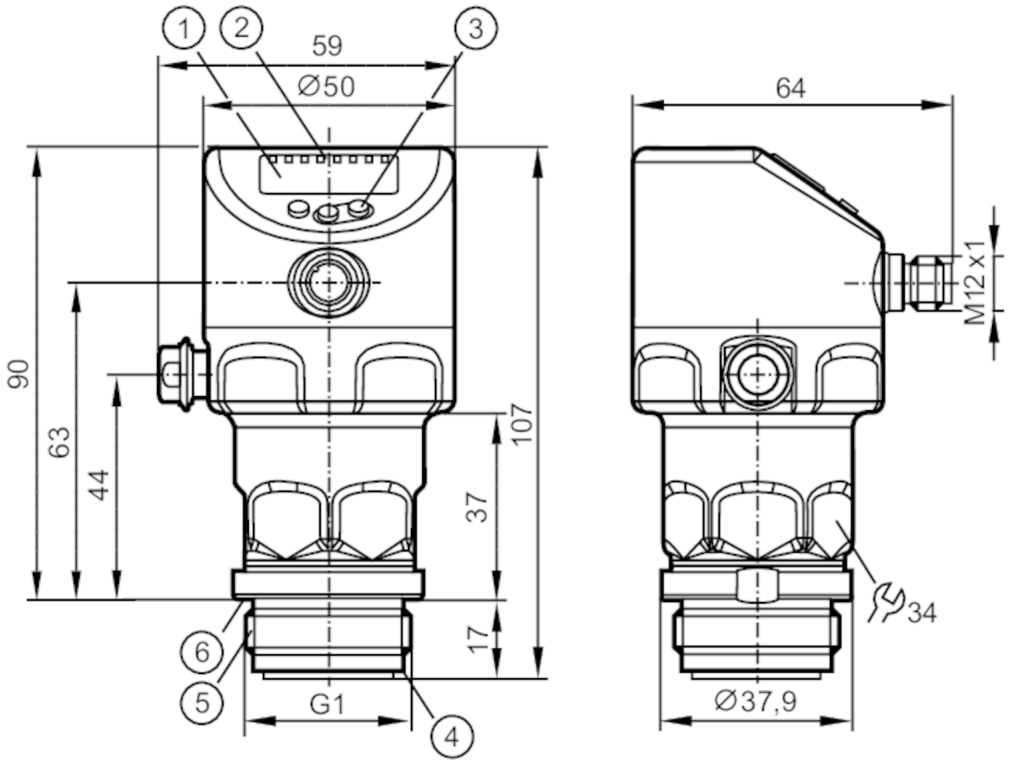
PI1717

Flush pressure sensor with display

PI-1,6-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)

3A ACS CE CRN cULus LISTED EC 1935/2004 EHEDG Certified FCM FDA IO-Link Reg31 UKCA

Product characteristics				
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1			
Measuring range	-100...1600 mbar	-1.46...23.2 psi	-40...642.5 inH2O	-10...160 kPa
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	40000 mbar	580 psi	4000 kPa	
Pressure rating	15000 mbar	215 psi	1500 kPa	
Vacuum resistance [mbar]	-1000			
Type of pressure	relative pressure; vacuum			
No dead space	yes			
MAWP (for applications according to CRN) [bar]	1.6			
Electrical data				
Min. insulation resistance [MΩ]	100; (500 V DC)			

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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	-100...1600 mbar	-1.46...23.2 psi	-40...642.5 inH2O	-10...160 kPa
Set point SP	-98...1600 mbar	-1.42...23.21 psi	-39.2...642.3 inH2O	-9.8...160 kPa
Reset point rP	-100...1598 mbar	-1.45...23.17 psi	-40.1...641.4 inH2O	-10...159.8 kPa
Analogue start point	-100...1272 mbar	-1.45...18.45 psi	-40.1...510.6 inH2O	-10...127.2 kPa
Analogue end point	228...1600 mbar	3.31...23.21 psi	91.6...642.3 inH2O	22.8...160 kPa
Min. difference between SP and rP	3 mbar	0.04 psi	1 inH2O	0.3 kPa
In steps of	1 mbar	0.01 psi	0.1 inH2O	0.1 kPa

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Factory setting		SP1 =400 mbar	rP1 = 368 mbar
		SP2 = 1200 mbar	rP2 = 1168 mbar
		ASP = 0.00 mbar	AEP = 1600 mbar
		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)	
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)

Interfaces

Communication interface	IO-Link
Transmission type	COM2 (38,4 kBaud)

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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	[mbar]	0.05	
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	1149
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]	357.3	
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		mbar; psi; kPa; inH2O	
Remarks			
Pack quantity		1 pcs.	

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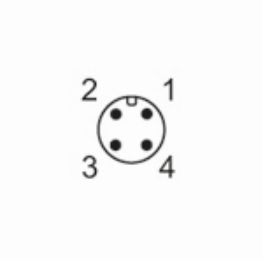
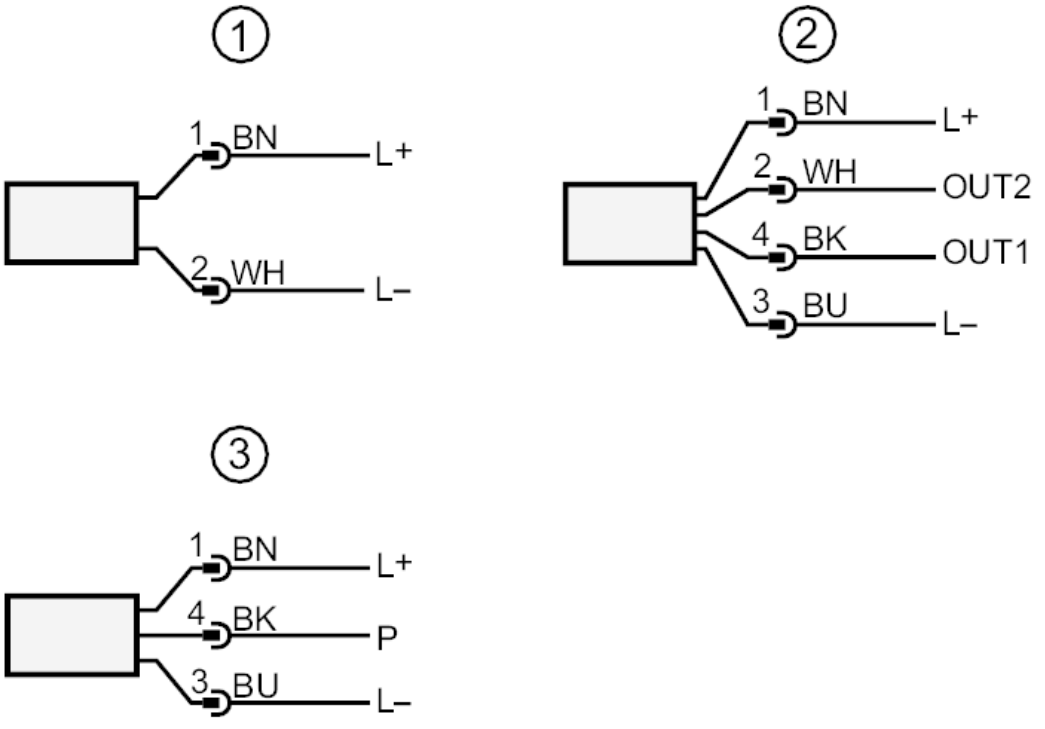
Electrical connection

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

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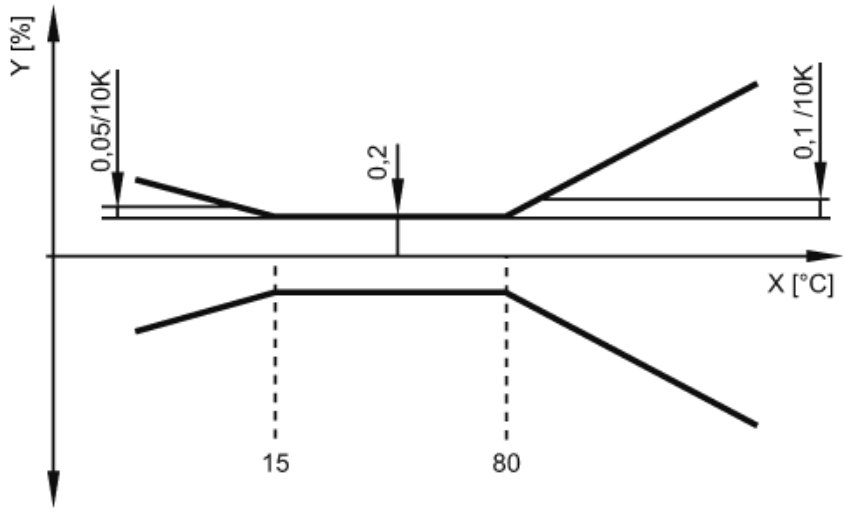
Diagrams and graphs

ambient temperature influence on the accuracy



X temperature

Y total deviation