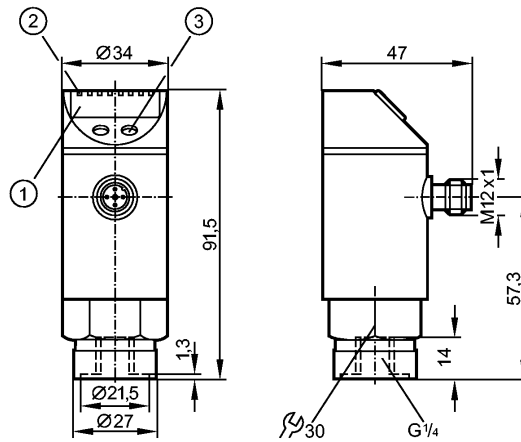


PN2069

PN-+,5BRBR14-MFRKG/US/ IV

Pressure sensors

New generation available: PN2169



- 1: 4-digit alphanumeric display
- 2: LEDs (display unit / switching status)
- 3: Programming button



Product characteristics

Combined pressure sensor
Quick disconnect
Zero and span adjustable
Function programmable
Process connection: G 1/4 I
2 outputs OUT1 = switching output OUT2 = switching output or analog output
4-digit alphanumeric display
Measuring range: -500...500 mbar

Application

Application	Type of pressure: relative pressure Liquids and gases
Pressure rating [mbar]	10000
Bursting pressure min. [mbar]	30000
Medium temperature [°C]	-25...80

Electrical data

Electrical design	DC PNP/NPN
Operating voltage [V]	18...32 DC ¹⁾
Current consumption [mA]	< 35
Insulation resistance [MΩ]	> 100 (500 V DC)
Protection class	III
Reverse polarity protection	yes

Outputs

Output	2 outputs OUT1 = switching output OUT2 = switching output or analog output
Output function	2 x normally open / closed programmable or 1 x normally open / closed programmable + 1 x analog (4...20 mA / 0...10 V; programmable 1:4)

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Pressure sensors

Current rating	[mA]	2 x 250
Voltage drop	[V]	< 2
Short-circuit protection		yes (non-latching)
Overload protection		yes
Switching frequency	[Hz]	≤ 500
Analog output		4...20 mA / 0...10 V
Max. load	[Ω]	4...20 mA: max. (U _b - 10 V) x 50 / 0...10 V: min. 2000

Measuring / setting range

Display unit		mbar, kPa, psi, inH2O
Measuring range	[mbar]	-500...500
Setting range		
Set point, SP	[mbar]	-496...500
Reset point, rP	[mbar]	-500...496
Analog start point, ASP	[mbar]	-500...250
Analog end point, AEP	[mbar]	-250...500
in steps of	[mbar]	1
Factory setting		SP1 = -250 mbar; rP1 = -270 mbar SP2 = 250 mbar; rP2 = 230 mbar ASP = -500 mbar; AEP = 500 mbar

Accuracy / deviations

Accuracy / deviations (in % of the span) Turn down 1:1		
Switch point accuracy		< ± 0.4
Characteristics deviation *)		< ± 0.25 (BFSL) / < ± 0.5 (LS)
Hysteresis		< ± 0.1
Repeatability **)		< ± 0.1
Long-term stability ***)		< ± 0.1
Temperature coefficients (TEMPCO) in the temperature range -25...80° C (in % of the span per 10 K)		
Greatest TEMPCO of the zero point		< ± 0.2
Greatest TEMPCO of the span		< ± 0.2

Reaction times

Power-on delay time	[s]	0.3
Min. response time switching output	[ms]	1.5
Damping for the switching output (dAP)	[s]	0; 0.01...4.00
Damping for the analog output (dAA)	[s]	0; 0.01...4.00
Response time analog output	[ms]	3
Integrated watchdog		yes

Software / programming

Programming options		hysteresis / window function; N.O. / N.C.; output polarity; current / voltage outputs; damping; calibration of displayed values; display can be rotated / deactivated; display unit
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Interfaces

IO-Link Device		
Transfer type		COM2 (38.4 kBaud)
IO-Link revision		1.0



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Pressure sensors

IO-Link Device ID	65 d / 00 00 41 h
Profiles	no profile
SIO mode	yes
Required master port class	A
Process data analogue	1
Process data binary	2
Min. process cycle time [ms]	2.3

Environment

Ambient temperature [°C]	-25...80
Storage temperature [°C]	-40...100
Protection	IP 65

Tests / approvals

EMC	EN 61000-4-2 ESD:	4 kV CD / 8 kV AD
	EN 61000-4-3 HF radiated:	10 V/m
	EN 61000-4-4 Burst:	2 kV
	EN 61000-4-5 Surge:	0.5/1 kV
	EN 61000-4-6 HF conducted:	10 V
Shock resistance	DIN IEC 68-2-27:	50 g (11 ms)
Vibration resistance	DIN IEC 68-2-6:	20 g (10...2000 Hz)
MTTF [Years]		131

Mechanical data

Process connection	G ¼ I
Materials (wetted parts)	stainless steel (303S22); ceramics; FPM (Viton)
Housing materials	stainless steel (304S15); stainless steel 316L / 1.4404; PC (Makrolon); PBT (Pocan); PEI; FPM (Viton); PTFE
Switching cycles min.	100 million
Weight [kg]	0.262

Displays / operating elements

Display	Display unit	3 x LED green
	Switching status	2 x LED yellow
	Function display	4-digit alphanumeric display
	Measured values	4-digit alphanumeric display

Electrical connection

Connection	M12 connector; gold-plated contacts
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Wiring

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Pressure sensors

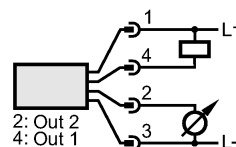
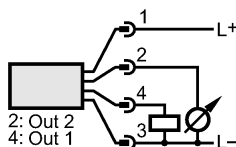
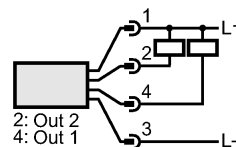
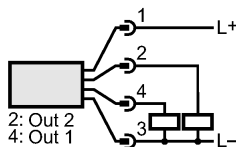
Programming of the output function (OUT1 / OUT2):

- Hno = hysteresis / normally open
- Hnc = hysteresis / normally closed
- Fno = window function / normally open
- Fnc = window function / normally closed

Complementary outputs:
output 1: = Hno, output 2: = Hnc
(with the same SP / rP)

Programming of the analog output (OUT2):

- I = current output (4...20 mA)
- U = voltage output (0...10 V)



Remarks

Remarks	<p>1) to EN50178, SELV, PELV *) BFSL = Best Fit Straight Line / LS = Limit Value Setting **) with temperature fluctuations < 10 K ***) in % of the span per year</p>
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Pack quantity	[piece]	1
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