

Submersible Pressure Transmitter



Product description

The new Submersible Pressure Transmitter ECL is based on Trafag's own thick-film-on-ceramic technology. The optionally 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

Features

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

 EMC: 2014/30/EU

 S.I. 2016 No. 1091

 RoHS/Reach compliant

 DNV EU RO Mutual Recognition

Technical Data

Measuring principle	Thick-film-on-ceramic
Measuring range	0 ... 0.1 to 0 ... 6.0 bar 0 ... 1.5 to 0 ... 100 psi
Output signal	4 ... 20 mA
Media temperature	max. -25°C ... +70°C
Ambient temperature	max. -25°C ... +70°C

Additional information

Data sheet www.trafag.com/H72336
Instructions www.trafag.com/H73336
Accessories www.trafag.com/H72258
Video <https://youtu.be/V5OZEV3EGoA>

Ordering information/Type code

Ordering information/Type code				8439	XX	XX	XX	XX	XX	XX
Measuring range ¹⁾	Pressure measurement range [bar]	Over pressure [bar]	Burst pressure [bar]	Pressure-measurement-range [psi]	Over pressure [psi]	Burst pressure [psi]				
	0 ... 0.1	1.2	2	66	0 ... 1.5	15	30	F6		
	0 ... 0.16	1.2	2	67	0 ... 2	15	30	F7		
	0 ... 0.2	1.2	2	68	0 ... 2.5	15	30	F8		
	0 ... 0.4	1.2	2	69	0 ... 5	15	30	F9		
	0 ... 0.5	1.2	2	64	0 ... 6.5	15	30	F4		
	0 ... 0.6	1.2	2	70	0 ... 7.5	15	30	G0		
	0 ... 1.0	2	3	71	0 ... 15	30	45	G1		
	0 ... 1.6	3.2	4.8	73	0 ... 20	45	70	G3		
	0 ... 2.0	3.2	4.8	72	0 ... 30 ²⁾	45	70	G5		
	0 ... 2.5 ²⁾	5	7.5	75	0 ... 50 ²⁾	100	150	G6		
	0 ... 4 ²⁾	8	12	76	0 ... 100 ²⁾	200	250	G7		
	0 ... 6 ²⁾	12	15	77						
Sensor	Relative pressure									23
Housing	Housing AISI 316L, Standard version ³⁾									58
	Housing 1.4462, Standard version ³⁾⁴⁾									55
	Housing AISI 316L, OEM-version ³⁾									56
	Housing AISI 316L, Serto Connection ³⁾⁴⁾									60
Electrical connection	Cable PUR, Ø 6 mm, L = 5 m									21
	Cable PUR, Ø 6 mm, L = 10 m									22
	Cable PUR, Ø 6 mm, L = 15 m									23
	Cable PUR, Ø 6 mm, L = 20 m									24
	Cable PUR, Ø 6 mm, L = 25 m									25
	Cable PUR, Ø 6 mm, L = 30 m									26
	Cable PUR, Ø 6 mm, L = 35 m									27
	Cable PUR, Ø 6 mm, L = 40 m									28
	Cable PUR, Ø 6 mm, L = 50 m									29
	Cable PUR, Ø 6 mm, customized (L = max. 50 m)									20
	Cable PE, Ø 6 mm, L = 5 m									41
	Cable PE, Ø 6 mm, L = 10 m									42
	Cable PE, Ø 6 mm, L = 15 m									43
	Cable PE, Ø 6 mm, L = 20 m									44
	Cable PE, Ø 6 mm, L = 25 m									45
	Cable PE, Ø 6 mm, L = 30 m									46
	Cable PE, Ø 6 mm, L = 35 m									47
	Cable PE, Ø 6 mm, L = 40 m									48
	Cable PE, Ø 6 mm, L = 50 m									49
	Cable PE, Ø 6 mm, customized (L = max. 50 m)									40
Output signal	Output signal									
	4 ... 20 mA									19

Accessories	Seal FKM / 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⁾ Without ship approval DNV-GL

³⁾ See section: Dimensions

⁴⁾ Upon request, whereas minimum order quantities may apply

Signal processing

Code	Cut-off frequency f_g	Rise time (10 ... 90 % nominal pressure)	Output signal
			4 ... 20 mA
GA ¹⁾	11 Hz	32 ms	x
Standard specification	350 Hz	1 ms	x

¹⁾ Upon request, whereas minimum order quantities may apply

Configurable measuring ranges standard

Pressure measuring range min.	Pressure measuring range max. (nominal range)	Overpressure	Burst pressure	Ordering code
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.

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	PUR ²⁾	FKM / Viton	-20 ... +70°C	
Serto	8439.XX.2360.2X.19.61.XX	AISI316L	PUR ²⁾	FKM / Viton	-20 ... +70°C	Wastewater, Grey-water, Drinking water
Standard	8439.XX.2358.2X.19.63.XX	AISI316L	–	EPDM / TPE	-25 ... +70°C	
Standard	8439.XX.2358.4X.19.63.XX	AISI316L	PE ²⁾	EPDM / TPE	-20 ... +65°C	Seawater, Special applications
Serto	8439.XX.2360.4X.19.63.XX	AISI316L	PE ²⁾	EPDM / TPE	-20 ... +65°C	
Standard	8439.XX.2355.4X.19.63.XX	1.4462	PE ²⁾	EPDM / TPE	-20 ... +65°C	
Standard	8439.XX.2355.4X.19.61.XX	1.4462	PE ²⁾	FKM / Viton	-20 ... +65°C	

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
	Power-on delay time	100 ms
	Rise time of supply voltage	typ. 1 ms/10 ... 90 % nominal pressure
	Resistance of insulation	> 10 MΩ, 250 VDC, 564 VAC, 50 Hz
	Current limiting output signal	appr. 24 mA max.
Environmental conditions	Media temperature ¹⁾	max. -25°C ... +70°C
	Ambient temperature	max. -25°C ... +70°C
	Storage temperature	-20°C ... +40°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)

¹⁾ See table: Signal processing

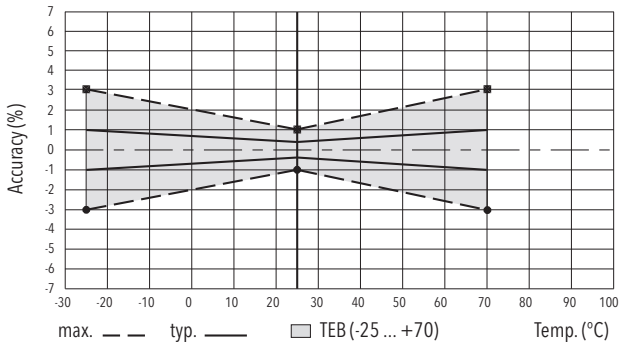
Accuracy

		Accuracy class 0.3 % Measuring ranges ≥ 0.3 bar	Accuracy class 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

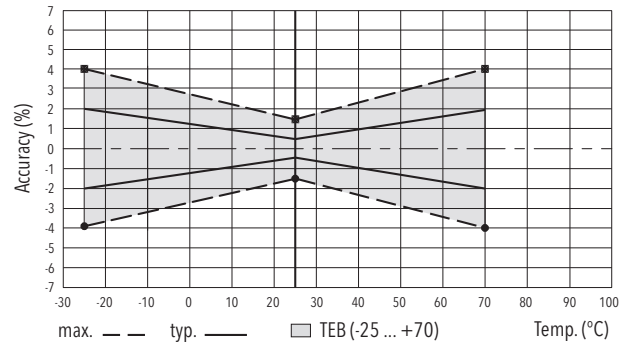
For instruments with configurable measuring ranges, the specifications always refer to the measuring span of the maximum measuring range. If the measuring span is reduced, the relative errors increase in relation to the maximum and the set measuring span.

ECL 8439

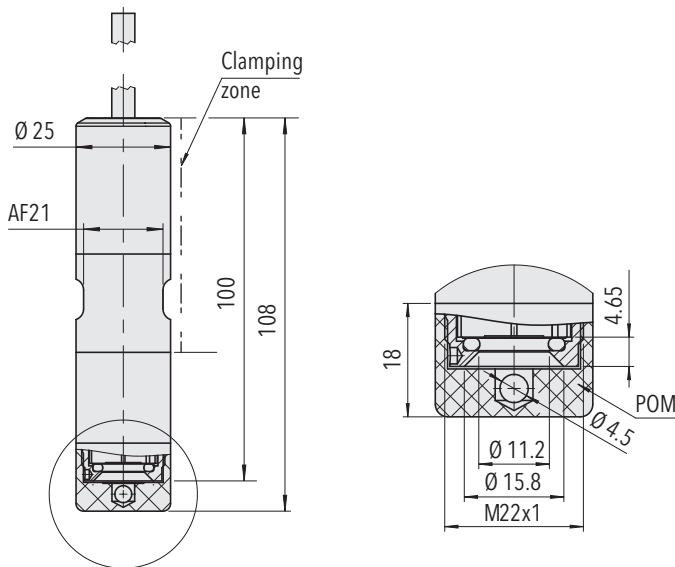
Accuracy class 0.3 %



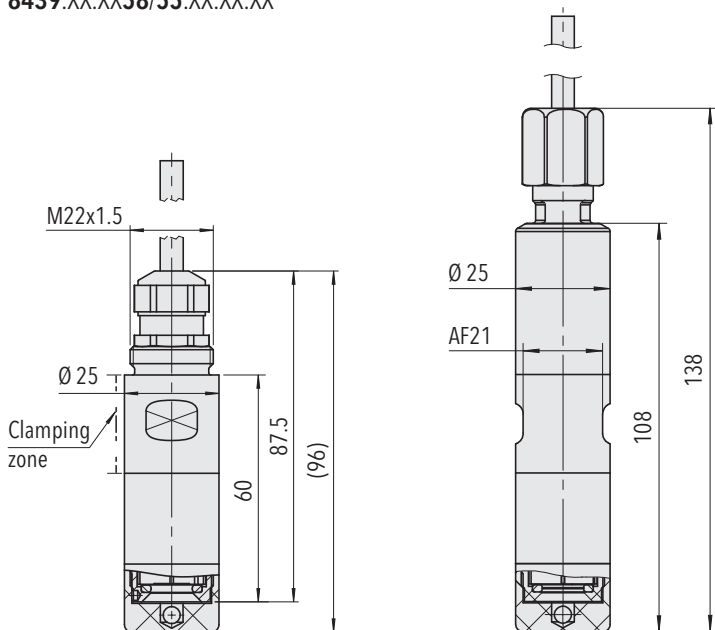
Accuracy class 0.5 %



Dimensions



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



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

8439.XX.XX56.XX.XX.XX

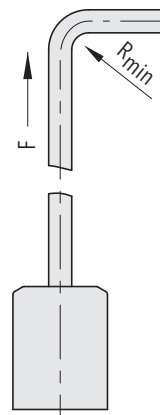
8439.XX.XX60.XX.XX.XX

OEM-Version

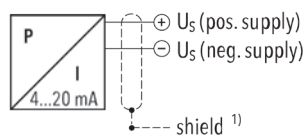
Electrical connection

	Cable PUR	Cable PE
	2X	4X
IP protection	IP68 (6.0 bar/60 m)	IP68 (6.0 bar/60 m)
Ambient and media temperature	-25°C ... +70°C	-20°C ... +65°C
Minimum cable bending radius R_{min}	40 mm	30 mm
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)

A) Shield
B) Venting tube with protective filter



F = max. 10 kg (100 N)



¹⁾ Shield not connected

Reliable quality

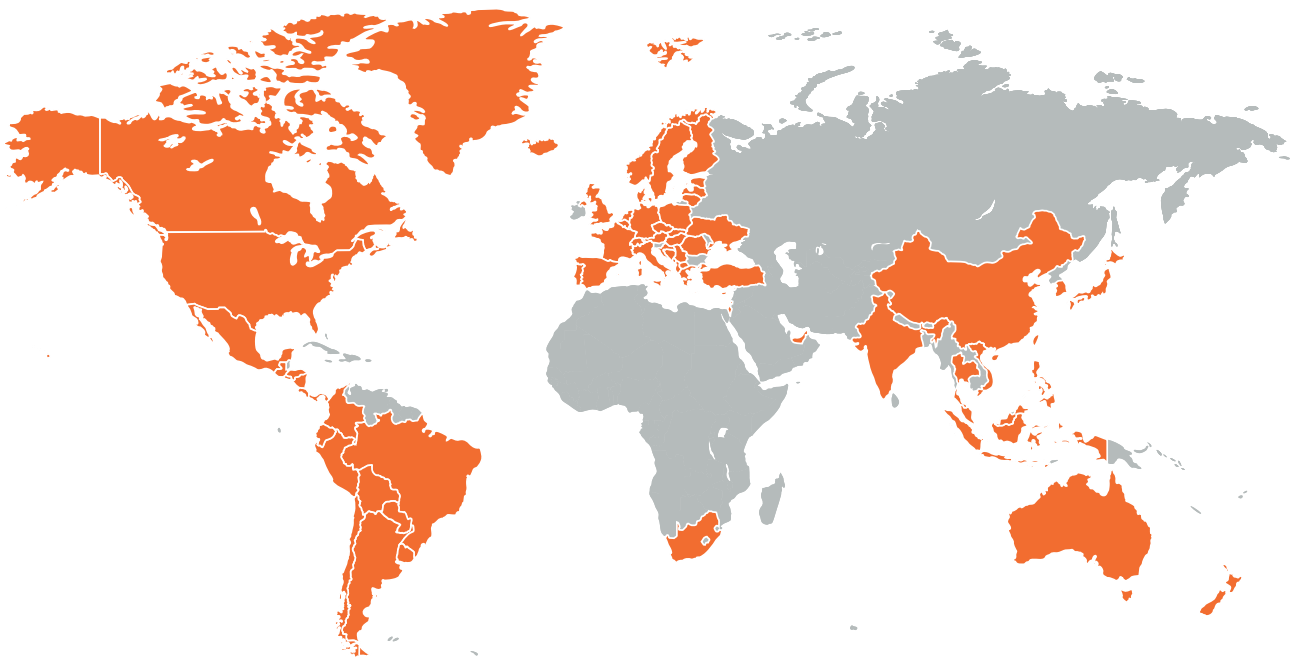
Worldwide represented, globally trusted, Swiss based

Trafag develops, produces and distributes robust, reliable and precise instruments for monitoring pressure, temperature and gas density.

The broad portfolio of pressure and temperature measuring instruments is tailored for use in test benches through to applications in harsh environments. The research and development departments in Switzerland and Germany develop all important components from the sensor to the application-specific microchip, which are

then manufactured in the production facilities in Switzerland, Germany, the Czech Republic, and India. Strict quality management according to ISO 9001 and ISO 14001 ensures that Trafag products meet the required quality and sustainability standards.

Trafag is headquartered in Switzerland, was founded in 1942 and has an extensive sales and service network in more than 40 countries worldwide.



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Pressure transmitters



Electronic pressure switches



Mechanical pressure switches



Pressure gauge



Thermostats



Temperature transmitters



Gas density