

## Submersible Transmitter

# ATM.ECO/N - Analog Level Transmitter



### Customer benefits

- Entry level series into precision level measurement
- Excellent long term stability allow accurate measurements over a long period
- High measurement accuracy is ensured by sophisticated digital temperature compensation algorithms
- Fast customization thanks to configurable product design
- Available with overvoltage protection

Version: 25.04.2016

# 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, (2)</b>	> 200 bar	> 200 bar	> 200 bar
<b>Accuracy, (3), (<math>\pm</math> % FS)</b>	$\leq 0.25$	$\leq 0.25$	$\leq 0.25$
<b>Total Error, (4) (<math>\pm</math> % FS)</b>			
-5 ... 50°C, (typ. / max.)	$\leq 1.0 / 1.5$	$\leq 0.7 / 1.0$	$\leq 0.7 / 1.0$
-5 ... 80°C, (typ. / max.)	$\leq 2.0 / 2.5$	$\leq 1.0 / 1.5$	$\leq 1.0 / 1.5$
<b>Response time, (typ.)</b>	< 1ms / 10 ... 90% FS	< 1ms / 10 ... 90% FS	< 1ms / 10 ... 90% FS
<b>Long term stability, (5)</b>	< 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) Total error including accuracy and temperature influences at maximum signal span (16 mA / 10 V DC)

(5) 1 year (typ. / max.), the long term stability can be improved by ageing (burn-in) the sensor

## Temperature range

<b>Operating temperature</b>	-5 ... 80°C
<b>Process temperature</b>	-5 ... 80°C
<b>Storage temperature</b>	-40 ... 80°C

## Electrical specifications

	4 ... 20 mA	0 ... 5 V	0 ... 10 V
<b>Power supply</b>	9 ... 33 VDC	10 ... 30 VDC	12 ... 30 VDC
Supply influence	< 0.05% FS	< 0.05% FS	< 0.05% FS
<b>Current consumption</b>		3 mA	3 mA
<b>Circuit diagram</b>			
<b>Load resistance</b>		$R_L > 10k\Omega$	$R_L > 10k\Omega$
Load influence	< 0.05% FS	< 0.05% FS	< 0.05% FS

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## Qualifications

	Standard	Level	Typical interferences
EN 60068-2-6	Vibration	10g (4 ... 2000 Hz / $\pm$ 10 mmpp)	
EN 60068-2-27	Shock	100g (impulse duration 6 ms)	
EN 55022	Emission, class B	< 30 dB $\mu$ 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 (0.08 ... 2.7 GHz, 3s)	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 $\Omega$ Line-Earth: 1 kV/42 $\Omega$	Overvoltage
EN 61000-4-6	Conducted RF	3 V (0.15 ... 80 MHz, 3 s)	Frequency converters

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## Physical specifications

<b>Materials</b>	
Transducer	Stainless steel (316L / 1.4435)
Housing	Stainless steel (316L / 1.4404)
Seals	Viton (Standard), EPDM, Kalrez, NBR
Cable	PUR, FEP, PE, PVC
<b>Weight (1)</b>	145 g

(1) Specification for a ATM.ECO/N, closed, cable

## Equipment

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### Overview

10.00.0091	Accessories overview
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## 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.ECO/N				
<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 (Fig. 1)	59			
	Open (Fig. 2)	56			
	G 1/4 M (Fig. 3)	11			
	G 1/2 M (Fig. 3)	13			
	Customized	99			
<b>Electrical connection</b>	PE cable, black, IP 68 (4) (5)		13		
	PUR cable, black, IP 68 (4) (6)		15		
	FEP cable, black, IP 68 (4)		21		
	PVC cable, blue, IP 68, ACS certified (4)		14		
	Connectable version, IP68, M12 (Lumberg RSF4), (Fig. 4), (3)		07		
	Customized		99		
<b>Output signal</b>	0 ... 5 VDC		46		
	0 ... 10 VDC		47		
	4 ... 20 mA		05		
	4 ... 20 mA surge protection		08		
<b>Accuracy</b>	$\leq \pm 0.25 \% \text{ FS}$			1	
<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>					
<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				
	Seals: Viton (standard)				U
	Seals: EPDM				S
	Seals: Kalrez (Level)				T
	Seals: NBR (ACS)				H
	Humidity filter element for gauge versions (only for PUR and PE cable)				Z

(3) Connector with required cable has to be ordered separately (KART100)

(4) Please specify the required cable length and medium

(5) Suitable for drinking water (food approved)

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

# Technical drawings

## Dimensions

Fig. 1 Closed version

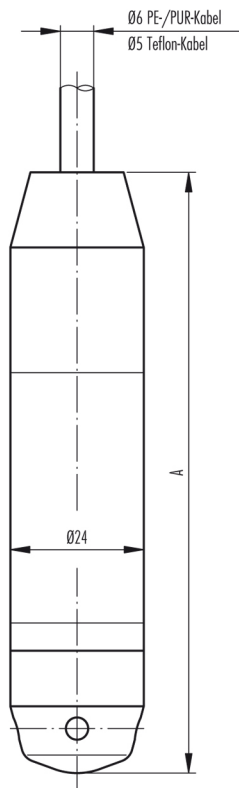


Fig. 2 Open version

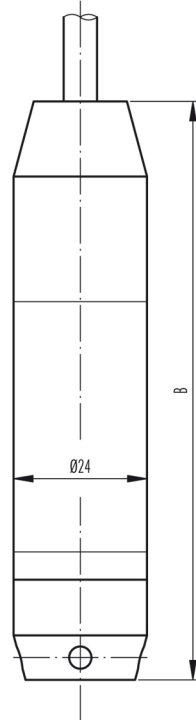


Fig. 3 With process connection

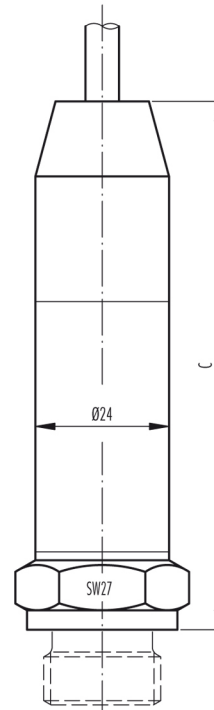
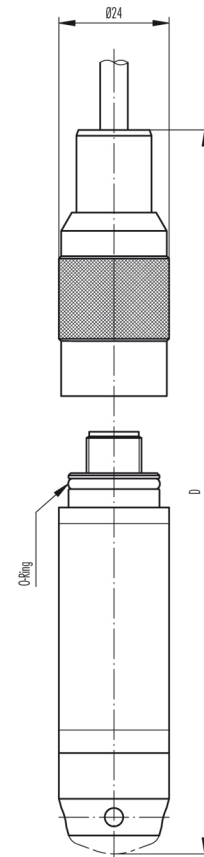


Fig. 4 Electrical connection, connectable



	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	3-wire
white	+Vin	+Vin
yellow	Pout	GND
brown		Pout
grey	EP (only Ex)	

Specifications may change without notice.

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