

SUBMERSIBLE PRESSURE TRANSMITTER

Swiss based Trafag is a leading international supplier of high quality sensors and monitoring instruments for measurement of pressure and temperature. The new Submersible Pressure Transmitter ECL is based on Trafag's own thick-film-on-ceramic technology. The optional-ly configurable pressure ranges can be adapted individually via interface tool and Smartphone App.



Applications

- Shipbuilding
- Process technology
- Water treatment (wastewater, grey-water, drinking water)
- Seawater



OEM-version

Features

- Suitable also for thick and viscous media
- Different materials for optimum media compatibility
- Configurable measuring ranges
- Optional: Enhanced lightning protection

Technical Data			
Measuring principle	Thick-film-on-ceramic	Accuracy @ 25°C typ.	± 0.3 % FS typ. Range 0 ... 0.1 to 0 ... 0.2 bar: ± 0.5 % FS typ.
Measuring range	0 ... 0.1 to 0 ... 6.0 bar 0 ... 1.5 to 0 ... 100 psi	Media temperature	max. -25°C ... +70°C
Output signal	4 ... 20 mA	Ambient temperature	max. -25°C ... +70°C
NLH @ 25°C (BSL) typ.	± 0.2 % FS typ. Range 0 ... 0.1 to 0 ... 0.2 bar: ± 0.3 % FS typ.	Approval / conformity	DNV-GL EU RO Mutual Recognition Type Approval Certificate

02/2023

Data sheet H723360

Subject to change

Ordering information/type code

				8439 . XX	XX	XX	XX	XX	XX	
Measuring range ¹⁾	Pressure measurement range [bar]	Over pressure [bar]	Burst pressure [bar]							
	0 ... 0.1	1.2	2	66						
	0 ... 0.16	1.2	2	67						
	0 ... 0.2	1.2	2	68						
	0 ... 0.4	1.2	2	69						
	0 ... 0.5	1.2	2	64						
	0 ... 0.6	1.2	2	70						
	0 ... 1.0	2	3	71						
	0 ... 1.6	3.2	4.8	73						
	0 ... 2.0	3.2	4.8	72						
	0 ... 2.5 ⁴⁾	5	7.5	75						
	0 ... 4 ⁴⁾	8	12	76						
	0 ... 6 ⁴⁾	12	15	77						
	Configurable measuring ranges standard, see table on page 3									
	Sensor	Relative pressure								23
Housing	Housing AISI316L, standard version ²⁾								58	
	Housing 1.4462, standard version ^{2) 3)}								55	
	Housing AISI316L, OEM-version ²⁾								56	
	Housing AISI316L, Serto Connection ^{2) 3)}								60	
Electrical connection	Cable PUR, Ø 6 mm, L = 5 m			21	Cable PE, Ø 6 mm, L = 5 m				41	
	Cable PUR, Ø 6 mm, L = 10 m			22	Cable PE, Ø 6 mm, L = 10 m				42	
	Cable PUR, Ø 6 mm, L = 15 m			23	Cable PE, Ø 6 mm, L = 15 m				43	
	Cable PUR, Ø 6 mm, L = 20 m			24	Cable PE, Ø 6 mm, L = 20 m				44	
	Cable PUR, Ø 6 mm, L = 25 m			25	Cable PE, Ø 6 mm, L = 25 m				45	
	Cable PUR, Ø 6 mm, L = 30 m			26	Cable PE, Ø 6 mm, L = 30 m				46	
	Cable PUR, Ø 6 mm, L = 35 m			27	Cable PE, Ø 6 mm, L = 35 m				47	
	Cable PUR, Ø 6 mm, L = 40 m			28	Cable PE, Ø 6 mm, L = 40 m				48	
	Cable PUR, Ø 6 mm, L = 50 m			29	Cable PE, Ø 6 mm, L = 50 m				49	
	Cable PUR, Ø 6 mm, customized (L = max. 50 m)			20	Cable PE, Ø 6 mm, customized (L = max. 50 m)				40	
	Output signal	4 ... 20 mA								19
Accessories	Seal FKM / FPM / Viton								61	
	Seal EPDM / TPE								63	
	Enhanced lightning protection DIN 61000-4-5 (Surge 4kV)								LP	

¹⁾ Extended overpressure as well as customized pressure ranges upon request

²⁾ See "Dimensions"

³⁾ Upon request

⁴⁾ Without ship approval DNV-GL

Configurable measuring ranges standard

Pressure measuring range minimal	Pressure measuring range max. (nominal range)	Overpressure	Burst pressure	Ordering no.
0 ... 0.1	0 ... 0.3	1.2	2	C1
0 ... 0.15	0 ... 0.4	1.2	2	C2
0 ... 0.2	0 ... 0.6	1.2	2	C3
0 ... 0.35	0 ... 1.0	2	3	C4
0 ... 0.6	0 ... 1.6	3.2	4.8	C5
0 ... 0.85	0 ... 2.0	3.2	4.8	C6

All accuracy indications refer to the nominal measurement range and the respective span. When minimizing the span, the relative errors are increasing in relation of the maximum to the selected span.

i Configuration of the measuring ranges

All measuring ranges can be configured via Smartphone app (Android). The SMI Sensor Master Interface as well as the Smartphone, which are necessary for the configuration, are not part of the delivery. The Android app is available for free in the Google Play Store.

- Ordering No. SMI Sensor Master Interface: F90170
- Data sheet SMI Sensor Master Interface: H72618



Standard combinations of wetted materials

Type	Type code	Housing material	Cable material	Seal	Temperature ranges	Typical applications
Standard ¹⁾	8439.XX.2358.2X.19.61.XX	AISI316L	PUR ²⁾	FKM / Viton	-20 ... +70°C	General applications, non-corrosive media
OEM ¹⁾	8439.XX.2356.2X.19.61.XX	AISI316L / Brass nickel-plated				
Serto	8439.XX.2360.2X.19.61.XX	AISI316L				
Standard	8439.XX.2358.2X.19.63.XX	AISI316L	PE ²⁾	EPDM / TPE	-25 ... +70°C	Wastewater, grey-water, drinking water
Standard	8439.XX.2358.4X.19.63.XX	AISI316L				
Serto	8439.XX.2360.4X.19.63.XX	AISI316L				
Standard	8439.XX.2355.4X.19.63.XX	1.4462	PE ²⁾	EPDM / TPE	-20 ... +65°C	Seawater

Non-standard build-up combinations may be selected, whereas minimum order quantities may apply

¹⁾ Extra short lead time

²⁾ Cable PUR or PE only usable inside tank for marine applications under DNV-GL EU RO Mutual Recognition Certificate

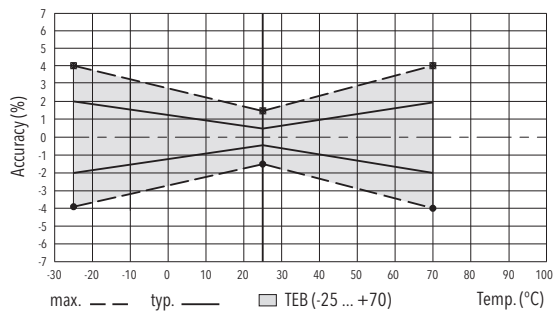
Specifications		
Electrical data	Output / supply voltage	4...20 mA: 24 (9...32) VDC
	Rise time	Typ. 1 ms / 10 ... 90 % nominal pressure
	Power-on delay time	100 ms
Environmental conditions	Media temperature ¹⁾	max. -25°C ... +70°C
	Ambient temperature	max. -25°C ... +70°C
	Protection	IP68 (6.0 bar/60 m)
	Vibration	20 g (40 ... 2000 Hz) 15 grms (20 ... 2000 Hz)
	Shock	50 g / 8 ms
EMC protection	Emission	EN/IEC 61000-6-3 / DNVGL-CG-0339
	Immunity	EN/IEC 61000-6-2 / DNVGL-CG-0339 Option LP: Enhanced inspection level 4 acc. to DIN EN 61000-4-5
Mechanical data	Sensor (wetted parts)	Ceramic, Al ₂ O ₃ (96%)
	Pressure connection (wetted parts)	1.4404 (AISI316L) or 1.4462 (AISI318LN)
	Housing	1.4404 (AISI316L) or 1.4462 (AISI318LN) OEM-version: Screwed cable gland brass nickel-plated
	Sealing	FKM (FPM, Viton), EPDM (TPE)
	Weight	~ 200 g (without cable) / OEM ~ 150 g

¹⁾ see table Temperature ranges

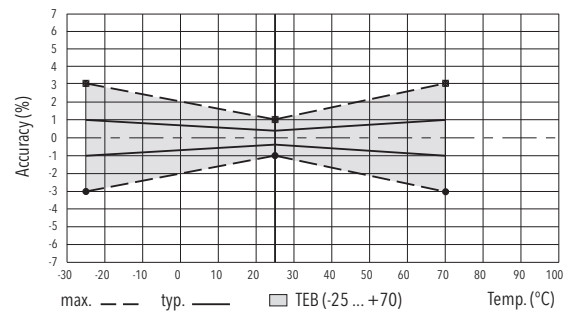
Accuracy			
		Measuring accuracy 0.3 % Measuring ranges ≥ 0.3 bar	Measuring accuracy 0.5 % Measuring ranges < 0.3 bar
TEB @ -25 ... +70°C	[% FS typ.]	± 1.0	± 2.0
Accuracy @ +25°C	[% FS typ.]	± 0.3	± 0.5
NLH @ +25°C (BSL)	[% FS typ.]	± 0.2	± 0.3
TC zero point and span	[% FS/K typ.]	± 0.02	± 0.02
Long term stability 1 year @ +25°C	[% FS typ.]	± 0.2	± 0.2

For instruments with configurable measuring ranges, the specifications always refer to the measuring span of the maximum measuring range. If the measuring span is reduced, the relative errors increase in relation to the maximum and the set measuring span.

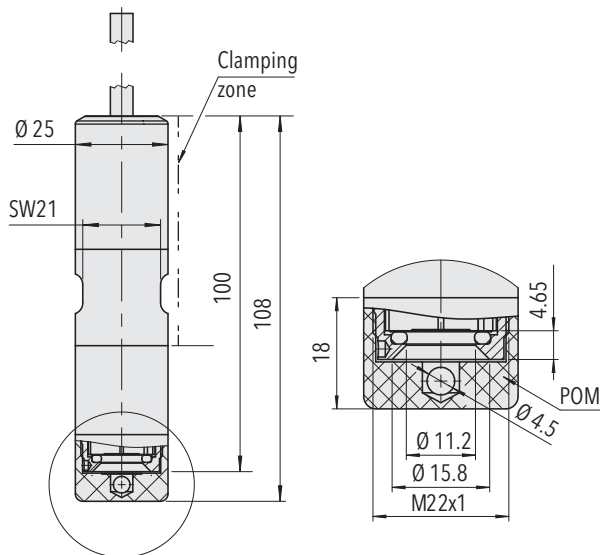
Measuring accuracy 0.5 %



Measuring accuracy 0.3 %

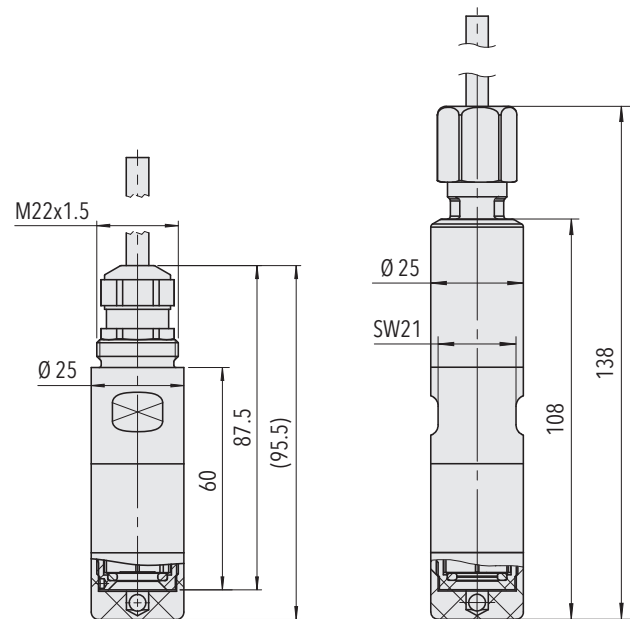


Dimensions



8439.XX.XX58/55.XX.XX.XX

Standard version



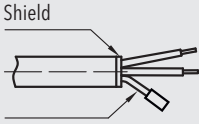
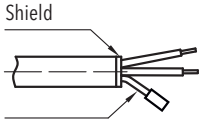
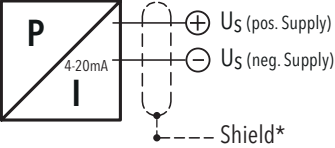
8439.XX.XX56.XX.XX.XX

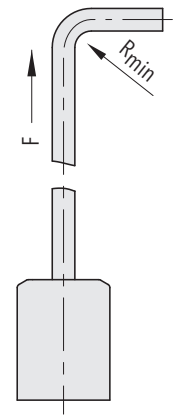
OEM-version

8439.XX.XX60.XX.XX.XX

Serto adapter SO 50021-12
for stainless steel tubes with:
outer diameter 12 mm
inner diameter 8 mm

Electrical connection

		Protection / electrical connection	
		IP68 (6.0 bar/60 m)	IP68 (6.0 bar/60 m)
		Cable PUR Ø 6 mm (5x0.22mm ²) 2X Shield  Venting tube with protective filter	Cable PE Ø 6 mm (5x0.22mm ²) 4X Shield  Venting tube with protective filter
Output signal	 8439.xx.xxxx.xx.19	white brown (yellow = not connected) (green = not connected) (red = not connected)	white brown (yellow = not connected) (green = not connected) (red = not connected)
	Minimum cable bending radius R_{min}	40 mm	30 mm
T-Range	Ambient and media temperature	-25°C ... +70°C	-20°C ... +65°C



F = max. 10 kg (100 N)

* Shield not connected

Additional information

Documents

Data sheet	www.trafag.com/H72336
Instructions	www.trafag.com/H73336
Flyer	www.trafag.com/H70690