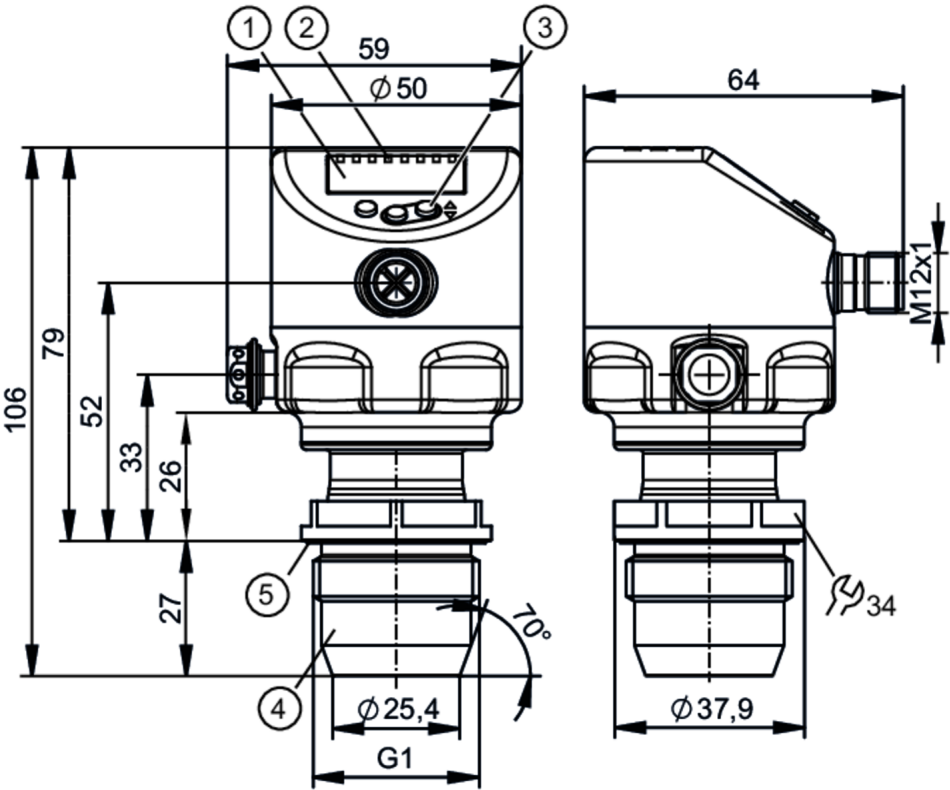




Flush pressure sensor with display

PI-040-REA01-MFRKG/US/ I/P



- 1 alphanumeric display 4-digit
 - 2 status LEDs
 - 3 programming button
 - 4 G1 sealing cone external thread
 - 5 groove with sealing ring
- Attention: The unit must only be installed in a process connection for G1 sealing cone.
The G1A sealing cone of the unit is only suited for adapters with metal end stop.



Product characteristics			
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1		
Measuring range	-1...40 bar	-14.5...580 psi	-0.1...4 MPa
Process connection	threaded connection G 1 external thread sealing cone Attention: The unit must only be installed in a process connection for G1 sealing cone.; The G1A sealing cone of the unit is only suited for adapters with metal end stop.		
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	400 bar	5800 psi	40 MPa
Pressure rating	125 bar	1800 psi	12.5 MPa
Vacuum resistance [mbar]	-1000		
Vacuum resistance [MPa]	-0.1		
Type of pressure	relative pressure; vacuum		
No dead space	yes		



Flush pressure sensor with display

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Electrical data			
Min. insulation resistance	[MΩ]	100; (500 V DC)	
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	
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...40 bar	-14.5...580 psi	-0.1...4 MPa
Set point SP	-0.94...40 bar	-13.6...580.2 psi	-0.094...4 MPa
Reset point rP	-1...39.94 bar	-14.5...579.3 psi	-0.1...3.994 MPa
Analogue start point	-1...32 bar	-14.5...464.1 psi	-0.1...3.2 MPa
Analogue end point	7...40 bar	101.5...580.2 psi	0.7...4 MPa
Min. difference between SP and rP	0.04 bar	0.6 psi	0.004 MPa
In steps of	0.06 bar	0.9 psi	0.006 MPa



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Factory setting		SP1 = 10 bar	rP1 = 9.2 bar
		SP2 = 30 bar	rP2 = 29.2 bar
		ASP = 0.00 bar	AEP = 40.00 bar
		dAP = 0.06 s	dAA = 0.06 s
Temperature monitoring			
Measuring range		-25...150 °C	-13...302 °F
Accuracy / deviations			
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		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	
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)	



Flush pressure sensor with display

PI-040-REA01-MFRKG/US/ IP

IO-Link revision	1.1	
SDCI standard	IEC 61131-9	
Profiles	Function class	Designation
	0x4000	Identification and Diagnosis
	0x800A	Measurement Data Channel (standard resolution)
SIO mode	yes	
Required master port type	A	
Min. process cycle time [ms]	5.6	
IO-Link resolution pressure [bar]	0.002	
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	1640
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]	208	
UL approval	UL Approval no.	J036
	File number UL	E174189
Mechanical data		
Weight [g]	386.8	
Housing	cylindrical	
Dimensions [mm]	Ø 50 / L = 106	
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]	20	
Process connection	threaded connection G 1 external thread sealing cone Attention: The unit must only be installed in a process connection for G1 sealing cone.; The G1A sealing cone of the unit is only suited for adapters with metal end stop.	



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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; psi; MPa	

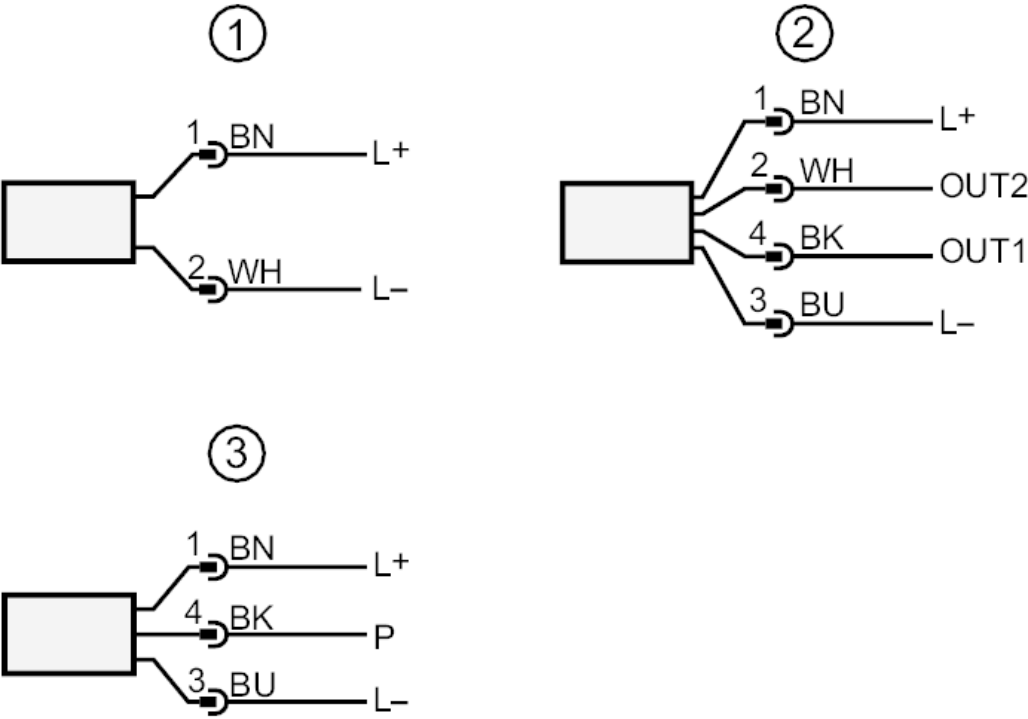
Remarks	
Pack quantity	1 pcs.

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)

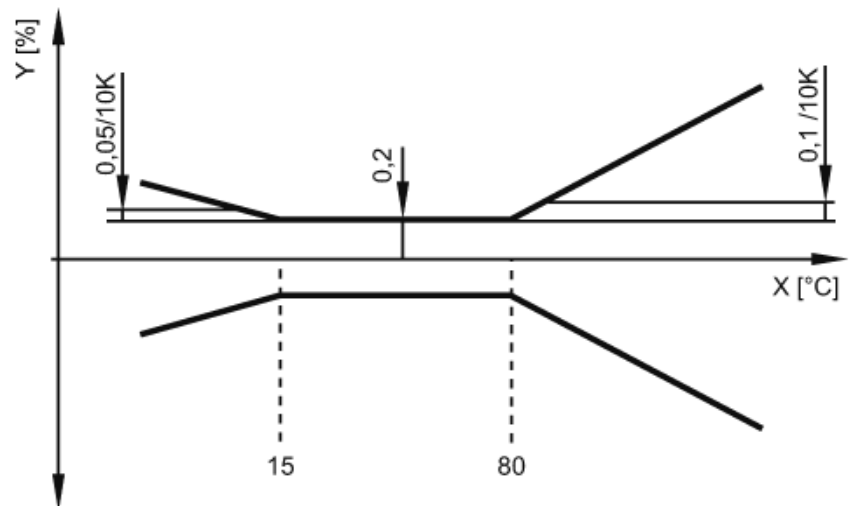


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Diagrams and graphs

ambient temperature influence on the accuracy



X temperature
Y total deviation