



Pressure sensor with display

PN-400-SER14-QFRKG/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
Measuring range [MPa]	0...40
Process connection	threaded connection G 1/4 internal thread

Application

Special feature	Gold-plated contacts
Measuring element	metallic thin film cell
Application	for industrial applications
Media	liquids and gases
Medium temperature [°C]	-25...80
Min. bursting pressure [MPa]	170
Pressure rating [MPa]	80
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



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Integrated watchdog	yes
Inputs / outputs	
Number of inputs and outputs	Number of digital outputs: 2
Outputs	
Total number of outputs	2
Output signal	switching 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]	2.5
Permanent current rating of switching output DC [mA]	150; (200 (...60 °C) 250 (...40 °C))
Switching frequency DC [Hz]	< 170
Short-circuit protection	yes
Type of short-circuit protection	pulsed
Overload protection	yes
Measuring/setting range	
Measuring range [MPa]	0...40
Factory setting / CMPT = 2	
Set point SP [MPa]	0.4...40
Reset point rP [MPa]	0.2...39.8
Min. difference between SP and rP [MPa]	0.2
In steps of [MPa]	0.2
Status_B High Resolution / CMPT = 3	
Set point SP [MPa]	0.3...40
Reset point rP [MPa]	0.1...39.8
Min. difference between SP and rP [MPa]	0.2
In steps of [MPa]	0.2
Accuracy / deviations	
Switch point accuracy [% of the span]	< ± 0,5
Repeatability [% of the span]	< ± 0,1; (with temperature fluctuations < 10 K)
Characteristics deviation [% of the span]	< ± 0,25 (BFSL) / < ± 0,5 (LS); (BFSL = Best Fit Straight Line; LS = limit value setting)
Hysteresis deviation [% of the span]	< ± 0,25
Long-term stability [% of the span]	< ± 0,05; (per 6 months)
Temperature coefficient zero point [% of the span / 10 K]	0,2; (-25...80 °C)
Temperature coefficient span	0,2; (-25...80 °C)



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[% of the span / 10 K]									
Response times									
Response time [ms]	< 3								
Delay time programmable dS, dr [s]	0...50								
Software / programming									
Parameter setting options	hysteresis / window; normally open / normally closed; switching logic; switch-on/switch-off delay; Damping; Display unit								
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> <tr> <th>Type of operation</th><th>DeviceID</th></tr> <tr> <td>Factory setting / CMPT = 2</td><td>435</td></tr> <tr> <td>Status_B High Resolution / CMPT = 3</td><td>620</td></tr> </table>	Type of operation	DeviceID	Factory setting / CMPT = 2	435	Status_B High Resolution / CMPT = 3	620		
Type of operation	DeviceID								
Factory setting / CMPT = 2	435								
Status_B High Resolution / CMPT = 3	620								
Note	For further information please see the IODD PDF file under "Downloads"								
Factory setting / CMPT = 2									
Profiles	Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis								
Min. process cycle time [ms]	2.3								
IO-Link resolution pressure [MPa]	0.1								
IO-Link process data (cyclical)	<table> <tr> <th>function</th><th>bit length</th></tr> <tr> <td>pressure</td><td>14</td></tr> <tr> <td>binary switching information</td><td>2</td></tr> </table>	function	bit length	pressure	14	binary switching information	2		
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 ED2: Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)								
Min. process cycle time [ms]	3								
IO-Link resolution pressure [MPa]	0.02								
IO-Link process data (cyclical)	<table> <tr> <th>function</th><th>bit length</th></tr> <tr> <td>pressure</td><td>16</td></tr> <tr> <td>device status</td><td>4</td></tr> <tr> <td>binary switching information</td><td>2</td></tr> </table>	function	bit length	pressure	16	device status	4	binary switching information	2
function	bit length								
pressure	16								
device status	4								
binary switching information	2								
IO-Link functions (acyclical)	application specific tag								
Operating conditions									
Ambient temperature [°C]	-25...80								
Storage temperature [°C]	-40...100								
Protection	IP 65; IP 67								
Tests / approvals									
EMC	<table> <tr> <td>DIN EN 61000-6-2</td><td></td></tr> <tr> <td>DIN EN 61000-6-3</td><td></td></tr> </table>	DIN EN 61000-6-2		DIN EN 61000-6-3					
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)								

PN7010



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MTTF	[years]	214
UL approval	UL Approval no.	J003
Pressure Equipment Directive	Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	

Mechanical data		
Weight	[g]	222.5
Housing		cylindrical
Dimensions	[mm]	Ø 34 / L = 90.7
Materials		stainless steel (630/1.4542/17-4 PH); stainless steel (316L/1.4404); PBT+PC-GF30; PBT-GF20; PC
Materials (wetted parts)		stainless steel (630/1.4542/17-4 PH)
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
Restrictor element integrated		no (can be retrofitted)

Displays / operating elements		
Display	Display unit	3 x LED, green (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



PN7010



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Connection



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