; PTFE
Min. pressure cycles	100 million
Tightening torque [Nm]	20
Process connection	threaded connection G 1/2 external thread sealing cone

Remarks

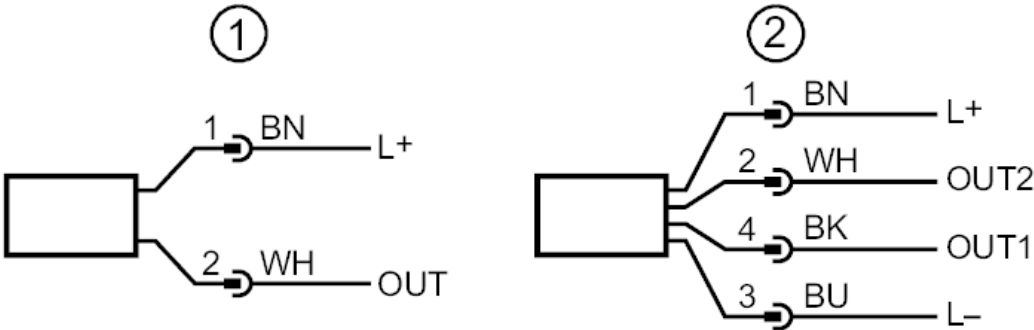
Pack quantity	1 pcs.
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Electrical connection

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



Connection



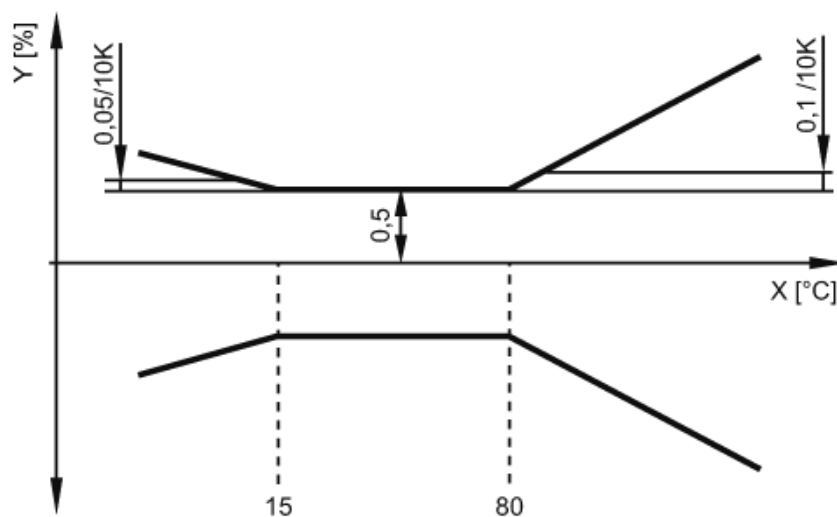
- 1
- 2
- connection for 2-wire operation (analog)
connection for 3-wire operation (analog / IO-Link)
OUT1: IO-Link
OUT2: analog output



Flush pressure sensor

PM-004-REA12-A-ZVG/US

Diagrams and graphs



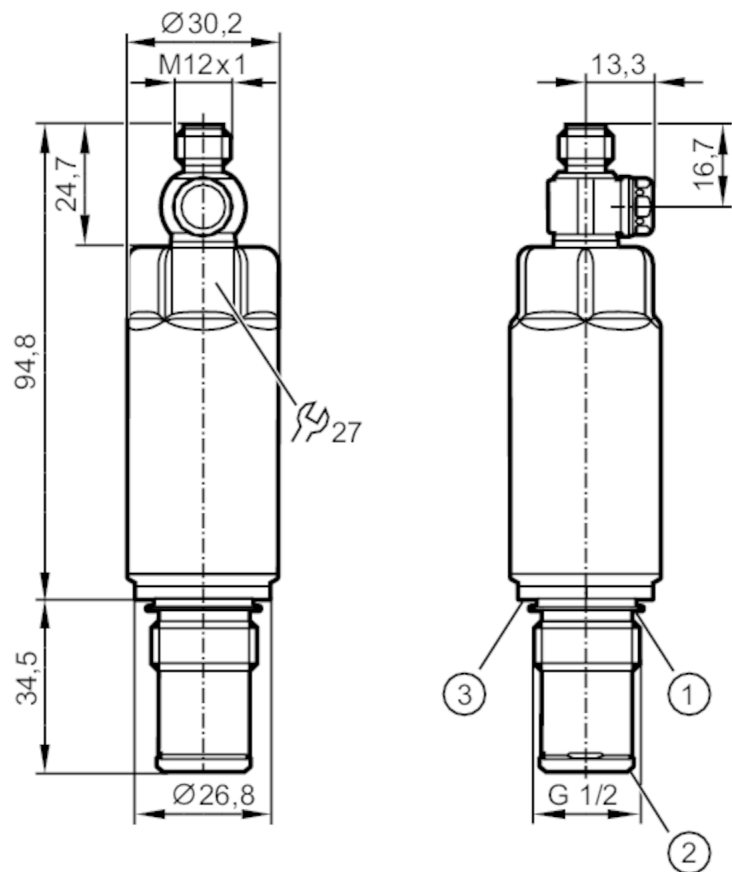
X temperature
Y total deviation

PM1506



Flush pressure sensor

PM-2,5-REA12-A-ZVG/US



- 1 Gasket FKM (for sealing on the back - not pressure resistant) / removable
- 2 pre-mounted PEEK sealing ring (removable) / metallic sealing area
- 3 groove for sealing ring DIN EN ISO 1179-2



ACS



CRN



EC 1935/2004

EHEDG Certified

FCM



IO-Link



Reg31



UKCA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1		
Measuring range	-125...2500 mbar	-1.82...36.26 psi	-12.5...250 kPa
Process connection	threaded connection G 1/2 external thread sealing cone		

Application

System	gold-plated contacts		
Measuring element	ceramic-capacitive pressure measuring cell		
Temperature monitoring	yes		
Application	flush mountable for the food and beverage industry		
Media	viscous media and liquids with suspended particles; liquids and gases		
Conditionally suitable for	use in gases at pressures > 25 bar only on request		
Medium temperature [°C]	-25...150		
Min. burst pressure	50000 mbar	725 psi	5000 kPa
Pressure rating	30000 mbar	435 psi	3000 kPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		

PM1506



Flush pressure sensor

PM-2,5-REA12-A-ZVG/US

MAWP (for applications according to CRN)	[bar]	3	
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; 1:5)	
Max. load	[Ω]	700; (U _b = 24 V; (U _b - 9 V) / 21.5 mA)	
Short-circuit proof	yes		
Overload protection	yes		
Measuring/setting range			
Measuring range	-125...2500 mbar	-1.82...36.26 psi	-12.5...250 kPa
Analog start point	-125...2000 mbar	-1.82...29 psi	-12.5...200 kPa
Analog end point	375...2500 mbar	5.44...36.26 psi	37.5...250 kPa
In steps of	1 mbar	0.02 psi	0.1 kPa
Factory setting	ASP = 0.0 bar	AEP = 2500 mbar	
Temperature monitoring			
Measuring range	-25...150 °C		-13...302 °F
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]	< ± 0,15; (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)	

PM1506



Flush pressure sensor

PM-2,5-REA12-A-ZVG/US

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		
Temperature monitoring			
Accuracy	[K]	± 2.5 K + (0.045 x (ambient temperature - medium temperature))	
Repeatability	[K]	± 0,2	
Resolution	[K]	0.2	
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	Common - I&D	Identification and Diagnosis	
	Function	Measurement data, standard resolution	
SIO mode	no		
Required master port class	A; (when pin 2 not connected: B)		
Min. process cycle time	[ms]	4.5	
IO-Link resolution pressure	[mbar]	0.5	
IO-Link resolution temperature	[K]	0.2	
IO-Link process data (cyclical)	Function	bit length	
	pressure	16	
	temperature	16	
	device status	4	
IO-Link functions (acyclical)	application specific tag; internal temperature		
Supported DeviceIDs	Type of operation	DeviceID	
	default	1024	
Operating conditions			
Ambient temperature	[°C]	-25...80	
Storage temperature	[°C]	-40...100	
Protection	IP 67; IP 68; IP 69K		
Tests / approvals			
EMC	DIN EN 61326-1		

PM1506



Flush pressure sensor

PM-2,5-REA12-A-ZVG/US

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]		322
UL approval	UL approval number	J024
	File number UL	E174189

Mechanical data

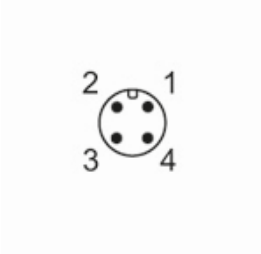
Weight [g]	306.2
Housing	tubular
Dimensions [mm]	Ø 30.2 / L = 129.3
Material	stainless steel (1.4404 / 316L); PTFE; FKM
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PEEK; PTFE
Min. pressure cycles	100 million
Tightening torque [Nm]	20
Process connection	threaded connection G 1/2 external thread sealing cone

Remarks

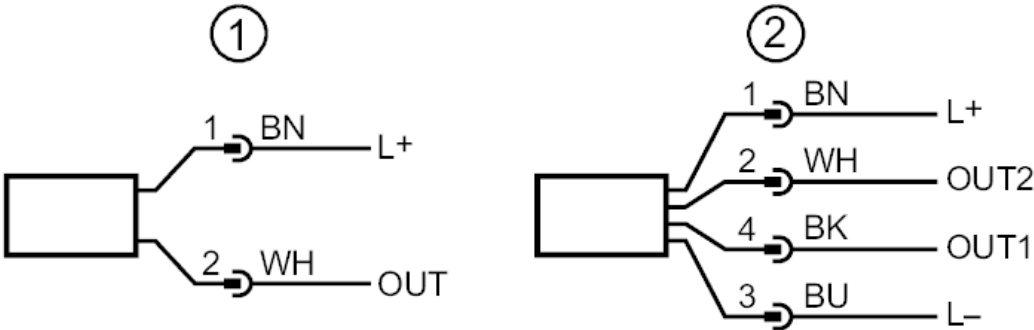
Pack quantity	1 pcs.
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Electrical connection

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



Connection



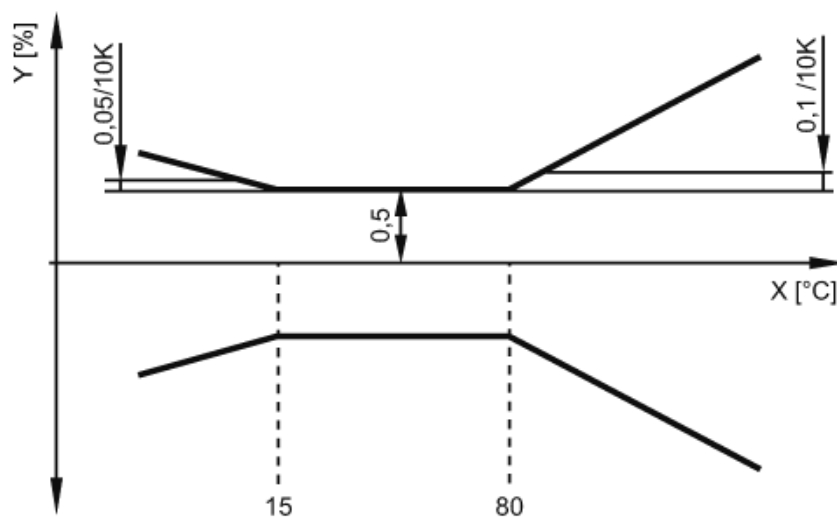
- 1
- connection for 2-wire operation (analog)
- 2
- connection for 3-wire operation (analog / IO-Link)
OUT1: IO-Link
OUT2: analog output



Flush pressure sensor

PM-2,5-REA12-A-ZVG/US

Diagrams and graphs



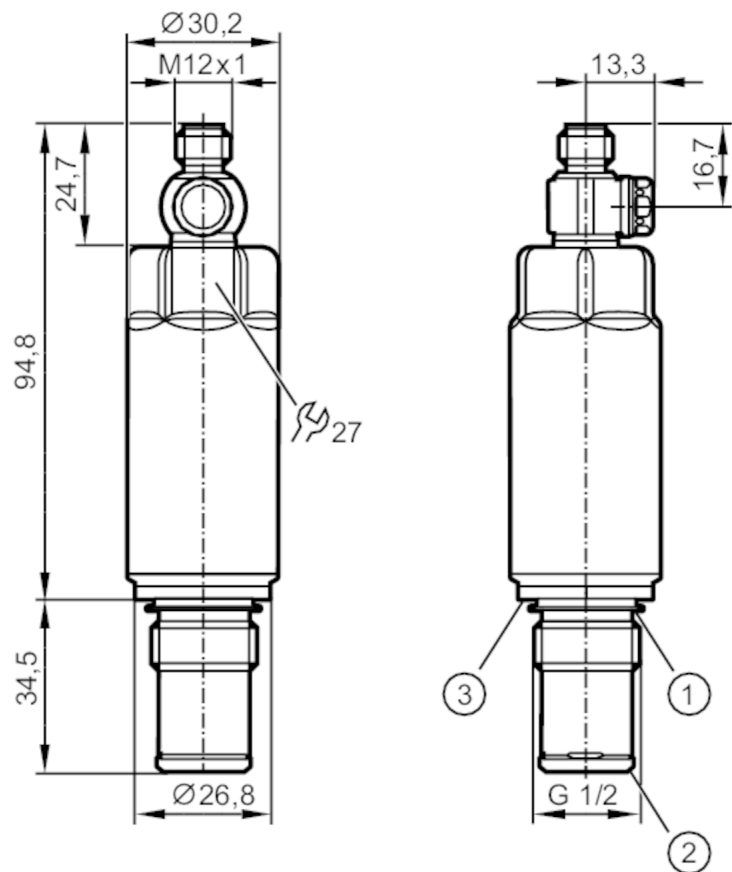
X temperature
Y total deviation

PM1507



Flush pressure sensor

PM-001-REA12-A-ZVG/US



- 1 Gasket FKM (for sealing on the back - not pressure resistant) / removable
- 2 pre-mounted PEEK sealing ring (removable) / metallic sealing area
- 3 groove for sealing ring DIN EN ISO 1179-2



ACS



CRN



EC 1935/2004

EHEDG Certified

FCM



IO-Link



Reg31



UKCA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1		
Measuring range	-50...1000 mbar	-0.73...14.5 psi	-5...100 kPa
Process connection	threaded connection G 1/2 external thread sealing cone		

Application

System	gold-plated contacts		
Measuring element	ceramic-capacitive pressure measuring cell		
Temperature monitoring	yes		
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	40000 mbar	580 psi	4000 kPa
Pressure rating	20000 mbar	290 psi	2000 kPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure		
No dead space	yes		
MAWP (for applications according to CRN)	1 bar	0.1 MPa	

PM1507



Flush pressure sensor

PM-001-REA12-A-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; 1:5)	
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	-50...1000 mbar	-0.73...14.5 psi	-5...100 kPa
Analog start point	-50...800 mbar	-0.73...11.6 psi	-5...80 kPa
Analog end point	150...1000 mbar	2.18...14.5 psi	15...100 kPa
In steps of	1 mbar	0.01 psi	0.1 kPa
Factory setting	ASP = 0.0 bar	AEP = 1000 mbar	
Temperature monitoring			
Measuring range	-25...150 °C		-13...302 °F
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]	< ± 0,15; (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)	

PM1507



Flush pressure sensor

PM-001-REA12-A-ZVG/US

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		
Temperature monitoring			
Accuracy	[K]	± 2.5 K + (0.045 x (ambient temperature - medium temperature))	
Repeatability	[K]	± 0,2	
Resolution	[K]	0.2	
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	Common - I&D	Identification and Diagnosis	
	Function	Measurement data, standard resolution	
SIO mode	no		
Required master port class	A; (when pin 2 not connected: B)		
Min. process cycle time	[ms]	4.5	
IO-Link resolution pressure	[mbar]	0.2	
IO-Link resolution temperature	[K]	0.2	
IO-Link process data (cyclical)	Function	bit length	
	pressure	16	
	temperature	16	
	device status	4	
IO-Link functions (acyclical)	application specific tag; internal temperature		
Supported DeviceIDs	Type of operation	DeviceID	
	default	1534	
Operating conditions			
Ambient temperature	[°C]	-25...80	
Storage temperature	[°C]	-40...100	
Protection	IP 67; IP 68; IP 69K		
Tests / approvals			
EMC	DIN EN 61326-1		

PM1507



Flush pressure sensor

PM-001-REA12-A-ZVG/US

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]		322
UL approval	UL approval number	J069
	File number UL	E174189

Mechanical data

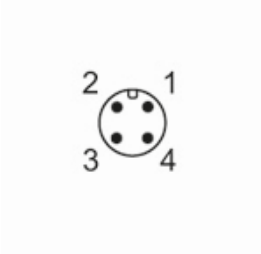
Weight [g]	265.9
Housing	tubular
Dimensions [mm]	Ø 30.2 / L = 129.3
Material	stainless steel (1.4404 / 316L); PTFE; FKM
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PEEK; PTFE
Min. pressure cycles	100 million
Tightening torque [Nm]	20
Process connection	threaded connection G 1/2 external thread sealing cone

Remarks

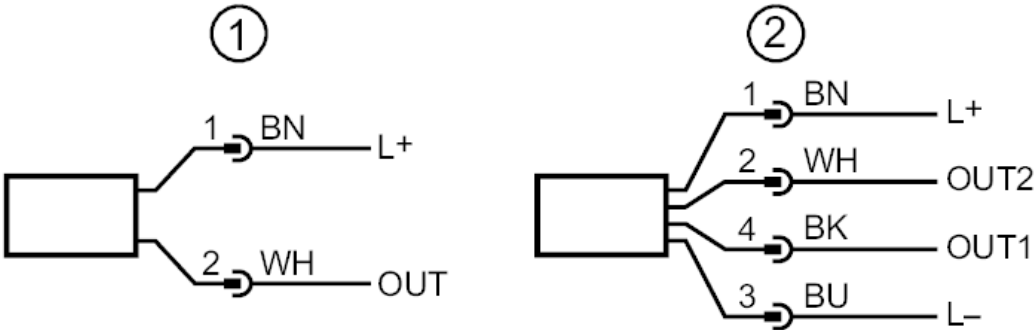
Pack quantity	1 pcs.
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Electrical connection

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



Connection



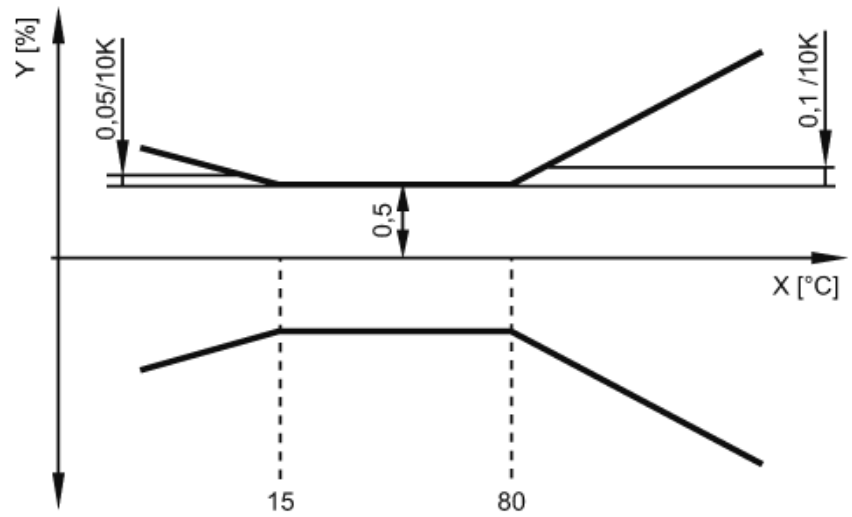
- 1
- 2
- connection for 2-wire operation (analog)
connection for 3-wire operation (analog / IO-Link)
OUT1: IO-Link
OUT2: analog output



Flush pressure sensor

PM-001-REA12-A-ZVG/US

Diagrams and graphs



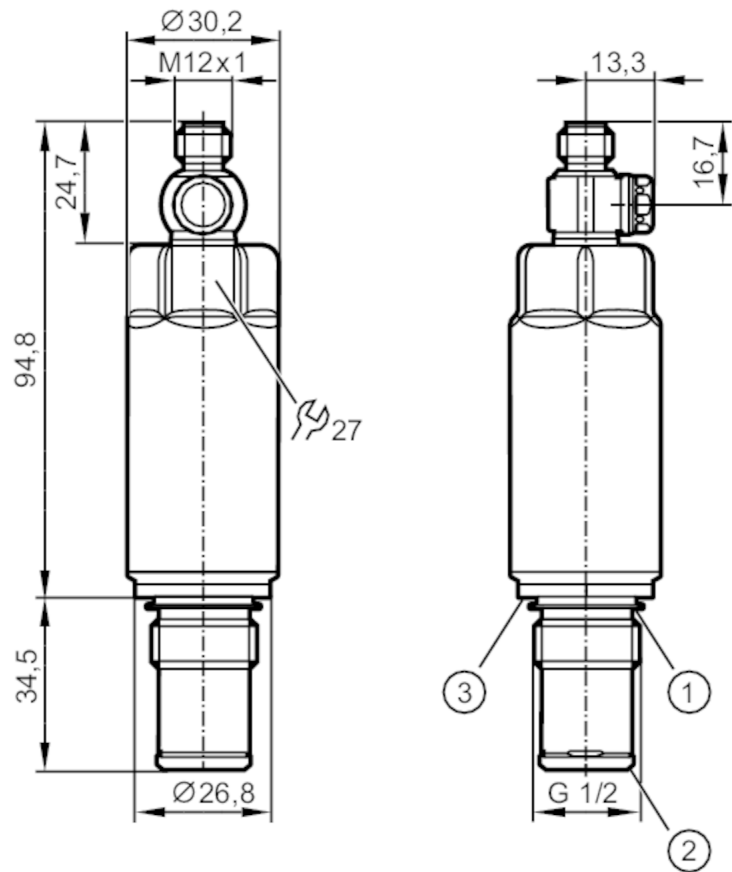
X temperature
Y total deviation

PM1514



Flush pressure sensor

PM-016-REA12-A-ZVG/US



- 1 Gasket FKM (for sealing on the back - not pressure resistant) / removable
2 pre-mounted PEEK sealing ring (removable) / metallic sealing area
3 groove for sealing ring DIN EN ISO 1179-2



ACS



CRN



EC 1935/2004

EHEDG Certified

FCM



IO-Link



Reg31



UKCA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1		
Measuring range	-1...16 bar	-14.6...232 psi	-0.1...1.6 MPa
Process connection	threaded connection G 1/2 external thread sealing cone		

Application

System	gold-plated contacts		
Measuring element	ceramic-capacitive pressure measuring cell		
Temperature monitoring	yes		
Application	flush mountable for the food and beverage industry		
Media	viscous media and liquids with suspended particles; liquids and gases		
Conditionally suitable for	use in gases at pressures > 25 bar only on request		
Medium temperature [°C]	-25...150		
Min. burst pressure	250 bar	3625 psi	25 MPa
Pressure rating	110 bar	1600 psi	11 MPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		

PM1514



Flush pressure sensor

PM-016-REA12-A-ZVG/US

MAWP (for applications according to CRN)	[bar]	43	
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; 1:5)	
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...16 bar	-14.6...232 psi	-0.1...1.6 MPa
Analog start point	-1...12.8 bar	-14.6...185.6 psi	-0.1...1.28 MPa
Analog end point	2.2...16 bar	32...232 psi	0.22...1.6 MPa
In steps of	0.01 bar	0.2 psi	0.001 MPa
Factory setting	ASP = 0.0 bar	AEP = 16.0 bar	
Temperature monitoring			
Measuring range	-25...150 °C		-13...302 °F
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]	< ± 0,15; (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)	

PM1514



Flush pressure sensor

PM-016-REA12-A-ZVG/US

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		
Temperature monitoring			
Accuracy	[K]	± 2.5 K + (0.045 x (ambient temperature - medium temperature))	
Repeatability	[K]	± 0,2	
Resolution	[K]	0.2	
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	Common - I&D	Identification and Diagnosis	
	Function	Measurement data, standard resolution	
SIO mode	no		
Required master port class	A; (when pin 2 not connected: B)		
Min. process cycle time	[ms]	4.5	
IO-Link resolution pressure	[bar]	0.005	
IO-Link resolution temperature	[K]	0.2	
IO-Link process data (cyclical)	Function	bit length	
	pressure	16	
	temperature	16	
	device status	4	
IO-Link functions (acyclical)	application specific tag; internal temperature		
Supported DeviceIDs	Type of operation	DeviceID	
	default	1020	
Operating conditions			
Ambient temperature	[°C]	-25...80	
Storage temperature	[°C]	-40...100	
Protection	IP 67; IP 68; IP 69K		
Tests / approvals			
EMC	DIN EN 61326-1		

PM1514



Flush pressure sensor

PM-016-REA12-A-ZVG/US

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]		322
UL approval	UL approval number	J024
	File number UL	E174189

Mechanical data

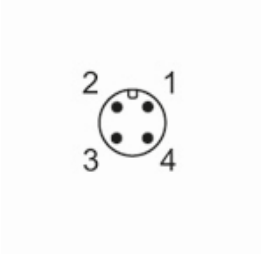
Weight [g]	306.1
Housing	tubular
Dimensions [mm]	Ø 30.2 / L = 129.3
Material	stainless steel (1.4404 / 316L); PTFE; FKM
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PEEK; PTFE
Min. pressure cycles	100 million
Tightening torque [Nm]	20
Process connection	threaded connection G 1/2 external thread sealing cone

Remarks

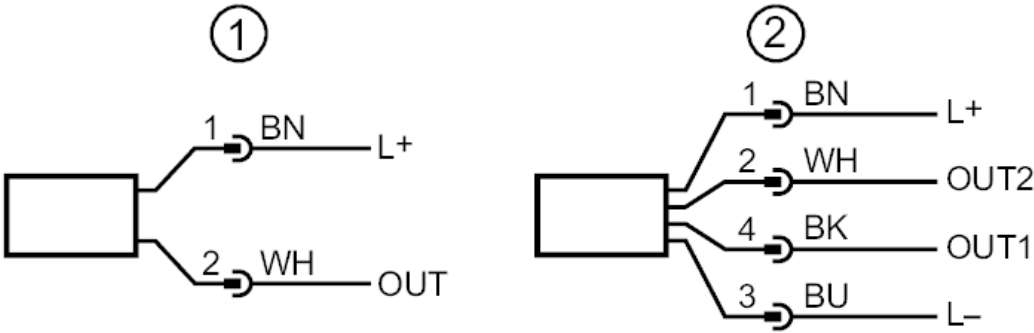
Pack quantity	1 pcs.
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Electrical connection

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



Connection



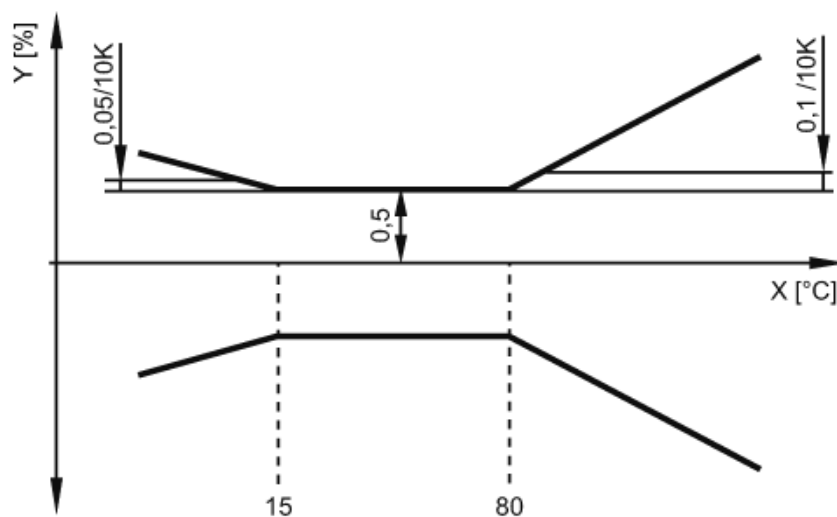
- 1
- 2
- connection for 2-wire operation (analog)
connection for 3-wire operation (analog / IO-Link)
OUT1: IO-Link
OUT2: analog output



Flush pressure sensor

PM-016-REA12-A-ZVG/US

Diagrams and graphs



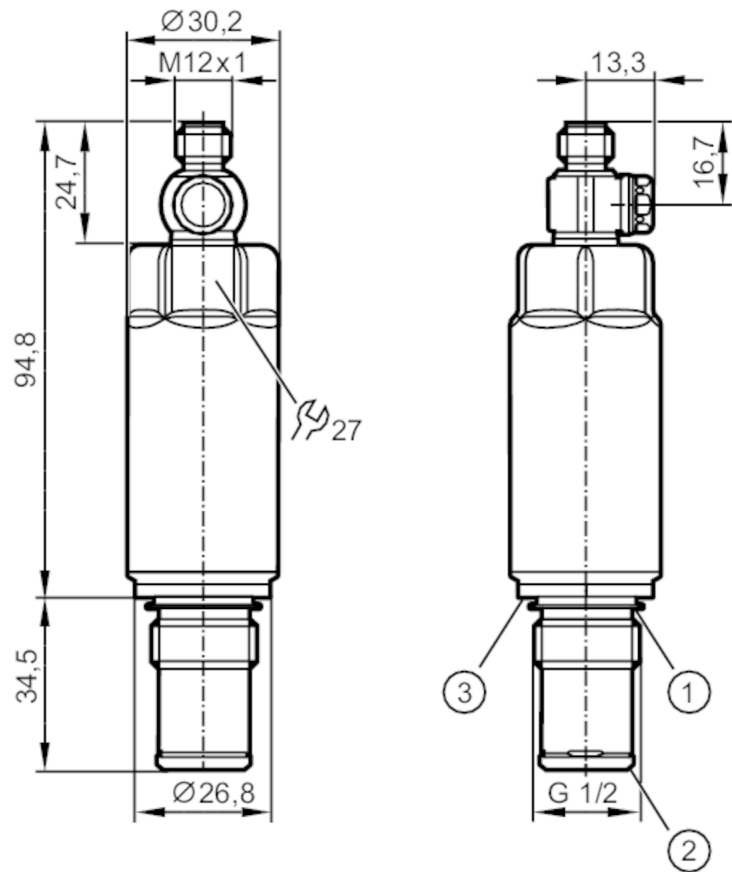
X temperature
Y total deviation

PM1515



Flush pressure sensor

PM-006-REA12-A-ZVG/US



- 1 Gasket FKM (for sealing on the back - not pressure resistant) / removable
- 2 pre-mounted PEEK sealing ring (removable) / metallic sealing area
- 3 groove for sealing ring DIN EN ISO 1179-2



Product characteristics			
Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1		
Measuring range	-1...6 bar	-14.5...87 psi	-100...600 kPa
Process connection	threaded connection G 1/2 external thread sealing cone		
Application			
System	gold-plated contacts		
Measuring element	ceramic-capacitive pressure measuring cell		
Temperature monitoring	yes		
Application	flush mountable for the food and beverage industry		
Media	viscous media and liquids with suspended particles; liquids and gases		
Conditionally suitable for	use in gases at pressures > 25 bar only on request		
Medium temperature [°C]	-25...150		
Min. burst pressure	120 bar	1740 psi	12000 kPa
Pressure rating	50 bar	725 psi	5000 kPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		

PM1515



Flush pressure sensor

PM-006-REA12-A-ZVG/US

MAWP (for applications according to CRN)	[bar]	43	
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; 1:5)	
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...6 bar	-14.5...87 psi	-100...600 kPa
Analog start point	-1...4.8 bar	-14.5...69.6 psi	-100...480 kPa
Analog end point	0.2...6 bar	2.9...87 psi	-20...600 kPa
In steps of	0.002 bar	0.05 psi	0.2 kPa
Factory setting	ASP = 0.0 bar	AEP = 6.0 bar	
Temperature monitoring			
Measuring range	-25...150 °C		-13...302 °F
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]	< ± 0,15; (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)	

PM1515



Flush pressure sensor

PM-006-REA12-A-ZVG/US

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		
Temperature monitoring			
Accuracy	[K]	± 2.5 K + (0.045 x (ambient temperature - medium temperature))	
Repeatability	[K]	± 0,2	
Resolution	[K]	0.2	
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	Common - I&D	Identification and Diagnosis	
	Function	Measurement data, standard resolution	
SIO mode	no		
Required master port class	A; (when pin 2 not connected: B)		
Min. process cycle time	[ms]	4.5	
IO-Link resolution pressure	[bar]	0.002	
IO-Link resolution temperature	[K]	0.2	
IO-Link process data (cyclical)	Function	bit length	
	pressure	16	
	temperature	16	
	device status	4	
IO-Link functions (acyclical)	application specific tag; internal temperature		
Supported DeviceIDs	Type of operation	DeviceID	
	default	1022	
Operating conditions			
Ambient temperature	[°C]	-25...80	
Storage temperature	[°C]	-40...100	
Protection	IP 67; IP 68; IP 69K		
Tests / approvals			
EMC	DIN EN 61326-1		

PM1515



Flush pressure sensor

PM-006-REA12-A-ZVG/US

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]		322
UL approval	UL approval number	J024
	File number UL	E174189

Mechanical data

Weight [g]	309.6
Housing	tubular
Dimensions [mm]	Ø 30.2 / L = 129.3
Material	stainless steel (1.4404 / 316L); PTFE; FKM
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PEEK; PTFE
Min. pressure cycles	100 million
Tightening torque [Nm]	20
Process connection	threaded connection G 1/2 external thread sealing cone

Remarks

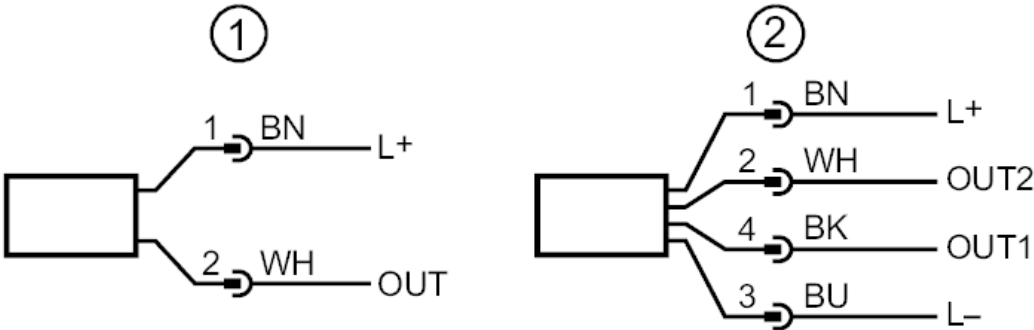
Pack quantity	1 pcs.
---------------	--------

Electrical connection

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



Connection



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

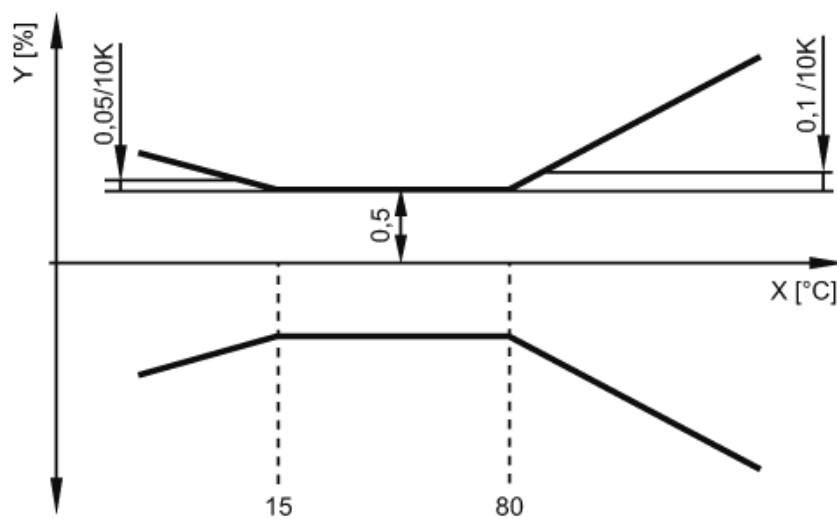
PM1515



Flush pressure sensor

PM-006-REA12-A-ZVG/US

Diagrams and graphs



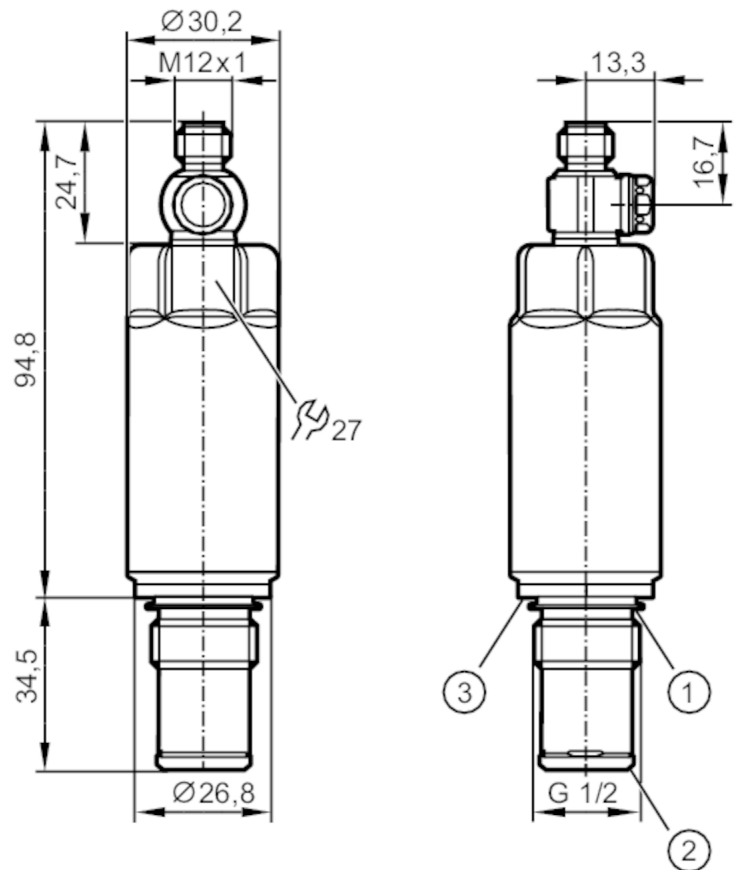
X temperature
Y total deviation

PM1543



Flush pressure sensor

PM-040-REA12-A-ZVG/US



- 1 Gasket FKM (for sealing on the back - not pressure resistant) / removable
- 2 pre-mounted PEEK sealing ring (removable) / metallic sealing area
- 3 groove for sealing ring DIN EN ISO 1179-2



Product characteristics			
Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1		
Measuring range	-1...40 bar	-14.6...580.2 psi	-0.1...4 MPa
Process connection	threaded connection G 1/2 external thread sealing cone		
Application			
System	gold-plated contacts		
Measuring element	ceramic-capacitive pressure measuring cell		
Temperature monitoring	yes		
Application	flush mountable for the food and beverage industry		
Media	viscous media and liquids with suspended particles; liquids and gases		
Conditionally suitable for	use in gases at pressures > 25 bar only on request		
Medium temperature [°C]	-25...150		
Min. burst pressure	300 bar	4350 psi	30 MPa
Pressure rating	200 bar	2900 psi	20 MPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure		
No dead space	yes		

PM1543



Flush pressure sensor

PM-040-REA12-A-ZVG/US

MAWP (for applications according to CRN)	[bar]	51.5	
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; 1:5)	
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...40 bar	-14.6...580.2 psi	-0.1...4 MPa
Analog start point	-1...32 bar	-14.6...462.2 psi	-0.1...3.2 MPa
Analog end point	7...40 bar	101.6...580.2 psi	0.7...4 MPa
In steps of	0.02 bar	0.2 psi	0.002 MPa
Factory setting	ASP = 0.0 bar	AEP = 40.0 bar	
Temperature monitoring			
Measuring range	-25...150 °C		-13...302 °F
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]	< ± 0,15; (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)	

PM1543



Flush pressure sensor

PM-040-REA12-A-ZVG/US

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		
Temperature monitoring			
Accuracy	[K]	± 2.5 K + (0.045 x (ambient temperature - medium temperature))	
Repeatability	[K]	± 0,2	
Resolution	[K]	0.2	
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	Common - I&D	Identification and Diagnosis	
	Function	Measurement data, standard resolution	
SIO mode	no		
Required master port class	A; (when pin 2 not connected: B)		
Min. process cycle time	[ms]	4.5	
IO-Link resolution pressure	[bar]	0.01	
IO-Link resolution temperature	[K]	0.2	
IO-Link process data (cyclical)	Function	bit length	
	pressure	16	
	temperature	16	
	device status	4	
IO-Link functions (acyclical)	application specific tag; internal temperature		
Supported DeviceIDs	Type of operation	DeviceID	
	default	1018	
Operating conditions			
Ambient temperature	[°C]	-25...80	
Storage temperature	[°C]	-40...100	
Protection	IP 67; IP 68; IP 69K		
Tests / approvals			
EMC	DIN EN 61326-1		

PM1543



Flush pressure sensor

PM-040-REA12-A-ZVG/US

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]		322
UL approval	UL approval number	J024
	File number UL	E174189

Mechanical data		
Weight [g]		266.6
Housing		tubular
Dimensions [mm]		Ø 30.2 / L = 129.3
Material		stainless steel (1.4404 / 316L); PTFE; FKM
Materials (wetted parts)		ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PEEK; PTFE
Min. pressure cycles		100 million
Tightening torque [Nm]		20
Process connection		threaded connection G 1/2 external thread sealing cone

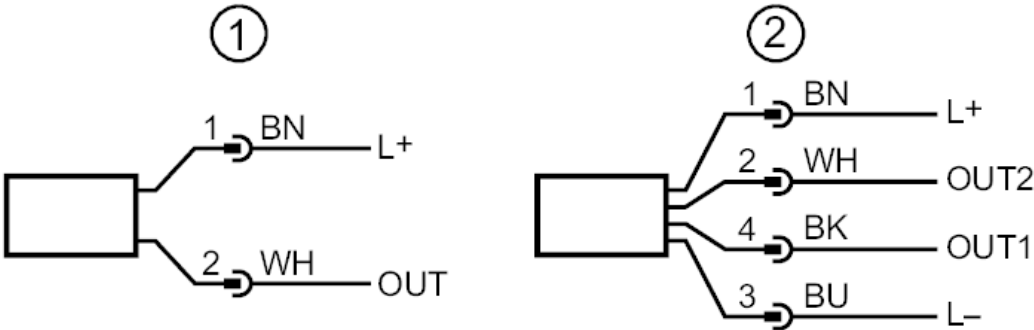
Remarks	
Pack quantity	1 pcs.

Electrical connection

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



Connection



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

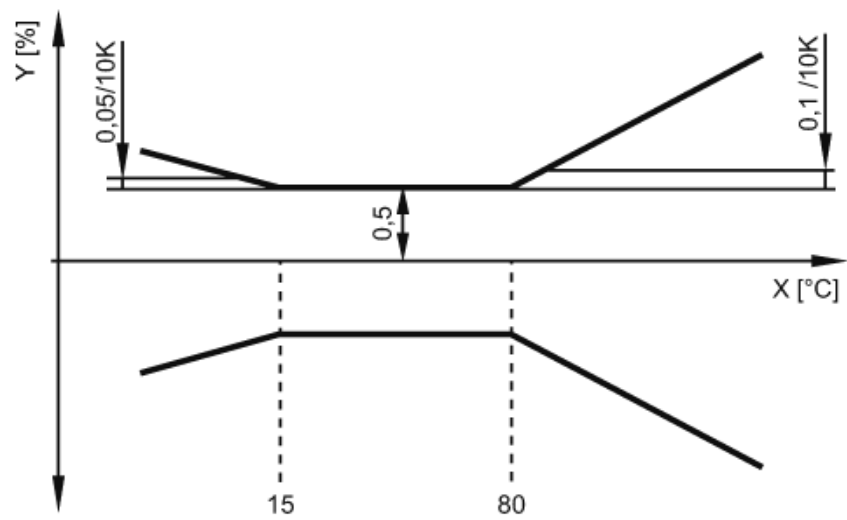
PM1543



Flush pressure sensor

PM-040-REA12-A-ZVG/US

Diagrams and graphs



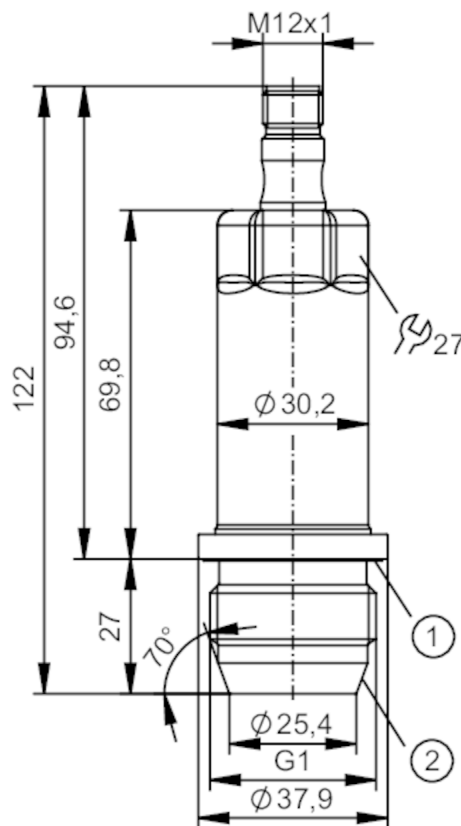
X temperature
Y total deviation

PM1602



Flush pressure sensor

PM-100-REA01-E-ZVG/US



- 1 groove with sealing ring (DIN EN ISO 1179-2)
2 G1 sealing cone external thread



ACS



EC 1935/2004

FCM



Hygienic Cleanable



IO-Link



Reg31



Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1		
Measuring range	-1...100 bar	-15...1450 psi	-0.1...10 MPa
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; use in gases at pressures > 25 bar only on request		
Medium temperature [°C]	-25...150		
Min. burst pressure	650 bar	9425 psi	65 MPa
Pressure rating	200 bar	2900 psi	20 MPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		



Flush pressure sensor

PM-100-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; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)	
Short-circuit proof		yes	
Overload protection		yes	
Measuring/setting range			
Measuring range		-1...100 bar	-15...1450 psi
Analog start point		-1...80 bar	-15...1160 psi
Analog end point		19...100 bar	276...1450 psi
In steps of		0.05 bar	1 psi
Factory setting		ASP = 0.0 bar	AEP = 100.0 bar
Accuracy / deviations			
Repeatability	[% of the span]	< ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)	
Characteristics deviation	[% of the span]	< ± 0,5; (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 ± 0,15 % of the span / 10 K
	15...80 °C		Characteristics deviation
	80...150 °C		Characteristics deviation ± 0,2 % of the span / 10 K



Flush pressure sensor

PM-100-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
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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	
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 class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[bar]	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	659

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 number	J023

Mechanical data

Weight	[g]	330.15
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 122
Material	stainless steel (1.4404 / 316L); PBT	

PM1602



Flush pressure sensor

PM-100-REA01-E-ZVG/US

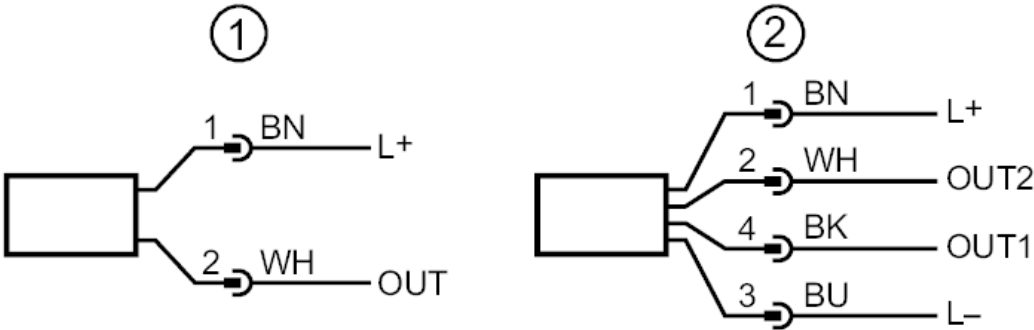
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE
Min. pressure cycles	100 million
Tightening torque [Nm]	20
Process connection	threaded connection G 1 external thread sealing cone
Remarks	
Pack quantity	1 pcs.

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

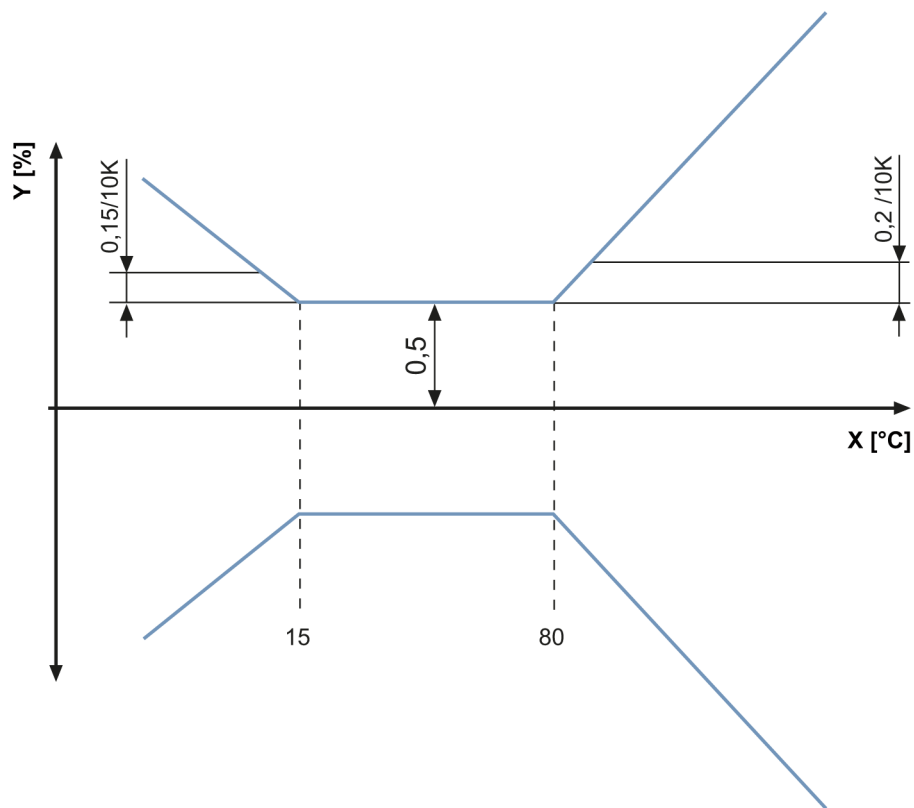
PM1602



Flush pressure sensor

PM-100-REA01-E-ZVG/US

Diagrams and graphs



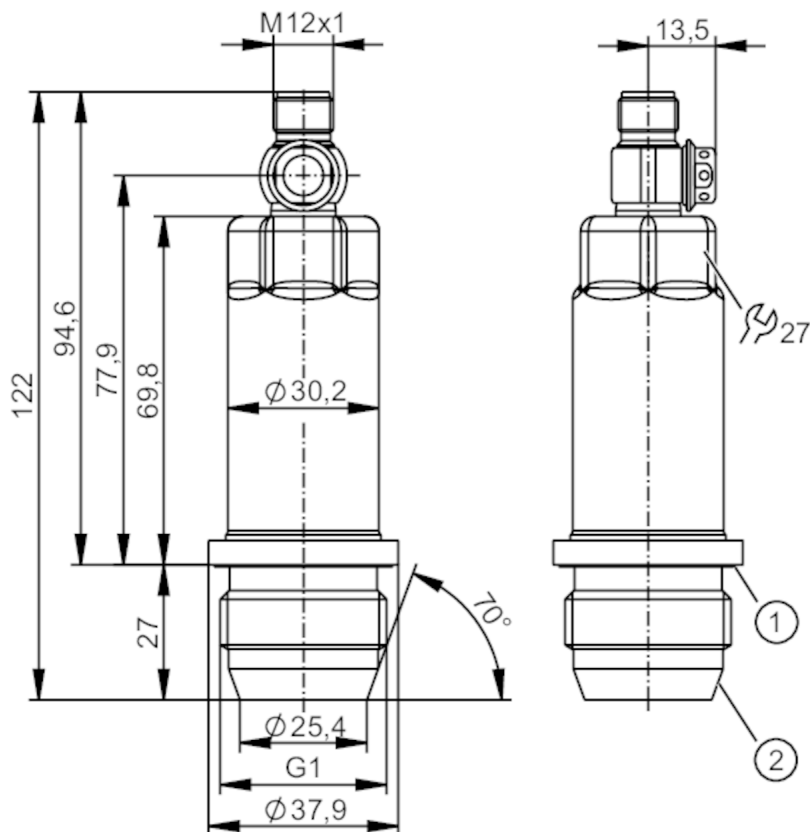
X temperature
Y total deviation

PM1603

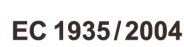


Flush pressure sensor

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 analog 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

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. burst 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		

PM1603



Flush pressure sensor

PM-025-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; (Ub = 24 V; (Ub - 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	-0.1...2.5 MPa
Analog start point	-1...20 bar	-14.6...290 psi	-0.1...2 MPa
Analog end point	4...25 bar	58...362.6 psi	0.4...2.5 MPa
In steps of	0.01 bar	0.2 psi	0.001 MPa
Factory setting	ASP = 0.00 bar	AEP = 25.00 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

PM1603



Flush pressure sensor

PM-025-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
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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]	0.005
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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 www.factory-certificate.ifm
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UL approval	UL approval number	J022
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Mechanical data

Weight	[g]	340.1
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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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PM1603



Flush pressure sensor

PM-025-REA01-E-ZVG/US

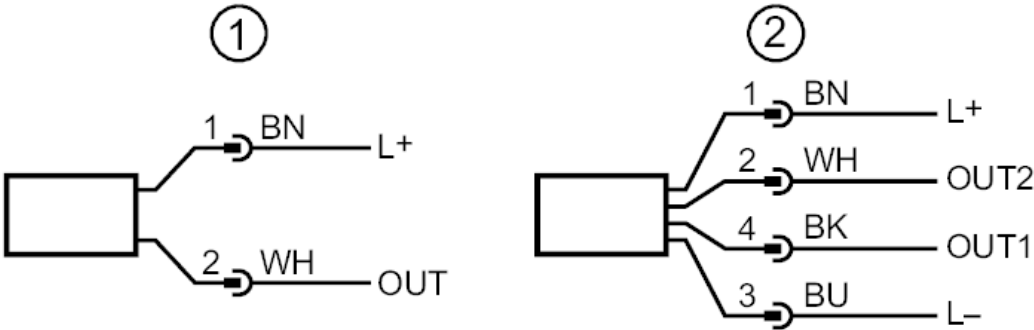
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE
Min. pressure cycles	100 million
Tightening torque [Nm]	20
Process connection	threaded connection G 1 external thread sealing cone
Remarks	
Pack quantity	1 pcs.

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

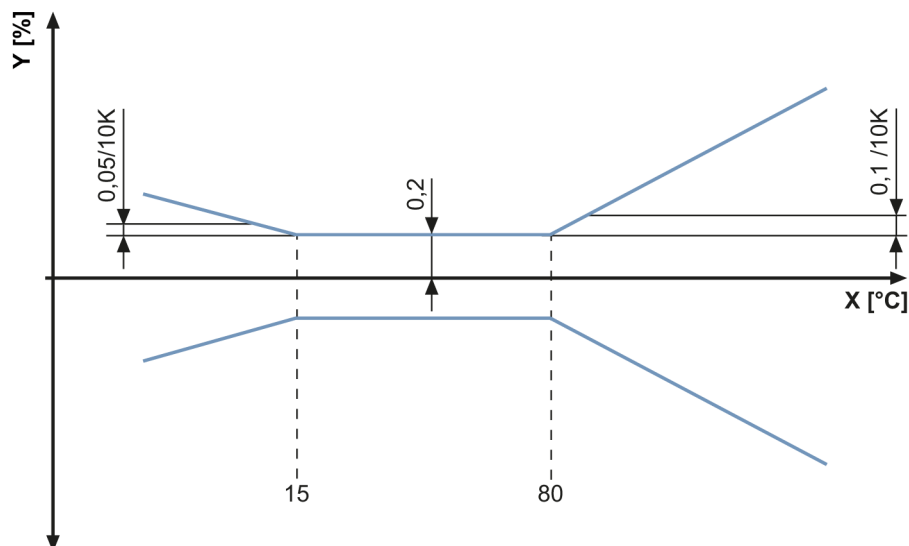


Flush pressure sensor

PM-025-REA01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy



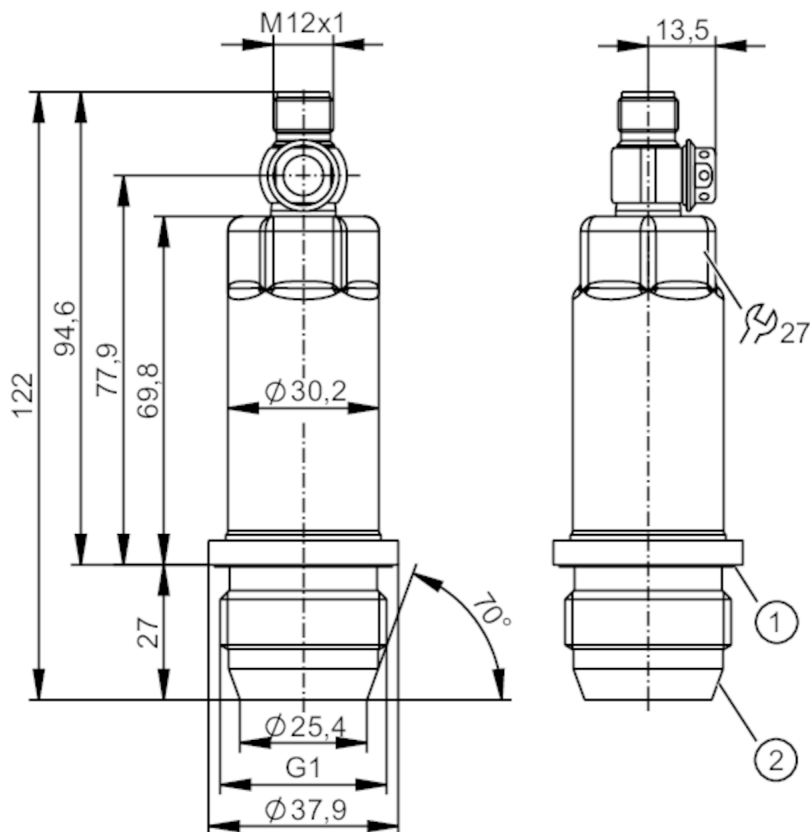
X temperature
Y total deviation

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



ACS



CRN



EC 1935/2004

FCM



Reg31

UK CA

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			

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. 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		

PM1604



Flush pressure sensor

PM-010-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; (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



Flush pressure sensor

PM-010-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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
SIO mode	no	
Required master port class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[bar]	0.002
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	662

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 number	J022

Mechanical data

Weight	[g]	337.7
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 122
Material	stainless steel (1.4404 / 316L); PBT	

PM1604



Flush pressure sensor

PM-010-REA01-E-ZVG/US

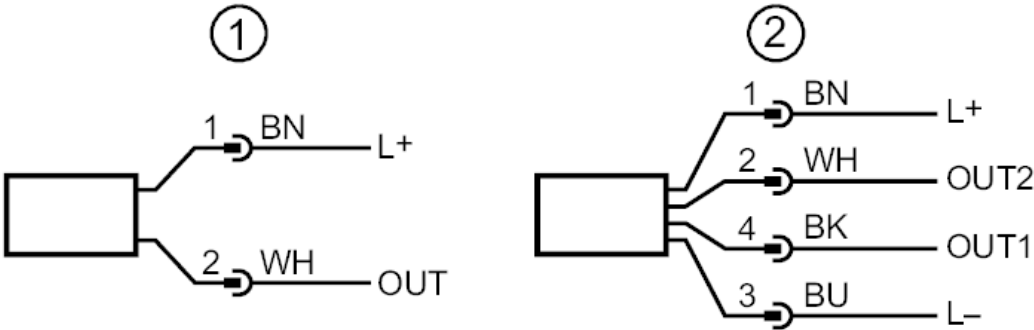
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE
Min. pressure cycles	100 million
Tightening torque [Nm]	20
Process connection	threaded connection G 1 external thread sealing cone
Remarks	
Pack quantity	1 pcs.

Electrical connection

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



Connection



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

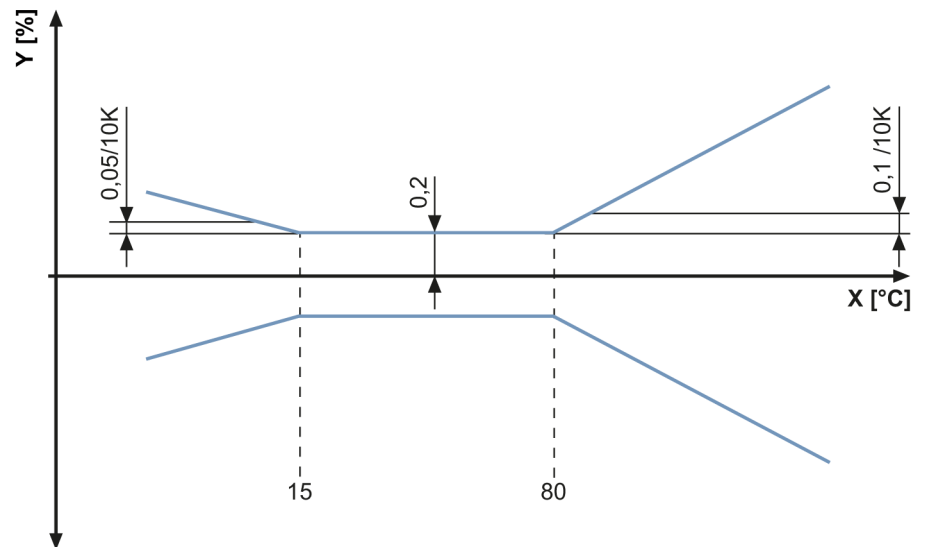


Flush pressure sensor

PM-010-REA01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy



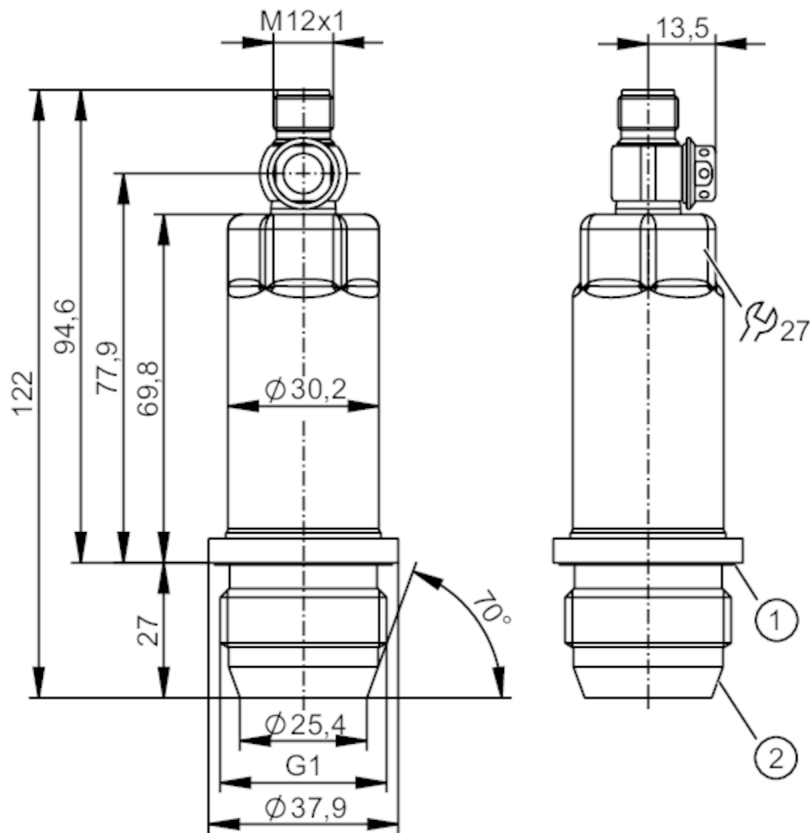
X temperature
Y total deviation

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



ACS



CRN



EC 1935/2004

FCM



Reg31



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. burst 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; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)	
Short-circuit proof		yes	
Overload protection		yes	
Measuring/setting range			
Measuring range	-1...4 bar	-14.5...58 psi	-100...400 kPa
Analog start point	-1...3.2 bar	-14.5...46.4 psi	-100...320 kPa
Analog end point	-0.2...4 bar	-2.9...58 psi	-20...400 kPa
In steps of	0.002 bar	0.05 psi	0.2 kPa
Factory setting	ASP = 0.0 bar	AEP = 4.0 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

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
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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]	0.001
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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	664

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

Weight	[g]	337.55
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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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PM1605



Flush pressure sensor

PM-004-REA01-E-ZVG/US

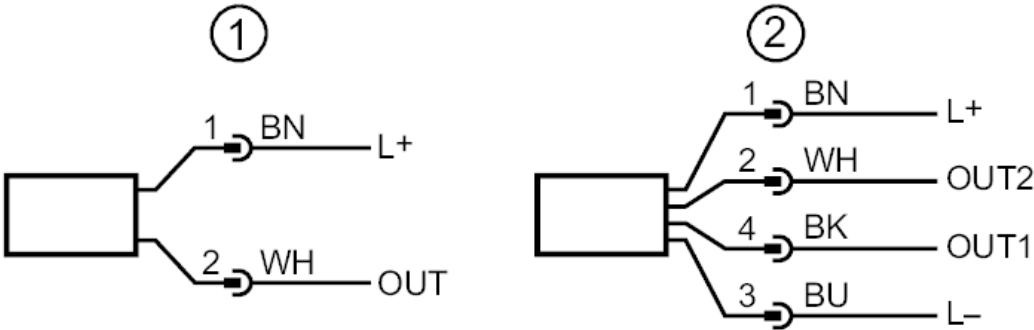
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE
Min. pressure cycles	100 million
Tightening torque [Nm]	20
Process connection	threaded connection G 1 external thread sealing cone
Remarks	
Pack quantity	1 pcs.

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

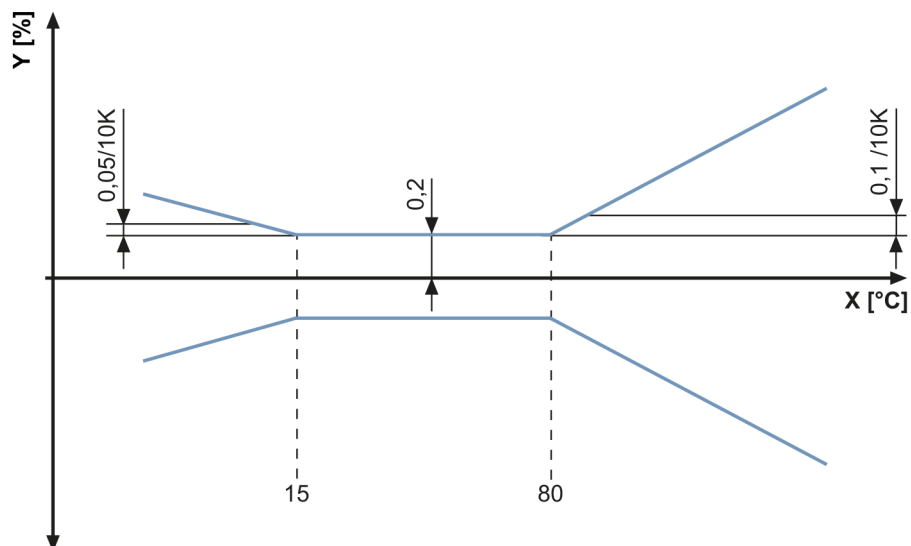


Flush pressure sensor

PM-004-REA01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy



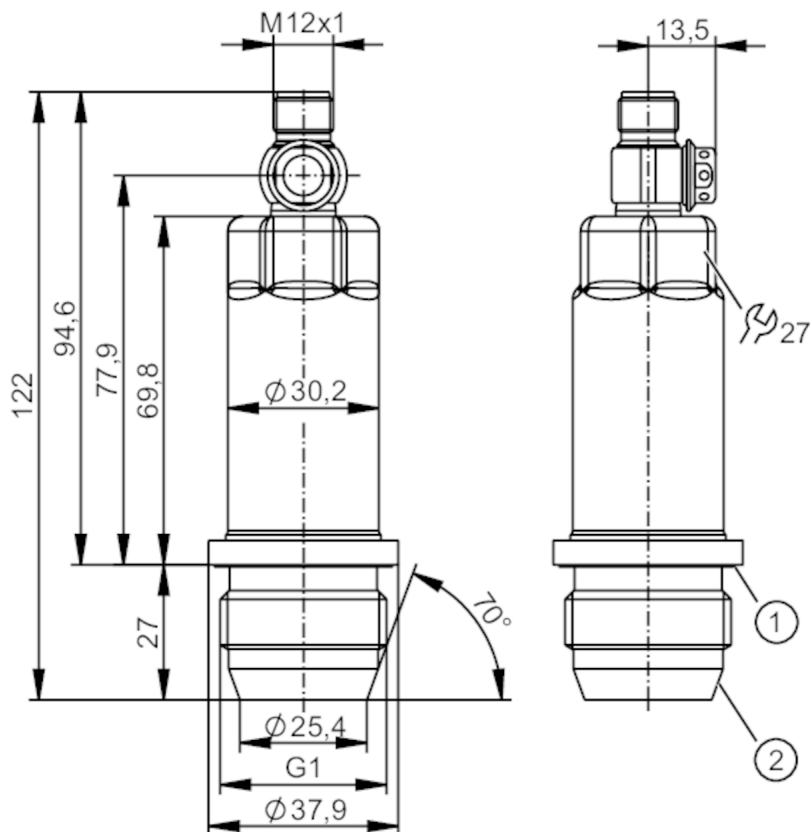
X temperature
Y total deviation

PM1606



Flush pressure sensor

PM-2,5-REA01-E-ZVG/US



- 1 groove with sealing ring (DIN EN ISO 1179-2)
2 G1 sealing cone external thread



ACS



CRN



EC 1935/2004

FCM



Reg31



Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1			
Measuring range	-0.125...2.5 bar	-125...2500 mbar	-1.82...36.26 psi	-12.5...250 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. burst pressure	50000 mbar	725 psi	5000 kPa
Pressure rating	20000 mbar	290 psi	2000 kPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure		
No dead space	yes		
MAWP (for applications according to CRN) [bar]	20		

PM1606



Flush pressure sensor

PM-2,5-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; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)		
Short-circuit proof		yes		
Overload protection		yes		
Measuring/setting range				
Measuring range		-0.125...2.5 bar	-125...2500 mbar	-1.82...36.26 psi -12.5...250 kPa
Analog start point		-125...2000 mbar	-1.82...29 psi	-12.5...200 kPa
Analog end point		-375...2500 mbar	5.44...36.25 psi	37.5...250 kPa
In steps of		1 mbar	0.02 psi	0.1 kPa
Factory setting		ASP = 0.0 bar	AEP = 2500 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

PM1606



Flush pressure sensor

PM-2,5-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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
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 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	665

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 number	J022

Mechanical data

Weight	[g]	342.3
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 122
Material	stainless steel (1.4404 / 316L); PBT	

PM1606



Flush pressure sensor

PM-2,5-REA01-E-ZVG/US

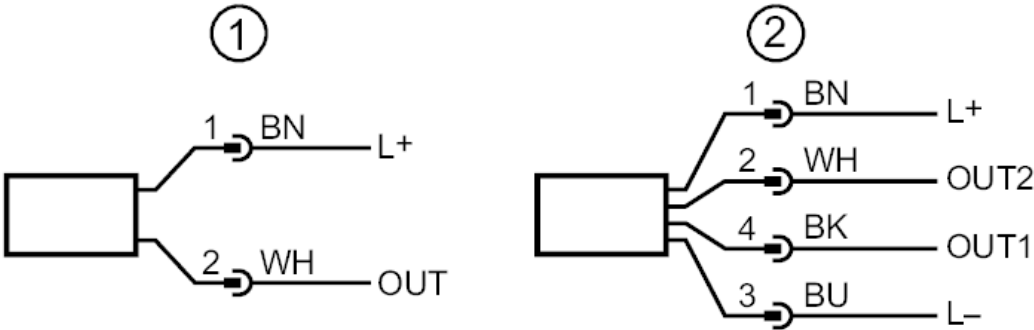
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE
Min. pressure cycles	100 million
Tightening torque [Nm]	20
Process connection	threaded connection G 1 external thread sealing cone
Remarks	
Pack quantity	1 pcs.

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

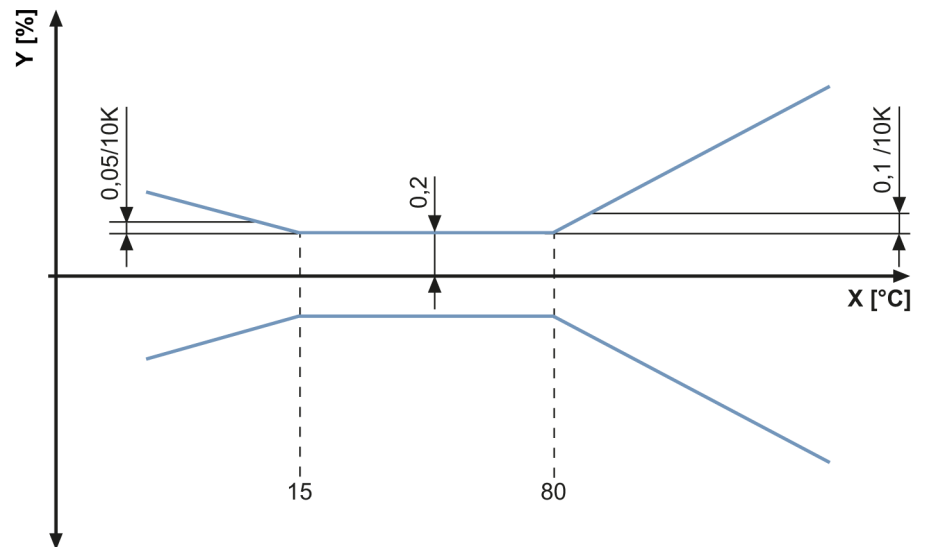


Flush pressure sensor

PM-2,5-REA01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy



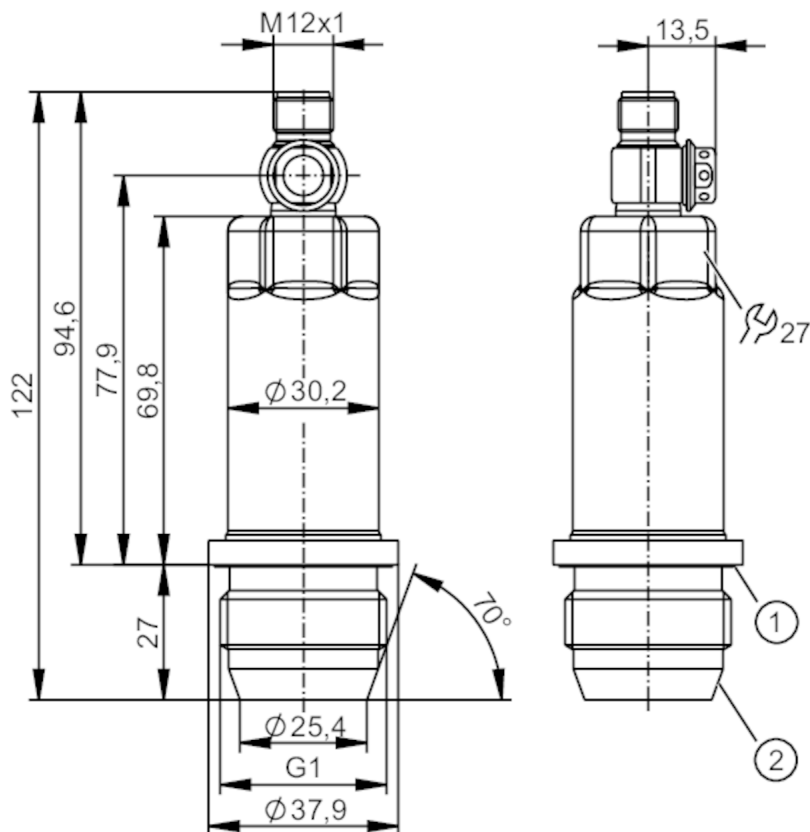
X temperature
Y total deviation

PM1607



Flush pressure sensor

PM-001BREA01-E-ZVG/US



- 1 groove with sealing ring (DIN EN ISO 1179-2)
2 G1 sealing cone external thread



ACS



CRN



EC 1935/2004

FCM



Reg31



Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1			
Measuring range	-0.05...1 bar	-50...1000 mbar	-0.73...14.5 psi	-5...100 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. burst pressure	30000 mbar	435 psi	3000 kPa
Pressure rating	10000 mbar	145 psi	1000 kPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure		
No dead space	yes		
MAWP (for applications according to CRN) [bar]	10		

PM1607



Flush pressure sensor

PM-001BREA01-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; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)		
Short-circuit proof		yes		
Overload protection		yes		
Measuring/setting range				
Measuring range		-0.05...1 bar	-50...1000 mbar	-0.73...14.5 psi -5...100 kPa
Analog start point		-50...800 mbar	-0.73...11.6 psi	-5...80 kPa
Analog end point		150...1000 mbar	2.18...14.5 psi	15...100 kPa
In steps of		0.5 mbar	0.01 psi	0.05 kPa
Factory setting		ASP = 0.0 bar	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



Flush pressure sensor

PM-001BREA01-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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
SIO mode	no	
Required master port class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[mbar]	0.2
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	668

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 number	J022

Mechanical data

Weight	[g]	339.45
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 122
Material	stainless steel (1.4404 / 316L); PBT	

PM1607



Flush pressure sensor

PM-001BREA01-E-ZVG/US

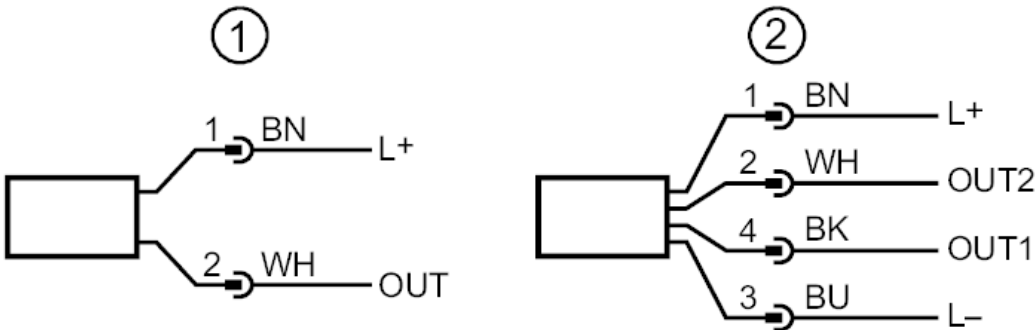
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE
Min. pressure cycles	100 million
Tightening torque [Nm]	20
Process connection	threaded connection G 1 external thread sealing cone
Remarks	
Pack quantity	1 pcs.

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

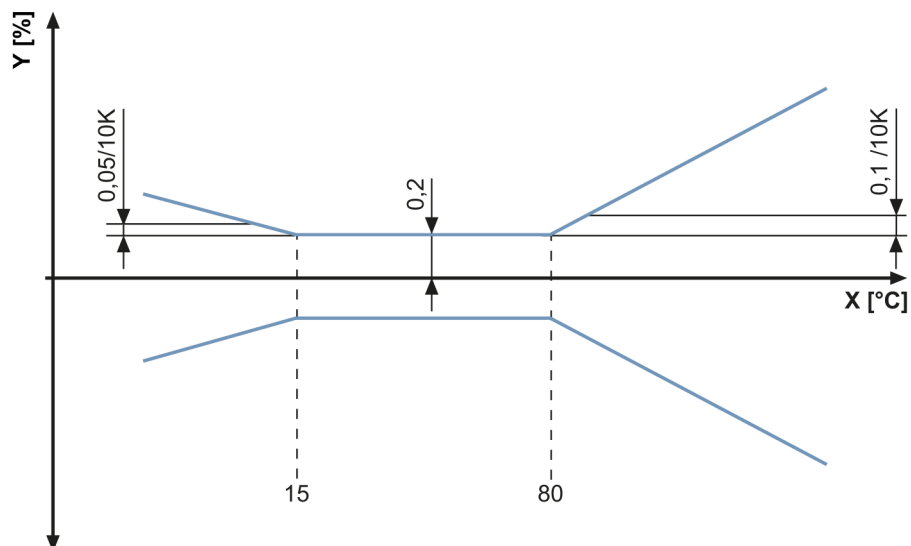


Flush pressure sensor

PM-001BREA01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy



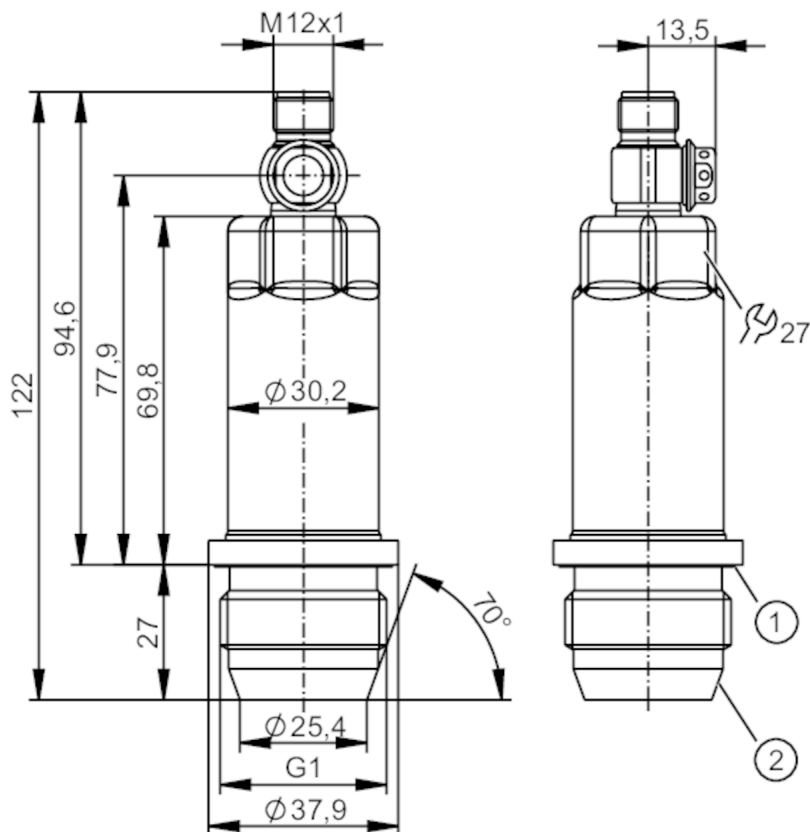
X temperature
Y total deviation

PM1608



Flush pressure sensor

PM-,25BREA01-E-ZVG/US



- 1 groove with sealing ring (DIN EN ISO 1179-2)
2 G1 sealing cone external thread



ACS



CRN



EC 1935/2004

FCM



Reg31



Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1			
Measuring range	-0.0125...0.25 bar	-12.5...250 mbar	-0.182...3.626 psi	-1.25...25 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. burst pressure	30000 mbar	435 psi	3000 kPa
Pressure rating	6000 mbar	84 psi	600 kPa
Vacuum resistance	-1000 mbar	-0.1 MPa	
Type of pressure	relative pressure		
No dead space	yes		
MAWP (for applications according to CRN) [bar]	10		

PM1608



Flush pressure sensor

PM-,25BREA01-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; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)		
Short-circuit proof		yes		
Overload protection		yes		
Measuring/setting range				
Measuring range		-0.0125...0.25 bar	-12.5...250 mbar	-0.182...3.626 psi -1.25...25 kPa
Analog start point		-12.5...200 mbar	-0.182...2.9 psi	-1.25...20 kPa
Analog end point		37.5...250 mbar	0.544...3.626 psi	3.75...25 kPa
In steps of		0.1 mbar	0.002 psi	0.01 kPa
Factory setting		ASP = 0.0 bar	AEP = 250 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 ± 0,1 % of the span / 10 K
		15...80 °C		Characteristics deviation
		80...150 °C		Characteristics deviation ± 0,15 % of the span / 10 K



Flush pressure sensor

PM-,25BREA01-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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
SIO mode	no	
Required master port class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[mbar]	0.05
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	669

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 number	J022

Mechanical data

Weight	[g]	304.8
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 122
Material	stainless steel (1.4404 / 316L); PBT	

PM1608



Flush pressure sensor

PM-,25BREA01-E-ZVG/US

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

Remarks

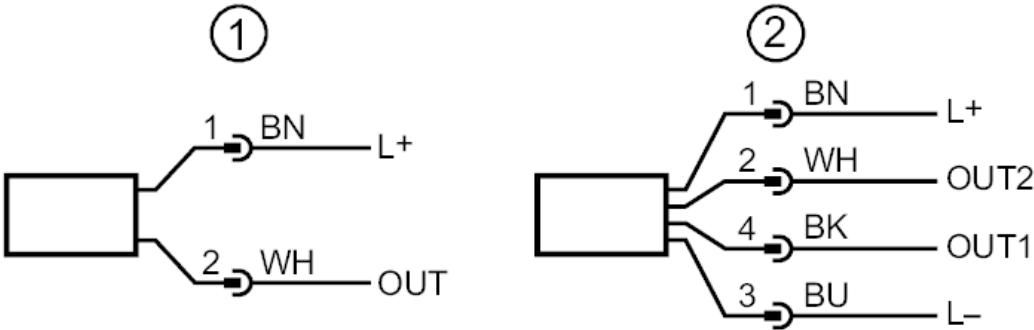
Pack quantity	1 pcs.
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Electrical connection

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



Connection



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

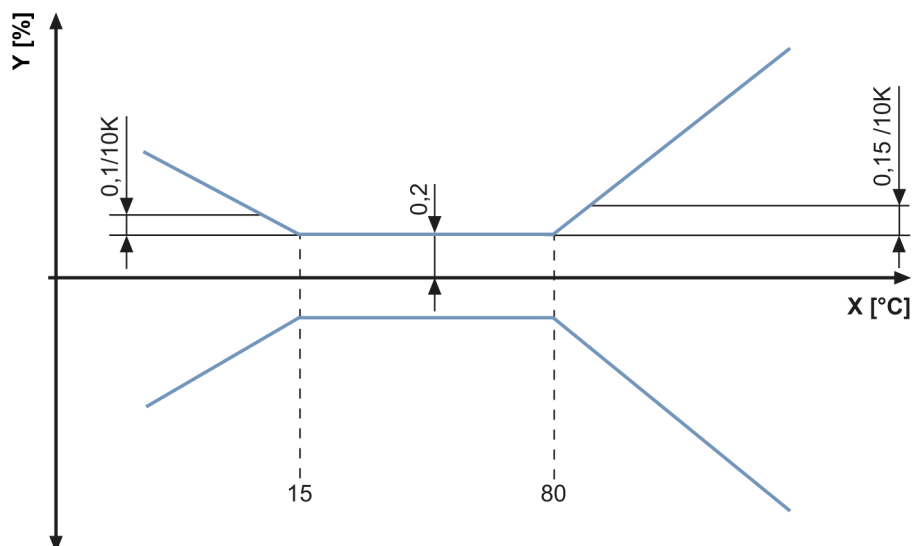


Flush pressure sensor

PM-,25BREA01-E-ZVG/US

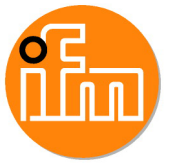
Diagrams and graphs

ambient temperature influence on the accuracy



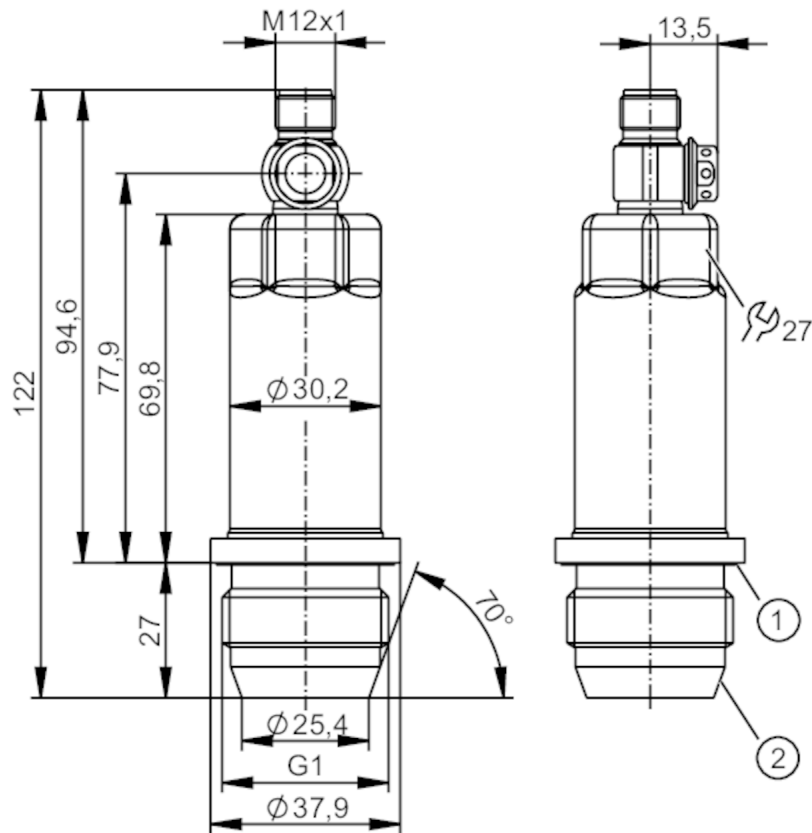
X temperature
Y total deviation

PM1609



Flush pressure sensor

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



- 1 groove with sealing ring (DIN EN ISO 1179-2)
2 G1 sealing cone external thread



ACS



CRN



EC 1935/2004

FCM



Hygienic

Cleanable



IO-Link



Reg31



UK

CA

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 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. burst 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		

PM1609



Flush pressure sensor

PM-1-1BREA01-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; (Ub = 24 V; (Ub - 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



Flush pressure sensor

PM-1-1BREA01-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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
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 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	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 www.factory-certificate.ifm	
UL approval	UL approval number	J022

Mechanical data

Weight	[g]	346
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 122
Material	stainless steel (1.4404 / 316L); PBT	

PM1609



Flush pressure sensor

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

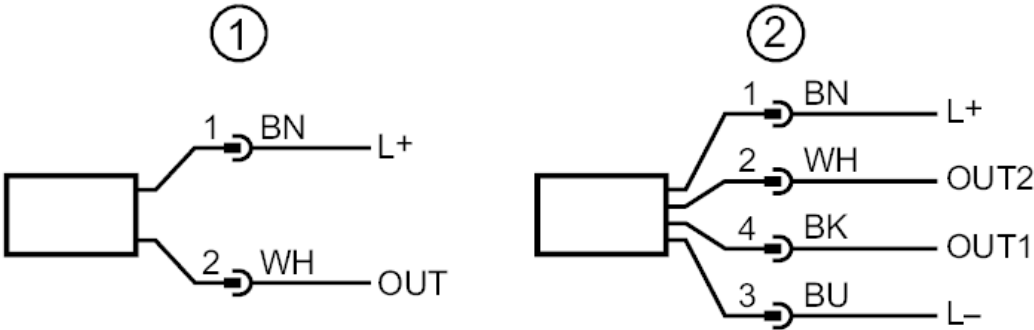
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE
Min. pressure cycles	100 million
Tightening torque [Nm]	20
Process connection	threaded connection G 1 external thread sealing cone
Remarks	
Pack quantity	1 pcs.

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

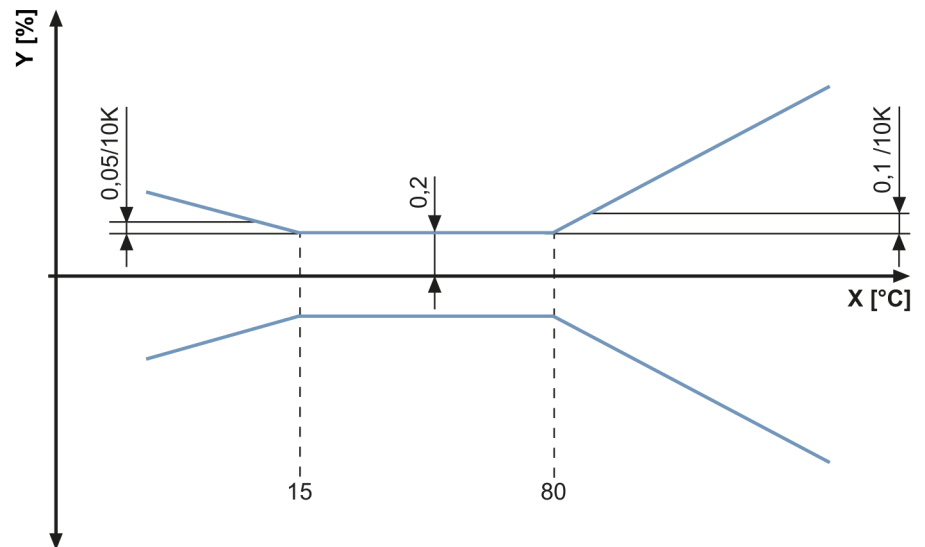


Flush pressure sensor

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

Diagrams and graphs

ambient temperature influence on the accuracy



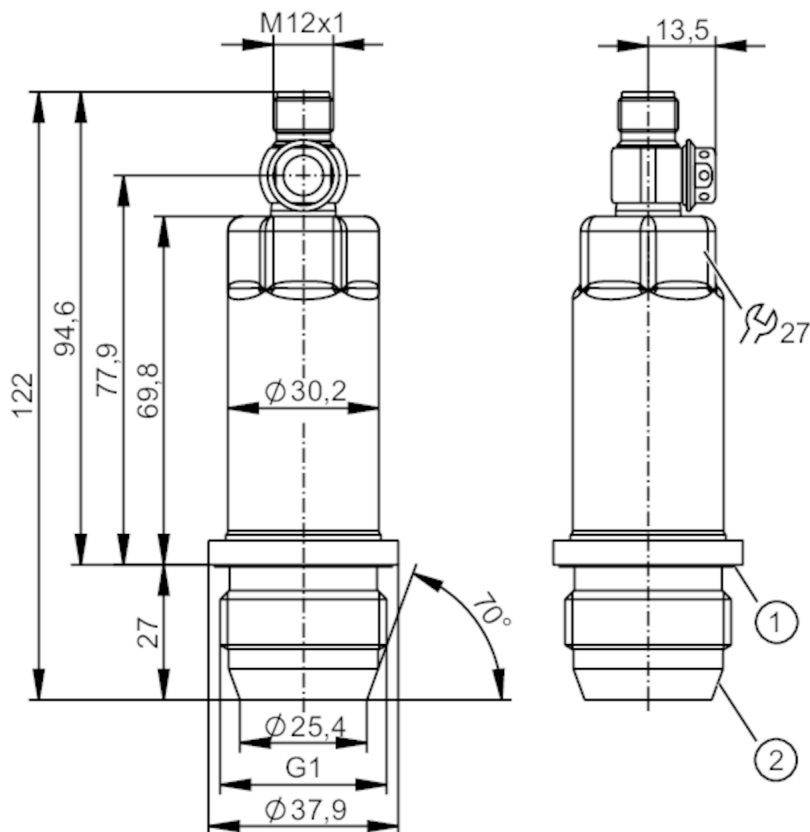
X temperature
Y total deviation

PM1614

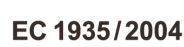


Flush pressure sensor

PM-016-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...16 bar	-14.6...232 psi	-0.1...1.6 MPa
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. burst pressure	250 bar	3625 psi	25 MPa
Pressure rating	75 bar	1085 psi	7.5 MPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		
MAWP (for applications according to CRN) [bar]	55		

PM1614



Flush pressure sensor

PM-016-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; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)	
Short-circuit proof		yes	
Overload protection		yes	
Measuring/setting range			
Measuring range		-1...16 bar	-14.6...232 psi -0.1...1.6 MPa
Analog start point		-1...12.8 bar	-14.6...185.6 psi -0.1...1.28 MPa
Analog end point		2.2...16 bar	32...232 psi 0.22...1.6 MPa
In steps of		0.01 bar	0.2 psi 0.001 MPa
Factory setting		ASP = 0.0 bar	AEP = 16.0 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



Flush pressure sensor

PM-016-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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
SIO mode	no	
Required master port class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[bar]	0.005
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	661

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 number	J022

Mechanical data

Weight	[g]	338.95
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 122
Material	stainless steel (1.4404 / 316L); PBT	

PM1614



Flush pressure sensor

PM-016-REA01-E-ZVG/US

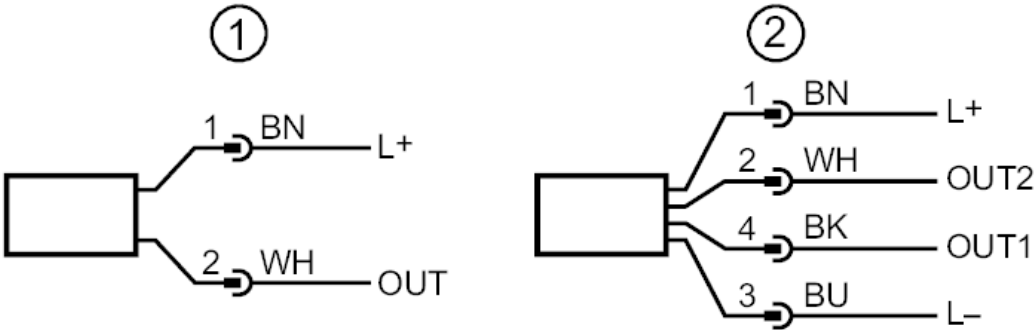
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE
Min. pressure cycles	100 million
Tightening torque [Nm]	20
Process connection	threaded connection G 1 external thread sealing cone
Remarks	
Pack quantity	1 pcs.

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

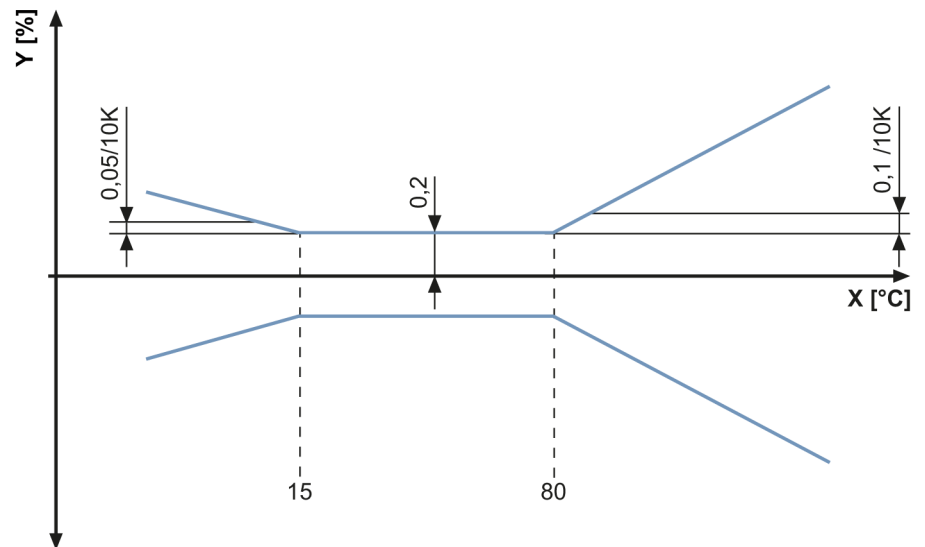


Flush pressure sensor

PM-016-REA01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy

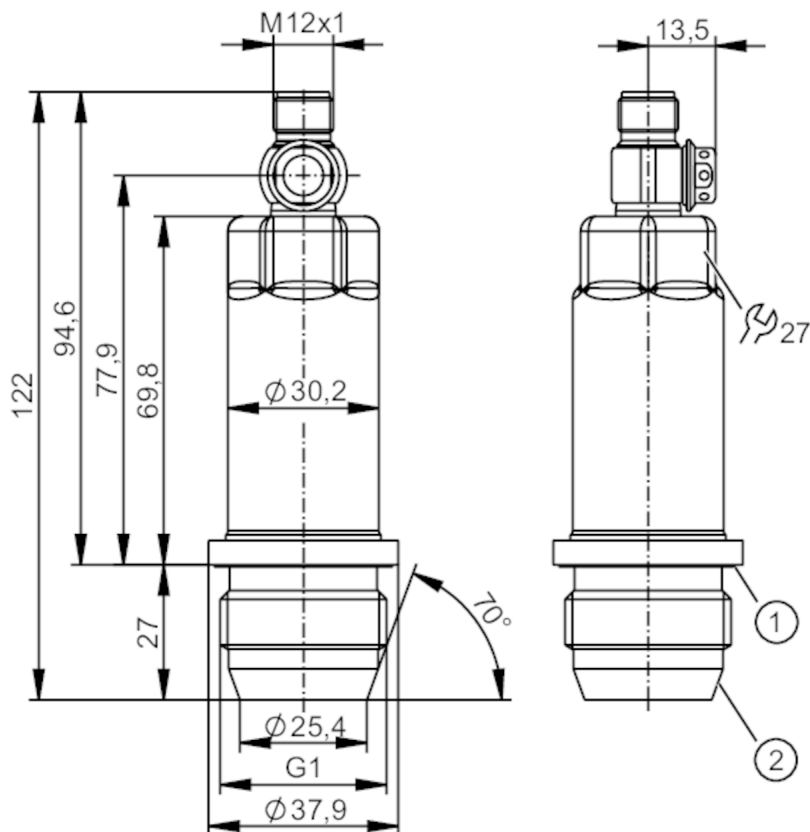


X temperature
Y total deviation

PM1615

Flush pressure sensor

PM-006-REA01-E-ZVG/US



- 1 groove with sealing ring (DIN EN ISO 1179-2)
2 G1 sealing cone external thread



ACS



CRN



EC 1935/2004

FCM



Reg31



Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1		
Measuring range	-1...6 bar	-14.5...87 psi	-100...600 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. burst 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		

PM1615



Flush pressure sensor

PM-006-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; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)	
Short-circuit proof		yes	
Overload protection		yes	
Measuring/setting range			
Measuring range		-1...6 bar	-14.5...87 psi -100...600 kPa
Analog start point		-1...4.8 bar	-14.5...69.6 psi -100...480 kPa
Analog end point		0.2...6 bar	2.9...87 psi 20...600 kPa
In steps of		0.002 bar	0.05 psi 0.2 kPa
Factory setting		ASP = 0.0 bar	AEP = 6.0 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



Flush pressure sensor

PM-006-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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
SIO mode	no	
Required master port class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[bar]	0.002
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	663

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 number	J022

Mechanical data

Weight	[g]	338.4
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 122
Material	stainless steel (1.4404 / 316L); PBT	

PM1615



Flush pressure sensor

PM-006-REA01-E-ZVG/US

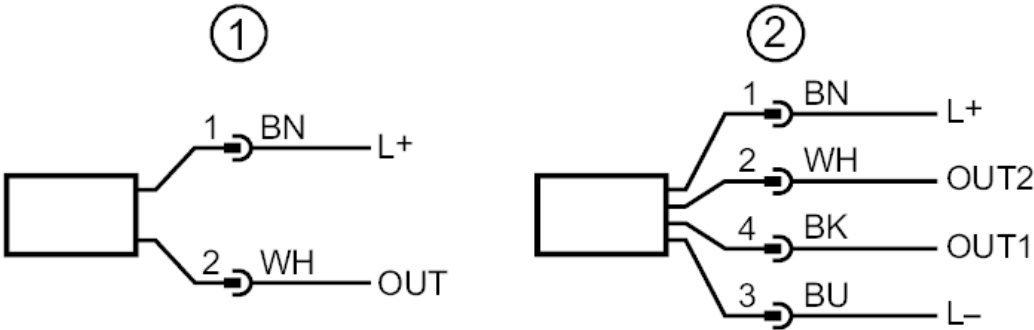
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE
Min. pressure cycles	100 million
Tightening torque [Nm]	20
Process connection	threaded connection G 1 external thread sealing cone
Remarks	
Pack quantity	1 pcs.

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

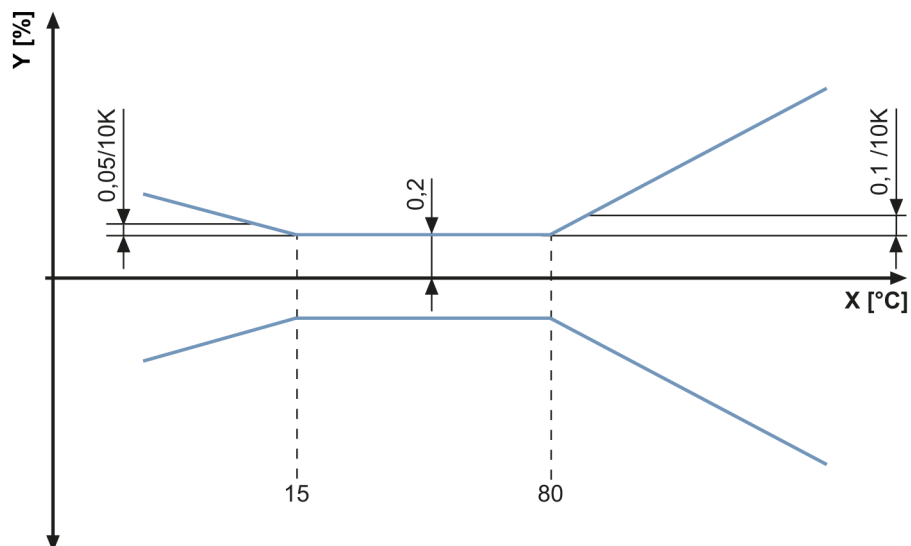


Flush pressure sensor

PM-006-REA01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy



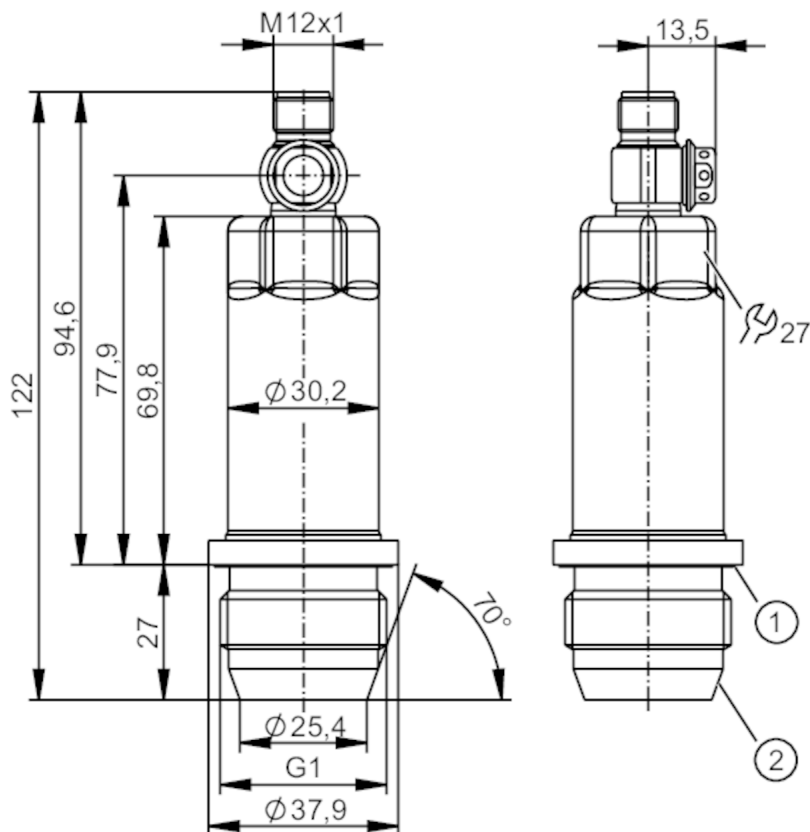
X temperature
Y total deviation

PM1617



Flush pressure sensor

PM-1,6-REA01-E-ZVG/US



- 1 groove with sealing ring (DIN EN ISO 1179-2)
2 G1 sealing cone external thread



ACS



CRN



EC 1935/2004

FCM



Hygienic



IO-Link



Reg31



CA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1			
Measuring range	-0.1...1.6 bar	-100...1600 mbar	-1.45...23.21 psi	-10...160 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. burst pressure	40000 mbar	580 psi	4000 kPa
Pressure rating	15000 mbar	215 psi	1500 kPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure		
No dead space	yes		
MAWP (for applications according to CRN) [bar]	15		

PM1617



Flush pressure sensor

PM-1,6-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; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)		
Short-circuit proof		yes		
Overload protection		yes		
Measuring/setting range				
Measuring range		-0.1...1.6 bar	-100...1600 mbar	-1.45...23.21 psi -10...160 kPa
Analog start point		-100...1280 mbar	-1.45...18.56 psi	-10...128 kPa
Analog end point		220...1600 mbar	3.19...23.21 psi	22...160 kPa
In steps of		1 mbar	0.01 psi	0.1 kPa
Factory setting		ASP = 0.0 mbar	AEP = 1600 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



Flush pressure sensor

PM-1,6-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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
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 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	666

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 number	J022

Mechanical data

Weight	[g]	337.4
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 122
Material	stainless steel (1.4404 / 316L); PBT	

PM1617



Flush pressure sensor

PM-1,6-REA01-E-ZVG/US

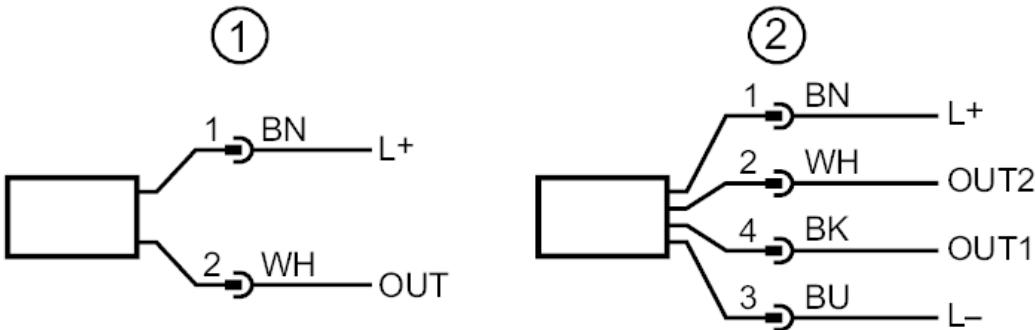
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE
Min. pressure cycles	100 million
Tightening torque [Nm]	20
Process connection	threaded connection G 1 external thread sealing cone
Remarks	
Pack quantity	1 pcs.

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

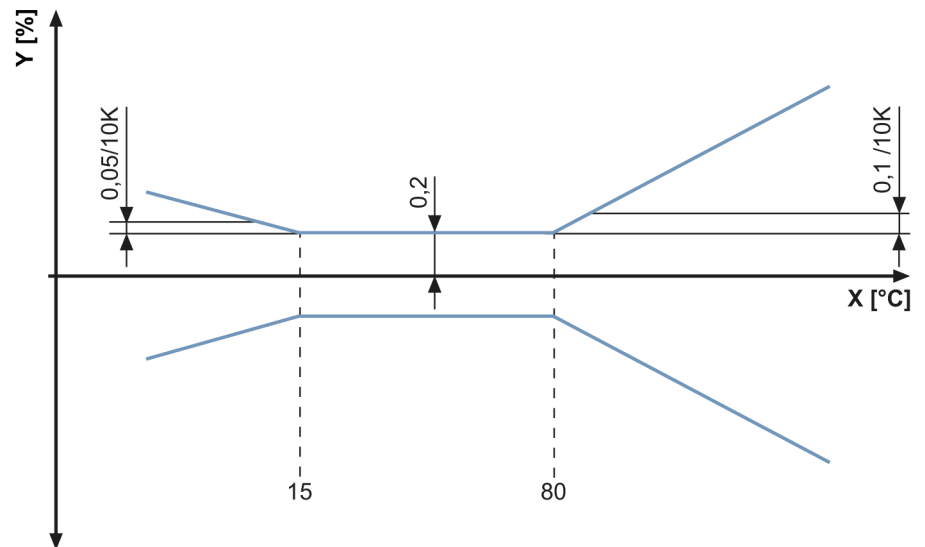


Flush pressure sensor

PM-1,6-REA01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy



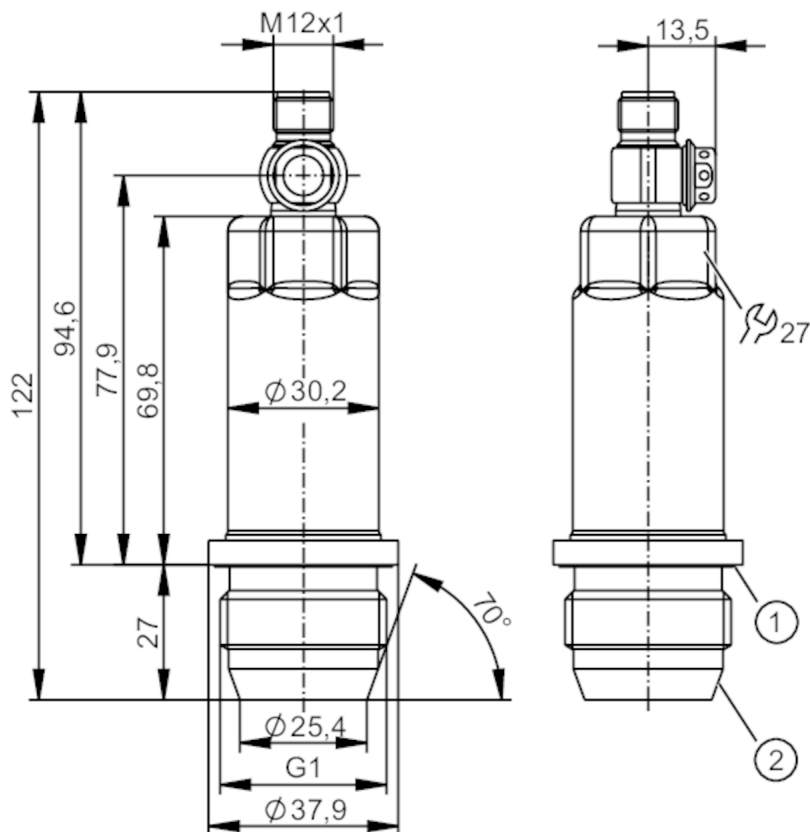
X temperature
Y total deviation

PM1618

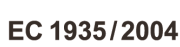


Flush pressure sensor

PM-,40BREA01-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	-0.05...0.4 bar	-50...400 mbar	-0.725...5.8 psi	-5...40 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. burst pressure	30000 mbar	435 psi	3000 kPa
Pressure rating	8000 mbar	116 psi	800 kPa
Vacuum resistance	-1000 mbar	-0.1 MPa	
Type of pressure	relative pressure		
No dead space	yes		
MAWP (for applications according to CRN)	0.4 bar	0.04 MPa	

PM1618



Flush pressure sensor

PM-,40BREA01-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; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)		
Short-circuit proof		yes		
Overload protection		yes		
Measuring/setting range				
Measuring range		-0.05...0.4 bar	-50...400 mbar	-0.725...5.8 psi -5...40 kPa
Analog start point		-50...320 mbar	-0.725...4.641 psi	-5...32 kPa
Analog end point		30...400 mbar	0.435...5.802 psi	3...40 kPa
In steps of		0.1 mbar	0.001 psi	0.01 kPa
Factory setting		ASP = 0.0 bar	AEP = 400 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 (DIN EN 61298-2); (incl. zero point and span error, non-linearity, hysteresis; Turn down 1:1)		
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 ± 0,1 % of the span / 10 K
		15...80 °C		Characteristics deviation
		80...150 °C		Characteristics deviation ± 0,15 % of the span / 10 K



Flush pressure sensor

PM-,40BREA01-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
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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
----------------------------------	------	---

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 class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[mbar]	0.1
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	1410

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]	364

Mechanical data

Weight	[g]	336.8
Housing		tubular
Dimensions	[mm]	Ø 30.2 / L = 122
Material		stainless steel (1.4404 / 316L); PBT
Materials (wetted parts)		ceramics (99.9 % Al ₂ O ₃); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE

PM1618



Flush pressure sensor

PM-,40BREA01-E-ZVG/US

Min. pressure cycles	100 million
Tightening torque [Nm]	20
Process connection	threaded connection G 1 external thread sealing cone

Displays / operating elements

Display unit	mbar; psi; kPa; mmWS; inH2O
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Remarks

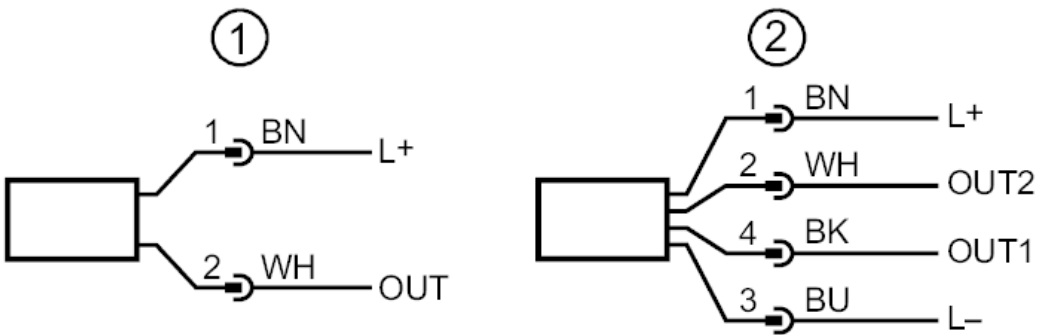
Pack quantity	1 pcs.
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Electrical connection

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



Connection



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

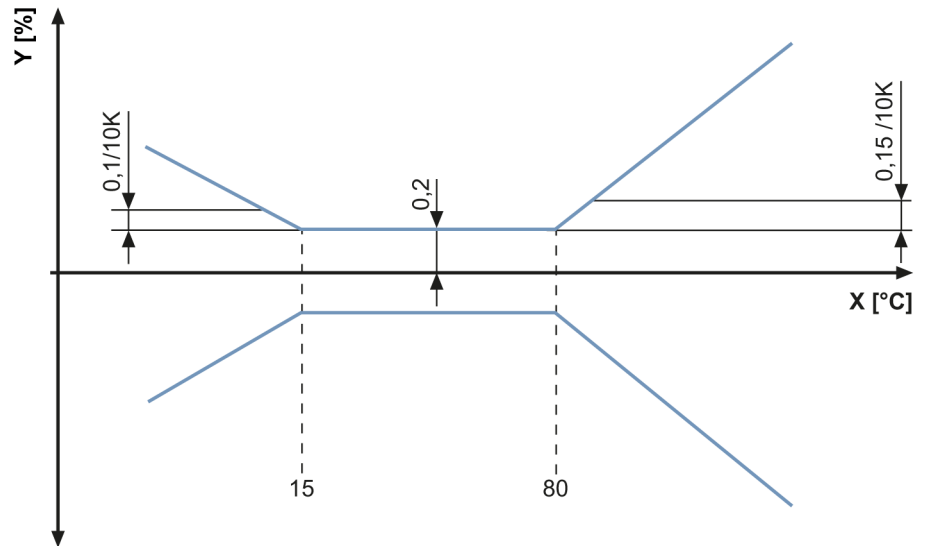


Flush pressure sensor

PM-,40BREA01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy



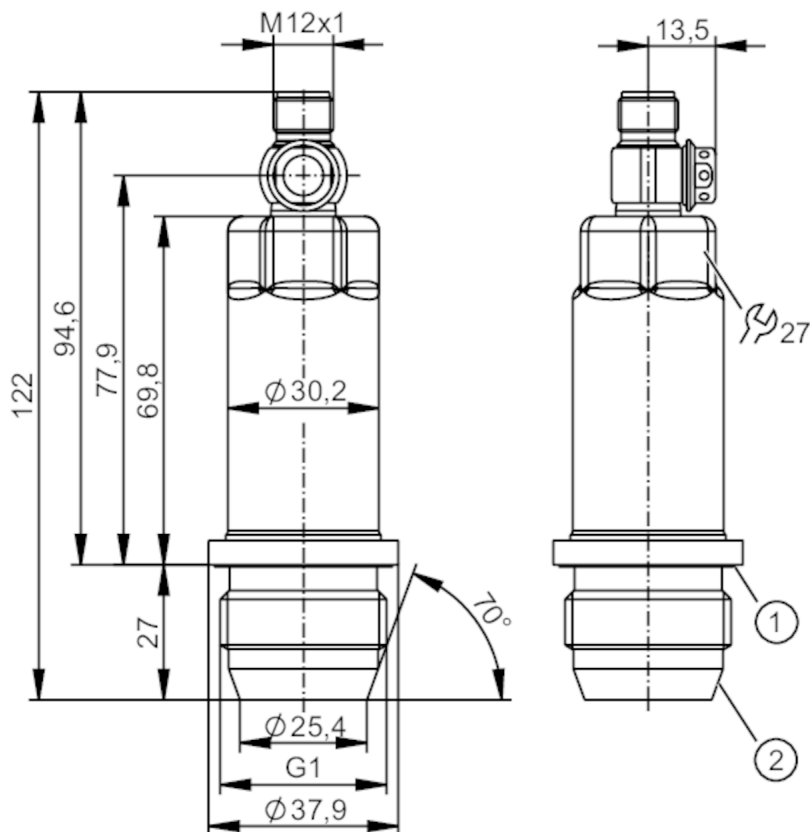
X temperature
Y total deviation

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



ACS



CRN



EC 1935/2004

FCM



Hygienic Cleanable



NSF

Reg31



UKCA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog 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			

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. 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		
MAWP (for applications according to CRN) [bar]	4		

PM1689



Flush pressure sensor

PM-,10BREA01-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; (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
Analog start point		-5...80 mbar	-0.073...1.16 psi	-0.5...8 kPa
Analog 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)		
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



Flush pressure sensor

PM-,10BREA01-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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
SIO mode	no	
Required master port class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[mbar]	0.02
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 number	J022

Mechanical data

Weight	[g]	337.4
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 122
Material	stainless steel (1.4404 / 316L); PBT	

PM1689



Flush pressure sensor

PM-,10BREA01-E-ZVG/US

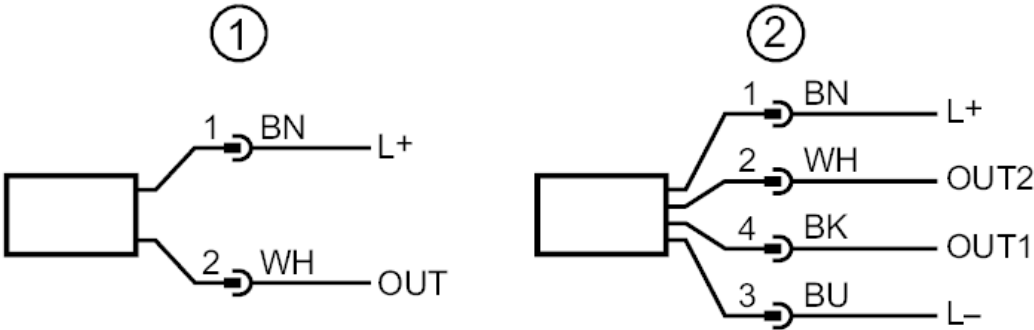
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE
Min. pressure cycles	100 million
Tightening torque [Nm]	20
Process connection	threaded connection G 1 external thread sealing cone
Remarks	
Pack quantity	1 pcs.

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

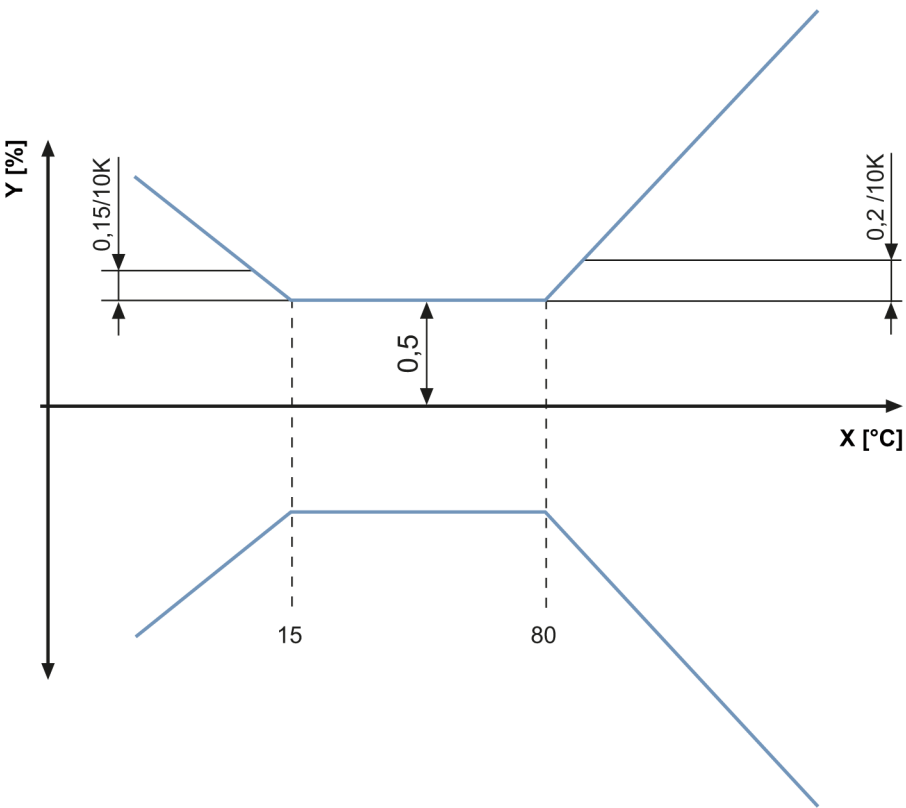
PM1689



Flush pressure sensor

PM-,10BREA01-E-ZVG/US

Diagrams and graphs



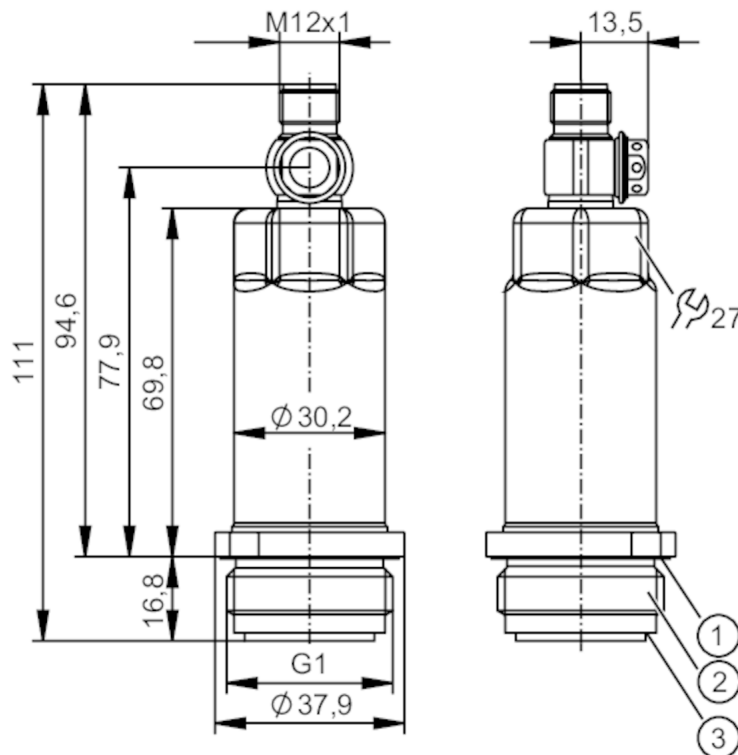
X temperature
Y total deviation

PM1703



Flush pressure sensor

PM-025-REA01-E-ZVG/US



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



ACS



CRN



EC 1935/2004

EHEDG

Certified

FCM

FDA

IO-Link

NSF

Reg31



UK

CA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog 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 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. burst 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]	60		

Electrical data

Operating voltage [V]	18...30 DC
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Flush pressure sensor

PM-025-REA01-E-ZVG/US

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...25 bar	-14.6...362.6 psi -0.1...2.5 MPa
Analog start point		-1...20 bar	-14.6...290 psi -0.1...2 MPa
Analog end point		4...25 bar	58...362.6 psi 0.4...2.5 MPa
In steps of		0.01 bar	0.2 psi 0.001 MPa
Factory setting		ASP = 0.0 bar	AEP = 25.0 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
Notes on the accuracy / deviation		for further details see section Diagrams and graphs	

PM1703



Flush pressure sensor

PM-025-REA01-E-ZVG/US

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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
SIO mode	no	
Required master port class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[bar]	0.005
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	660
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 number	J021
Mechanical data		
Weight	[g]	307.6
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 111
Material	stainless steel (1.4404 / 316L); PBT	
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE	

PM1703



Flush pressure sensor

PM-025-REA01-E-ZVG/US

Min. pressure cycles	100 million
Tightening torque [Nm]	35
Process connection	threaded connection G 1 external thread Aseptoflex Vario

Remarks

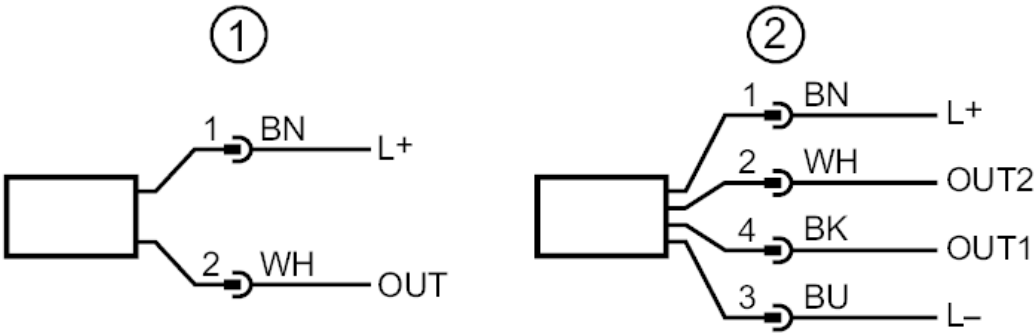
Pack quantity	1 pcs.
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Electrical connection

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

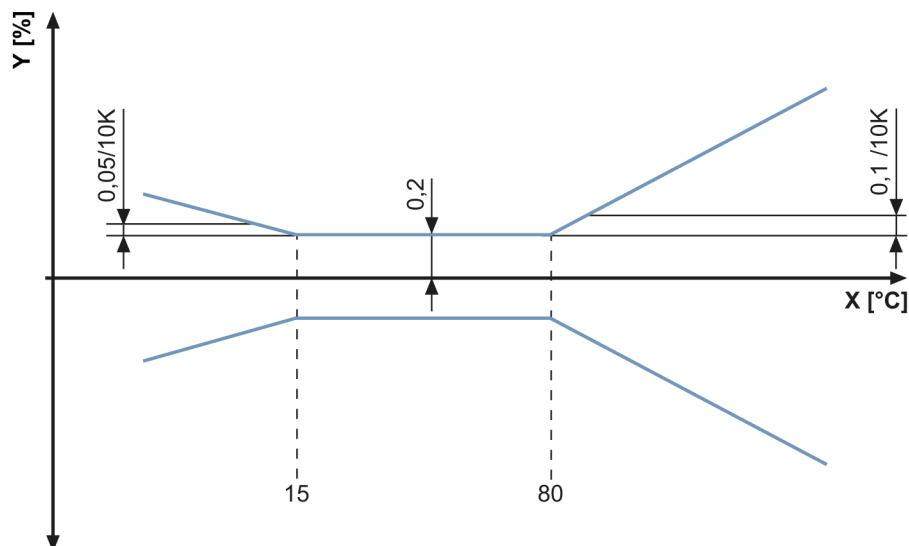


Flush pressure sensor

PM-025-REA01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy



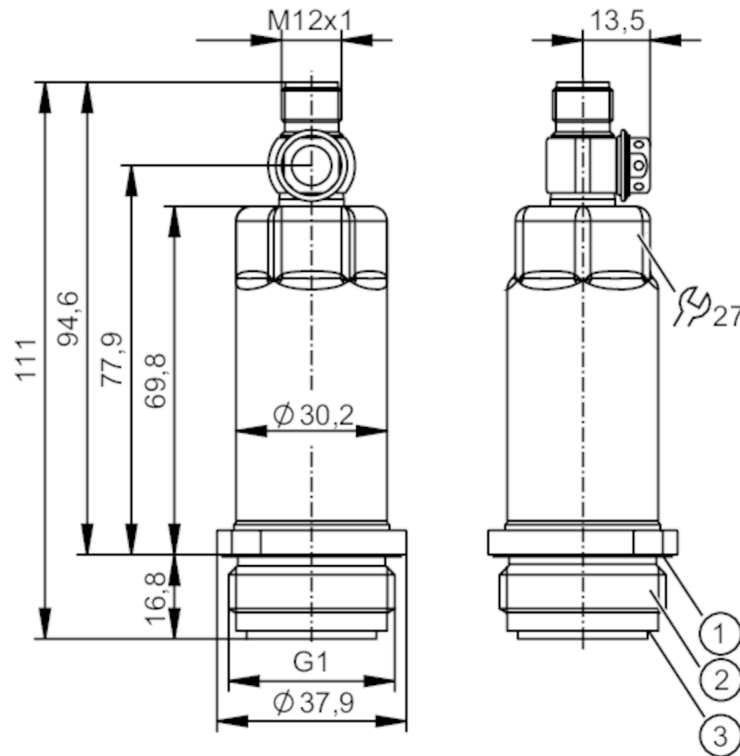
X temperature
Y total deviation

PM1704



Flush pressure sensor

PM-010-REA01-E-ZVG/US



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



ACS



CRN



EC 1935/2004

EHEDG

Certified

FCM

FDA

IO-Link

NSF

Reg31

UK CA

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 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. 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		

Electrical data

Operating voltage [V]	18...30 DC
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Flush pressure sensor

PM-010-REA01-E-ZVG/US

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	
Notes on the accuracy / deviation		for further details see section Diagrams and graphs			

PM1704



Flush pressure sensor

PM-010-REA01-E-ZVG/US

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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
SIO mode	no	
Required master port class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[bar]	0.002
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	662
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 number	J021
Mechanical data		
Weight	[g]	307.75
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 111
Material	stainless steel (1.4404 / 316L); PBT	
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE	

PM1704



Flush pressure sensor

PM-010-REA01-E-ZVG/US

Min. pressure cycles	100 million
Tightening torque [Nm]	35
Process connection	threaded connection G 1 external thread Aseptoflex Vario

Remarks

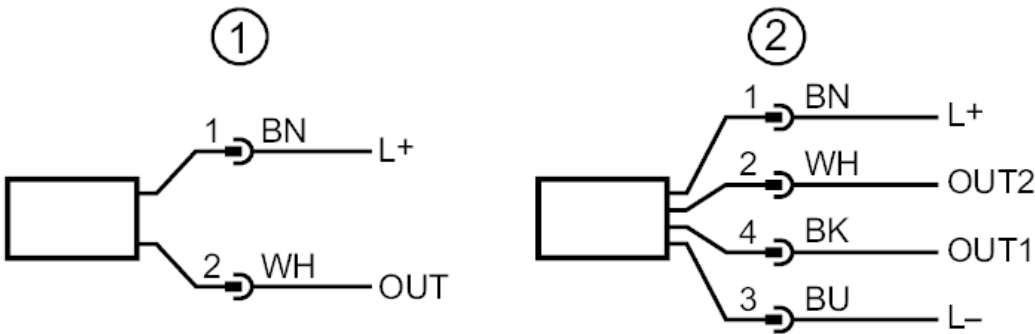
Pack quantity	1 pcs.
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Electrical connection

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

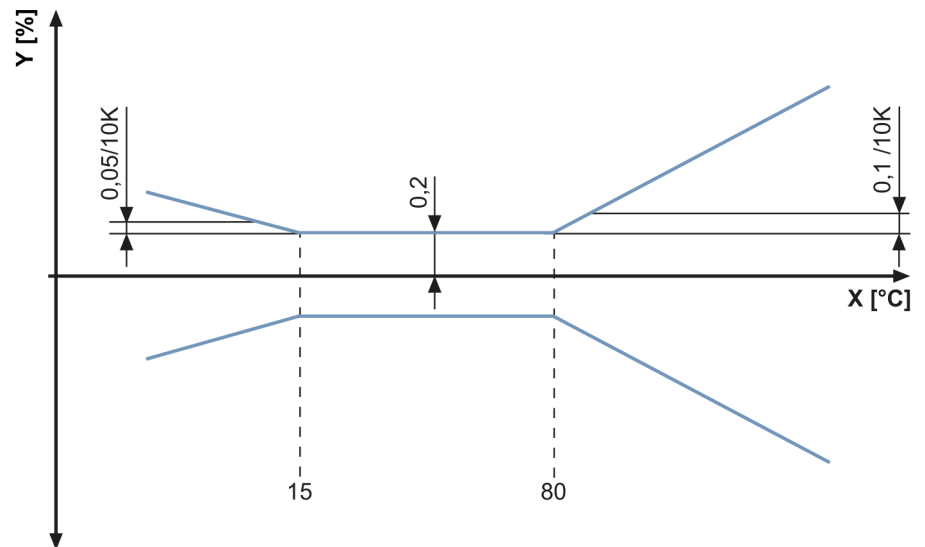


Flush pressure sensor

PM-010-REA01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy



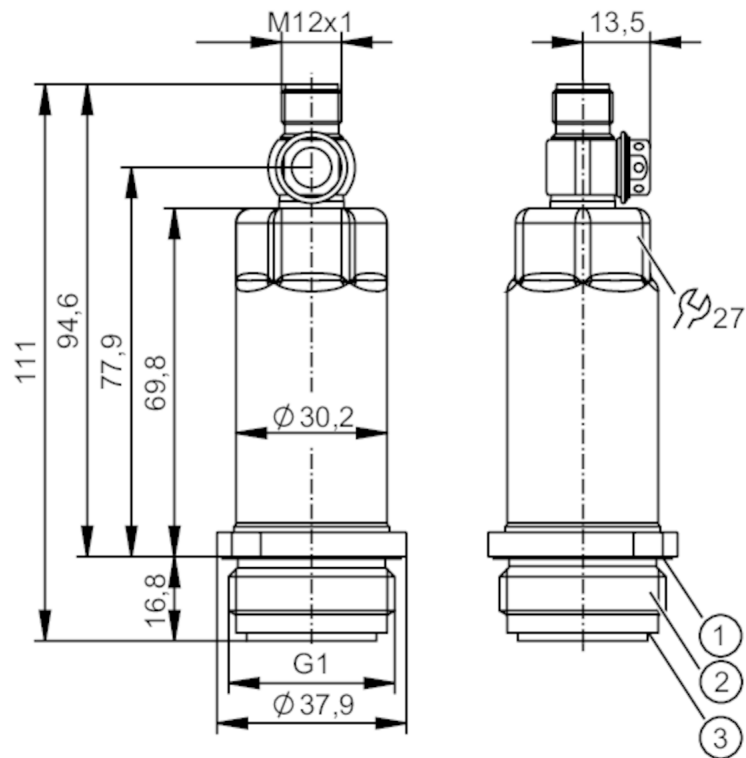
X temperature
Y total deviation

PM1705



Flush pressure sensor

PM-004-REA01-E-ZVG/US



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



ACS



CRN



EC 1935/2004

EHEDG

Certified

FCM

FDA

IO-Link

NSF

Reg31

UK

CA

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 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. burst 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		

Electrical data

Operating voltage [V]	18...30 DC
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Flush pressure sensor

PM-004-REA01-E-ZVG/US

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...4 bar	-14.5...58 psi -100...400 kPa
Analog start point		-1...3.2 bar	-14.5...46.4 psi -100...320 kPa
Analog end point		-0.2...4 bar	-2.9...58 psi -20...400 kPa
In steps of		0.002 bar	0.05 psi 0.2 kPa
Factory setting		ASP	0.0 bar
		AEP	4.0 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
Notes on the accuracy / deviation		for further details see section Diagrams and graphs	

PM1705



Flush pressure sensor

PM-004-REA01-E-ZVG/US

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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
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 www.factory-certificate.ifm	
UL approval	UL approval number	J021
Mechanical data		
Weight	[g]	306.65
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 111
Material	stainless steel (1.4404 / 316L); PBT	
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE	

PM1705



Flush pressure sensor

PM-004-REA01-E-ZVG/US

Min. pressure cycles	100 million
Tightening torque [Nm]	35
Process connection	threaded connection G 1 external thread Aseptoflex Vario

Remarks

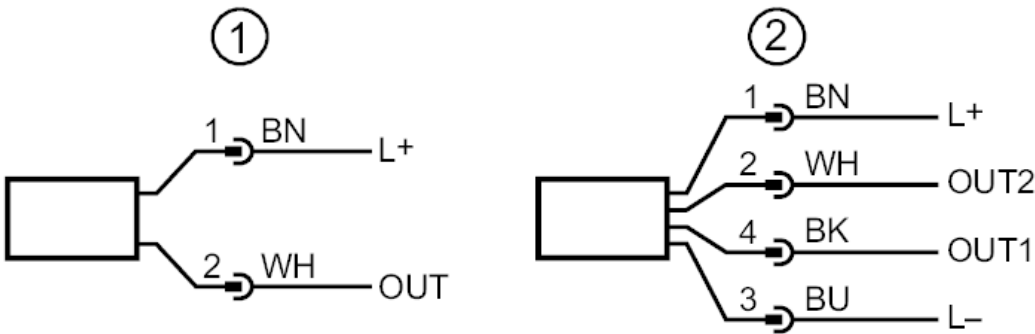
Pack quantity	1 pcs.
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Electrical connection

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

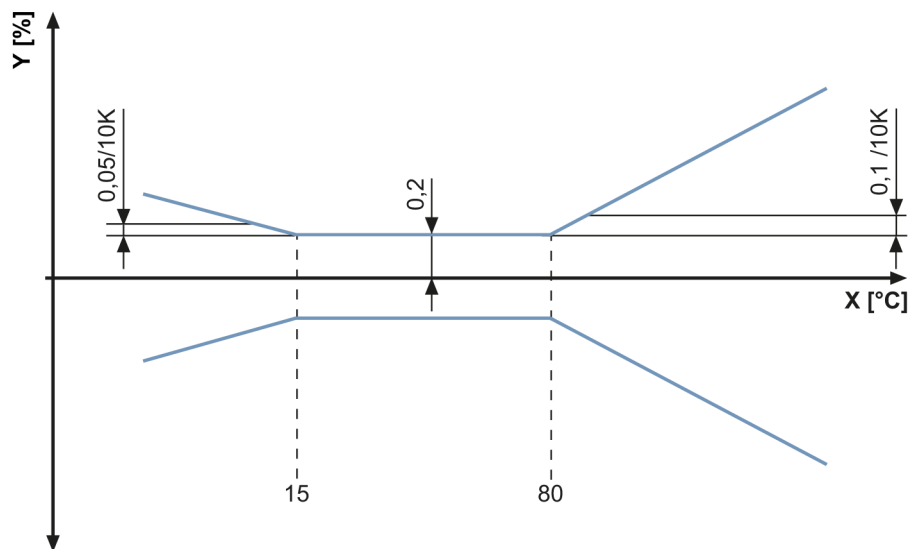


Flush pressure sensor

PM-004-REA01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy



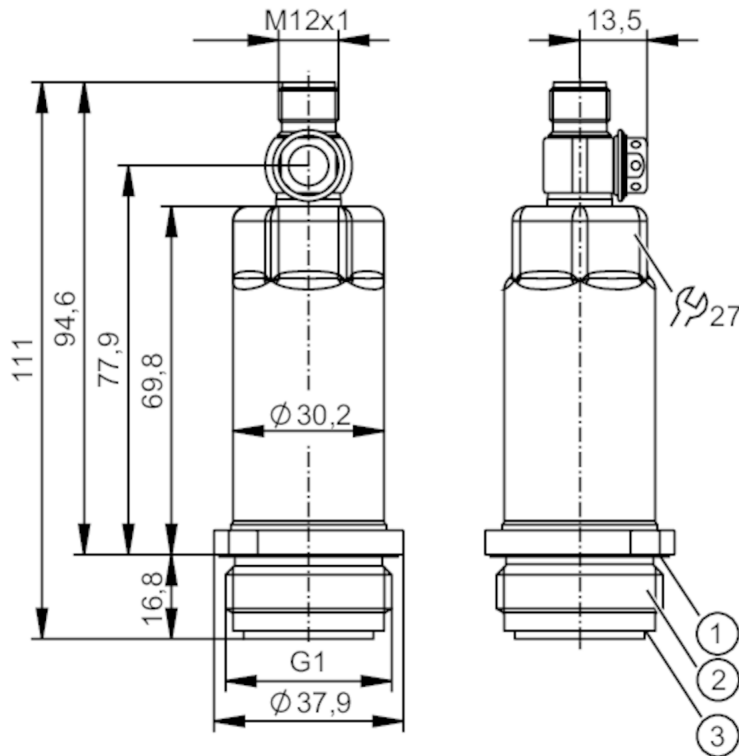
X temperature
Y total deviation

PM1706



Flush pressure sensor

PM-2,5-REA01-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	-0.125...2.5 bar	-125...2500 mbar	-1.82...36.26 psi	-12.5...250 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. burst pressure	50000 mbar	725 psi	5000 kPa	
Pressure rating	20000 mbar	290 psi	2000 kPa	
Vacuum resistance [mbar]	-1000			
Type of pressure	relative pressure			
No dead space	yes			
MAWP (for applications according to CRN) [bar]	20			
Electrical data				
Operating voltage [V]	18...30 DC			



Flush pressure sensor

PM-2,5-REA01-E-ZVG/US

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		-0.125...2.5 bar	-125...2500 mbar	-1.82...36.26 psi	-12.5...250 kPa
Analog start point		-125...2000 mbar	-1.82...29 psi	-12.5...200 kPa	
Analog end point		375...2500 mbar	5.44...36.26 psi	-37.5...250 kPa	
In steps of		1 mbar	0.02 psi	0.1 kPa	
Factory setting		ASP = 0.0 mbar	AEP = 2500 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			

PM1706



Flush pressure sensor

PM-2,5-REA01-E-ZVG/US

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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
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 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	665
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 number	J021
Mechanical data		
Weight	[g]	307.4
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 111
Material	stainless steel (1.4404 / 316L); PBT	
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE	

PM1706



Flush pressure sensor

PM-2,5-REA01-E-ZVG/US

Min. pressure cycles	100 million
Tightening torque [Nm]	35
Process connection	threaded connection G 1 external thread Aseptoflex Vario

Remarks

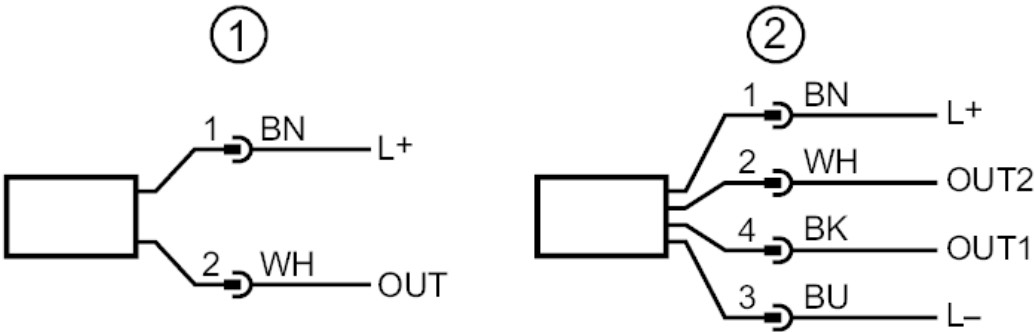
Pack quantity	1 pcs.
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Electrical connection

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

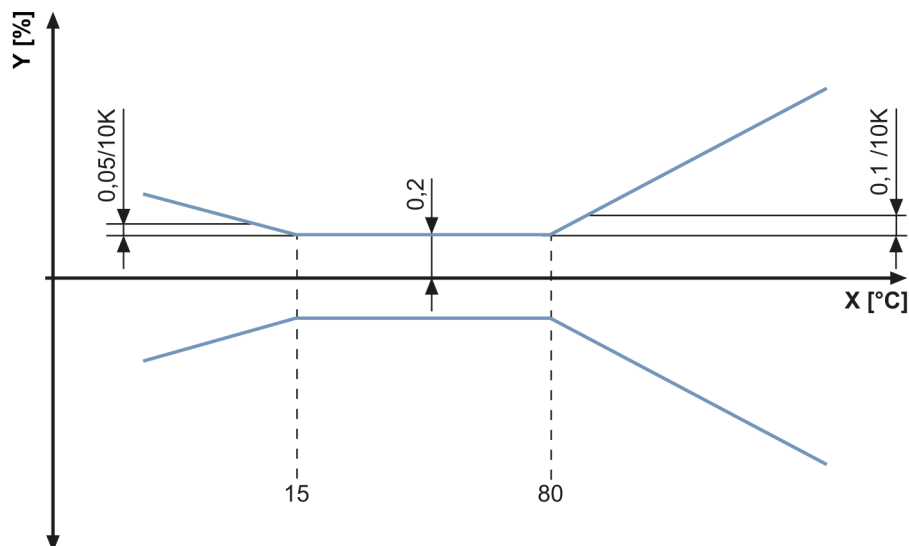


Flush pressure sensor

PM-2,5-REA01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy



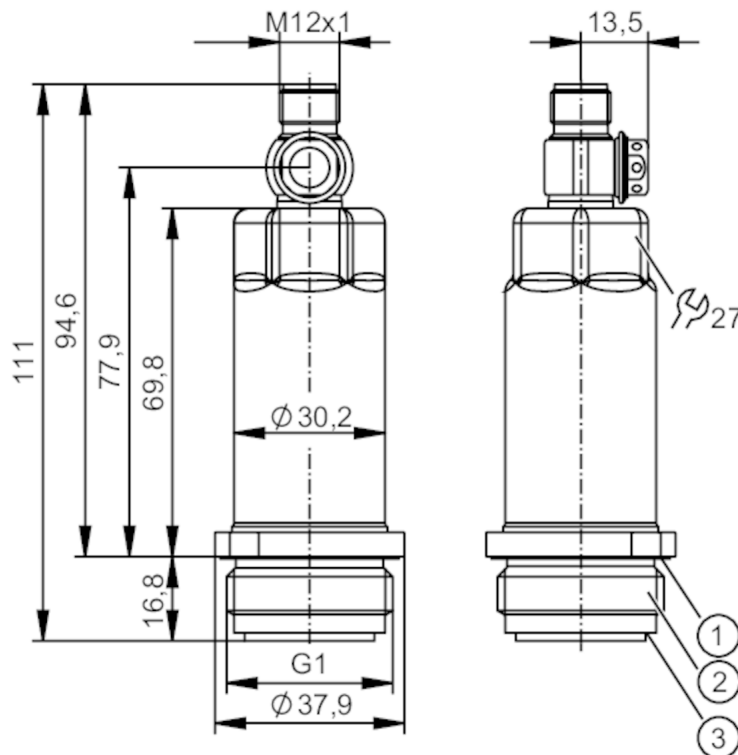
X temperature
Y total deviation

PM1707



Flush pressure sensor

PM-001BREA01-E-ZVG/US



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



ACS



CRN



EC 1935/2004

EHEDG

Certified

FCM



IO-Link



Reg31



Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1			
Measuring range	-0.05...1 bar	-50...1000 mbar	-0.73...14.5 psi	-5...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. burst pressure	30000 mbar	435 psi	3000 kPa
Pressure rating	10000 mbar	145 psi	1000 kPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure		
No dead space	yes		
MAWP (for applications according to CRN) [bar]	10		

Electrical data

Operating voltage [V]	18...30 DC
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Flush pressure sensor

PM-001BREA01-E-ZVG/US

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		-0.05...1 bar	-50...1000 mbar	-0.73...14.5 psi	-5...100 kPa
Analog start point		-50...800 mbar	-0.73...11.6 psi	-5...80 kPa	
Analog end point		150...1000 mbar	2.18...14.5 psi	15...100 kPa	
In steps of		0.5 mbar	0.01 psi	0.05 kPa	
Factory setting		ASP = 0.0 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			



Flush pressure sensor

PM-001BREA01-E-ZVG/US

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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
SIO mode	no	
Required master port class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[mbar]	0.2
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	668
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 number	J021
Mechanical data		
Weight	[g]	314
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 111
Material	stainless steel (1.4404 / 316L); PBT	
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0.4 µm / Rz = 4 µm; PTFE	

PM1707



Flush pressure sensor

PM-001BREA01-E-ZVG/US

Min. pressure cycles	100 million
Tightening torque [Nm]	35
Process connection	threaded connection G 1 external thread Aseptoflex Vario

Remarks

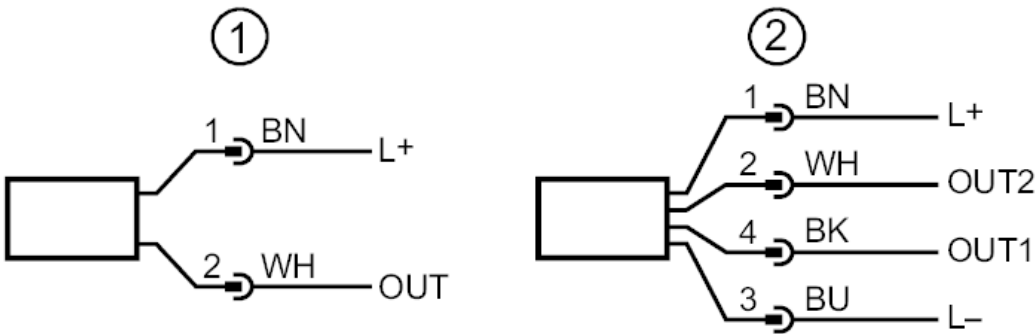
Pack quantity	1 pcs.
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Electrical connection

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

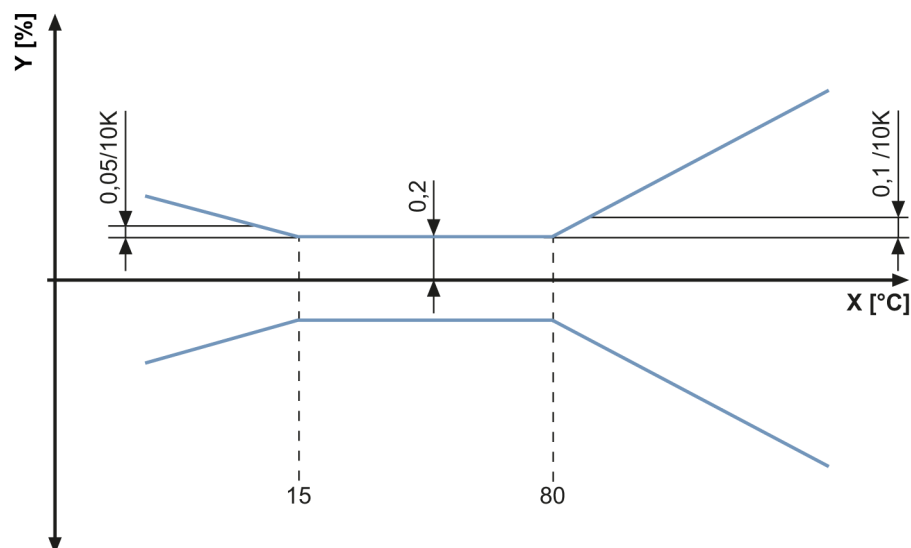


Flush pressure sensor

PM-001BREA01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy



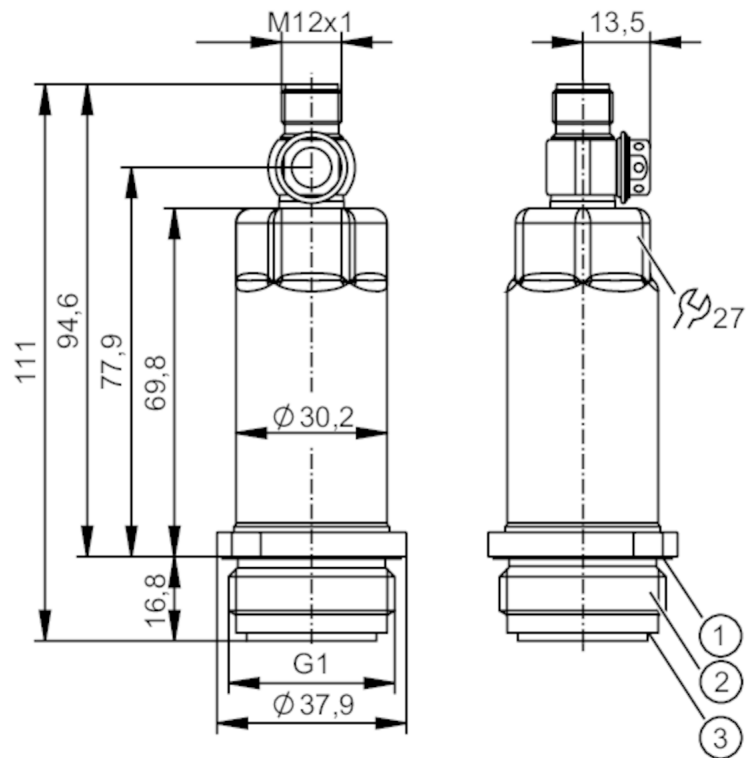
X temperature
Y total deviation

PM1708



Flush pressure sensor

PM-,25BREA01-E-ZVG/US



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

ACS CRN US LISTED EC 1935/2004 EHEDG Certified FCM IO-Link NSF Reg31

Product characteristics				
Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1			
Measuring range	-0.0125...0.25 bar	-12.5...250 mbar	-0.182...3.626 psi	-1.25...25 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. burst pressure	30000 mbar	435 psi	3000 kPa	
Pressure rating	6000 mbar	84 psi	600 kPa	
Vacuum resistance	-1000 mbar		-0.1 MPa	
Type of pressure	relative pressure			
No dead space	yes			
MAWP (for applications according to CRN) [bar]	10			
Electrical data				
Operating voltage [V]	18...30 DC			



Flush pressure sensor

PM-,25BREA01-E-ZVG/US

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 _b = 24 V; (U _b - 9 V) / 21.5 mA)
Short-circuit proof		yes
Overload protection		yes
Measuring/setting range		
Measuring range		-0.0125...0.25 bar -12.5...250 mbar -0.182...3.626 psi -1.25...25 kPa
Analog start point		-12.5...200 mbar -0.182...2.9 psi -1.25...20 kPa
Analog end point		37.5...250 mbar 0.544...3.626 psi 3.75...25 kPa
In steps of		0.1 mbar 0.002 psi 0.01 kPa
Factory setting		ASP = 0.0 mbar AEP = 250 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 ± 0,1 % of the span / 10 K
	15...80 °C	Characteristics deviation
	80...150 °C	Characteristics deviation ± 0,15 % of the span / 10 K
Notes on the accuracy / deviation		for further details see section Diagrams and graphs



Flush pressure sensor

PM-,25BREA01-E-ZVG/US

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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
SIO mode	no	
Required master port class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[mbar]	0.05
IO-Link functions (acyclical)	application specific tag; internal temperature	
Supported DeviceIDs	Type of operation	DeviceID
	default	669
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 number	J021
Mechanical data		
Weight	[g]	273.45
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 111
Material	stainless steel (1.4404 / 316L); PBT	
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]	35

PM1708



Flush pressure sensor

PM-,25BREA01-E-ZVG/US

Process connection	threaded connection G 1 external thread Aseptoflex Vario
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Remarks

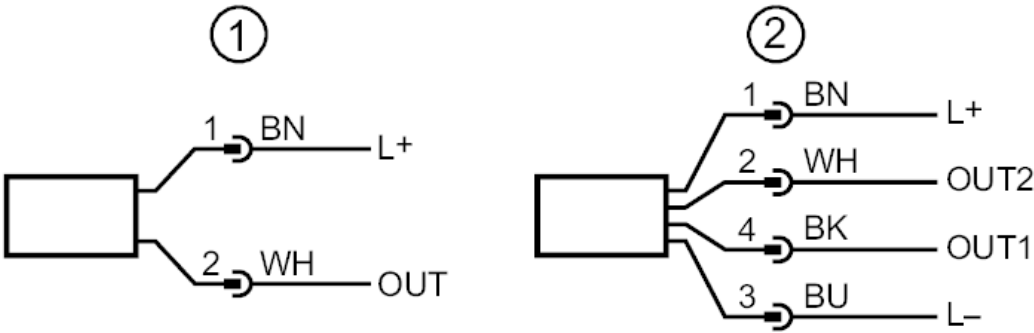
Pack quantity	1 pcs.
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Electrical connection

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



Connection



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

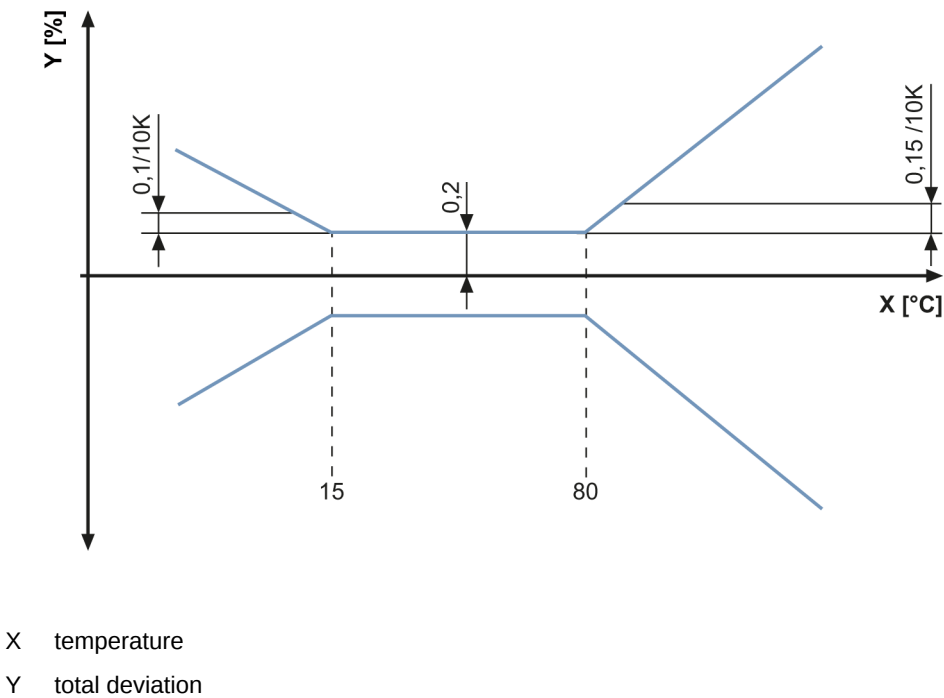


Flush pressure sensor

PM-,25BREA01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy

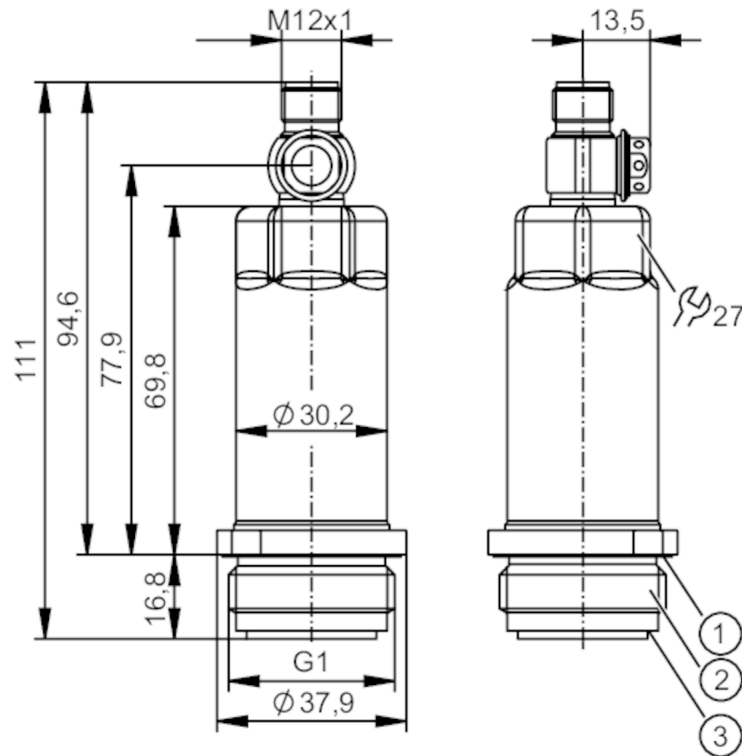


PM1709



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



ACS



CRN



EC 1935/2004

EHEDG

Certified

FCM

FDA

IO-Link

NSF

Reg31

UK

CA

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. burst 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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Flush pressure sensor

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

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...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			



Flush pressure sensor

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

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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
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	Type of operation	DeviceID
	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 www.factory-certificate.ifm	
UL approval	UL approval number	J021
Mechanical data		
Weight	[g]	306.9
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 111
Material	stainless steel (1.4404 / 316L); PBT	
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]	35

PM1709



Flush pressure sensor

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

Process connection	threaded connection G 1 external thread Aseptoflex Vario
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Remarks

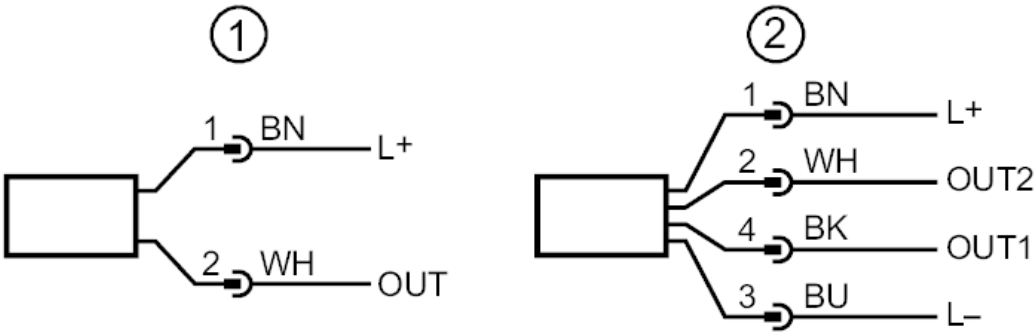
Pack quantity	1 pcs.
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Electrical connection

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



Connection



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

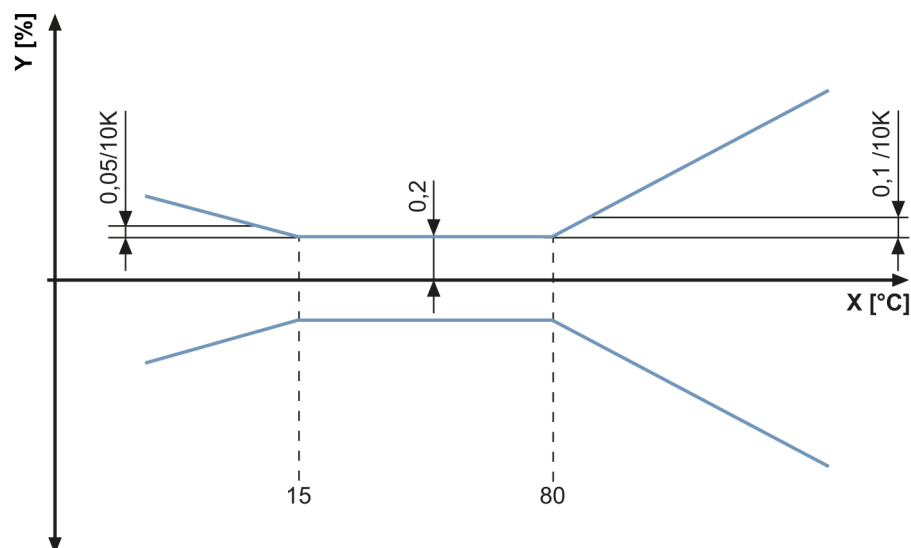


Flush pressure sensor

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

Diagrams and graphs

ambient temperature influence on the accuracy



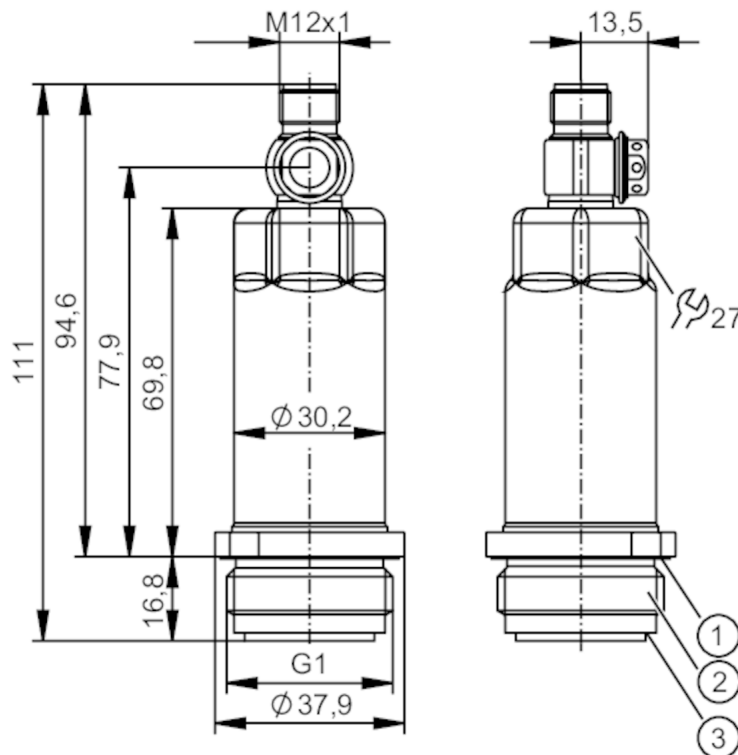
X temperature
Y total deviation

PM1714



Flush pressure sensor

PM-016-REA01-E-ZVG/US



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



ACS



CRN



EC 1935/2004

EHEDG

Certified

FCM

FDA

IO-Link

NSF

Reg31



UK

CA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1		
Measuring range	-1...16 bar	-14.6...232 psi	-0.1...1.6 MPa
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. burst pressure	250 bar	3625 psi	25 MPa
Pressure rating	75 bar	1085 psi	7.5 MPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		
MAWP (for applications according to CRN) [bar]	60		

Electrical data

Operating voltage [V]	18...30 DC
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Flush pressure sensor

PM-016-REA01-E-ZVG/US

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...16 bar	-14.6...232 psi -0.1...1.6 MPa
Analog start point		-1...12.8 bar	-14.6...185.6 psi -0.1...1.28 MPa
Analog end point		2.2...16 bar	32...232 psi 0.22...1.6 MPa
In steps of		0.01 bar	0.2 psi 0.001 MPa
Factory setting			ASP = 0.0 bar AEP = 16.0 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
Notes on the accuracy / deviation		for further details see section Diagrams and graphs	



Flush pressure sensor

PM-016-REA01-E-ZVG/US

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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
SIO mode	no	
Required master port class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[bar]	0.005
IO-Link functions (acyclical)	application specific tag; internal temperature	
Supported DeviceIDs	Type of operation	DeviceID
	default	661
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 number	J021
Mechanical data		
Weight	[g]	308.3
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 111
Material	stainless steel (1.4404 / 316L); PBT	
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]	35

PM1714



Flush pressure sensor

PM-016-REA01-E-ZVG/US

Process connection	threaded connection G 1 external thread Aseptoflex Vario
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Remarks

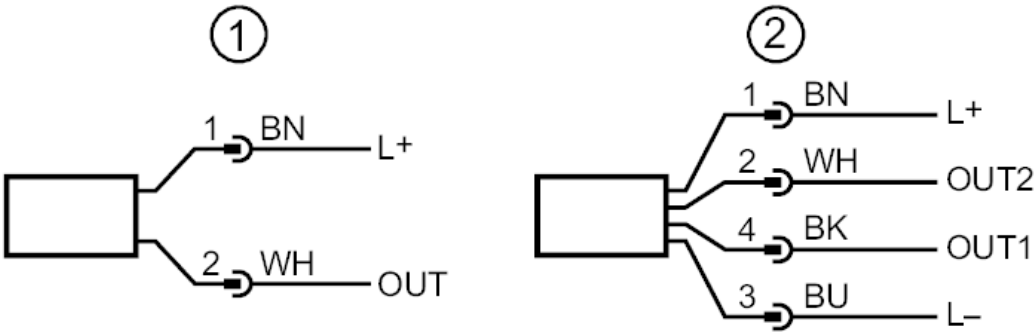
Pack quantity	1 pcs.
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Electrical connection

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



Connection



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

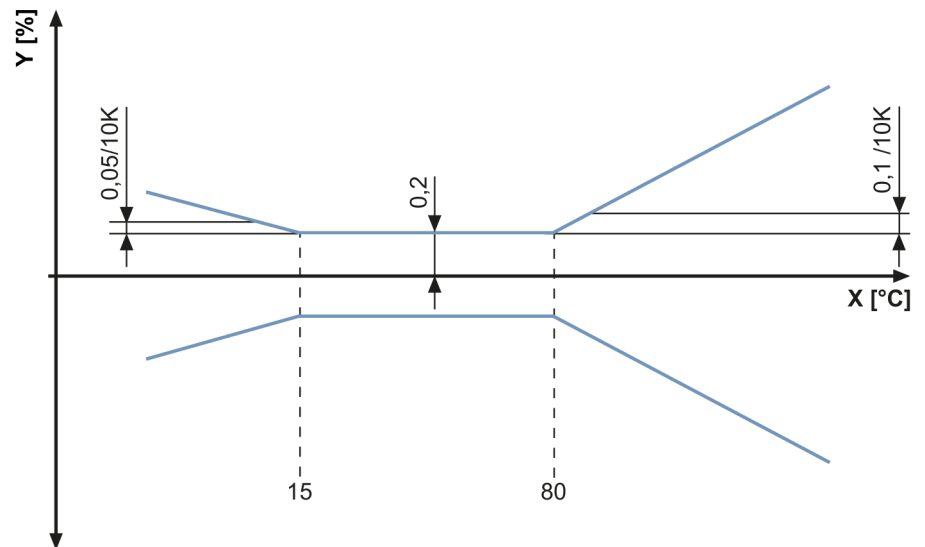


Flush pressure sensor

PM-016-REA01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy



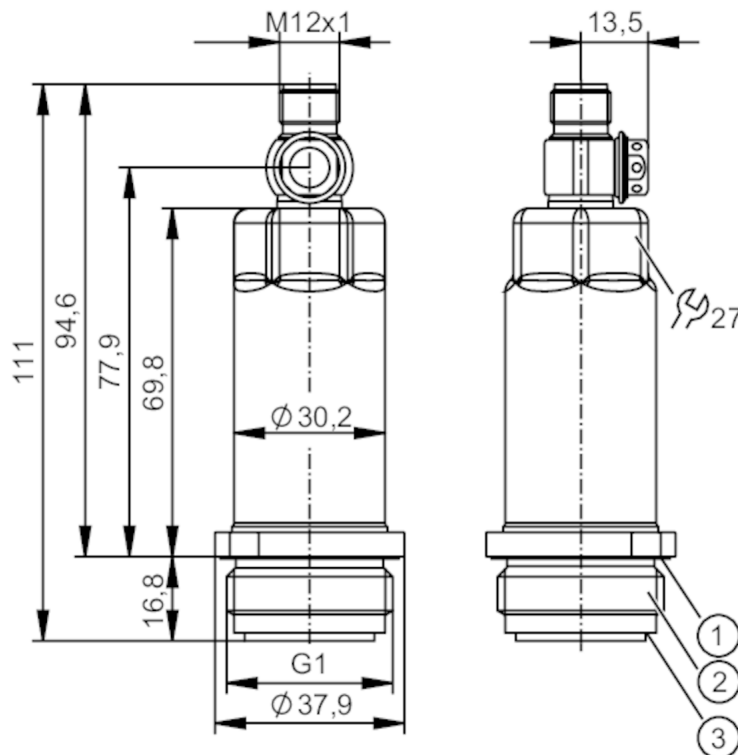
X temperature
Y total deviation

PM1715



Flush pressure sensor

PM-006-REA01-E-ZVG/US



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



ACS



CRN



EC 1935/2004

EHEDG

Certified

FCM

FDA

IO-Link

NSF

Reg31



UK

CA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1		
Measuring range	-1...6 bar	-14.5...87 psi	-100...600 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. burst 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		

Electrical data

Operating voltage [V]	18...30 DC
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Flush pressure sensor

PM-006-REA01-E-ZVG/US

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...6 bar	-14.5...87 psi -100...600 kPa
Analog start point		-1...4.8 bar	-14.5...69.6 psi -100...480 kPa
Analog end point		0.2...6 bar	2.9...87 psi 20...600 kPa
In steps of		0.02 bar	0.05 psi 0.2 kPa
Factory setting			ASP = 0.0 bar AEP = 6.0 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
Notes on the accuracy / deviation		for further details see section Diagrams and graphs	

PM1715



Flush pressure sensor

PM-006-REA01-E-ZVG/US

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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
SIO mode	no	
Required master port class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[bar]	0.002
IO-Link functions (acyclical)	application specific tag; internal temperature	
Supported DeviceIDs	Type of operation	DeviceID
	default	663
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 number	J021
Mechanical data		
Weight	[g]	308
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 111
Material	stainless steel (1.4404 / 316L); PBT	
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]	35

PM1715



Flush pressure sensor

PM-006-REA01-E-ZVG/US

Process connection	threaded connection G 1 external thread Aseptoflex Vario
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Remarks

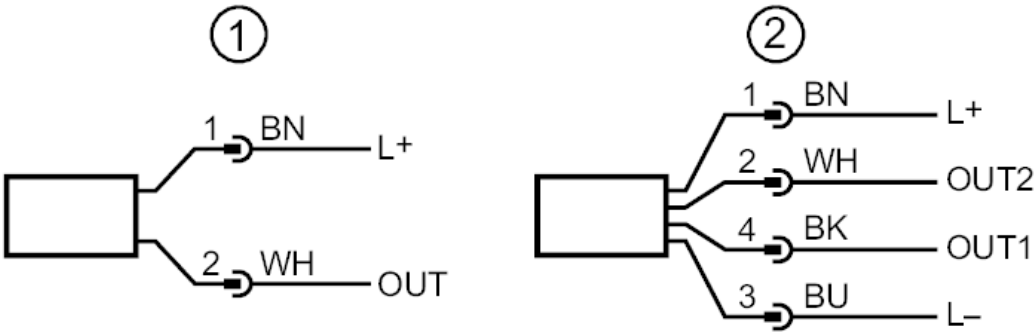
Pack quantity	1 pcs.
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Electrical connection

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



Connection



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

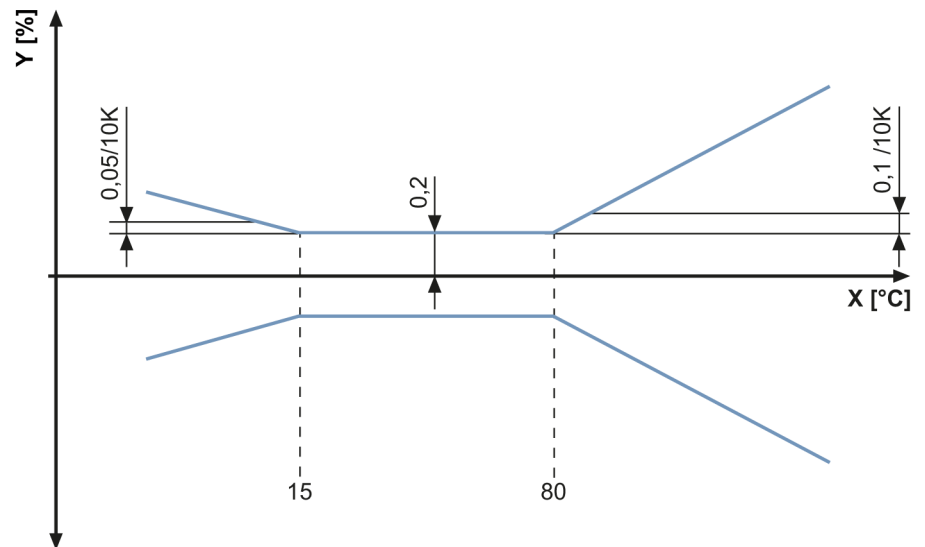


Flush pressure sensor

PM-006-REA01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy



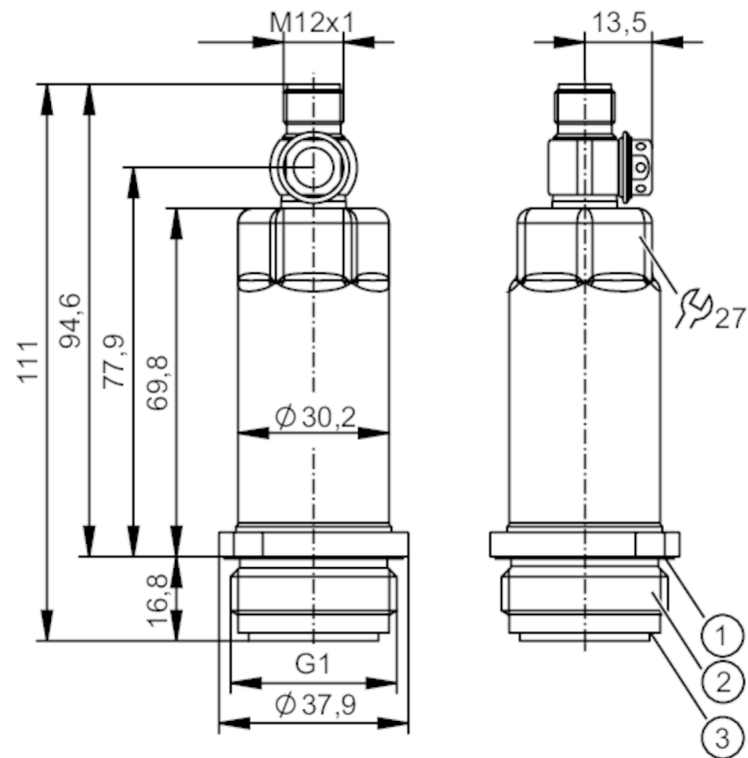
X temperature
Y total deviation

PM1717



Flush pressure sensor

PM-1,6-REA01-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	-0.1...1.6 bar	-100...1600 mbar	-1.45...23.21 psi	-10...160 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. burst pressure	40000 mbar	580 psi	4000 kPa	
Pressure rating	15000 mbar	215 psi	1500 kPa	
Vacuum resistance [mbar]	-1000			
Type of pressure	relative pressure			
No dead space	yes			
MAWP (for applications according to CRN) [bar]	15			
Electrical data				
Operating voltage [V]	18...30 DC			



Flush pressure sensor

PM-1,6-REA01-E-ZVG/US

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		-0.1...1.6 bar	-100...1600 mbar	-1.45...23.21 psi	-10...160 kPa
Analog start point		-100...1280 mbar	-1.45...18.56 psi	-10...128 kPa	
Analog end point		220...1600 mbar	3.19...23.21 psi	22...160 kPa	
In steps of		1 mbar	0.01 psi	0.1 kPa	
Factory setting		ASP		0.0 mbar	
		AEP		1600 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			



Flush pressure sensor

PM-1,6-REA01-E-ZVG/US

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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
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	Type of operation	DeviceID
	default	666
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 number	J021
Mechanical data		
Weight	[g]	307.7
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 111
Material	stainless steel (1.4404 / 316L); PBT	
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]	35

PM1717



Flush pressure sensor

PM-1,6-REA01-E-ZVG/US

Process connection	threaded connection G 1 external thread Aseptoflex Vario
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Remarks

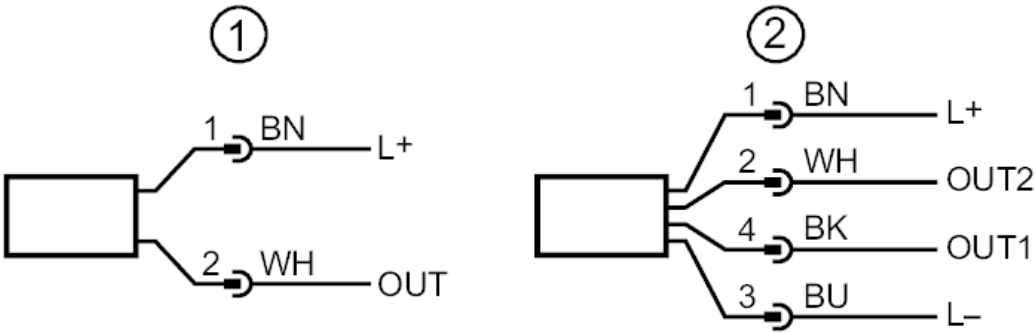
Pack quantity	1 pcs.
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Electrical connection

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



Connection



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

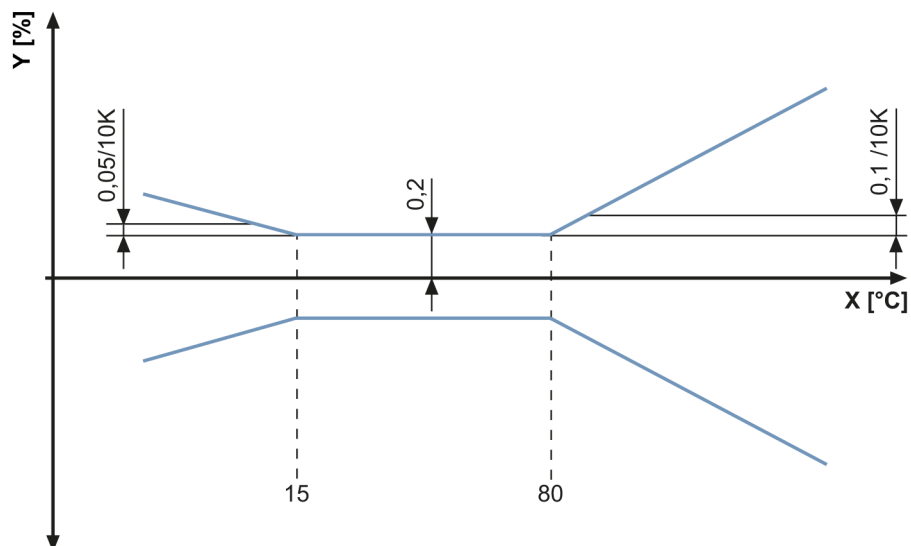


Flush pressure sensor

PM-1,6-REA01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on
the accuracy



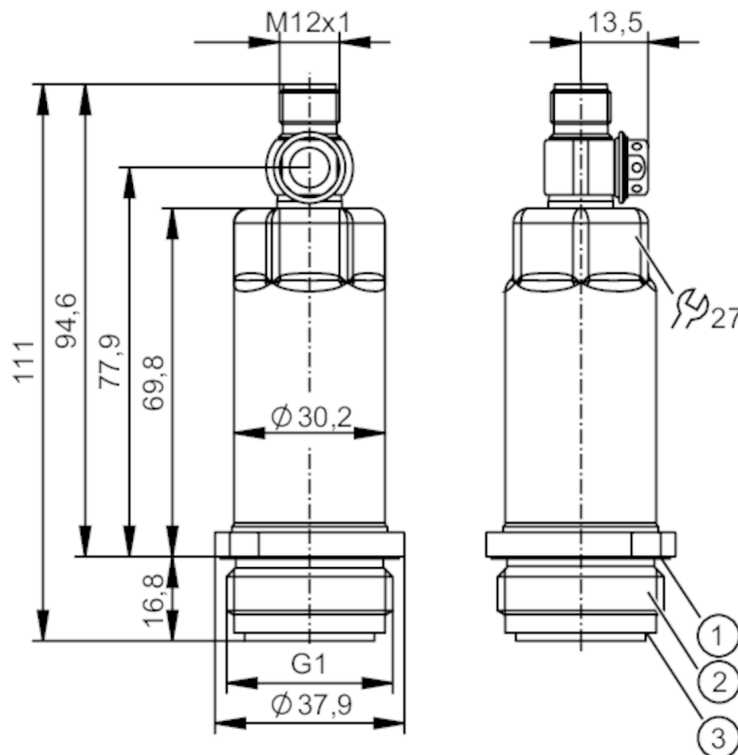
X temperature
Y total deviation

PM1718



Flush pressure sensor

PM-,40BREA01-E-ZVG/US



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



ACS



CRN



EC 1935/2004

EHEDG

Certified

FCM

FDA

IO-Link

NSF

Reg31



UK

CA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1			
Measuring range	-0.05...0.4 bar	-50...400 mbar	-0.725...5.8 psi	-5...40 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. burst pressure	30000 mbar	435 psi	3000 kPa
Pressure rating	8000 mbar	116 psi	800 kPa
Vacuum resistance	-1000 mbar	-0.1 MPa	
Type of pressure	relative pressure		
No dead space	yes		
MAWP (for applications according to CRN)	0.4 bar	0.04 MPa	

Electrical data

Operating voltage [V]	18...30 DC
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Flush pressure sensor

PM-,40BREA01-E-ZVG/US

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		-0.05...0.4 bar	-50...400 mbar	-0.725...5.8 psi	-5...40 kPa
Analog start point		-50...320 mbar	-0.725...4.641 psi	-5...32 kPa	
Analog end point		30...400 mbar	0.435...5.802 psi	3...40 kPa	
In steps of		0.1 mbar	0.001 psi	0.01 kPa	
Factory setting		ASP = 0.0 mbar	AEP = 400 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 (DIN EN 61298-2); (incl. zero point and span error, non-linearity, hysteresis; Turn down 1:1)			
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 ± 0,1 % of the span / 10 K	
		15...80 °C		Characteristics deviation	
		80...150 °C		Characteristics deviation ± 0,15 % of the span / 10 K	
Notes on the accuracy / deviation		for further details see section Diagrams and graphs			



Flush pressure sensor

PM-,40BREA01-E-ZVG/US

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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
SIO mode	no	
Required master port class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[mbar]	0.1
IO-Link functions (acyclical)	application specific tag; internal temperature	
Supported DeviceIDs	Type of operation	DeviceID
	default	1410
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]	364
Mechanical data		
Weight	[g]	272.05
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 111
Material	stainless steel (1.4404 / 316L); PBT	
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]	35
Process connection	threaded connection G 1 external thread Aseptoflex Vario	

PM1718



Flush pressure sensor

PM-,40BREA01-E-ZVG/US

Displays / operating elements	
Display unit	mbar; psi; kPa; mmWS; inH2O
Remarks	
Pack quantity	1 pcs.
Electrical connection	

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



Connection

①

②

1

connection for 2-wire operation (analog)

2

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

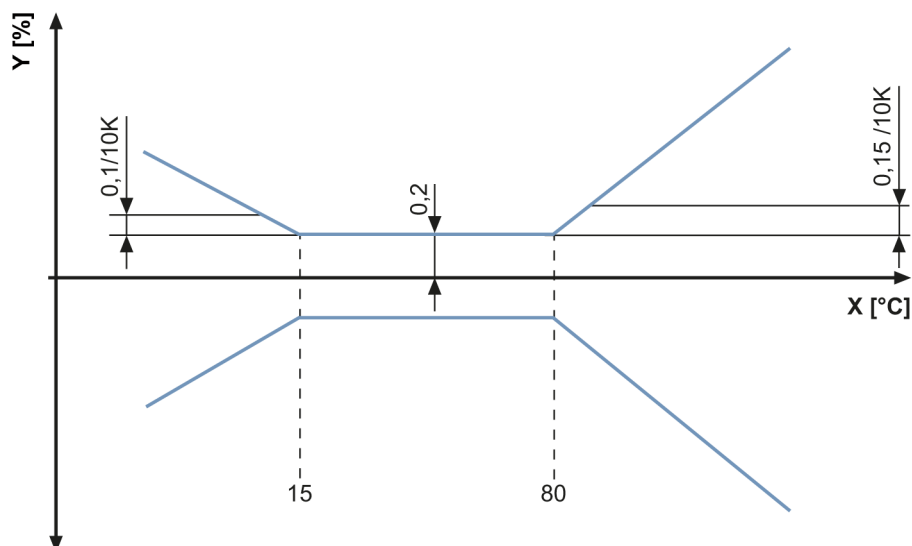


Flush pressure sensor

PM-,40BREA01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on the accuracy



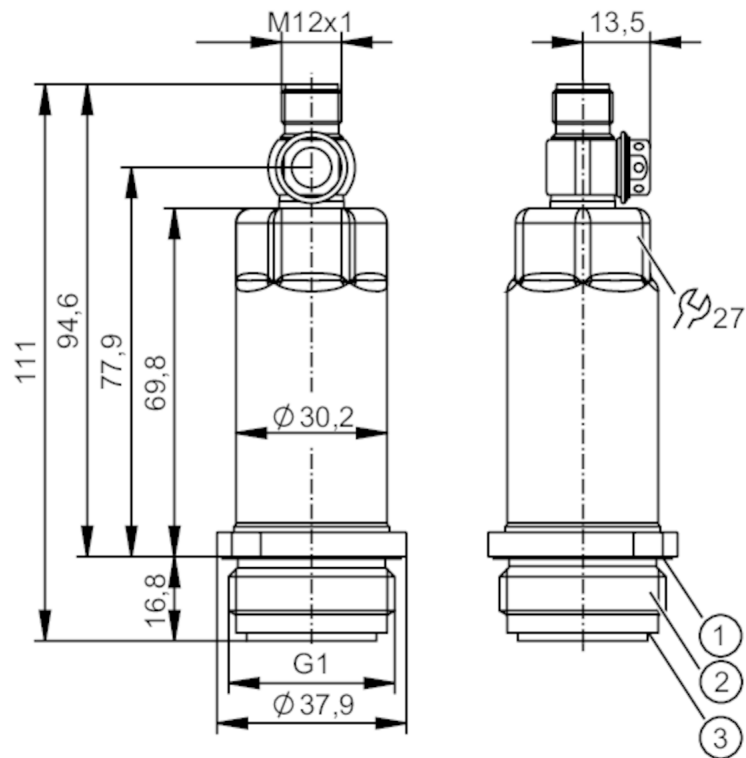
X temperature
Y total deviation

PM1743



Flush pressure sensor

PM-040-REA01-E-ZVG/US



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

ACS CRN LISTED EHEDG Certified FDA Reg31

Product characteristics			
Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1		
Measuring range	-1...40 bar	-14.6...580.2 psi	-0.1...4 MPa
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		
Conditionally suitable for	use in gases at pressures > 25 bar only on request		
Medium temperature [°C]	-25...150		
Min. burst pressure	400 bar	5800 psi	40 MPa
Pressure rating	125 bar	1800 psi	12.5 MPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		
MAWP (for applications according to CRN)	40 bar	4 MPa	



Flush pressure sensor

PM-040-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; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)		
Short-circuit proof		yes		
Overload protection		yes		
Measuring/setting range				
Measuring range		-1...40 bar	-14.6...580.2 psi	-0.1...4 MPa
Analog start point		-1...32 bar	-14.6...464.2 psi	-0.1...3.2 MPa
Analog end point		7...40 bar	101.4...580.2 psi	0.7...4 MPa
In steps of		0.02 bar	0.2 psi	0.002 MPa
Factory setting		ASP = 0.0 bar	AEP = 40.0 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

PM1743



Flush pressure sensor

PM-040-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
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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]	0.01
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IO-Link functions (acyclical)	application specific tag; internal temperature
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Supported DeviceIDs	Type of operation	DeviceID
	default	1641

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)
Vibration resistance	DIN EN 60068-2-6	20 g (10...2000 Hz)
MTTF	[years]	320
UL approval	UL approval number	J077
	File number UL	E174189

Mechanical data

Weight	[g]	272.6
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Housing	tubular
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Dimensions	[mm]	Ø 30.2 / L = 111
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Material	stainless steel (1.4404 / 316L); PBT
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Materials (wetted parts)	ceramics (99.9 % Al ₂ O ₃); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE
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Min. pressure cycles	100 million
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PM1743



Flush pressure sensor

PM-040-REA01-E-ZVG/US

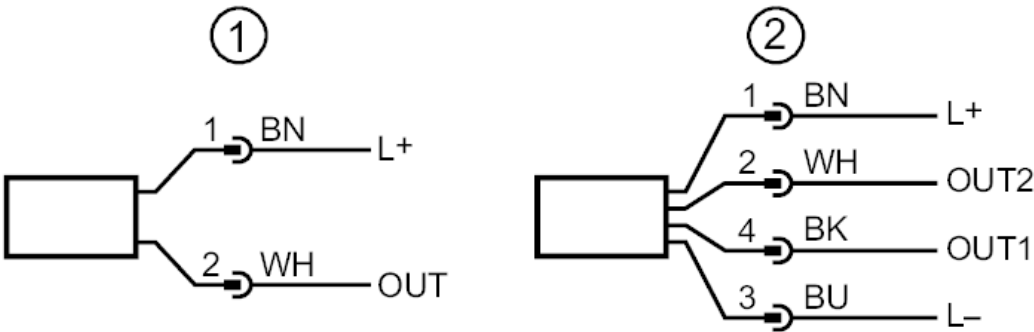
Tightening torque	[Nm]	35
Process connection	threaded connection G 1 external thread Aseptoflex Vario	
Remarks		
Pack quantity	1 pcs.	

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

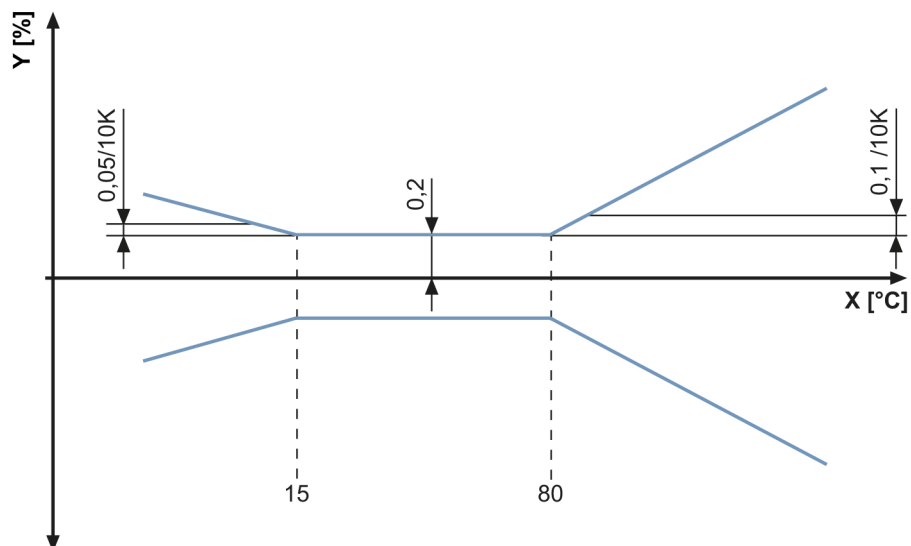


Flush pressure sensor

PM-040-REA01-E-ZVG/US

Diagrams and graphs

ambient temperature influence on
the accuracy



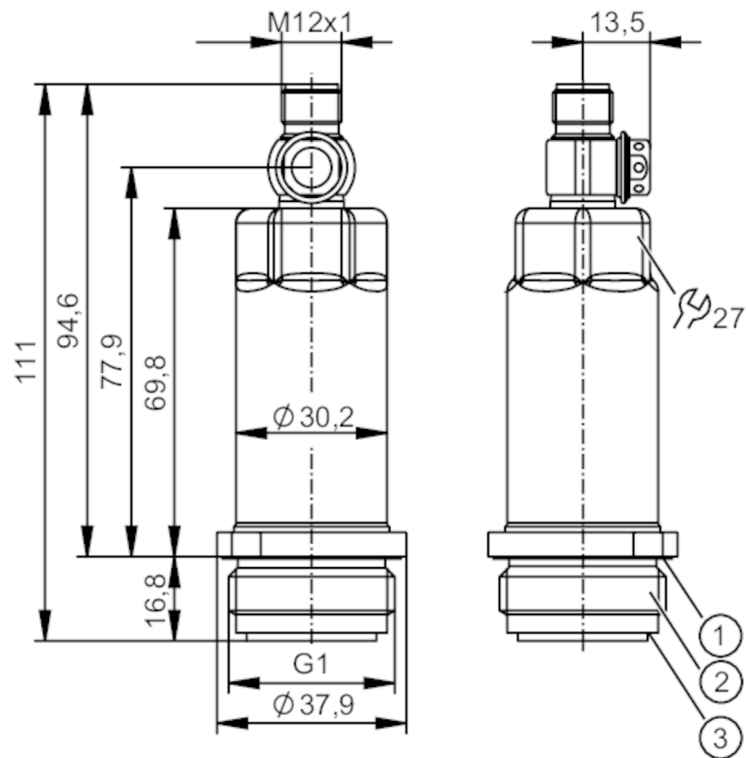
X temperature
Y total deviation

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Flush pressure sensor

PM-,10BREA01-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	-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 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. 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			
MAWP (for applications according to CRN) [bar]	4			
Electrical data				
Operating voltage [V]	18...30 DC			



Flush pressure sensor

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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
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 _b = 24 V; (U _b - 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
Analog start point		-5...80 mbar -0.073...1.16 psi -0.5...8 kPa
Analog 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)
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	

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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	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
SIO mode	no	
Required master port class	A	
Process data analog	3	
Min. process cycle time	[ms]	3.2
IO-Link resolution pressure	[mbar]	0.02
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 number	J021
Mechanical data		
Weight	[g]	272.15
Housing	tubular	
Dimensions	[mm]	Ø 30.2 / L = 111
Material	stainless steel (1.4404 / 316L); PBT	
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]	35

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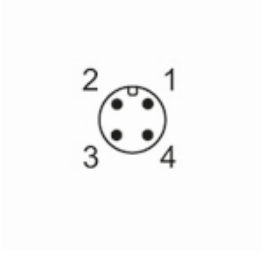
Process connection	threaded connection G 1 external thread Aseptoflex Vario
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Remarks

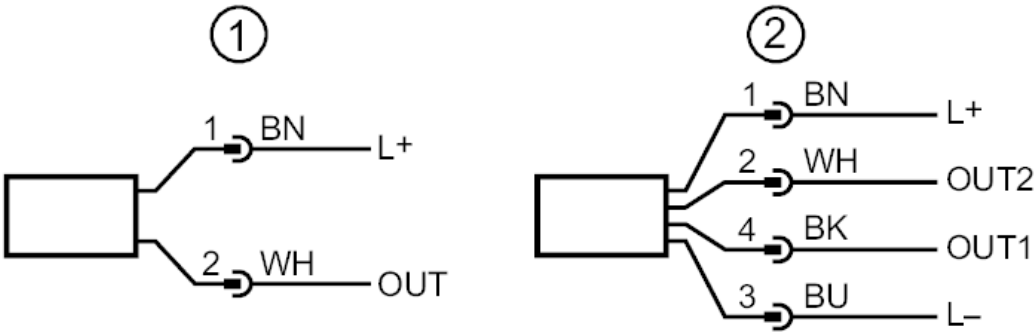
Pack quantity	1 pcs.
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Electrical connection

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



Connection



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

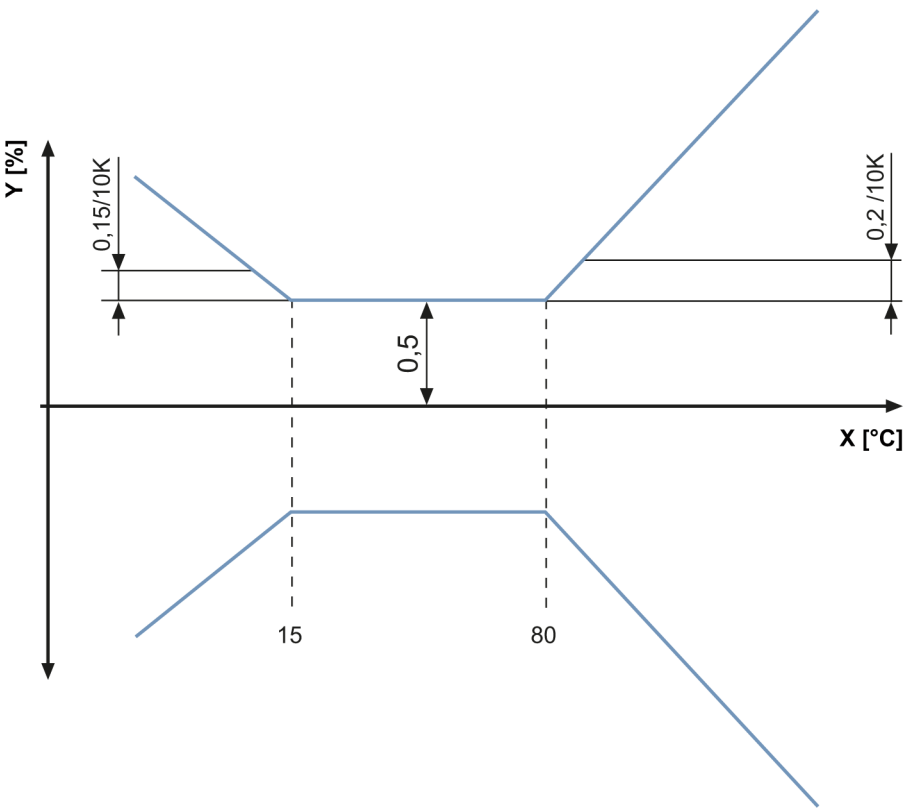
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Flush pressure sensor

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Diagrams and graphs



X temperature
Y total deviation