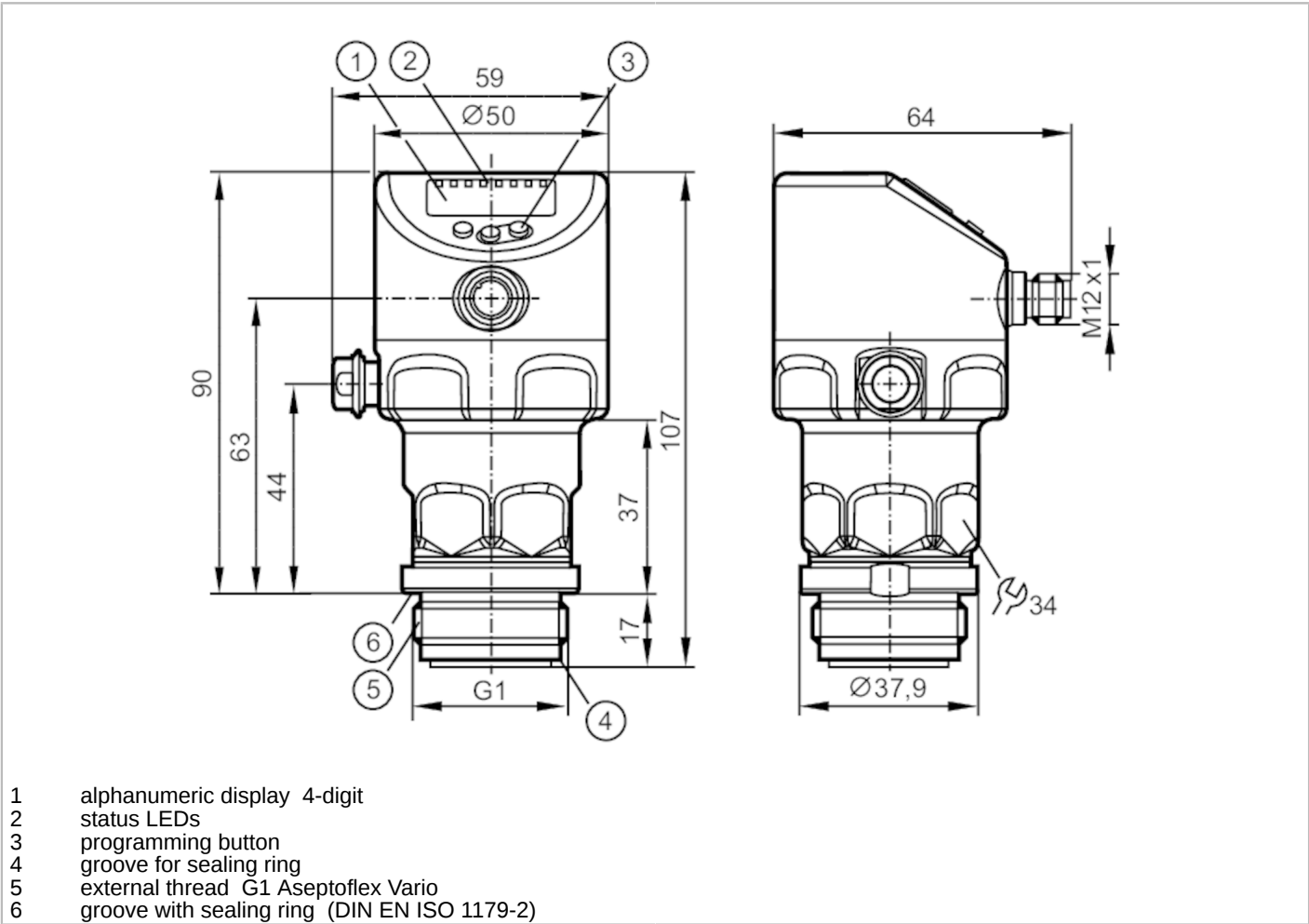




Flush pressure sensor with display

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



Product characteristics		
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1	
Measuring range	-1...10 bar	-0.1...1 MPa
Process connection	threaded connection G 1 external thread Aseptoflex Vario	
Application		
Special feature	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	15 MPa
Pressure rating	50 bar	5 MPa
Vacuum resistance [mbar]	-1000	
Type of pressure	relative pressure; vacuum	
No dead space	yes	
Electrical data		
Min. insulation resistance [MΩ]	100; (500 V DC)	
Protection class	III	
Reverse polarity protection	yes	



Flush pressure sensor with display

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

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	
Inputs / outputs			
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1		
Outputs			
Total number of outputs	2		
Output signal	switching signal; analogue signal; IO-Link		
Electrical design	PNP/NPN		
Number of digital outputs	2		
Output function	normally open / normally closed; (parameterisable)		
Number of analogue outputs	1		
Analogue current output	[mA]	4...20, invertible; (scalable)	
Short-circuit protection	yes		
Type of short-circuit protection	pulsed		
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)	
Measuring/setting range			
Measuring range	-1...10 bar	-0.1...1 MPa	
Set point SP	-0.99...10 bar	-0.099...1 MPa	
Reset point rP	-1...9.99 bar	-0.1...0.999 MPa	
Analogue start point	-1...8 bar	-0.1...0.8 MPa	
Analogue end point	1...10 bar	0.1...1 MPa	
Min. difference between SP and rP	0.02 bar	0.002 MPa	
In steps of	0.01 bar	0.001 MPa	
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



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Temperature monitoring		
Measuring range	[°C]	-25...150
Accuracy / deviations		
Switch point accuracy	[% of the span]	< ± 0,2; (DIN EN IEC 62828-1; Turn down 1:1)
Repeatability		< ± 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		< ± 0,15; (Turn down 1:1)
Hysteresis deviation	[% of the span]	< ± 0,15; (Turn down 1:1)
Long-term stability		< ± 0,1; (Turn down 1:1; per year)
Total deviation over temperature range	Temperature range	
	-25...15 °C	total deviation
	15...80 °C	Characteristics deviation ± 0,05 % of the span / 10 K
	80...150 °C	Characteristics deviation
Notes on the accuracy / deviation	Characteristics deviation ± 0,1 % of the span / 10 K	
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
Response times		
Damping process value dAP	[s]	0...99.99
Damping for the analogue output dAA	[s]	0...99.99
2-wire		
Step response time analogue output	[ms]	30
3-wire		
Min. response time of switching output (dAP)	[ms]	3
Step response time analogue output	[ms]	7
Temperature monitoring		
Dynamic response T05 / T09	[s]	< 35 / < 135; (DIN EN 60751 water ; > 0,9 m/s)
Interfaces		
Communication interface	IO-Link	
Transmission type	COM2 (38,4 kBaud)	
IO-Link revision	1.1	
SDCI standard	IEC 61131-9	
Profiles	Identification and Diagnosis (0x4000), Measurement Data Channel (0x800A)	



Flush pressure sensor with display

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SIO mode	yes	
Required master port type	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	1648
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	
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]	201	
UL approval	UL Approval no.	J048
	File number UL	E174189
Mechanical data		
Weight [g]	158.3	
Materials	stainless steel (316L/1.4404); FKM; PTFE; PBT; PEI; PFA	
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (316L/1.4435); 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	
Displays / operating elements		
Display	Display unit	LED, green
	switching status	LED, yellow
	function display	alphanumeric display, 4-digit
	measured values	alphanumeric display, 4-digit
Display unit	bar; MPa	
Remarks		
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 / analogue output
- 3 connection for IO-Link parameter setting (P = communication via IO-Link)
- colours to DIN EN 60947-5-2
- Core colours
- BK = black
- BN = brown
- BU = blue
- WH = white



Flush pressure sensor with display

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Diagrams and graphs

ambient temperature influence on the accuracy



X temperature
Y total deviation