

Intrinsically safe submersible level transmitters

ATM.1ST/N/Ex



CUSTOMER BENEFITS

- Various certificates available
- High precision pressure sensor over the whole temperature range
- Electronic compensation
- Any process connections available
- Can be ordered in different materials

Technical Specifications

PRESSURE MEASURING RANGE (MH2O)

	1 ... 5, (1)	> 5 ... 20	> 20 ... 250
Overpressure	3 bar	3 x FS (≥ 3 bar)	3 x FS
Burst pressure	> 200 bar	> 200 bar	> 200 bar
Accuracy, (2), (\pm % FS)	≤ 0.1	≤ 0.1	≤ 0.1
Total Error, (3), (\pm % FS)			
-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.)	$\leq 1.3 / 1.5$	$\leq 0.75 / 1.0$	$\leq 0.75 / 1.0$
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) Zero based accuracy according to DIN-16086, incl. hysteresis and repeatability at ambient temperature

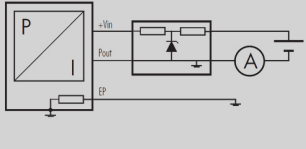
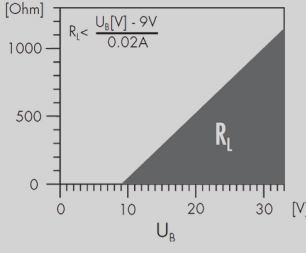
(3) Total error including accuracy and temperature influences at maximum signal span (16 mA / 10 V DC)

(4) 1 year (typ. / max.), the long term stability can be improved by ageing (burn-in) the sensor

TEMPERATURE RANGE

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

ELECTRICAL SPECIFICATIONS

	4 ... 20 mA
Power supply	9 ... 28 VDC
Supply influence	< 0.05% FS
Circuit diagram	
Load resistance	
Load influence	< 0.05% FS

ATEX APPROVAL

Certificate, (1)	SEV 09 ATEX 0108		
Gas	II 1G Ex ia IIB/IIC T3 ... T6	EN 60079-0 / -11 / -26	
Dust	II 1D Ex ia IIIC IP6x T140°C ... T70°C	EN 61241-0 / -11	
Mining	I M1 Ex ia I	EN 50303	
Temperature class, (2)	T6	T4	T4
Ambient temperature	-5 ... 50°C	-5 ... 80°C	-5 ... 80°C
Process temperature	-5 ... 50°C	-5 ... 50°C	-5 ... 80°C
Maximum values of the intrinsically safe circuit	28V / 93 mA / 0.65W		

(1) For detailed Ex specifications see certificate and operating an safety instructions

(2) Without any information about temperature class the transmitter will be delivered for T4

GL APPROVAL

Certificate	75878-09 HH
Field of application	C, H, EMC1

ADDITIONAL APPROVALS

IEC Ex	IEC Ex SEV 10.0003
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QUALIFICATIONS

	Standard	Level	Typical interferences
EN 60068-2-6	Vibration	10g (4 ... 2000 Hz / ± 10 mmp)	
EN 60068-2-27	Shock	100g (impulse duration 6 ms)	
EN 55022	Emission, class B	< 30 dB μ V/m (0.03 ... 1 GHz)	
EN 61000-4-2	Electrostatic discharge	8 kV contact 15 kV air	
EN 61000-4-3	Irradiated RF	10V/m ... 2.7 GHz, 3s) (0.08	Radio sets, wireless phones
EN 61000-4-4	Transients (burst)	4 kV	Motors, valves
EN 61000-4-5	Surge	Line-Line: 0.5 kV/42 Ω Line-Earth: 1 kV/42 Ω	Overvoltage
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)
Housing	Stainless steel (316L / 1.4404), titanium (Gr. 2)
Seals	Viton (standard), EPDM, Kalrez
Cable	PUR, FEP

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	XXX	XXX	XX	XXX
Type					
					ATM.1ST/N/Ex
Pressure type					
					Gauge 1
					Absolute (vacuum) 2
Pressure measuring range					
					50 mbar ... <100 mbar XX
					100 mbar ... 25 bar XX
Process connection					
					Closed (Fig. 1) 55
					Open (Fig. 2) 56
					G 1/4 M (Fig. 3) 11
					G 1/2 M (Fig. 3) 13
					Customized 99
Electrical connection					
					PUR cable, blue, IP 68 (4) (5) 17
					FEP cable, blue, IP 68 (4) 22
					Connectable version, IP 68, Lumberg RSF4 (Fig. 4), (3) 07
					Customized 99
Output signal					
					4 ... 20 mA 05
Accuracy					
					$\leq \pm 0.25 \% \text{ FS}$ 1
					$\leq \pm 0.1 \% \text{ FS}$ 2
Temperature range					
					T6 (Ta: -5 ... 50°C) -5 ... 50°C compensated (allowed process temperature: -5 ... 50°C) 3
					T4 (Ta: -5 ... 80°C) -5 ... 50°C compensated (allowed process temperature: -5 ... 50°C) 4
					T4 (Ta: -5 ... 80°C) -5 ... 80°C compensated (allowed process temperature: -5 ... 80°C) 5
Option 1					
					Special oil filling: Anderol Food (for food applications) G
					Cutting ring connection G 1/2 M
					Strain relief
Option 2					
Option 3					
					Ballast weight 1.4435 B
					Version titanium (without ballast weight) K
					Seals: Viton (standard) U
					Seals: EPDM S
					Seals: Kalrez (Level) T
					Humidity filter element for gauge versions (only PUR cable) Z

(1) 0.5 mH2O on request

- (2) mH2O, mWS, mWC etc. available
- (3) Connector with required cable has to be ordered separately (KART100)
- (4) Please specify the required cable length and medium
- (5) For operating temperature > 50°C, FEP cable must be used

Technical drawings

Dimensions

Fig. 1 Closed version

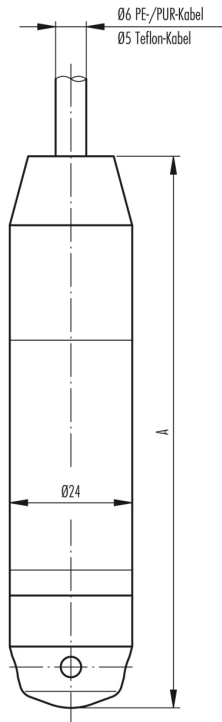


Fig. 2 Open version

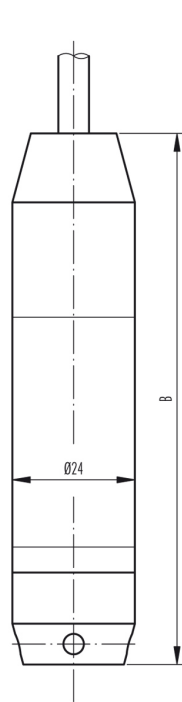


Fig. 3 With process connection

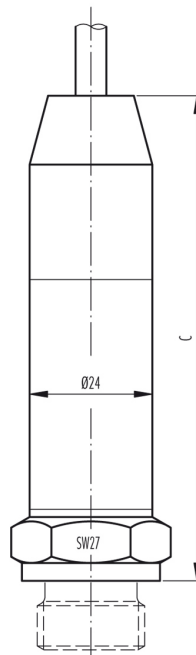
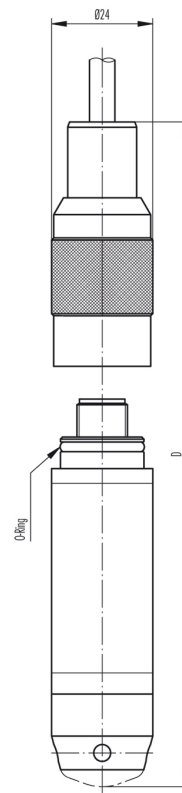


Fig. 4 Electrical connection, connectable



	A [mm]	B [mm]	C [mm]	D [mm]	Weight [g]
without ballast weight	88	84	on request*	119*	ca. 145
with ballast weight	175	171	on request*	201*	ca. 405

*C: Depending on process connection

Colour	2-wire
white	+Vin
yellow	Pout
brown	
grey	EP (only Ex)

Technische Änderungen vorbehalten.

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