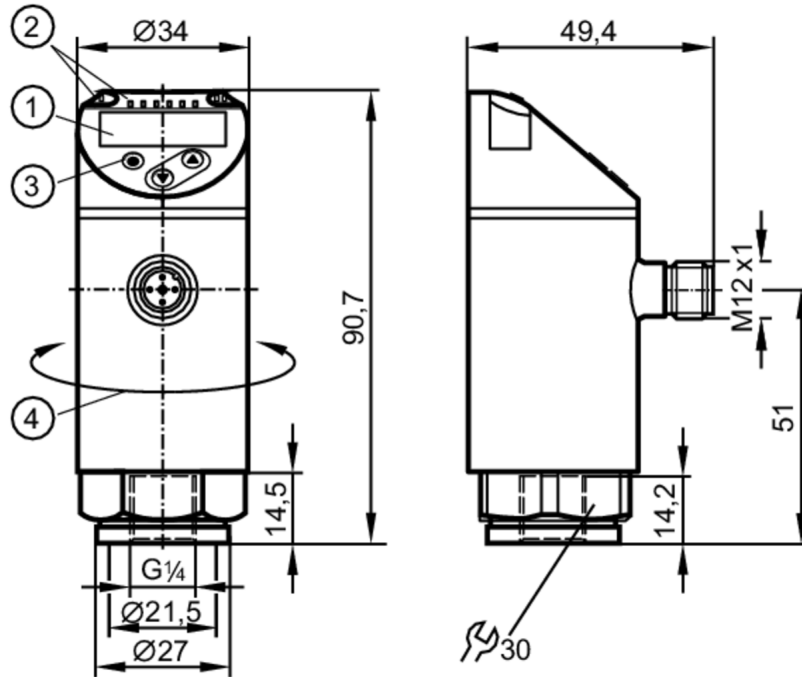


# PN3129



## Pressure sensor with display

PN-0-1BRER14-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: 1; Number of analog outputs: 1				
Measuring range	-1...0 bar	-1000...0 mbar	-14.5...0 psi	-29.5...0 inHg	-100...0 kPa
Process connection	threaded connection G 1/4 Internal thread M6 I				

### 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. burst pressure	50000 mbar	725 psi	1450 inHg	5000 kPa
Pressure rating	20000 mbar	290 psi	590 inHg	2000 kPa
Vacuum resistance	-1000 mbar		-0.1 MPa	
Type of pressure	relative pressure; vacuum			

### 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			

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Integrated watchdog	yes
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### Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1
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### 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	-1...0 bar	-1000...0 mbar	-14.5...0 psi	-29.5...0 inHg	-100...0 kPa
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#### Factory setting / CMPT = 2

Set point SP	-990...0 mbar	-14.4...0 psi	-29.3...0 inHg	-99...0 kPa
Reset point rP	-995...-5 mbar	-14.45...-0.05 psi	-29.4...-0.1 inHg	-99.5...-0.5 kPa
Min. difference between SP and rP	5 mbar	0.1 psi	0.2 inHg	0.5 kPa
In steps of	5 mbar	0.05 psi	0.1 inHg	0.5 kPa

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

Set point SP	-992...0 mbar	-14.38...0 psi	-29.3...0 inHg	-99.2...0 kPa
Reset point rP	-997...-5 mbar	-14.45...-0.07 psi	-29.4...-0.1 inHg	-99.7...-0.5 kPa
Min. difference between SP and rP	5 mbar	0.08 psi	0.2 inHg	0.5 kPa
In steps of	1 mbar	0.01 psi	0.1 inHg	0.1 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	< ± 0,05; (per 6 months)

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## Pressure sensor with display

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	[% of the span]	
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)

### Reaction times

Response time	[ms]	< 3
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
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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 class	A						
Process data analog	1						
Process data binary	1						
Supported DeviceIDs	<table border="1"> <thead> <tr> <th>Type of operation</th> <th>DeviceID</th> </tr> </thead> <tbody> <tr> <td>Factory setting / CMPT = 2</td> <td>434</td> </tr> <tr> <td>Status_B High Resolution / CMPT = 3</td> <td>619</td> </tr> </tbody> </table>	Type of operation	DeviceID	Factory setting / CMPT = 2	434	Status_B High Resolution / CMPT = 3	619
Type of operation	DeviceID						
Factory setting / CMPT = 2	434						
Status_B High Resolution / CMPT = 3	619						
Note	For further information please see the IODD PDF file at "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	1 mbar	0.001 MPa
IO-Link process data (cyclical)	<b>Function</b>	<b>bit length</b>
	pressure	14
	binary switching information	1
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	0.5 mbar	0.0005 MPa

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## Pressure sensor with display

PN-0-1BRER14-MFRKG/US/ IV

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]	234.5
Housing		tubular
Dimensions	[mm]	Ø 34 / L = 90.7
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 Internal thread M6 I
Restrictor element integrated		no (can be retrofitted)

Displays / operating elements		
Display	Display unit	4 x LED, green (mbar, psi, kPa, inHg)
	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; coding: A; Contacts: gold-plated



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### Connection



OUT1	Switching output
	IO-Link
OUT2	analog output
	Core colors :
BK =	black
BN =	brown
BU =	blue
WH =	white