Film Type
TEMPERATURE SENSORS

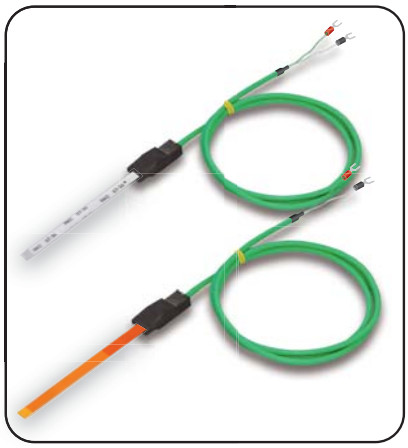
Film Type Temperature Sensors
(Type K Thermocouple)

ST-50 Series

Adhesive Type

Exposed Tip Type

Insulated Type

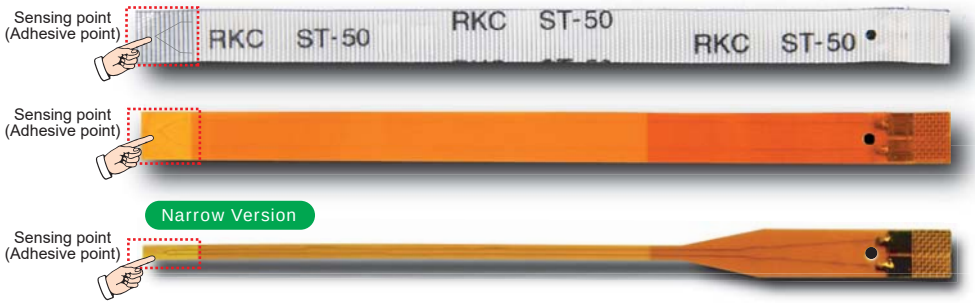


RKC® RKC INSTRUMENT INC.

「Self-Adhesive」「Thin Design」

Film Type Thermocouple Sensors

Adhesive Type

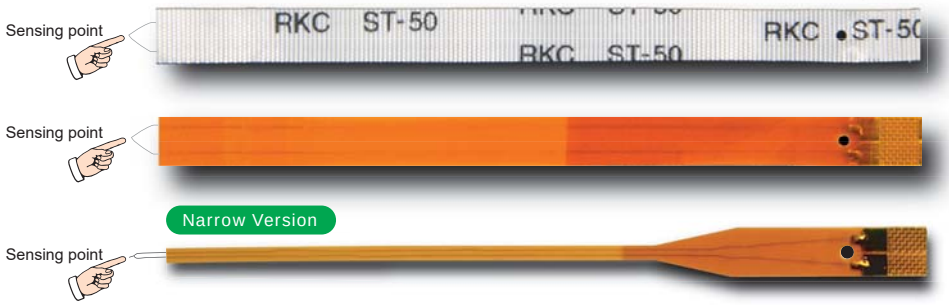


ST-50 Max. 300℃
Glass cloth base type

ST-51 Max. 300℃
Polyimide sheet type

ST-51S Max. 300℃
Polyimide sheet type

Exposed Tip Type

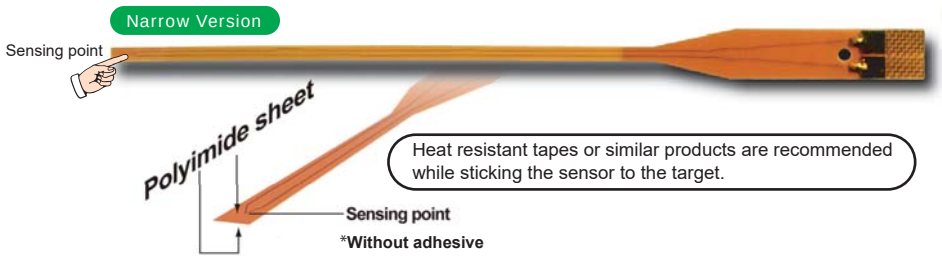


ST-50B Max. 300℃
Glass cloth base type

ST-51B Max. 300℃
Polyimide sheet type

ST-51SB Max. 300℃
Polyimide sheet type

Insulated Type



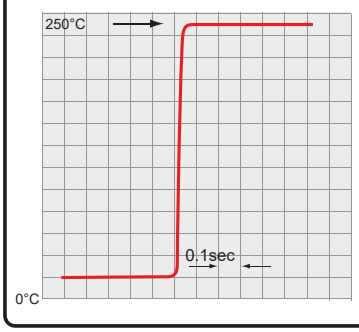
NEW
ST-51SC Max. 300℃
Polyimide sheet type

Features

- Ideal for measuring hard-to-reach target with its thin film design.
- Compatible with all Type K Thermocouple Input instruments.
- Easily stick on target with Self-Adhesive Type or insert between two touching surfaces with Exposed Tip Type. Use Polyimide (PI) Insulated Type for applications where electrical insulation is needed.

Rapid Response Time

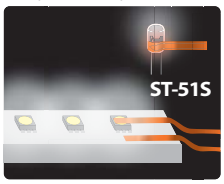
Low heat capacity allows instant measurement.
Ideal for measuring and logging.



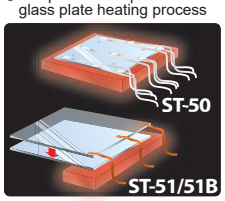
< ST-50B / ST-51B / ST-51SB characteristic curve>

Measuring Examples

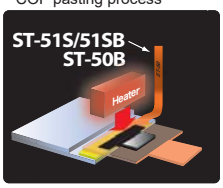
- Temperature inspection for LED



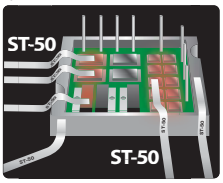
- Temperature inspection for glass plate heating process



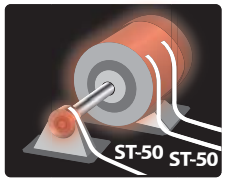
- Temperature inspection for COF pasting process



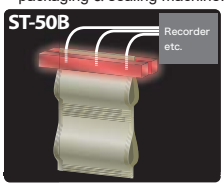
- Temperature inspection for power modules



- Heating temperature of a shaft bearing and a motor.



- Temperature profiling for packaging & sealing machine.



Glass cloth base type

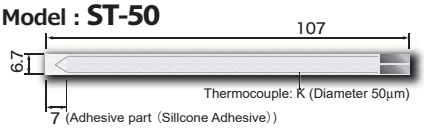
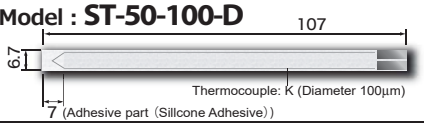
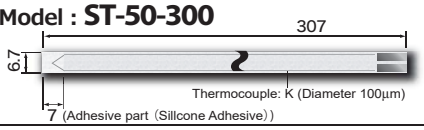
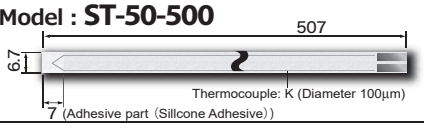
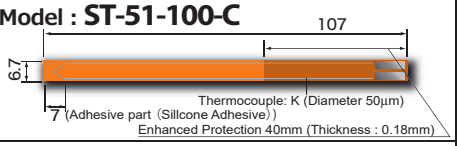
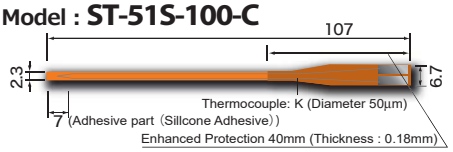
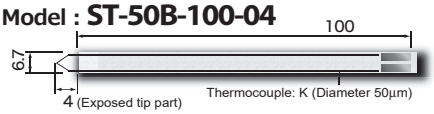
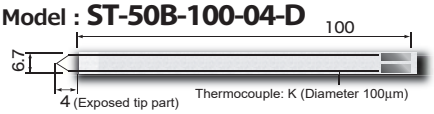
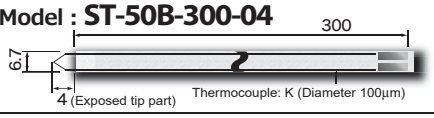
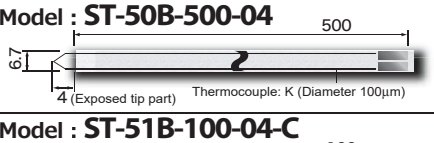
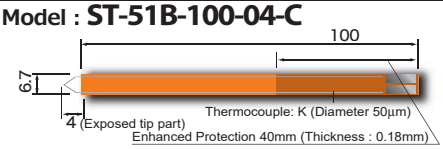
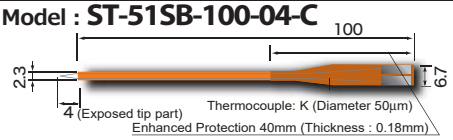
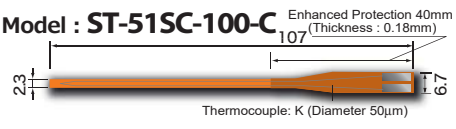
0.34-mm-thick glass cloth.
Available in lengths of 100/300/500mm.

- Thermocouple wire diameter of 50μm and 100μm are available with 100mm long sensor.
- Thermocouple wire diameter of 100μm is available with 300mm and 500mm long sensors.

Polyimide sheet type

0.13-mm-thick Polyimide（PI）film.
Ideal for using in cleanroom facilities.

- Please consult our sales representative for length of 300mm or 500mm

Model/Dimensions (Unit：mm)	Type	Film Thickness (mm)	Film Material	Measuring Range(*1)	95% of Response Time(*2)	Resistance with 1m of extension wire	Accuracy (*3)	Packaging
Model : ST-50 	Adhesive Type	0.34	Glass cloth base	0〜300℃	0.08sec.	51Ω	±1.3℃	5 pieces/pack
Model : ST-50-100-D 						17Ω	±1.5℃	5 pieces/pack
Model : ST-50-300 						41Ω	±1.5℃	1 piece/pack
Model : ST-50-500 						66Ω	±1.5℃	1 piece/pack
Model : ST-51-100-C 		0.13	Polyimide sheet			51Ω	±1.3℃	5 pieces/pack
Model : ST-51S-100-C 				−40〜+300℃		51Ω	±1.2℃	5 pieces/pack
Model : ST-50B-100-04 	Exposed Tip Type	0.34	Glass cloth base	0〜300℃	0.03sec.	51Ω	±1.3℃	5 pieces/pack
Model : ST-50B-100-04-D 						17Ω	±1.5℃	5 pieces/pack
Model : ST-50B-300-04 						41Ω	±1.5℃	1 piece/pack
Model : ST-50B-500-04 						66Ω	±1.5℃	1 piece/pack
Model : ST-51B-100-04-C 		0.13	Polyimide sheet			51Ω	±1.3℃	5 pieces/pack
Model : ST-51SB-100-04-C 				−40〜+300℃		51Ω	±1.2℃	5 pieces/pack
Model : ST-51SC-100-C  ・Insulation resistance: More than 10MΩ at 500V DC ・Dielectric voltage: 500V AC for one minute.	Insulated Type				0.32sec.	51Ω	±1.2℃	5 pieces/pack

Type of sensor: Type K thermocouple element class 2

(*1)Self-Adhesive section is good for multiplpe uses under following conditions: 1. Object temperature <=150℃. 2. Object temperature is maintained between 150℃ and 200℃. 3. Object temperature is maintained between 250℃ and 300℃.
*Result may be affected by environment and object surface condition.
*Silicone adhesive is used and no siloxane is generated.

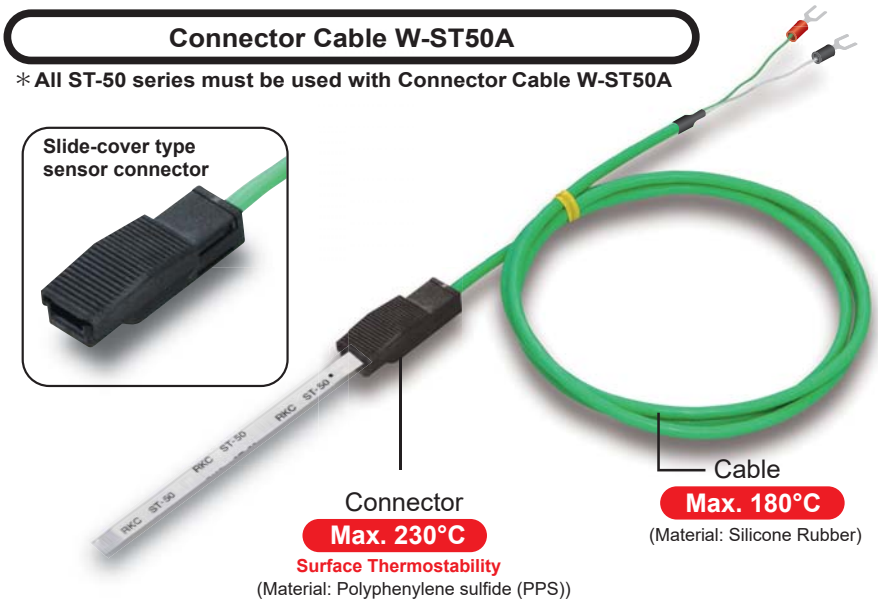
(*2)While measuring paraffin wax temperature of 250℃.

(*3)While measuring copper surface temperature of 100C. **Exposed-Tip type is tested with using of polyimide adhesive.

○Response time of measuring metal surface (Adhesive Type only)：　50μm element wire type：0.4sec.　100μm element wire type：0.9sec.

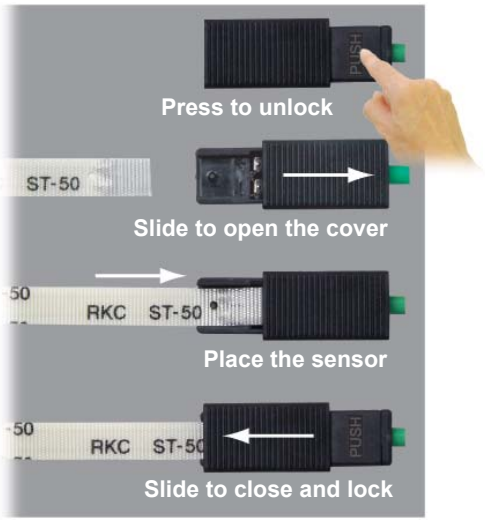
Connector Cable W-ST50A

＊All ST-50 series must be used with Connector Cable W-ST50A

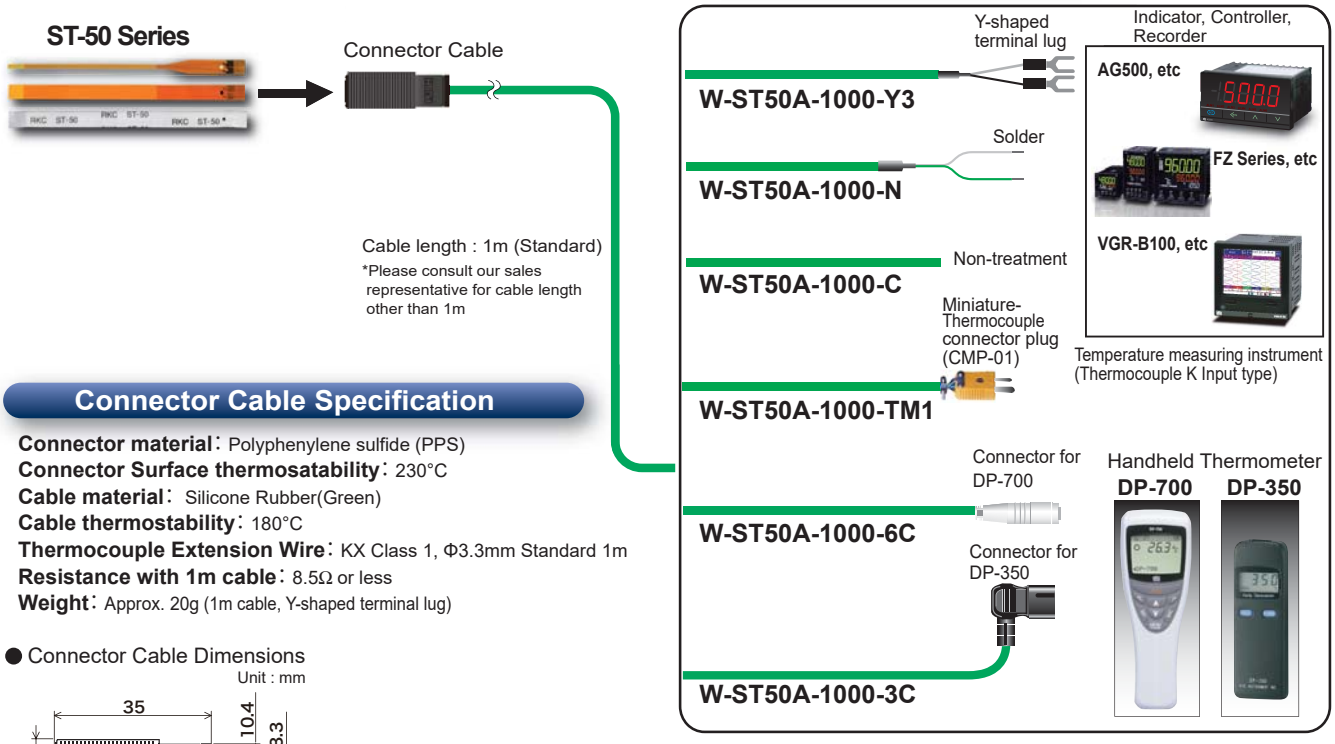


Easy for sensor installation and exchange

Slide-cover type sensor connector



Connector Cable Models

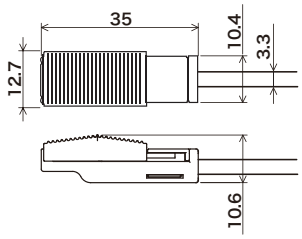


Connector Cable Specification

Connector material: Polyphenylene sulfide (PPS)
Connector Surface thermosatability: 230°C
Cable material: Silicone Rubber(Green)
Cable thermostability: 180°C
Thermocouple Extension Wire: KX Class 1, Φ3.3mm Standard 1m
Resistance with 1m cable: 8.5Ω or less
Weight: Approx. 20g (1m cable, Y-shaped terminal lug)

● Connector Cable Dimensions

Unit : mm



Safety Warning	Caution for the export trade
· 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.	All transactions must comply with laws, regulations, and treaties.

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