

PE2096



Pressure sensor with display

PE-2,5-RER14-MFRKG/US/IE



- 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	-0.125...2.5 bar	-125...2500 mbar	-1.8...36.25 psi	-12.5...250 kPa
Process connection	threaded connection G 1/4 internal thread			

Application

Special feature	Gold-plated contacts		
Measuring element	ceramic-capacitive pressure measuring cell		
Application	for industrial applications		
Media	liquids and gases		
Medium temperature [°C]	-25...80		
Min. burst pressure	50 bar	725 psi	5000 kPa
Pressure rating	20 bar	290 psi	2000 kPa
Vacuum resistance	-1000 mbar		-0.1 MPa
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		
Power-on delay time [s]	0.3		
Integrated watchdog	yes		



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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]	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	-0.125...2.5 bar	-125...2500 mbar	-1.8...36.25 psi	-12.5...250 kPa
Analogue start point	-0.125...2 bar	-1.8...29 psi	-12.5...200 kPa	
Analogue end point	0.375...2.5 bar	5.45...36.25 psi	37.5...250 kPa	
Factory setting / CMPT = 2				
Set point SP	-0.11...2.5 bar	-1.6...36.25 psi	-11...250 kPa	
Reset point rP	-0.12...2.49 bar	-1.75...36.1 psi	-12...249 kPa	
Min. difference between SP and rP	0.015 bar	0.15 psi	1.5 kPa	
In steps of	0.005 bar	0.05 psi	0.5 kPa	
Status_B High Resolution / CMPT = 3				
Set point SP	-0.109...2.5 bar	-1.58...36.25 psi	-10.9...250 kPa	
Reset point rP	-0.12...2.49 bar	-1.73...36.11 psi	-12...249 kPa	
Min. difference between SP and rP	0.011 bar	0.15 psi	1.1 kPa	
In steps of	0.001 bar	0.01 psi	0.1 kPa	
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	< ± 0,05; (Turn down 1:1; per 6 months)			

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	[% of the span]	
Temperature coefficient zero point	[% of the span / 10 K]	0,2; (-25...80 °C)
Temperature coefficient span	[% of the span / 10 K]	0,2; (-25...80 °C)
Notes on the accuracy / deviation		switch point accuracy, linearity error under DNV GL: $\pm 1\%$

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
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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						
SIO mode	yes						
Required master port type	A; (when pin 2 not connected: B)						
Supported DeviceIDs	<table border="1"> <thead> <tr> <th>Type of operation</th> <th>DeviceID</th> </tr> </thead> <tbody> <tr> <td>Factory setting / CMPT = 2</td> <td>464</td> </tr> <tr> <td>Status_B High Resolution / CMPT = 3</td> <td>975</td> </tr> </tbody> </table>	Type of operation	DeviceID	Factory setting / CMPT = 2	464	Status_B High Resolution / CMPT = 3	975
Type of operation	DeviceID						
Factory setting / CMPT = 2	464						
Status_B High Resolution / CMPT = 3	975						
Note	For further information please see the IODD PDF file under "Downloads"						

Factory setting / CMPT = 2

Profiles	Smart Sensor - SSP 0	Generic Profiled Sensor
	Function	Device identification
	Function	Process data variable
	Function	Device diagnosis
Min. process cycle time	[ms]	2.3
IO-Link resolution pressure	[bar]	0.005
IO-Link process data (cyclical)	function	bit length
	pressure	14
	binary switching information	2
IO-Link functions (acyclical)		application specific tag

Status_B High Resolution / CMPT = 3

Profiles	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
Min. process cycle time	[ms]	3
IO-Link resolution pressure	[bar]	0.001

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IO-Link process data (cyclical)	function	bit length
	pressure	16
	device status	4
	binary switching information	2

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]	171
UL approval	UL approval no.	J012
Pressure Equipment Directive	Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	

Mechanical data		
Weight	[g]	235.5
Housing		cylindrical
Dimensions	[mm]	Ø 34 / L = 90.7
Materials		stainless steel (316L/1.4404); PBT+PC-GF30; PBT-GF20; PC
Materials (wetted parts)		stainless steel (316L/1.4404); Al2O3 (99.9%; ceramics); EPDM
Min. pressure cycles		100 million
Tightening torque	[Nm]	25...35; (recommended tightening torque; depends on the lubrication, the seal and the pressure load)
Process connection		threaded connection G 1/4 internal thread
Restrictor element integrated		no (can be retrofitted)

Displays / operating elements		
Display	Display unit	3 x LED, green (bar, psi, kPa)
	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: 4, gold-plated



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Connection



OUT1 switching output or IO-Link
OUT2 switching output or analogue output
 colours to DIN EN 60947-5-2
Core colours :
BK = black
BN = brown
BU = blue
WH = white