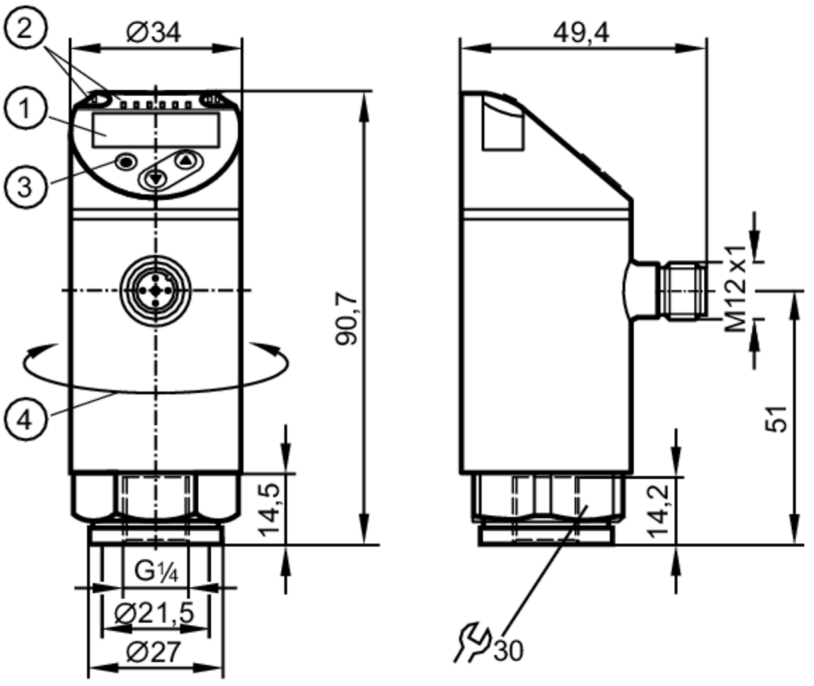
PN7160

Pressure sensor with display

PN-600-SER14-QFRKG/US/ /V



1 alphanumeric display 4-digit red/green
2 LEDs Display unit / switching status
3 programming button
4 upper part of the housing can be rotated 345°

Product characteristics				
Number of inputs and outputs		Number of digital outputs: 2		
Measuring range		0...600 bar	0...8700 psi	0...60 MPa
Process connection		threaded connection G 1/4 internal thread		
Application				
Special feature		Gold-plated contacts		
Measuring element		metallic thin film cell		
Application		for industrial applications		
Media		liquids and gases		
Medium temperature	[°C]	-25...80		
Min. bursting pressure		2500 bar	36250 psi	250 MPa
Pressure rating		800 bar	11580 psi	80 MPa
Vacuum resistance	[mbar]	-1000		
Vacuum resistance	[MPa]	-0.1		
Type of pressure		relative pressure		
Electrical data				
Operating voltage	[V]	18...30 DC; (to SELV/PELV)		
Current consumption	[mA]	< 35		
Min. insulation resistance	[MΩ]	100; (500 V DC)		
Protection class		III		
Reverse polarity protection		yes		

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Power-on delay time	[s]	< 0.3		
Integrated watchdog		yes		
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		
Number of digital outputs		2		
Output function		normally open / normally closed; (parameterisable)		
Max. voltage drop switching output DC	[V]	2.5		
Permanent current rating of switching output DC	[mA]	150; (200 (...60 °C) 250 (...40 °C))		
Switching frequency DC	[Hz]	< 170		
Short-circuit protection		yes		
Type of short-circuit protection		pulsed		
Overload protection		yes		
Measuring/setting range				
Measuring range		0...600 bar	0...8700 psi	0...60 MPa
Factory setting / CMPT = 2				
Set point SP		4...600 bar	40...8700 psi	0.4...60 MPa
Reset point rP		2...598 bar	20...8680 psi	0.2...59.8 MPa
Min. difference between SP and rP		2 bar	40 psi	0.2 MPa
In steps of		2 bar	20 psi	0.2 MPa
Status_B High Resolution / CMPT = 3				
Set point SP		3...600 bar	47...8702 psi	0.3...60 MPa
Reset point rP		2...599 bar	26...8681 psi	0.2...59.9 MPa
Min. difference between SP and rP		2 bar	21 psi	0.2 MPa
In steps of		1 bar	1 psi	0.1 MPa
Accuracy / deviations				
Switch point accuracy	[% of the span]	< ± 0,5		
Repeatability	[% of the span]	< ± 0,1; (with temperature fluctuations < 10 K)		
Characteristics deviation	[% of the span]	< ± 0,25 (BFSL) / < ± 0,5 (LS); (BFSL = Best Fit Straight Line; LS = limit value setting)		
Hysteresis deviation	[% of the span]	< ± 0,25		
Long-term stability	[% of the span]	< ± 0,05; (per 6 months)		
Temperature coefficient zero point	[% of the span / 10 K]	0,2; (-25...80 °C)		
Temperature coefficient span		0,2; (-25...80 °C)		

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[% of the span / 10 K]		

Response times		
Response time	[ms]	< 3
Delay time programmable dS, dr	[s]	0...50

Software / programming	
Parameter setting options	hysteresis / window; normally open / normally closed; switching logic; switch-on/switch-off delay; Damping; Display unit

Interfaces		
Communication interface		IO-Link
Transmission type		COM2 (38,4 kBaud)
IO-Link revision		1.1
SDCI standard		IEC 61131-9
SIO mode		yes
Required master port type		A; (when pin 2 not connected: B)
Process data analogue		1
Process data binary		2
Supported DeviceIDs	**Type of operation**	**DeviceID**
	Factory setting / CMPT = 2	398
	PN7060	315
	Status_B High Resolution / CMPT = 3	596
Note		For further information please see the IODD PDF file under "Downloads"

Factory setting / CMPT = 2		
Profiles		Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis
Min. process cycle time	[ms]	2.3
IO-Link resolution pressure	[bar]	1
IO-Link resolution pressure	[MPa]	0.1
IO-Link process data (cyclical)	**function**	**bit length**
	pressure	14
	binary switching information	2
IO-Link functions (acyclical)		application specific tag

Status_B High Resolution / CMPT = 3		
Profiles		Smart Sensor ED2: Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)
Min. process cycle time	[ms]	3
IO-Link resolution pressure	[bar]	0.2
IO-Link resolution pressure	[MPa]	0.02
IO-Link process data (cyclical)	**function**	**bit length**
	pressure	16
	device status	4
	binary switching information	2
IO-Link functions (acyclical)		application specific tag

Operating conditions		
Ambient temperature	[°C]	-25...80
Storage temperature	[°C]	-40...100

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Protection		IP 65; IP 67	
Tests / approvals			
EMC		DIN EN 61000-6-2	
		DIN EN 61000-6-3	
Shock resistance		DIN EN 60068-2-27	50 g (11 ms)
Vibration resistance		DIN EN 60068-2-6	20 g (10...2000 Hz)
MTTF	[years]	214	
UL approval		UL Approval no.	J003
Pressure Equipment Directive		Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data			
Weight	[g]	231.5	
Housing		cylindrical	
Dimensions	[mm]	Ø 34 / L = 90.7	
Materials		stainless steel (630/1.4542/17-4 PH); stainless steel (316L/1.4404); PBT+PC-GF30; PBT-GF20; PC	
Materials (wetted parts)		stainless steel (630/1.4542/17-4 PH)	
Min. pressure cycles		100 million	
Tightening torque	[Nm]	30...50; (recommended tightening torque; depends on lubrication, seal and pressure rating)	
Process connection		threaded connection G 1/4 internal thread	
Restrictor element integrated		no (can be retrofitted)	
Displays / operating elements			
Display		Display unit	3 x LED, green (bar, psi, MPa)
		switching status	2 x LED, yellow
		measured values	alphanumeric display, red/green 4-digit
Remarks			
Pack quantity		1 pcs.	

Electrical connection

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

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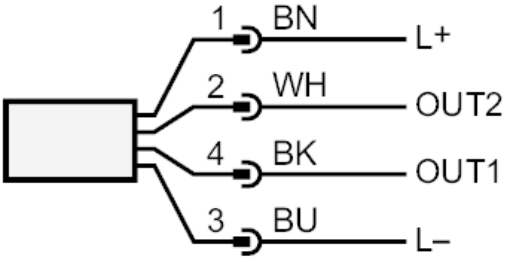
Connection



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