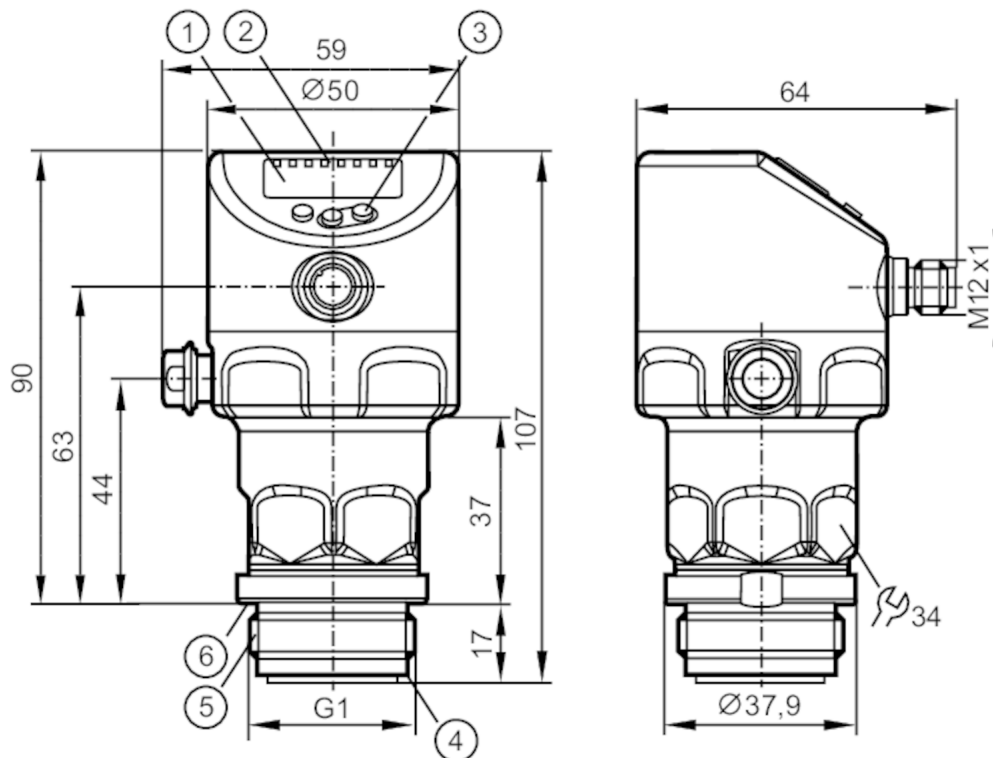


PI1703



Flush pressure sensor with display

PI-025-REA01-MFRKG/US/ I/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



IO-Link

Reg31

UK

CA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analog outputs: 1		
Measuring range	-1...25 bar	-14.5...362.5 psi	-0.1...2.5 MPa
Process connection	threaded connection G 1 external thread Aseptoflex Vario		

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. bursting pressure	350 bar	5075 psi	35 MPa
Pressure rating	100 bar	1450 psi	10 MPa
Vacuum resistance	-1000 mbar	-0.1 MPa	
Type of pressure	relative pressure; vacuum		
No dead space	yes		
MAWP (for applications according to CRN) [bar]	61		

Electrical data

Min. insulation resistance [MΩ]	100; (500 V DC)
---------------------------------	-----------------



Flush pressure sensor with display

PI-025-REA01-MFRKG/US/ /P

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	-1...25 bar	-14.5...362.5 psi	-0.1...2.5 MPa
Set point SP	-0.96...25 bar	-14...362.6 psi	-0.096...2.5 MPa
Reset point rP	-1...24.96 bar	-14.5...362.1 psi	-0.1...2.496 MPa
Analog start point	-1...20 bar	-14.5...290.1 psi	-0.1...2 MPa
Analog end point	4...25 bar	58...362.6 psi	0.4...2.5 MPa
Min. difference between SP and rP	0.04 bar	0.6 psi	0.004 MPa
In steps of	0.01 bar	0.1 psi	0.001 MPa



Flush pressure sensor with display

PI-025-REA01-MFRKG/US/ /P

Factory setting		SP1 = 6.25 bar	rP1 = 5.75 bar
		SP2 = 18.75 bar	rP2 = 18.25 bar
		ASP = 0.00 bar	AEP = 25.00 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	
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	
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-025-REA01-MFRKG/US/ /P

IO-Link revision	1.1										
SDCI standard	IEC 61131-9										
Profiles	<table> <tr> <th>Function class</th><th>Description</th></tr> <tr> <td>0x4000</td><td>Identification and Diagnosis</td></tr> <tr> <td>0x800A</td><td>Measurement Data Channel (standard resolution)</td></tr> </table>	Function class	Description	0x4000	Identification and Diagnosis	0x800A	Measurement Data Channel (standard resolution)				
Function class	Description										
0x4000	Identification and Diagnosis										
0x800A	Measurement Data Channel (standard resolution)										
SIO mode	yes										
Required master port class	A										
Min. process cycle time [ms]	5.6										
IO-Link resolution pressure [bar]	0.001										
IO-Link resolution temperature [K]	0.2										
IO-Link process data (cyclical)	<table> <tr> <th>Function</th><th>bit length</th></tr> <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> </table>	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										
IO-Link functions (acyclical)	application specific tag; internal temperature; operating hours counter; switching cycles counter; Pressure peak counter										
Supported DeviceIDs	<table> <tr> <th>Type of operation</th><th>DeviceID</th></tr> <tr> <td>default</td><td>1157</td></tr> </table>	Type of operation	DeviceID	default	1157						
Type of operation	DeviceID										
default	1157										
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	<table> <tr> <td>UL approval number</td><td>J035</td></tr> <tr> <td>File number UL</td><td>E174189</td></tr> </table>	UL approval number	J035	File number UL	E174189						
UL approval number	J035										
File number UL	E174189										
Mechanical data											
Weight [g]	358.2										
Housing	tubular										
Dimensions [mm]	Ø 50 / L = 107										
Material	stainless steel (1.4404 / 316L); FKM; PTFE; PBT; PEI; PFA										
Materials (wetted parts)	ceramics (99.9 % Al ₂ O ₃); stainless steel (1.4435 / 316L); 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										

PI1703



Flush pressure sensor with display

PI-025-REA01-MFRKG/US/ IP

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-025-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 / analog output
- 3 connection for IO-Link parameter setting (P = communication via IO-Link)

Colors to DIN EN 60947-5-2

Core colors

BK = black
 BN = brown
 BU = blue
 WH = white



Flush pressure sensor with display

PI-025-REA01-MFRKG/US/ IP

Diagrams and graphs

ambient temperature influence on the accuracy



X temperature
Y total deviation