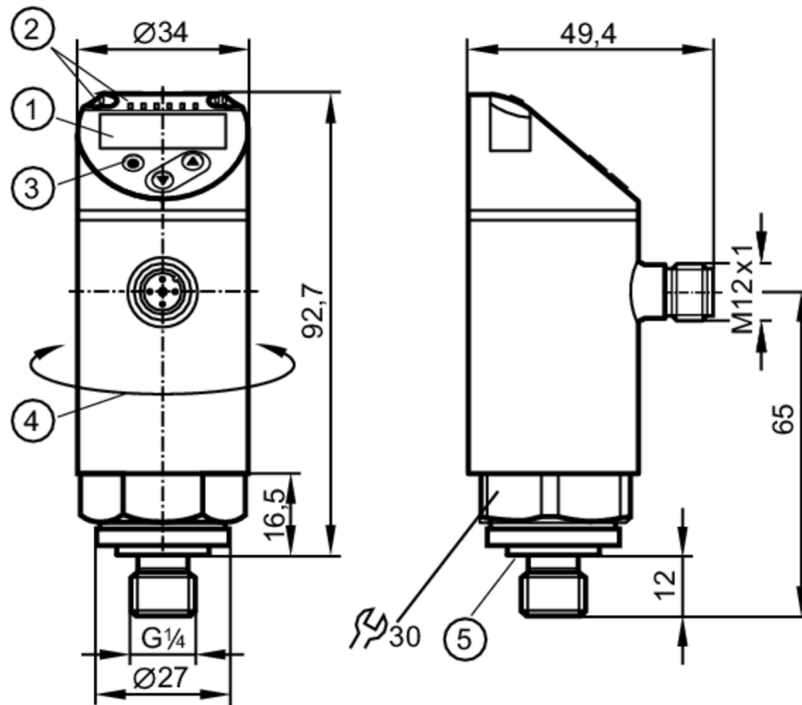


# PN7593



## Pressure sensor with display

PN-025-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

Output signal	switching signal; IO-Link; (configurable)		
Measuring range	0...25 bar	0...362 psi	0...2.5 MPa
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		
Conditionally suitable for	For gaseous media the application is limited to max. 25 bar.		
Medium temperature [°C]	-25...80		
Pressure rating	150 bar	2175 psi	15 MPa
Min. bursting pressure	350 bar	5075 psi	35 MPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure		



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Electrical data			
Operating voltage	[V]	18...30 DC; (according to EN 50178 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	
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		0...25 bar	0...362 psi
			0...2.5 MPa
Factory setting / CMPT = 2			
Set point SP		0.2...25 bar	4...362 psi
			0.02...2.5 MPa
Reset point rP		0.1...24.9 bar	2...360 psi
			0.01...2.49 MPa
Min. difference between SP and rP		0.2 bar	2 psi
			0.02 MPa
In steps of		0.1 bar	2 psi
			0.01 MPa
Status_B High Resolution / CMPT = 3			
Set point SP		0.2...25 bar	3...363 psi
			0.02...2.5 MPa
Reset point rP		0.1...24.9 bar	1...361 psi
			0.01...2.49 MPa
Min. difference between SP and rP		0.2 bar	2 psi
			0.02 MPa
In steps of		0.1 bar	1 psi
			0.01 MPa
Accuracy / deviations			
Switch point accuracy		< ± 0,5	
	[% of the span]		
Repeatability		< ± 0,1; (with temperature fluctuations < 10 K)	
	[% of the span]		
Characteristics deviation		< ± 0,25 (BFSL) / < ± 0,5 (LS); (BFSL = Best Fit Straight Line; LS = limit value setting)	
	[% of the span]		
Hysteresis deviation		< ± 0,25	

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	[% of the span]	
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	[% of the span / 10 K]	< ± 0,2; (-0...80 °C)

### 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
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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)	
Process data analogue	1	
Process data binary	2	
Supported DeviceIDs	Type of operation	DeviceID
	Factory setting / CMPT = 2	402 d / 00 01 92 h
	Status_B High Resolution / CMPT = 3	600 d / 00 02 58 h
	PN7003	310 d / 00 01 36 h
Note	For further information please see the IODD PDF file at "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	[bar]	0.1
IO-Link resolution pressure	[MPa]	0.01
IO-Link functions (cyclical)	function	bit length
	pressure	14
	binary switching information	2
IO-Link functions (acyclical)	application specific tag	

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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 [bar]	0.01	
IO-Link resolution pressure [MPa]	0.001	
IO-Link functions (cyclical)	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	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]	260.5	
Materials	stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC	
Materials (wetted parts)	stainless steel (1.4404 / 316L); 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 external thread internal thread M5	
Restrictor element integrated	no (can be retrofitted)	
Displays / operating elements		
Display	Display unit	3 x LED, green (bar, psi, 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; Contacts: gold-plated		

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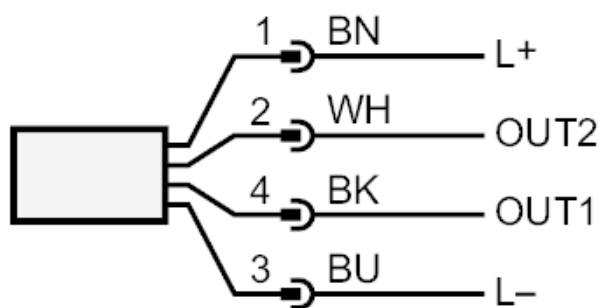


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### Connection



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