



## Intrinsically Safe Submersible Transmitters

# ATM/N/Ex - Analog Level Transmitter



### CUSTOMER BENEFITS

- Certificate: ATEX
- Fast customization thanks to configurable product design
- Compact design requires minimal space
- Short response times suitable for dynamic pressure measurements

Release: 10.80.0531.A - 2019.06

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# Technical Specifications

## PRESSURE MEASURING RANGE (MH2O)

	1 ... 5 (1)	> 5 ... 20	> 20 ... 250
Overpressure	3 bar	3 x FS ( $\geq 3$ 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 0 ... 70 $^{\circ}$ C	$\leq 0.06$	$\leq 0.03$	$\leq 0.015$
Zero point -25 ... 85 $^{\circ}$ C	$\leq 0.08$	$\leq 0.04$	$\leq 0.02$
Span 0 ... 70 $^{\circ}$ C	$\leq 0.015$	$\leq 0.015$	$\leq 0.015$
Span -25 ... 85 $^{\circ}$ C	$\leq 0.02$	$\leq 0.02$	$\leq 0.02$
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

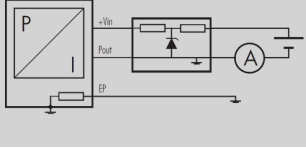
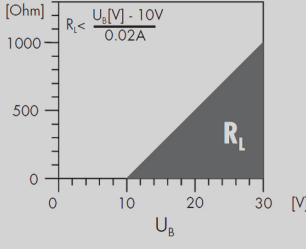
## TEMPERATURE RANGE

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, PE or FEP cable must be used

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## ELECTRICAL SPECIFICATIONS

	4 ... 20 mA
Power supply	10 ... 30 VDC
Supply influence	< 0.1% FS
Circuit diagram	
Load resistance	
Load influence	< 0.1% FS

## ATEX APPROVAL

Certificate, (1)	SEV 11 ATEX 0142	
Gas	II 1G Ex ia IIC T3 ... T6	EN 60079-0 / -11 / -26
Dust	II 1D Ex iaD 20 IP6x T125°C ... T80°C	
Mining	I M1 Ex ia I	EN 50303
Temperature class, (2)	T6	T4
Ambient temperature	-5 ... 50°C	-5 ... 80°C
Process temperature	-5 ... 50°C	-5 ... 80°C
Maximum values of the intrinsically safe circuit	30 V / 100 mA / 1 W	

(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	40869-01 HH
Field of application	C, EMC1

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## 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 61000-4-5, (1)	Surge	10 kA (8 / 20 µs)	Overvoltage
EN 61000-4-6	Conducted RF	10 V (0.15 ... 80 MHz, 3 s)	Frequency converters

(1) Only with optional overvoltage protection

## 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
Weight (2)	108 g

(1) Hastelloy (C-276) on request

(2) Specification for a ATM/N/Ex, closed, without cable

## Equipment

### OVERVIEW

10.00.0091	
10.00.0091	Accessories overview

## Additional documents

### OPERATING AND SAFETY INSTRUCTIONS

Article number	
10.88.0437	DMM042

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# Ordering information

	X	XXX	XXX	XX	XXX
<b>Type</b>					
ATM/N/Ex					34
<b>Pressure type</b>					
Gauge					1
Absolute (vacuum)					2
<b>Pressure measuring range</b>					
50 mbar ... < 100 mbar				XX	
100 mbar ... 25 bar				XX	
Offset, special adjustment					99
<b>Process connection</b>					
Closed (Fig. 1)					55
Open (Fig. 2)					56
G 1/4 M (Fig. 3)					11
G 1/2 M (Fig. 3)					13
Customized					99
<b>Electrical connection</b>					
Connectable version, IP 68 (Fig. 4), (3)					07
PUR cable, blue, IP 68 (4), (5)					17
FEP cable, blue, IP 68 (4)					22
Customized					99
<b>Output signal</b>					
4 ... 20 mA					05
4 ... 20 mA with surge protection					08
<b>Accuracy</b>					
≤ ± 0.5 % FS					0
≤ ± 0.25 % FS					1
≤ ± 0.1 % FS					2
<b>Temperature range</b>					
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)					5
<b>Option</b>					
Ballast weight 1.4435					B
Seals: Viton (standard)					U
Seals: EPDM					S
Seals: Kalrez (Level)					T
Version titanium (without ballast weight)					K
Humidity filter element for gauge versions (only for PUR cable)					Z

(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

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## Dimensions

Fig. 1: Closed version

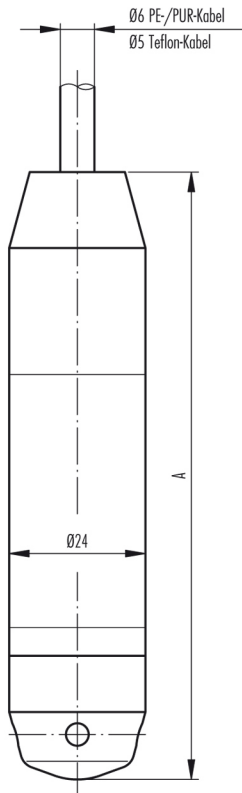


Fig. 2: Open version

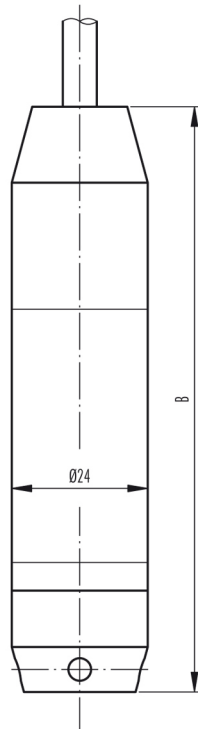


Fig. 3: with process connection

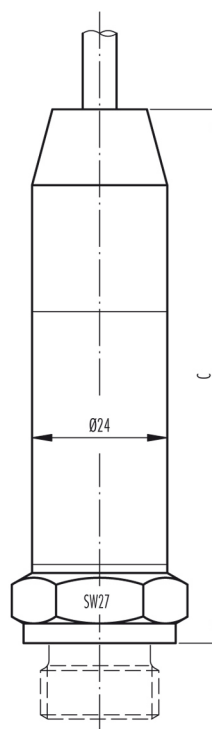
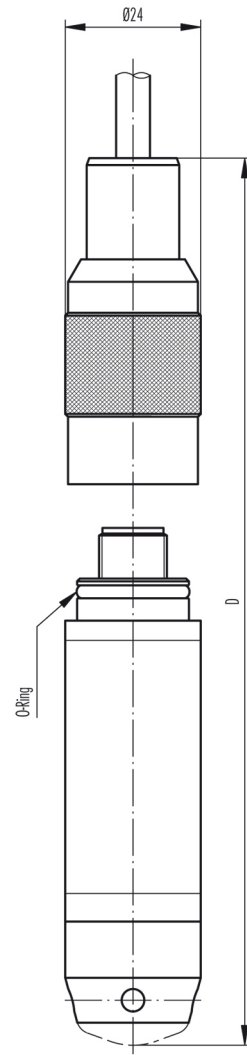


Fig. 4: Electrical connection, connectable



Standard	A [mm]	B [mm]	C [mm]	D [mm]	Weight [g]
without ballast weight	108	104	on request*	on request*	approx. 160
with ballast weight	195	191	on request*	on request*	approx. 420

\*C: Depending on process connection

\*D: Depending on process connection or version

Version with surge (lightning) protection	A [mm]	B [mm]	C [mm]	D [mm]	Weight [g]
without ballast weight	157	153	on request	on request	approx. 200
with ballast weight	244	240	on request	on request	approx. 460

Colour 2-Wire

white +Vin  
yellow Pout  
gray EP

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Measurement and data acquisition solutions

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