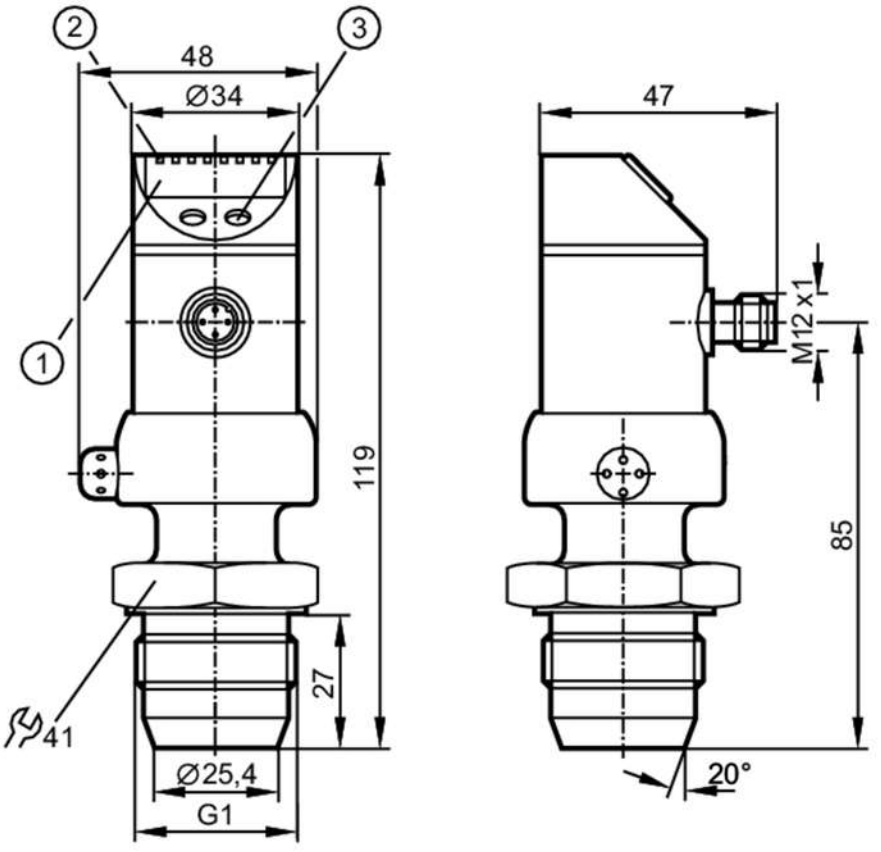
PIM693

Pressure sensor with diagnostic function for pumps

PIM025-REA01-KFPKG/US/ /P



1 alphanumeric display 4-digit
2 status LEDs
3 programming button

EC 1935/2004 EHEDG Tested FCM

Product characteristics			
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1		
Measuring range	-1...25 bar	-14.4...362.7 psi	-0.1...2.5 MPa
Process connection	threaded connection G 1 external thread sealing cone		
Application			
Special feature	Gold-plated contacts		
Application	flush mountable for the food and beverage industry		
Installation	freely rotatable housing 350°		
Media	viscous media and liquids with suspended particles; liquids and gases		
Medium temperature [°C]	-25...125; (145 max. 1h)		
Min. bursting pressure	350 bar	5070 psi	35 MPa
Pressure rating	100 bar	1450 psi	10 MPa
Type of pressure	relative pressure; vacuum		
No dead space	yes		
Electrical data			
Operating voltage [V]	18...32 DC		
Current consumption [mA]	< 50		

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Min. insulation resistance	[MΩ]	100; (500 V DC)
Protection class		III
Reverse polarity protection		yes
Power-on delay time	[s]	0.2
Integrated watchdog		yes

Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1

Outputs

Total number of outputs		2
Output signal		switching signal; analogue signal; (configurable)
Electrical design		PNP
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]	250
Switching frequency DC	[Hz]	350
Notes on switching frequency	[Hz]	OUT2
Number of analogue outputs		1
Analogue current output	[mA]	4...20, invertible; (scalable)
Max. load	[Ω]	(Ub - 10 V) / 20 mA
Short-circuit protection		yes
Type of short-circuit protection		pulsed
Overload protection		yes

Measuring/setting range

Measuring range	-1...25 bar	-14.4...362.7 psi	-0.1...2.5 MPa
Set point SP	-0.96...25 bar	-13.8...362.7 psi	-0.096...2.5 MPa
Reset point rP	-1...24.96 bar	-14.4...362.1 psi	-0.1...2.496 MPa
Analogue start point	-1...18.74 bar	-14.4...271.8 psi	-0.1...1.874 MPa
Analogue end point	5.24...25 bar	76.2...362.7 psi	0.524...2.5 MPa
In steps of	0.02 bar	0.3 psi	0.002 MPa
Factory setting		OU1 = Fnc	OU2 = I
		ASP = 0.00 bar	AEP = 25.00 bar

Accuracy / deviations

Switch point accuracy	[% of the span]	< ± 0,2; (Turn down 1:1)
Repeatability	[% of the span]	< ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)
Characteristics deviation	[% of the span]	< ± 0,2; (Turn down 1:1 , linearity, incl. hysteresis and repeatability , limit value setting to DIN EN IEC 62828-1)
Linearity deviation	[% of the span]	< ± 0,15; (Turn down 1:1)
Hysteresis deviation	[% of the span]	< ± 0,15; (Turn down 1:1)
Long-term stability		< ± 0,1; (Turn down 1:1; per year)

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[% of the span]			
Temperature coefficient zero point [% of the span / 10 K]		< ± 0,15; (0...70 °C)	
Temperature coefficient span [% of the span / 10 K]		< ± 0,1; (0...70 °C)	
Response times			
Response time	[ms]	< 2.5	
Damping process value dAP	[s]	0...10	
Damping for the analogue output dAA	[s]	0...10	
Step response time analogue output	[ms]	0.2	
Software / programming			
Parameter setting options		zero point; span	
Operating conditions			
Ambient temperature	[°C]	-25...80	
Storage temperature	[°C]	-40...100	
Protection		IP 67; IP 69K	
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]	188	
Mechanical data			
Weight	[g]	457	
Housing		cylindrical	
Dimensions	[mm]	Ø 34 / L = 119	
Materials		stainless steel (316L/1.4404); PC; PBT; PEI; FKM; PTFE	
Materials (wetted parts)		ceramics (99.9 % Al2O3); stainless steel (316L/1.4435); surface characteristics: Ra < 0,4 / Rz 4; PTFE	
Min. pressure cycles		100 million	
Process connection		threaded connection G 1 external thread sealing cone	
Displays / operating elements			
Display		Display unit	4 x LED, green
		switching status	2 x LED, yellow
		function display	alphanumeric display, 4-digit
		measured values	alphanumeric display, 4-digit

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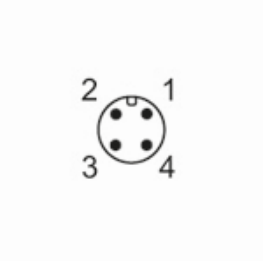
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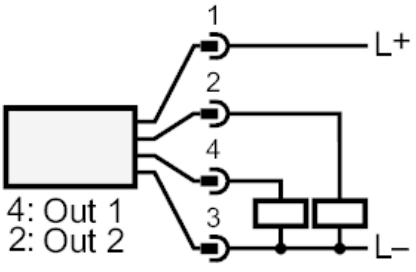
Remarks	
Remarks	pump diagnosis for pumps with constant rotational speed (+/- 10 % deviation of the taught rotational speed)
	speed range 40...3000 U/min
	minimum pressure for pump diagnosis 0,5 bar
	The 3-A qualification is only valid if adapters with 3-A qualification are used for installation.
Pack quantity	1 pcs.

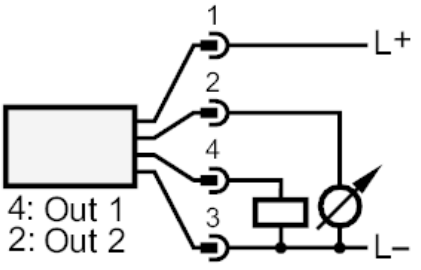
Electrical connection

Connector: 1 x M12; coding: A; Contacts: gold-plated



Connection





OUT1	pump diagnosis
OUT2	pressure monitoring