

ADHESIVE TYPE
TEMPERATURE SENSORS

Adhesive Type Temperature Sensor
ST-50/51/51S

Exposed Tip Type Temperature Sensor
ST-50B/51B



 RoHS compliant



Easy temperature measurement of tiny objects and gaps



ST-51S NEW Polyimide sheet type

< Actual size >



ST-51S Max. 300°C
Adhesive type

ST-51/51B Polyimide sheet type

< Actual size >



ST-51 Max. 300°C
Adhesive type



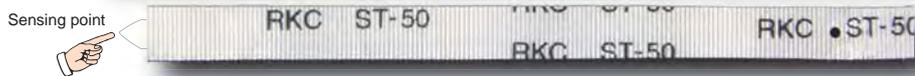
ST-51B Max. 300°C
Exposed tip type

ST-50/50B Glass cloth base type

< Actual size >



ST-50 Max. 300°C
Adhesive type



ST-50B Max. 300°C
Exposed tip type

■ Easy temperature measurement

Temperature can be measured by simply applying the tip of the sensor to a tiny object or inserting the sensor into tiny gaps.

■ No dust generation (Polyimide sheet type)

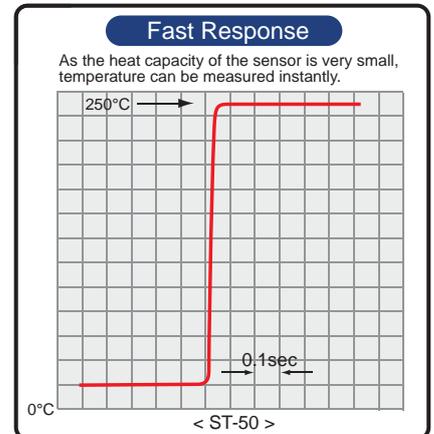
■ Durable adhesive tape

The adhesive tape can be repeatedly applied to and detached from various types of surfaces.

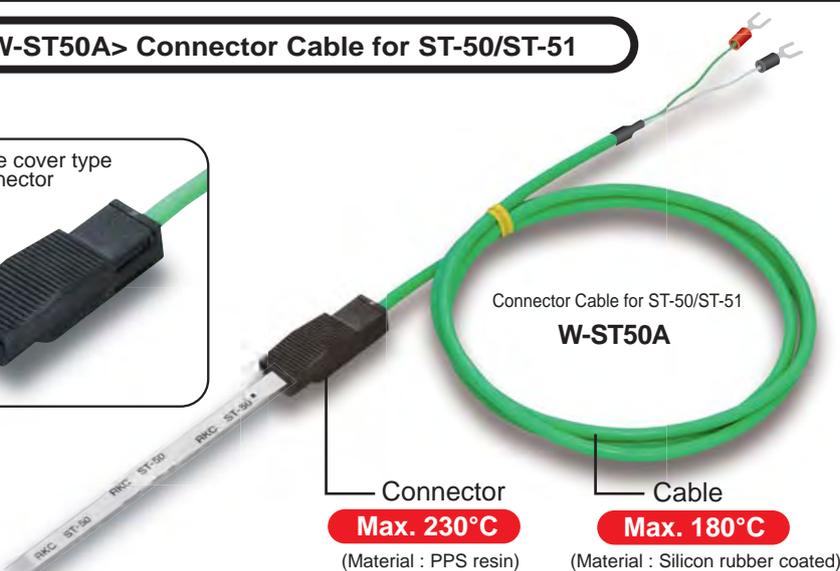
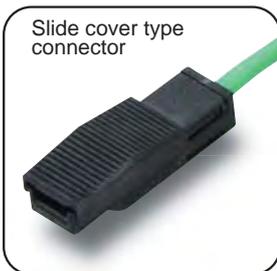
<Durability of adhesive tape>

- Up to 150°C (302°F) : Repeated use and detachment is available.
- Up to 200°C (393°F)
When temperature stays above 150°C (302°F), repeated use and detachment is available.
- Up to 250°C (482°F)
When temperature stays above 200°C (392°F), repeated use and detachment is available.
- Higher than 250°C (482°F)
Adhesive part will be burnt. Repeated use is not available.

* Frequency of repeated use can be different based on the working conditions.



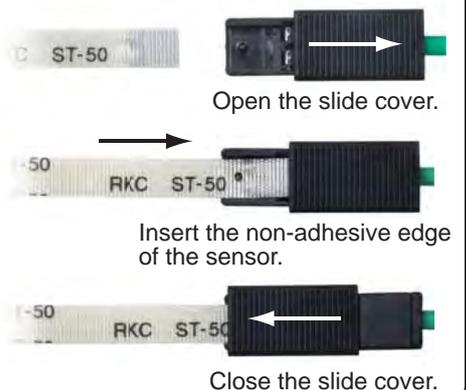
<W-ST50A> Connector Cable for ST-50/ST-51

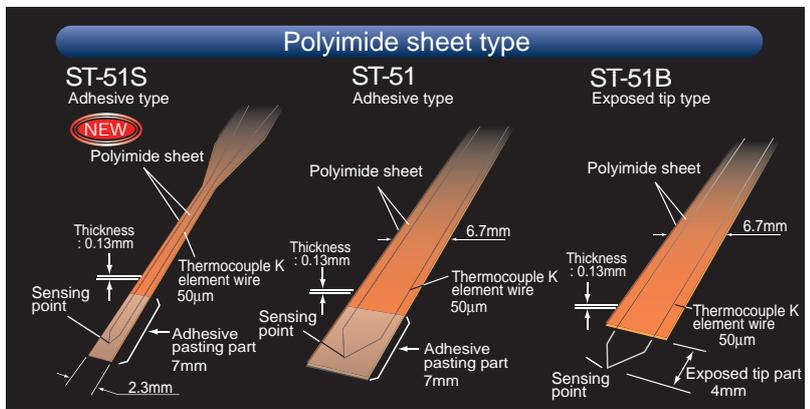
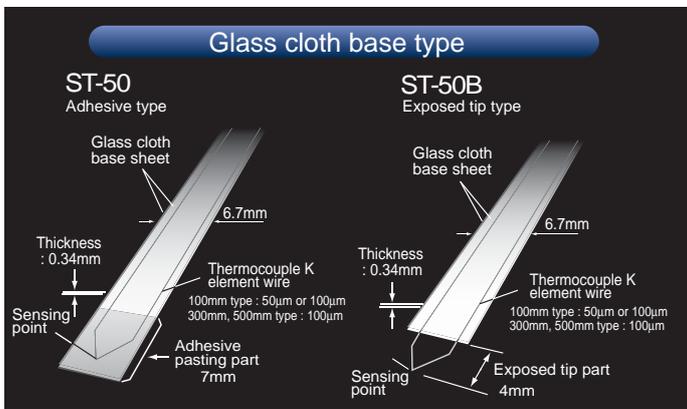


Connector
Max. 230°C
(Material : PPS resin)

Cable
Max. 180°C
(Material : Silicon rubber coated)

How to connect ST-50/ST-51 sensor





Sensor Specifications

Sheet Material	ST-50/50B : Glass cloth base sheet ST-51/51S/51B : Polyimide sheet
Operating Temperature	ST-51S : -40 to 300°C (-40 to 577°F) ST-50/50B/51S/51B : 0 to 300°C (32 to 577°F)
Adhesive Tape	<ul style="list-style-type: none"> Up to 150°C: Can be stuck and peeled off repeatedly. Up to 200°C: Can be stuck and peeled off repeatedly under the condition that the temperature is not lowered below 150°C. Up to 250°C: Can be stuck and peeled off repeatedly under the condition that the temperature is not lowered below 200°C. More than 250°C: Adhesive gets burnt and hardened not to be stuck any more. However, the number of sticking times differs depending on the environment where the adhesive is used.
Thermocouple	Type K
Sensor Length	ST-50/50B : 100/300/500mm Type ST-51/51S/51B : 100mm Type
Sensor Thickness	ST-50/50B : 0.34mm ST-51/51S/51B : 0.13mm
Element wire diameter	ST-50/50B : 50µm/100µm (100mm Type) 100µm (300/500mm Type) ST-51/51S/51B : 50µm

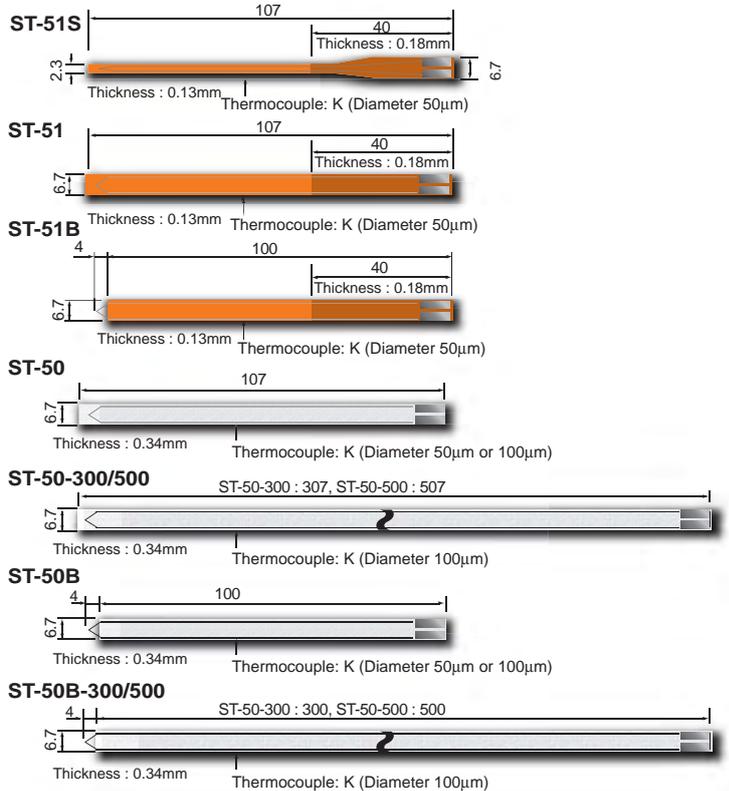
	Response of 95.0% ^{*1}	Resistance value (With cable 1m)	Accuracy ^{*2}
ST-51S (50µm element wire)	0.08sec	51Ω	±1.2°C
ST-51 (50µm element wire)	0.08sec	51Ω	±1.3°C
ST-51B (50µm element wire)	0.03sec	51Ω	±1.3°C
ST-50 (50µm element wire)	0.08sec	51Ω	±1.3°C
ST-50-100-D (100µm element wire)	0.08sec	17Ω	±1.5°C
ST-50-300 (100µm element wire)	0.08sec	41Ω	±1.5°C
ST-50-500 (100µm element wire)	0.08sec	66Ω	±1.5°C
ST-50B (50µm element wire)	0.03sec	51Ω	±1.3°C
ST-50B-100-D (100µm element wire)	0.03sec	17Ω	±1.5°C
ST-50B-300 (100µm element wire)	0.03sec	41Ω	±1.5°C
ST-50B-500 (100µm element wire)	0.03sec	66Ω	±1.5°C

^{*1} : Response when temperature of paraffin is 250°C (482°F).
^{*2} : Accuracy when temperature on metal surface is 100°C (212°F).

Response of Metal Surface (Adhesive type)

50µm element wire type : 0.4sec
100µm element wire type : 0.9sec

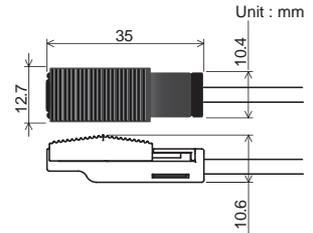
● Sensor External Dimension Unit : mm



Specification : Connector Cable for ST-50/ST-51

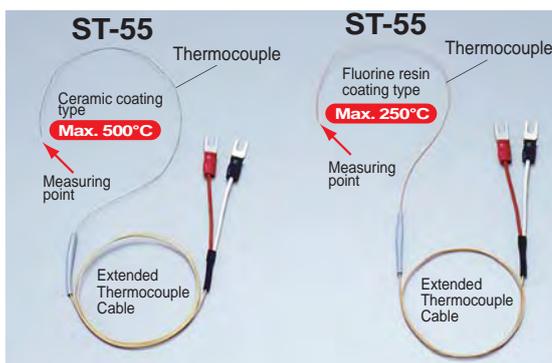
Connector material	PPS resin
Connector Max. temperature	230°C
Cable	φ3.3 Extended cable, Standard 1m
Cable material	Silicon rubber coated (Green)
Resistance value	7.0Ω or less (1m)
Cable Max. temperature	180°C
Weight	Approx 20g (Cable 1m, Y-sharped terminal lug type)

● Connector External Dimension Unit : mm



Temperature Sensor for Extremely Small Surface ST-55/56

- Up to 500°C (932°F) with ceramic coating
- ST-55 has a joint which enables a longer length



ST-56 is a seamless thermocouple

Sensor Model Code

<ST-50> Glass cloth base type

ST-50 (Adhesive type)



Model Code	Contents
ST-50	Length : 107mm, Element Wire Diameter 50 μ m, 5 pieces per set
ST-50-100-D	Length : 107mm, Element Wire Diameter 100 μ m, 5 pieces per set
ST-50-300	Length : 307mm, Element Wire Diameter 100 μ m, 1 piece
ST-50-500	Length : 507mm, Element Wire Diameter 100 μ m, 1 piece

ST-50B (Exposed tip type)



Model Code	Contents
ST-50B-100-4	Length : 104mm, Element Wire Diameter 50 μ m, 5 pieces per set
ST-50B-100-4-D	Length : 104mm, Element Wire Diameter 100 μ m, 5 pieces per set
ST-50B-300-4	Length : 304mm, Element Wire Diameter 100 μ m, 1 piece
ST-50B-500-4	Length : 504mm, Element Wire Diameter 100 μ m, 1 piece

<ST-51> Polyimide sheet type

ST-51S (Adhesive type)



Model Code	Contents
ST-51S-100-C	Length : 107mm, Element Wire Diameter 50 μ m, 5 pieces per set

ST-51 (Adhesive type)



Model Code	Contents
ST-51-100-C	Length : 107mm, Element Wire Diameter 50 μ m, 5 pieces per set

ST-50B (Exposed tip type)



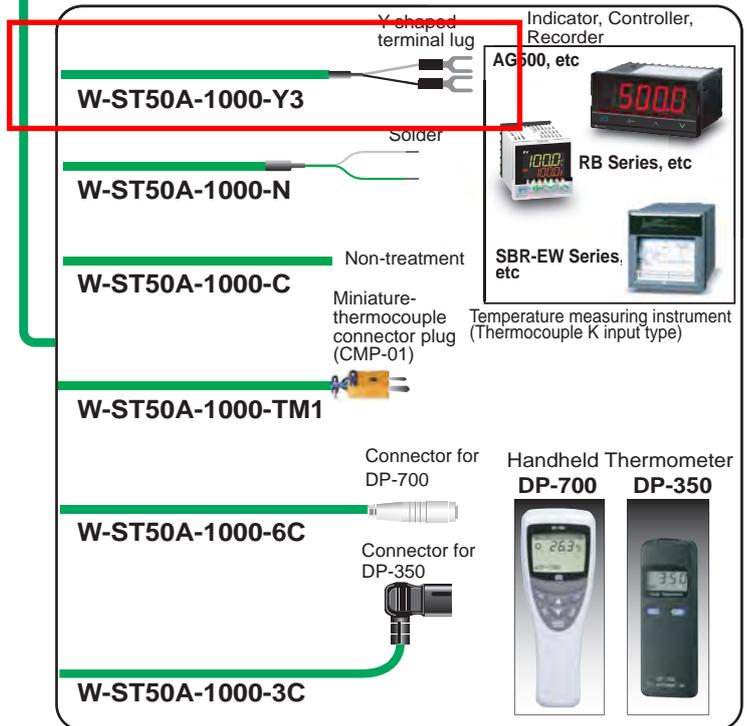
Model Code	Contents
ST-51B-100-C	Length : 107mm, Element Wire Diameter 50 μ m, 5 pieces per set

Connector Cable

ST-50/51/51S/50B/51B



Cable length : 1m (Standard)



Applications

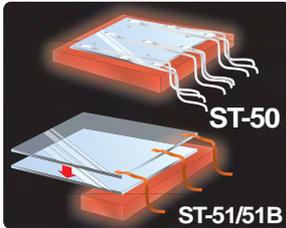
● Temperature inspection for LED



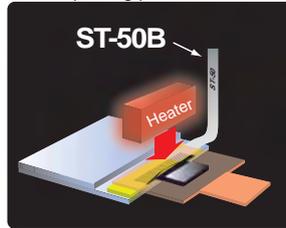
● Temperature distribution on the surface of solar cells.



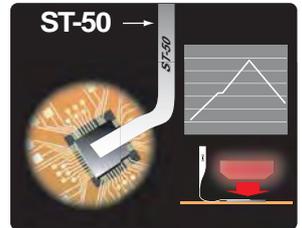
● Temperature inspection for glass plate heating process



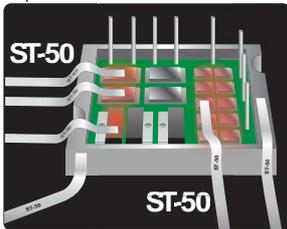
● Temperature inspection for COF pasting process



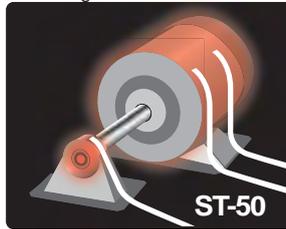
● Temperature inspection for CSP rework



● Temperature inspection for power modules



● Heating temperature of a shaft bearing and a motor.



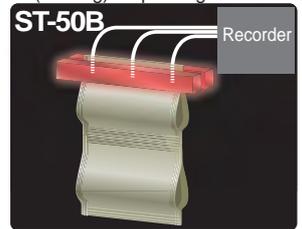
● Temperature inspection for electronic parts



● Temperature inspection for cooling fin



● Temperature distribution of heater (Sealing) for packing machine.



- This product is intended for use with industrial machines, test and measuring equipment. It is not designed for use with medical equipment.
- If it is possible that an accident may occur as a result of the failure of the product or some other abnormality, an appropriate independent protection device must be installed.
- Do not touch the sensor with high-voltage connections or high-current line such as power supply terminals, or do not stick the sensor to avoid electric shock or failure.

Caution for the export trade

All transactions must comply with laws, regulations, and treaties.

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