

PROGRAMMABLE PRESSURE TRANSMITTER FOR LEVEL MEASUREMENT PTM/N (RS485)



44



Features

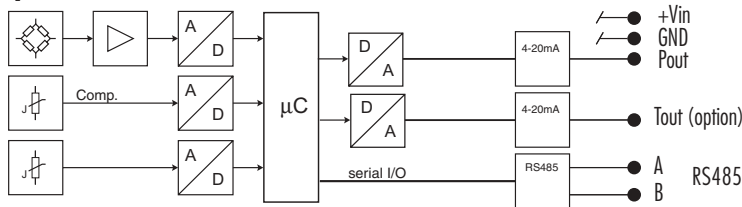
- Piezoresistive measuring element
- Adjustable 1:4 of the nominal range within -5% to +105% FS
- All pressure ranges between 0...50 mbar and -1...1000 bar available
- Pressure units adjustable
- Recalibration function for zero and span
- Adjustable time delay
- Reverse polarity and short circuit protected
- Interface RS485 (MODBUS)
Output: pressure and temperature
- Active compensated (option)
(Digital temperature compensated)

Typical applications

Depth and level measurement in

- Wells
- Bore holes
- Waste water
- Lakes, rivers
- Sewage treatment plant
- Water supply

Specifications



Pressure range [bar]	0.1 ... 0.5	> 0.5 ... 2	> 2 ... 25
Overpressure	3 bar	3 x FS (min. 3 bar)	3 x FS
Burst pressure	> 200 bar	> 200 bar	> 200 bar
Thermal shift [± % FS/°C]			
Zero	0...70°C -25...85°C	≤ 0.06 ⁴⁾ ≤ 0.08 ⁵⁾	≤ 0.03 ≤ 0.04
Span	0...70°C -25...85°C	≤ 0.015 ≤ 0.02	≤ 0.015 ≤ 0.02
Active compensated (Z+S)	-10...50°C (typ./max.) -25...85°C (typ./max.)	≤ 0.01/0.015 ≤ 0.015/0.02	≤ 0.01/0.015 ≤ 0.015/0.02
Accuracy ¹⁾	≤ ± 0.25 % FS ≤ ± 0.1 % FS, ≥ 500 mbar ≤ ± 0.1 % FS, activ compensated (option)		

Electrical specifications

Supply voltage	Range: Supply voltage influence:	9...30 VDC < 0.1 % FS
Output	Standard: Activ compensated: Resolution: Output at 4 mA: Output at 20 mA: Span: Adjustable time delay: Temperature output (precision):	RS485 (pressure) and 4...20mA (pressure) RS485 (pressure and temperature) and 4...20mA (pressure and temperature) ≤ ± 0.025 % (analog output), ± 0.01 % (digital output) adjustable between -5% FS... 105% FS adjustable between -5% FS... 105% FS adjustable between 25% FS... 110% FS, min. 50 mbar 100 ms, 1 s, 10 s, (standard ca. 30 ms) ± 1°C
Load resistance Load resistance influence		$R_L = U_B [V] \cdot 6V / 0.02A$, 1 kOhm max. < 0.1 % FS
Protocol	MODBUS, Layer 7	
Interface ³⁾	VART199 incl. PC-Program (VART244)	

Materials

Process connection, Diaphragm, Housing Seals (standard)	Stainless steel 1.4435 (316L) other materials (e.g. titanium) on request Viton (other materials see ordering code)
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Electromagnetic compatibility

Standard	Level	Typical interferences
Emission:		
EN 61000-6-3 EN 55022	Generic emission standard Emission, class B	
Immunity:		
EN 61000-6-2	Generic immunity	
EN 61000-4-2	Electrostatic discharge	4kV contact, 8kV air
EN 61000-4-3	Radiated electro-magnetic field	10V/m, 80-1000 MHz, 80% AM 1kHz
EN 61000-4-3	Radiated electro-magnetic field (GSM)	10V/m, 950 MHz, 200Hz on/off
EN 61000-4-4	Fast transients (burst)	2 kV
EN 61000-4-6	Conducted radio-frequency	10V, 0.15-80 MHz, 80% AM 1kHz
EN 61000-4-5	Surge	10 kA (8/20 µs) ²⁾
		Cellular phones, radio sets Digital portable phones Motors, valves Cellular phones, radio sets Lightning strikes

¹⁾ Zero based non-conformity according to DIN 16086, including hysteresis and repeatability

²⁾ Only with optional surge (lightning) protection

³⁾ Interface not included

⁴⁾ 50 – 99 mbar: ≤ 0.12

⁵⁾ 50 – 99 mbar: ≤ 0.16

Ordering information

44 X . XXXX . XXXX . XX . XXX

Type	PTM/N	44					
Pressure type	Gauge	1					
	Absolute	2					
Pressure range⁴⁾	All pressure ranges between 0...50 mbar and -1...1000 bar available		XX				
Version	Closed version (Fig. 1)				55		
	Open version (Fig. 2)				56		
	G 1/4 M (Fig. 3)				11		
	G 1/2 M (Fig. 3)				13		
	Other process connector available					XX	
Electrical connection	PE cable ^{1) 2) 3)}	IP68			13		
	PUR cable ^{1) 2)}	IP68			15		
	Teflon cable ¹⁾	IP68			21		
Output signal	RS485 (pressure) and 4...20mA (pressure)					62	
	RS485 (pressure) and 4...20mA (pressure) with overvoltage protection					64	
	RS485 (pressure) and 4...20mA (p and t)					65	
	RS485 (pressure) and 4...20mA (p and t) with overvoltage protection					66	
	RS485 (pressure) ⁵⁾					67	
	RS485 (pressure) with overvoltage protection ⁵⁾					68	
Accuracy	≤ ± 0.25 % FS					1	
	≤ ± 0.1 % FS					2	
Temperature range	0...70°C compensated (max. medium temperature 0... 80°C) ²⁾					0	
	-25... 85°C compensated (max. medium temperature -25... 85°C) ²⁾					1	
	Customized temperature range					9	
Options	Version titanium					K	
	Ballast weight (260g)					B	
	Electronic packed in gel:	Gauge					C
		Absolute					D
	Special oil filling:	ASEOL Food					G
		Halocarbon					H
	Seals:	Viton (Standard)					U
		EPDM					S
		Kalrez					T
	Temperature calibration active, -10... 50°C compensated						E
Special options						Z	

¹⁾ Please specify the medium and required cable length

²⁾ For medium temperature >50°C a teflon cable must be used

³⁾ Suitable for drinking water (food approved)

⁴⁾ mH2O, mWG, mWC etc. available

⁵⁾ With option E: RS485 (p and t)

Dimensions

Fig. 1: Closed version

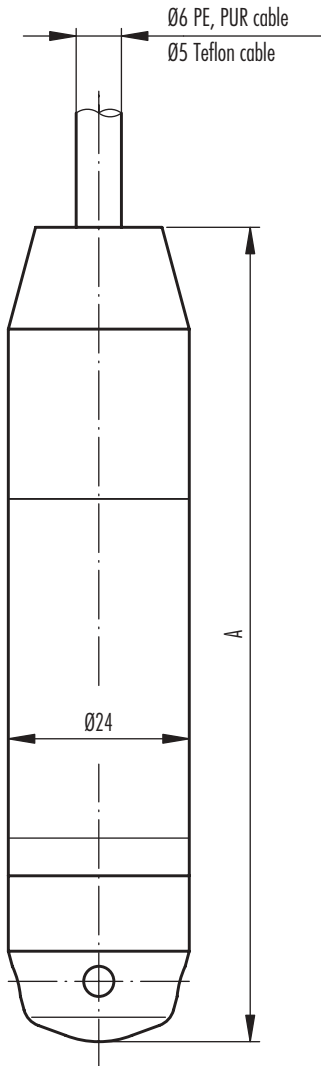


Fig. 2: Open version

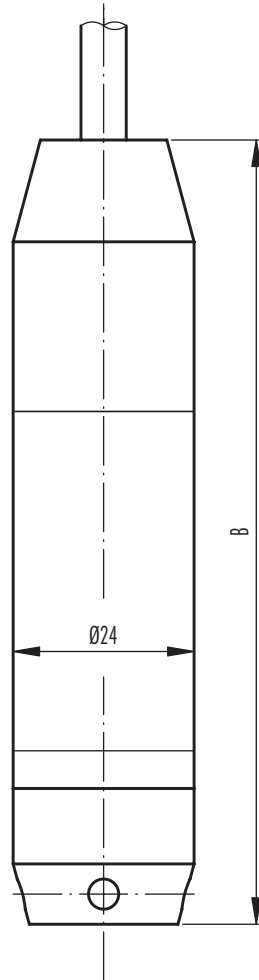
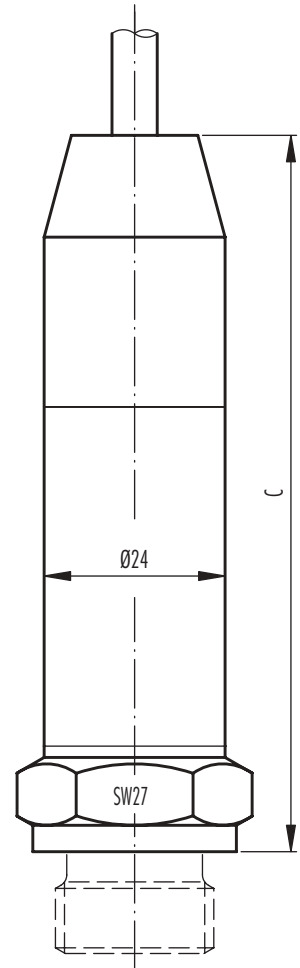


Fig. 3: with process connection



Standard

	A [mm]	B [mm]	C [mm]	D [mm]	Weight [g]
without ballast weight	118	114	on request*	on request*	ca. 200
with ballast weight	205	201	on request*	on request*	ca. 460

*C: Depending on process connection

*D: Depending on process connection or version

Variant with overvoltage protection

	A [mm]	B [mm]	C [mm]	D [mm]	Weight [g]
without ballast weight	258	254	on request*	on request*	ca. 280
with ballast weight	345	341	on request*	on request*	ca. 540

*C: Depending on process connection

*D: Depending on process connection or version

Colour	RS485
white	+Vin
yellow	GND
brown	Pout
rosa	Tout
green	A
grau	B

Specifications may change without notice.

DED035B

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