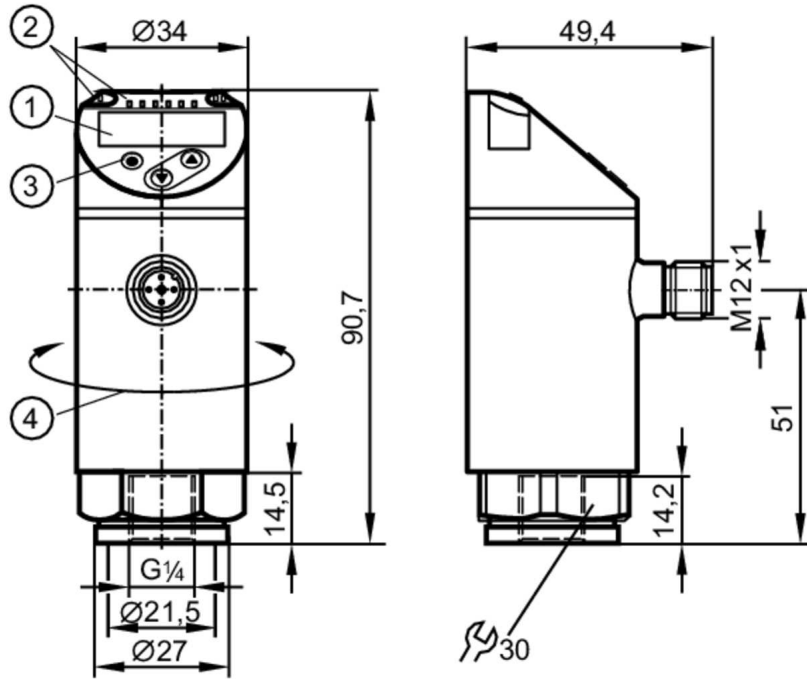


# PN3160



## 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: 1; Number of analog outputs: 1		
Measuring range	0...600 bar	0...8700 psi	0...60 MPa
Process connection	threaded connection G 1/4 Internal thread M6 I		

### Application

System	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		

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Integrated watchdog	yes
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### Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1
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### Outputs

Total number of outputs	2
Output signal	switching signal; analog signal; IO-Link; (configurable)
Electrical design	PNP
Number of digital outputs	1
Output function	normally open / closed; (configurable)
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
Number of analog outputs	1
Analog current output [mA]	4...20
Max. load [Ω]	500
Analog voltage output [V]	0...10
Min. load resistance [Ω]	2000
Short-circuit protection	yes
Type of short-circuit protection	yes (non-latching)
Overload protection	yes

### Measuring/setting range

Measuring range	0...600 bar	0...8700 psi	0...60 MPa
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#### 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	< ± 0,05; (per 6 months)

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	[% of the span]	
Temperature coefficient zero point	[% of the span / 10 K]	0,2; (-25...80 °C)
Temperature coefficient span	[% of the span / 10 K]	0,2; (-25...80 °C)

### Reaction times

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

### Software / programming

Parameter setting options	hysteresis / window; normally open / 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 class	A						
Process data analog	1						
Process data binary	1						
Supported DeviceIDs	<table border="1"> <thead> <tr> <th>Type of operation</th> <th>DeviceID</th> </tr> </thead> <tbody> <tr> <td>Factory setting / CMPT = 2</td> <td>426</td> </tr> <tr> <td>Status_B High Resolution / CMPT = 3</td> <td>605</td> </tr> </tbody> </table>	Type of operation	DeviceID	Factory setting / CMPT = 2	426	Status_B High Resolution / CMPT = 3	605
Type of operation	DeviceID						
Factory setting / CMPT = 2	426						
Status_B High Resolution / CMPT = 3	605						
Note	For further information please see the IODD PDF file at "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)	<table border="1"> <thead> <tr> <th>Function</th> <th>bit length</th> </tr> </thead> <tbody> <tr> <td>pressure</td> <td>14</td> </tr> <tr> <td>binary switching information</td> <td>1</td> </tr> </tbody> </table>	Function	bit length	pressure	14	binary switching information	1
Function	bit length						
pressure	14						
binary switching information	1						
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

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## Pressure sensor with display

PN-600-SER14-MFRKG/US/ IV

IO-Link process data (cyclical)	Function	bit length
	pressure	16
	device status	4
	binary switching information	1
IO-Link functions (acyclical)	application specific tag	

### 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	[years]	190
UL approval	UL approval number	J006
Pressure equipment directive	sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	

### Mechanical data

Weight	[g]	231
Material	1.4542 (17-4 PH / 630); stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC	
Materials (wetted parts)	1.4542 (17-4 PH / 630)	
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 M6 I	
Restrictor element integrated	no (can be retrofitted)	

### Displays / operating elements

Display	Display unit	3 x LED, green (bar, psi, MPa)
	Switching status	1 x LED, yellow
	Measured values	alphanumeric display, red/green 4-digit

### Remarks

Pack quantity	1 pcs.
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### Electrical connection

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



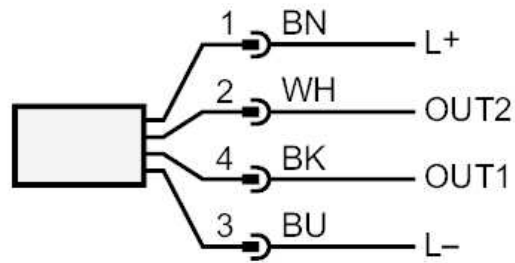
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### Connection



OUT1	Switching output IO-Link
OUT2	analog output
	Core colors :
BK =	black
BN =	brown
BU =	blue
WH =	white