Passive Submersible Transmitters

TM/N - Passive Level Transmitter

Customer benefits

- Unreinforced output signal
- Fast customization thanks to configurable product design
- Short response times suitable for dynamic level measurements

Version: 03.05.2016

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Technical Specifications

Pressure measuring range (mH2O)

	1 ... 5, (1)	> 5 ... 20	> 20 ... 250
Overpressure	3 bar	3 x FS (≥ 3 bar)	3 x FS
Burst pressure, (2)	> 200 bar	> 200 bar	> 200 bar
Accuracy, (3), (± % FS)	≤ 0.5 / ≤ 0.25	≤ 0.5 / ≤ 0.25	≤ 0.5 / ≤ 0.25
Thermal shift, (± % FS/°C)			
Zero point 0...70°C	≤ 0.06	≤ 0.03	≤ 0.015
Zero point -25…85°C	≤ 0.08	≤ 0.04	≤ 0.02
Span 0…70°C	≤ 0.015	≤ 0.015	≤ 0.015
Span -25…85°C	≤ 0.02	≤ 0.02	≤ 0.02
Response time, (typ.)	< 0.1ms / 10...90% FS	< 0.1ms / 10...90% FS	< 0.1ms / 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 DIN16086, 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

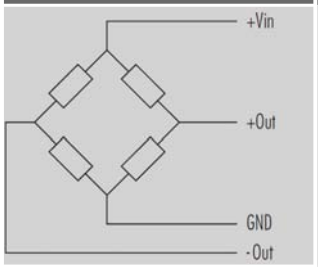
Typical output signal (mH2O)

	1 ... 2	> 2 ... 4	> 4 ... 10
Output signal, (1), (mV)	15	25	35

	> 10 ... 20	> 20 ... 250
Output signal, (1), (mV)	50	100

(1) At nominal pressure, 10 V DC

Electrical specifications

Circuit diagram	
Input impedance	> 10 kOhm
Bridge resistance, (typ.)	3 kOhm
Supply voltage, (typ. / max.)	10 / 15 V DC

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, PE
Weight (2)	200 g

(1) Hastelloy (C-276) on request
(2) Specification for a TM/N, closed, cable

Equipment

Overview

10.00.0091	Accessories overview

Additional documents

Operating and safety instructions

	Article number
10.88.0369	DMM030

Ordering information

			X.	XXXX.	XXXX.	XX.	XXX
Type							
	TM/N	22					
Pressure type							
	Gauge		1				
	Absolute (vacuum)		2				
Pressure measuring range							
	50 mbar ... < 100 mbar			XX			
	100 mbar ... < 25 bar			XX			
	Offset, special adjustment			99			
Process connection							
	Closed, (Fig.1)			55			
	Open, (Fig.2)			56			
	G 1/4 M, (Fig. 3)			11			
	G 1/2 M, (Fig. 3)			13			
	Customized connections available			99			
Electrical connection							
	Connectable version, IP 68, (Fig. 4)				07		
	PE cable, IP 68, black, (5), (6)				13		
	PUR cable, IP 68, black (4), (6)				15		
	FEP cable, (high temperature), black, IP 68, (5), (12)				12		
	FEP cable, IP 68, black (6)				21		
Output signal							
	0...15 mV (11)				10		
	0...25 mV (11)				11		
	0...35 mV (11)				12		
	0...50 mV (11)				13		
	0...100 mV (11)				14		
	0...XXX mV (customized)				99		
Accuracy							
	≤ ± 0.5 % FS					0	
	≤ ± 0.25 % FS (on request)					1	
Temperature range							
	-5...50 °C compensated (allowed process temperature: -5...50 °C)					4	
	-5...80 °C compensated (allowed process temperature: -5...80 °C) (5)					5	
	Customized					9	
Option 1							
	Special oil filling: Androl Food (for food applications)						G
Option 2							
	Electronics packed in gel: Gauge pressure						C
	Electronics packed in gel: Absolute pressure						D
Option 3							
	Ballast weight 1.4435						B
	Version titanium (without ballast weight)						K
	Seals: Viton (standard)						U
	Seals: EPDM						S
	Seals: Kalrez (8)						T
	Humidity filter element for gauge versions (only for PUR and PE cable)						Z
	Cutting ring connection G1/2 male						
	Strain relief						

(4) For operating temperature > 50°C, PE or FEP cable must be used
(5) Cable type PE and FEP pressure range <10 bar
(6) Specify type and length of cable and medium
(8) Only with FEP cable available
(11) According to datasheet
(12) max. 130°C @ 10 mH2O, max. 110°C @ 50 mH2O

Technical drawings

Dimensions

Fig. 1: Closed version

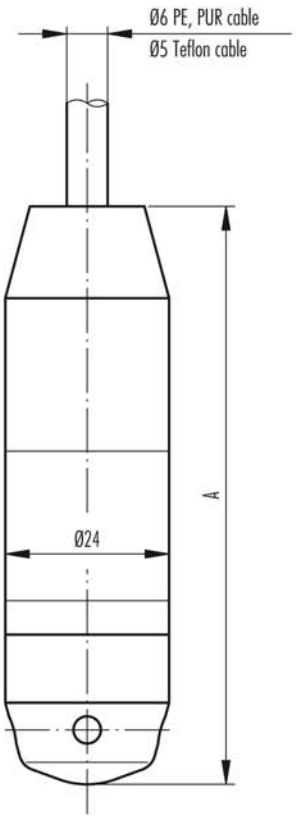


Fig. 2: Open version

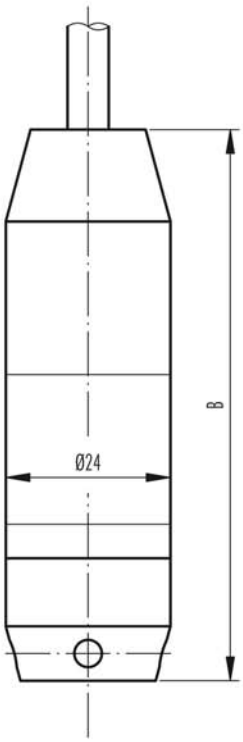


Fig. 3: with process connection

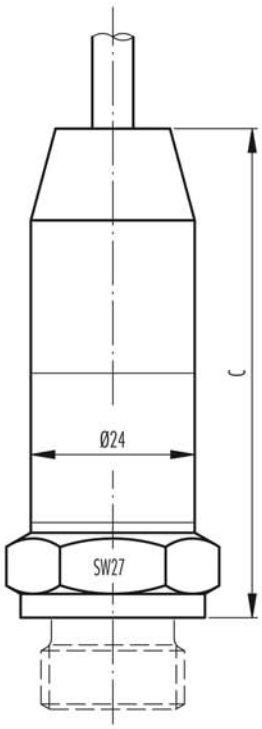
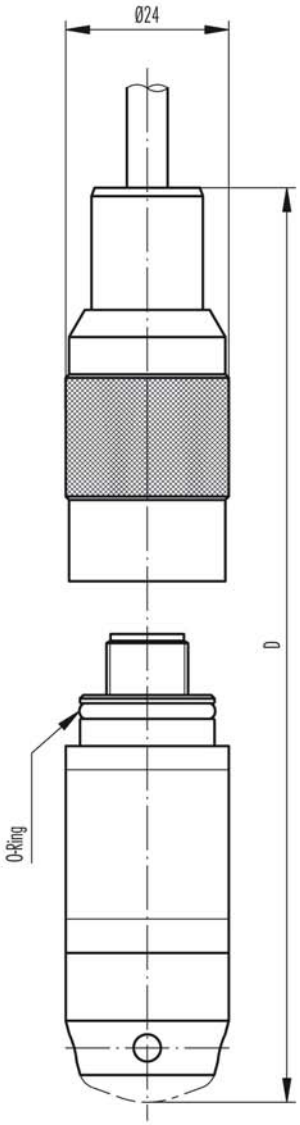


Fig. 4: Electrical connection, connectable



	A [mm]	B [mm]	C [mm]	D [mm]	Weight [g]
without ballast weight	85	81	on request	on request	approx. 200
with ballast weight	172	168	on request	on request	approx. 450

Colour	
white	+Vin
yellow	GND
brown	+Out
green	-Out

Specifications may change without notice.

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