

Submersible Level Transmitter

ATM.1ST/N19 - Miniature Level Transmitter



CUSTOMER BENEFITS

- Submersible level transmitter with a diameter of 19 mm
- Any measuring ranges between 0 ... 1 mH₂O and 0 ... 250 mH₂O available
- Static accuracies available to 0.05 %FS
- Hysteresis and repeatability better than 0.01 %
- Piezoresistive technology suitable for static and dynamic pressure measurements

Technical Specifications

PRESSURE MEASURING RANGE (MH2O)

Pressure range	0 ... 1 to 0 ... < 5	0 ... 1 to 0 ... < 10	0 ... 10 to 0 ... 250
Overpressure (Proof)	3 bar	3 bar	3 x FS
Burst pressure	> 200 bar	> 200 bar	> 200 bar
Accuracy, (1) ($\pm$ % FS)	≤ 0.25	$\leq 0.2 / \leq 0.1$	$\leq 0.2 / \leq 0.1 / \leq 0.05$
Total Error, (2) ($\pm$ % FS ; typ. / max.)			
-5 ... 50°C compensated	$\leq 0.2 / 0.4$	$\leq 0.2 / 0.4$	$\leq 0.15 / 0.3$
-5 ... 80°C compensated	$\leq 0.3 / 0.5$	$\leq 0.3 / 0.5$	$\leq 0.2 / 0.4$
Response time, (typ.)	< 1ms / 10 ... 90 % FS	< 1ms / 10 ... 90 % FS	< 1ms / 10 ... 90 % FS
Long term stability, (typ./max. per year)	< 1 mbar / < 2 mbar	< 1 mbar / < 2 mbar	< 0.1% FS / < 0.2% FS

(1) Zero based accuracy according to EN-61298, incl. hysteresis and repeatability at ambient temperature

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

TEMPERATURE RANGE

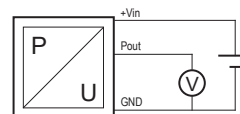
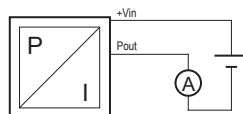
Operating temperature	-5 ... 80°C, (1)
Process temperature	-5 ... 80°C, (1)
Storage temperature	-40 ... 100°C

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

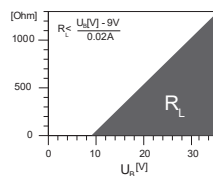
ELECTRICAL SPECIFICATIONS

Output signal	4 ... 20 mA	0.5 ... 4.5 V DC 0 ... 5 V DC	0 ... 10 V DC
Power supply	9 ... 33 V DC	10 ... 30 V DC	12 ... 30 V DC
Supply influence	< 0.05 % FS	< 0.05 % FS	< 0.05 % FS
Current consumption (typ.)	n.a.	3 mA	3 mA
Start-up time, (1)	≤ 170 ms	≤ 170 ms	≤ 170 ms

Circuit diagram



Load resistance



$$R_L > 10 \text{ kOhm}$$

Load influence	< 0.05 % FS	< 0.05 % FS	< 0.05 % FS
Reverse polarity protection	Yes	Yes	Yes
Short-circuit resistance	n.a.	Yes	Yes

(1) typical start-up time at 25°C, might vary under different temperatures

QUALIFICATIONS

	Description	Level
EN 61326-2-3	EMC	
EN 61000-6-2	EMC	
EN 61000-6-3	EMC	

PHYSICAL SPECIFICATIONS

Oil filling	Standard: Silicone Oil Optional: Anderol Food
Transducer	Stainless steel (316L / 1.4435)
Housing	Stainless steel (316L / 1.4435)

Accessories

MANUALS

Article number	Description	
DMM029	Operating and safety instructions	10.88.0092

Ordering information

Type	x	xxxx	xxxx	xx	xxx
ATM.1ST/N19					
Pressure type					
Gauge	1				
Absolute	2				
Pressure measuring range					
Any measuring ranges between 0 ... 1 mH ₂ O and 0 ... 250 mH ₂ O available		xx			
Process connection					
Closed, nose cone POM, (Fig. 1)		55			
Other process connections on request		99			
Electrical connection					
PE cable, black, IP 68, (1)			13		
PUR cable, black, IP 68, (1), (2)			15		
FEP cable, black, IP 68, (1)			21		
Other electrical connections on request			99		
Output signal					
0.5 ... 4.5 VDC			41		
0 ... 5 VDC			46		
0 ... 10 VDC			47		
4 ... 20 mA			05		
Accuracy					
≤ ± 0.2 % FS (1 mH ₂ O ... 250 mH ₂ O)				4	
≤ ± 0.1 % FS (1 mH ₂ O ... 250 mH ₂ O)				2	
≤ ± 0.05 % FS (10 mH ₂ O ... 250 mH ₂ O)				6	
Temperaturbereich					
-5 ... 50°C compensated (allowed process temperature: - 5 ... 50°C)				4	
-5 ... 80°C compensated (allowed process temperature: - 5 ... 80°C), (2)				5	
Options					
Special oil filling: Anderol Food (for food applications)					G
Seals: FKM (standard)					U
Seals: EPDM					S
Seals: Kalrez, (3)					T
Humidity filter element for gauge versions					Z

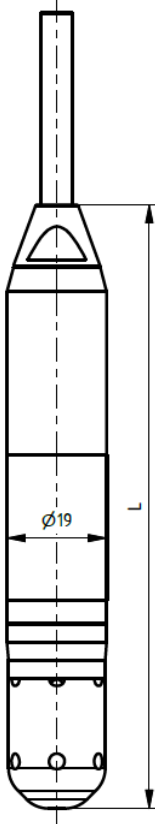
(1) Please specify the required cable length and medium

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

(3) Only available with FEP cable

Dimensions

Fig. 1
Closed version



Version	L [mm]	Weight [g] (without cable)	Colour	2-wire	3-wire
Figure 1 - closed	ca. 116	ca. 120	white yellow brown black	+Vin Pout Shield	+Vin GND Pout Shield