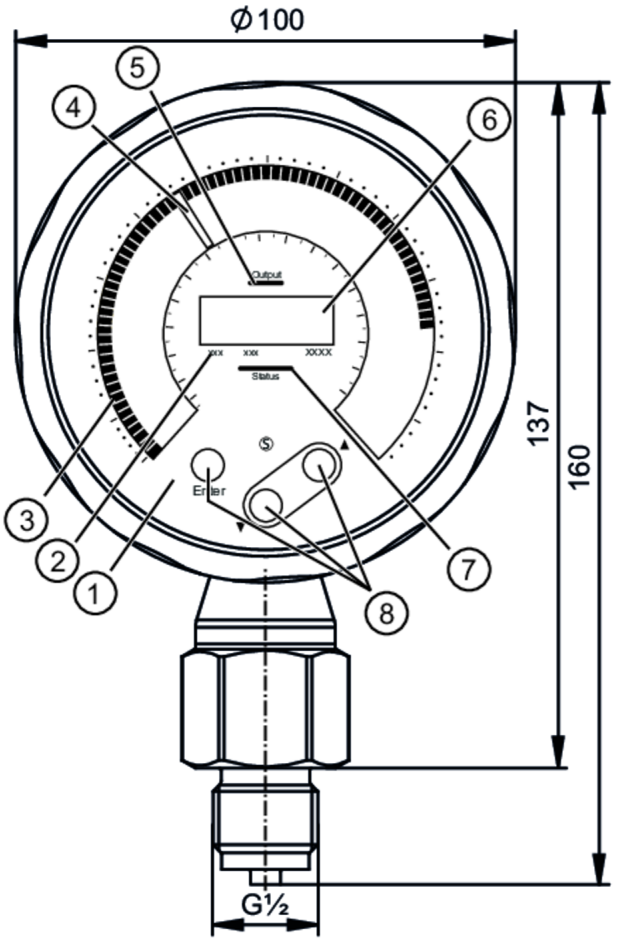
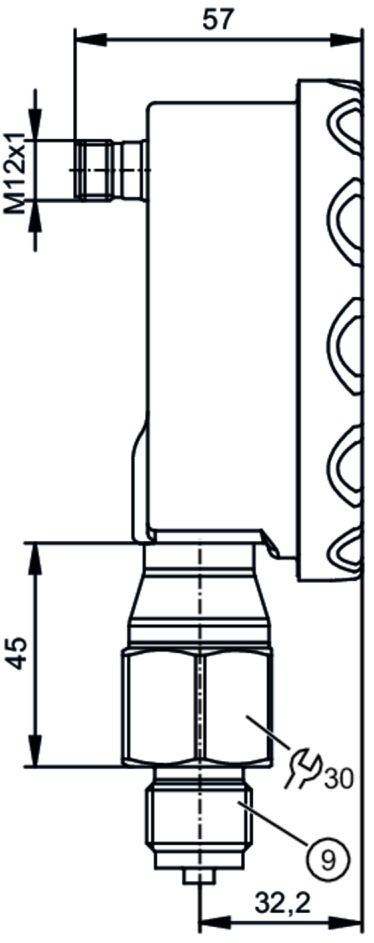
PG1412

Pressure sensor with analog display

PG-160-REB12-MFRKG/US/ /P





1	analog display
2	LED units
3	colored LED ring
4	LED pointer
5	switching status LED
6	4-digit alphanumeric digital display
7	Status LED
8	optical operating keys
9	threaded connection G 1/2 external thread DIN EN 837-1

Product characteristics			
Number of inputs and outputs		Number of digital outputs: 1; Number of analog outputs: 1	
Measuring range		0...160 bar	0...2321 psi
Process connection		threaded connection G 1/2 external thread DIN EN 837-1	
Application			
System		gold-plated contacts	
Application		for industrial applications	
Media		liquids and gases	
Medium temperature	[°C]	-25...80; (higher temperature upon request)	
Min. burst pressure		750 bar	10878 psi
Pressure rating		350 bar	5076 psi

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Vacuum resistance		-1000 mbar	14.5 psi
Type of pressure		relative pressure; vacuum	
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 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		1	
Output function		normally open / closed; (configurable)	
Max. voltage drop switching output DC	[V]	2	
Permanent current rating of switching output DC	[mA]	100	
Switching frequency DC	[Hz]	125	
Number of analog outputs		1	
Analog current output	[mA]	4...20, invertible; (scalable)	
Max. load	[Ω]	500	
Short-circuit protection		yes	
Type of short-circuit protection		yes (non-latching)	
Overload protection		yes	
Measuring/setting range			
Measuring range		0...160 bar	0...2321 psi
Set point SP		0...160 bar	0...2321 psi
Analog start point		0...128 bar	0...1856 psi
Analog end point		32...160 bar	464...2321 psi
In steps of		0.1 bar	2 psi

Measuring range (bar)			
Factory setting	SP1 = 40 bar		
	SP2 = 36.8 bar		
	ASP = 0.00 bar		AEP = 160 bar
	dAP = 0.06 s		dAA = 0.06 s

Measuring range (psi)			
Factory setting	SP1 = 580 psi		
	SP2 = 534 psi		
	ASP = 0.00 psi		AEP = 2321 psi
	dAP = 0.06 s		dAA = 0.06 s

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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)	
Zero-point stabilization [% of the span]	IO-Link, analog output	0,25; (see operating instructions zero-point behavior)
	Display, Switching output	0,5
Hysteresis deviation [% of the span]	< ± 0,15; (Turn down 1:1 -25...80°C)	
Long-term stability [% of the span]	< ± 0,1; (Turn down 1:1; per year)	
Temperature coefficient zero point [% of the span / 10 K]	< ± 0,25; (0...70 °C)	
Temperature coefficient span [% of the span / 10 K]	< ± 0,25; (0...70 °C)	

Reaction times		
Min. response time of switching output (dAP) [ms]	3	
Damping process value dAP [s]	0...99.99	
Damping for the analog output dAA [s]	0...99.99	
Step response time analog output [ms]	7	

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 4.2.1	Measuring and Switching Sensor, high resolution, 1 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 class	A	
Min. process cycle time [ms]	1.3	
IO-Link resolution pressure [bar]	0.005	
IO-Link process data (cyclical)	**Function**	**bit length**
	pressure	32
	device status	4
	binary switching information pressure	2

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IO-Link functions (acyclical)		application specific tag; internal temperature; operating hours counter; switching cycles counter; Pressure peak counter	
Supported DeviceIDs		**Type of operation**	**DeviceID**
		default	1870
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 number	J062
		File number UL	E174189
Mechanical data			
Weight	[g]	689.5	
Housing		manometer housing	
Dimensions	[mm]	160 x 100 x 57	
Material		Housing: stainless steel (1.4404 / 316L); M12 connector: PPSU; sealing: FKM; viewing glass: laminated safety glass 4 mm	
Materials (wetted parts)		measuring cell: Al2O3 (ceramics); Process connection: stainless steel (1.4404 / 316L); sealing: FKM	
Min. pressure cycles		100 million	
Process connection		threaded connection G 1/2 external thread DIN EN 837-1	
Restrictor element integrated		no (can be retrofitted)	
Displays / operating elements			
Display		Pointer	LED, white ; 72 steps
		LED bar graph	multi-color ; 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	
Operating elements		3	optical operating keys
Remarks			
Pack quantity		1 pcs.	
Electrical connection			

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

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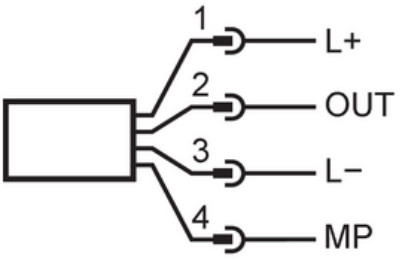
Connection



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