

## Programmable Submersible Level Transmitters

# PTM/N - Programmable 4-20mA



### Customer benefits

- High flexibility due to scalable pressure range
- Adjustment of zero and span setting through software commands
- Fast customization thanks to configurable product design
- Stainless steel and titanium version for use in acidic or otherwise aggressive media
- Available with lightning protection

Version: 03.05.2016

# Technical Specifications

## Pressure measuring range (mH2O)

	1 ... 5	> 5 ... 20	> 20 ... 250
<b>Overpressure</b>	3 bar	3 x FS ( $\geq 3$ bar)	3 x FS
<b>Burst pressure, (1)</b>	> 200 bar	> 200 bar	> 200 bar
<b>Accuracy, (2), (<math>\pm</math> % FS)</b>	$\leq \pm 0.25$	$\leq \pm 0.1$	$\leq \pm 0.1$
<b>Total error, (3), (4), (<math>\pm</math> % FS)</b>			
-10...50°C, (typ. / max.)	$\leq 0.15 / 0.3$ ( $\leq 200$ mbar: 0.3 / 0.6)	$\leq 0.15 / 0.3$	$\leq 0.15 / 0.3$
-25...85°C, (typ. / max.)	$\leq 0.65 / 0.7$ ( $\leq 200$ mbar: 0.65 / 0.8)	$\leq 0.65 / 0.7$	$\leq 0.55 / 0.7$
<b>Long term stability, (5)</b>	$\leq 0.5\%$ FS / < 4 mbar	$\leq 0.2\%$ FS / < 4 mbar	$\leq 0.1\%$ FS / < 0.2% FS

(1) Transducer

(2) Zero based accuracy according to DIN 16086, incl. hysteresis and repeatability at ambient temperature

(3) Total error including accuracy and temperature influences at maximum signal span (16 mA)

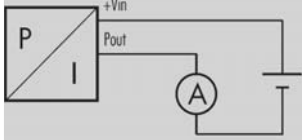
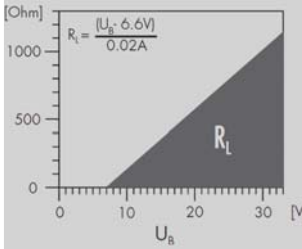
(4) Active compensated

(5) 1 year (typ. / max.), the long term stability can be improved by ageing (burn-in) the sensor

## Temperature range

<b>Operating temperature</b>	-5...80 °C
<b>Process temperature</b>	-5...80 °C
<b>Storage temperature</b>	-10...80 °C

## Electrical specifications

<b>Resolution</b>	0.025% FS
<b>Output adjustable</b>	
4 mA	-5% FS...105% FS
20 mA	-5% FS...105% FS
Span	25% FS...110% FS ( $\geq 1$ mH2O)
Low pass filter	0.1 / 1 / 10 / 30 Hz (standard: 30 Hz)
<b>Power supply</b>	9...33 V DC
Supply influence	< 0.1% FS
<b>Circuit diagram</b>	
<b>Load resistance</b>	
Load influence	< 0.1% FS

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## Qualifications

	Description	Level	Typical interferences
EN 60068-2-6	Vibration	4g (4...100 Hz / ± 3.2 mmpp)	
EN 60068-2-27	Shock	100g (impulse duration 6 ms)	
EN 55022	Emission, class B	< 30 dBµV/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)	2 kV	Motors, valves
EN 61000-4-5	Surge	10 kA (8 / 20 µs), (1)	Lightning
EN 61000-4-6	Conducted RF	10 V (0.15...80 MHz, 3 s)	Frequency converters

(1) Only with optional surge (lightning) protection

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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, NBR
Cable	PUR, FEP, PE, PVC
<b>Weight (2)</b>	137 g

(1) Hastelloy (C-276) on request

(2) Specification for a PTM/N, closed, cable

## Equipment

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### Overview

<b>10.00.0091</b>	Accessories overview
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### Interface

<b>101138</b>	PTM - Interface
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### Software

<b>101224</b>	PC Software V1.50
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## Additional documents

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### Manuals

	Article number	Description
10.00.0079	DEB003	Configuration software
10.00.0089	DEB005	User manual

### Operating and safety instructions

	Article number
10.00.0137	DMM009

## Ordering information

		X. XXXX.	XXXX.	XX.	XXX
<b>Type</b>	PTM/N	32			
<b>Pressure type</b>	Gauge	1			
	Absolute (vacuum)	2			
<b>Pressure measuring range</b>	100 mbar ... 25 bar (1)	XX			
	Offset, special adjustment	99			
<b>Process connection</b>	Closed, (Fig. 1)	55			
	Open, (Fig. 2)	56			
	Closed, (1.4435), for ACS certification (Fig. 1)	59			
	G 1/4 M, (Fig. 3)	11			
	G 1/2 M, (Fig. 3)	13			
	Customized connection available	99			
<b>Electrical connection</b>	PE cable, black, IP 68, (3), (4)		13		
	PUR cable, black, IP 68, (3), (5)		15		
	FEP cable, black, IP 68, (3)		21		
	PVC cable, blue, IP 68, (3), (6)		14		
	Connectable version, IP 68, (Fig. 4), (2)		07		
	Customized connection available		99		
<b>Output signal</b>	4...20 mA		05		
	4...20 mA surge protection		08		
<b>Accuracy</b>	$\leq \pm 0.25$ % FS for $p < 500$ mbar			1	
	$\leq \pm 0.1$ % FS for $p \geq 500$ mbar			2	
<b>Temperature range</b>	-5...50 °C compensated (allowed process temperature: -5...50 °C)			4	
	-5...80 °C compensated (allowed process temperature: -5...80 °C)			5	
<b>Option 1</b>	Special oil filling: Anderol Food (for food applications)				G
<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
	Active compensated				E
	Version titanium (without ballast weight)				K
	Seals: Viton (standard)				U
	Seals: EPDM				S
	Seals: Kalrez (Level)				T
	Seals: NBR (ACS)				H
	Humidity filter element for gauge versions (only for PUR and PE cable)				Z
	Cutting ring connection G 1/2 M				
	Strain relief				

(1) mH<sub>2</sub>O, mWS, mWC etc. available

- (2) Connector with required cable has to be ordered separately (KART100)
- (3) Please specify the required cable length and medium
- (4) Suitable for drinking water (food approved)
- (5) For operating temperature > 50°C, PE or FEP cable must be used
- (6) ACS Certification

# Technical drawings

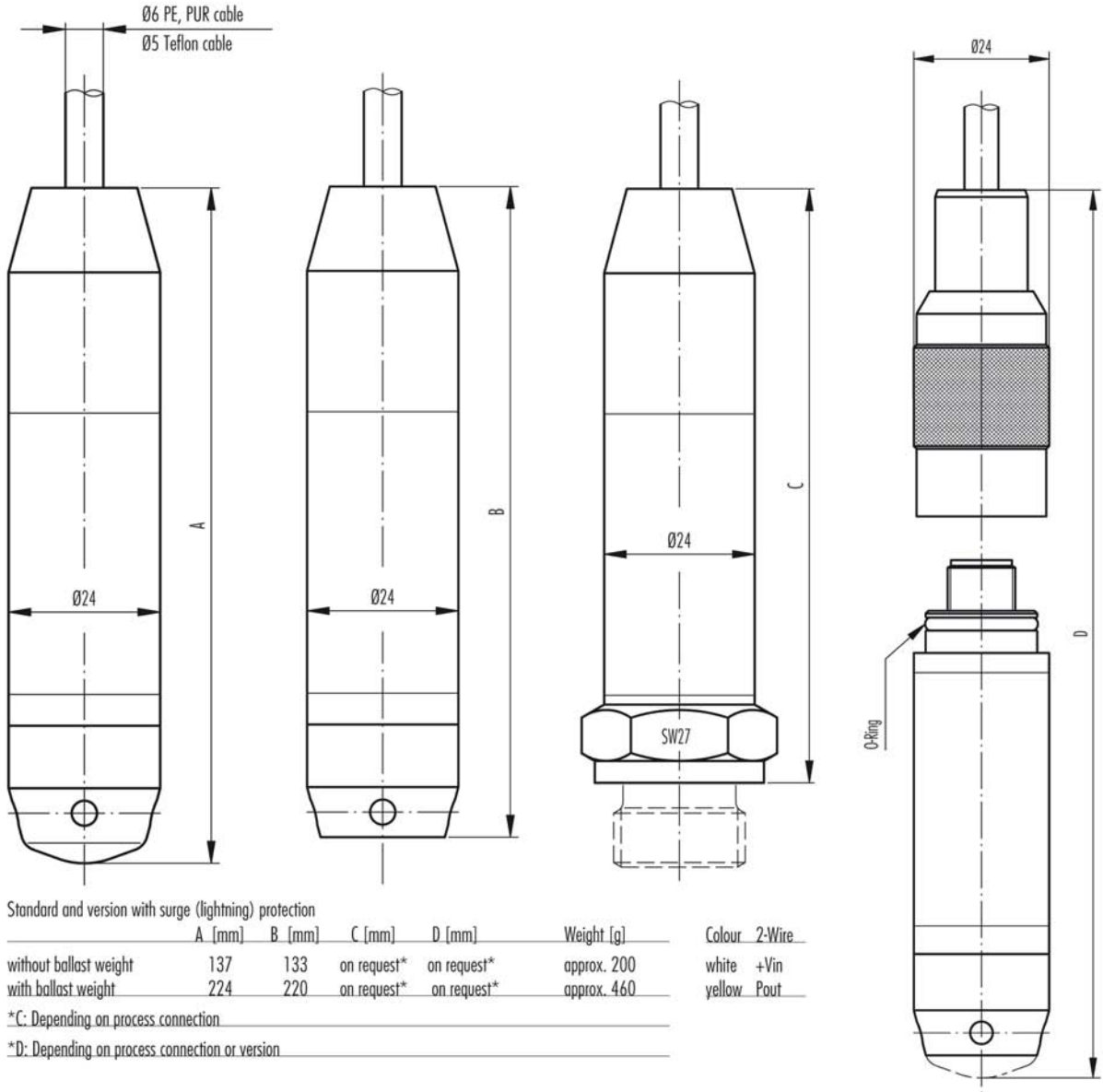
## Dimensions

Fig. 1: Closed version

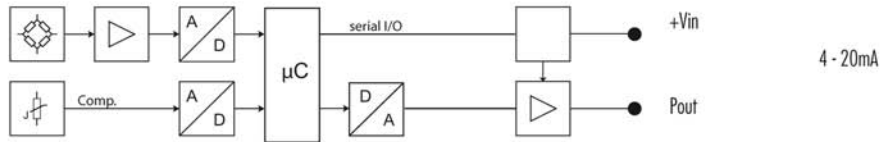
Fig. 2: Open version

Fig. 3: With process connection

Fig. 4: Electrical connection, connectable



### Scheme:



Specifications may change without notice.

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