

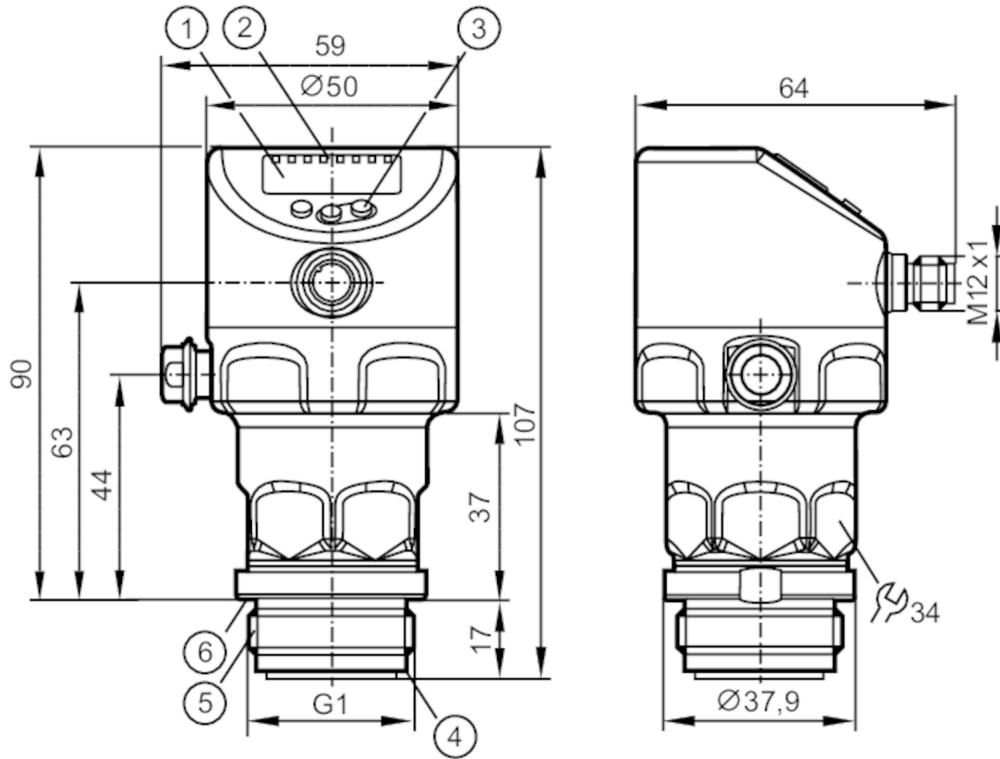
PI1708



Flush pressure sensor with display

PI-,25BREA01-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)



ACS



c UL LISTED

us

EC 1935/2004

EHDG Certified

FCM

FDA

IO-Link

Reg31

UK

CA

CA

CA

CA

CA

CA

CA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analog outputs: 1			
Measuring range	-12.4...250 mbar	-5...100.4 inH ₂ O	-1.24...25 kPa	-126...2550 mmWS
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	30000 mbar	12044 inH ₂ O	3000 kPa
Pressure rating	6000 mbar	2400 inH ₂ O	600 kPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		

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 analog outputs: 1
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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]	($U_b - 10 \text{ V}$) / 21,5 mA; 650 Ω ($U_b = 24 \text{ V}$)

Measuring/setting range

Measuring range	-12.4...250 mbar	-5...100.4 inH2O	-1.24...25 kPa	-126...2550 mmWS
Set point SP	-12...250 mbar	-4.8...100.4 inH2O	-1.2...25 kPa	-122...2549 mmWS
Reset point rP	-12.4...249.6 mbar	-5...100.2 inH2O	-1.24...24.96 kPa	-126...2545 mmWS
Analog start point	-12.4...199.4 mbar	-5...80.1 inH2O	-1.24...19.94 kPa	-126...2033 mmWS
Analog end point	38.2...250 mbar	15.3...100.4 inH2O	3.82...25 kPa	390...2549 mmWS
Min. difference between SP and rP	0.5 mbar	0.2 inH2O	0.05 kPa	5 mmWS
In steps of	0.1 mbar	0.1 inH2O	0.01 kPa	1 mmWS

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Factory setting	SP1 = 62.5 mbar	rP1 = 57.5 mbar
	SP2 = 187.5 mbar	rP2 = 182.5 mbar
	ASP = 0.00 mbar	AEP = 250 mbar
	dAP = 2.00 s	dAA = 2.00 s

Temperature monitoring

Measuring range	-25...150 °C	-13...302 °F
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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 % der Spanne / 10 K
	15...80 °C	Characteristics deviation
	80...150 °C	Characteristics deviation ± 0,15 % der Spanne / 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
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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)
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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 class	A										
Min. process cycle time [ms]	5.6										
IO-Link resolution pressure [mbar]	0.01										
IO-Link resolution temperature [K]	0.2										
IO-Link process data (cyclical)	<table border="1"><tr><td>Function</td><td>bit length</td></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 border="1"><tr><td>Type of operation</td><td>DeviceID</td></tr><tr><td>default</td><td>1152d</td></tr></table>	Type of operation	DeviceID	default	1152d						
Type of operation	DeviceID										
default	1152d										

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 border="1"><tr><td>UL approval number</td><td>J048</td></tr><tr><td>File number UL</td><td>E174189</td></tr></table>	UL approval number	J048	File number UL	E174189
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Mechanical data	
Weight [g]	375.6
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

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; inH ₂ O; mmWS	

Remarks	
Pack quantity	1 pcs.

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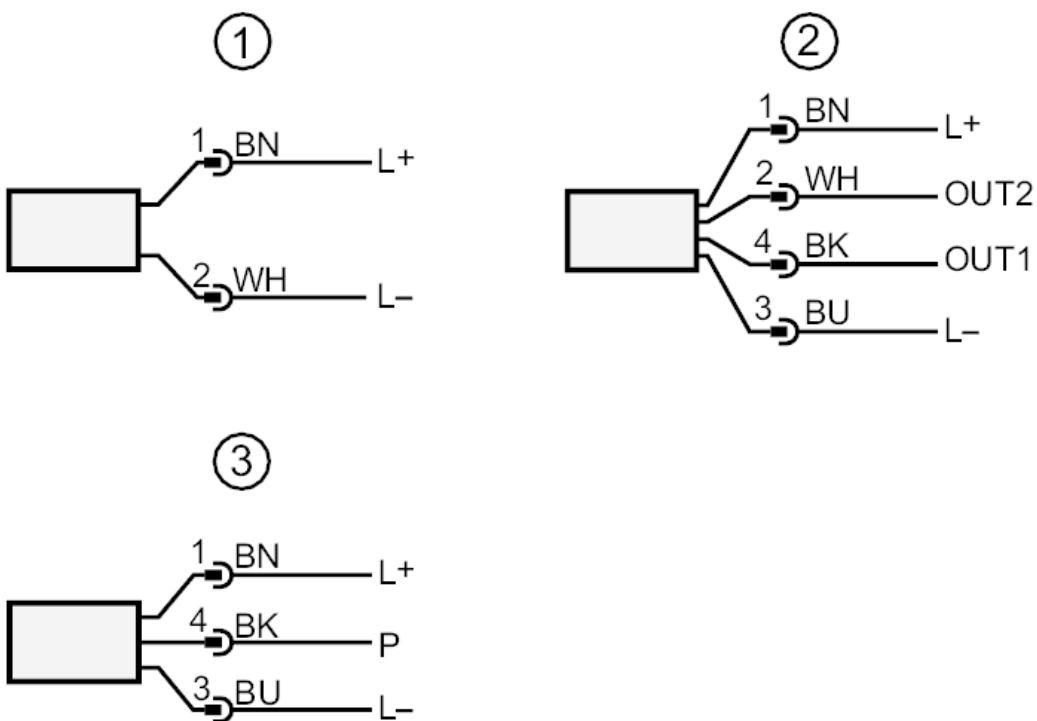
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Electrical connection

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 / 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

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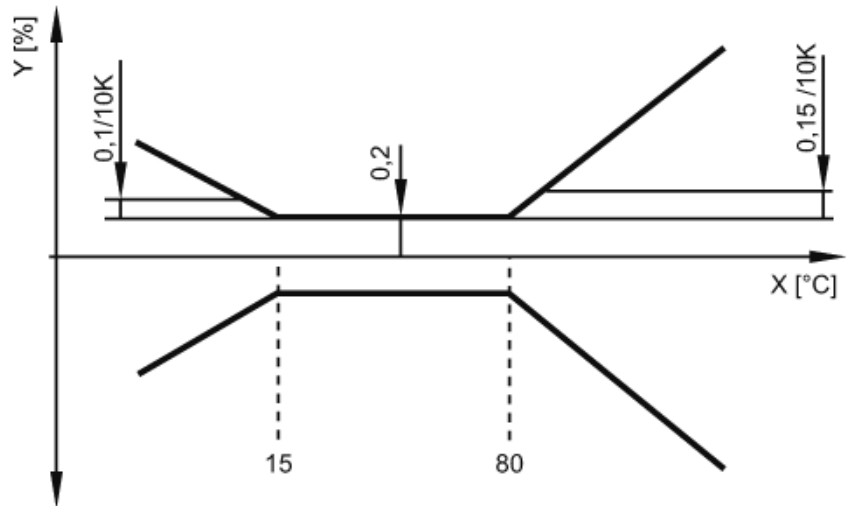


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Diagrams and graphs

ambient temperature influence on the accuracy



X temperature
Y total deviation