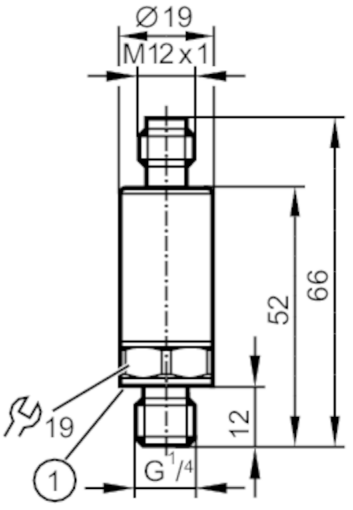
PV8004

Pressure switch with IO-Link

PV-010-REG14-UFRVG/US/ /



1 Sealing

Product characteristics			
Number of inputs and outputs	Number of digital outputs: 2		
Measuring range	-1...10 bar	-14.5...145 psi	-0.1...1 MPa
Process connection	threaded connection G 1/4 external thread (DIN EN ISO 1179-2); internal thread:M5		
Application			
Measuring element	metallic thin film cell		
Application	for industrial applications		
Media	liquids and gases		
Medium temperature [°C]	-40...90		
Min. bursting pressure	300 bar	4350 psi	30 MPa
Pressure rating	25 bar	360 psi	2.5 MPa
Note on pressure rating	static		
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure		
Electrical data			
Operating voltage [V]	18...30 DC		
Current consumption [mA]	< 15		
Min. insulation resistance [MΩ]	100; (500 V DC)		
Protection class	III		
Reverse polarity protection	yes		
Power-on delay time [s]	< 0.3		
Inputs / outputs			
Number of inputs and outputs	Number of digital outputs: 2		
Outputs			
Total number of outputs	2		
Output signal	switching signal; IO-Link; (configurable)		
Electrical design	PNP/NPN		

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Number of digital outputs		2		
Output function		normally open / normally closed; (parameterisable)		
Max. voltage drop switching output DC	[V]	2		
Permanent current rating of switching output DC	[mA]	100		
Switching frequency DC	[Hz]	< 130		
Short-circuit protection		yes		
Type of short-circuit protection		pulsed		
Overload protection		yes		
Measuring/setting range				
Measuring range		-1...10 bar	-14.5...145 psi	-0.1...1 MPa
Set point SP		-0.9...10 bar	-13.1...145 psi	-0.09...1 MPa
Reset point rP		-0.949...9.951 bar	-13.8...144.3 psi	-0.0949...0.9951 MPa
In steps of		0.001 bar	0.1 psi	0.0001 MPa
Factory setting		SP1 = 2.5 bar	rP1 = 2.3 bar	ou1 = Hno;
		SP2 = 7.5 bar	rP2 = 7.3 bar	ou2 = Hno;
		dS1/dS2 = 0 ms	dr1/dr2 = 0 ms	
		coF = 0 %	P-n = PnP	dAP= 60 ms
Temperature monitoring				
Measuring range		-40...90 °C	-40...194 °F	
Set point SP		-38...90 °C	-36.4...194 °F	
Reset point rP		-40...88 °C	-40...19.4 °F	
In steps of		0.1 °C	0.1 °F	
Accuracy / deviations				
Switch point accuracy	[X21]	< ± 0,5 (nach DIN EN 61298-2)		
Repeatability	[X21]	< ± 0,05; (with temperature fluctuations < 10 K)		
Characteristics deviation	[X21]	< ± 0,5; (linearity incl. hysteresis and repeatability, limit value setting to DIN EN IEC 62828-1)		
Linearity deviation	[X21]	< ± 0,1 (BFSL) / < ± 0,2 (LS)		
Hysteresis deviation	[X21]	< ± 0,2		
Long-term stability	[X21]	< ± 0,1; (per 6 months)		
Temperature coefficient zero point	[X22]	< 0,1 (-25...90 °C) / < 0,2 (-40...-25 °C)		
Temperature coefficient span	[X22]	< 0,1 (-25...90 °C) / < 0,2 (-40...-25 °C)		
Temperature monitoring				
Accuracy	[K]	± 2 K + (0.1 x (ambient temperature - medium temperature))		
Notes on the accuracy / deviation		temperature range -10 to 80 °C		
Response times				
Response time	[ms]	< 3		
Temperature monitoring				
Dynamic response T05 / T09	[s]	< 80 / < 210 (under ifm reference conditions)		
Software / programming				
Parameter setting options		hysteresis / window; normally open / normally closed; switching logic; switch-on/switch-off delay; Damping		

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Interfaces			
Communication interface		IO-Link	
Transmission type		COM2 (38,4 kBaud)	
IO-Link revision		1.1	
SDCI standard		IEC 61131-9	
Profiles		Identification and Diagnosis (0x4000), Measurement Data Channel (0x800A)	
SIO mode		yes	
Required master port type		A	
Process data analogue		5	
Process data binary		2	
Min. process cycle time	[ms]	4.5	
IO-Link resolution pressure	[bar]	0.005	
IO-Link resolution pressure	[MPa]	0.0005	
IO-Link resolution temperature	[K]	0.2	
IO-Link process data (cyclical)		**function**	**bit length**
		pressure	16
		temperature	16
		device status	4
		binary switching information	2
IO-Link functions (acyclical)		application specific tag; internal temperature; operating hours counter; switching cycles counter; Pressure peak counter; Temperature peak counter	
Supported DeviceIDs		**Type of operation**	**DeviceID**
		default	1210
Operating conditions			
Ambient temperature	[°C]	-40...90	
Storage temperature	[°C]	-40...100	
Protection		IP 67; IP 69K	
Tests / approvals			
EMC		DIN EN 61326-1	
Shock resistance		DIN EN 60068-2-27	500 g (1 ms)
Vibration resistance		DIN EN 60068-2-6	20 g (10...2000 Hz)
MTTF	[ANN]	668	
UL approval		UL Approval no.	J037
		File number UL	E174189
Pressure Equipment Directive		Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data			
Weight	[g]	53.5	
Materials		1.4542 (17-4 PH / 630); stainless steel (1.4404 / 316L); PEI	
Materials (wetted parts)		stainless steel (1.4305 / 303); 1.4542 (17-4 PH / 630)	
Min. pressure cycles		60 million; (at 1.2 times nominal pressure)	
Tightening torque	[Nm]	25...35; (recommended tightening torque; depends on lubrication, seal and pressure rating)	
Process connection		threaded connection G 1/4 external thread (DIN EN ISO 1179-2); internal thread:M5	
Process connection sealing		FKM (DIN EN ISO 1179-2)	
Restrictor element integrated		yes	

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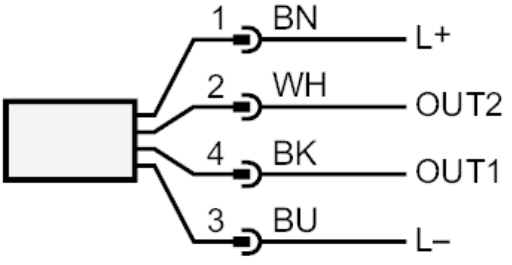
Remarks

Remarks	BFSL = Best Fit Straight Line
	LS = limit value setting
Pack quantity	1 pcs.

Electrical connection

Connector: 1 x M12; coding: A

Connection



OUT1	switching output pressure
	IO-Link
OUT2	switching output pressure / temperature
	colours to DIN EN 60947-5-2
	Core colours :
BK =	black
BN =	brown
BU =	blue
WH =	white