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Submersible Level and Temperature Transmitters

ATM/N/T - Analog Transmitter

CUSTOMER BENEFITS

- Fast customization thanks to configurable product design
- Short response time suitable for dynamic level measurements
- Available with overvoltage protection
- Stainless steel and titanium version for use in acidic or otherwise aggressive media

Release: 10.80.0533.A - 2019.06

Technical Specifications

PRESSURE MEASURING RANGE (MH2O)

	1 ... 5, (1)	> 5 ... 20	> 20 ... 250
Overpressure	3 bar	3 x FS (min. 3 bar)	3 x FS
Burst pressure, (2)	> 200 bar	> 200 bar	> 200 bar
Accuracy, (3) (± % FS)	≤ 0.5 / ≤ 0.25	≤ 0.5 / ≤ 0.25 / ≤ 0.1	≤ 0.5 / ≤ 0.25 / ≤ 0.1
Thermal shift (± % FS/°C)			
Zero point -5 ... 50°C	≤ 0.06	≤ 0.03	≤ 0.03
Span -5 ... 50°C	≤ 0.015	≤ 0.015	≤ 0.015
Response time, (typ.)	< 1ms / 10 ... 90% FS	< 1ms / 10 ... 90% FS	< 1ms / 10 ... 90% FS
Long term stability, (4)	< 0.5% FS / < 4 mbar	< 0.2% FS / < 4 mbar	< 0.1% FS / < 0.2% FS

(1) 0.5 mH2O on request
(2) Transducer
(3) Zero based accuracy according to DIN-16086, incl. hysteresis and repeatability at ambient temperature
(4) 1 year (typ. / max.), the long term stability can be improved by ageing (burn-in) the sensor

TEMPERATURE MEASURING RANGE

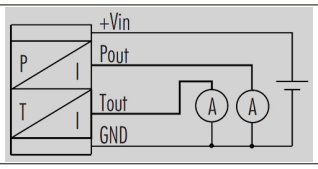
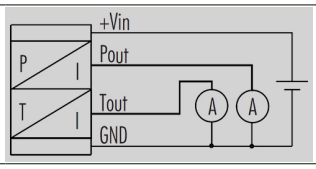
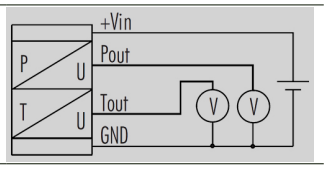
Standard, (1)	-5 ... 80°C
Lower end of range	-25 °C
Upper end of range	85 °C
Temperature span, (2)	> 30 °C
Accuracy, (3)	
0 ... 70°C, (typ. / max.)	± 0.5 / 1.0 °C
-25 ... 85°C, (typ. / max.)	± 1.0 / 1.5 °C

(1) Other temperature measuring ranges on request
(2) Measuring range 15...30 °C must be contained
(3) Probe, electronics, calibration

TEMPERATURE RANGE

Operating temperature	-5 ... 80°C
Process temperature	-5 ... 80°C
Storage temperature	-10 ... 80°C

ELECTRICAL SPECIFICATIONS

	4 ... 20 mA	0 ... 20 mA	0 ... 5 V / 0 ... 10 V
Power supply	15 ... 30 VDC	15 ... 30 VDC	15 ... 30 VDC
Supply influence	< 0.1% FS	< 0.1% FS	< 0.1% FS
Current consumption			3 mA
Circuit diagram			
Load resistance	(Usupply - 5V) / 0.02A	(Usupply - 5V) / 0.02A	RL > 10kOhm
Load influence	< 0.1% FS	< 0.1% FS	< 0.1% FS

QUALIFICATIONS

	Description	Level	Typical interferences
EN 61000-4-2	Electrostatic discharge	4 kV contact / 8 kV air	
EN 61000-4-3	Irradiated RF	10V/m (0.08 ... 1 GHz, 3s)	Radio sets, wireless phones
EN 61000-4-4	Transients (burst)	2 kV	Motors, valves
EN 61000-4-6	Conducted RF	10 V (0.15 ... 80 MHz, 3 s)	Frequency converters

PHYSICAL SPECIFICATIONS

Materials	
Transducer	Stainless steel (316L / 1.4435), titanium (Gr. 2), (1)
Housing	Stainless steel (316L / 1.4404), titanium (Gr. 2)
Seals	Viton (Standard), EPDM, Kalrez
Cable	PUR, FEP, PE
Weight (2)	137 g

(1) Hastelloy (C-276) on request
(2) Specification for a ATM/N/T, closed, withou cable

Equipment

OVERVIEW

10.00.0091	Accessories overview

Additional documents

OPERATING AND SAFETY INSTRUCTIONS

	Article number
10.88.0092	DMM029

Ordering information

			X.	XXXX.	XXXX.	XX.	XXX
Type							
	ATM/N/T	31					
Pressure type							
	Gauge		1				
	Absolute (vacuum)		2				
Pressure measuring range							
	50 mbar ... < 100 mbar			XX			
	100 mbar ... 25 bar			XX			
	Offset, special adjustment			99			
Process connection							
	Closed (Fig. 1)			55			
	Open (Fig. 2)			56			
	Customized			99			
Electrical connection							
	PE cable, black, IP 68 (4) (5)				13		
	PUR cable, black, IP 68 (4) (6)				15		
	FEP cable, black, IP 68 (4)				21		
	Connectable version, IP 68, M12x1, (Fig. 4), (3)				07		
	Customized				99		
Output signal							
	0 ... 5 VDC				46		
	0 ... 10 VDC				47		
	0 ... 20 mA				00		
	4 ... 20 mA				05		
	Customized				99		
Accuracy							
	≤ ± 0.5 % FS					0	
	≤ ± 0.25 % FS					1	
	≤ ± 0.1 % FS					2	
Temperature range							
	-5 ... 50°C compensated process temperature: -5 ... 50°C)	(allowed				4	
	-5 ... 80°C compensated process temperature: -5 ... 80°C)	(allowed				5	
Option 1							
	Special oil filling: Anderol Food food applications)	(for					G
Option 2							
	Electronics packed in gel: Absolute pressure						D
Option 3							
	Ballast weight 1.4435						B
	Cutting ring connection G 1/2 M						
	Strain relief						
	Version titanium (without ballast weight)						K
	Seals: Viton (standard)						U
	Seals: EPDM						S
	Seals: Kalrez (Level)						T

(3) Connector with required cable has to be ordered separately (KART100)

(4) Please specify the required cable length and medium

(5) Suitable for drinking water (food approved)

(6) For operating temperature > 50°C, PE or FEP cable must be used

Dimensions

Fig. 1: Closed version

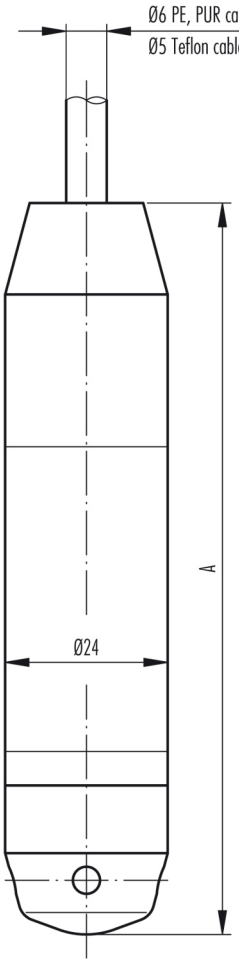


Fig. 2: Open version

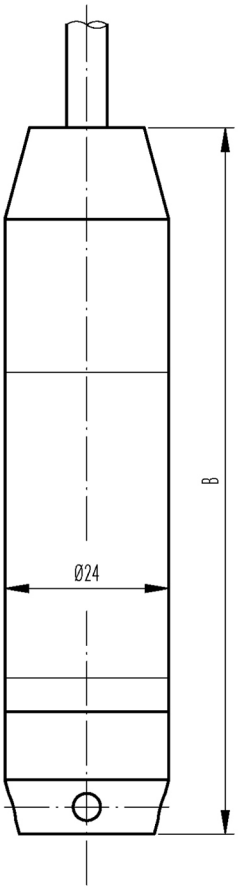
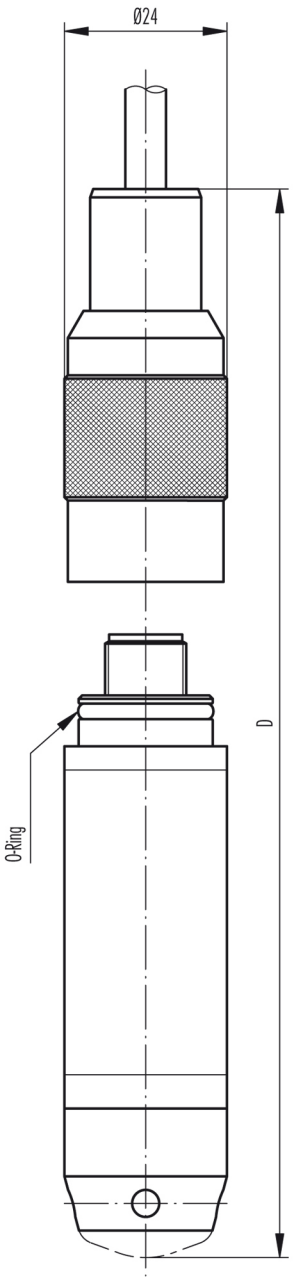


Fig. 4: Electrical connection, connectable



Standard

	A [mm]	B [mm]	C [mm]	D [mm]	Weight [g]
without ballast weight	137	133	on request*	on request*	approx. 180
with ballast weight	224	220	on request*	on request*	approx. 440

*C: depending on process connection

*D: depending on process connection or version

Colour	3-wire	4-wire
white	+Vin	+VinP
yellow		+VinT
brown	Pout	Pout
green	Tout	Tout