



## Temperature sensors Resistance thermometer

TBS-1HSGT2506NE



**Model Name** > TBS-1HSGT2506NE  
**Part No.** > -\*



\* When ordering for the first time, please use the information in "Model Name" instead of "Part No."

#### At a glance

- Large display
- Individually programmable transistor outputs PNP or NPN, optional analog output 4 mA ... 20 mA or 0 V ... 10 V
- Round connector M12 x 1
- Measuring ranges -20 °C ... +80 °C
- Pt1000 element, accuracy class A (IEC 60751)
- Various insertion lengths and connection threads
- Wetted parts made from corrosion-resistant stainless steel 1.4571
- Enclosure rating IP 65 and IP 67

#### Your benefits

- Quick and safe set-up through superior ease of use
- Compact dimensions and rotatable housing facilitate integration
- Very reliable: splash-proof housing, high-grade materials, rugged design, and field-proven technology
- Very good long-term stability, accuracy and linearity
- Quick response time
- Versatile configuration allows for optimal solutions for specific requirements



#### Features

|                                        |                                                                                   |
|----------------------------------------|-----------------------------------------------------------------------------------|
| Measuring range:                       | -20 °C ... 80 °C                                                                  |
| Sensor element:                        | Pt1000, 2-wire, class A according to IEC 60751                                    |
| Output signals:                        | 1 x NPN<br>1 x 0 V ... 10 V                                                       |
| Output type:                           | Transistor                                                                        |
| Switching output function:             | Normally open/normally closed, windows- and hysteresis function freely adjustable |
| Switching voltage:                     | Supply voltage [V DC] - 1 V DC                                                    |
| Maximum switching current:             | 250 mA                                                                            |
| Switching delay:                       | 0 s ... 50 s, programmable                                                        |
| Setting accuracy of switching outputs: | 0.1 °C                                                                            |
| Temperature offset:                    | ± 3 °C                                                                            |
| Messbereichskalierung:                 | Zero point: max. +25 % of span<br>Full scale: max. -25 % of span                  |

|                    |                                                                                                       |
|--------------------|-------------------------------------------------------------------------------------------------------|
| Display:           | 14-segment LED, blue, 4-digits, height 9 mm, display electronically turnable by 180 °, update: 200 ms |
| Rotatable housing: | Display against housing with electrical connection: 330 °, Housing against process connection: 320 °  |

## Performance

|                               |                                                        |
|-------------------------------|--------------------------------------------------------|
| Accuracy of sensor element:   | $\leq \pm (0.15 \text{ °C} + 0.002  t )$ <sup>1)</sup> |
| Accuracy of switching output: | $\leq \pm 0.8 \text{ % of span}$                       |
| Display accuracy:             | $\leq \pm 0.8 \text{ % of span} \pm 1 \text{ digit}$   |
| Accuracy of analog output:    | $\leq \pm 0.5 \text{ % of span}$                       |
| Response time t50:            | $\leq 5 \text{ s}$ <sup>2)</sup>                       |
| Response time t90:            | $\leq 10 \text{ s}$ <sup>3)</sup>                      |

<sup>1)</sup> |t| is the absolute value of the temperature in °C <sup>2) 3)</sup> Depending on sensor configuration, according to IEC 60751.

## Mechanics/electronics

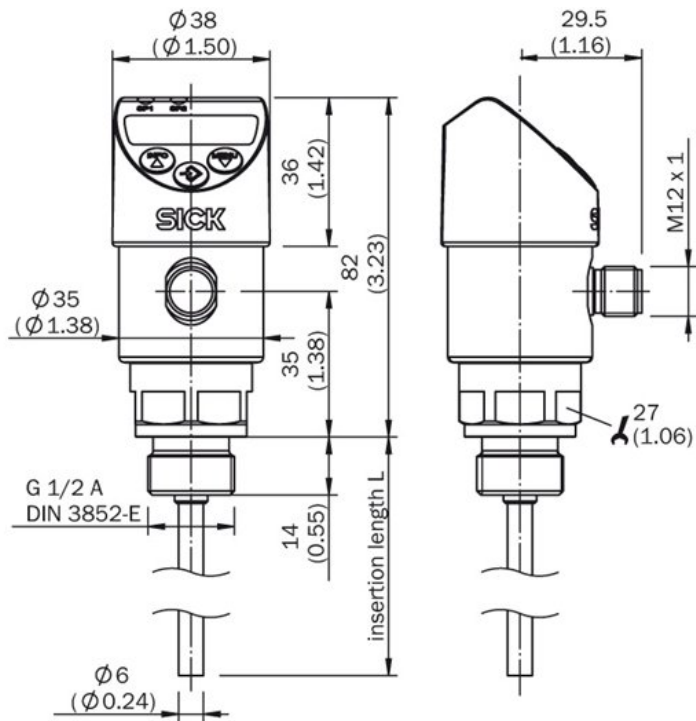
|                                     |                                                                                                                      |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Process connection:                 | Thread G 1/2 A according to DIN 3852-E                                                                               |
| Insertion length/diameter of probe: | 250 mm/6 mm                                                                                                          |
| Housing material:                   | Lower body: stainless steel 1.4301 (AISI 304)<br>Plastic head: PC + ABS<br>Input keypad: TPE-E<br>Display window: PC |
| Wetted parts:                       | Stainless steel 1.4571 (AISI 316Ti)                                                                                  |
| Supply voltage:                     | 15 V DC ... 35 V DC                                                                                                  |
| CE-conformity:                      | 2004/108/EC, EN 61326-1 emission (group 1, class B) and interference immunity (industrial application)               |
| Maximum power consumption:          | 70 mA                                                                                                                |
| Seal:                               | NBR                                                                                                                  |
| Maximum process pressure:           | 150 bar <sup>1)</sup>                                                                                                |
| Enclosure rating::                  | IP 65, according to IEC 60529 <sup>2) 3)</sup><br>IP 67, according to IEC 60529 <sup>2) 3)</sup>                     |
| Connection type:                    | Round connector M12 x 1, 5-pin                                                                                       |
| Maximum ohmic load RA:              | $\leq 100 \text{ k}\Omega$ (Switching outputs)<br>$> 10 \text{ k}\Omega$ (output signal 0 V ... 10 V)                |
| Total current consumption:          | 570 mA (incl. switching current)<br>320 mA                                                                           |
| Protection class:                   | III                                                                                                                  |
| Isolation voltage:                  | 500 V DC                                                                                                             |
| Overvoltage protection:             | 40 V DC                                                                                                              |
| Short-circuit protection:           | Outputs QA, Q1, Q2 towards M                                                                                         |
| Reverse polarity protection:        | L+ towards M                                                                                                         |
| RoHS certificate:                   | ✓                                                                                                                    |

<sup>1)</sup> At room temperature and when connected through thread. <sup>2) 3)</sup> The enclosure rating classes specified only apply while the thermometer is connected with female connectors that provide the corresponding enclosure rating.

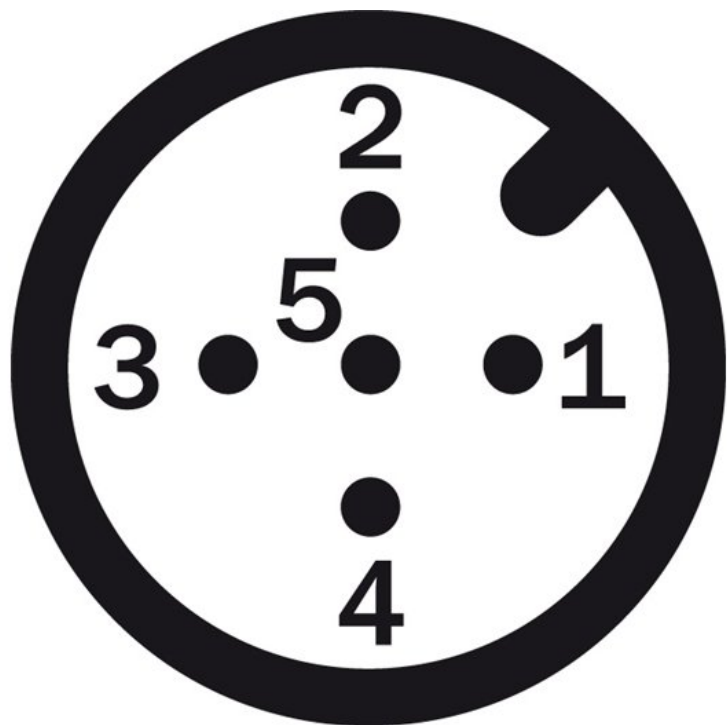
## Ambient data

|                                    |                  |
|------------------------------------|------------------|
| Ambient temperature:               | -20 °C ... 80 °C |
| Storage and transport temperature: | -20 °C ... 80 °C |
| Relative humidity:                 | 45 % ... 75 %    |

Dimensional drawing



Connection type



- |1| L+
- |2| Q2
- |3| M
- |4| Q1
- |5| QA

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