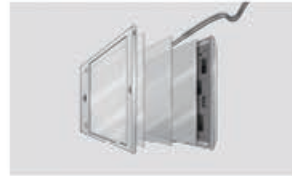


Model **ST** series

Flat Leaf Probes



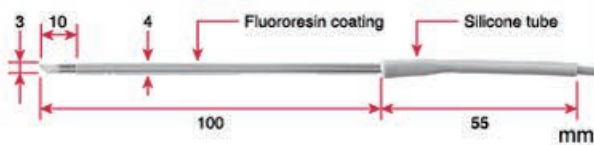
Surface temperature of liquid crystal
液晶屏温度检测

Model ST series probes are multi-purpose temperature sensors featuring a flexible tape shape. They can be glued to the surfaces of measurement targets for use in a range of applications.

ST系列产品为极薄·柔软性高的贴片式多用途温度传感器。贴片前端形状/贴片宽窄·外膜材质·贴片长度等可自由选择。

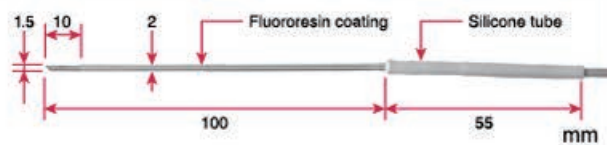
Typical probes of ST series 典型产品

Type K Model ST-11K-010-TS1-ANP
Type E Model ST-11E-010-TS1-ANP



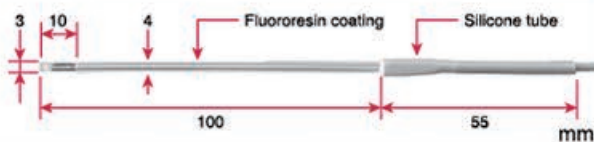
Temp. range	Tolerance	Response time	Durability
-50~210°C	±2.5°C (at 100°C)	2 s	S

Type K Model ST-31K-010-TS1-ANP
Type E Model ST-31E-010-TS1-ANP



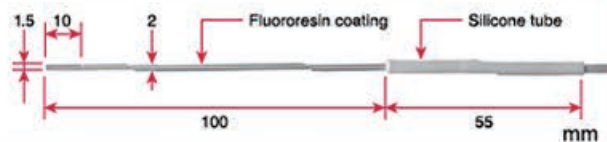
Temp. range	Tolerance	Response time	Durability
-50~210°C	±2.5°C (at 100°C)	2 s	S

Type K Model ST-21K-010-TS1-ANP
Type E Model ST-21E-010-TS1-ANP



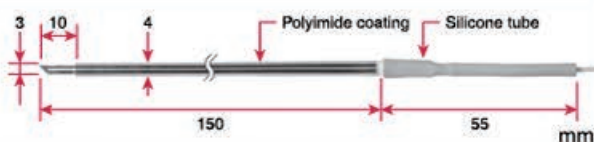
Temp. range	Tolerance	Response time	Durability
-50~210°C	±2.5°C (at 100°C)	2 s	S

Type K Model ST-41K-010-TS1-ANP
Type E Model ST-41E-010-TS1-ANP



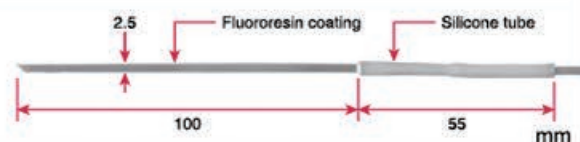
Temp. range	Tolerance	Response time	Durability
-50~210°C	±2.5°C (at 100°C)	2 s	S

Type K Model ST-13K-015-GW1-ANP
Type E Model ST-13E-015-GW1-ANP



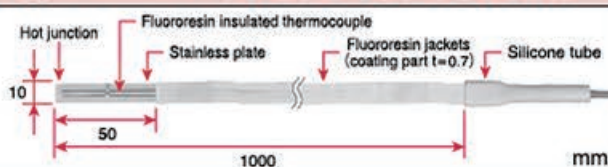
Temp. range	Tolerance	Response time	Durability
-50~400°C	±2.5°C (at 100°C)	2 s	S

Type K Model ST-32K-010-TS1-ANP
Type E Model ST-32E-010-TS1-ANP



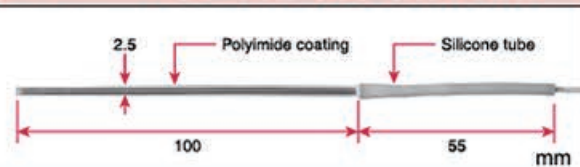
Temp. range	Tolerance	Response time	Durability
-50~210°C	±2.5°C (at 100°C)	8 s	S

Type K Model ST-25K-100-TC1-ANP
Type E Model ST-25E-100-TC1-ANP



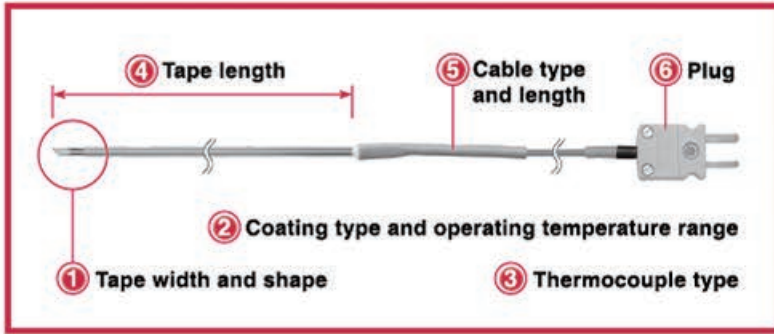
Temp. range	Tolerance	Response time	Durability
-50~210°C	±2.5°C (at 100°C)	2 s	S

Type K Model ST-44K-010-GW1-ANP
Type E Model ST-44E-010-GW1-ANP



Temp. range	Tolerance	Response time	Durability
-50~400°C	±2.5°C (at 100°C)	8 s	S

How to order of ST series 选型



ST-11K-010-TS1-ANP

① ② ③ ④ ⑤ ⑥

① Tape width and shape 贴片宽窄和形状	1 : Standard type (Sharp) 2 : Standard type (Flat) 3 : Narrow type (Sharp) 4 : Narrow type (Flat)
② Coating type and operating temperature range 外膜材质和使用温度范围	1 : Low temp. Fluororesin coating (Open) 2 : Low temp. All fluororesin coating 3 : High temp. Polyimide coating (Open) 4 : High temp. All polyimide coating 5 : Sheet probes (Only ST-25)
③ Thermocouple type 热电偶种类	K : Chromel-Alumel E : Chromel-Constantan
④ Tape length 贴片长度	003 : 30mm 005 : 50mm 008 : 80mm 010 : 100mm 200 : 2000mm ※ For ST-25, choose a tape length of 100mm or longer.
⑤ Cable type and length 导线种类和长度 (See page 9)	TS1 : For ST-*1, ST-*2 GW1 : For ST-*3, ST-*4 TC1 : For ST-25 0 : Without cable Standard specifications : 1m The cable length can be specified each 0.5m.
⑥ Plug 插头 (See page 8)	ANP (For AM-9***, HR-1*5*, AP-450) ASP (For HR-1*0*, AP-400) W (Without plug)

Attention

Where the probes are not glued or inserted, the operating temperature limits are as follows:

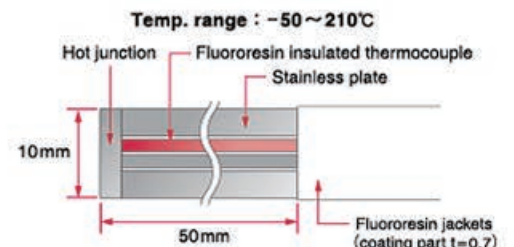
	ST-*1	ST-*2	ST-*3	ST-*4	ST-25
Tape ≤ 150mm	200°C	180°C	200°C	200°C	200°C
Tape > 150mm	200°C	180°C	180°C	180°C	200°C

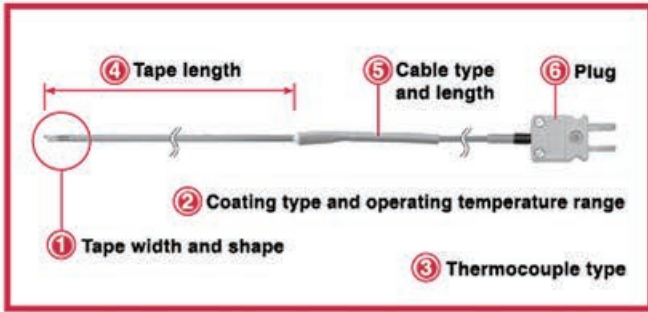
- ① Tape width and shape
贴片宽窄和形状
- ② Coating type and operating temperature range
外膜材质和使用温度范围

②	①	Tape width Standard type
Low temp. Fluororesin coating Temp. range : -50~210°C	Open	ST-11 Sharp Thickness t=0.1mm (Open part)
		ST-21 Flat Thickness t=0.1mm (Open part)
	All coating	ST-12 Sharp Thickness t=0.26mm
		ST-22 Flat Thickness t=0.26mm
High temp. Polyimide coating Temp. range : -50~400°C Max. temperature of 350°C when the tape length exceeds 150mm	Open	ST-13 Sharp Thickness t=0.1mm (Open part)
		ST-23 Flat Thickness t=0.1mm (Open part)
	All coating	ST-14 Sharp Thickness t=0.22mm
		ST-24 Flat Thickness t=0.22mm

Thickness other than tip
Fluororesin type : 0.2mm Polyimide type : 0.17mm

Sheet probes (Only ST-25)





ST-11K-010-TS1-ANP



① Tape width and shape

贴片宽窄和形状

② Coating type and operating temperature range

外膜材质和使用温度范围

		① Tape width Narrow type	
Low temp. Fluororesin coating Temp. range : -50~210°C	Open	ST-31 Sharp Thickness t=0.1mm (Open part)	ST-41 Flat Thickness t=0.1mm (Open part)
		All coating	ST-32 Sharp Thickness t=0.26mm
	Open		ST-33 Sharp Thickness t=0.1mm (Open part)
		All coating	ST-34 Sharp Thickness t=0.22mm

Thickness other than tip

Fluororesin type : 0.2mm Polyimide type : 0.17mm

③ Thermocouple type

热电偶种类

※ Select the same type of thermocouple as thermometer.

K Type K	E Type E
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④ Tape length

贴片长度

	30mm	003
	50mm	005
	80mm	008
	100mm	010
	150mm	015
	200mm	020
	300mm	030

	2000mm	200

⑤ Cable type and length

导线种类和长度

Standard	Outer diameter	Heat resistant
TS1 [※] For ST-*1, ST-*2	φ2.3mm	240°C
GW1 [※] For ST-*3, ST-*4	1.2mm×1.7mm	300°C
TC1 [※] For ST-25	φ4mm	240°C
0	Without cable. Cable is directly attached to the plug.	

※ Standard specifications : 1m

You can choose cable length by 0.5m.

⑥ Plug

插头

ANP For AM-9*** HR-1*5* AP-450	
ASP For HR-1*0* AP-400	
W Without plug	

Specifications of ST series 规格

Model number ^{※1}	ST-*1	ST-*2	ST-*3	ST-*4	ST-25	
Thermocouple type	Type K or E					
Temp. range ^{※2}	-50~210℃	-50~210℃	Tape length ≤ 150mm : -50~400℃ Tape length > 150mm : -50~350℃		-50~210℃	
Tolerance ^{※3}	-50℃ ≤ t < -40℃	±3.5℃	±3.5℃	±3.5℃	±3.5℃	±3.5℃
	0℃	±2.5℃	±2.5℃	±2.5℃	±2.5℃	±2.5℃
	100℃	±2.5℃	±2.5℃	±2.5℃	±2.5℃	±2.5℃
	200℃	±2.5℃	±2.5℃	±2.5℃	±2.5℃	±2.5℃
	300℃	—	—	±2.5℃	±2.5℃	—
	400℃	—	—	±3.0℃	±3.0℃	—
	Tolerance calculation method t:Temperature(℃)	At within temperature range -40℃ ≤ t ≤ 400℃ : ±2.5℃ or ±(0.0075× t)℃, whichever is greater				
Response time ^{※4}	2s	8s	2s	8s	2s	
Durability	S (Can not evaluate because of special-application)					

※1 The asterisk (*) is replaced by the number of the model name you selected. The model number after thermocouple type is omitted.

※2 The operating temperature limit is determined by the allowable temperature limit of the sensor head contacts the measurement target.
Note that the operating temperature limit is not the same as the allowable temperature limits of the grip, cable, and plug.

※3 Tolerance is defined in the operating temperature range of at the internal temperature with sufficient heat capacity.
For tolerance at temperature not listed in the above table, please refer to calculation method of tolerance.

※4 The response time given for our temperature measuring probes is the time required to detect 99% of the true value when measuring the temperature of boiling water or vapor.