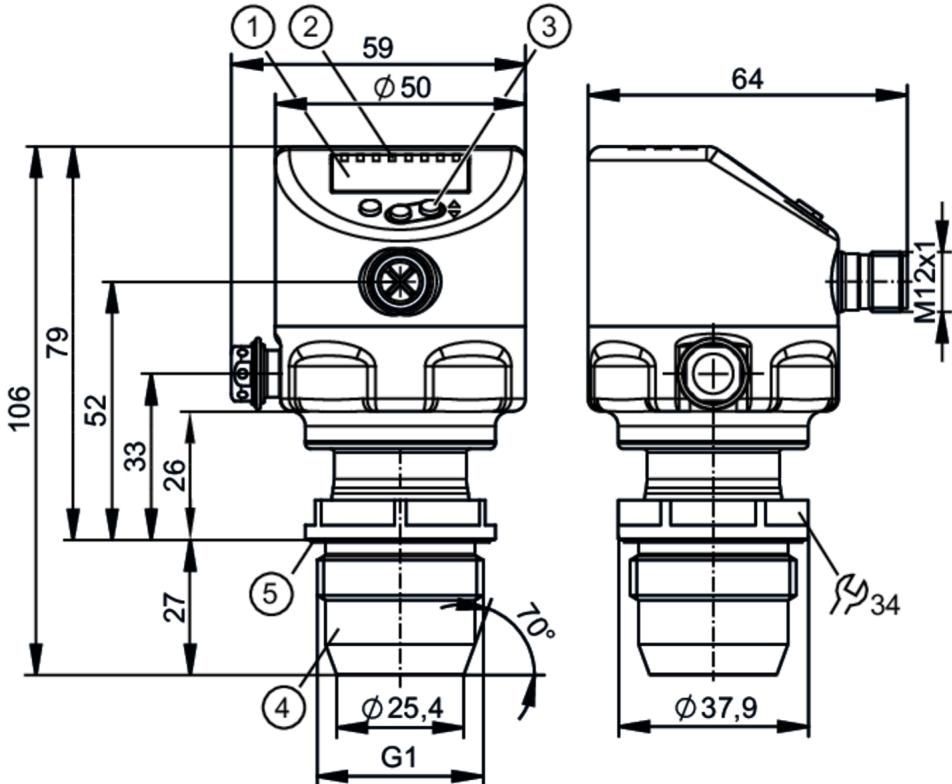


Flush pressure sensor with display

PI-40BREA01-MFRKG/US/ IP



1 alphanumeric display 4-digit

2 status LEDs

3 programming button

4 G1 sealing cone external thread

Attention: The unit must only be installed in a process connection for G1 sealing cone.

The G1A sealing cone of the unit is only suited for adapters with metal end stop.

5 groove with sealing ring

Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1		
Measuring range	-50...400 mbar	-20...160.6 inH2O	-5...40 kPa
Process connection	threaded connection G 1 external thread sealing cone Attention: The unit must only be installed in a process connection for G1 sealing cone.; The G1A sealing cone of the unit is only suited for adapters with metal end stop.		

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	8000 mbar	3200 inH2O	800 kPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		
MAWP (for applications according to CRN) [bar]	8		

Flush pressure sensor with display

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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	-50...400 mbar	-20...160.6 inH2O	-5...40 kPa
Set point SP	-49.4...400 mbar	-19.8...160.6 inH2O	-4.94...40 kPa
Reset point rP	-50...399.4 mbar	-20.1...160.3 inH2O	-5...39.94 kPa
Analogue start point	-50...320 mbar	-20.1...128.5 inH2O	-5...32 kPa
Analogue end point	30...400 mbar	12...160.6 inH2O	3...40 kPa
Min. difference between SP and rP	0.6 mbar	0.3 inH2O	0.06 kPa
In steps of	0.1 mbar	0.1 inH2O	0.01 kPa

Flush pressure sensor with display

PI-40BREA01-MFRKG/US/ /P

Factory setting	SP1 = 100 mbar SP2 = 300 mbar ASP = 0.00 mbar dAP = 2.00 s	rP1 = 92 mbar rP2 = 292 mbar AEP = 400 mbar 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 ± 0,1 % of the span / 10 K
	15...80 °C	Characteristics deviation
	80...150 °C	Characteristics deviation ± 0,15 % 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)	

PI1818

Flush pressure sensor with display

PI-40BREA01-MFRKG/US/ IP



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]	0.02											
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	1189										
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.	J049										
	File number UL	E174189										
Mechanical data												
Weight [g]	395											
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]	20											
Process connection	threaded connection G 1 external thread sealing cone Attention: The unit must only be installed in a process connection for G1 sealing cone.; The G1A sealing cone of the unit is only suited for adapters with metal end stop.											
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; mmWS											

Flush pressure sensor with display

PI-40BREA01-MFRKG/US/ /P

Remarks

Pack quantity

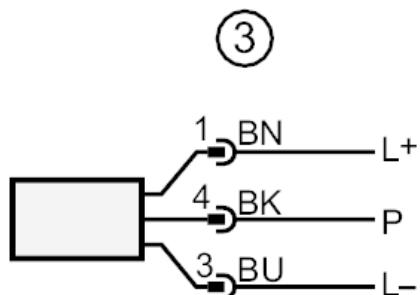
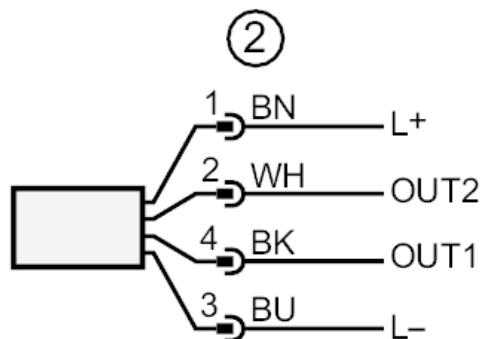
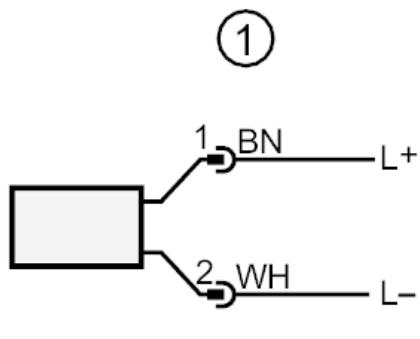
1 pcs.

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

PI-40BREA01-MFRKG/US/ IP

Diagrams and graphsambient temperature influence on
the accuracy