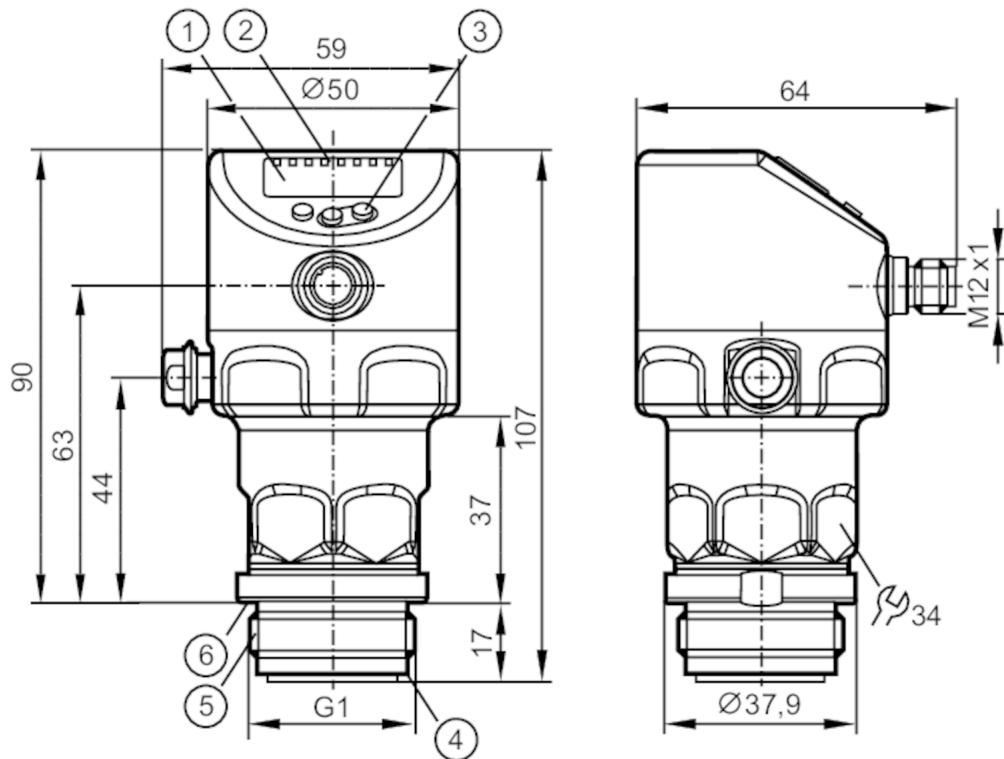


Flush pressure sensor with display

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



- 1 alphanumeric display 4-digit
- 2 status LEDs
- 3 programming button
- 4 groove for sealing ring
- 5 external thread G1 Aseptoflex Vario
- 6 groove with sealing ring (DIN 3869-33)

ACS CRN EC 1935/2004 EHEDG Certified FCM Reg31 UK

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 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	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	

Electrical data

Min. insulation resistance [MΩ]	100; (500 V DC)
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Flush pressure sensor with display

PI-016-REA01-MFRKG/US/ IP

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

Flush pressure sensor with display

PI-016-REA01-MFRKG/USI /P

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		<table border="1"> <thead> <tr> <th>Temperature range</th><th>total deviation</th></tr> </thead> <tbody> <tr> <td>-25...15 °C</td><td>Characteristics deviation ± 0,05 % of the span / 10 K</td></tr> <tr> <td>15...80 °C</td><td>Characteristics deviation</td></tr> <tr> <td>80...150 °C</td><td>Characteristics deviation ± 0,1 % of the span / 10 K</td></tr> </tbody> </table>		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
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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)										

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Flush pressure sensor with display

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IO-Link revision	1.1											
SDCI standard	IEC 61131-9											
Profiles	Identification and Diagnosis (0x4000), Measurement Data Channel (0x800A)											
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)	<table border="1"> <thead> <tr> <th>function</th><th>bit length</th></tr> </thead> <tbody> <tr> <td>pressure</td><td>32</td></tr> <tr> <td>temperature</td><td>32</td></tr> <tr> <td>device status</td><td>4</td></tr> <tr> <td>binary switching information</td><td>2</td></tr> </tbody> </table> application specific tag; internal temperature; operating hours counter; switching cycles counter; Pressure peak counter		function	bit length	pressure	32	temperature	32	device status	4	binary switching information	2
function	bit length											
pressure	32											
temperature	32											
device status	4											
binary switching information	2											
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.	J048										
	File number UL	E174189										
Mechanical data												
Weight [g]	357.8											
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; psi; MPa											
Remarks												
Pack quantity	1 pcs.											

Flush pressure sensor with display

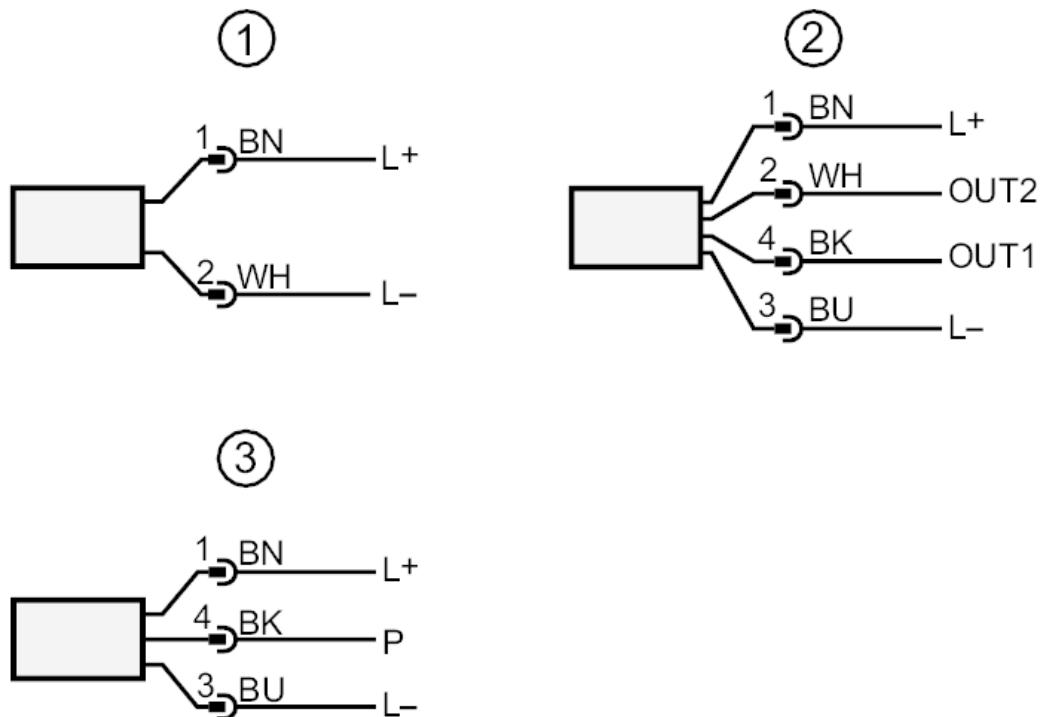
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Electrical connection

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

