

TBS-1PSG12506NM

TBS

TEMPERATURE SENSORS





Ordering information

Туре	Part no.
TBS-1PSG12506NM	6071172

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

Illustration may differ



Detailed technical data

Features

Temperature measuring range	-20 °C +80 °C
Sensor element	Pt1000, 2-wire, class A according to IEC 60751
Output signals	IO-Link/PNP + 0 V 10 V
Switching output	Transistor
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
Switching output	Transistor
Number	2
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
Scaling of measuring range	Zero point: max. +25 % of span Full scale: max25 % of span
Scaling of measuring range	Max. +25 $\%$ of span, max25 $\%$ 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 $^\circ$ Housing against process connection: 320 $^\circ$

Mechanics/electronics

Process connection	Thread G ¼ A according to DIN 3852-E
Insertion length/diameter of probe	250 mm / 6 mm

 $^{^{1)}\,\}mathrm{At}$ room temperature and when connected through thread.

²⁾ IP enclosure rating as per IEC 60529.

Seal NER Wetted parts Stainless steel 1.4571 (AISI 316TI) Maximum process pressure ≤ 150 bar ³¹ Housing material Lower body: stainless steel 1.4301 (AISI 304) Plastic head: PC + ABS. Input keppad: TPE E Display window: PC Connection type M12 round connector x 1, 4-pin Enclosure rating PP65 ²¹ Proced 1 ± 100 kd (Switching outputs) > 1 ± 100 kd (Switching outputs) > 10 kG (output signal 4 mA 20 mA) Supply voltage 1 ± 100 kd (switching outputs) As ma Total current consumption 45 mA Total current consumption 45 mA Sloal current consumption 570 mA (incl. switching current) 320 mA 200 vD Overotitage protection 40 vDC Short-circuit protection 40 vDC Short-circuit protection 40 vDC Short-circuit protection 40 vDC Overvoitage protection dass isolation voitage 500 vDC Overvoitage protection 40 vDC Overvoitage protection 40 vDC Overvoitage protection 40 vDC <t< th=""><th></th><th></th></t<>		
Maximum process pressure ≤ 150 bar ¹¹ Housing material Lower body: stainless steel 1.4301 (AISI 304) Plastic head: PC + ABS Input keypad: TPEE Display window: PC Connection type M12 round connector x 1, 4-pin Enclosure rating IP65 ²¹ P67 ²² Maximum ohmic load Ra ≤ 100 kΩ (Switching outputs) > 10 kΩ (output signal 4 mA 20 mA) Supply voltage 15 V DC 35 V DC Maximum current consumption 45 mA Total current consumption 75 m A((incl. switching current) 320 mA Isolation voltage 500 V DC Overvoltage protection 40 V DC Short-circuit protection 0utputs Qa, Q1, Q2 towards M Electrical safety III Electrical safety 500 V DC Overvoltage protection 15 boov DC Overvoltage protection 40 V DC Short-circuit protection 500 V DC Overvoltage protection 40 V DC Short-circuit protection 40 V DC Short-circuit protection 40 V DC All provided protection (ass) Isolation voltage 40 V DC Short-circuit protection 40 V DC	Seal	NBR
Housing material Lower body: stainless steel 1.4301 (AISI 304) Plastic head: PC + ABS Input keypad: TPE-E Display window: PC Connection type M12 round connector x 1, 4-pin Enclosure rating IP65 ²¹ IP67 ²³ Maximum ohmic load R _A \$100 kΩ (Switching outputs) > 10 kΩ (output signal 4 mA 20 mA) Supply voitage Maximum current consumption 45 mA Total current consumption 45 mA Total current consumption 320 mA Protection class III Isolation voitage Overvoitage protection A0 V DC Short-circuit protection Protection class III Isolation voitage Overvoitage protection Protection class Isolation voitage Overvoitage protection A0 V DC Overvoitage protection Protection class Isolation voitage Overvoitage protection A0 V DC Overvoitage protection A0 V DC Overvoitage protection Short-circuit protection Reverse polarity protection A0 V DC Overvoitage protection Short-circuit protection A0 V DC Overvoitage protection A0 V DC Overvoitage protection A0 V DC Overvoitage protection Covervoitage protection An V DC Overvoitage protection Covervoitage protection An V DC Overvoitage protection Covervoitage protection An V DC Overvoitage protection Covervoitage protection An V DC Overvoitage pro	Wetted parts	Stainless steel 1.4571 (AISI 316Ti)
Plastic head: PC + ABS Input keypad: TPE-E Display window: PC	Maximum process pressure	≤ 150 bar ¹⁾
Enclosure rating IP65 2° (P67 2°) Maximum ohmic load R _A ≤ 100 kΩ (Switching outputs) > 10 kΩ (output signal 4 mA 20 mA) Supply voltage 15 V DC 35 V DC Maximum current consumption 45 mA Total current consumption 570 mA (incl. switching current) 320 mA Protection class III Isolation voltage 500 V DC Overvoltage protection 0vtputs Q _A , Q ₁ , Q ₂ towards M Reverse polarity protection L* towards M Electrical safety III Protection class Isolation voltage III Overvoltage protection 40 V DC Short-circuit protection 500 V DC Overvoltage protection 40 V DC Short-circuit protection cutputs 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 ✓	Housing material	Plastic head: PC + ABS Input keypad: TPE-E
Maximum ohmic load R _A \$ 100 kΩ (switching outputs) > 10 kΩ (output signal 4 mA 20 mA) Supply voltage Maximum current consumption \$ 570 mA (incl. switching current) 320 mA Frotection class III Isolation voltage Overvoltage protection Av V DC Short-circuit protection Reverse polarity protection Isolation voltage Protection class III Isolation voltage Outputs Q _A , Q ₁ , Q ₂ towards M Electrical safety Protection class III Isolation voltage Overvoltage protection Av V DC Short-circuit protection III Isolation voltage Protection class III Isolation voltage Overvoltage protection Av V DC Overvoltage protection Overvoltage protection Av V DC Short-circuit protection Covervoltage protection Av V DC Short-circuit protection Av	Connection type	M12 round connector x 1, 4-pin
Supply voltage 15 ∨ DC 35 ∨ DC Maximum current consumption 45 mA Total current consumption 570 mA (incl. switching current) 320 mA Protection class III Isolation voltage 500 ∨ DC Overvoltage protection 40 ∨ DC Short-circuit protection Class III Protection class Isolation voltage 00tputs Q _A , Q ₁ , Q ₂ towards M Reverse polarity protection III Protection class Isolation voltage 500 ∨ DC Blectrical safety III Protection class III AV ∨ DC Overvoltage protection 40 ∨ DC Overvoltage protection class Isolation voltage 500 ∨ DC AV ∨ DC Overvoltage protection class III Fool ∨ DC Overvoltage protection 40 ∨ DC Overvoltage protection 500 ∨ DC AV ∨ DC Overvoltage protection 500 ∨ DC Cotputs Q _A , Q ₁ , Q ₂ towards M L* towards M CE-conformity 2004/108/EC, EN 61326-1 emission (group 1, class B) and interference immunity (industrial application) FOHS certificate ✓	Enclosure rating	
Maximum current consumption 45 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 0 utputs QA, Q1, Q2 towards M Reverse polarity protection L* towards M Electrical safety 500 V DC Overvoltage protection class Isolation voltage Overvoltage protection Overvoltage protection Short-circuit protection Overvoltage Protection Overvo	Maximum ohmic load R _A	, and the second
Total current consumption 570 mA (incl. switching current) 320 mA Protection class III Solution voltage Overvoltage protection Short-circuit protection Protection class Isolation voltage Protection class Isolation voltage Protection class Isolation voltage Overvoltage protection Protection class Isolation voltage Overvoltage protection Short-circuit protection Avervoltage protection Short-circuit protection Short-circuit protection CE-conformity CE-conformity V V V V V V V V V V V V V	Supply voltage	15 V DC 35 V DC
Protection class III Isolation voltage Covervoltage protection Short-circuit protection Cerconformity 320 mA III 1	Maximum current consumption	45 mA
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 Electrical safety III Protection class ISolation voltage Isolation voltage 500 V DC 40 V DC 40 V DC Short-circuit protection Outputs QA, Q1, Q2 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 ✓	Total current consumption	· · · · · · · · · · · · · · · · · · ·
Overvoltage protection Short-circuit protection Cutputs Q _A , Q ₁ , Q ₂ towards M Reverse polarity protection Protection class Isolation voltage Overvoltage protection Short-circuit protection CE-conformity Overvoltage CE-conformity A0 V DC Outputs Q _A , Q ₁ , Q ₂ towards M L* towards M CE-conformity 40 V DC Outputs Q _A , Q ₁ , Q ₂ towards M L* towards M COutputs Q _A , Q ₁ , Q ₂ towards M L* towards M CE-conformity CE-conformity A0 V DC Outputs Q _A , Q ₁ , Q ₂ towards M L* towards M CE-conformity CE-conformity CE-conformity A0 V DC Outputs Q _A , Q ₁ , Q ₂ towards M L* towards M CE-conformity CE-conformity CE-conformity A0 V DC Outputs Q _A , Q ₁ , Q ₂ towards M L* towards M CE-conformity CE-conformity CE-conformity A0 V DC	Protection class	III
Short-circuit protection Reverse polarity protection Protection class III Solotion voltage protection Overvoltage protection Short-circuit protection Reverse polarity protection CE-conformity CE-conformity Outputs Q _A , Q ₁ , Q ₂ towards M L ⁺ towards M 2004/108/EC, EN 61326-1 emission (group 1, class B) and interference immunity (industrial application) ✓	Isolation voltage	500 V DC
Reverse polarity protection Electrical safety Protection class III Solation voltage 500 V DC Overvoltage protection outputs QA, Q1, Q2 towards M Reverse polarity protection Reverse polarity protection CE-conformity ROHS certificate L⁺ towards M ✓ V blace L* towards M Z004/108/EC, EN 61326-1 emission (group 1, class B) and interference immunity (industrial application)	Overvoltage protection	40 V DC
Electrical safety Protection class Isolation voltage Overvoltage protection Short-circuit protection Reverse polarity protection CE-conformity RoHS certificate Protection class III 40 V DC 40 V DC Outputs Q _A , Q ₁ , Q ₂ towards M L ⁺ towards M 2004/108/EC, EN 61326-1 emission (group 1, class B) and interference immunity (industrial application)	Short-circuit protection	Outputs Q _A , Q ₁ , Q ₂ towards M
Protection class Isolation voltage Overvoltage protection Short-circuit protection CE-conformity Protection class III 500 V DC 40 V DC Outputs Q _A , Q ₁ , Q ₂ towards M L ⁺ towards M 2004/108/EC, EN 61326-1 emission (group 1, class B) and interference immunity (industrial application) RoHS certificate ✓	Reverse polarity protection	L ⁺ towards M
Isolation voltage Overvoltage protection Short-circuit protection Reverse polarity protection CE-conformity CE-conformity RoHS certificate 500 V DC 40 V DC Outputs Q _A , Q ₁ , Q ₂ towards M L ⁺ towards M 2004/108/EC, EN 61326-1 emission (group 1, class B) and interference immunity (industrial application)	Electrical safety	
Overvoltage protection Short-circuit protection Reverse polarity protection CE-conformity CE-conformity RoHS certificate 40 V DC Outputs Q _A , Q ₁ , Q ₂ towards M L ⁺ towards M 2004/108/EC, EN 61326-1 emission (group 1, class B) and interference immunity (industrial application)	Protection class	III
Short-circuit protection Reverse polarity protection CE-conformity CE-conformit	Isolation voltage	500 V DC
Reverse polarity protection L ⁺ towards M 2004/108/EC, EN 61326-1 emission (group 1, class B) and interference immunity (industrial application) RoHS certificate ✓	Overvoltage protection	40 V DC
CE-conformity 2004/108/EC, EN 61326-1 emission (group 1, class B) and interference immunity (industrial application) RoHS certificate ✓	Short-circuit protection	Outputs Q _A , Q ₁ , Q ₂ towards M
application) RoHS certificate ✓	Reverse polarity protection	L ⁺ towards M
	CE-conformity	
MTTF 330 years	RoHS certificate	√
	МТТБ	330 years

 $^{^{1)}}$ At room temperature and when connected through thread.

Performance

Accuracy of sensor element	$\leq \pm (0.15 ^{\circ}\text{C} + 0.002 t)^{1)}$
Accuracy of switching output	≤ ± 0.8 % of span
Display accuracy	≤ ± 0.8 % of span ± 1 digit
Accuracy of analog output	≤ ± 0.5 % of span
Response time t ₅₀	\leq 5 s ²⁾
Response time t ₉₀	\leq 10 s ²⁾

²⁾ IP enclosure rating as per IEC 60529.

 $^{^{1)}}$ |t| is the absolute value of the temperature in °C. $^{2)}$ Depending on sensor configuration, according to IEC 60751.

TBS-1PSG12506NM | TBS

TEMPERATURE SENSORS

Ambient data

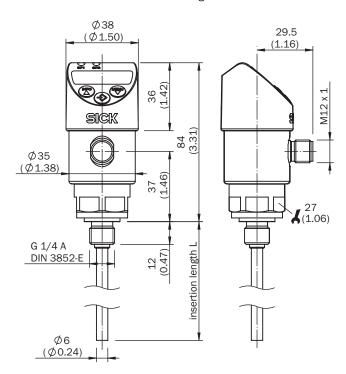
Ambient temperature	-20 °C +80 °C
Storage and transport temperature	-20 °C +80 °C
Relative humidity	45 % 75 %

Classifications

ECLASS 5.0	27200208
ECLASS 5.1.4	27200208
ECLASS 6.0	27200208
ECLASS 6.2	27200208
ECLASS 7.0	27200208
ECLASS 8.0	27200208
ECLASS 8.1	27200208
ECLASS 9.0	27200208
ECLASS 10.0	27200208
ECLASS 11.0	27200208
ECLASS 12.0	27200208
ETIM 5.0	EC002994
ETIM 6.0	EC002994
ETIM 7.0	EC002994
ETIM 8.0	EC002994
UNSPSC 16.0901	41112211

Dimensional drawing (Dimensions in mm (inch))

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



Connection type



- 3 M
- 4 Q₁

Recommended accessories

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

	Brief description	Туре	Part no.
Others			
	 Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Zones with oils and lubricants, Drag chain operation, Robot 	YF2A14- 020UB3XLEAX	2095607

TBS-1PSG12506NM | TBS

TEMPERATURE SENSORS

Brief description	Туре	Part no.
 Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Zones with oils and lubricants, Drag chain operation, Robot 	YF2A14- 050UB3XLEAX	2095608
 Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 4-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals 	YF2A14- 020VB3XLEAX	2096234
 Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals 	YF2A14- 050VB3XLEAX	2096235

Recommended services

Additional services → www.sick.com/TBS

	Туре	Part no.
Function Block Factory		
 Description: The Function Block Factory supports common programmable logic controllers (PLCs) from various manufacturers, such as Siemens, Beckhoff, Rockwell Automation and B&R. More information on the FBF can be found here. Note: You can configure your function block at Function Block Factory. As a login please use your SICK ID. 	Function Block Factory	On request

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is "Sensor Intelligence."

WORLDWIDE PRESENCE:

Contacts and other locations -www.sick.com

