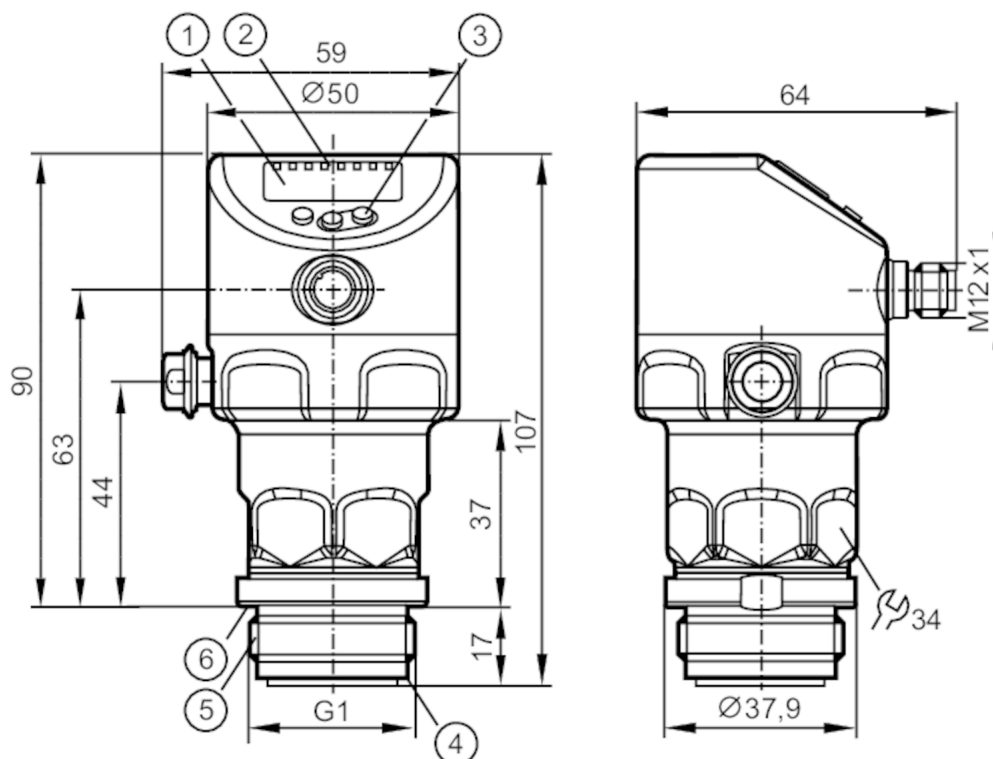


Flush pressure sensor with display

PI-,10BREA01-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



IO-Link

Reg31



UK

CA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1			
Measuring range	-0.005...0.1 bar	-5...100 mbar	-2...40.15 inH ₂ O	-0.5...10 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	30000 mbar	12044 inH2O	3000 kPa
Pressure rating	4000 mbar	1606 inH2O	400 kPa
Vacuum resistance	-1000 mbar	-0.1 MPa	
Type of pressure	relative pressure; vacuum		
No dead space	yes		
MAWP (for applications according to CRN) [bar]	4		

Electrical data

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

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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	-0.005...0.1 bar	-5...100 mbar	-2...40.15 inH2O	-0.5...10 kPa
Set point SP	-0.0049...0.1 bar	-4.9...100 mbar	-1.95...40.15 inH2O	-0.49...10 kPa
Reset point rP	-0.005...0.099 bar	-5...99.9 mbar	-2.01...40.09 inH2O	-0.5...9.99 kPa
Analogue start point	-0.005...0.08 bar	-5...80 mbar	-2.01...32.12 inH2O	-0.5...8 kPa
Analogue end point	0.015...0.1 bar	15...100 mbar	6.02...40.15 inH2O	1.5...10 kPa
Min. difference between SP and rP	0.0002 bar	0.2 mbar	0.06 inH2O	0.02 kPa
In steps of	0.0001 bar	0.1 mbar	0.01 inH2O	0.01 kPa



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Factory setting		SP1 =25 mbar	rP1 = 23 mbar
		SP2 = 75 mbar	rP2 = 73 mbar
		ASP = 0 mbar	AEP = 100 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]		< ± 0,5; (DIN EN IEC 62828-1; Turn down 1:1)	
Repeatability [% of the span]		< ± 0,2; (with temperature fluctuations < 10 K; Turn down 1:1)	
Characteristics deviation [% of the span]		< ± 0,5; (DIN IEC EN 62828-1 incl. zero point and span error, non-linearity, hysteresis; Turn down 1:1)	
Linearity deviation [% of the span]		< ± 0,25; (Turn down 1:1)	
Hysteresis deviation [% of the span]		< ± 0,2; (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 ± 0,15 % of the span / 10 K
		15...80 °C	Characteristics deviation
		80...150 °C	Characteristics deviation ± 0,2 % 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)		



Flush pressure sensor with display

PI-,10BREA01-MFRKG/US/ /P

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 [mbar]	0.005	
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	1158
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	
Housing	cylindrical	
Dimensions [mm]	Ø 50 / L = 107	
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	

PI1789



Flush pressure sensor with display

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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; kPa; inH2O	

Remarks

Pack quantity	1 pcs.
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Electrical connection

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

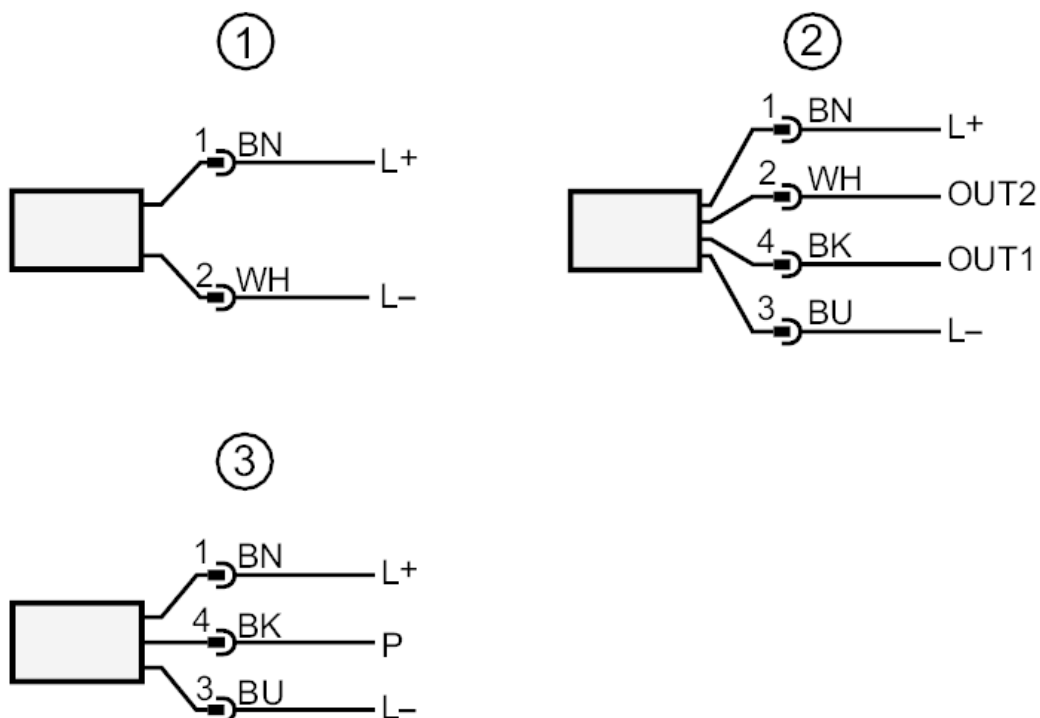




Flush pressure sensor with display

PI-,10BREA01-MFRKG/US/ /P

Connection



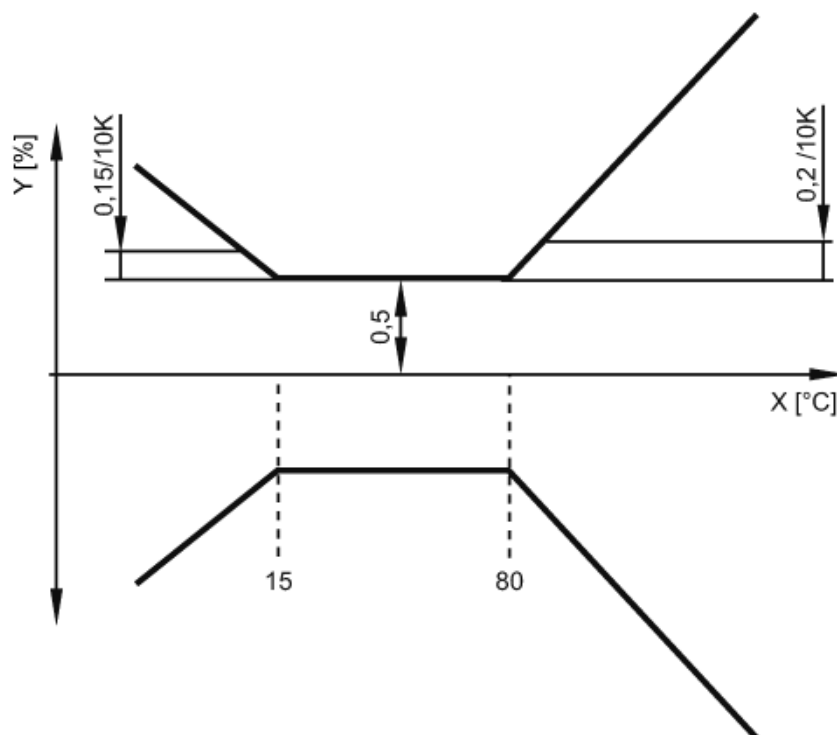
- 1 connection for 2-wire operation
- 2 connection for 3-wire operation
- OUT1 switching output / IO-Link
- OUT2 switching output / analogue output
- 3 connection for IO-Link parameter setting (P = communication via IO-Link)
- colours to DIN EN 60947-5-2
- Core colours
- BK = black
- BN = brown
- BU = blue
- WH = white



Flush pressure sensor with display

PI-,10BREA01-MFRKG/US/ /P

Diagrams and graphs



X temperature
Y total deviation