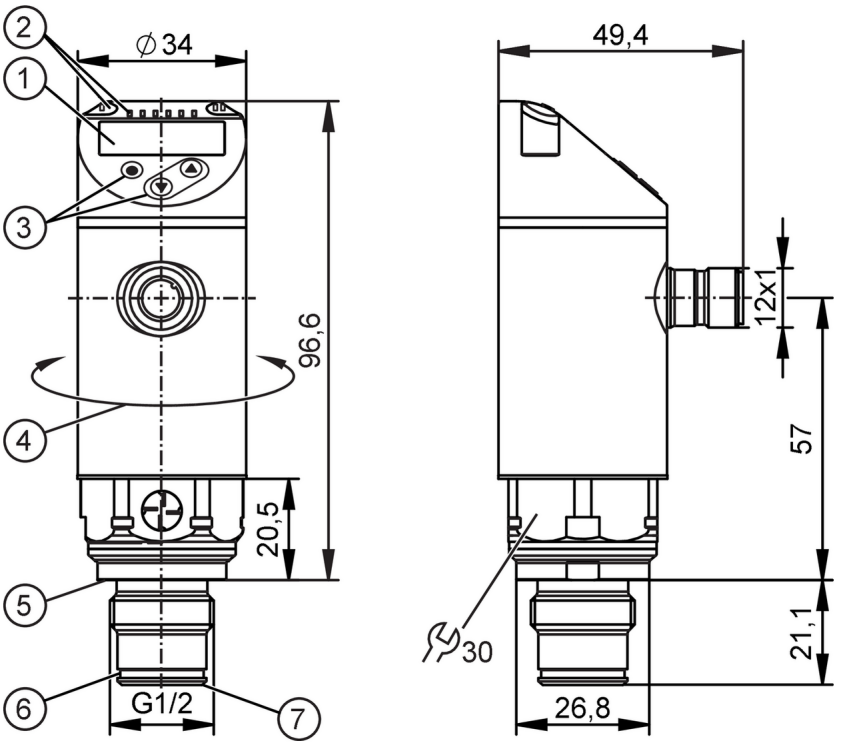
PF1503

Pressure sensor with display

PF-025-REA12-MFRKG/US//P



1 4-digit alphanumeric display with colour change red / green
2 LEDs Display unit / switching status
3 programming buttons
4 upper part of the housing can be rotated 330°
5 Sealing DIN EN ISO 1179-2
6 groove for O-ring 16.4 x 1.0 (up to 60 bar)
7 area for metal sealing

ACS CE IO-Link UKCA

Product characteristics			
Number of inputs and outputs		Number of digital outputs: 2; Number of analogue outputs: 1	
Measuring range		-1...25 bar	-0.1...2.5 MPa
Process connection		threaded connection G 1/2 external thread - 21 mm	
Application			
Special feature		Gold-plated contacts	
Measuring element		ceramic-capacitive pressure measuring cell	
Temperature monitoring		yes	
Application		flush mountable for industrial applications; for industrial applications	
Media		viscous media and liquids with suspended particles; Liquids; other media on request	
Medium temperature	[°C]	-25...80; (flush mount zero-leak using metal-to-metal seal. for permissible temperatures of other sealing versions, see sealing materials under “Accessories”)	
Min. burst pressure		280 bar	28 MPa
Pressure rating		130 bar	13 MPa
Vacuum resistance	[mbar]	-1000	
Type of pressure		relative pressure; vacuum	
No dead space		yes	
Electrical data			
Operating voltage	[V]	18...32 DC	

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Current consumption	[mA]	15...40; (240 at max. load current)
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: 2; Number of analogue outputs: 1

Outputs

Total number of outputs		2
Output signal		switching signal; analogue signal; IO-Link; (configurable)
Electrical design		PNP/NPN
Number of digital outputs		2
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]	< 170
Number of analogue outputs		1
Analogue current output	[mA]	4...20; (scalable 1:10)
Max. load	[Ω]	500
Analogue voltage output	[V]	0...10; (scalable 1:10)
Min. load resistance	[Ω]	2000
Short-circuit protection		yes
Type of short-circuit protection		pulsed
Overload protection		yes

Measuring/setting range

Measuring range	-1...25 bar	-0.1...2.5 MPa
Set point SP	-1...25 bar	-0.1...2.5 MPa
Analogue start point	-1...22.5 bar	-0.1...2.25 MPa
Analogue end point	1.5...25 bar	0.15...2.5 MPa
In steps of	0.01 bar	0.001 MPa

Measuring range (MPa)

Factory setting	SSC1.1 SP1 = 0.625 MPa		SSC1.1 SP2 = 0.575 MPa
	SSC1.2 SP1 = 1.875 MPa		SSC1.2 SP2 = 1.825 MPa
	ASP = 0.00 MPa		AEP = 2.5 MPa
	dAP = 0.06 s		dAA = 0.06 s

Measuring range (bar)

Factory setting	SSC1.1 SP1 = 6.25 bar		SSC1.1 SP2 = 5.75 bar
	SSC1.2 SP1 = 18.75 bar		SSC1.2 SP2 = 18.25 bar
	ASP = 0.00 bar		AEP = 25 bar
	dAP = 0.06 s		dAA = 0.06 s

Temperature monitoring

Measuring range	[°C]	-25...120

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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 stabilisation [% of the span]	IO-Link, analogue output	0,25; (see operating instructions zero-point behaviour)
	display, switching output	0,5
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)	
Temperature coefficient zero point [% of the span / 10 K]	< ± 0,1; (-25...80 °C)	
Temperature coefficient span [% of the span / 10 K]	< ± 0,1; (-25...80 °C)	
Temperature monitoring		
Accuracy [K]	± 2 + (0,045 x (Ambient temperature - Medium temperature))	
Repeatability [K]	± 0,2	
Response times		
Response time [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]	3	
Temperature monitoring		
Dynamic response T05 / T09 [s]	< 10 / < 45; (DIN EN 60751 water; > 0,9 m/s)	
Software / programming		
Parameter setting options	hysteresis / window; normally open / normally closed; switch-on/ switch-off delay; Damping; Display unit; current/voltage output	
Interfaces		
Communication interface	IO-Link	
Transmission type	COM3 (230,4 kBaud)	
IO-Link revision	1.1	
SDCI standard	IEC 61131-9	
Profiles	Smart Sensor - SSP 4.1.2	Measuring and Switching Sensor, 2 channel
	Common - I&D	Identification and Diagnosis
	Extension	Quantity detection, switches when value exceeds the setpoint
	Function	Locator
	Function	ProductURI
SIO mode	yes	

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Required master port type		A	
Min. process cycle time	[ms]	1	
IO-Link resolution pressure	[bar]	0.005	
IO-Link resolution temperature	[K]	0.2	
IO-Link process data (cyclical)		**function**	**bit length**
		pressure	16
		temperature	16
		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	1977
Note		For further information please see the IODD PDF file under "Downloads"	
Operating conditions			
Ambient temperature	[°C]	-25...80	
Storage temperature	[°C]	-40...100	
Protection		IP 65; 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]	245	
Embedded software included		yes	
Mechanical data			
Weight	[g]	215	
Housing		cylindrical	
Dimensions	[mm]	Ø 34 / L = 117.8	
Materials		Housing: stainless steel (316L/1.4404); Operating units: PBT, PC; sealings: FKM; pressure compensation element: PTFE	
Materials (wetted parts)		measuring cell: Al2O3 (ceramics); Process connection: stainless steel (316L/1.4435) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; Sealing: PTFE; (FKM for sealing with seal DIN EN ISO 1179-2, see operating instructions)	
Min. pressure cycles		100 million	
Tightening torque	[Nm]	25	
Process connection		threaded connection G 1/2 external thread - 21 mm	
Displays / operating elements			
Display		Display unit	2x LED, green (bar, MPa)
		switching status	2 x LED, yellow
		measured values	alphanumeric display, red/green 4-digit
Operating elements			3 pushbuttons
Accessories			
Items supplied		Gasket: G1/2, FKM DIN EN ISO1179-2 (-15...80°C), E30492	

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Accessories (optional)	Gasket: G1/2, EPDM DIN EN ISO1179-2 (-25...80°C), E30451
	Gasket: G1/2, FFKM DIN EN ISO1179-2 (-5...80°C), E30513
	O-ring: 16,4 x 1, FKM (-15...80°C), E30510
	O-ring: 16,4 x 1, EPDM (-25...80°C), E30511
	O-ring: 16,4 x 1, FFKM (-5...80°C), E30512
	cover for filter system: E30605

Remarks

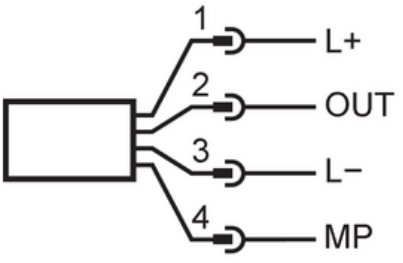
Pack quantity	1 pcs.

Electrical connection - plug

Connector: 1 x M12; coding: A; Contacts: 4, gold-plated



Connection



plug

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