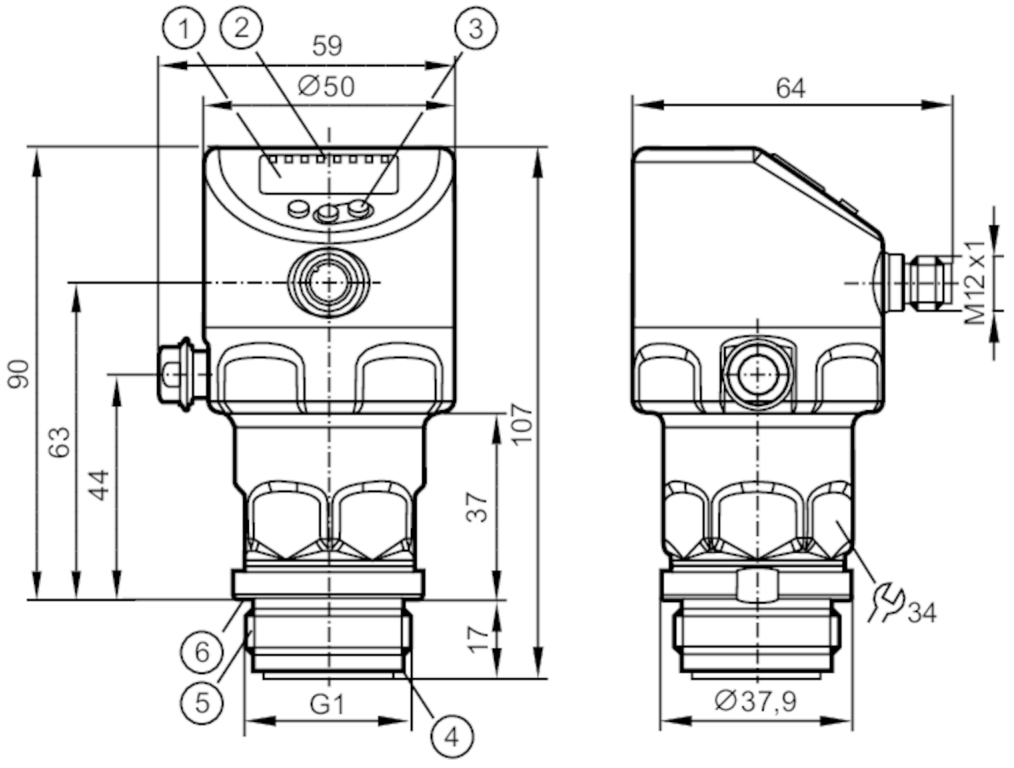
PI1703

Flush pressure sensor with display

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

When selecting an alternative article and accessories please note that technical data may differ!



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)

Product characteristics			
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue 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			
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	350 bar	5075 psi	35 MPa
Pressure rating	100 bar	1450 psi	10 MPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		
MAWP (for applications according to CRN) [bar]	61		

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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...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
Analogue start point		-1...20 bar	-14.5...290.1 psi	-0.1...2 MPa
Analogue 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

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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	

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	[bar]	0.001	
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	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		UL Approval no.	J035
		File number UL	E174189

Mechanical data

Weight	[g]	358.2	
Materials		stainless steel (1.4404 / 316L); FKM; PTFE; PBT; PEI; PFA	
Materials (wetted parts)		ceramics (99.9 % Al2O3); 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	

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.	

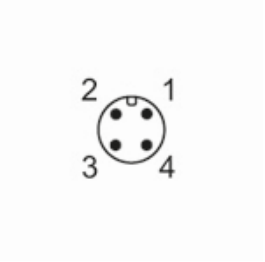
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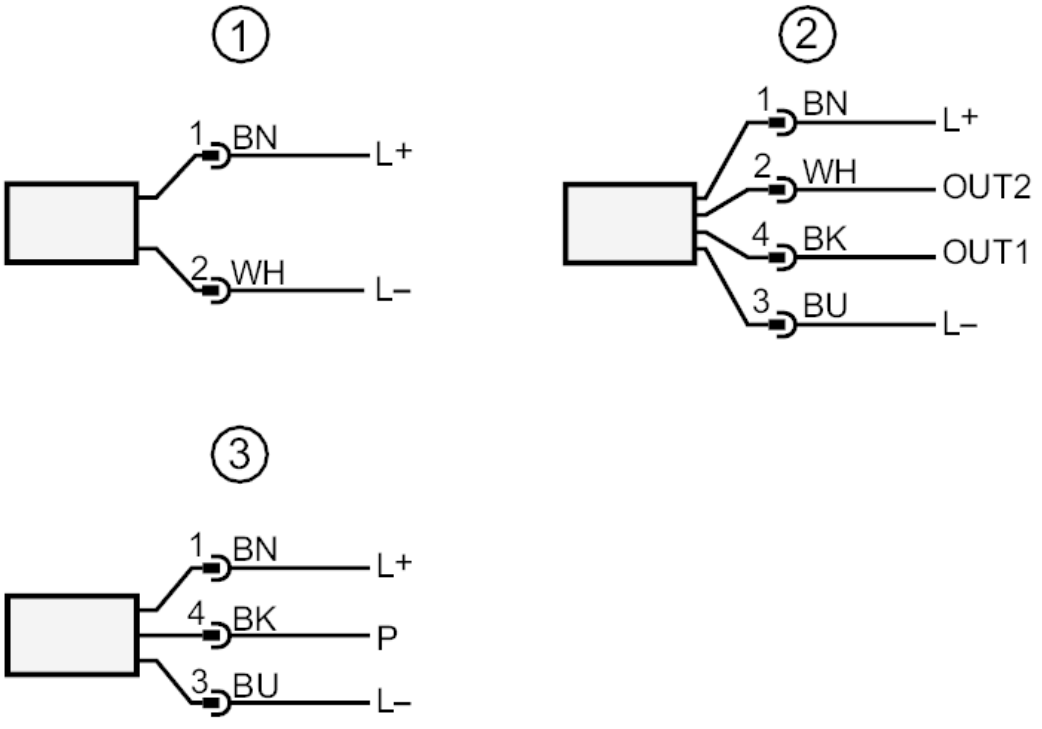
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Electrical connection

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

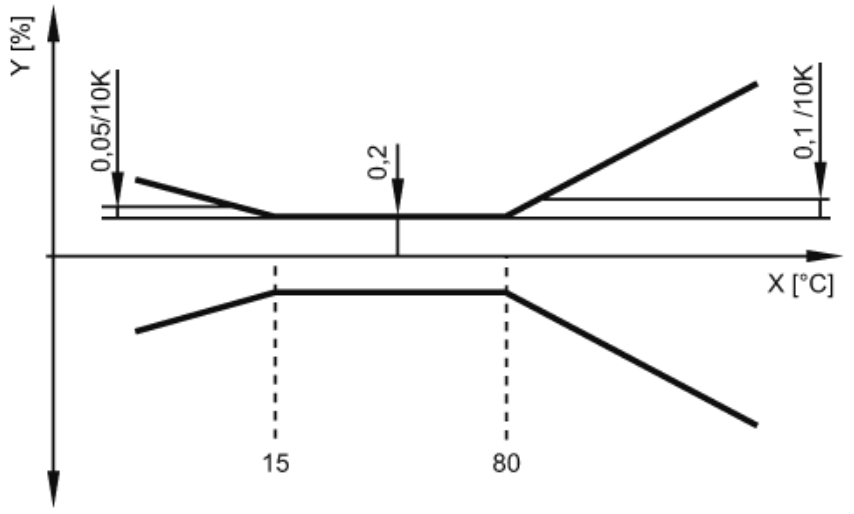
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Diagrams and graphs

ambient temperature influence on the accuracy



X temperature

Y total deviation