

PV8023



Pressure switch with IO-Link

PV-060-REG14-UFRVG/US /



1 Sealing



Product characteristics

Number of inputs and outputs	Number of digital outputs: 2		
Measuring range	0...60 bar	0...870 psi	0...6 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	900 bar	13050 psi	90 MPa
Pressure rating	150 bar	2175 psi	15 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



Pressure switch with IO-Link

PV-060-REG14-UFRVG/US/ /

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	0...60 bar	0...870 psi	0...6 MPa
Set point SP	0.6...60 bar	9...870 psi	0...6 MPa
Reset point rP	0.31...59.71 bar	4...866 psi	0.031...5.971 MPa
In steps of	0.01 bar	1 psi	0.001 MPa
Factory setting	SP1 = 15 bar	rP1 = 13.8 bar	ou1 = Hno;
	SP2 = 45 bar	rP2 = 43.8 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...190.4 °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



Pressure switch with IO-Link

PV-060-REG14-UFRVG/US/ /

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]	0.02
IO-Link resolution pressure	[MPa]	0.002
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	1215
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]	56.1
Materials	stainless steel (630/1.4542/17-4 PH); stainless steel (316L/1.4404); PEI	
Materials (wetted parts)	stainless steel (303/1.4305); stainless steel (630/1.4542/17-4 PH)	

PV8023



Pressure switch with IO-Link

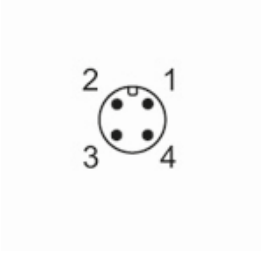
PV-060-REG14-UFRVG/US/ /

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

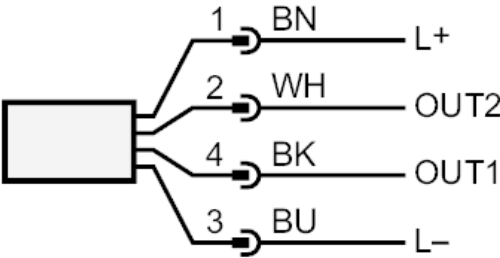
Remarks	
Remarks	BFSL = Best Fit Straight Line LS = limit value setting
Pack quantity	1 pcs.

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