

Programmable submersible level and temperature transmitters

## PTM/N/SDI-12

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Version: 26.06.2014

# Technical Specifications

## Pressure measuring range (mH2O)

	> 5 ... 20	> 20 ... 250
<b>Overpressure</b>	3 x FS ( $\geq 3$ bar)	3 x FS
<b>Burst pressure</b>	> 200 bar	> 200 bar
<b>Accuracy, (1), (<math>\pm</math> % FS)</b>	$\leq \pm 0.1$	$\leq \pm 0.1$
<b>Thermal shift, (<math>\pm</math> % FS/<math>^{\circ}</math>C)</b>		
Zero point -5...50 $^{\circ}$ C	$\leq 0.03$	$\leq 0.015$
Span -5...50 $^{\circ}$ C	$\leq 0.015$	$\leq 0.015$
<b>Long term stability, (2)</b>	< 0.2% FS / < 4 mbar	< 0.1% FS / < 0.2% FS

- (1) Zero based accuracy according to DIN 16086, incl. hysteresis and repeatability at ambient temperature  
 (2) 1 year (typ. / max.), the long term stability can be improved by ageing (burn-in) the sensor

## Temperature measuring range

<b>Standard</b>	-25...85 $^{\circ}$ C
<b>Accuracy, (1)</b>	$\leq \pm 0.3$ / $\leq \pm 0.5$ $^{\circ}$ C

- (1) -5...50  $^{\circ}$ C, typ. / max.

## Temperature range

<b>Operating temperature</b>	-5...80 $^{\circ}$ C
<b>Process temperature</b>	-5...80 $^{\circ}$ C
<b>Storage temperature</b>	-10...80 $^{\circ}$ C

## Electrical specifications

<b>Output</b>	
Interface	SDI-12
Protocol	SDI-12 V1.3
<b>Resolution</b>	
Pressure	0.01% FS
Temperature	0.05 $^{\circ}$ C
<b>Measuring units, (1)</b>	
Pressure	mbar, bar, mWC, mH2O, psi, inWC, ftWC, inH2O
Temperature	$^{\circ}$ C, $^{\circ}$ F, K
<b>Power supply</b>	8...30 V DC
Supply influence	< 0.1% FS
Current consumption sleep mode	< 0.5 mA
Current consumption active mode	< 6 mA
<b>Cable length, (max.)</b>	250 m (850 ft)

- (1) Adjustable

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## Qualifications

	Description	Level	Typical interferences
EN 60068-2-6	Vibration	4g (4...100 Hz / $\pm$ 3.2 mmpp)	
EN 60068-2-27	Shock	100g (impulse duration 6 ms)	
EN 55022	Emission, class B	< 30 dB $\mu$ V/m (0.03...1 GHz)	
EN 61000-4-2	Electrostatic discharge	4 kV contact 8 kV air	
EN 61000-4-3	Irradiated RF	10V/m (0.08...1 GHz)	Radio sets, wireless phones
EN 61000-4-4	Transients (burst)	4 kV	Motors, valves
EN 61000-4-5	Surge	Line-Line: 0.5 kV/2 $\Omega$ Line-Earth: 1 kV/12 $\Omega$	Lightning
EN 61000-4-6	Conducted RF	10 V (0.15...230 MHz, 3 s)	Frequency converters

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## Physical specifications

<b>Materials</b>	
Transducer	Stainless steel (316L / 1.4435), titanium (Gr. 2), (1)
Housing	Stainless steel (316L / 1.4404), titanium (Gr. 2)
Seals	Viton (Standard), EPDM, Kalrez
Cabel	PUR, FEP, PE

(1) Hastelloy (C-276) on request

## Equipement

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### Overview

10.00.0091	Accessories overview

## Additional documents

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### Manual

	Article number	Description
10.00.0292		User Manual

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### Operating and safety instructions

	Article number
10.00.0137	DMM009

## Ordering information

		X. XXXX.	XXXX.	XX.	XXX
<b>Type</b>					
	PTM/N/SDI-12	49			
<b>Pressure type</b>					
	Gauge	1			
	Absolute (vacuum)	2			
<b>Pressure measuring range</b>					
	500 mbar...25 bar	XX			
	Offset, special adjustment	99			
<b>Process connection</b>					
	Closed, (Fig. 1)	55			
	Open, (Fig. 2)	56			
	Customized	99			
<b>Electrical connection</b>					
	PE cable, IP 68, black (1), (2)		13		
	PUR cable, IP 68, black (1), (3)		15		
	FEP cable, IP 68, black (1)		21		
	Customized		99		
<b>Output signal</b>					
	SDI-12		69		
<b>Accuracy</b>					
	$\leq \pm 0.1$ % FS for $p \geq 500$ mbar			2	
	$\leq \pm 0.25$ % FS for $p < 500$ mbar			1	
<b>Temperature range</b>					
	-5...50 °C compensated (allowed process temperature: -5...50 °C)			4	
	-5 ... 80 °C compensated (allowed media temperatur -5 ... 80 °C)			5	
<b>Option 1</b>					
	Special oil filling: Anderol Food (for food applications)				G
	Cutting ring connection G 1/2 M				
	Strain relief				
<b>Option 2</b>					
	Electronics packed in gel: Gauge pressure				C
	Electronics packed in gel: Absolute pressure				D
<b>Option 3</b>					
	Ballast weight 1.4435				B
	Version titanium (without ballast weight)				K
	Seals: Viton (standard)				U
	Seals: EPDM				S
	Seals: Kalrez (Level)				T
	Humidity filter element for gauge version (only for PUR and PE cable)				Z

- (1) Please specify the required cable length and medium
- (2) Suitable for drinking water (food approved)
- (3) For operating temperature  $> 50$  °C, PE or FEP cable must be used
- (4) min. Medium temperature  $-25$  °C
- (5) Standard, no special cleaning. Special cleaning must be requested.

# Technical drawings

## Dimensions

Fig. 1: Closed version

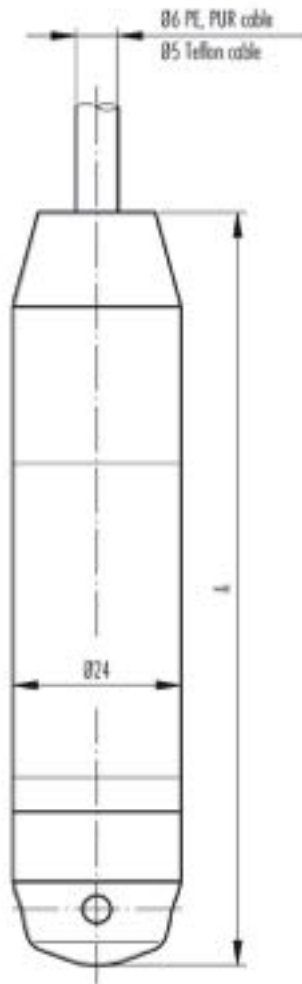


Fig. 2: Open version



Colour	
white	+Vin
yellow	GND
green	SDI-12

### Standard

A (mm)	B (mm)	Weight (g)
157	153	approx. 200

Specifications may change without notice.

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