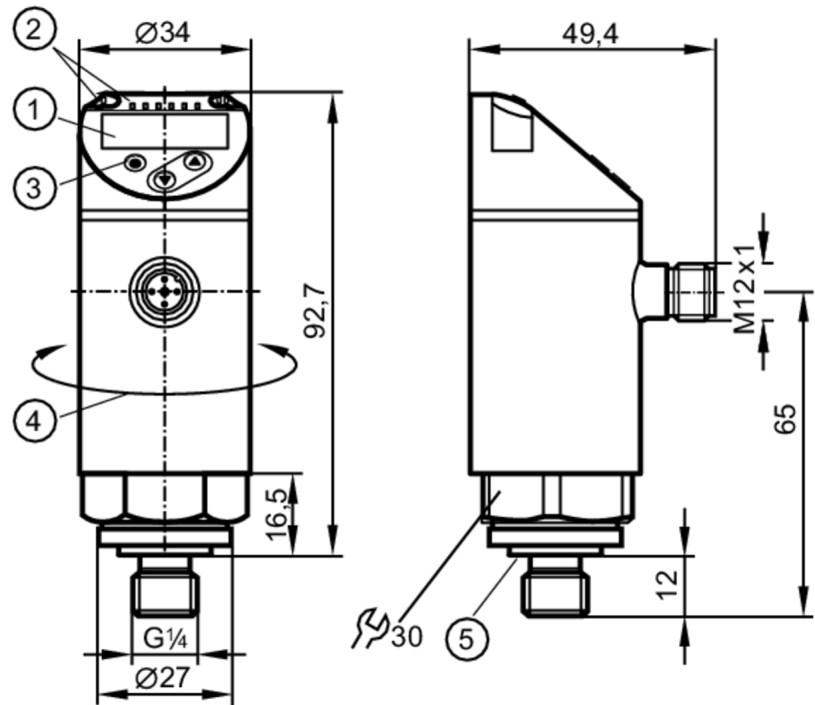


PN3593



Pressure sensor with display

PN-025-REG14-MFRKG/US/ /V



- 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; analog 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 (DIN EN ISO 1179-2); Internal thread:M5		
Application			
System	gold-plated contacts		
Measuring element	ceramic-capacitive pressure measuring cell		
Application	for industrial applications		
Media	liquids and gases		
Medium temperature [°C]	-25...80		
Min. bursting pressure	350 bar	5075 psi	35 MPa
Pressure rating	150 bar	2175 psi	15 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: 1; Number of analog outputs: 1	
Outputs			
Total number of outputs		2	
Output signal		switching signal; analog signal; IO-Link; (configurable)	
Electrical design		PNP	
Number of digital outputs		1	
Output function		normally open / closed; (configurable)	
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	
Number of analog outputs		1	
Analog current output	[mA]	4...20	
Max. load	[Ω]	500	
Analog voltage output	[V]	0...10	
Min. load resistance	[Ω]	2000	
Short-circuit protection		yes	
Type of short-circuit protection		yes (non-latching)	
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	



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

Reaction times		
Response time	[ms]	< 3
Delay time programmable dS, dr	[s]	0...50
Damping for the switching output dAP	[s]	0...4
Damping for the analog output dAA	[s]	0...4
Max. response time analog output	[ms]	3

Software / programming	
Parameter setting options	hysteresis / window; normally open / 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	
SIO mode	yes	
Required master port class	A	
Process data analog	1	
Process data binary	1	
Supported DeviceIDs	Type of operation	DeviceID
	Factory setting / CMPT = 2	430
	Status_B High Resolution / CMPT = 3	609
Note	For further information please see the IODD PDF file at "Downloads"	



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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 process data (cyclical)	Function	bit length
	pressure	14
	binary switching information	1
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 [bar]	0.01	
IO-Link resolution pressure [MPa]	0.001	
IO-Link process data (cyclical)	Function	bit length
	pressure	16
	device status	4
	binary switching information	1
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]	226	
UL approval	UL approval number	J004
Pressure equipment directive	sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data		
Weight [g]	261	
Material	stainless steel (1.4404 / 316L) stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC	
Materials (wetted parts)	stainless steel (1.4404 / 316L); 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 external thread (DIN EN ISO 1179-2); Internal thread:M5	
Process connection sealing	FKM (to DIN 3869)	
Restrictor element integrated	no (can be retrofitted)	

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Displays / operating elements		
Display	Display unit	3 x LED, green (bar, psi, MPa)
	Switching status	1 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		



Connection

```
graph LR
    subgraph Connector
        direction TB
        1[1]
        2[2]
        4[4]
        3[3]
    end
    1 --- BN[BN]
    2 --- WH[WH]
    4 --- BK[BK]
    3 --- BU[BU]
    BN --- Lplus[L+]
    WH --- OUT2[OUT2]
    BK --- OUT1[OUT1]
    BU --- Lminus[L-]
```

OUT1

Switching output

OUT2

IO-Link

OUT2

analog output

Core colors :

BK =

black

BN =

brown

BU =

blue

WH =

white