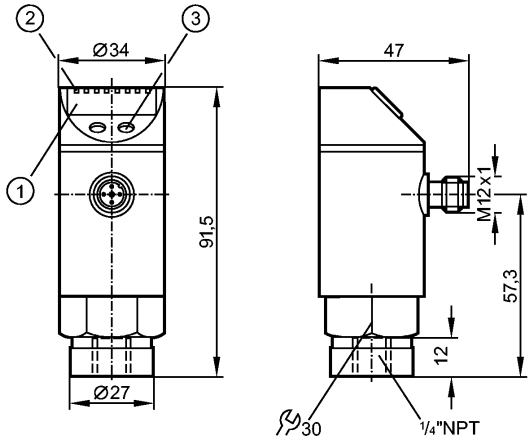
PN2221

PN-250-SBN14-MFRKG/US/ /V

Pressure sensors

New generation available: PN2271



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: ¼" NPT
- 2 outputs
  OUT1 = switching output
  OUT2 = switching output or analog output
- 4-digit alphanumeric display
- Measuring range: 0...3630 psi / 0...250 bar / 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		5800 psi	400 bar	40 MPa
Bursting pressure min.		12300 psi	850 bar	85 MPa
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)

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. (Ub - 10 V) x 50 / 0...10 V: min. 2000		
Measuring / setting range				
Measuring range		0...3630 psi	0...250 bar	0...25 MPa
Setting range				
Set point, SP		30...3625 psi	2.0...250.0 bar	0.20...25.0 MPa
Reset point, rP		15...3610 psi	1.0...249.0 bar	0.10...24.90 MPa
Analog start point, ASP		0...2720 psi	0.0...187.5 bar	0.00...18.75 MPa
Analog end point, AEP		905...3625 psi	62.5...250.0 bar	6.25...25.00 MPa
in steps of		5 psi	0.5 bar	0.05 MPa
Factory setting		SP1 = 905 psi; rP1 = 835 psi SP2 = 2720 psi; rP2 = 26450 psi ASP = 0 psi; AEP = 3525 psi		
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		
Interfaces				
IO-Link Device				
Transfer type		COM2 (38.4 kBaud)		
IO-Link revision		1.0		
Environment				

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Pressure sensors

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	¼" NPT
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]	0.292

Displays / operating elements

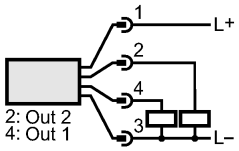
Display	Display unit 3 x LED green
	Switching status 2 x LED yellow
	Function display 4-digit alphanumeric display
	Measured values 4-digit alphanumeric display

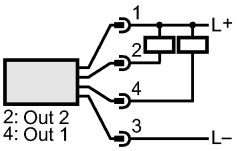
Electrical connection

Connection	M12 connector; gold-plated contacts

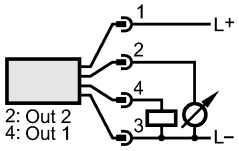
Wiring

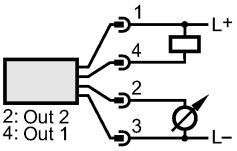
Programming of the output function (OUT1 / OUT2):
Hno = hysteresis / normally open
Hnc = hysteresis / normally closed
Fno = window function / normally open
Fnc = window function / normally closed
Complementary outputs:
output 1: = Hno, output 2: = Hnc
(with the same SP / rP)





Programming of the analog output (OUT2):
I = current output (4...20 mA)
U = voltage output (0...10 V)





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