

# PN2298



## Pressure sensor with display

PN-,25-REN14-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°



### Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analog outputs: 1				
Measuring range	-0.0125...0.25 bar	-12.5...250 mbar	-5...100.4 inH2O	-1.25...25 kPa	-127...2549 mmWS
Process connection	threaded connection 1/4" NPT Internal thread				

### 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	30000 mbar	12000 inH2O	3000 kPa	306000 mmWS	
Pressure rating	10000 mbar	4000 inH2O	1000 kPa	102000 mmWS	
Vacuum resistance [mbar]	-1000				
Type of pressure	relative pressure				
MAWP (for applications according to CRN)	10 bar	10000 mbar	4000 inH2O	1000 kPa	

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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		-0.0125...0.25 bar	-12.5...250 mbar	-5...100.4 inH <sub>2</sub> O	-1.25...25 kPa	-127...2549 mmWS
Analog start point		-12.5...200 mbar	-5...80.2 inH <sub>2</sub> O	-1.25...20 kPa	-125...2040 mmWS	
Analog end point		37.5...250 mbar	15...100.4 inH <sub>2</sub> O	3.75...25 kPa	385...2550 mmWS	
Factory setting / CMPT = 2						
Set point SP		-11...250 mbar	-4.4...100.4 inH <sub>2</sub> O	-1.1...25 kPa	-110...2550 mmWS	
Reset point rP		-12...249 mbar	-4.8...100 inH <sub>2</sub> O	-1.2...24.9 kPa	-120...2540 mmWS	
Min. difference between SP and rP		1.5 mbar	0.6 inH <sub>2</sub> O	0.15 kPa	15 mmWS	
In steps of		0.5 mbar	0.2 inH <sub>2</sub> O	0.05 kPa	5 mmWS	

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Status_B High Resolution / CMPT = 3				
Set point SP	-10.9...250 mbar	-4.4...100.4 inH2O	-1.09...25 kPa	-112...2550 mmWS
Reset point rP	-12...249 mbar	-4.8...100 inH2O	-1.2...24.9 kPa	-122...2539 mmWS
Min. difference between SP and rP	1.1 mbar	0.5 inH2O	0.11 kPa	11 mmWS
In steps of	0.1 mbar	0.1 inH2O	0.01 kPa	1 mmWS
Accuracy / deviations				
Switch point accuracy [% of the span]	< ± 0,4; (Turn down 1:1)			
Repeatability [% of the span]	< ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)			
Characteristics deviation [% of the span]	< ± 0,25 (BFSL) / < ± 0,5 (LS); (Turn down 1:1; BFSL = Best Fit Straight Line; LS = limit value setting)			
Hysteresis deviation [% of the span]	< ± 0,1; (Turn down 1:1)			
Long-term stability [% of the span]	< ± 0,05; (Turn down 1:1; 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)			
Notes on the accuracy / deviation	switch point accuracy, linearity error under DNV GL: < ± 1%: < ± 1%			
Reaction times				
Response time [ms]	< 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	476		
	Status_B High Resolution / CMPT = 3	992		
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 [mbar]	0.1	
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 [mbar]	0.1	
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]	145	
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]	223.5	
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]	> 50; (Depends on lubrication, seal and pressure rating)	
Process connection	threaded connection 1/4" NPT Internal thread	
Restrictor element integrated	no (can be retrofitted)	
Displays / operating elements		
Display	Display unit	4 x LED, green (mbar, mmWS, kPa, inH2O)
	Switching status	2 x LED, yellow
	Measured values	alphanumeric display, red/green 4-digit
Remarks		
Pack quantity	1 pcs.	

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## Pressure sensor with display

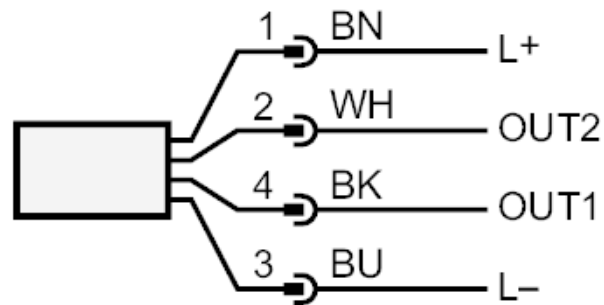
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### Electrical connection

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