

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



Features

- Suitable for thick and viscous media
- Different materials for optimum media compatibility
- Lightning protection integrated
- Configurable measuring ranges

| 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 |

07/2021

Data sheet H723361

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 1.4462, OEM-version ^{2) 3)} | | | | | | | | 50 | |
| | 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 | |

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



| Type | Type code | Housing | Cable material ²⁾ | Seal | Typical applications |
|------------------------|--------------------------|--------------------------------|------------------------------|-------------|--|
| Standard ¹⁾ | 8439.XX.2358.2X.19.61.XX | AISI316L | | | |
| OEM ¹⁾ | 8439.XX.2356.2X.19.61.XX | AISI316L / Brass nickel plated | PUR | FKM / Viton | General applications |
| Serto | 8439.XX.2360.2X.19.61.XX | AISI316L | | | |
| Standard | 8439.XX.2358.4X.19.63.XX | AISI316L | | | |
| OEM | 8439.XX.2356.4X.19.63.XX | AISI316L / Brass nickel plated | PE | EPDM / TPE | Wastewater, grey-water, drinking water |
| Serto | 8439.XX.2360.4X.19.63.XX | AISI316L | | | |
| Standard | 8439.XX.2355.4X.19.63.XX | 1.4462 | | | |
| OEM | 8439.XX.2350.4X.19.63.XX | 1.4462 / Brass nickel plated | PE | EPDM / TPE | 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

| 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 |
| 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 |

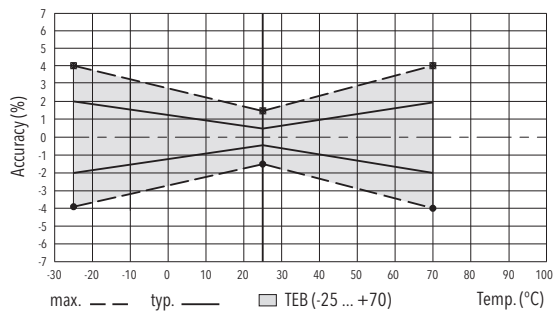
¹⁾ see table Temperature ranges

| Temperature ranges | | |
|------------------------------------|--|-----------------|
| Max. ambient and media temperature | | -25°C ... +70°C |
| Cable PE | Code 8439.XX.23.XX.4X.19.XX | -20°C ... +65°C |
| Seal FKM with standard version | Code 8439.XX.23.55.XX.19.61 Code 8439.XX.23.58.XX.19.61 | -20°C ... +70°C |
| Seal FKM with Serto connection | Code 8439.XX.23.60.XX.19.61 | |

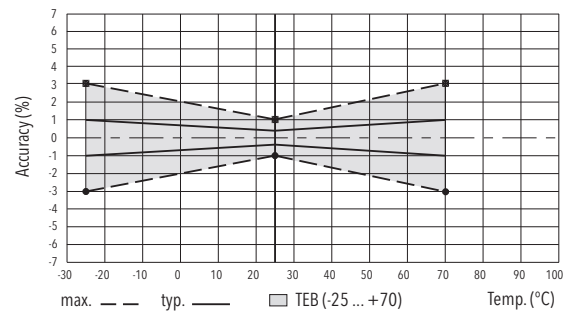
| Accuracy | | | |
|------------------------------------|---------------|--|--|
| | | Measuring accuracy 0.3 % Measuring ranges ≥ 0.3 bar | Measuring accuracy 0.5 % Measuring ranges < 0.3 bar |
| TEB @ -25 ... +70°C | [% FS typ.] | ± 1.0 | ± 2.0 |
| Accuracy @ +25°C | [% FS typ.] | ± 0.3 | ± 0.5 |
| 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.

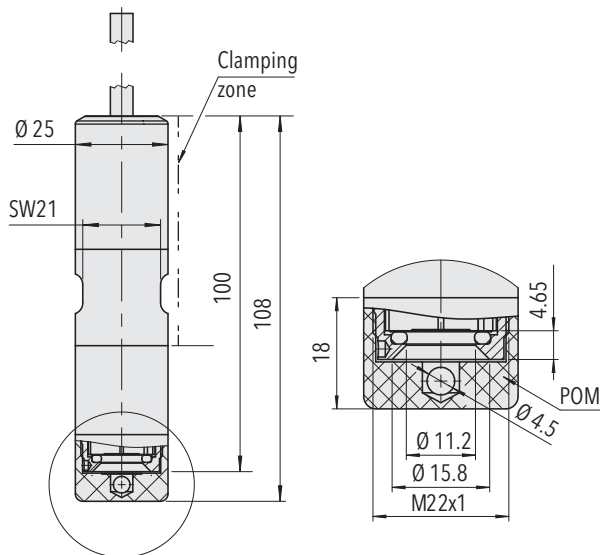
Measuring accuracy 0.5 %



Measuring accuracy 0.3 %

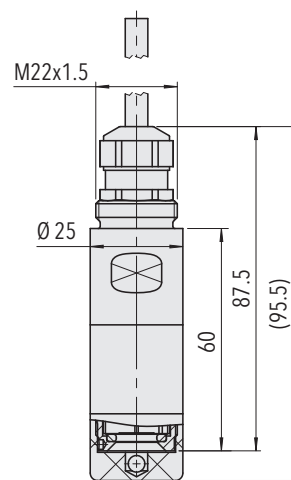


Dimensions



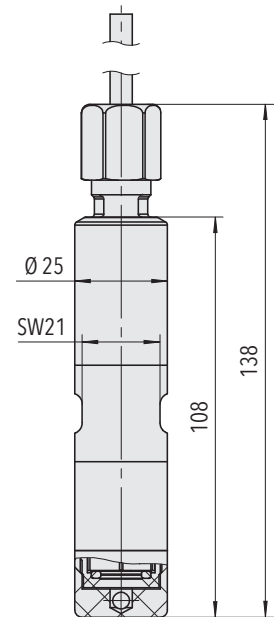
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Standard version



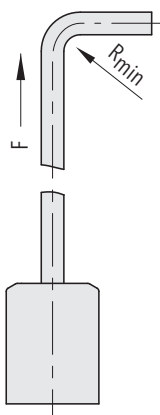
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OEM-version



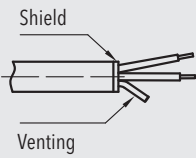
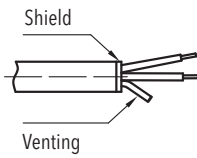
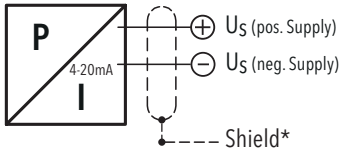
8439.XX.XX60.XX.XX.XX

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



F = max. 10 kg (100 N)

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  | Cable PE Ø 6 mm (5x0.22mm ²) 4X  |
| Output signal |  <p>8439.XX.XXXX.XX.19</p> | 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 |

* Shield not connected

Additional information

Documents

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