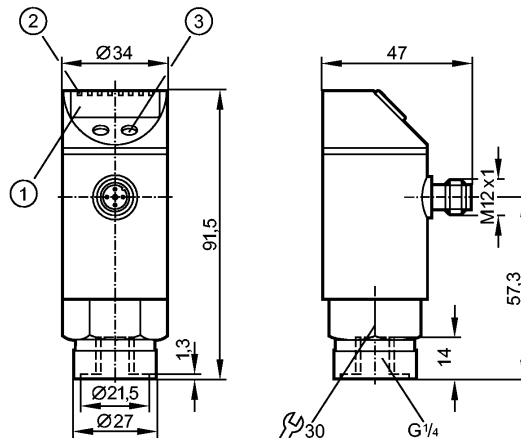


**PN2021**

PN-250-SBR14-MFRKG/US/ IV

Pressure sensors

New generation available: PN2071



- 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 $\frac{1}{4}$ I
2 outputs
OUT1 = switching output
OUT2 = switching output or analog output
4-digit alphanumeric display
Measuring range: 0...250 bar / 0...3630 psi / 0...25 MPa

**Application**

Application	Type of pressure: relative pressure Liquids and gases Use in gases at pressures > 25 bar only after contacting the manufacturer ifm		
Pressure rating	400 bar	5800 psi	40 MPa
Bursting pressure min.	850 bar	12300 psi	85 MPa
Medium temperature [°C]	-25...80		

**Electrical data**

Electrical design	DC PNP/NPN
Operating voltage [V]	18...32 DC <sup>1)</sup>
Current consumption [mA]	< 35
Insulation resistance [M $\Omega$ ]	> 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)

**PN2021**

PN-250-SBR14-MFRKG/US/ IV

**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 <sub>b</sub> - 10 V) x 50 / 0...10 V: min. 2000

**Measuring / setting range**

Measuring range	0...250 bar	0...3630 psi	0...25 MPa
Setting range			
Set point, SP	2.0...250.0 bar	30...3625 psi	0.20...25.00 MPa
Reset point, rP	1.0...249.0 bar	15...3610 psi	0.10...24.90 MPa
Analog start point, ASP	0.0...187.5 bar	0...2720 psi	0.00...18.75 MPa
Analog end point, AEP	62.5...250.0 bar	905...3625 psi	6.25...25.00 MPa
in steps of	0.5 bar	5 psi	0.05 MPa
Factory setting	SP1 = 62.5 bar; rP1 = 57.5 bar SP2 = 187.5 bar; rP2 = 182.5 bar ASP = 0.0 bar; AEP = 250.0 bar		

**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 0...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
IO-Link Device ID	57 d / 00 00 39 h

**PN2021**

PN-250-SBR14-MFRKG/US/ IV

**Pressure sensors**

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 67

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

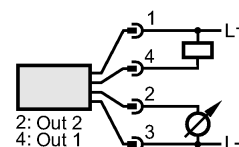
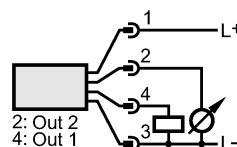
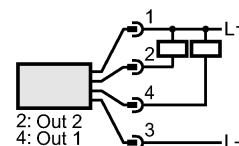
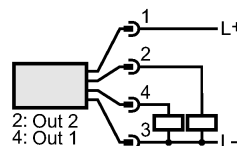
Mechanical data		
Process connection		G ¼ I
Materials (wetted parts)		stainless steel (303S22); ceramics; FPM (Viton)
Housing materials		stainless steel (304S15); stainless steel 316L / 1.4404; PC (Makrolon); PBT (Pocan); PEI; FPM (Viton)
Switching cycles min.		100 million
Weight [kg]		0.265

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

**Wiring**

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)



**PN2021**

PN-250-SBR14-MFRKG/US/ IV

**Pressure sensors****Remarks**

Remarks

- 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

Pack quantity

[piece]

1

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**New generation available: PN2071**