

Intrinsically safe submersible level transmitters

ATM.ECO/N/Ex



Version: 13.11.2013

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	> 200 bar	> 200 bar	> 200 bar
Accuracy, (2), (± % FS)	≤ 0.25	≤ 0.25	≤ 0.25
Total Error, (3), (± % FS)			
-5...50 °C, (typ. / max.)	≤ 1.0 / 1.5	≤ 0.7 / 1.0	≤ 0.7 / 1.0
-5...80 °C, (typ. / max.)	≤ 2.0 / 2.5	≤ 1.0 / 1.5	≤ 1.0 / 1.5
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) Zero based accuracy according to DIN16086, incl. hysteresis and repeatability at ambient temperature

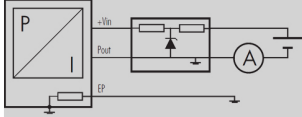
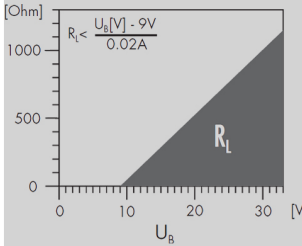
(3) Total error including accuracy and temperature influences at maximum signal span (16 mA)

(4) 1 year (typ. / max.), the long term stability can be improved by ageing (burn-in) the sensor

Temperature range

Operating temperature	-5...80 °C
Process temperature	-5...80 °C
Storage temperature	-10...80 °C

Electrical specifications

	4 ... 20 mA
Power supply	9... 28 V DC
Supply influence	< 0.05% FS
Circuit diagram	
Load resistance	
Load influence	< 0.05% FS

ATEX Approval

Certificate, (1)	SEV 09 ATEX 0108		
Gas	II 1G Ex ia IIC T3 / T4 / T6	EN 60079-0 / -11 / -26	
Dust	II 1D Ex iaD 20 IP6x Tx°C	EN 61241-0 / -11	
Mining	I M1 Ex ia I	EN 50303	
Temperature class, (2)	T6	T4	T3
Ambient temperature	-5...50 °C	-5...80 °C	-5...80 °C
Process temperature	-5...50 °C	-5...80 °C	-5...80 °C
Maximum values of the intrinsically safe circuit	28V / 93 mA / 0.65W		

(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	75878-09 HH
Field of application	C, H, EMC1

Additional approvals

IEC Ex	IEC Ex SEV 10.0003
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Qualifications

	Description	Level	Typical interferences
EN 60068-2-6	Vibration	10g (4...2000 Hz / ± 10 mmp)	
EN 60068-2-27	Shock	100g (impulse duration 6 ms)	
EN 55022	Emission, class B	< 30 dBµV/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 Ω Line-Earth: 1 kV/42 Ω	Lightning
EN 61000-4-6	Conducted RF	10 V (0.15...80 MHz, 3 s)	Frequency converters

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

(1) Hastelloy (C-276) on request

Equipment

Overview

10.00.0091	Accessories overview
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Additional documents

Operating and safety instructions

10.88.0092	Article number DMM029
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Ordering information

		X. XXXX.	XXXX.	XX.	XXX
Type	ATM.ECO/N/Ex				
Pressure type	Gauge	1			
	Absolute (vacuum)	2			
Pressure measuring range	100 mbar...25 bar	XX			
Process connection	Closed, (Fig. 1)	55			
	Closed, (1.4435), ACS certified (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			
Electrical connection	Connectable version, IP 68 (Fig. 4), (3)		07		
	PUR cable, blue, IP 68 (4), (5)		17		
	FEP cable, blue, IP 68 (4)		22		
	Customized connection available		99		
Output signal	4...20 mA		05		
Accuracy	≤ ± 0.25 % FS			1	
Temperature range	T6 (Ta: -5...50 °C) -5...50 °C compensated (allowed process temperature: -5...50°C)			3	
	T4 (Ta: -5...50 °C) -5...50 °C compensated (allowed process temperature: -5...50°C)			4	
	T4 (Ta: -5...80 °C) -5...80 °C compensated (allowed process temperature: -5...80°C)			5	
Option 1					
Option 2					
Option 3	Ballast weight 1.4435				B
	Cutting ring connection G1/2 M				
	Strain relief (Drw. 6.10.0168)				
	Seals: Viton (standard)				U
	Seals: EPDM				S
	Seals: Kalrez (Level)				T
	Seals: NBR (ACS)				H
	Humidity filter element for gauge versions (only for PUR cable)				Z

(1) 0.5 mH₂O on request

(2) mH₂O, 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) For operating temperature > 50°C, FEP cable must be used

(6) min. Medium temperature -25 °C

(7) Standard, no special cleaning. Special cleaning must be requested.

Technical drawings

Dimensions

Fig. 1 Closed version

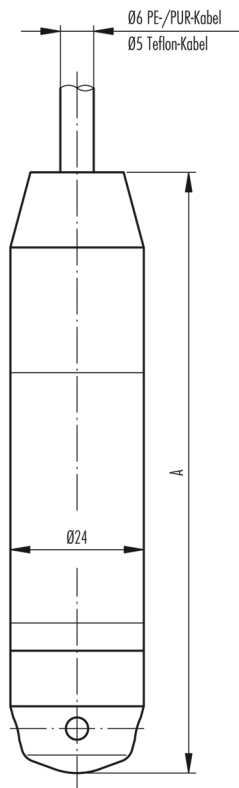


Fig. 2 Open version

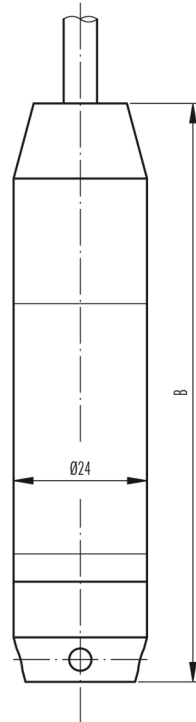


Fig. 3 With process connection

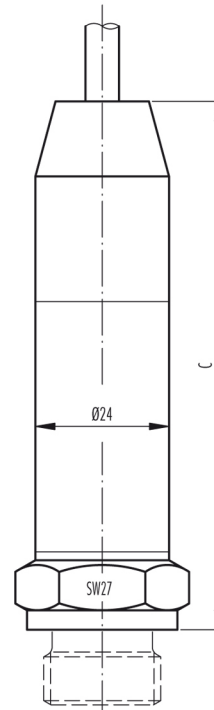
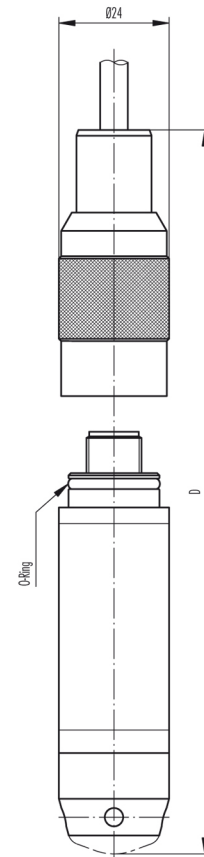


Fig. 4 Electrical connection, connectable



	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.

STS Headquarters, Switzerland:
 STS Sensor Technik Sirmach AG
 Rütihofstrasse 8, 8370 Sirmach, Switzerland
 sales@stssensors.com | www.stssensors.com

STS France:
 STS France
 844 Route de la Caille, 74350 Allonzier la Caille, France
 info-fr@stssensors.com | www.stssensors.fr

STS Germany:
 STS Sensoren Transmitter Systeme GmbH
 Poststrasse 7, 71063 Sindelfingen, Germany
 info-de@stssensors.com | www.stssensors.de

STS Great Britain:
 STS Great Britain Ltd.
 Box 3942 | Warwick | CV34 9AE, United Kingdom
 contact@stssensors.com | www.stssensors.co.uk

STS Italy:
 STS Italia s.r.l.
 Via Gesù 5, 20090 Opera (Milano), Italy
 info-italia@stssensors.com | www.stssensors.it