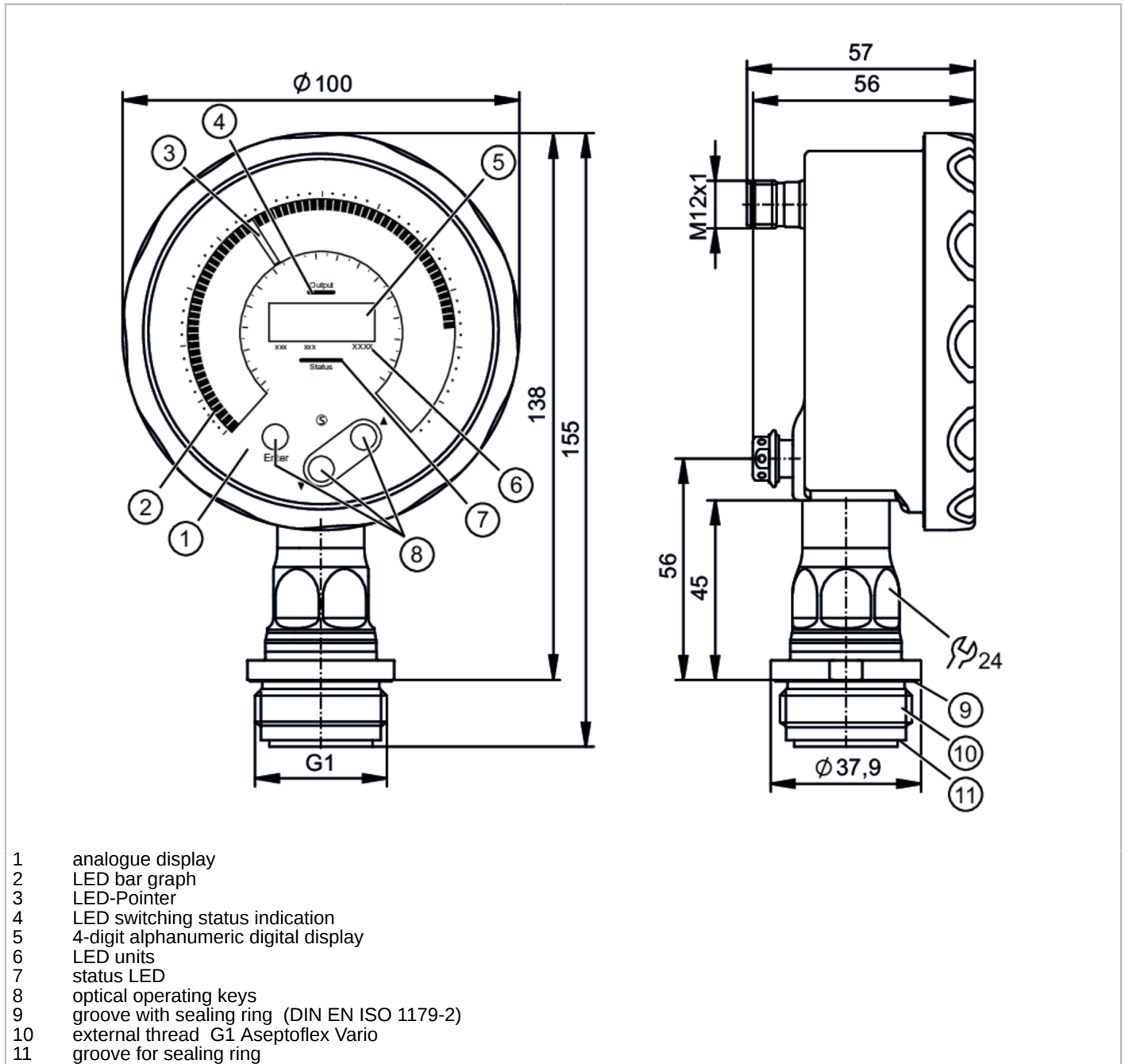


PG1704



Flush pressure sensor with display

PG-010-REA01-MFRKG/US/ IP



Product characteristics	
Number of inputs and outputs	Number of digital outputs: 1; Number of analogue outputs: 1
Measuring range	-1...10 bar -14.5...145 psi
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	
Special feature	Gold-plated contacts
Measuring element	ceramic-capacitive pressure measuring cell
Application	flush mountable for the food and beverage industry

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Media	viscous media and liquids with suspended particles; liquids and gases	
Medium temperature [°C]	-25...150	
Min. burst pressure	150 bar	2175 psi
Pressure rating	50 bar	725 psi
Vacuum resistance	-1000 mbar	14.5 psi
Type of pressure	relative pressure; vacuum	
No dead space	yes	

Electrical data		
Operating voltage [V]	18...30 DC	
Current consumption [mA]	25...260	
Min. insulation resistance [MΩ]	100; (500 V DC)	
Protection class	III	
Reverse polarity protection	yes	
Power-on delay time [s]	< 0.5	
Integrated watchdog	yes	

Inputs / outputs	
Number of inputs and outputs	Number of digital outputs: 1; 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	1	
Output function	normally open / normally closed; (parameterisable)	
Max. voltage drop switching output DC [V]	2	
Permanent current rating of switching output DC [mA]	100	
Switching frequency DC [Hz]	125	
Number of analogue outputs	1	
Analogue current output [mA]	4...20, invertible; (scalable)	
Max. load [Ω]	500	
Short-circuit protection	yes	
Type of short-circuit protection	pulsed	
Overload protection	yes	

Measuring/setting range		
Measuring range	-1...10 bar	-14.5...145 psi
Set point SP	-1...10 bar	-14.5...145 psi
Analogue start point	-1...8 bar	-14.5...116 psi
Analogue end point	1...10 bar	14.5...145 psi
In steps of	0.01 bar	0.2 psi

Measuring range (bar)			
Factory setting	SP1 = 2.5 bar		
	SP2 = 2.3 bar		
	ASP = 0.00 bar		AEP = 10.00 bar
	dAP = 0.06 s		dAA = 0.06 s



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Measuring range (psi)									
Factory setting	<table border="1"> <tr> <td>SP1 = 36.3 psi</td> <td></td> </tr> <tr> <td>SP2 = 33.4 psi</td> <td></td> </tr> <tr> <td>ASP = 0.00 psi</td> <td>AEP = 145 psi</td> </tr> <tr> <td>dAP = 0.06 s</td> <td>dAA = 0.06 s</td> </tr> </table>	SP1 = 36.3 psi		SP2 = 33.4 psi		ASP = 0.00 psi	AEP = 145 psi	dAP = 0.06 s	dAA = 0.06 s
SP1 = 36.3 psi									
SP2 = 33.4 psi									
ASP = 0.00 psi	AEP = 145 psi								
dAP = 0.06 s	dAA = 0.06 s								
Temperature monitoring									
Measuring range	-25...150 °C -13...302 °F								
Resolution of display [K]	1								
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 stabilisation [% of the span]	<table border="1"> <tr> <td>IO-Link, analogue output</td> <td>0,1; (see operating instructions zero-point behaviour)</td> </tr> <tr> <td>display, switching output</td> <td>0,2</td> </tr> </table>	IO-Link, analogue output	0,1; (see operating instructions zero-point behaviour)	display, switching output	0,2				
IO-Link, analogue output	0,1; (see operating instructions zero-point behaviour)								
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	<table border="1"> <thead> <tr> <th>Temperature range</th> <th>total deviation</th> </tr> </thead> <tbody> <tr> <td>-25...15 °C</td> <td>Characteristics deviation ± 0,05 % of the span / 10 K</td> </tr> <tr> <td>15...80 °C</td> <td>Characteristics deviation</td> </tr> <tr> <td>80...150 °C</td> <td>Characteristics deviation ± 0,1 % of the span / 10 K</td> </tr> </tbody> </table>	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
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]	± 0.8 + (0.16 x (ambient temperature - medium temperature))								
Repeatability [K]	± 0,2								
Response times									
Min. response time of switching output (dAP) [ms]	3								
Damping process value dAP [s]	0...99.99								
Damping for the analogue output dAA [s]	0...99.99								
Step response time analogue output [ms]	7								
Temperature monitoring									
Dynamic response T05 / T09 [s]	< 55 / < 270; (DIN EN 60751 water ; > 0,9 m/s)								
Interfaces									
Communication interface	IO-Link								
Transmission type	COM3 (230,4 kBaud)								



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IO-Link revision	1.1	
SDCI standard	IEC 61131-9	
Profiles	Smart Sensor - SSP 4.2.2	Measuring and Switching Sensor, high resolution, 2 channel
	BLOB	Binary Large Object transfer
	Common - I&D	Identification and Diagnosis
	Extension	Sensor Control Wide
	Extension	Quantity detection, switches when value exceeds the setpoint
	Function	Locator
	Function	ProductURI
	SIO mode	yes
Required master port type	A	
Min. process cycle time [ms]	1.3	
IO-Link resolution pressure [bar]	0.0005	
IO-Link resolution temperature [K]	0.1	
IO-Link process data (cyclical)	function	bit length
	pressure	32
	temperature	32
	device status	4
	binary switching information pressure	2
	binary switching information temperature	2
IO-Link functions (acyclical)	application specific tag; internal temperature; operating hours counter; switching cycles counter; Pressure peak counter; Temperature peak counter	
Supported DeviceIDs	Type of operation	DeviceID
	default	1695

Operating conditions		
Ambient temperature [°C]	-25...70	
Storage temperature [°C]	-40...100	
Protection	IP 67; IP 69; (to DIN EN 60529)	

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	10 g (10...2000 Hz)
MTTF [years]	115	
Embedded software included	yes	
UL approval	UL approval no.	J058
	File number UL	E174189

Mechanical data		
Weight [g]	655.6	
Housing	manometer housing	
Dimensions [mm]	155 x 100 x 57	
Materials	Housing: stainless steel (316L/1.4404); M12 connector: PPSU; Sealing: FKM; pressure compensation element: PTFE; viewing glass: laminated safety glass 4 mm	
Materials (wetted parts)	measuring cell: ceramics (99.9 % Al ₂ O ₃); Process connection: stainless steel (316L/1.4435) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; Sealing: PTFE	
Min. pressure cycles	100 million	

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Tightening torque	[Nm]	35
Process connection	threaded connection G 1 external thread mit Dichtkontur Aseptoflex Vario	

Displays / operating elements

Display	Pointer	LED, white ; 72 steps
	LED bar graph	multi-colour ; 72 steps
	measured values	alphanumeric display, white 4-digit
	switching status	LED, yellow
	device status	LED, red/green
	Display unit	LED, white
	Display	display rotation: 320°
Display unit	bar; psi; °C; °F	
Operating elements	3	optical operating keys

Remarks

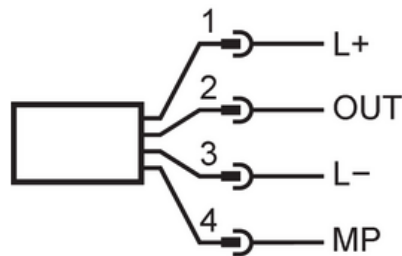
Pack quantity	1 pcs.
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Electrical connection

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



Connection



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

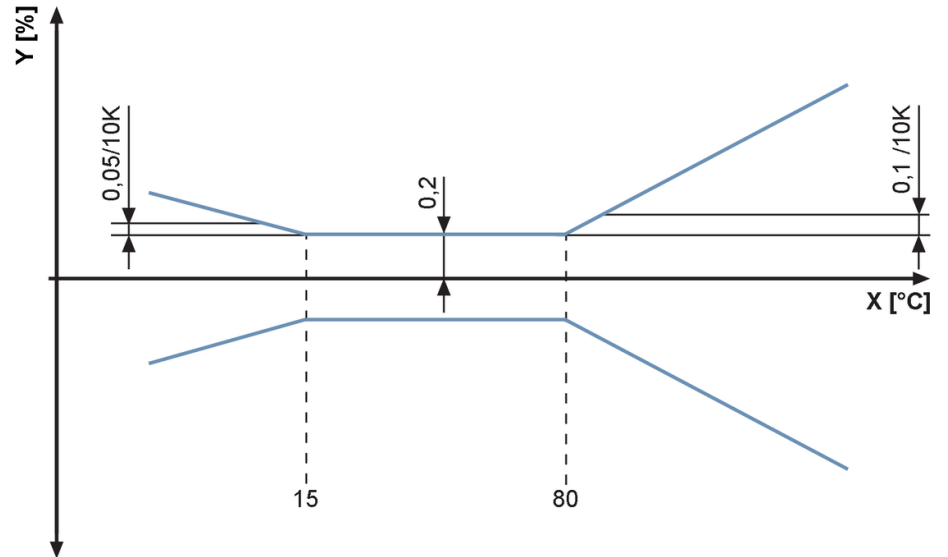


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Diagrams and graphs

ambient temperature influence on the accuracy



X temperature
Y total deviation