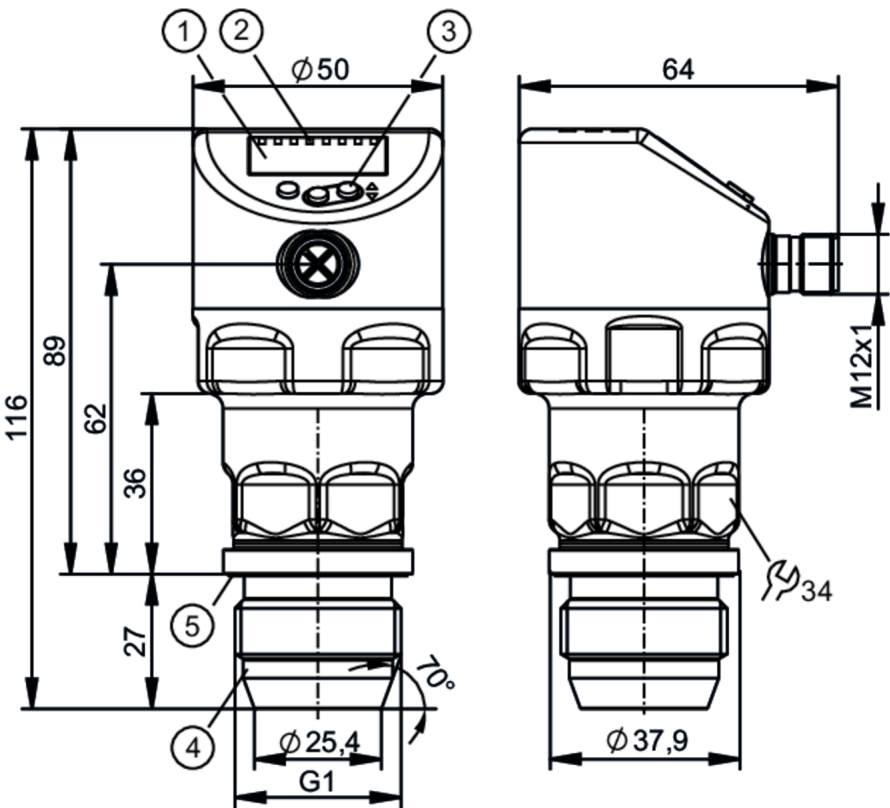


PI1602



Flush pressure sensor with display

PI-100-REA01-MFRKG/US/ I/P



- 1 alphanumeric display 4-digit
- 2 status LEDs
- 3 Programming button
- 4 G1 sealing cone external thread
- 5 groove with sealing ring (DIN 3863-33)

ACS EC 1935/2004 FCM Reg31 TSDP/TÜV

UK
CA

Product characteristics			
Number of inputs and outputs	Number of digital outputs: 2; Number of analog outputs: 1		
Measuring range	-1...100 bar	-14...1450 psi	-0.1...10 MPa
Process connection	threaded connection G 1 external thread sealing cone - 27 mm		
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; use in gases at pressures > 25 bar only on request		
Medium temperature	-25...150		
Min. burst pressure	650 bar	9425 psi	65 MPa
Pressure rating	200 bar	2900 psi	20 MPa
Vacuum resistance	-1000 mbar	-0.1 MPa	
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		
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]	(Ub - 10 V) / 21,5 mA; 650 Ω (Ub = 24 V)	
Measuring/setting range			
Measuring range	-1...100 bar	-14...1450 psi	-0.1...10 MPa
Set point SP	-0.9...100 bar	-12...1450 psi	-0.09...10 MPa
Reset point rP	-1...99.9 bar	-15...1448 psi	-0.1...9.9 MPa
Analog start point	-1...80 bar	-15...1160 psi	-0.1...8 MPa
Analog end point	19...100 bar	276...1450 psi	1.9...10 MPa
Min. difference between SP and rP	0.2 bar	3 psi	0.02 MPa
In steps of	0.1 bar	1 psi	0.01 MPa



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Factory setting		SP1 = 25 bar	rP1 = 23 bar
		SP2 = 75 bar	rP2 = 73 bar
		ASP = 0.00 bar	AEP = 100 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]	< ± 0,5; (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]	< ± 0,5; (DIN IEC EN 62828-1 incl. zero point and span error, non-linearity, hysteresis; Turn down 1:1)		
Linearity deviation [% of the span]	< ± 0,15; (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 ± 0,15 % 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		
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		
Temperature monitoring			
Dynamic response T05 / T09 [s]	< 45 / < 200; (DIN EN 60751 water ; > 0,9 m/s)		



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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 [bar]	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; measuring cell diagnosis	
Supported DeviceIDs	Type of operation	DeviceID
	default	1150
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	J034
	File number UL	E174189
Mechanical data		
Weight [g]	395.1	
Housing	tubular	
Dimensions [mm]	Ø 50 / L = 116	
Material	Housing: stainless steel (1.4404 / 316L); Pushbuttons: PBT; sealings: FKM; M12 connector: PEI; Display: PFA	
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]	20	
Process connection	threaded connection G 1 external thread sealing cone - 27 mm	

PI1602



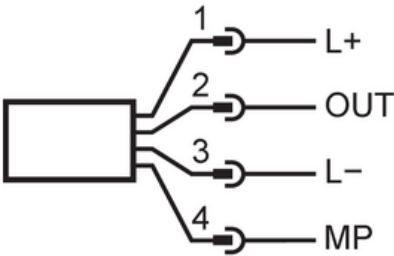
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Displays / operating elements		
Display	Display unit	LED, green
	Switching status	LED, yellow
	Function display	alphanumeric display, 4-digit
	Measured values	alphanumeric display, 4-digit
Display unit	bar; psi; MPa	

Remarks	
Pack quantity	1 pcs.

Electrical connection	
Connector: 1 x M12; coding: A; Contacts: 4, 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	



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Diagrams and graphs

