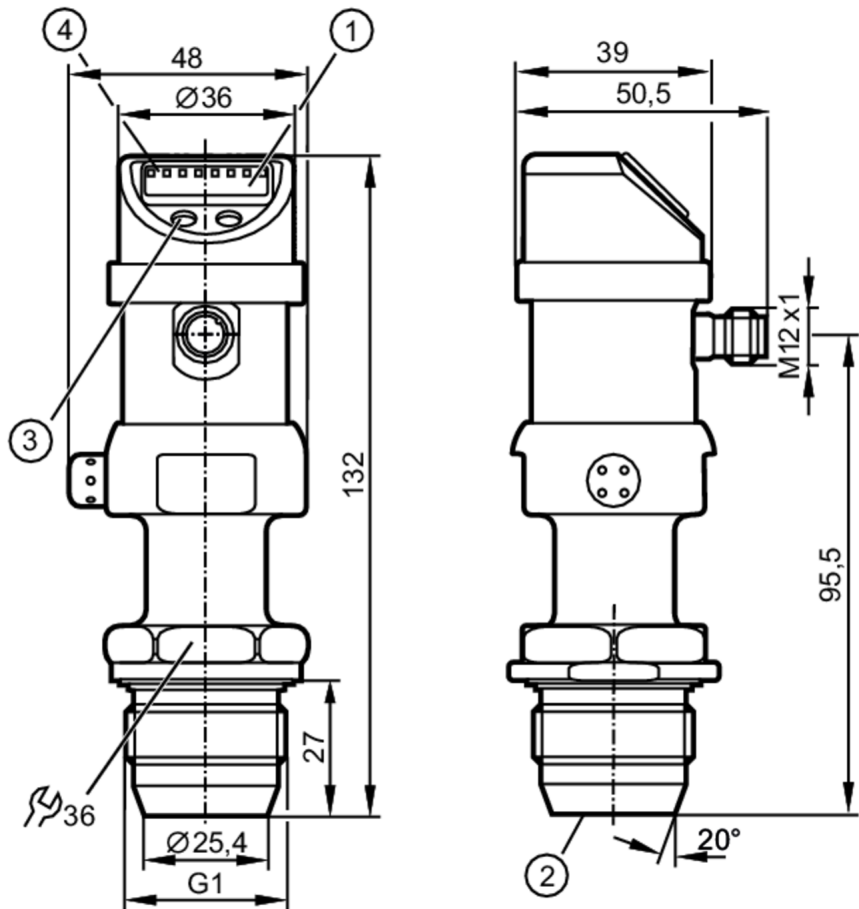


PI003A



Pressure sensor with display

PI-025-REA01-MFRKG/US/3D/3G /P



- 1 alphanumeric display 4-digit
- 2 recessed non flush mount measuring cell
- 3 Programming button
- 4 status LEDs



Product characteristics			
Number of inputs and outputs	Number of digital outputs: 1; Number of analog 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			
System	gold-plated contacts		
Application	food and beverage industry		
Installation	Freely rotatable housing 350°		
Media	viscous media and liquids with suspended particles; liquids and gases		
Medium temperature [°C]	-20...60; (when used outside the hazardous area; Ambient temperature: -25...85 °C; Medium temperature: -25...125 °C / 145 °C < 1h)		
Min. burst pressure	350 bar	5070 psi	35 MPa
Pressure rating	100 bar	1450 psi	10 MPa
Type of pressure	relative pressure; vacuum		
Electrical data			
Operating voltage [V]	18...32 DC		

PI003A



Pressure sensor with display

PI-025-REA01-MFRKG/US/3D/3G /P

Current consumption	[mA]	< 50
Protection class		III
Reverse polarity protection		yes
Power-on delay time	[s]	0.5
Integrated watchdog		yes

Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1
------------------------------	---

Outputs

Total number of outputs	2
Output signal	switching signal; analog signal; (configurable)
Electrical design	PNP/NPN
Number of digital outputs	1
Output function	normally open / closed; (configurable)
Max. voltage drop switching output DC	[V] 2
Permanent current rating of switching output DC	[mA] 250
Switching frequency DC	[Hz] 6
Number of analog outputs	1
Analog current output	[mA] 4...20, invertible; (scalable 1:4)
Max. load	[Ω] ($U_b - 10\text{ V}$) / 20 mA
Analog voltage output	[V] 0...10, invertible; (scalable 1:4)
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	-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
Analog start point	-1...18.74 bar	-14.4...271.8 psi	-0.1...1.874 MPa
Analog 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

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	[% of the span] < ± 0,1; (Turn down 1:1; per year)

PI003A



Pressure sensor with display

PI-025-REA01-MFRKG/US/3D/3G /P

Temperature coefficient zero point [% of the span / 10 K]	< ± 0,05; (0...70 °C)	
Temperature coefficient span [% of the span / 10 K]	< ± 0,15; (0...70 °C)	
Reaction times		
Response time [ms]	< 100	
Damping process value dAP [s]	0.1...100	
Damping for the analog output dAA [s]	0.1...100	
Step response time analog output [ms]	25	
Software / programming		
Parameter setting options	hysteresis / window; normally open / closed; switching logic; current/ voltage output; Damping; adaptation of displayed values; display can be rotated and switched off; Display unit; Zero point; span	
Operating conditions		
Ambient temperature [°C]	-20...60	
Storage temperature [°C]	-40...100	
Protection	IP 65	
Tests / approvals		
ATEX marking	 II 3D Ex tc IIIC T90°C Dc X	
	 II 3G Ex nA IIC T4 Gc X	
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]	163	
Mechanical data		
Weight [g]	512.5	
Housing	tubular	
Dimensions [mm]	Ø 36 / L = 132	
Material	stainless steel (1.4404 / 316L); PC; PBT; PEI; FKM; PTFE	
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L); stainless steel (1.4404 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE; EPDM	
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	LED, yellow
	Function display	alphanumeric display, 4-digit
	Measured values	alphanumeric display, 4-digit
Display unit	bar; psi; MPa; % of the span	

PI003A



Pressure sensor with display

PI-025-REA01-MFRKG/US/3D/3G /P

Remarks

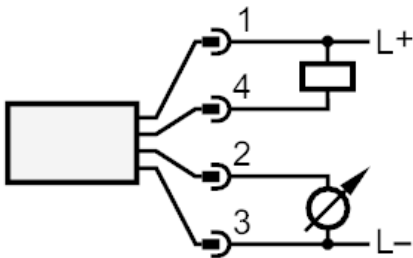
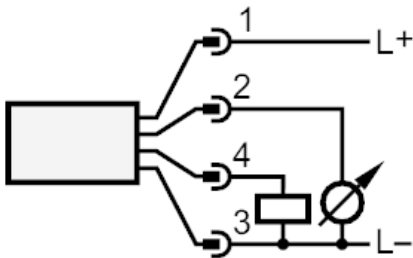
Pack quantity 1 pcs.

Electrical connection

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



Connection



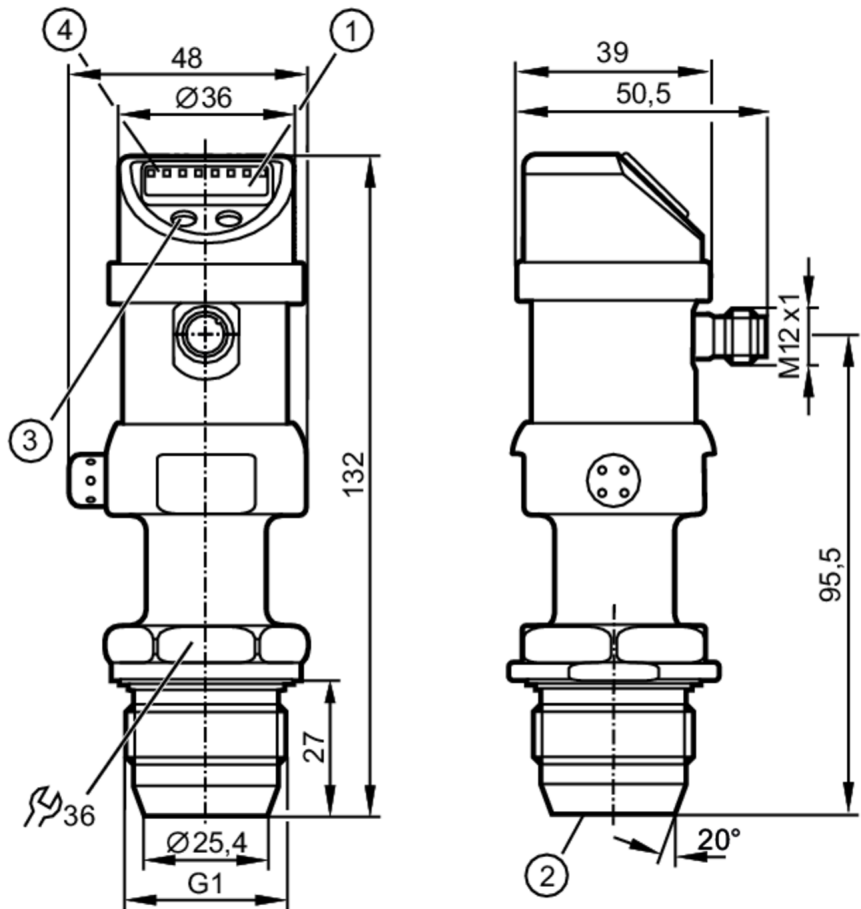
OUT1 Switching output
OUT2 analog output

PI008A



Pressure sensor with display

PI-,25BREA01-MFRKG/US/3D/3G /P



- 1 alphanumeric display 4-digit
- 2 recessed non flush mount measuring cell
- 3 Programming button
- 4 status LEDs



Product characteristics				
Number of inputs and outputs		Number of digital outputs: 1; Number of analog outputs: 1		
Measuring range		-0.0124...0.25 bar	-12.4...250 mbar	-5...100.4 inH2O -1.24...25 kPa
Process connection		threaded connection G 1 external thread sealing cone		
Application				
System		gold-plated contacts		
Application		food and beverage industry		
Installation		Freely rotatable housing 350°		
Media		viscous media and liquids with suspended particles; liquids and gases		
Medium temperature [°C]		-20...60; (when used outside the hazardous area;; Ambient temperature: -25...85 °C; Medium temperature: -25...125 °C / 145 °C < 1h)		
Min. burst pressure		30000 mbar	12044 inH2O	3000 kPa
Pressure rating		6000 mbar	2400 inH2O	600 kPa
Type of pressure		relative pressure; vacuum		
Electrical data				
Operating voltage [V]		18...32 DC		

PI008A



Pressure sensor with display

PI-,25BREA01-MFRKG/US/3D/3G /P

Current consumption	[mA]	< 50
Protection class		III
Reverse polarity protection		yes
Power-on delay time	[s]	0.5
Integrated watchdog		yes

Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1
------------------------------	---

Outputs

Total number of outputs	2
Output signal	switching signal; analog signal; (configurable)
Electrical design	PNP/NPN
Number of digital outputs	1
Output function	normally open / closed; (configurable)
Max. voltage drop switching output DC	[V] 2
Permanent current rating of switching output DC	[mA] 250
Switching frequency DC	[Hz] 6
Number of analog outputs	1
Analog current output	[mA] 4...20, invertible; (scalable 1:4)
Max. load	[Ω] (U _b - 10 V) / 20 mA
Analog voltage output	[V] 0...10, invertible; (scalable 1:4)
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	-0.0124...0.25 bar	-12.4...250 mbar	-5...100.4 inH2O	-1.24...25 kPa
Set point SP	-12...250 mbar	-4.8...100.4 inH2O	-1.2...25 kPa	
Reset point rP	-12.4...249.6 mbar	-5...100.2 inH2O	-1.24...24.96 kPa	
Analog start point	-12.4...187.4 mbar	-5...75.2 inH2O	-1.24...18.74 kPa	
Analog end point	50...250 mbar	20.1...100.4 inH2O	5...25 kPa	
In steps of	0.2 mbar	0.1 inH2O	0.02 kPa	

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	[% of the span]	< ± 0,1; (Turn down 1:1; per year)

PI008A



Pressure sensor with display

PI-,25BREA01-MFRKG/US/3D/3G /P

Temperature coefficient zero point [% of the span / 10 K]	< ± 0,05; (0...70 °C)	
Temperature coefficient span [% of the span / 10 K]	< ± 0,15; (0...70 °C)	
Reaction times		
Response time [ms]	< 100	
Damping process value dAP [s]	0.1...100	
Damping for the analog output dAA [s]	0.1...100	
Step response time analog output [ms]	25	
Software / programming		
Parameter setting options	hysteresis / window; normally open / closed; switching logic; current/ voltage output; Damping; adaptation of displayed values; display can be rotated and switched off; Display unit; Zero point; span	
Operating conditions		
Ambient temperature [°C]	-20...60	
Storage temperature [°C]	-40...100	
Protection	IP 65	
Tests / approvals		
ATEX marking	II 3D Ex tc IIIC T90°C Dc X	
	II 3G Ex nA IIC T4 Gc X	
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]	163	
Mechanical data		
Weight [g]	509	
Housing	tubular	
Dimensions [mm]	Ø 36 / L = 132	
Material	stainless steel (1.4404 / 316L); PC; PBT; PEI; FKM; PTFE	
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L); stainless steel (1.4404 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE; EPDM	
Min. pressure cycles	100 million	
Process connection	threaded connection G 1 external thread sealing cone	
Displays / operating elements		
Display	Display unit	6 x, green
	Switching status	LED, yellow
	Function display	alphanumeric display, 4-digit
	Measured values	alphanumeric display, 4-digit
Display unit	mbar; kPa; inH2O; mmWS; % of the span	

PI008A



Pressure sensor with display

PI-,25BREA01-MFRKG/US/3D/3G /P

Remarks

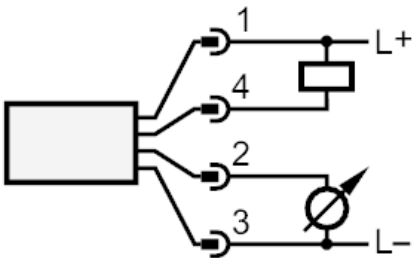
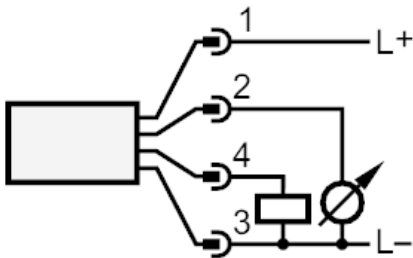
Pack quantity 1 pcs.

Electrical connection

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



Connection



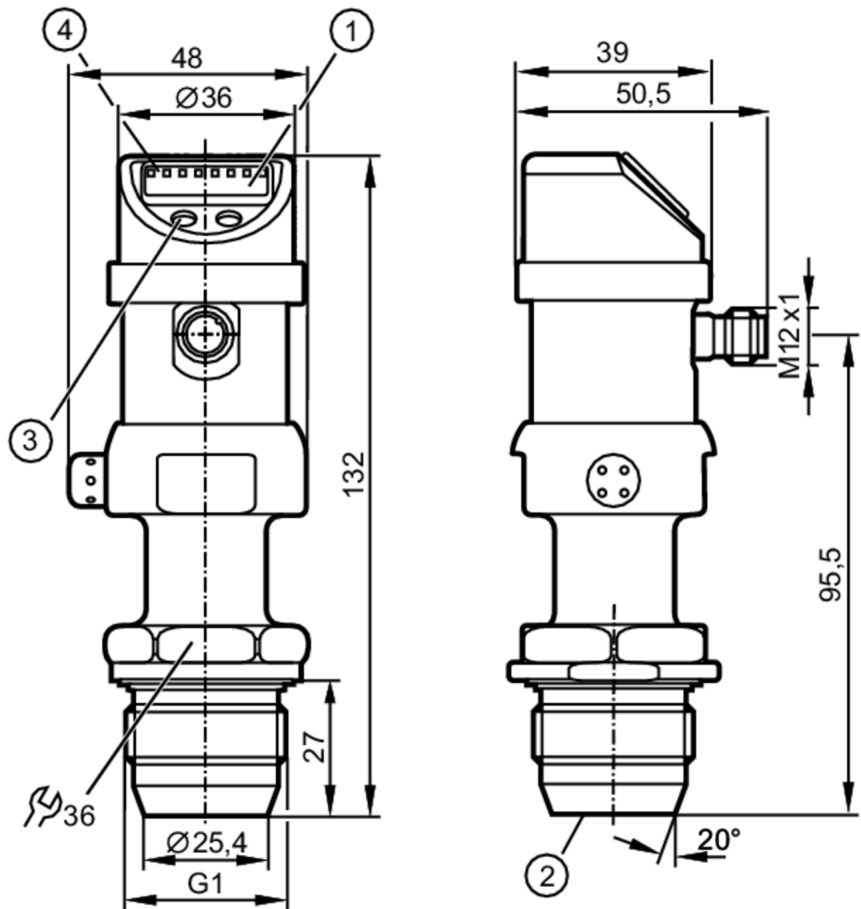
OUT1 Switching output
OUT2 analog output

PI009A



Pressure sensor with display

PI-1-1BREA01-MFRKG/US/3D/3G /P



- 1 alphanumeric display 4-digit
- 2 recessed non flush mount measuring cell
- 3 Programming button
- 4 status LEDs



Product characteristics				
Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1			
Measuring range	-1...1 bar	-1000...1000 mbar	-14.5...14.5 psi	-100...100 kPa
Process connection	threaded connection G 1 external thread sealing cone			
Application				
System	gold-plated contacts			
Application	food and beverage industry			
Installation	Freely rotatable housing 350°			
Media	viscous media and liquids with suspended particles; liquids and gases			
Medium temperature [°C]	-20...60; (when used outside the hazardous area:; Ambient temperature: -25...85 °C; Medium temperature: -25...125 °C / 145 °C < 1h)			
Min. burst pressure	30000 mbar	435 psi	3000 kPa	
Pressure rating	10000 mbar	145 psi	1000 kPa	
Type of pressure	relative pressure; vacuum			
Electrical data				
Operating voltage [V]	18...32 DC			

PI009A



Pressure sensor with display

PI-1-1BREA01-MFRKG/US/3D/3G /P

Current consumption	[mA]	< 50
Protection class		III
Reverse polarity protection		yes
Power-on delay time	[s]	0.5
Integrated watchdog		yes

Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1
------------------------------	---

Outputs

Total number of outputs	2
Output signal	switching signal; analog signal; (configurable)
Electrical design	PNP/NPN
Number of digital outputs	1
Output function	normally open / closed; (configurable)
Max. voltage drop switching output DC	[V] 2
Permanent current rating of switching output DC	[mA] 250
Switching frequency DC	[Hz] 6
Number of analog outputs	1
Analog current output	[mA] 4...20, invertible; (scalable 1:4)
Max. load	[Ω] (U _b - 10 V) / 20 mA
Analog voltage output	[V] 0...10, invertible; (scalable 1:4)
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	-1...1 bar	-1000...1000 mbar	-14.5...14.5 psi	-100...100 kPa
Set point SP	-998...1000 mbar	-14.45...14.5 psi	-99.8...100 kPa	
Reset point rP	-1000...998 mbar	-14.5...14.45 psi	-100...99.8 kPa	
Analog start point	-1000...500 mbar	-14.5...7.25 psi	-100...50 kPa	
Analog end point	-500...1000 mbar	-7.25...14.5 psi	-50...100 kPa	
In steps of	1 mbar	0.05 psi	0.1 kPa	

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	[% of the span] < ± 0,1; (Turn down 1:1; per year)

PI009A



Pressure sensor with display

PI-1-1BREA01-MFRKG/US/3D/3G /P

Temperature coefficient zero point [% of the span / 10 K]	< ± 0,05; (0...70 °C)	
Temperature coefficient span [% of the span / 10 K]	< ± 0,15; (0...70 °C)	
Reaction times		
Response time [ms]	< 100	
Damping process value dAP [s]	0.1...100	
Damping for the analog output dAA [s]	0.1...100	
Step response time analog output [ms]	25	
Software / programming		
Parameter setting options	hysteresis / window; normally open / closed; switching logic; current/ voltage output; Damping; adaptation of displayed values; display can be rotated and switched off; Display unit; Zero point; span	
Operating conditions		
Ambient temperature [°C]	-20...60	
Storage temperature [°C]	-40...100	
Protection	IP 65	
Tests / approvals		
ATEX marking	 II 3D Ex tc IIIC T90°C Dc X	
	 II 3G Ex nA IIC T4 Gc X	
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]	163	
Mechanical data		
Weight [g]	513	
Housing	tubular	
Dimensions [mm]	Ø 36 / L = 132	
Material	stainless steel (1.4404 / 316L); PC; PBT; PEI; FKM; PTFE	
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L); stainless steel (1.4404 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE; EPDM	
Min. pressure cycles	100 million	
Process connection	threaded connection G 1 external thread sealing cone	
Displays / operating elements		
Display	Display unit	6 x, green
	Switching status	LED, yellow
	Function display	alphanumeric display, 4-digit
	Measured values	alphanumeric display, 4-digit
Display unit	mbar; kPa; psi; inH2O; mWS; % of the span	

PI009A



Pressure sensor with display

PI-1-1BREA01-MFRKG/US/3D/3G /P

Remarks

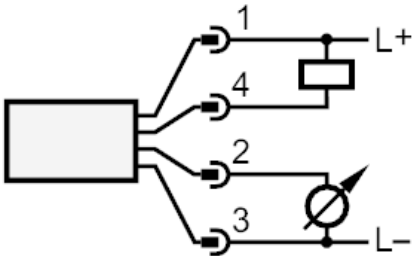
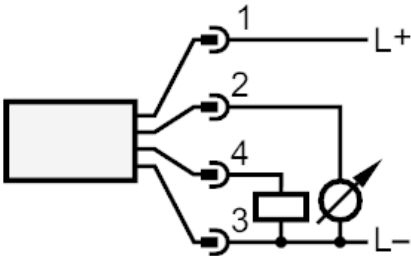
Pack quantity	1 pcs.
---------------	--------

Electrical connection

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



Connection



OUT1 Switching output
OUT2 analog output