

## Level and temperature transmitters

# ATM.1ST/N/T

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Version: 13.01.2015

# Technical Specifications

## Pressure measuring range (mH2O)

	1 ... 5 (1)	> 5 ... 20	> 20 ... 250
<b>Overpressure</b>	3 bar	3 x FS ( $\geq 3$ bar)	3 x FS
<b>Burst pressure</b>	> 200 bar	> 200 bar	> 200 bar
<b>Accuracy, (2), (<math>\pm</math> % FS)</b>	$\leq 0.25 / \leq 0.1$	$\leq 0.25 / \leq 0.1$	$\leq 0.25 / \leq 0.1$
<b>Total Error, (3), (<math>\pm</math> % FS)</b>			
-5 ... 50°C, (typ. / max.)	$\leq 0.8 / 1.0$	$\leq 0.3 / 0.5$	$\leq 0.3 / 0.5$
-5 ... 80°C, (typ. / max.)	$\leq 1.3 / 1.5$	$\leq 0.75 / 1.0$	$\leq 0.75 / 1.0$
<b>Response time, (typ.)</b>	< 1ms / 10 ... 90% FS	< 1ms / 10 ... 90% FS	< 1ms / 10 ... 90% FS
<b>Long term stability, (4)</b>	< 0.5% FS / < 4 mbar	< 0.2% FS / < 4 mbar	< 0.1% FS / < 0.2% FS

(1) 0.5 mH2O on request

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

## Temperature measuring range

<b>Standard, (1)</b>	-5 ... 50°C
Lower end of range	-5°C
Upper end of range	80°C
<b>Temperature span, (2)</b>	> 30°C
<b>Accuracy, (3)</b>	< $\pm 0.3$ °C
<b>Response time, (4)</b>	
T 0.50	60 s
T 0.63	75 s
T 0.90	160 s
<b>Self heating, (5)</b>	
Water, 0 m/s	0.05°C
Air, 0 m/s	1.5°C

(1) Other temperature measuring ranges on request

(2) Measuring range 15 ... 30°C must be contained

(3) Probe, electronics, calibration

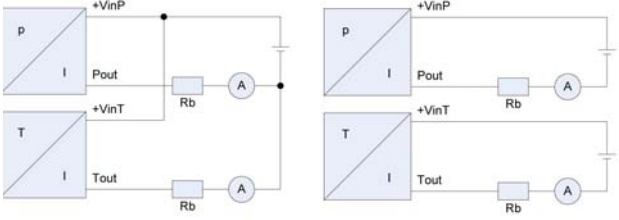
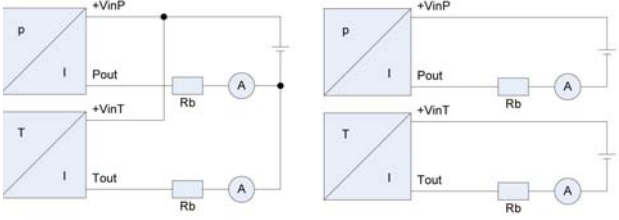
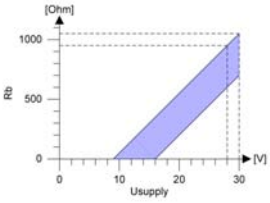
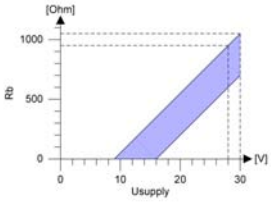
(4) Time in seconds that the sensor needs to carry out eg 63% of a temperature change

(5) At minimum recommended load resistance

## 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

	4 ... 20 mA	4 ... 20 mA
<b>Power supply</b>	9 ... 30 VDC	9 ... 30 VDC
Supply influence	< 0.05% FS	< 0.05% FS
<b>Circuit diagram</b>		
<b>Load resistance</b>		
Minimum load resistance	$RL = (U_b - 15V) / 0.02A$	$RL = (U_b - 15V) / 0.02A$
Maximum load resistance	$RL = (U_b - 9V) / 0.02A$	$RL = (U_b - 9V) / 0.02A$
Load influence	< 0.05% FS	< 0.05% FS

## Qualifications

	Description	Level	Typical interferences
<b>EN 60068-2-6</b>	Vibration	4g 100 Hz / ± 3.2 mmpp) <sup>(4 ...</sup>	
<b>EN 60068-2-27</b>	Shock	100g (impulse duration 6 ms)	
<b>EN 55022</b>	Emission, class B	< 30 dBμV/m (0.03 ... 1 GHz)	
<b>EN 61000-4-2</b>	Electrostatic discharge	8 kV contact 15 kV air	
<b>EN 61000-4-3</b>	Irradiated RF	10V/m (0.08 ... 2.7 GHz, 3s)	Radio sets, wireless phones
<b>EN 61000-4-4</b>	Transients (burst)	4 kV	Motors, valves
<b>EN 61000-4-5</b>	Surge	Line-Line: 0.5 kV/42 Ω Line-Earth: 1 kV/42 Ω	Overvoltage
<b>EN 61000-4-6</b>	Conducted RF	10 V (0.15 ... 80 MHz, 3 s)	Frequency converters

## Physical specifications

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

# Equipment

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## Overview

10.00.0091	Accessories overview

# Additional documents

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## Operating and safety instructions

	Article number
10.88.0092	DMM029

## Ordering information

		X. XXXX.	XXXX.	XX.	XXX
<b>Type</b>	ATM.1ST/N/T				
<b>Pressure type</b>	Gauge	1			
	Absolute (vacuum)	2			
<b>Pressure measuring range</b>	100 mbar ... 25 bar	XX			
<b>Process connection</b>	Closed (Fig. 1)	55			
	Closed (1.4435) for ACS certification (Fig. 1)	59			
	Open (Fig. 2)	56			
	Customized connections 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		
	FEP cable, (high temperature), black, IP 68 (8)		12		
	PVC cable, blue, IP 68 (3) (6)		14		
	Connectable version, IP 68, Lumberg RSF4 (Fig. 4) (2)		07		
	Customized		99		
<b>Output signal</b>	4 ... 20 mA (3 wires)		03		
	4 ... 20 mA (4 wires)		05		
<b>Accuracy</b>	≤ ± 0.25 % FS			1	
	≤ ± 0.1 % FS			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
	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
	Seals: NBR (ACS)				
	Humidity filter element for gauge versions (only for PUR and PE cable)				Z

(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
- (7) min. Medium temperature -25 ° C
- (8) max. 130°C @ 10 mH2O, max. 110°C @ 50 mH2O
- (9) Standard, no special cleaning. Special cleaning must be requested.

# Technical drawings

## Dimensions

Fig. 1: Closed version

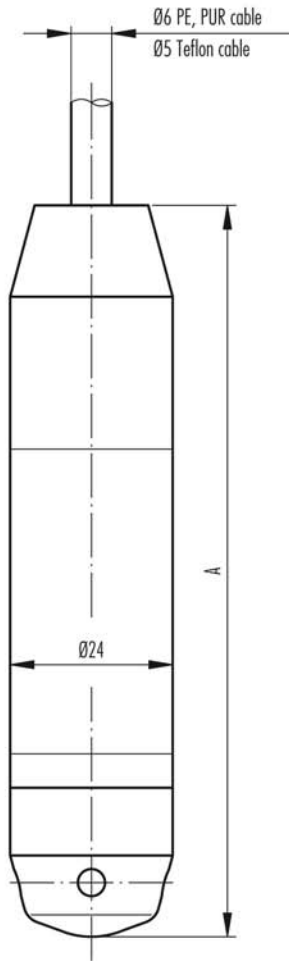


Fig. 2: Open version

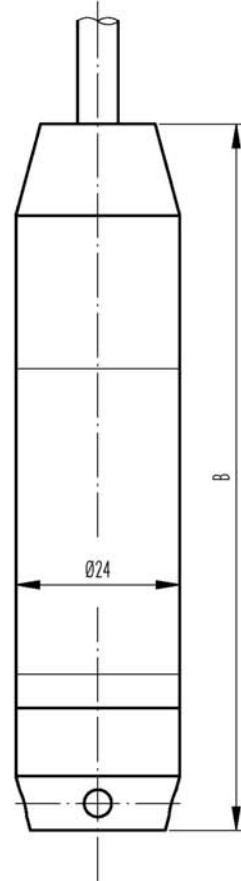


Fig. 3: with process connection

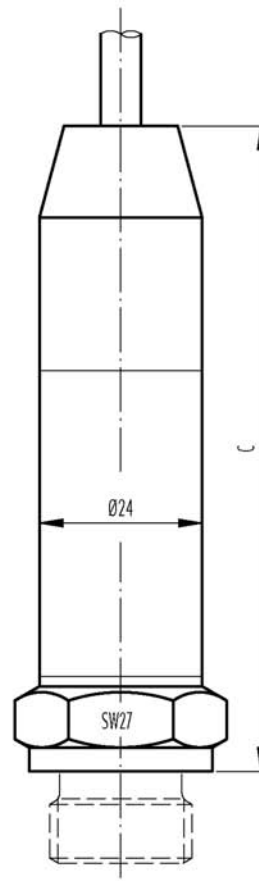
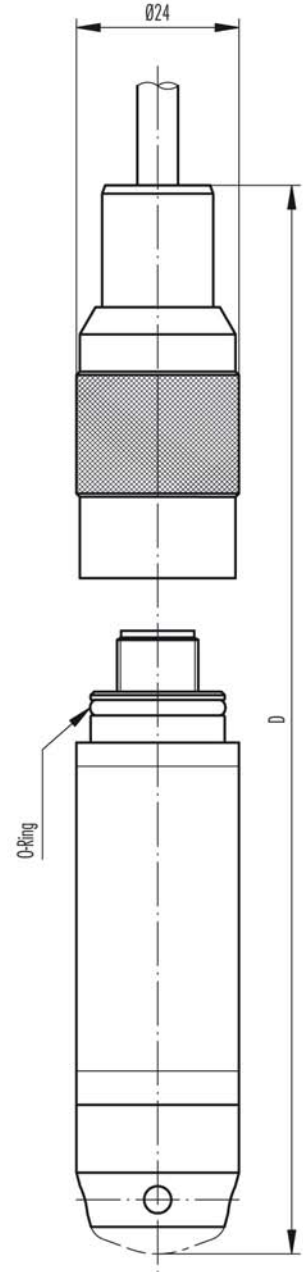


Fig. 4: Electrical connection, connectable



### Standard

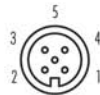
	A [mm]	B [mm]	C [mm]	D [mm]	Weight [g]
without ballast weight	137	133	on request*	on request*	approx. 180
with ballast weight	224	220	on request*	on request*	approx. 440

\*C: depending on process connection

\*D: depending on process connection or version

### Colour 3-wire 4-wire

white	+Vin	+VinP
yellow	+VinT	+VinT
brown	Pout	Pout
green	Tout	Tout



Specifications may change without notice.

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