



# TBS-1DSG11006NE

TBS

TEMPERATURE SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Model name	Part no.
TBS-1DSG11006NE	6048678

Other models and accessories → [www.sick.de/TBS](http://www.sick.de/TBS)

### Detailed technical data

#### Features

<b>Measuring range</b>	-20 °C ... +80 °C
<b>Sensor element</b>	Pt1000, 2-wire, class A according to IEC 60751
<b>Output signals</b>	2 x PNP + 4 mA ... 20 mA
<b>Switching output</b>	Transistor
<b>Switching output function</b>	Normally open/normally closed, windows- and hysteresis function freely adjustable
<b>Switching voltage</b>	Supply voltage [V DC] - 1 V DC
<b>Maximum switching current</b>	≤ 250 mA
<b>Switching delay</b>	0 s ... 50 s, programmable
<b>Setting accuracy of switching outputs</b>	+0.1 °C
Number	2
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
<b>Temperature offset</b>	± 3 °C
<b>Scaling of measuring range</b>	Zero point: max. +25 % of span Full scale: max. -25 % of span Max. +25 % of span, max. -25 % of span
<b>Display</b>	14-segment LED, blue, 4-digits, height 9 mm, Display electronically turnable by 180 °, update: 200 ms
<b>Rotatable housing</b>	Display against housing with electrical connection: 330 ° Housing against process connection: 320 °

#### Performance

<b>Accuracy of sensor element</b>	≤ ± (0.15 °C + 0.002  t ) <sup>1)</sup>
<b>Accuracy of switching output</b>	≤ ± 0.8 % of span
<b>Display accuracy</b>	≤ ± 0.8 % of span ± 1 digit
<b>Accuracy of analog output</b>	≤ ± 0.5 % of span

<sup>1)</sup> |t| is the absolute value of the temperature in °C.

<sup>2)</sup> Depending on sensor configuration, according to IEC 60751.

<b>Response time <math>t_{50}</math></b>	$\leq 5 \text{ s}^{2)}$
<b>Response time <math>t_{90}</math></b>	$\leq 10 \text{ s}^{2)}$

1)  $|t|$  is the absolute value of the temperature in °C.

2) Depending on sensor configuration, according to IEC 60751.

## Mechanics/electronics

<b>Process connection</b>	Thread G ¼ A according to DIN 3852-E
<b>Insertion length/diameter of probe</b>	100 mm / 6 mm
<b>Seal</b>	NBR
<b>Wetted parts</b>	Stainless steel 1.4571 (AISI 316Ti)
<b>Maximum process pressure</b>	$\leq 150 \text{ bar}^{1)}$
<b>Housing material</b>	Lower body: stainless steel 1.4301 (AISI 304) Plastic head: PC + ABS Input keypad: TPE-E Display window: PC
<b>Enclosure rating</b>	IP 65 (according to IEC 60529) <sup>2)</sup> IP 67 (according to IEC 60529) <sup>2)</sup>
<b>Electrical connection</b>	Round connector M12 x 1, 5-pin
<b>Maximum ohmic load <math>R_A</math></b>	$\leq 100 \text{ k}\Omega$ (Switching outputs) < 0.5 k $\Omega$ (output signal 4 mA ... 20 mA)
<b>Supply voltage</b>	15 V DC ... 35 V DC
<b>Maximum current consumption</b>	70 mA
<b>Total current consumption</b>	570 mA (incl. switching current) 320 mA
<b>Protection class</b>	III
<b>Isolation voltage</b>	500 V DC
<b>Overvoltage protection</b>	40 V DC
<b>Short-circuit protection</b>	Outputs $Q_A$ , $Q_1$ , $Q_2$ towards M
<b>Reverse polarity protection</b>	$L^+$ towards M
<b>Electrical safety</b>	
Protection class	III
Isolation voltage	500 V DC
Overvoltage protection	40 V DC
Short-circuit protection	Outputs $Q_A$ , $Q_1$ , $Q_2$ towards M
<b>Reverse polarity protection</b>	$L^+$ towards M
<b>CE-conformity</b>	2004/108/EC, EN 61326-1 emission (group 1, class B) and interference immunity (industrial application)
<b>RoHS certificate</b>	✓

1) At room temperature and when connected through thread.

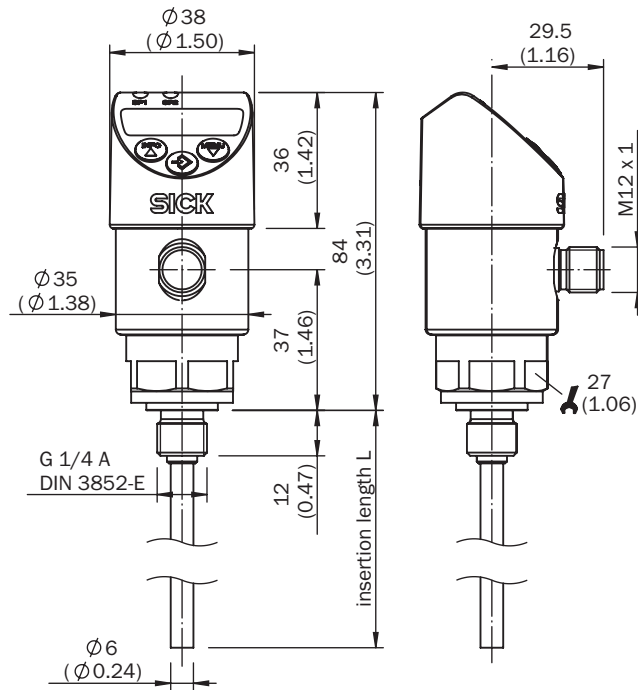
2) The enclosure rating classes specified only apply while the thermometer is connected with female connectors that provide the corresponding enclosure rating.

## Ambient data

<b>Ambient temperature</b>	-20 °C ... +80 °C
<b>Storage and transport temperature</b>	-20 °C ... +80 °C
<b>Relative humidity</b>	45 % ... 75 %

### Dimensional drawing (Dimensions in mm (inch))

TBS with connection G 1/4 A according to DIN 3852-E





### Connection type





- ① L+
- ② Q<sub>2</sub>
- ③ M
- ④ Q<sub>1</sub>
- ⑤ Q<sub>A</sub>

### Recommended accessories

Other models and accessories → [www.sick.de/TBS](http://www.sick.de/TBS)

	Brief description	Model name	Part no.
<b>Plug connectors and cables</b>			
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: drag chain use, PVC, unshielded, 2 m	DOL-1205-G02M	6008899
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 2 m	DOL-1205-G02MC	6025906

	Brief description	Model name	Part no.
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: drag chain use, PVC, unshielded, 5 m	DOL-1205-G05M	6009868
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 5 m	DOL-1205-G05MC	6025907

**Australia**

Phone +61 3 9457 0600  
1800 33 48 02 - tollfree  
E-Mail sales@sick.com.au

**Belgium/Luxembourg**

Phone +32 (0)2 466 55 66  
E-Mail info@sick.be

**Brasil**

Phone +55 11 3215-4900  
E-Mail marketing@sick.com.br

**Canada**

Phone +1 905 771 14 44  
E-Mail information@sick.com

**Česká republika**

Phone +420 2 57 91 18 50  
E-Mail sick@sick.cz

**China**

Phone +86 4000 121 000  
E-Mail info.china@sick.net.cn  
Phone +852-2153 6300  
E-Mail ghk@sick.com.hk

**Danmark**

Phone +45 45 82 64 00  
E-Mail sick@sick.dk

**Deutschland**

Phone +49 211 5301-301  
E-Mail info@sick.de

**España**

Phone +34 93 480 31 00  
E-Mail info@sick.es

**France**

Phone +33 1 64 62 35 00  
E-Mail info@sick.fr

**Great Britain**

Phone +44 (0)1727 831121  
E-Mail info@sick.co.uk

**India**

Phone +91-22-4033 8333  
E-Mail info@sick-india.com

**Israel**

Phone +972-4-6801000  
E-Mail info@sick-sensors.com

**Italia**

Phone +39 02 27 43 41  
E-Mail info@sick.it

**Japan**

Phone +81 (0)3 5309 2112  
E-Mail support@sick.jp

**Magyarország**

Phone +36 1 371 2680  
E-Mail office@sick.hu

**Nederland**

Phone +31 (0)30 229 25 44  
E-Mail info@sick.nl

**Norge**

Phone +47 67 81 50 00  
E-Mail sick@sick.no

**Österreich**

Phone +43 (0)22 36 62 28 8-0  
E-Mail office@sick.at

**Polska**

Phone +48 22 837 40 50  
E-Mail info@sick.pl

**România**

Phone +40 356 171 120  
E-Mail office@sick.ro

**Russia**

Phone +7-495-775-05-30  
E-Mail info@sick.ru

**Schweiz**

Phone +41 41 619 29 39  
E-Mail contact@sick.ch

**Singapore**

Phone +65 6744 3732  
E-Mail sales.gsg@sick.com

**Slovenija**

Phone +386 (0)1-47 69 990  
E-Mail office@sick.si

**South Africa**

Phone +27 11 472 3733  
E-Mail info@sickautomation.co.za

**South Korea**

Phone +82 2 786 6321/4  
E-Mail info@sickkorea.net

**Suomi**

Phone +358-9-25 15 800  
E-Mail sick@sick.fi

**Sverige**

Phone +46 10 110 10 00  
E-Mail info@sick.se

**Taiwan**

Phone +886-2-2375-6288  
E-Mail sales@sick.com.tw

**Türkiye**

Phone +90 (216) 528 50 00  
E-Mail info@sick.com.tr

**United Arab Emirates**

Phone +971 (0) 4 8865 878  
E-Mail info@sick.ae

**USA/México**

Phone +1(952) 941-6780  
1 800-325-7425 - tollfree  
E-Mail info@sickusa.com

More representatives and agencies  
at [www.sick.com](http://www.sick.com)