

PV8004



Pressure switch with IO-Link

PV-010-REG14-UFRVG/US /



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
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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 [% of the span]	< ± 0,5 (nach DIN EN 61298-2)
Repeatability [% of the span]	< ± 0,05; (with temperature fluctuations < 10 K)
Characteristics deviation [% of the span]	< ± 0,5; (linearity incl. hysteresis and repeatability, limit value setting to DIN EN IEC 62828-1)
Linearity deviation [% of the span]	< ± 0,1 (BFSL) / < ± 0,2 (LS)
Hysteresis deviation [% of the span]	< ± 0,2
Long-term stability [% of the span]	< ± 0,1; (per 6 months)
Temperature coefficient zero point [% of the span / 10 K]	< 0,1 (-25...90 °C) / < 0,2 (-40...-25 °C)
Temperature coefficient span [% of the span / 10 K]	< 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



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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	
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	[years]	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 (316L/1.4404); PEI	
Materials (wetted parts)	stainless steel (1.4305 / 303); 1.4542 (17-4 PH / 630)	

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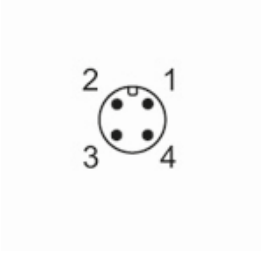
PV-010-REG14-UFRVG/US/ /

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

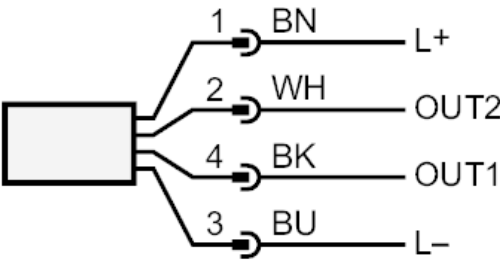
Remarks	
Remarks	BFSL = Best Fit Straight Line LS = limit value setting
Pack quantity	1 pcs.

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