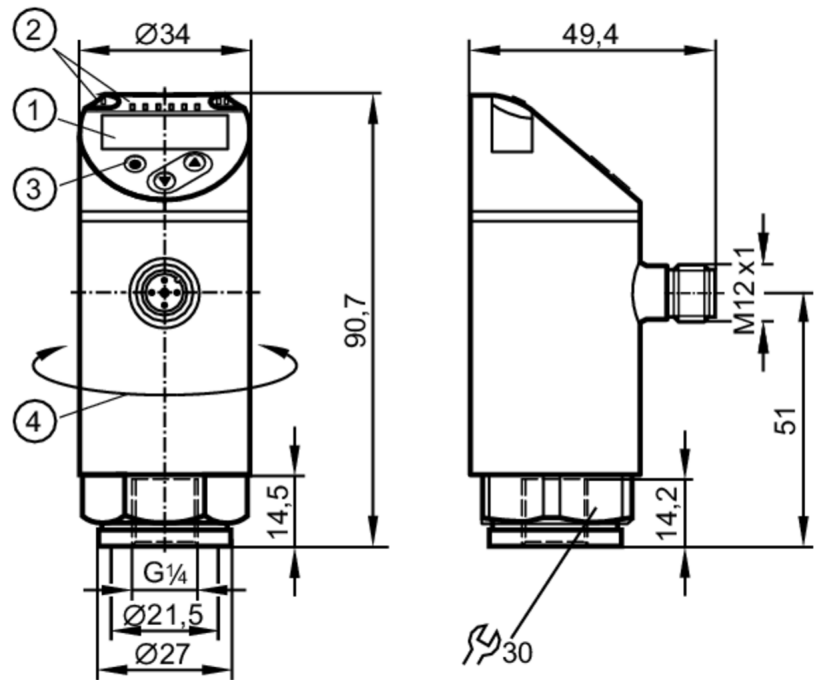


PN2160



Pressure sensor with display

PN-600-SER14-MFRKG/US/ IV



- 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; Number of analogue outputs: 1		
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		
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		
Power-on delay time [s]	0.3		



Pressure sensor with display

PN-600-SER14-MFRKG/US/ /V

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; 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		
Permanent current rating of switching output DC [mA]	250		
Switching frequency DC [Hz]	< 500		
Number of analogue outputs	1		
Analogue current output [mA]	4...20; (scalable 1:5)		
Max. load [Ω]	500		
Analogue voltage output [V]	0...10; (scalable 1:5)		
Min. load resistance [Ω]	2000		
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
Analogue start point	0...480 bar	0...6960 psi	0...48 MPa
Analogue end point	120...600 bar	1740...8700 psi	12...60 MPa
Factory setting / CMPT = 2			
Set point SP	4...600 bar	60...8700 psi	0.4...60 MPa
Reset point rP	1...597 bar	20...8660 psi	0.1...59.7 MPa
Min. difference between SP and rP	3 bar	40 psi	0.3 MPa
In steps of	1 bar	20 psi	0.1 MPa
Status_B High Resolution / CMPT = 3			
Set point SP	4...600 bar	55...8702 psi	0...60 MPa
Reset point rP	1...597 bar	19...8666 psi	0...60 MPa
Min. difference between SP and rP	3 bar	37 psi	1 MPa
In steps of	1 bar	1 psi	1 MPa
Accuracy / deviations			
Switch point accuracy [X21]	< ± 0,4; (Turn down 1:1)		
Repeatability [X21]	< ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)		
Characteristics deviation [X21]	< ± 0,25 (BFSL) / < ± 0,5 (LS); (Turn down 1:1; BFSL = Best Fit Straight Line; LS = limit value setting)		
Hysteresis deviation [X21]	< ± 0,1; (Turn down 1:1)		
Long-term stability [X21]	< ± 0,05; (Turn down 1:1; per 6 months)		



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Temperature coefficient zero [X22] point	0,2; (-25...80 °C)
Temperature coefficient span [X22]	0,2; (-25...80 °C)
Notes on the accuracy / deviation	switch point accuracy, linearity error under DNV GL: < ± 1%: < ± 1%

Response times

Response time [ms]	< 1.5
Delay time programmable dS, dr [s]	0...50
Damping process value dAP [s]	0...4
Damping for the analogue output dAA [s]	0...4
Max. response time analogue output [ms]	3

Software / programming

Parameter setting options	hysteresis / window; normally open / normally closed; switch-on/ switch-off delay; Damping; Display unit; current/voltage output
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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						
SIO mode	yes						
Required master port type	A; (when pin 2 not connected: B)						
Supported DeviceIDs	<table> <tr> <th>Type of operation</th><th>DeviceID</th></tr> <tr> <td>Factory setting / CMPT = 2</td><td>458</td></tr> <tr> <td>Status_B High Resolution / CMPT = 3</td><td>637</td></tr> </table>	Type of operation	DeviceID	Factory setting / CMPT = 2	458	Status_B High Resolution / CMPT = 3	637
Type of operation	DeviceID						
Factory setting / CMPT = 2	458						
Status_B High Resolution / CMPT = 3	637						
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]	0.1						
IO-Link process data (cyclical)	<table> <tr> <th>function</th><th>bit length</th></tr> <tr> <td>pressure</td><td>14</td></tr> <tr> <td>binary switching information</td><td>2</td></tr> </table>	function	bit length	pressure	14	binary switching information	2
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 process data (cyclical)	<table> <tr> <th>function</th><th>bit length</th></tr> <tr> <td>pressure</td><td>16</td></tr> <tr> <td>device status</td><td>4</td></tr> <tr> <td>binary switching information</td><td>2</td></tr> </table>	function	bit length	pressure	16	device status	4	binary switching information	2
function	bit length								
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IO-Link functions (acyclical)	application specific tag								

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Operating conditions		
Ambient temperature	[°C]	-25...80
Storage temperature	[°C]	-40...100
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	[ANN]	129
UL approval	UL Approval no.	J014
Pressure Equipment Directive	Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data		
Weight	[g]	233.5
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		
		

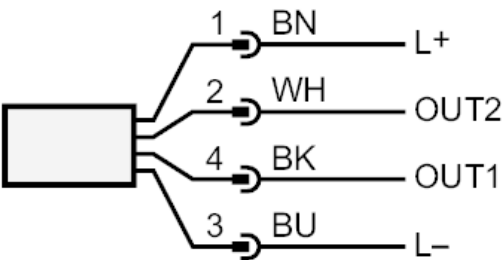
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Connection



OUT1	switching output
	IO-Link
OUT2	switching output
	analogue output
	Core colours :
BK =	black
BN =	brown
BU =	blue
WH =	white