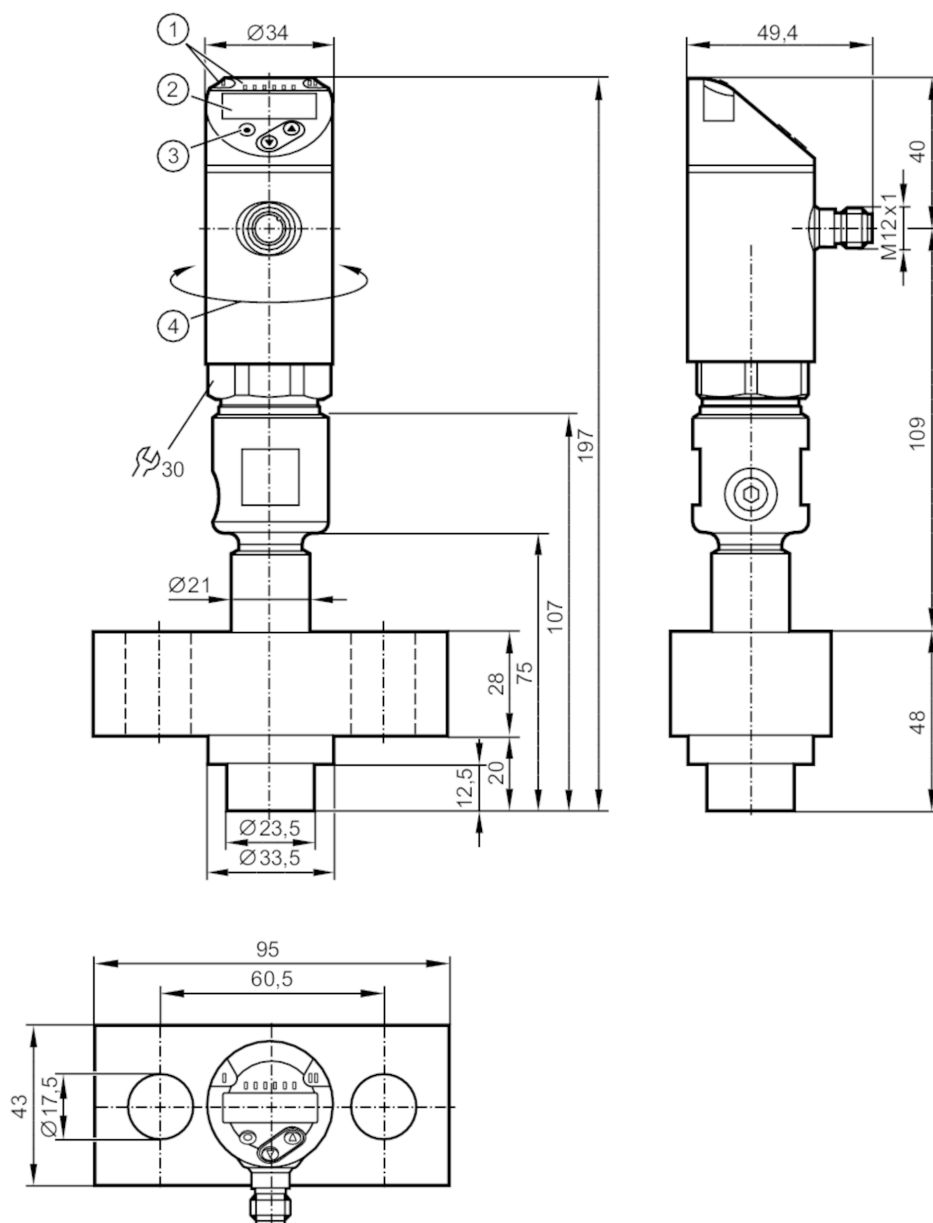


Pressure sensor with display

PN-400-SE MFRKG/US/ I



- 1 alphanumeric display 4-digit red/green
- 2 LEDs Display unit / switching status
- 3 programming button



Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1	
Measuring range	0...400 bar	0...5800 psi
Measuring range [MPa]	0...40	
Process connection	homogeniser connection	

Application

Special feature	Gold-plated contacts
Measuring element	diaphragm seal



Pressure sensor with display

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Application	flush mountable for the food and beverage industry	
Media	liquids and gases	
Medium temperature [°C]	5...90; (for further details see section Diagrams and graphs)	
Min. bursting pressure	1000 bar	14500 psi
Min. bursting pressure [MPa]	100	
Pressure rating	600 bar	8700 psi
Pressure rating [MPa]	60	
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	
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...400 bar	0...5800 psi
Measuring range [MPa]	0...40	
Set point SP	2.5...400 bar	40...5800 psi
Set point SP [MPa]	0.25...40	
Reset point rP	1...398.5 bar	10...5780 psi

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Reset point rP	[MPa]	0.1...39.85
Analogue start point		0...320 bar 0...4640 psi
Analogue start point	[MPa]	0...32
Analogue end point		80...400 bar 1160...5800 psi
Analogue end point	[MPa]	8...40
In steps of		0.5 bar 10 psi
In steps of	[MPa]	0.05

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]	< ± 1; (linearity, incl. hysteresis and repeatability; limit value setting to DIN EN IEC 62828-1)
Hysteresis deviation	[X21]	< ± 0,1; (Turn down 1:1)
Long-term stability	[X21]	< ± 0,05; (Turn down 1:1; per 6 months)
Temperature coefficient zero point	[X22]	0,2; (5...80 °C)
Temperature coefficient span	[X22]	0,2; (5...80 °C)

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				
Profiles	Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis				
SIO mode	yes				
Required master port type	A				
Process data analogue	1				
Process data binary	2				
Min. process cycle time	[ms] 2.3				
Supported DeviceIDs	<table><tr><th>Type of operation</th><th>DeviceID</th></tr><tr><td>default</td><td>459</td></tr></table>	Type of operation	DeviceID	default	459
Type of operation	DeviceID				
default	459				

Operating conditions

Ambient temperature	[°C] 5...80
Storage temperature	[°C] -40...100
Protection	IP 67

PY9070



Pressure sensor with display

PN-400-SE MFRKG/US/ /

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	10 g (10...2000 Hz)

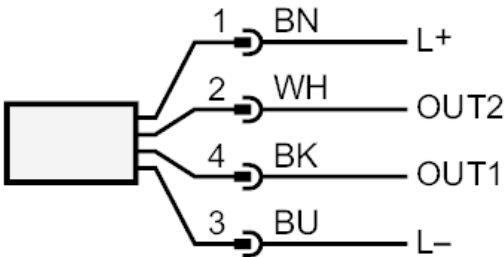
Mechanical data		
Weight	[g]	1479
Materials	1.4542 (17-4 PH / 630); stainless steel (1.4404 / 316L); stainless steel (1.4435 / 316L); PBT+PC-GF30; PBT-GF20; PC	
Materials (wetted parts)	stainless steel (1.4435 / 316L)	
Min. pressure cycles	60 million; (at 1.2 times nominal pressure)	
Process connection	homogeniser connection	

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



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

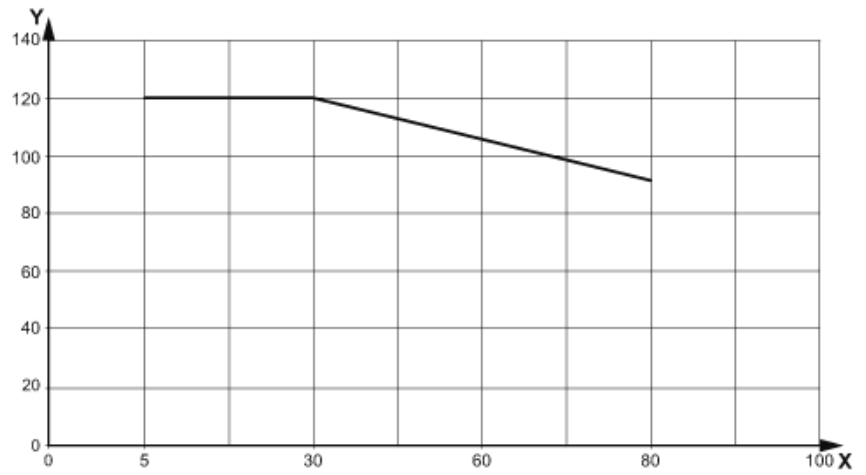
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Diagrams and graphs



X Ambient temperature

Y Medium temperature