

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

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) (\pm % FS)	$\leq 0.5 / \leq 0.25$	$\leq 0.5 / \leq 0.25 / \leq 0.1$	$\leq 0.5 / \leq 0.25 / \leq 0.1$
Thermal shift (\pm % FS/ $^{\circ}$ C)			
Zero point -5 ... 50 $^{\circ}$ C	≤ 0.06	≤ 0.03	≤ 0.03
Span -5 ... 50 $^{\circ}$ 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 $^{\circ}$ C
Lower end of range	-25 $^{\circ}$ C
Upper end of range	85 $^{\circ}$ C
Temperature span, (2)	> 30 $^{\circ}$ C
Accuracy, (3)	
0 ... 70 $^{\circ}$ C, (typ. / max.)	$\pm 0.5 / 1.0$ $^{\circ}$ C
-25 ... 85 $^{\circ}$ C, (typ. / max.)	$\pm 1.0 / 1.5$ $^{\circ}$ C

(1) Other temperature measuring ranges on request

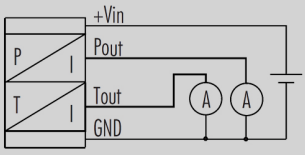
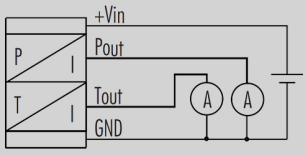
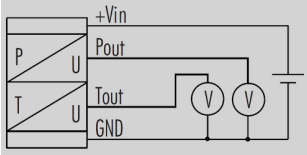
(2) Measuring range 15...30 $^{\circ}$ C must be contained

(3) Probe, electronics, calibration

TEMPERATURE RANGE

Operating temperature	-5 ... 80 $^{\circ}$ C
Process temperature	-5 ... 80 $^{\circ}$ C
Storage temperature	-10 ... 80 $^{\circ}$ 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	$(U_{\text{supply}} - 5V) / 0.02A$	$(U_{\text{supply}} - 5V) / 0.02A$	$R_L > 10k\Omega$
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, without cable

Equipment

OVERVIEW

10.00.0091	Accessories overview
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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					
	$\leq \pm 0.5$ % FS			0	
	$\leq \pm 0.25$ % FS			1	
	$\leq \pm 0.1$ % 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 $> 50^{\circ}\text{C}$, PE or FEP cable must be used

Dimensions

Fig. 1: Closed version

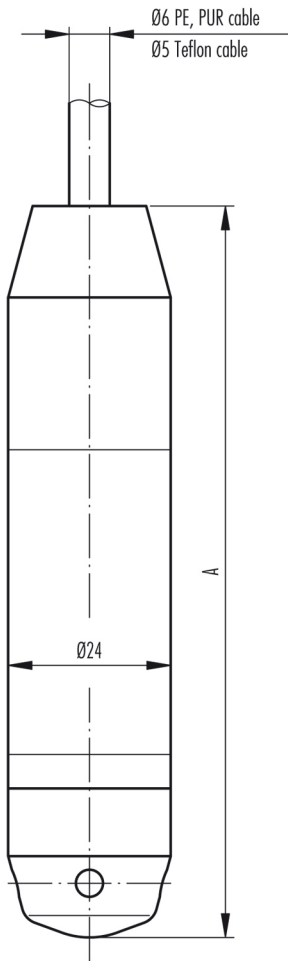


Fig. 2: Open version

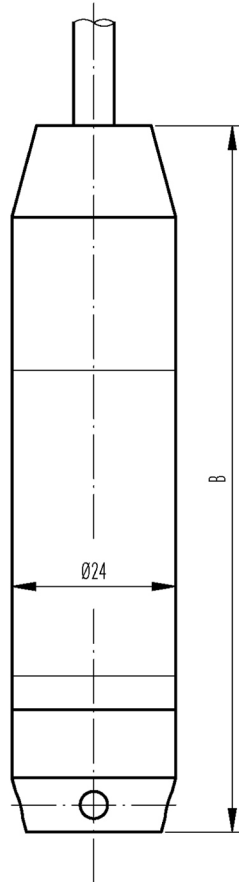
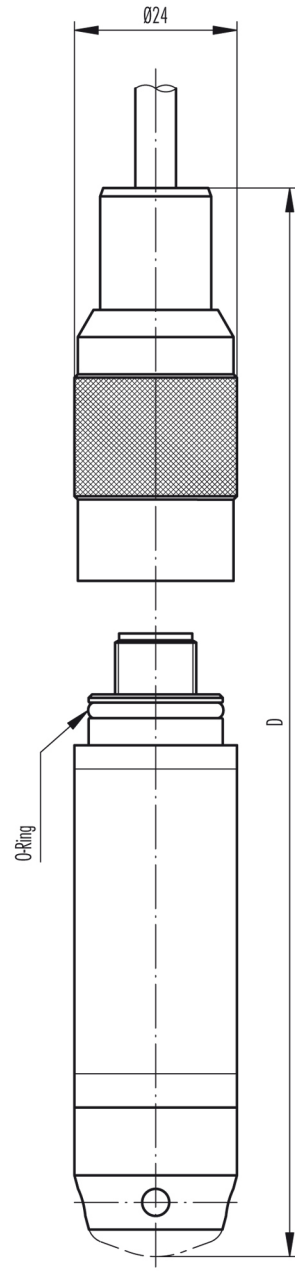


Fig. 4: Electrical connection, connectable



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	+Vin	+VinT
brown	Pout	Pout
green	Tout	Tout

