

PN2593



Pressure sensor with display

PN-025-REG14-MFRKG/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; Number of analog outputs: 1		
Measuring range	-1...25 bar	-14.5...362.5 psi	-0.1...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; vacuum		

PN2593



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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		
Inputs / outputs				
Number of inputs and outputs		Number of digital outputs: 2; Number of analog outputs: 1		
Outputs				
Total number of outputs		2		
Output signal		switching signal; analog signal; IO-Link; (configurable)		
Electrical design		PNP/NPN		
Number of digital outputs		2		
Output function		normally open / closed; (configurable)		
Max. voltage drop switching output DC	[V]	2		
Permanent current rating of switching output DC	[mA]	250		
Switching frequency DC	[Hz]	< 500		
Number of analog outputs		1		
Analog current output	[mA]	4...20; (scalable 1:5)		
Max. load	[Ω]	500		
Analog voltage output	[V]	0...10; (scalable 1:5)		
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		-1...25 bar	-14.5...362.5 psi	-0.1...2.5 MPa
Analog start point		-1...20 bar	-14.5...290 psi	-0.1...2 MPa
Analog end point		4...25 bar	58...362.5 psi	0.4...2.5 MPa
Factory setting / CMPT = 2				
Set point SP		-0.85...25 bar	-12...362.5 psi	-0.085...2.5 MPa
Reset point rP		-0.95...24.9 bar	-13.5...361 psi	-0.095...2.49 MPa
Min. difference between SP and rP		0.15 bar	1.5 psi	0.015 MPa
In steps of		0.05 bar	0.5 psi	0.005 MPa
Status_B High Resolution / CMPT = 3				
Set point SP		-0.84...25 bar	-12.2...362.6 psi	-0.084...2.5 MPa
Reset point rP		-0.95...24.9 bar	-13.7...361.1 psi	-0.095...2.49 MPa
Min. difference between SP and rP		0.11 bar	1.5 psi	0.011 MPa
In steps of		0.01 bar	0.1 psi	0.001 MPa



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Accuracy / deviations		
Notes on the accuracy / deviation	switch point accuracy, linearity error under DNV GL: $\lt; \pm 1\%$	
Switch point accuracy [% of the span]	$\lt; \pm 0,4$; (Turn down 1:1)	
Repeatability [% of the span]	$\lt; \pm 0,1$; (with temperature fluctuations $\lt; 10\text{ K}$; Turn down 1:1)	
Characteristics deviation [% of the span]	$\lt; \pm 0,25$ (BFSL) / $\lt; \pm 0,5$ (LS); (Turn down 1:1; BFSL = Best Fit Straight Line; LS = limit value setting)	
Hysteresis deviation [% of the span]	$\lt; \pm 0,1$; (Turn down 1:1)	
Long-term stability [% of the span]	$\lt; \pm 0,05$; (Turn down 1:1; per 6 months)	
Temperature coefficient zero point [% of the span / 10 K]	$\lt; \pm 0,2$; (-0...80 °C)	
Temperature coefficient span [% of the span / 10 K]	$\lt; \pm 0,2$; (-0...80 °C)	
Reaction times		
Response time [ms]	$\lt; 1.5$	
Delay time programmable dS, dr [s]	0...50	
Damping process value 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; (wenn PIN 2 nicht verbunden: B)	
Supported DeviceIDs	Type of operation	DeviceID
	Factory setting / CMPT = 2	462
	Status_B High Resolution / CMPT = 3	973
Note	For further information please see the IODD PDF file at "Downloads"	

PN2593



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PN-025-REG14-MFRKG/US/ IV

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]	0.01	
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 ED2: Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)	
Min. process cycle time [ms]	3	
IO-Link resolution pressure [bar]	0.01	
IO-Link process data (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]	138	
UL approval	UL approval number	J012
Pressure equipment directive	sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data		
Weight [g]	263.5	
Material	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 (DIN EN ISO 1179-2)	
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

PN2593



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Remarks

Pack quantity

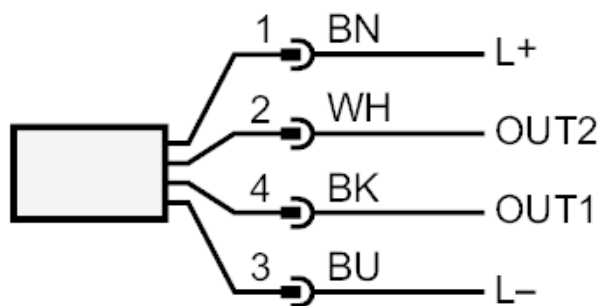
1 pcs.

Electrical connection

Connector: 1 x M12; coding: A; Contacts: gold-plated



Connection



OUT1 Switching output
 IO-Link

OUT2 Switching output
 analog output

Core colors :

BK = black
BN = brown
BU = blue
WH = white