

# EX SUBMERSIBLE PRESSURE TRANSMITTER

Swiss based Trafag is a leading international supplier of high quality sensors and monitoring instruments for measurement of pressure and temperature.



## Applications

- Shipbuilding
- Ex SEV 11 ATEX 0145 X



## Features

- Pressure ranges from 100 mbar
- Cable PUR or FEP
- Chemical resistant material, in titanium
- Explosion-proof Ex ia IIC T3 ... T6
- Option: Lightning protection (IEC 61000-4-5), 10kA (8/20 μs)

09/2024

Data sheet H72231h

## Technical Data

|                     |                           |                       |                                                                                   |
|---------------------|---------------------------|-----------------------|-----------------------------------------------------------------------------------|
| Measuring principle | Piezoresistive            | Ambient temperature   | T4/T6: -5°C ... +50°C                                                             |
| Measuring range     | 0 ... 0.1 to 0 ... 25 bar | Approval / conformity | DNV-GL                                                                            |
| Output signal       | 4 ... 20 mA               | Type of protection    | <br>II 1G Ex ia IIC T3 ... T6 Ga<br>II 1D Ex ia IIIC T125°C Da<br>I M1 Ex ia I Ma |
| Media temperature   | T4/T6: -5°C ... +50°C     |                       |                                                                                   |

Subject to change

## Ordering information/type code

|                               |                                                                          |                     | 8858 .               | XX | XX | XX | XX | XX | XX |
|-------------------------------|--------------------------------------------------------------------------|---------------------|----------------------|----|----|----|----|----|----|
| Measuring range <sup>1)</sup> | Pressure measurement range [bar]                                         | Over pressure [bar] | Burst pressure [bar] |    |    |    |    |    |    |
|                               | 0 ... 0.1                                                                | 3                   | 200                  | 66 |    |    |    |    |    |
|                               | 0 ... 0.16                                                               | 3                   | 200                  | 67 |    |    |    |    |    |
|                               | 0 ... 0.2                                                                | 3                   | 200                  | 68 |    |    |    |    |    |
|                               | 0 ... 0.4                                                                | 3                   | 200                  | 69 |    |    |    |    |    |
|                               | 0 ... 0.6                                                                | 3                   | 200                  | 70 |    |    |    |    |    |
|                               | 0 ... 1                                                                  | 3                   | 200                  | 71 |    |    |    |    |    |
|                               | 0 ... 1.6                                                                | 4.8                 | 200                  | 73 |    |    |    |    |    |
|                               | 0 ... 2.5                                                                | 7.5                 | 200                  | 75 |    |    |    |    |    |
|                               | 0 ... 4                                                                  | 12                  | 200                  | 76 |    |    |    |    |    |
|                               | 0 ... 6                                                                  | 18                  | 200                  | 77 |    |    |    |    |    |
|                               | 0 ... 10                                                                 | 30                  | 200                  | 78 |    |    |    |    |    |
|                               | 0 ... 16                                                                 | 48                  | 200                  | 79 |    |    |    |    |    |
|                               | 0 ... 25                                                                 | 75                  | 200                  | 80 |    |    |    |    |    |
| Sensor                        | Type 01, relative pressure (accuracy NLH: $\pm 0.1$ % FS) <sup>2)</sup>  |                     |                      | P1 |    |    |    |    |    |
|                               | Type 02, relative pressure (accuracy NLH: $\pm 0.25$ % FS) <sup>2)</sup> |                     |                      | P2 |    |    |    |    |    |
|                               | Type 05, relative pressure (Accuracy NLH: $\pm 0.5$ % FS) <sup>2)</sup>  |                     |                      | P5 |    |    |    |    |    |
| Pressure connection           | Open                                                                     |                     |                      |    | 40 |    |    |    |    |
|                               | Closed                                                                   |                     |                      |    | 41 |    |    |    |    |
|                               | G1/4" male                                                               |                     |                      |    | 15 |    |    |    |    |
| Electrical connection         | Cable PUR <sup>3) 5)</sup>                                               |                     |                      |    |    | 22 |    |    |    |
|                               | Cable FEP <sup>3) 5)</sup>                                               |                     |                      |    |    | 39 |    |    |    |
| Output signal                 | 4 ... 20 mA                                                              |                     |                      |    |    |    | 19 |    |    |
|                               | 4 ... 20 mA with lightning protection (Surge)                            |                     |                      |    |    |    | 09 |    |    |
| Accessories                   | Special oil filling: Anderol <sup>4)</sup>                               |                     |                      |    |    |    |    | 94 |    |
|                               | Temperature class T4 <sup>4)</sup>                                       |                     |                      |    |    |    |    | T4 |    |
|                               | Temperaturklasse T6 <sup>4)</sup>                                        |                     |                      |    |    |    |    | T6 |    |
|                               | Application for seawater <sup>4)</sup>                                   |                     |                      |    |    |    |    | 97 |    |
|                               | Titanium (Material pressure connection and housing)                      |                     |                      |    |    |    |    | Ti |    |

<sup>1)</sup> Customized pressure ranges upon request

<sup>2)</sup> Accuracy NLH see table

<sup>3)</sup> Please specify the cable length when ordering

<sup>4)</sup> Please specify the measuring medium when ordering

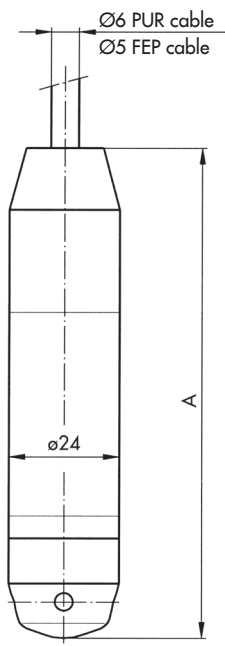
<sup>5)</sup> Attention! Additional measure against static charges are required for Zone 0 to 20 for these cables (laid with earthed metal braid, metal hose or metal pipe).

| Specifications                  |                                    |                                                  |
|---------------------------------|------------------------------------|--------------------------------------------------|
| <b>Electrical Data</b>          | Repeatability                      | ± 0.05 % FS                                      |
|                                 | Zener barrier                      | 30 VDC/ 100mA/ 1W                                |
|                                 | Load                               | 4 ... 20 mA: $R_L \leq (U_S - 9V)/20 \text{ mA}$ |
|                                 | Rise time                          | Typ. 1 ms / 10 ... 90 % nominal pressure         |
| <b>Environmental conditions</b> | Media temperature                  | T4/T6: -5°C ... +50°C                            |
|                                 | Ambient temperature                | T4/T6: -5°C ... +50°C                            |
|                                 | Protection                         | Min. IP68                                        |
|                                 | Humidity                           | Max. 95 % relative                               |
|                                 | Vibration                          | 6 g (25...2000 Hz)                               |
|                                 | Shock                              | 50 g / 1 ms                                      |
| <b>EMC Protection</b>           | Burst                              | EN/IEC 61000-4-4, Level 3                        |
|                                 | Surge                              | EN/IEC 61000-4-5, Level 3<br>$R_i = 42 \Omega$   |
|                                 | Emission                           | EN/IEC 61000-6-3                                 |
|                                 | Immunity                           | EN/IEC 61000-6-2                                 |
| <b>Mechanical Data</b>          | Sensor (wetted parts)              | 1.4435 (AISI316L)                                |
|                                 | Pressure connection (wetted parts) | 1.4435 (AISI316L) or titanium                    |
|                                 | Housing                            | 1.4404 (AISI316L) or titanium                    |
|                                 | Sealing                            | FKM (Viton)                                      |
|                                 | Male electrical connector          | See ordering information                         |
|                                 | Weight                             | ~ 200 g                                          |
|                                 | Mounting torque                    | 25 Nm                                            |

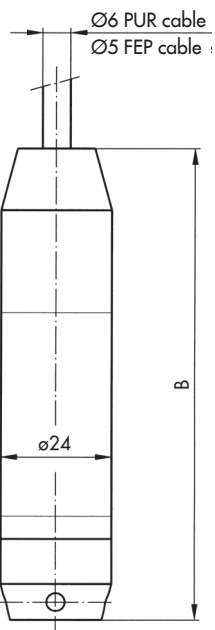
| Accuracy                                           |            |             |           |            |
|----------------------------------------------------|------------|-------------|-----------|------------|
| Range                                              | [bar]      | 0.1 ... 0.5 | 0.5 ... 2 | 2 ... 25   |
| Accuracy NLH (BSL through 0) <b>P5</b>             | [± % FS]   | ± 0.5       | ± 0.5     | ± 0.5      |
| Accuracy NLH (BSL through 0) <b>P2</b>             | [± % FS]   | ± 0.25      | ± 0.25    | ± 0.25     |
| Accuracy NLH (BSL through 0) <b>P1</b>             | [± % FS]   | -           | ± 0.1     | ± 0.1      |
| Temperature coefficient Zero point<br>-5 ... +50°C | [± % FS/K] | ± 0.06      | ± 0.03    | ± 0.015    |
| Temperature coefficient Span<br>-5 ... +50°C       | [± % FS/K] | ± 0.015     | ± 0.015   | ± 0.015    |
| Long term drift                                    | [1 year]   | < 4 mbar    | < 4 mbar  | < 0.2 % FS |

| Additional information |              |                                                                  |
|------------------------|--------------|------------------------------------------------------------------|
| <b>Documents</b>       | Data sheet   | <a href="http://www.trafag.com/H72231">www.trafag.com/H72231</a> |
|                        | Instructions | <a href="http://www.trafag.com/H73227">www.trafag.com/H73227</a> |

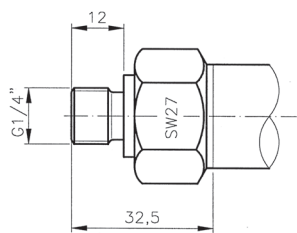
Dimensions



8858.XX.XX.41.XX.XX.XX



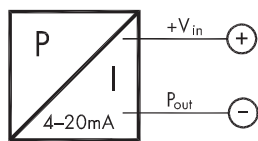
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8858.XX.XX.15.XX.XX.XX

|                           | A [mm] | B [mm] |
|---------------------------|--------|--------|
| Standard                  | 113    | 109    |
| With lightning protection | 157    | 153    |

Electrical connection



Color 4 ... 20 mA  
white +V<sub>in</sub>  
yellow P<sub>out</sub>  
grey ⊖ EP

