

## Submersible level transmitters

# ATM/N

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Version: 13.11.2013

# 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</b>	> 200 bar	> 200 bar	> 200 bar
<b>Accuracy, (2), (<math>\pm</math> % FS)</b>	$\leq 0.5 / \leq 0.25$	$\leq 0.5 / \leq 0.25 / \leq 0.1$	$\leq 0.5 / \leq 0.25 / \leq 0.1$
<b>Thermal shift, (<math>\pm</math> % FS/<math>^{\circ}</math>C)</b>			
Zero point -5...50 $^{\circ}$ C	$\leq 0.06$	$\leq 0.03$	$\leq 0.015$
Span -5...50 $^{\circ}$ C	$\leq 0.015$	$\leq 0.015$	$\leq 0.015$
<b>Response time, (typ.)</b>	< 1ms / 10...90% FS	< 1ms / 10...90% FS	< 1ms / 10...90% FS
<b>Long term stability, (3)</b>	< 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 DIN16086, incl. hysteresis and repeatability at ambient temperature

(3) 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 $^{\circ}$ C
<b>Process temperature</b>	-5...80 $^{\circ}$ C
<b>Storage temperature</b>	-10...80 $^{\circ}$ C

## Electrical specifications

	4 ... 20 mA	0 ... 20 mA	0 ... 5 V / 0 ... 10 V
<b>Power supply</b>	9...33 V DC	9...33 V DC	15...30 V DC
Supply influence	< 0.1% FS	< 0.1% FS	< 0.1% FS
<b>Current consumption</b>			3 mA
<b>Circuit diagram</b>			
<b>Load resistance</b>			$R_L > 10k\Omega$
Load influence	< 0.1% FS	< 0.1% FS	< 0.1% FS

## Qualifications

	Description	Level	Typical interferences
<b>EN 61000-4-2</b>	Electrostatic discharge	4 kV contact 8 kV air	
<b>EN 61000-4-3</b>	Irradiated RF	10 V/m (0.08...1 GHz)	Radio sets, wireless phones
<b>EN 61000-4-4</b>	Transients (burst)	2 kV	Motors, valves
<b>EN 61000-4-5</b>	Surge	10 kA (8 / 20 $\mu$ s), (1)	Lightning
<b>EN 61000-4-6</b>	Conducted RF	10 V (0.15...80 MHz)	Frequency converters

(1) Only with optional surge (lightning) protection

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## Physical specifications

<b>Materials</b>	
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, PE

(1) Hastelloy (C-276) on request

## Equipment

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### Overview

<b>10.00.0091</b>	Accessories overview

## Additional documents

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### Operating and safety instructions

	Article number
<b>10.88.0092</b>	DMM029

## Ordering information

		X. XXXX.	XXXX.	XX.	XXX
<b>Type</b>					
	ATM/N	24			
<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			
	Closed, (1.4435), for ACS certificate (Fig. 1)	59			
	Open, (Fig. 2)	56			
	G 1/4 M, (Fig. 3)	11			
	G 1/2 M, (Fig. 3)	13			
	Customized connections available	99			
<b>Electrical connection</b>					
	Connectable version, IP 68, (Fig. 4), (3)		07		
	PE cable, IP 68, black (4), (5)		13		
	PUR cable, IP 68, black (4), (6)		15		
	FEP cable, IP 68, black (4)		21		
	PVC cable, blue, IP 68, (4), (7)		14		
	Customized connection available		99		
<b>Output signal</b>					
	4...20 mA		05		
	0...20 mA		00		
	0... 5 V DC		46		
	0...10 V DC		47		
	4...20 mA surge overvoltage protection		08		
	0...10 V DC surge overvoltage protection		49		
	0...5V DC with overvoltage protection		50		
	Customized connections available		99		
<b>Accuracy</b>					
	≤ ± 0.5 % FS			0	
	≤ ± 0.25 % FS			1	
	≤ ± 0.1 % FS			2	
<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
	Version titanium (without ballast weight)				K
	Seals: Viton (standard)				U
	Seals: EPDM				S
	Seals: Kalrez (Level)				T
	Seals: NBR (ACS)				H

Humidity filter element for gauge versions for PUR and PE cable)	(only					Z
Separate electronic (2 tube housings)						Y

- (1) 0.5 mH<sub>2</sub>O on request
- (2) mH<sub>2</sub>O, 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) Suitable for drinking water (food approved)
- (6) For operating temperature > 50°C, PE or FEP cable must be used
- (7) ACS Certification
- (8) min. Medium temperature -25 ° C
- (9) Standard, no special cleaning. Special cleaning must be requested.

# Technical drawings

## Dimensions

Fig. 1: Closed version

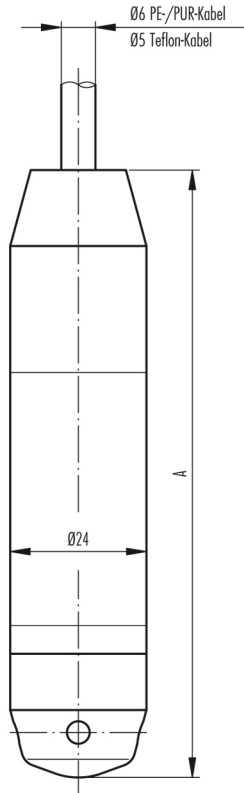


Fig. 2: Open version

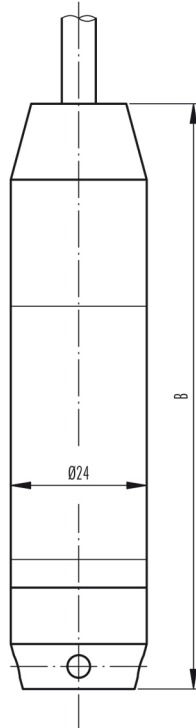


Fig. 3: with process connection

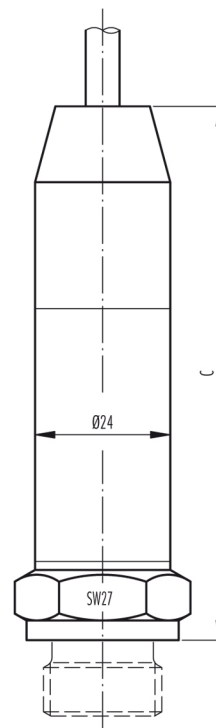
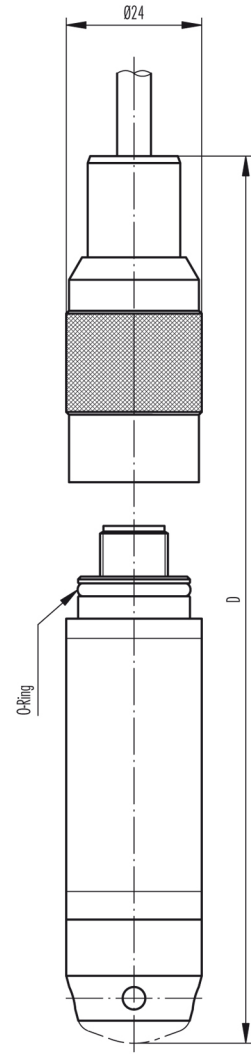


Fig. 4: Electrical connection, connectable



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	3-Wire
with	+Vin	+Vin
yellow	Pout	GND
brown		Pout

Specifications may change without notice.

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