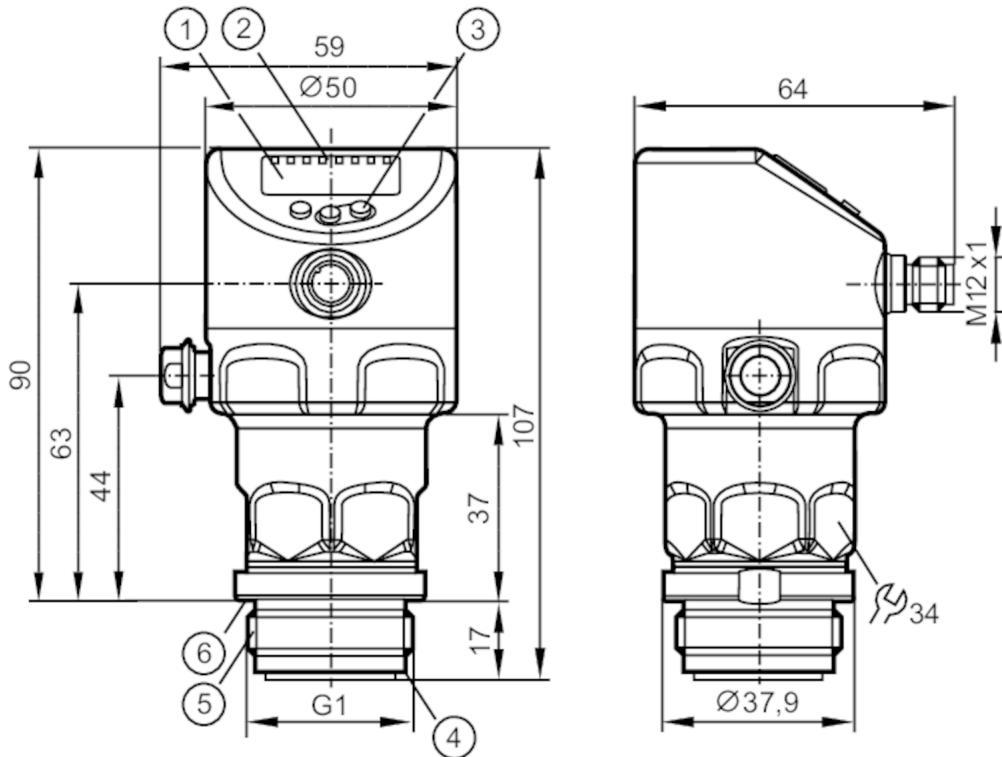


## Flush pressure sensor with display

PI-010-REA01-MFRKG/US/ /P



- 1 alphanumeric display 4-digit
- 2 status LEDs
- 3 Programming button
- 4 groove for sealing ring
- 5 external thread G1 Aseptoflex Vario
- 6 groove with sealing ring (DIN 3869-33)

ACS CRN EC 1935/2004 EHEDG Certified FCM Reg31 UK

**Product characteristics**

Number of inputs and outputs	Number of digital outputs: 2; Number of analog outputs: 1		
Measuring range	-1...10 bar	-14.6...145 psi	-0.1...1 MPa
Process connection	threaded connection G 1 external thread Aseptoflex Vario		

**Application**

System	gold-plated contacts		
Application	flush mountable for the food and beverage industry		
Media	viscous media and liquids with suspended particles; liquids and gases		
Medium temperature [°C]	-25...150		
Min. bursting pressure	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]	10		

**Electrical data**

Min. insulation resistance [MΩ]	100; (500 V DC)
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## Flush pressure sensor with display

PI-010-REA01-MFRKG/US/ IP

Protection class		III	
Reverse polarity protection		yes	
Integrated watchdog		yes	
2-wire			
Operating voltage	[V]	20...30 DC	
Current consumption	[mA]	3.5...21.5	
Power-on delay time	[s]	< 1	
3-wire			
Operating voltage	[V]	18...30 DC	
Current consumption	[mA]	5...45; (430 bei max. Laststrom)	
Power-on delay time	[s]	< 0.5	
<b>Inputs / outputs</b>			
Number of inputs and outputs		Number of digital outputs: 2; Number of analog outputs: 1	
<b>Outputs</b>			
Total number of outputs		2	
Output signal		switching signal; analog signal; IO-Link	
Electrical design		PNP/NPN	
Number of digital outputs		2	
Output function		normally open / closed; (configurable)	
Number of analog outputs		1	
Analog current output	[mA]	4...20, invertible; (scalable)	
Short-circuit protection		yes	
Type of short-circuit protection		yes (non-latching)	
Overload protection		yes	
2-wire			
Max. load	[Ω]	300	
3-wire			
Max. voltage drop switching output DC	[V]	2	
Permanent current rating of switching output DC	[mA]	100	
Switching frequency DC	[Hz]	125	
Max. load	[Ω]	(Ub - 10 V) / 21,5 mA; 650 Ω (Ub = 24 V)	
<b>Measuring/setting range</b>			
Measuring range	-1...10 bar	-14.6...145 psi	-0.1...1 MPa
Set point SP	-0.99...10 bar	-14.3...145 psi	-0.099...1 MPa
Reset point rP	-1...9.99 bar	-14.5...144.8 psi	-0.1...0.999 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
Min. difference between SP and rP	0.02 bar	0.3 psi	0.002 MPa
In steps of	0.01 bar	0.1 psi	0.001 MPa

# PI1704



## Flush pressure sensor with display

PI-010-REA01-MFRKG/US/ /P

Factory setting		SP1 = 2.50 bar	rP1 = 2.30 bar								
		SP2 = 7.50 bar	rP2 = 7.30 bar								
		ASP = 0.00 bar	AEP = 10.00 bar								
		dAP = 0.06 s	dAA = 0.06 s								
Temperature monitoring											
Measuring range	-25...150 °C	-13...302 °F									
<b>Accuracy / deviations</b>											
Switch point accuracy [% of the span]		< ± 0,2; (DIN EN IEC 62828-1; Turn down 1:1)									
Repeatability [% of the span]		< ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)									
Characteristics deviation [% of the span]		< ± 0,2; (DIN IEC EN 62828-1 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		<table border="1"> <thead> <tr> <th>Temperature range</th><th>total deviation</th></tr> </thead> <tbody> <tr> <td>-25...15 °C</td><td>Characteristics deviation ± 0,05 % of the span / 10 K</td></tr> <tr> <td>15...80 °C</td><td>Characteristics deviation</td></tr> <tr> <td>80...150 °C</td><td>Characteristics deviation ± 0,1 % of the span / 10 K</td></tr> </tbody> </table>		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
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+ (0,08 x ( Umgebungstemperatur - Mediumtemperatur ))									
Repeatability [K]		± 0,2									
Resolution [K]		0.2									
<b>Reaction times</b>											
Damping process value dAP [s]		0...99.99									
Damping for the analog output dAA [s]		0...99.99									
2-wire											
Step response time analog output [ms]		30									
3-wire											
Min. response time of switching output (dAP) [ms]		3									
Step response time analog output [ms]		7									
Temperature monitoring											
Dynamic response T05 / T09 [s]		< 35 / < 135; (DIN EN 60751 water ; > 0,9 m/s)									
<b>Interfaces</b>											
Communication interface		IO-Link									
Transmission type		COM2 (38,4 kBaud)									

# PI1704



## Flush pressure sensor with display

PI-010-REA01-MFRKG/US/ /P

IO-Link revision	1.1	
SDCI standard	IEC 61131-9	
Profiles	Identification and Diagnosis (0x4000), Measurement Data Channel (0x800A)	
SIO mode	yes	
Required master port class	A	
Min. process cycle time [ms]	5.6	
IO-Link resolution pressure [bar]	0.0005	
IO-Link resolution temperature [K]	0.2	
IO-Link process data (cyclical)	Function	bit length
	pressure	32
	temperature	32
	device status	4
	binary switching information	2
IO-Link functions (acyclical)	application specific tag; internal temperature; operating hours counter; switching cycles counter; Pressure peak counter	
Supported DeviceIDs	Type of operation	DeviceID
	default	1156
<b>Operating conditions</b>		
Ambient temperature [°C]	-25...80	
Storage temperature [°C]	-40...100	
Protection	IP 67; IP 68; IP 69K	
<b>Tests / approvals</b>		
EMC	DIN EN 61326-1	
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]	214	
Note on approval	Factory certificate available as download at <a href="http://www.factory-certificate.ifm">www.factory-certificate.ifm</a>	
UL approval	UL approval number	J048
	File number UL	E174189
<b>Mechanical data</b>		
Weight [g]	360	
Material	stainless steel (1.4404 / 316L); FKM; PTFE; PBT; PEI; PFA	
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L); surface characteristics: Ra < 0,4 / Rz 4; PTFE	
Min. pressure cycles	100 million	
Tightening torque [Nm]	35	
Process connection	threaded connection G 1 external thread Aseptoflex Vario	
<b>Displays / operating elements</b>		
Display	Display unit	LED, green
	Switching status	LED, yellow
	Function display	alphanumeric display, 4-digit
	Measured values	alphanumeric display, 4-digit
Display unit	bar; psi; MPa	
<b>Remarks</b>		
Pack quantity	1 pcs.	

## Flush pressure sensor with display

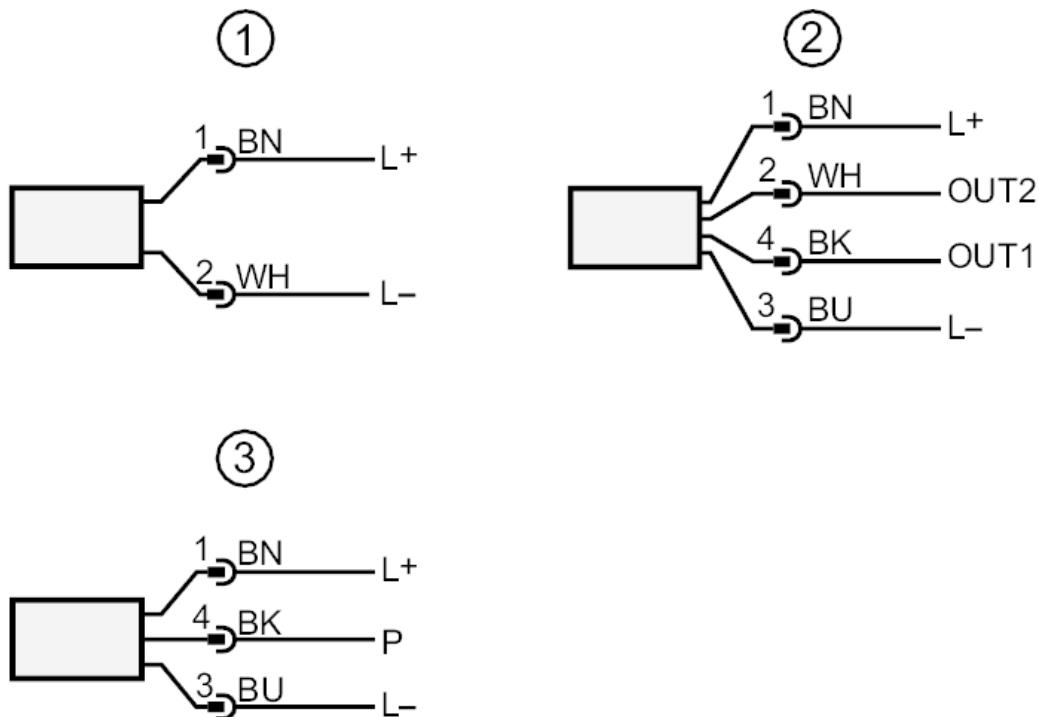
PI-010-REA01-MFRKG/US/ /P

## Electrical connection

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



## Connection



1	connection for 2-wire operation
2	connection for 3-wire operation
OUT1	Switching output / IO-Link
OUT2	Switching output / analog output
3	connection for IO-Link parameter setting (P = communication via IO-Link) Colors to DIN EN 60947-5-2 Core colors
BK =	black
BN =	brown
BU =	blue
WH =	white

## Flush pressure sensor with display

PI-010-REA01-MFRKG/US/ /P

## Diagrams and graphs

ambient temperature influence on  
the accuracy

