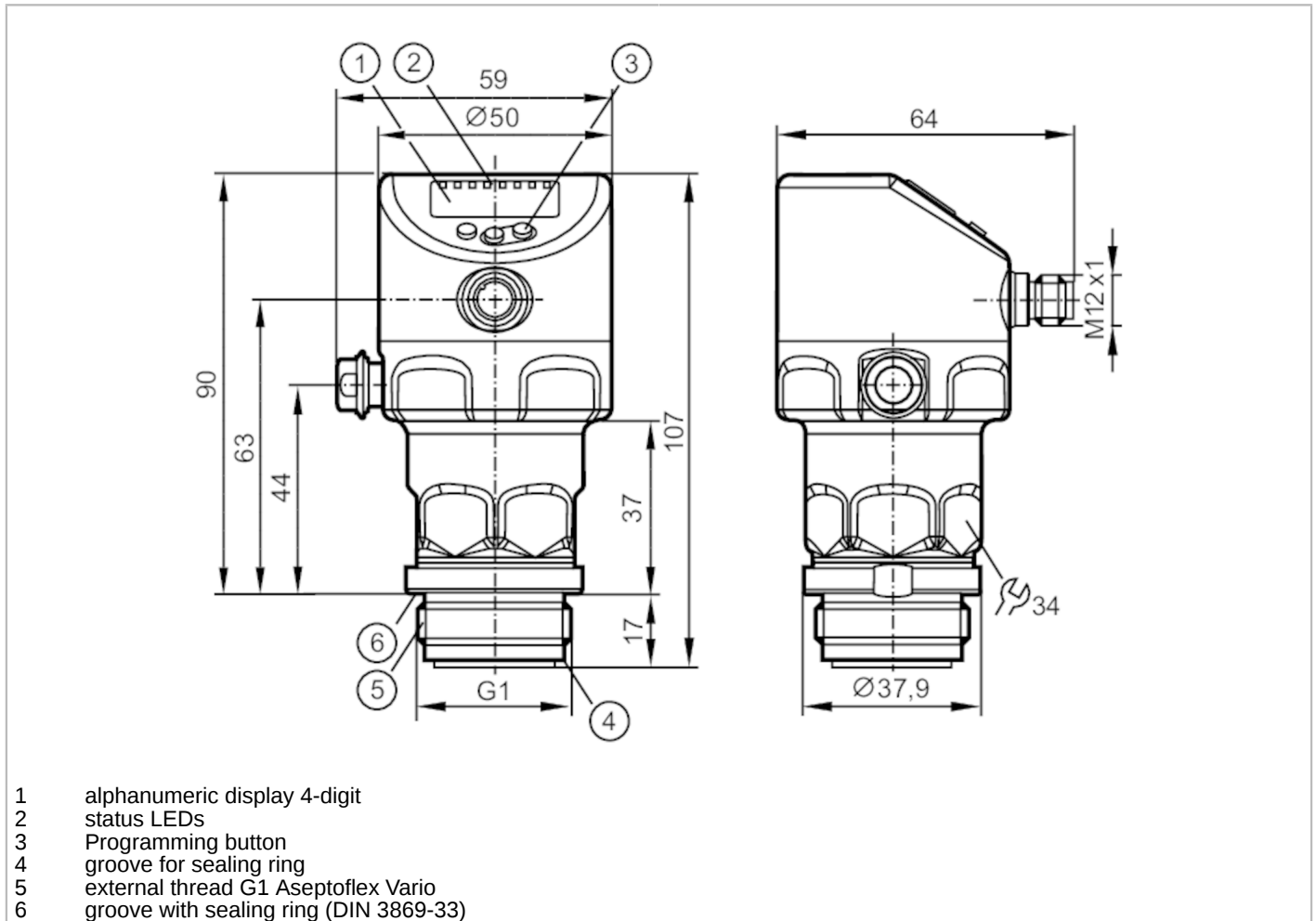


PI1707



Flush pressure sensor with display

PI-001BREA01-MFRKG/US/ /P



ACS



CRN



EC 1935/2004

EHEDG Certified

FCM

FDA

IO-Link

NSF

Reg31

TSDP/TÜV

UK

CA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analog outputs: 1			
Measuring range	-50...1000 mbar	-0.72...14.5 psi	-20...401.5 inH2O	-5...100 kPa
Process connection	threaded connection G 1 external thread mit Dichtkontur Aseptoflex Vario			
Note	G1 Gewinde nach ISO 228. Alternativ dichtend über rückwärtige Dichtkontur mit Dichtung in Anlehnung an DIN EN ISO 1179-2.			

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. burst pressure	30000 mbar	435 psi	3000 kPa
Pressure rating	10000 mbar	145 psi	1000 kPa
Vacuum resistance	-1000 mbar		-0.1 MPa
Type of pressure	relative pressure; vacuum		
No dead space	yes		

PI1707



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MAWP (for applications according to CRN)	[bar]	10			
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 analog outputs: 1			
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 V) / 21,5 mA; 650 Ω (U _b = 24 V)			
Measuring/setting range					
Measuring range		-50...1000 mbar	-0.72...14.5 psi	-20...401.5 inH2O	-5...100 kPa
Set point SP		-49...1000 mbar	-0.7...14.5 psi	-19.5...401.5 inH2O	-4.9...100 kPa
Reset point rP		-50...999 mbar	-0.73...14.48 psi	-20.1...400.9 inH2O	-5...99.9 kPa
Analog start point		-50...800 mbar	-0.73...11.6 psi	-20.1...321.2 inH2O	-5...80 kPa
Analog end point		150...1000 mbar	2.18...14.5 psi	60.2...401.5 inH2O	15...100 kPa

PI1707



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Min. difference between SP and rP	2 mbar	0.03 psi	0.6 inH2O	0.2 kPa
In steps of	1 mbar	0.01 psi	0.1 inH2O	0.1 kPa
Factory setting	SP1 = 250 mbar		rP1 = 230 mbar	
	SP2 = 750 mbar		rP2 = 730 mbar	
	ASP = 0.00 mbar		AEP = 1000 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)	
Zero-point stabilization [% of the span]	IO-Link, analog output	0,15; (see operating instructions zero-point behavior)
	Display, Switching output	0,2
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

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

3-wire	
Min. response time of switching output (dAP) [ms]	3
Step response time analog output [ms]	7

PI1707



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PI-001BREA01-MFRKG/US/ /P

Temperature monitoring		
Dynamic response T05 / T09	[s]	< 45 / < 200; (DIN EN 60751 water ; > 0,9 m/s)
Interfaces		
Communication interface	IO-Link	
Transmission type	COM2 (38,4 kBaud)	
IO-Link revision	1.1	
SDCI standard	IEC 61131-9	
Profiles	Common - I&D	Identification and Diagnosis
	Function	Measurement data, high resolution
SIO mode	yes	
Required master port class	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; measuring cell diagnosis	
Supported DeviceIDs	Type of operation	DeviceID
	default	1153
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
UL approval	UL approval number	J048
	File number UL	E174189
Mechanical data		
Weight	[g]	356.9
Housing	tubular	
Dimensions	[mm]	Ø 50 / L = 107
Material	Housing: stainless steel (1.4404 / 316L); Pushbuttons: PBT; sealings: FKM; M12 connector: PEI; Display: PFA; ventilation diaphragm: PTFE	
Materials (wetted parts)	measuring cell: ceramics (99.9 % Al2O3); Process connection: stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; sealing: PTFE	
Min. pressure cycles	100 million	
Tightening torque	[Nm]	35
Process connection	threaded connection G 1 external thread mit Dichtkontur Aseptoflex Vario	

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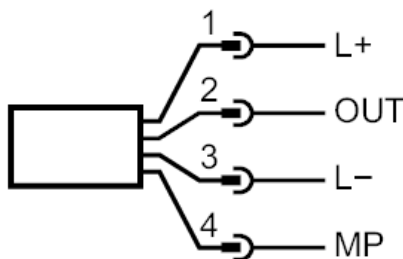
Displays / operating elements		
Display	Display unit	LED, green
	Switching status	LED, yellow
	Function display	alphanumeric display, 4-digit
	Measured values	alphanumeric display, 4-digit
Display unit	mbar; psi; kPa; inH2O	

Remarks	
Pack quantity	1 pcs.

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



Connection



2-wire		
1	L+	
2	OUT	AO

3-wire		
1	L+	
2	OUT	DO2 (NO/NC), AO
3	L-	
4	MP	DO1 (NO/NC), IO-Link

Parameter setting		
1	L+	
3	L-	
4	MP	IO-Link

PI1707

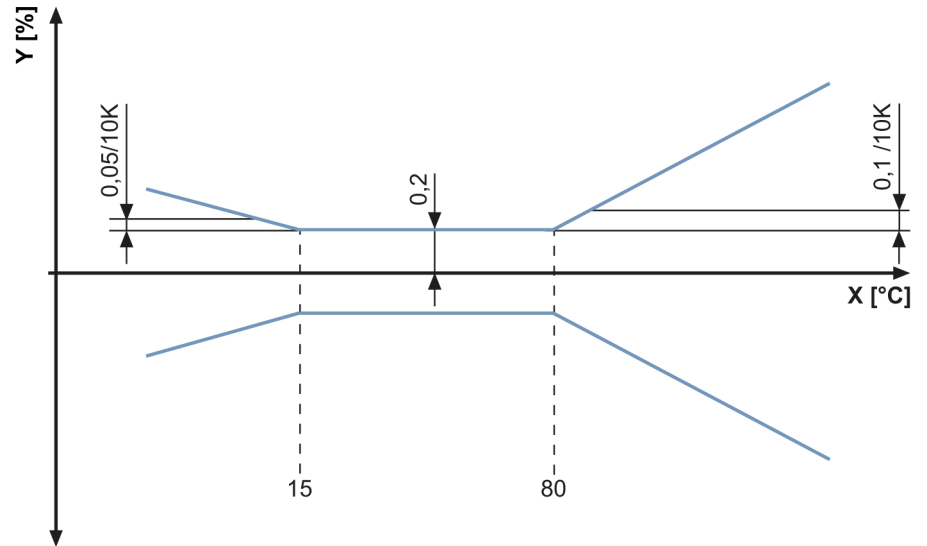


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Diagrams and graphs

ambient temperature influence on the accuracy



X temperature
Y total deviation