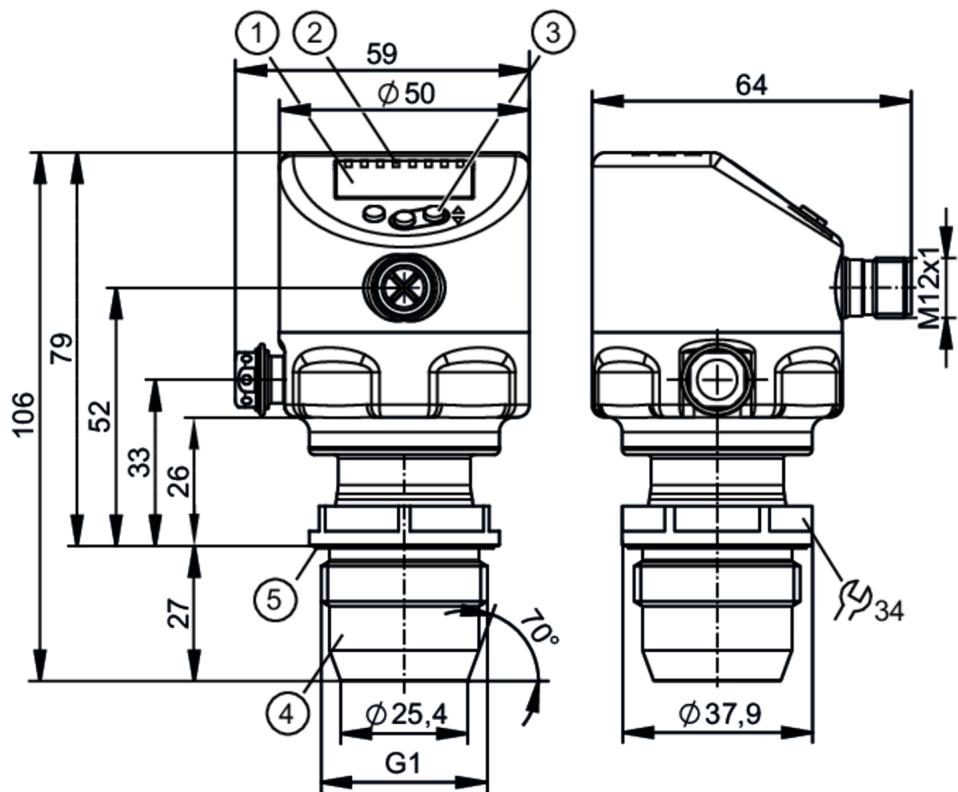




Flush pressure sensor with display

PI-016-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



Product characteristics			
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue 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 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	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]	50		



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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...16 bar	-14.6...232 psi	-0.1...1.6 MPa
Set point SP	-0.98...16 bar	-14.2...232.1 psi	-0.098...1.6 MPa
Reset point rP	-1...15.98 bar	-14.5...231.7 psi	-0.1...1.598 MPa
Analogue start point	-1...12.8 bar	-14.5...185.6 psi	-0.1...1.28 MPa
Analogue end point	2.2...16 bar	31.9...232.1 psi	0.22...1.6 MPa
Min. difference between SP and rP	0.03 bar	0.4 psi	0.003 MPa
In steps of	0.01 bar	0.1 psi	0.001 MPa



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Factory setting		SP1 = 4.00bar	rP1 = 3.68 bar
		SP2 = 12.00 bar	rP2 = 11.68 bar
		ASP = 0.00 bar	AEP = 16.00 bar
		dAP = 0.06 s	dAA = 0.06 s
Temperature monitoring			
Measuring range	-25...150 °C		-13...302 °F
Accuracy / deviations			
Switch point accuracy	[X21]	< ± 0,2; (DIN EN IEC 62828-1; Turn down 1:1)	
Repeatability	[X21]	< ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)	
Characteristics deviation	[X21]	< ± 0,2; (DIN IEC EN 62828-1 incl. zero point and span error, non-linearity, hysteresis; Turn down 1:1)	
Linearity deviation	[X21]	< ± 0,15; (Turn down 1:1)	
Hysteresis deviation	[X21]	< ± 0,15; (Turn down 1:1)	
Long-term stability	[X21]	< ± 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)		
IO-Link revision	1.1		
SDCI standard	IEC 61131-9		
Profiles	Identification and Diagnosis (0x4000), Measurement Data Channel (0x800A)		
SIO mode	yes		



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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	1147

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 [ANN]	214	
Note on approval	factory certificate available as download at www.factory-certificate.ifm	
UL approval	UL Approval no.	J049
	File number UL	E174189

Mechanical data		
Weight [g]	384.7	
Materials	stainless steel (316L/1.4404); FKM; PTFE; PBT; PEI; PFA	
Materials (wetted parts)	ceramics (99.9 % Al ₂ O ₃); 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.	

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.	



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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