



TBS-1DSG10506NE

TBS

TEMPERATURE SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Model name	Part no.
TBS-1DSG10506NE	6048677

Other models and accessories → www.sick.de/TBS

Detailed technical data

Features

Measuring range	-20 °C ... +80 °C
Sensor element	Pt1000, 2-wire, class A according to IEC 60751
Output signals	2 x PNP + 4 mA ... 20 mA
Switching output	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
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
Temperature offset	± 3 °C
Scaling of measuring range	Zero point: max. +25 % of span Full scale: max. -25 % of span Max. +25 % of span, 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	≤ ± (0.15 °C + 0.002 t) ¹⁾
Accuracy of switching output	≤ ± 0.8 % of span
Display accuracy	≤ ± 0.8 % of span ± 1 digit
Accuracy of analog output	≤ ± 0.5 % of span

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

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

Response time t_{50}	$\leq 5 \text{ s}^{2)}$
Response time t_{90}	$\leq 10 \text{ s}^{2)}$

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

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

Mechanics/electronics

Process connection	Thread G ¼ A according to DIN 3852-E
Insertion length/diameter of probe	50 mm / 6 mm
Seal	NBR
Wetted parts	Stainless steel 1.4571 (AISI 316Ti)
Maximum process pressure	$\leq 150 \text{ bar}^{1)}$
Housing material	Lower body: stainless steel 1.4301 (AISI 304) Plastic head: PC + ABS Input keypad: TPE-E Display window: PC
Enclosure rating	IP 65 (according to IEC 60529) ²⁾ IP 67 (according to IEC 60529) ²⁾
Electrical connection	Round connector M12 x 1, 5-pin
Maximum ohmic load R_A	$\leq 100 \text{ k}\Omega$ (Switching outputs) < 0.5 k Ω (output signal 4 mA ... 20 mA)
Supply voltage	15 V DC ... 35 V DC
Maximum current consumption	70 mA
Total current consumption	570 mA (incl. switching current) 320 mA
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
Reverse polarity protection	L^+ towards M
Electrical safety	
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
Reverse polarity protection	L^+ towards M
CE-conformity	2004/108/EC, EN 61326-1 emission (group 1, class B) and interference immunity (industrial application)
RoHS certificate	✓

1) At room temperature and when connected through thread.

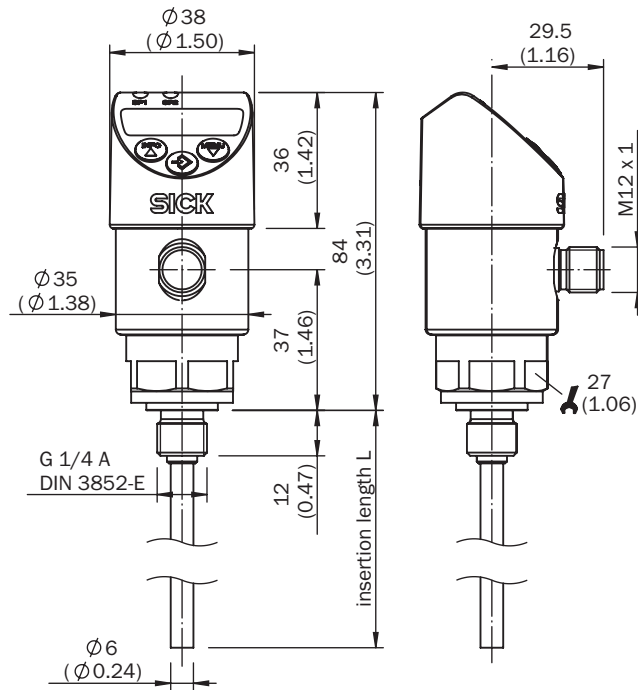
2) The enclosure rating classes specified only apply while the thermometer is connected with female connectors that provide the corresponding enclosure rating.

Ambient data

Ambient temperature	-20 °C ... +80 °C
Storage and transport temperature	-20 °C ... +80 °C
Relative humidity	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 Q₂
- ③ M
- ④ Q₁
- ⑤ Q_A

Recommended accessories

Other models and accessories → www.sick.de/TBS

	Brief description	Model name	Part no.
Plug connectors and cables			
	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

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