



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



ACS



CRN



EC 1935/2004

EHEDG

Tested

FCM



Reg31



UK

CA

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		
Vacuum resistance [MPa]	-0.1		
Type of pressure	relative pressure; vacuum		
No dead space	yes		



Flush pressure sensor with display

PI-016-REA01-MFRKG/US/ /P

MAWP (for applications according to CRN)	[bar]	50		
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



Flush pressure sensor with display

PI-016-REA01-MFRKG/US/ /P

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
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 [% 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)	



Flush pressure sensor with display

PI-016-REA01-MFRKG/US/ /P

Interfaces		
Communication interface	IO-Link	
Transmission type	COM2 (38,4 kBaud)	
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]	0.0005	
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 [years]	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	
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	

PI1814



Flush pressure sensor with display

PI-016-REA01-MFRKG/US/ /P

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.
---------------	--------

Electrical connection

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





Flush pressure sensor with display

PI-016-REA01-MFRKG/US/ /P

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

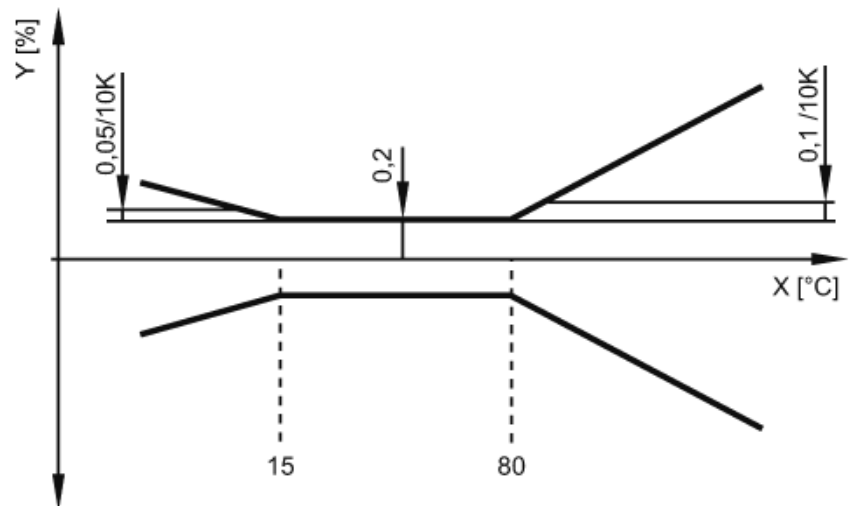


Flush pressure sensor with display

PI-016-REA01-MFRKG/US/ IP

Diagrams and graphs

ambient temperature influence on the accuracy



X temperature
Y total deviation