



Pressure sensor with display

PN-001BREN14-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°



Product characteristics					
Number of inputs and outputs	Number of digital outputs: 2				
Measuring range	0...1 bar	0...1000 mbar	0...14.5 psi	0...29.5 inHg	0...100 kPa
Process connection	threaded connection 1/4" NPT external 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	450 psi	880 inHg	3000 kPa	
Pressure rating	10000 mbar	145 psi	290 inHg	1000 kPa	
Type of pressure	relative pressure				
MAWP (for applications according to CRN)	10 bar	10000 mbar	145 psi	290 inHg	1000 kPa
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				

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Power-on delay time	[s]	< 0.3
Integrated watchdog		yes

Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 2
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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 / 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
Short-circuit protection	yes
Type of short-circuit protection	yes (non-latching)
Overload protection	yes

Measuring/setting range

Measuring range	0...1 bar	0...1000 mbar	0...14.5 psi	0...29.5 inHg	0...100 kPa
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Factory setting / CMPT = 2

Set point SP	10...1000 mbar	0.1...14.5 psi	0.2...29.5 inHg	1...100 kPa
Reset point rP	5...995 mbar	0.05...14.45 psi	0.1...29.4 inHg	0.5...99.5 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	8...1000 mbar	0.12...14.5 psi	0.2...29.5 inHg	0.8...100 kPa
Reset point rP	3...995 mbar	0.05...14.43 psi	0.1...29.4 inHg	0.3...99.5 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	[% 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		< ± 0,2; (-0...80 °C)



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[% of the span / 10 K]		
Reaction times		
Response time	[ms]	< 3
Delay time programmable dS, dr	[s]	0...50
Software / programming		
Parameter setting options	hysteresis / window; normally open / closed; switching logic; switch-on/switch-off delay; Damping; Display unit	
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; (when pin 2 not connected: B)	
Supported DeviceIDs	Type of operation	DeviceID
	Default	405
	Factory setting / CMPT = 2	456
	Status_B High Resolution / CMPT = 3	635
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	1 mbar	0.001 MPa
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	0.5 mbar	0.0005 MPa
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)

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Vibration resistance	DIN EN 60068-2-6	20 g (10...2000 Hz)
MTTF [years]		260
UL approval	UL approval number	J001
Pressure equipment directive	sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	

Mechanical data

Weight [g]	243.5
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); ceramics; FKM
Min. pressure cycles	100 million
Tightening torque [Nm]	2...3 turns after hand-fastening; recommended tightening torque; Depends on lubrication, seal and pressure rating
Process connection	threaded connection 1/4" NPT external thread
Restrictor element integrated	no (can be retrofitted)

Displays / operating elements

Display	Display unit	4 x LED, green (mbar, psi, kPa, inHg)
	Switching status	2 x LED, yellow
	Measured values	alphanumeric display, red/green 4-digit

Remarks

Pack quantity	1 pcs.
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Electrical connection

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



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Connection



OUT1	Switching output
	IO-Link
OUT2	Switching output
	Colors to DIN EN 60947-5-2
	Core colors :
BK =	black
BN =	brown
BU =	blue
WH =	white