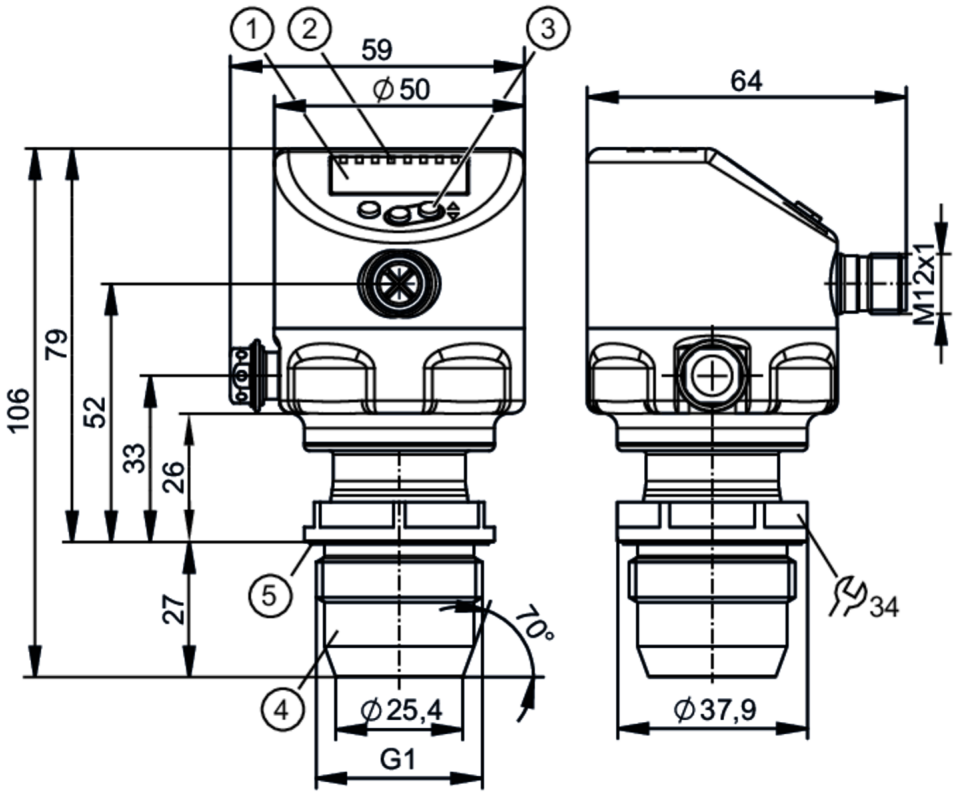
PI1806

Flush pressure sensor with display

PI-2,5-REA01-MFRKG/US/ /P



1 alphanumeric display 4-digit
2 status LEDs
3 Programming button
4 G1 sealing cone external thread
- 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.
5 groove with sealing ring

3A ACS CE CRN cULus LISTED EC 1935/2004 FCM FDA Hygienic Cleanable IO-Link NSF Reg31 TSDP/TÜV UKCA

Product characteristics				
Number of inputs and outputs	Number of digital outputs: 2; Number of analog outputs: 1			
Measuring range	-0.124...2.5 bar	-1.8...36.25 psi	-50...1004 inH2O	-12.4...250 kPa
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				
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. burst pressure	50 bar	725 psi	5000 MPa	
Pressure rating	20 bar	290 psi	2000 kPa	
Vacuum resistance	-1000 mbar	-0.1 MPa		
Type of pressure	relative pressure; vacuum			
No dead space	yes			

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MAWP (for applications according to CRN)	[bar]	20			
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 analog outputs: 1			
Outputs					
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)			
Measuring/setting range					
Measuring range		-0.124...2.5 bar	-1.8...36.25 psi	-50...1004 inH2O	-12.4...250 kPa
Set point SP		-0.12...2.5 bar	-1.74...36.26 psi	-48...1004 inH2O	-12...250 kPa
Reset point rP		-0.124...2.496 bar	-1.8...36.2 psi	-50...1002 inH2O	-12.4...249.6 kPa
Analog start point		-0.124...1.994 bar	-1.8...28.92 psi	-50...801 inH2O	-12.4...199.4 kPa
Analog end point		0.382...2.5 bar	5.54...36.26 psi	153...1004 inH2O	38.2...250 kPa

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Min. difference between SP and rP	0.004 bar	0.06 psi	2 inH2O	0.4 kPa
In steps of	0.001 bar	0.01 psi	1 inH2O	0.1 kPa
Factory setting		SP1 = 0.625 bar		rP1 = 0.575 bar
		SP2 = 1.875 bar		rP2 = 1.825 bar
		ASP = 0.00 bar		AEP = 2.50 bar
		dAP = 2.00 s		dAA =2.00 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)	
Zero-point stabilization [% of the span]	IO-Link, analog output	0,15; (see operating instructions zero-point behavior)
	Display, Switching output	0,2
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	

Reaction times

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

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Temperature monitoring			
Dynamic response T05 / T09	[s]	< 45 / < 200; (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		Common - I&D	Identification and Diagnosis
		Function	Measurement data, high resolution
SIO mode		yes	
Required master port class		A	
Min. process cycle time	[ms]	5.6	
IO-Link resolution pressure	[bar]	0.0001	
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; measuring cell diagnosis	
Supported DeviceIDs		**Type of operation**	**DeviceID**
		default	1154
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]	214	
UL approval		UL approval number	J049
		File number UL	E174189
Mechanical data			
Weight	[g]	384.8	
Housing		tubular	
Dimensions	[mm]	Ø 50 / L = 106	
Material		Housing: stainless steel (1.4404 / 316L); Pushbuttons: PBT; sealings: FKM; M12 connector: PEI; Display: PFA; ventilation diaphragm: PTFE	
Materials (wetted parts)		measuring cell: ceramics (99.9 % Al2O3); Process connection: stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; sealing: PTFE	
Min. pressure cycles		100 million	
Tightening torque	[Nm]	20	

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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.

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; kPa; inH2O	

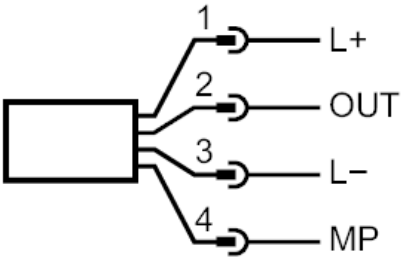
Remarks

Pack quantity	1 pcs.

Electrical connection

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

Connection



2-wire

1	L+	
2	OUT	AO

3-wire

1	L+	
2	OUT	DO2 (NO/NC), AO
3	L-	
4	MP	DO1 (NO/NC), IO-Link

Parameter setting

1	L+	
3	L-	
4	MP	IO-Link

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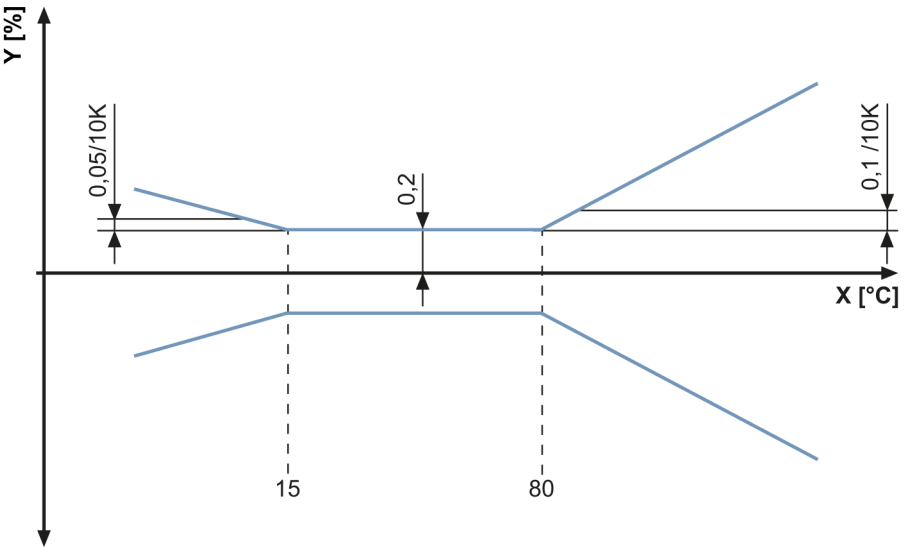
Diagrams and graphs

ambient temperature influence on the accuracy



X temperature

Y total deviation