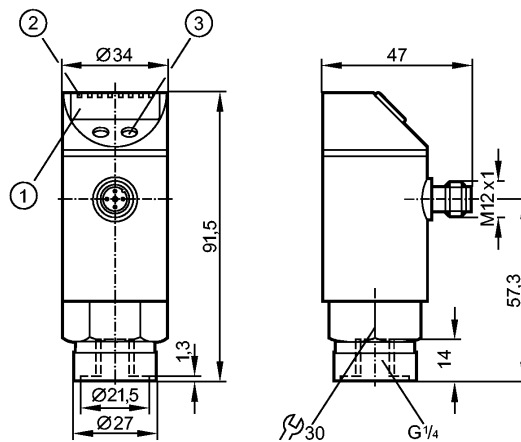


PN2020

PN-400-SBR14-MFRKG/US/ IV

Pressure sensors

New generation available: PN2070



- 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: 0...400 bar / 0...5800 psi / 0...40 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	600 bar	8700 psi	60 MPa
Bursting pressure min.	1000 bar	14500 psi	100 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)

PN2020

PN-400-SBR14-MFRKG/US/ /V

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			
Measuring range	0...400 bar	0...5800 psi	0...40 MPa
Setting range			
Set point, SP	4...400 bar	60...5800 psi	0.4...40.0 MPa
Reset point, rP	2...398 bar	30...5770 psi	0.2...39.8 MPa
Analog start point, ASP	0...300 bar	0...4350 psi	0.0...30.0 MPa
Analog end point, AEP	100...400 bar	1450...5800 psi	10.0...40.0 MPa
in steps of	1 bar	10 psi	0.1 MPa
Factory setting	SP1 = 100 bar; rP1 = 92 bar SP2 = 300 bar; rP2 = 292 bar ASP = 0 bar; AEP = 400 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

Interfaces	
IO-Link Device	
Transfer type	COM2 (38.4 kBaud)
IO-Link revision	1.0
IO-Link Device ID	56 d / 00 00 38 h

PN2020

PN-400-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

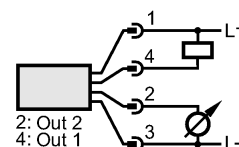
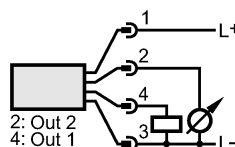
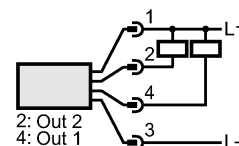
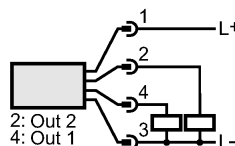
Mechanical data		
Process connection		G ¼ I
Materials (wetted parts)		stainless steel (303S22); ceramics; FPM (Viton)
Housing materials		stainless steel (304S15); stainless steel 316L / 1.4404; PC (Makrolon); PBT (Pocan); PEI; FPM (Viton)
Switching cycles min.		100 million
Weight [kg]		0.267

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)



**PN2020**

PN-400-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: PN2070