

Submersible Level Transmitter - ATEX certified

TM/N/Ex - Passive Level Transmitter (mV)



CUSTOMER BENEFITS

- Certificates: ATEX, EAC, GOST
- Any measuring ranges between 0 ... 0.5 mH₂O and 0 ... 250 mH₂O available
- Static accuracies available to 0.1 %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 ... 0.5 to 0 ... 5	0 ... > 5 to 0 ... 20	0 ... > 20 to 0 ... 250
Overpressure (Proof)	3 bar	3 bar / 3 x FS	3 x FS
Burst pressure	> 200 bar	> 200 bar	> 200 bar
Accuracy, (1), \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 error (\pm % FS/ $^{\circ}$ C)			
Zero point: -5 ... 50 $^{\circ}$ C	≤ 0.06	≤ 0.03	≤ 0.015
Zero point: -5 ... 80 $^{\circ}$ C	≤ 0.08	≤ 0.04	≤ 0.02
Span: -5 ... 50 $^{\circ}$ C	≤ 0.015	≤ 0.015	≤ 0.015
Span: -5 ... 80 $^{\circ}$ C	≤ 0.02	≤ 0.02	≤ 0.02
Response time, (typ.)	< 0.1 ms / 10...90 % FS	< 0.1 ms / 10...90 % FS	< 0.1 ms / 10...90 % FS
Long term stability (typ./max. per year)	< 0.5% FS / < 2 mbar	< 0.2% FS / < 2 mbar	< 0.1% FS / < 0.2% FS

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

TEMPERATURE RANGE

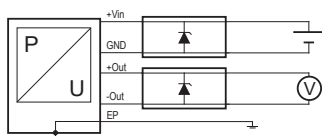
Operating temperature	-5 ... 80 $^{\circ}$ C, (1)
Process temperature	-5 ... 80 $^{\circ}$ C, (1)
Storage temperature	-10 ... 80 $^{\circ}$ C

(1) For operating temperature > 50 $^{\circ}$ C, FEP cable must be used

ELECTRICAL SPECIFICATIONS

Output signal	Typically between 10 mV FS and 100 mV FS at 10 V DC supply. Depending on the pressure range and accuracy requirement. The possible output signal can be specified on request.
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Circuit diagram



Input impedance	> 10 kOhm
Bridge resistance, (typ.)	3.3 kOhm
Power supply (typ./max.)	10 / 15 V DC

CERTIFICATES / APPROVALS

Certificates, (1)		
ATEX, (2)	SEV 04 ATEX 0149 X	
Gas	Zone 0	II 1G Ex ia IIC T4 ... T6 Ga
Gas	Zone 1+2	II 2G Ex ia IIB T4 ... T6 Gb
Dust		II 1D Ex ia IIIC T ₂₀₀ 110°C Da
Maximum values of the intrinsically safe circuit	20 V / 300 mA / 1.2 W	
Temperature class, (3)	T6	T4
Ambient temperature (Ta)	-5 ... 50 °C	-5 ... 80 °C
Process temperature	-5 ... 50 °C	-5 ... 80 °C

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

(2) Max. permitted cable length: ≤ 300 m

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

QUALIFICATIONS

	Description	Level
EN 60068-2-6	Vibration	4G (4 ... 100 Hz)
EN 60068-2-27	Shock	100 G (impulse duration 6 ms)
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	Standard: Stainless steel (316L / 1.4435) Optional: Titanium (Gr. 2)
Housing	Standard: Stainless steel (316L / 1.4435) Optional: Titanium (Gr. 2)

Accessories

MANUALS

Article number	Description	
DMM043	Operating and safety instructions	10.88.0438

Ordering information

Type	x	xxxx	xxxx	xx	xxx
TM/N/Ex	19				
Pressure type					
Gauge	1				
Absolute	2				
Pressure measuring range					
Any measuring ranges between 0 ... 0.5 mH2O and 0 ... 250 mH2O available		xx			
Process connection					
Closed, nose cone POM, (Fig. 1)		55			
Open, nose cone POM, (Fig. 2)		56			
Other process connections on request		99			
Electrical connection					
PUR cable, blue, IP 68, (1), (2)			17		
FEP cable, blue, IP 68, (1)			22		
Other electrical connections on request			99		
Output signal					
0 ... xxx mV			xx		
Accuracy					
$\leq \pm 0.5$ % FS (0.5 mH2O ... 250 mH2O)				0	
$\leq \pm 0.25$ % FS (1 mH2O ... 250 mH2O)				1	
$\leq \pm 0.1$ % FS (5 mH2O ... 250 mH2O)				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 ... 80°C compensated (allowed process temperature: - 5 ... 80°C), (2)				5	
Options					
Special oil filling: Anderol Food (for food applications)					G
Version titanium (without ballast weight)					K
Seals: FKM (standard)					U
Seals: EPDM					S
Seals: Kalrez					T
Humidity filter element for gauge versions					Z

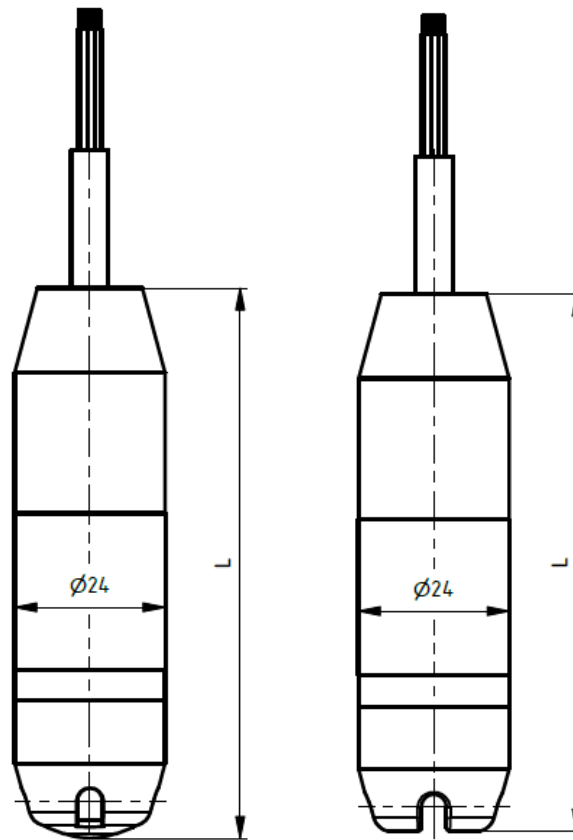
(1) Please specify the required cable length and medium

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

Dimensions

Fig. 1
Closed version

Fig. 2
Open version



Version	L [mm]	Weight [g] (without cable)	Colour	5 wire
Figur 1 - closed	ca. 85	ca. 200	white	+Vin
Figur 2 - open	ca. 83	ca. 200	brown	+Out
			green	-Out
			yellow	GND
			grey	EP

Specifications may change without notice

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