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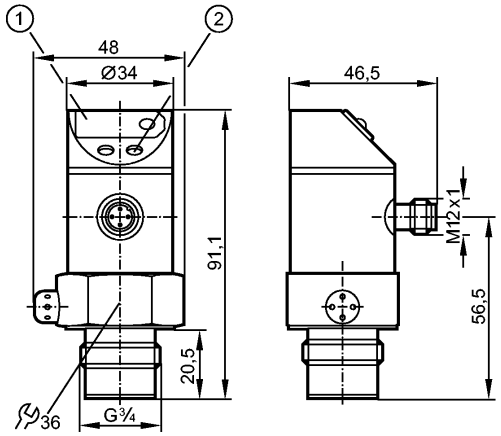
PF2954

PF-010-REB34-MFRKG/US/ /P

Pressure sensors



1: 7-segment LED display
2: Programming button

Product characteristics

- Combined pressure sensor
- Quick disconnect
- no dead space
- Freely rotatable housing 350°
- Zero and span adjustable
- Function programmable
- Process connection: G ¾ A
- 2 outputs
  OUT1 = switching output
  OUT2 = switching output or analog output
- 7-segment LED display
- Measuring range: -0.5...10 bar / -7...145 psi / -50...1000 kPa

Application

Application		Type of pressure: relative pressure Hygienic systems, viscous media and liquids with suspended particles Liquids and gases		
Pressure rating		50 bar	725 psi	5000 kPa
Bursting pressure min.		150 bar	2175 psi	15000 kPa
Medium temperature	[°C]	-25...80		

Electrical data

Electrical design		DC PNP/NPN
Operating voltage	[V]	20...30 DC
Current consumption	[mA]	< 60
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]	≤ 170		
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				
Display unit		bar, psi, kPa		
Measuring range		-0.5...10 bar	-7...145 psi	-50...1000 kPa
Setting range				
Set point, SP		-0.45...9.99 bar	-7 ...145 psi	-45...999 kPa
Reset point, rP		-0.50...9.94 bar	-7 ...144 psi	-50...994 kPa
Analog start point, ASP		-0.50...7.49 bar	-7 ...109 psi	-50...749 kPa
Analog end point, AEP		2.00...9.99 bar	29 ...145 psi	200...999 kPa
in steps of		0.01 bar	1 psi	1 kPa
Factory setting		SP1 = 2.50 bar; rP1 = 2.30 bar ASP = 0.00 bar; AEP = 9.99 bar		
Accuracy / deviations				
Accuracy / deviations (in % of the span) Turn down 1:1				
Characteristics deviation *)		< ± 0.6		
Linearity		< ± 0.5		
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		< ± 0.1		
Greatest TEMPCO of the span		< ± 0.2		
Reaction times				
Power-on delay time	[s]	0.2		
Min. response time switching output	[ms]	3		
Damping for the switching output (dAP)	[s]	0...4		
Damping for the analog output (dAA)	[s]	0 - 0.1 - 0.5 - 2		
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		
Environment				
Ambient temperature	[°C]	-25...80		
Storage temperature	[°C]	-40...100		
Protection		IP 67		

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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 61000-4-6 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]		170

Mechanical data

Process connection	G ¾ A
Materials (wetted parts)	ceramics (99.9 % Al2 O3); PTFE; FPM (Viton); stainless steel 316L / 1.4435; surface characteristics: Ra < 0.4 / Rz 4
Housing materials	stainless steel 316L / 1.4404; PBT (Pocan); PC (Makrolon); PEI; EPDM/X (Santoprene); FPM (Viton)
Switching cycles min.	100 million
Weight [kg]	0.303

Displays / operating elements

Display	Switching status	2 x LED red
	Function display	7-segment LED display
	Measured values	7-segment LED display

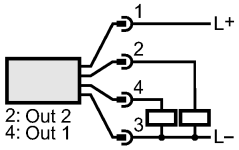
Electrical connection

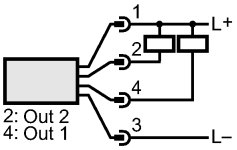
Connection	M12 connector; gold-plated contacts

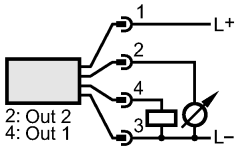
Wiring

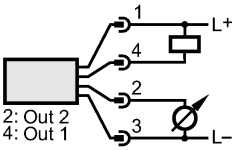
Programming of the output function (OUT1 / OUT2):
Hno = hysteresis / normally open
Hnc = hysteresis / normally closed
Fno = window function / normally open
Fnc = window function / normally closed
Complementary outputs:
output 1: = Hno, output 2: = Hnc
(with the same SP / rP)

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









Remarks

Remarks	*) linearity, incl. hysteresis and repeatability; (limit value setting to DIN 16086) **) with temperature fluctuations < 10 K ***) in % of the span per year	
Pack quantity [piece]	1	