



Pressure sensor with display

PN-100-SER14-MFRKG/US/ IV



- 1 alphanumeric display 4-digit red/green
- 2 LEDs Display unit / switching status
- 3 programming button
- 4 upper part of the housing can be rotated 345°



Product characteristics		
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1	
Measuring range	0...100 bar	0...10 MPa
Process connection	threaded connection G 1/4 internal thread (DIN EN ISO 1179-2)	
Application		
Special feature	Gold-plated contacts	
Measuring element	ceramic-capacitive pressure measuring cell	
Application	for industrial applications	
Media	Liquids	
Conditionally suitable for	use in gases at pressures > 25 bar only on request	
Medium temperature [°C]	-25...80	
Min. bursting pressure	650 bar	65 MPa
Pressure rating	300 bar	30 MPa
Vacuum resistance [mbar]	-1000	
Type of pressure	relative pressure	
Electrical data		
Operating voltage [V]	18...30 DC; (to SELV/PELV)	
Current consumption [mA]	< 35	
Min. insulation resistance [MΩ]	100; (500 V DC)	
Protection class	III	
Reverse polarity protection	yes	



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Power-on delay time	[s]	0.3
Integrated watchdog		yes

Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1
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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] 250
Switching frequency DC	[Hz] < 500
Number of analogue outputs	1
Analogue current output	[mA] 4...20; (scalable 1:5)
Max. load	[Ω] 500
Analogue voltage output	[V] 0...10; (scalable 1:5)
Min. load resistance	[Ω] 2000
Short-circuit protection	yes
Type of short-circuit protection	pulsed
Overload protection	yes

Measuring/setting range

Measuring range	0...100 bar	0...10 MPa
Set point SP	0.6...100 bar	0.06...10 MPa
Reset point rP	0.2...99.6 bar	0.02...9.96 MPa
Analogue start point	0...80 bar	0...8 MPa
Analogue end point	20...100 bar	2...10 MPa
Min. difference between SP and rP	0.5 bar	0.05 MPa
In steps of	0.1 bar	0.01 MPa

Accuracy / deviations

Switch point accuracy	[% of the span]	< ± 0,4; (Turn down 1:1)
Repeatability	[% of the span]	< ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)
Characteristics deviation	[% of the span]	< ± 0,25 (BFSL) / < ± 0,5 (LS); (Turn down 1:1; BFSL = Best Fit Straight Line; LS = limit value setting)
Hysteresis deviation	[% of the span]	< ± 0,1; (Turn down 1:1)
Long-term stability	[% of the span]	< ± 0,05; (Turn down 1:1; per 6 months)
Temperature coefficient zero point	[% of the span / 10 K]	< ± 0,2; (0...80 °C)
Temperature coefficient span		< ± 0,2; (0...80 °C)



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[% of the span / 10 K]			
Notes on the accuracy / deviation		switch point accuracy, linearity error under DNV GL: < ± 1%: < ± 1%	
Response times			
Response time	[ms]	< 1.5	
Delay time programmable dS, dr	[s]	0...50	
Damping process value dAP	[s]	0...4	
Damping for the analogue output dAA	[s]	0...4	
Max. response time analogue output	[ms]	3	
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		COM2 (38,4 kBaud)	
IO-Link revision		1.1	
SDCI standard		IEC 61131-9	
Profiles		Smart Sensor ED2: Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)	
SIO mode		yes	
Required master port type		A; (when pin 2 not connected: B)	
Min. process cycle time	[ms]	3	
IO-Link resolution pressure	[bar]	0.05	
IO-Link process data (cyclical)	function	bit length	
	pressure	16	
	device status	4	
	binary switching information	2	
IO-Link functions (acyclical)		application specific tag	
Supported DeviceIDs	Type of operation	DeviceID	
	default	1660	
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	
Tests / approvals			
EMC	DIN EN 61000-6-2		
	DIN EN 61000-6-3		
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]	172	
UL approval	UL Approval no.	J013	
	File number UL	E174189	
Pressure Equipment Directive		Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	

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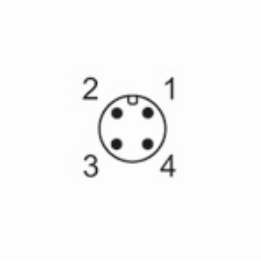
Mechanical data		
Weight	[g]	254.1
Materials	stainless steel (316L/1.4404); PBT+PC-GF30; PBT-GF20; PC	
Materials (wetted parts)	stainless steel (316L/1.4404); Al2O3 (ceramics); FKM	
Min. pressure cycles	100 million	
Tightening torque	[Nm]	25...35; (recommended tightening torque; depends on lubrication, seal and pressure rating)
Process connection	threaded connection G 1/4 internal thread (DIN EN ISO 1179-2)	
Restrictor element integrated	no (can be retrofitted)	

Displays / operating elements		
Display	Display unit	3 x LED, green (bar, MPa)
	switching status	2 x LED, yellow
	measured values	alphanumeric display, red/green 4-digit

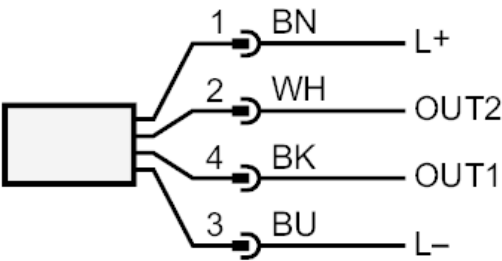
Remarks	
Pack quantity	1 pcs.

Electrical connection

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



Connection



OUT1	switching output
OUT2	switching output
	analogue output
	Core colours :
BK =	black
BN =	brown
BU =	blue
WH =	white