

# proSense™

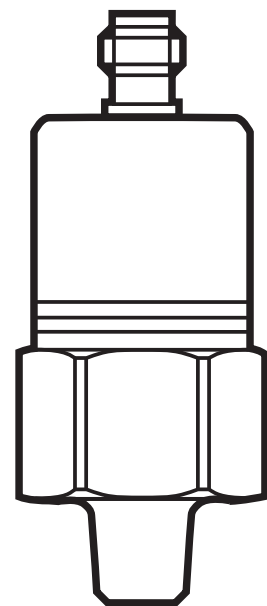
by  **AUTOMATIONDIRECT**.com

## Installation Instructions Electronic pressure sensor

**PTD25-10-xxxxx**

**PTD25-20-xxxxx**

704954 / 00 11 / 2010



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## Safety instructions


Please read the product description prior to installing the unit. Please check that the product is suitable for your application without any restrictions.

If the operating instructions or the technical data are not adhered to, personal injury and/or damage to property may occur.

Please check in all applications that the product materials (see Technical data) are compatible with the media to be measured.

For gaseous media the application is limited to max. 363 PSI.

High-pressure units (5000 PSI) are supplied with a pressure relief mechanism and an integrated damping device to comply with the regulations for UL approval and to avoid any risk of injury in case of bursting when bursting pressure is exceeded.

-  Any manipulation of the damping device is not permissible. When the damping device is removed, there is no damping function any more. **ATTENTION: risk of injury!** For units with cULus approval this approval becomes invalid when the damping device is removed.

For units with cULus approval and the scope of validity cULus:

The Sensor shall be connected only by using any R/C (CYJV2) cord, having suitable ratings.

The device shall be supplied from an isolating transformer having a secondary Listed fuse rated as noted in the following table.

Overcurrent protection		
Control-circuit wire size		Maximum protective device rating Ampere
AWG	(mm <sup>2</sup> )	
26	(0.13)	1
24	(0.20)	2
22	(0.32)	3
20	(0.52)	5
18	(0.82)	7
16	(1.3)	10

## Function and features

The pressure sensor detects the system pressure and converts it into an analog output signal.

- 0 to 10 V (PTD25-10-xxxxH, PTD25-10-0100WCH)
- 10 to 0 V (PTD25-10-VH)
- 4 to 20 mA (PTD25-20-xxxxH, PTD25-20-0100WCH)
- 20 to 4 mA (PTD25-20-VH)

Applications (type of pressure: relative pressure)

Order no.	Measuring range	Permissible overload pressure	Bursting pressure
	PSI	PSI	PSI
PTD25-10-5000H PTD25-20-5000H	0 to 5000	11600	17400
PTD25-10-3000H PTD25-20-3000H	0 to 3000	5800	12300
PTD25-10-1000H PTD25-20-1000H	0 to 1000	4350	9400
PTD25-10-0500H PTD25-20-0500H	0 to 500	2175	5075
PTD25-10-0200H PTD25-20-0200H	0 to 200	1087	2175
PTD25-10-0100H PTD25-20-0100H	0 to 100	1087	2175
PTD25-10-0030H PTD25-20-0030H	0 to 30	290	725
PTD25-10-0015H PTD25-20-0015H	0 to 15	145	450
PTD25-10-VH PTD25-20-VH	-14.5 to 0 (vacuum)	145	450
	inH2O	inH2O	inH2O
PTD25-10-0100WCH PTD25-20-0100WCH	0 to 100	4015	12043



Avoid static and dynamic overpressure exceeding the given over-load pressure.

Even if the bursting pressure is exceeded only for a short time the unit can be destroyed (danger of injuries)!

## Installation



Before mounting and removing the sensor, make sure that no pressure is applied to the system.

Mount the pressure sensor on a suitable process connection (see type label "Port Size").

## Electrical connection



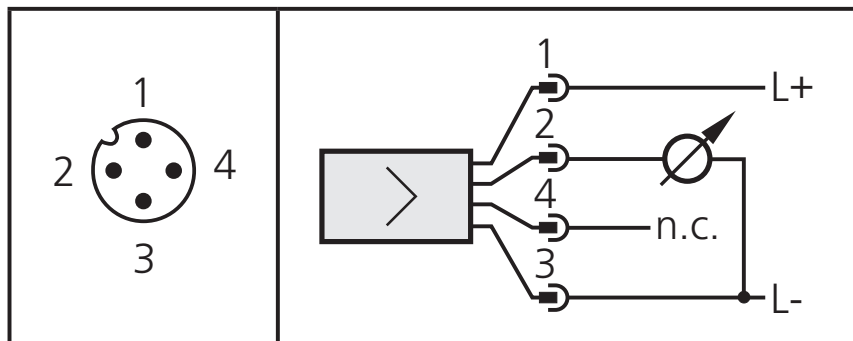
The unit must only be connected by an electrician.

The national and international regulations for the installation of electrical equipment must be observed.

Voltage supply to EN50178, SELV, PELV.

Disconnect power before connecting the unit as follows:

Voltage output (PTD25-10-xxxxx)



Cable Assembly Wiring Colors:

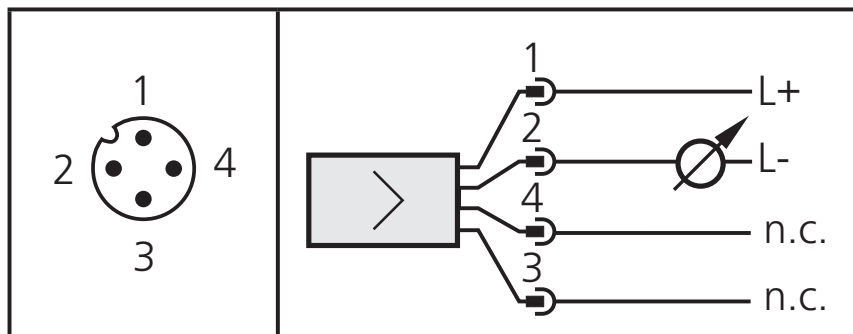
Pin 1 - Brown

Pin 2 - White

Pin 3 - Blue

Pin 4 - Black (not connected)

Current output (PTD25-20-xxxxx)



Cable Assembly Wiring Colors:

Pin 1 - Brown

Pin 2 - White

Pin 3 - Blue (not connected)

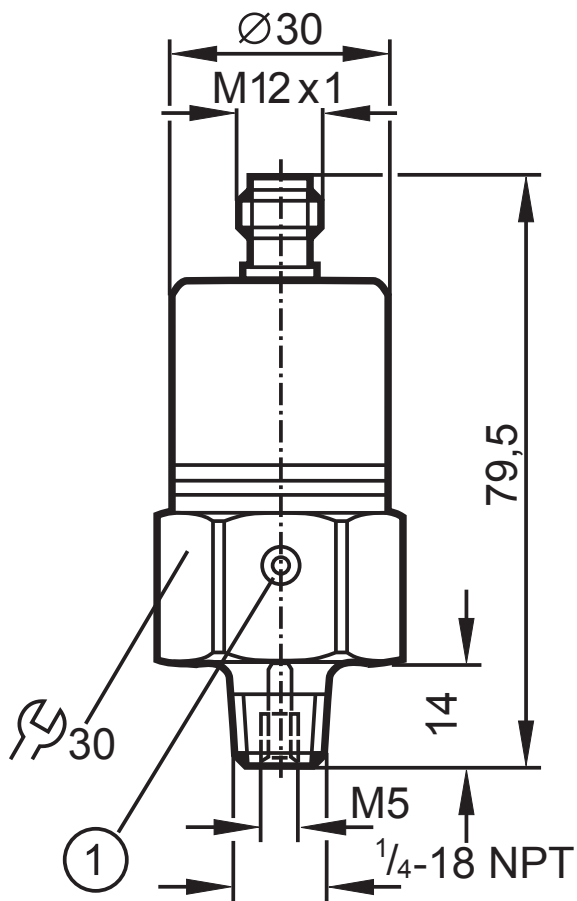
Pin 4 - Black (not connected)

# Scale drawing

<p>PTD25-10-5000H PTD25-20-5000H</p>	<p>PTD25-10-3000H PTD25-20-3000H PTD25-10-1000H PTD25-20-1000H</p>
<p>1: Pressure relief mechanism No mechanical force must be exerted on the pressure relief mechanism.</p>	

dimensions are in millimeters (25.4 mm = 1 inch)  
process connection 1/4 NPT, tightening torque 25 Nm

PTD25-10-0500H  
PTD25-20-0500H  
PTD25-10-0200H  
PTD25-20-0200H  
PTD25-10-0100H  
PTD25-20-0100H  
PTD25-10-0030H  
PTD25-20-0030H  
PTD25-10-0015H  
PTD25-20-0015H  
PTD25-10-VH  
PTD25-20-VH  
PTD25-10-0100WCH  
PTD25-20-0100WCH



1: Vent

dimensions are in millimeters (25.4 mm = 1 inch)  
process connection 1/4 NPT, tightening torque 25 Nm

# Technical data

PTD25-10-xxxxx	
Operating voltage [V].....	16 to 32 DC <sup>1)</sup>
Current consumption [mA].....	< 18
Analog output .....	0 to 10 V DC
Load [ $\Omega$ ] .....	min. 2000
Step response time analog output [ms].....	3
PTD25-20-xxxxx	
Operating voltage [V].....	9.6 to 32 DC <sup>1)</sup>
Analog output .....	4 to 20 mA
Load [ $\Omega$ ] .....	max. $(U_B - 9,6) \times 50$ ; 720 at $U_B = 24$ V DC
Step response time analog output [ms].....	3
Characteristics deviation (in % of full range)	
PTD25-xx-5000H .....	< $\pm 0.35$ (BFSL) / < $\pm 0.75$ (FR)
PTD25-xx-3000H .....	< $\pm 0.35$ (BFSL) / < $\pm 0.75$ (FR)
PTD25-xx-1000H .....	< $\pm 0.35$ (BFSL) / < $\pm 0.75$ (FR)
PTD25-xx-0500H .....	< $\pm 0.35$ (BFSL) / < $\pm 0.75$ (FR)
PTD25-xx-0200H .....	< $\pm 0.35$ (BFSL) / < $\pm 0.75$ (FR)
PTD25-xx-0100H .....	< $\pm 0.35$ (BFSL) / < $\pm 0.75$ (FR)
PTD25-xx-0030H .....	< $\pm 0.35$ (BFSL) / < $\pm 0.75$ (FR)
PTD25-xx-0015H .....	< $\pm 0.25$ (BFSL) / < $\pm 0.5$ (FR)
PTD25-xx-0100WCH .....	< $\pm 0.35$ (BFSL) / < $\pm 0.75$ (FR)
PTD25-xx-VH.....	< $\pm 0.25$ (BFSL) / < $\pm 0.5$ (FR)
Repeatability (in % of full range)	
PTD25-xx-5000H .....	< 0.15
PTD25-xx-3000H .....	< 0.15
PTD25-xx-1000H .....	< 0.15
PTD25-xx-0500H .....	< 0.15
PTD25-xx-0200H .....	< 0.15
PTD25-xx-0100H .....	< 0.15
PTD25-xx-0030H .....	< 0.15
PTD25-xx-0015H .....	< 0.1
PTD25-xx-0100WCH .....	< 0.15
PTD25-xx-VH.....	< 0.1

<sup>1)</sup> to EN50178, SELV, PELV

BFSL = Best Fit Straight Line / FR = full range



Temperature coefficients (TEMPCO) in the compensated temperature range 0 to 80°C  
(in% of full range/10 °C); greatest TEMPCO of the zero point / of full range

PTD25-xx-5000H .....	0.3 / 0.4
PTD25-xx-3000H .....	0.2 / 0.3
PTD25-xx-1000H .....	0.2 / 0.3
PTD25-xx-0500H .....	0.15 / 0.2
PTD25-xx-0200H .....	0.15 / 0.2
PTD25-xx-0100H .....	0.2 / 0.3
PTD25-xx-0030H .....	0.2 / 0.3
PTD25-xx-0015H .....	0.15 / 0.2
PTD25-xx-0100WCH .....	0.2 / 0.3
PTD25-xx-VH.....	0.15 / 0.2

Housing material.....	stainless steel (316S12); FPM (Viton); PA; EPDM/X (Santoprene)
Materials (wetted parts).....	stainless steel (303S22); ceramics; FPM (Viton)
Operating temperature [°C] .....	-25 to +80
Medium temperature [°C] .....	-25 to +90
Storage temperature [°C].....	-40 to +100
Protection .....	IP 68 / IP 69K <sup>2)</sup>
Protection .....	IP 65 <sup>3)</sup>
Protection class .....	III
Insulation resistance [MΩ] .....	> 100 (500 V DC)
Shock resistance [g] .....	50 (DIN / IEC 68-2-27, 11ms)
Vibration resistance [g].....	20 (DIN / IEC 68-2-6, 10 - 2000 Hz)

EMC (PTD25-10-xxxxx)	
EN 61000-4-2 ESD:.....	4 kV / 8 KV AD
EN 61000-4-3 HF radiated: .....	30 V/m
EN 61000-4-4 Burst:.....	2 KV
EN 61000-4-6 HF conducted:.....	10 V

EMC (PTD25-20-xxxxx)	
EN 61000-4-2 ESD:.....	4 kV / 8 KV AD
EN 61000-4-3 HF radiated: .....	30 V/m
EN 61000-4-4 Burst:.....	2 KV
EN 61000-4-6 HF conducted:.....	10 V
Radiation of interference: according to the road vehicle guideline 2004/104/EC / CISPR25	
Noise immunity:..... according to the road vehicle guideline 2004/104/EC / ISO 11452-2	
HF conducted: .....	100 V/m
Pulse resistance: .....	according to ISO7637-2 / severity level 3

<sup>2)</sup> for PTD25-xx-5000H, PTD25-xx-3000H and PTD25-xx-1000H

<sup>3)</sup> for PTD25-xx-0500H, PTD25-xx-0200H, PTD25-xx-0100H, PTD25-xx-0030H, PTD25-xx-0015H, PTD25-xx-0100WCH, PTD25-xx-VH

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