

# PN7596



## Pressure sensor with display

PN-2,5-REG14-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°
- 5 Sealing



### Product characteristics

Number of inputs and outputs	Number of digital outputs: 2			
Measuring range	0...2.5 bar	0...2500 mbar	0...36.2 psi	0...250 kPa
Process connection	threaded connection G 1/4 external thread internal thread:M5			

### 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		

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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
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### 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	0...2.5 bar	0...2500 mbar	0...36.2 psi	0...250 kPa
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### Factory setting / CMPT = 2

Set point SP	0.02...2.5 bar	0.4...36.2 psi	2...250 kPa
Reset point rP	0.01...2.49 bar	0.2...36 psi	1...249 kPa
Min. difference between SP and rP	0.02 bar	0.2 psi	2 kPa
In steps of	0.01 bar	0.2 psi	1 kPa

### Status\_B High Resolution / CMPT = 3

Set point SP	0.02...2.5 bar	0.3...36.3 psi	2...250 kPa
Reset point rP	0.01...2.49 bar	0.1...36.1 psi	1...249 kPa
Min. difference between SP and rP	0.02 bar	0.2 psi	2 kPa
In steps of	0.01 bar	0.1 psi	1 kPa

### 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; (-0...80 °C)
Temperature coefficient span	< ± 0,2; (-0...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)	
Process data analogue	1	
Process data binary	2	
Supported DeviceIDs	<b>Type of operation</b>	<b>DeviceID</b>
	Factory setting / CMPT = 2	404
	Status_B High Resolution / CMPT = 3	602
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	0.01 bar	0.001 MPa
IO-Link process data (cyclical)	<b>function</b>	<b>bit length</b>
	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	0.001 bar	0.0001 MPa
IO-Link process data (cyclical)	<b>function</b>	<b>bit length</b>
	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	

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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]	260	
UL approval	UL approval no.	J001
Pressure Equipment Directive	Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	

Mechanical data		
Weight [g]	260	
Materials	stainless steel (316L/1.4404); PBT+PC-GF30; PBT-GF20; PC	
Materials (wetted parts)	stainless steel (316L/1.4404); ceramics; FKM	
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 external thread internal thread:M5	
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 IO-Link
OUT2	switching output colours to DIN EN 60947-5-2 Core colours :
BK =	black
BN =	brown
BU =	blue
WH =	white