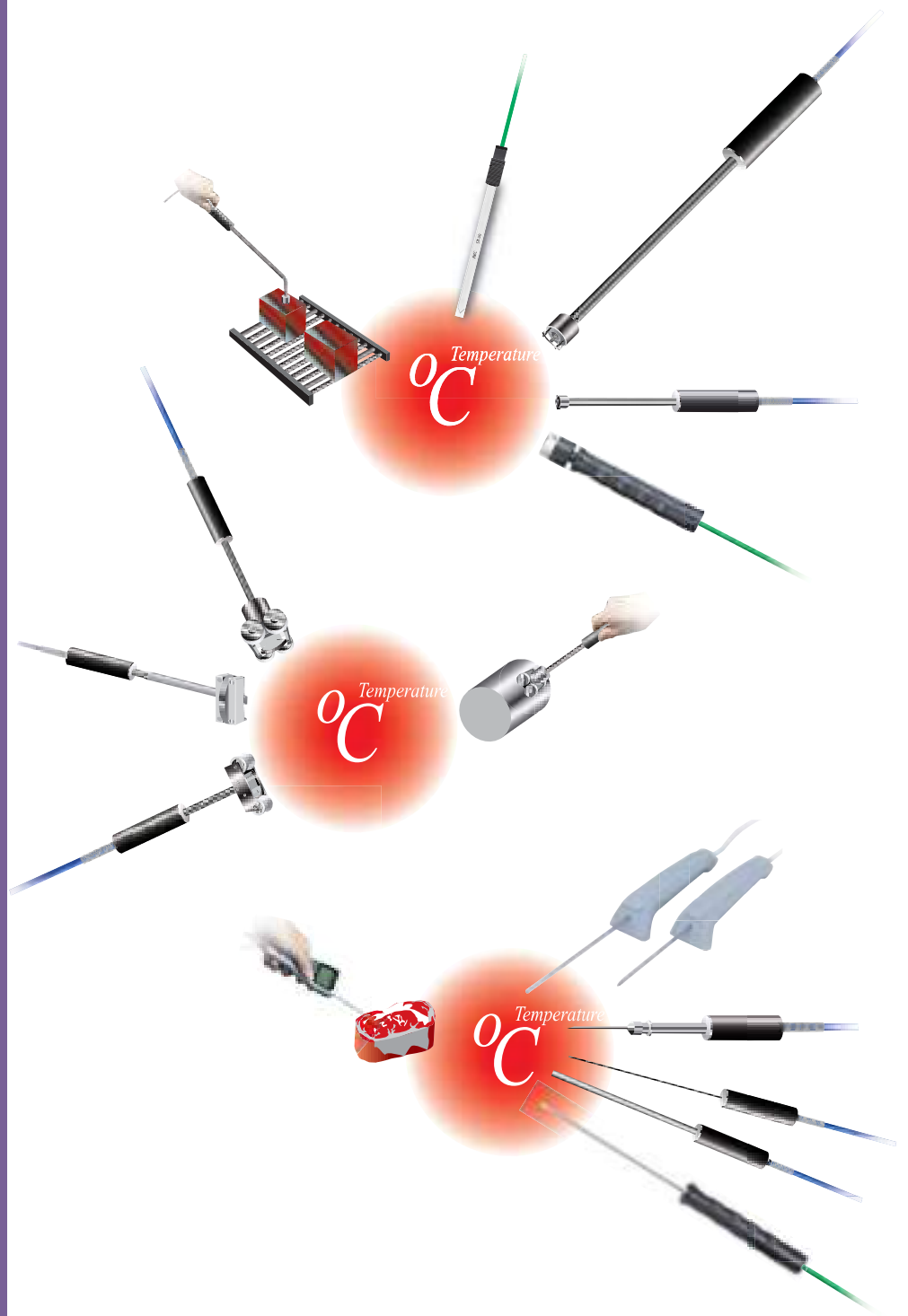


# HANDHELD SENSORS

## For Handheld Thermometer Temperature Sensors



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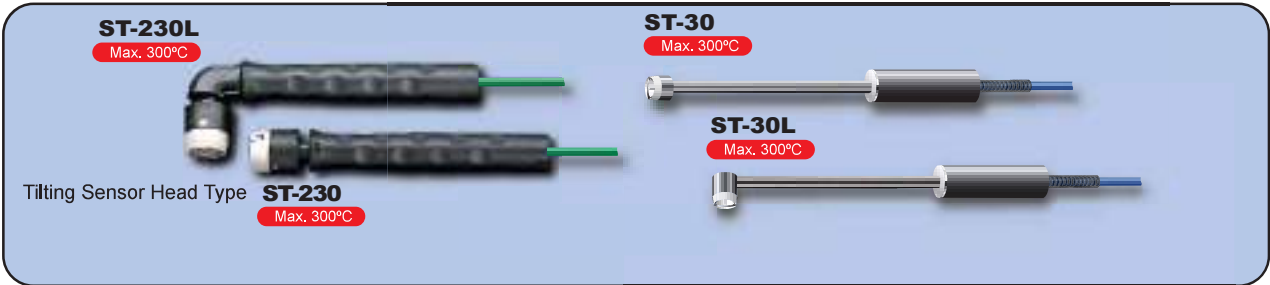
[sales@GlobalTestSupply.com](mailto:sales@GlobalTestSupply.com)

# For Stationary Surfaces

For General Purpose

Maximum Operating Temperature : 300°C

Page 6 to 7



For Middle/High Temperature

Maximum Operating Temperature : 600°C

Page 8



For High Temperature

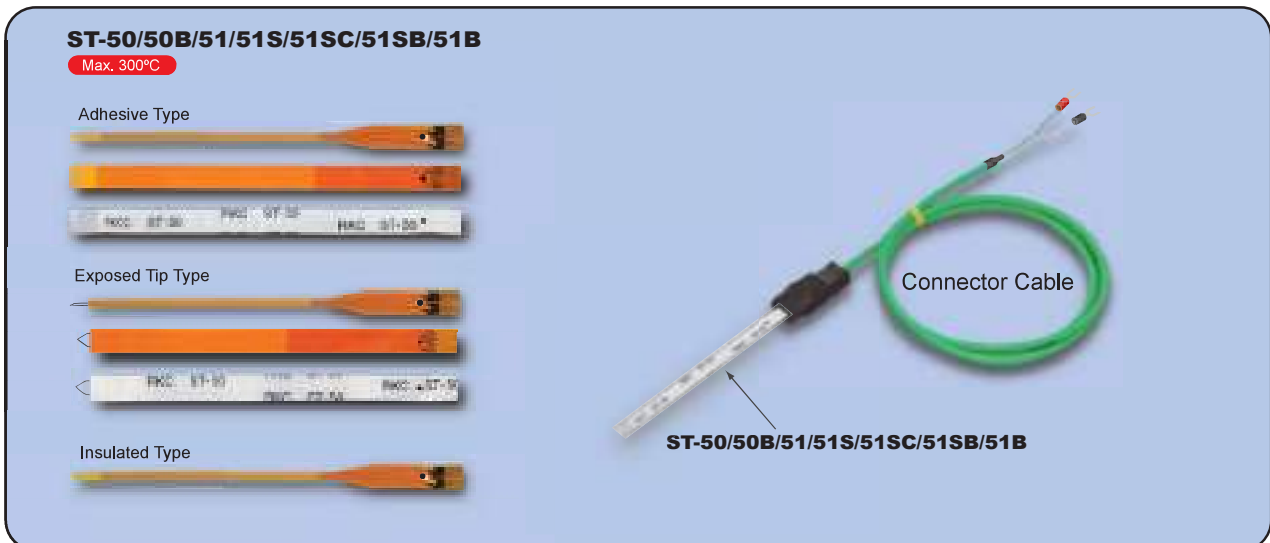
Maximum Operating Temperature : 1000°C

Page 9



Film Type Temperature Sensors

Page 10 to 11

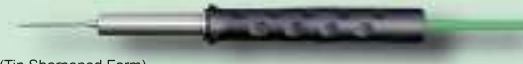


## For Semi-solid, Viscous Material and Liquids

### For General Purpose


Page 12 to 13

**JB-150**  
Max. 400°C




(Tip Sharpened Form)


**JB-16**  
Max. 650°C  $\phi 1.6$




Max. 750°C  $\phi 3.2$



**JB-160**  
Max. 650°C  $\phi 1.6$




Max. 750°C  $\phi 3.2$



### For Foods


Page 14

**JB-703**  
Max. 400°C  
IP67 Waterproof



(Tip Sharpened Form)  
Polish Finishing

**JB-704**  
Max. 400°C  
IP67 Waterproof



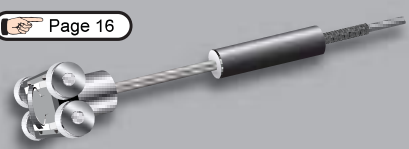
Polish Finishing

## For Rotating / Moving Surfaces

### For Roller and Moving Objects (Sheets)

Page 15

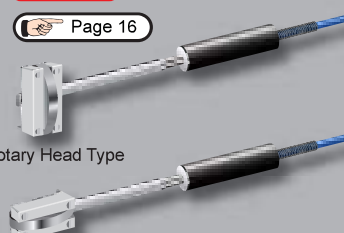
**ST-41**  
Max. 300°C



With Distancer

Page 16

**ST-44**  
Max. 300°C




Rotary Head Type

Page 16


### For Roller

Page 16

**ST-36**  
Max. 300°C



**ST-37**  
Max. 300°C



### For Roller and Moving Objects (Sheets)

Page 17

Contact / Non-Contact Type (Built-in type)

**JBS-3898**  
Max. 300°C



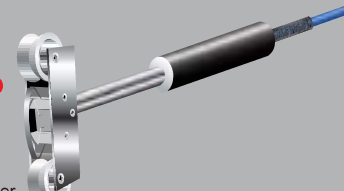
**ST-100/100K**  
Max. 300°C



### For Moving Wire




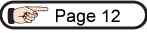

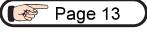



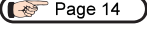

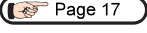





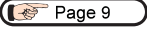



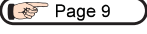









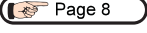
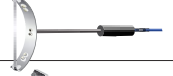










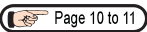




Page 18

**ST-43**  
Max. 300°C



With Distancer

# Model Code List

<b>JB-150</b>	Internal of Semi-solid, Viscous Material and Liquids (For General Purpose) • Tip Sharpened Form		 Page 12
<b>JB-16</b>	Internal of Semi-solid, Viscous Material and Liquids (For General Purpose)		 Page 12
<b>JB-160</b>	Internal of Semi-solid, Viscous Material and Liquids (For General Purpose)		 Page 13
<b>JB-703</b>	Internal of Semi-solid, Viscous Material and Liquids (For Food) • Tip Sharpened Form		 Page 14
<b>JB-704</b>	Internal of Semi-solid, Viscous Material and Liquids (For Food)		 Page 14
<b>JBS-3898</b>	Moving / Rotating Surfaces (For roller, Built-in type)		 Page 17
<b>ST-230</b>	Stationary Surfaces, Tilting Sensor Head Type (For General Purpose)		 Page 6
<b>ST-230L</b>	Stationary Surfaces, Tilting Sensor Head Type (For General Purpose, L shaped head)		 Page 6
<b>ST-29</b>	Stationary Surfaces (For High Temperature), Max.800°C		 Page 9
<b>ST-29H</b>	Stationary Surfaces (For High Temperature), Max.1000°C		 Page 9
<b>ST-29HL</b>	Stationary Surfaces (For High Temperature, L shaped head) Max.1000°C		 Page 9
<b>ST-29L</b>	Stationary Surfaces (For High Temperature, L shaped head) Max.800°C		 Page 9
<b>ST-30</b>	Stationary Surfaces (For General Purpose, Small head)		 Page 7
<b>ST-30L</b>	Stationary Surfaces (For General Purpose, Small head, L shaped )		 Page 7
<b>ST-32</b>	Stationary Surfaces (For Middle/High Temperature), Max.600°C		 Page 8
<b>ST-32L</b>	Stationary Surfaces (For Middle/High Temperature, L shaped head) Max.600°C		 Page 8
<b>ST-36</b>	Rotating / Moving Surfaces (For Roller)		 Page 16
<b>ST-37</b>	Rotating / Moving Surfaces (For Roller)		 Page 16
<b>ST-41</b>	Rotating / Moving Surfaces (For roller and moving objects [Sheets])		 Page 15
<b>ST-43</b>	Rotating / Moving Surfaces (For moving wire)		 Page 18
<b>ST-44</b>	Rotating / Moving Surfaces (For roller, Rotary head type )		 Page 15
<b>ST-50</b>	Stationary Surfaces (Adhesive and Exposed Tip Type)		 Page 10 to 11
<b>ST-100</b>	Rotating / Moving Surfaces (For Roller, Built-in Type) • Non-Contact Type, For Metal Surface		 Page 17
<b>ST-100K</b>	Rotating / Moving Surfaces (For Roller, Built-in Type) • Non-Contact Type, For Insulator Surface		 Page 17



# How to read this catalog

Structure of sensor head and measuring part.

- Shape of sensor is provided only for surface measurement sensors.

Model code necessary to order sensors.

Model code of the sensor described on this page.

Applicable measured objects and major applications of the sensor.

**ST-230**

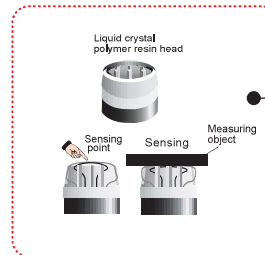
Stationary Surfaces For General Purpose

Maximum Operating Temperature : 300°C

**ST-230** □ - K-1000-□ □ □

- No symbol : No case
- \*K : With case
- /A : Silicon rubber coated cable (Blue) Standard type
- /C : Spiral cable
- 3C : Connector for DP-350
- 6C : Connector for DP-700
- 1000 : Cable length 1m
- Please contact distributors regarding more than 1m.
- K : Thermocouple K
- No symbol : Straight type
- L : L shaped type

Products with traceability option.



- Tilting sensor head type with free movement head. The temperature can be accurately measured by pressing the temperature sensor against the object under measurement.
- Dimpled processing for grip
- Fitting feeling allows easy gripping with the bare hand or even when wearing gloves.
- Temperature sensor has a maximum operating temperature of 300°C and is designed to measure the surface temperature of metals and insulators. (Temperature Range : -40 to 300°C)
- The head is made of a liquid crystal polymer resin that does not scratch the measurement object and has little thermal effect.

	Response Time Response of 99%	Response of 90%	Resistance value (With cable 1m)	Accuracy (*)
ST-230	1.1 sec (Metal Surface)	0.45 sec (Metal Surface)	7.7Ω	±1.3°C or ±1.3% of measured temperature (Whichever is larger)
ST-230L				

(\*) : Accuracy when temperature on copper metal surface is 100°C.

**ST-230L**

Max. 300°C

Cable length : 1m

Connector for DP-700

Code : 6C

Connector for DP-350

Code : 3C

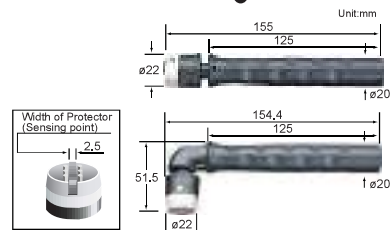
**ST-230**

Max. 300°C

Case for ST-23/23L

Case for ST-23/23L

Sensing point



External appearance and selectable connectors (connecting plugs) for the sensor.

External Dimensions

Overview of a sensor.

Hardware specifications or optional services for a sensor.

- #400 Protection tube with #400 buff finish for food application.
- Waterproof (Water washable)
- Products those which traceable documents are available

Specifications

**Response Time (95% response)**

A time required to indicate 95 % of the temperature range after the sensor has in contact with a measured object.

**Time Constant (63% response)**

A time required to indicate 63 % of the temperature range after the sensor has in contact with a measured object.

**Resistance value with cable 1m**

Total resistance including a sensor itself and lead wire.

**Accuracy**

Accuracy when temperature on copper metal surface is 100°C .  
• Measurement method depends on the sensor types.

# ST-230

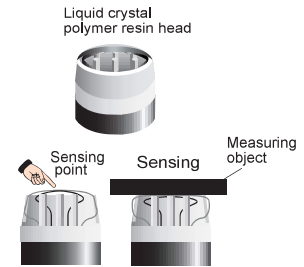
## Stationary Surfaces

# For General Purpose

Maximum Operating Temperature : 300°C

# ST-230 □ - K-1000-□ □ □

- No symbol : No case  
\*K : With case
- /F : Silicon rubber coated cable (Green) Standard type  
/C : Spiral cable
- 3C : Connector for DP-350  
6C : Connector for DP-700
- 1000 : Cable length 1m  
\* Please contact distributors for cable length more than 1m.
- K : Thermocouple K
- No symbol : Straight type  
L : L shaped type



\* For silicon-coated cable of ST-230/230L, with a cable diameter of ø3.3mm.

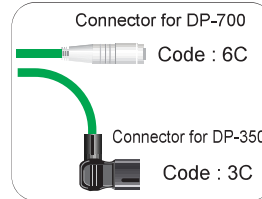
- Tilting sensor head type with free movement head. The temperature can be accurately measured by pressing the temperature sensor against the object under measurement.
- Dimpled processing for grip. Designed for easy grip with or without gloves.
- Temperature sensor has a maximum operating temperature of 300°C and is designed to measure the surface temperature of metals and insulators. (Temperature Range : -40 to 300°C)
- The head is made of a liquid crystal polymer resin that does not scratch the measurement object and has little thermal effect.

	Response Time		Resistance value (With cable 1m)	Accuracy (*)
	Response of 99%	Response of 90%		
<b>ST-230</b>	1.1 sec (Metal Surface)	0.45 sec (Metal Surface)	7.7Ω	±1.3°C or ±1.3% of measured temperature (Whichever is larger)
<b>ST-230L</b>				

(\*) : Accuracy when temperature on copper metal surface is 100°C.

## ST-230L

Max. 300°C

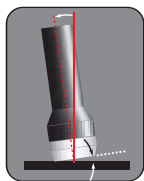
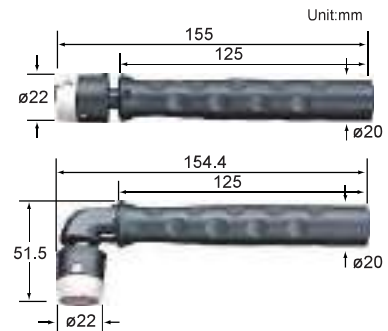
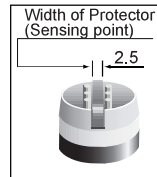


## ST-230

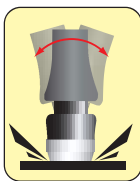
Max. 300°C



Case for ST-230/230L  
Model Code: STJB-K



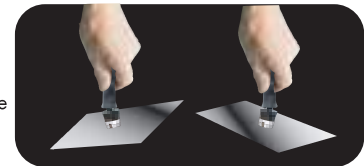
Conventional product (ST-23)



ST-230



With a conventional sensor, a gap between the sensing element and the measured object caused by unintentional movement results in measurement error. The ST-230 uses a tilting head structure which keeps a firm contact and minimizes the influence due to unintentional movement of the sensor.



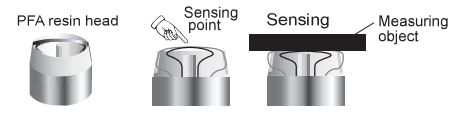
# ST-30

□ - K-1000-□ □ □

- No symbol : No case  
\*L : With case
- /A : Silicon rubber coated cable (Blue) Standard type  
/C : Spiral cable
- 3C : Connector for DP-350  
6C : Connector for DP-700
- 1000 : Cable length 1m  
\* Please contact distributors for cable length more than 1m.
- K : Thermocouple K
- No symbol : Straight type  
L : L shaped type

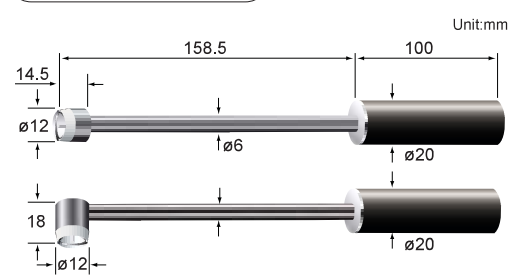
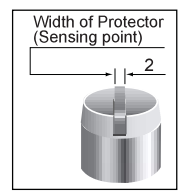
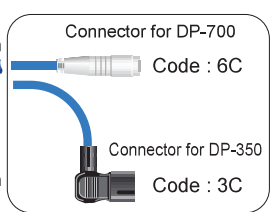
Products with traceability option.

- Standard temperature sensor for metallic and insulated objects, with a Teflon coated head, for measurement up to 300°C maximum.
- Compact head. Suitable for small area measurement.



	Response of 95%	Response of 63% (Time constant)	Resistance value (With cable 1m)	Accuracy (*)
ST-30	0.6 sec (Metal Surface)	0.2 sec (Metal Surface)	8Ω	±0.5%±1°C
ST-30L				

(\*) : Accuracy when temperature on copper metal surface is 100°C.



# ST-32

## Stationary Surfaces For Middle/High Temperature

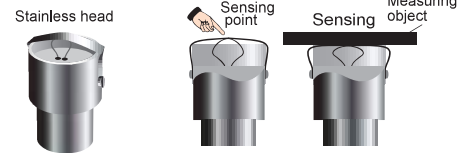
Maximum Operating Temperature : 600°C

# ST-32 □ - K-1000- □ □ □

- No symbol : No case
- \*L : With case
- /A : Silicon rubber coated cable (Blue) Standard type
- /C : Spiral cable
- 3C : Connector for DP-350
- 6C : Connector for DP-700
- 1000 : Cable length 1m
- \* Please contact distributors for cable length more than 1m.
- K : Thermocouple K
- No symbol : Straight type
- L : L shaped type

 Products with traceability option.

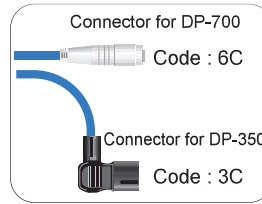
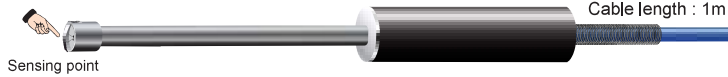
- Standard temperature sensor for metallic objects, for measurement up to 600°C maximum.
- Durable stainless steel head.



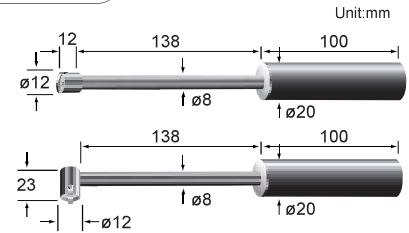
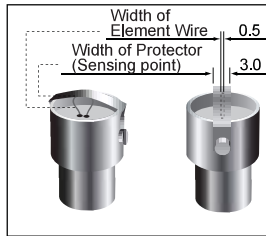
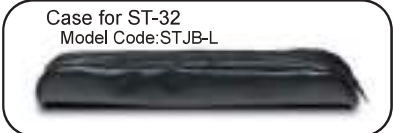
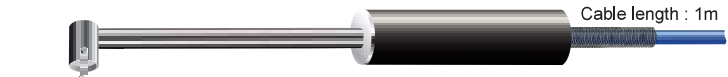
	Response of 95%	Response of 63% (Time constant)	Resistance value (With cable 1m)	Accuracy (*)
ST-32	0.7 sec (Metal Surface)	0.2 sec (Metal Surface)	7.5Ω	±0.5%±1°C

(\*) : Accuracy when temperature on copper metal surface is 100°C.

### ST-32 Max. 600°C

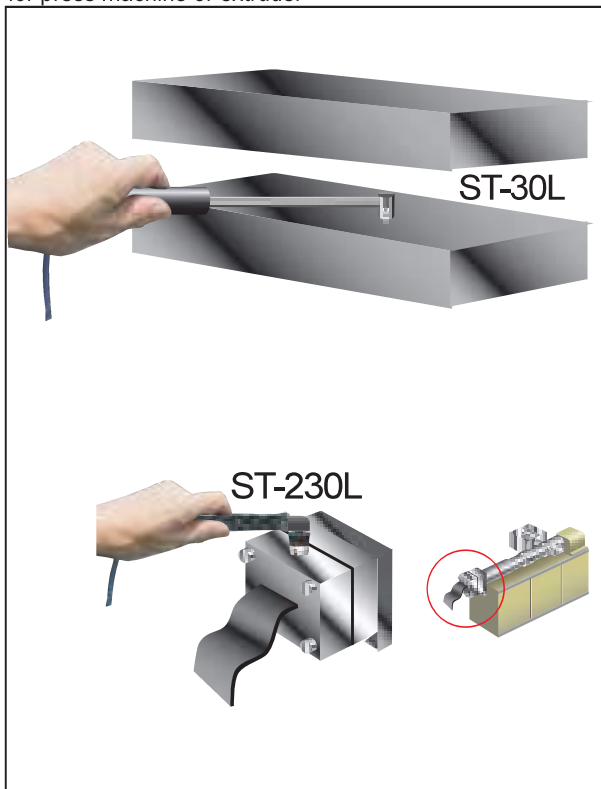


### ST-32L Max. 600°C

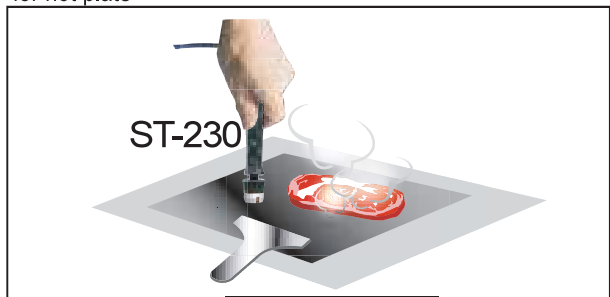


## Applications

Mold surface temperature measurement for press machine or extruder



Surface temperature measurement for hot plate

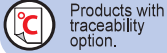


Steel surface temperature measurement



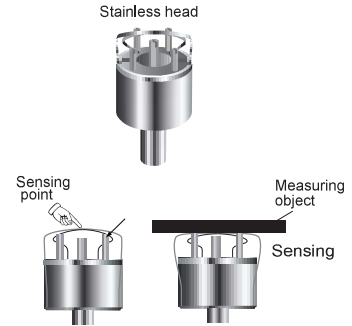
# ST-29 □ - K-1000- □ □

- /A : Silicon rubber coated cable (Blue) Standard type
- /C : Spiral cable
- 3C : Connector for DP-350
- 6C : Connector for DP-700
- 1000 : Cable length 1m  
\* Please contact distributors for cable length more than 1m.
- K : Thermocouple K
- No symbol : Straight type
- L : L shaped type (Standard type)
- H : Straight type (For high temperature)
- HL : L shaped type (For high temperature)



- Standard temperature sensor for metallic objects, for measurement up to 800°C maximum.
- Type H measures up to maximum of 1000°C, \*

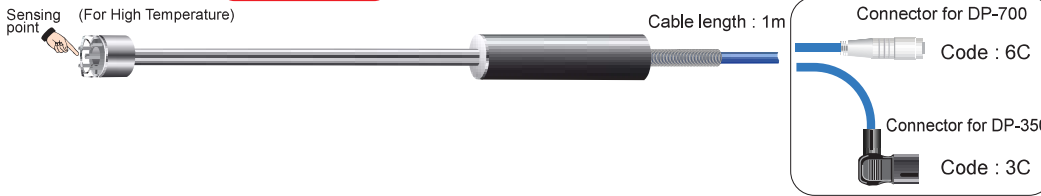
\* The measuring part will deteriorate rapidly if used above 1000°C.



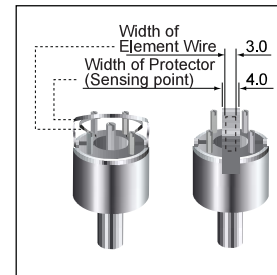
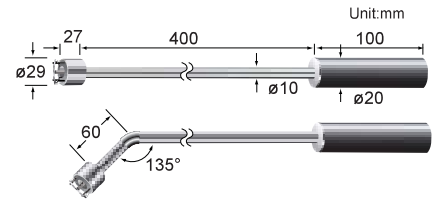
	Response of 95%	Response of 63% (Time constant)	Resistance value (With cable 1m)	Accuracy (*)
ST-29 ST-29L	0.5 sec (Metal Surface)	0.1 sec (Metal Surface)	10.0Ω	±0.3%±1°C
ST-29H ST-29HL	1.5 sec (Metal Surface)	0.4 sec (Metal Surface)	2.0Ω	±0.5%±1°C

(\*) : Accuracy when temperature on copper metal surface is 100°C.

**ST-29** Max. 800°C  
**ST-29H** Max. 1000°C (For High Temperature)

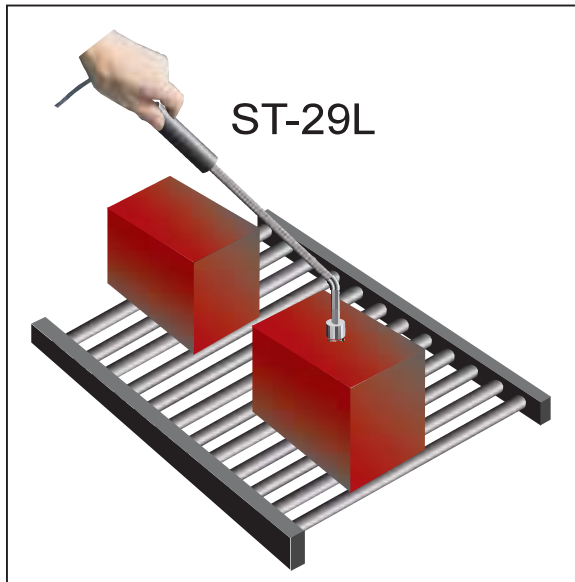


**ST-29L** Max. 800°C  
**ST-29HL** Max. 1000°C (For High Temperature)



## ● Applications

- Surface temperature measurement of a steel material after heat treatment



# ST-50

## Stationary Surfaces For Extremely Small Surface (Adhesive and Exposed Tip Type)

\*A dedicated connecting cable is required. (Sold separately).

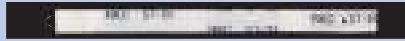
### <ST-50> Glass cloth base type

ST-50 (Adhesive type)



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

ST-50B (Exposed tip type)



Model Code	Contents
ST-50B-100-04	Length : 104mm, Element Wire Diameter 50 $\mu$ m, 5 pieces per set
ST-50B-100-04-D	Length : 104mm, Element Wire Diameter 100 $\mu$ m, 5 pieces per set
ST-50B-300-04	Length : 304mm, Element Wire Diameter 100 $\mu$ m, 1 piece
ST-50B-500-04	Length : 504mm, Element Wire Diameter 100 $\mu$ m, 1 piece

\*A dedicated connecting cable is required. (Sold separately).

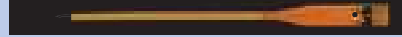
### <ST-51> Polyimide sheet type

ST-51S (Adhesive type)



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

ST-51SB (Exposed tip type)



Model Code	Contents
ST-51SB-100-04-C	Length : 107mm, Element Wire Diameter 50 $\mu$ m, 5 pieces per set

ST-51SC (Insulated Type)



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

ST-51 (Adhesive type)



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

ST-50B (Exposed tip type)

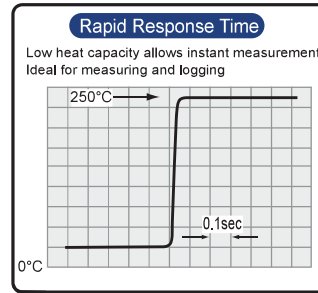


Model Code	Contents
ST-51B-100-04-C	Length : 107mm, Element Wire Diameter 50 $\mu$ m, 5 pieces per set

- 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.



<W-ST50A>  
Connector Cable for ST-50/ST-51  
(Connecting cable for DP-350 with a 3C plug)



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

## ST-50/51

<Actual Size>

Sensing point (Adhesive point) **ST-51S** **Max. 300°C** Narrow Version, Adhesive type, Polyimide sheet type

Without adhesive Sensing point **ST-51SB** **Max. 300°C** Narrow Version Exposed tip type, Polyimide sheet type

Without adhesive Sensing point **ST-51SC** **Max. 300°C** Narrow Version Insulated Type, Polyimide sheet type

Sensing point (Adhesive point) **ST-51** **Max. 300°C** Adhesive type, Polyimide sheet type

Without adhesive Sensing point **ST-51B** **Max. 300°C** Exposed tip type, Polyimide sheet type

Sensing point (Adhesive point) **ST-50** **Max. 300°C** Adhesive type, Glass cloth base type

Without adhesive Sensing point **ST-50B** **Max. 300°C** Exposed tip type, Glass cloth base type

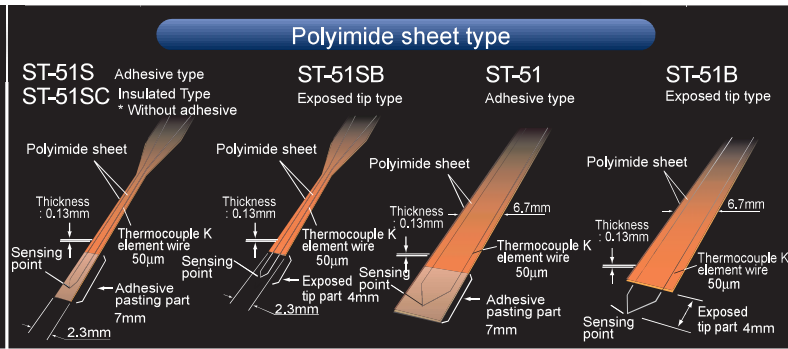
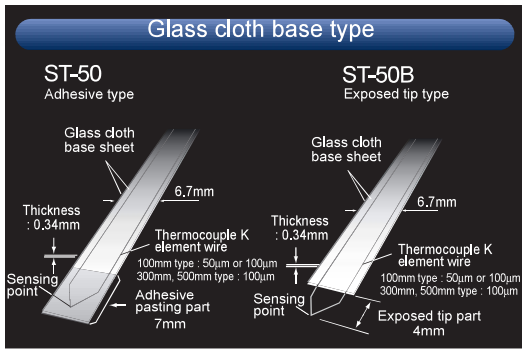
	Response of 95.0% <sup>*1</sup>	Resistance value (With cable 1m)	Accuracy
<b>ST-51S</b> (50 $\mu$ m element wire)	0.08sec	51 $\Omega$	$\pm 1.2^\circ\text{C}$
<b>ST-51SB</b> (50 $\mu$ m element wire)	0.03sec	51 $\Omega$	$\pm 1.2^\circ\text{C}$
<b>ST-51SC</b> (50 $\mu$ m element wire)	0.5sec	51 $\Omega$	$\pm 1.2^\circ\text{C}$
<b>ST-51</b> (50 $\mu$ m element wire)	0.08sec	51 $\Omega$	$\pm 1.3^\circ\text{C}$
<b>ST-51B</b> (50 $\mu$ m element wire)	0.03sec	51 $\Omega$	$\pm 1.3^\circ\text{C}$
<b>ST-50</b> (50 $\mu$ m element wire)	0.08sec	51 $\Omega$	$\pm 1.3^\circ\text{C}$
<b>ST-50-100-D</b> (100 $\mu$ m element wire)	0.08sec	17 $\Omega$	$\pm 1.5^\circ\text{C}$
<b>ST-50-300</b> (100 $\mu$ m element wire)	0.08sec	41 $\Omega$	$\pm 1.5^\circ\text{C}$
<b>ST-50-500</b> (100 $\mu$ m element wire)	0.08sec	66 $\Omega$	$\pm 1.5^\circ\text{C}$
<b>ST-50B</b> (50 $\mu$ m element wire)	0.03sec	51 $\Omega$	$\pm 1.3^\circ\text{C}$
<b>ST-50B-100-D</b> (100 $\mu$ m element wire)	0.03sec	17 $\Omega$	$\pm 1.5^\circ\text{C}$
<b>ST-50B-300</b> (100 $\mu$ m element wire)	0.03sec	41 $\Omega$	$\pm 1.5^\circ\text{C}$
<b>ST-50B-500</b> (100 $\mu$ m element wire)	0.03sec	66 $\Omega$	$\pm 1.5^\circ\text{C}$

\*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)

50 $\mu$ m element wire type : 0.4sec
100 $\mu$ m element wire type : 0.9sec





Standard non-woven glass fabric (glass fiber) type. 100mm/300mm/500mm types are available.

- For a 100mm long thermocouple wire type, available diameter is either 50µm or 100µm.
- For 300mm or 500mm long thermocouple wire types, available diameter is only 100µm.

Thin polyimide resin type (0.13mm thickness) Low dust emission allows for a clean operating environment.

- Please consult with our local distributors for either 300mm or 500mm type requirement

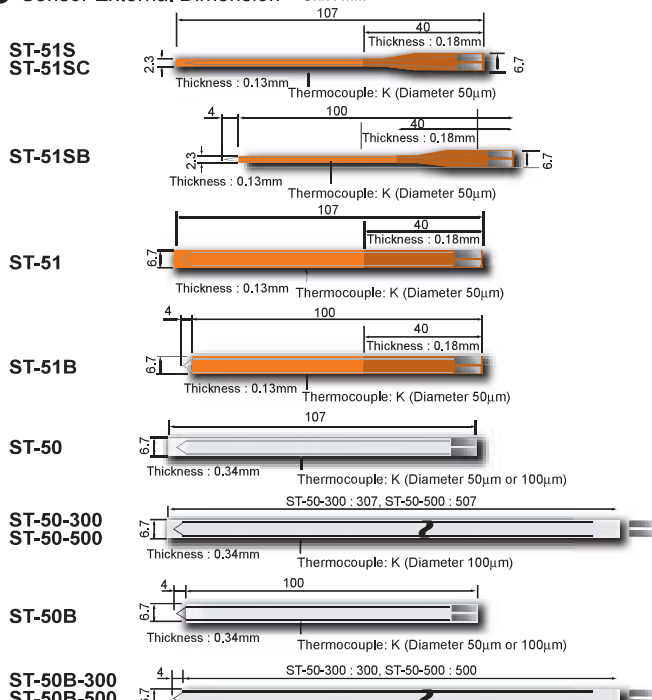
■ Connector Cable Specifications

Connector material	PPS resin
Connector Max. temperature	230°C
Cable	ø3.3 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)

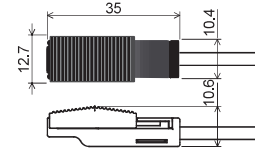
■ Sensor Specifications

Sheet Material	ST-50/50B : Glass cloth base sheet ST-51/51S/51B : Polyimide sheet
Operating Temperature	ST-51S/51SC/51SB : -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"> <li>• Up to 150°C: Can be stuck and peeled off repeatedly.</li> <li>• Up to 200°C: Can be stuck and peeled off repeatedly under the condition that the temperature is not lowered below 150°C.</li> <li>• Up to 250°C: Can be stuck and peeled off repeatedly under the condition that the temperature is not lowered below 200°C.</li> <li>• More than 250°C: Adhesive will burn and harden. Depending upon the environment, the number of times the adhesive can be reused is limited.</li> </ul>
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/51SC/51SB/51B : 0.13mm
Element wire diameter	ST-50/50B : 50µm/100µm (100mm Type) 100µm (300/500mm Type) ST-51/51S/51SC/51SB/51B : 50µm
Insulation resistance (ST-51SC)	More than 10MΩ at 500V DC
Dielectric voltage (ST-51SC)	500V AC for one minute.

● Sensor External Dimension Unit : mm



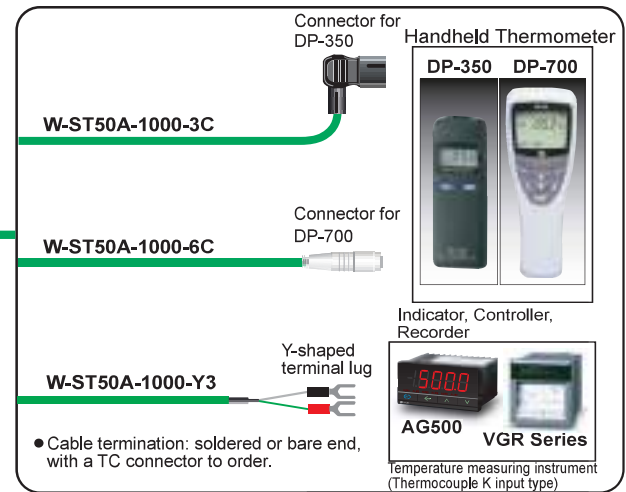
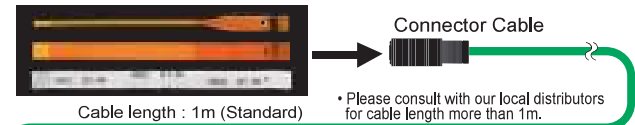
● Connector External Dimension Unit : mm



■ Connector Cable Model Code

- A dedicated connecting cable is necessary for use with ST-50/51/50B/51B sensors. (Sold separately)

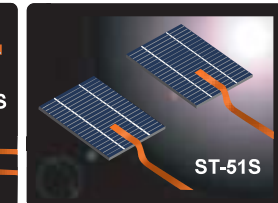
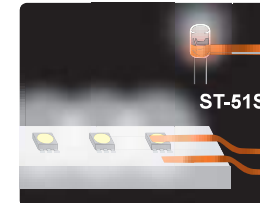
ST-50/51/51S/50B/51B



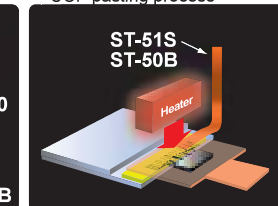
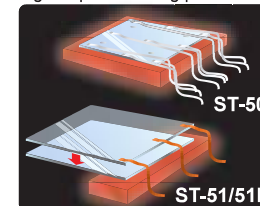
- Cable termination: soldered or bare end, with a TC connector to order.

● 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





**JB-150**  
**JB-16**

For Semi-solid, Viscous Material and Liquids

For General Purpose

**JB-150-K-□-1000-□□□**

- No symbol : No case
- \*L : With case
- /F : Silicon rubber coated cable (Green)
- 3C : Connector for DP-350
- 6C : Connector for DP-700
- 1000 : Cable length 1m
- \* Please contact distributors for cable length more than 1m.
- 50 : Protection tube 50mm
- K : Thermocouple K

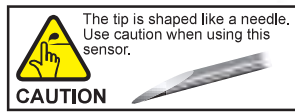
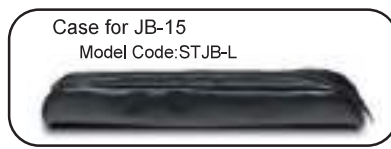
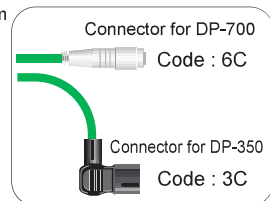
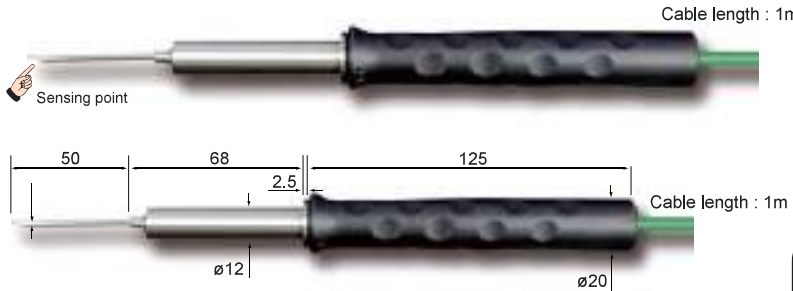


• A needle type temperature sensor. Its needle shaped protection tube tip can be stuck into a semi-solid object.



	Response of 90%	Resistance value (With cable 1m)
JB-150	0,6 sec (Boiling Water)	11Ω
Accuracy		
Less than 333°C : ±2.5°C		
More than 333°C : ±0.0075· t  (t=Measured temperature)		

**JB-150** Max. 400°C

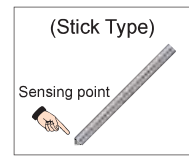


**JB-16-K-□-□-1000-□□□**

- No symbol : No case
- \*K : With case (Fits only for a sensor with 100mm protection tube and 1m lead wire.)
- /A : Silicon rubber coated cable (Blue) Standard type
- /C : Spiral cable
- 3C : Connector for DP-350
- 6C : Connector for DP-700
- 1000 : Cable length 1m
- \* Please contact distributors for cable length more than 1m.
- 100: Protection tube 100mm (Standard)
- \* Please contact distributors for protection tube more than 100mm.
- 1.6 : Protection tube diameter : ø1,6 (\*)
- 3.2 : Protection tube diameter : ø3,2 (\*)
- K : Thermocouple K



This is a stick type temperature sensor for internal temperature measurement of the object. This sensor can be dipped into liquids or stuck into a semi-solid objects.

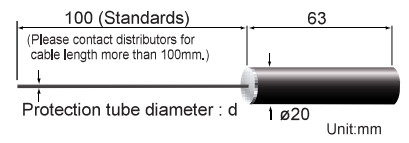
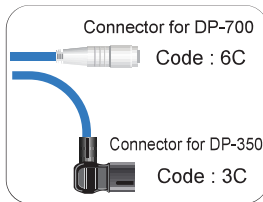
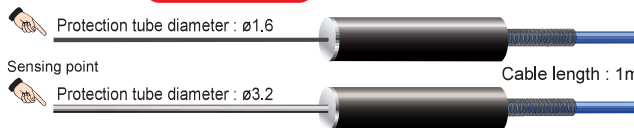


JB-16	Response of 95%	Response of 63% (Time constant)
ø1.6	1,00 sec (Boiling Water)	0,15sec (Boiling Water)
ø3.2	2,50 sec (Boiling Water)	0,50sec (Boiling Water)
JB-16 Resistance value (With cable 1m)		
ø1.6	3.9Ω	
ø3.2	1.7Ω	
Accuracy		
Less than 333°C : ±2.5°C		
More than 333°C : ±0.0075· t		

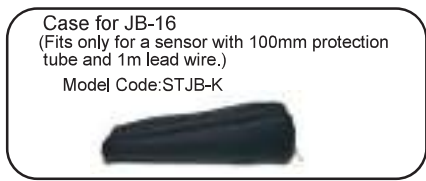
(\*) Available with sheath diameter of 1.0mm/2.3mm/4.8mm/6.4mm.

**JB-16** Max. 650°C : ø1.6

Sensing point Max. 750°C : ø3.2



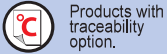
Nicrobell sheathed type is also available. Recommended for frequent measurement of high temperature objects. Please consult with our local distributors.



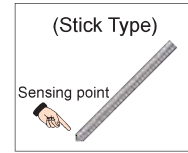
# JB-160-K-□-□-1000-□□□

• Dimpled handle for easy grip with or without gloves.

- No symbol : No case
- \*L : With case
- /F : Silicon rubber coated cable (Green) Standard type
- 3C : Connector for DP-350
- 6C : Connector for DP-700
- 1000 : Cable length 1m  
\* Please contact distributors for cable length more than 1m.
- 100: Protection tube 100mm
- 150: Protection tube 150mm
- 1.6 : Protection tube diameter :  $\phi 1.6$
- 3.2 : Protection tube diameter :  $\phi 3.2$
- K : Thermocouple K

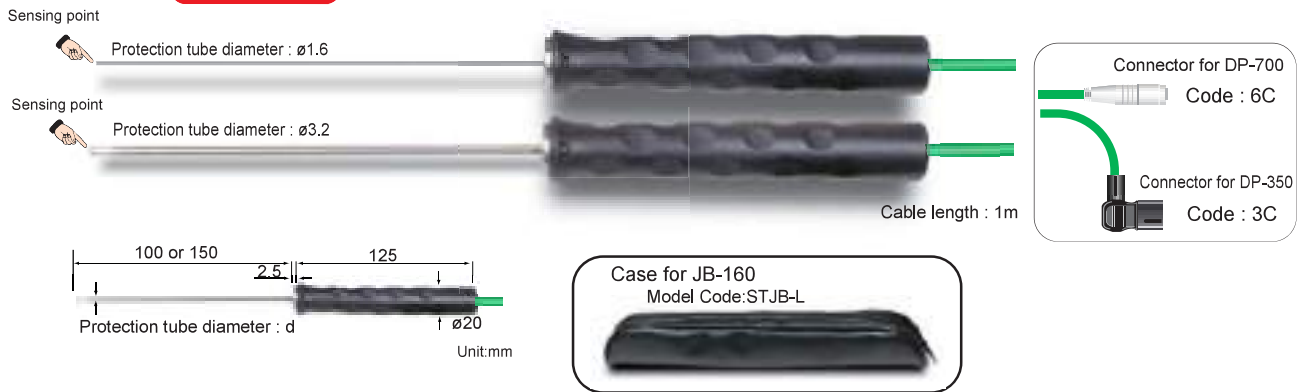


Products with traceability option.



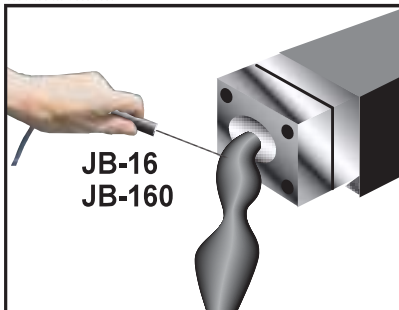
JB-160	Response of 90%	Resistance value (With cable 1m)	Accuracy
$\phi 1.6$	0.7 sec (Boiling Water)	12 $\Omega$	Less than 333°C : $\pm 2.5^{\circ}\text{C}$ More than 333°C : $\pm 0.0075 \cdot  t $
$\phi 3.2$	1.4 sec (Boiling Water)	9 $\Omega$	

**JB-160** Max. 650°C :  $\phi 1.6$   
Max. 750°C :  $\phi 3.2$

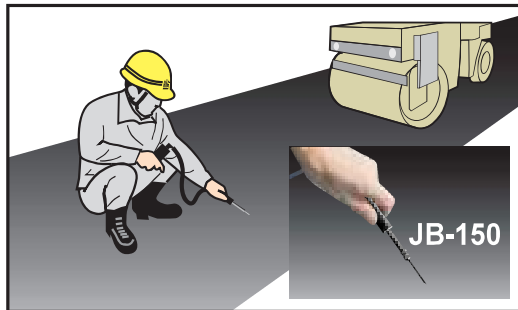


## ● Applications

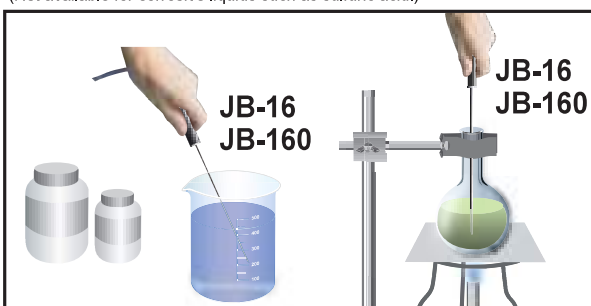
Extrusion molding machine outlet resin temperature measurement



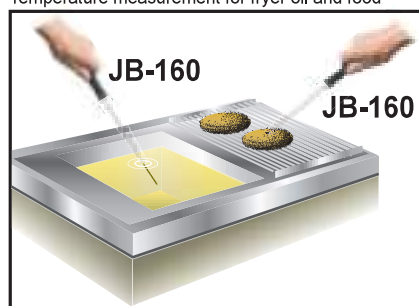
Internal temperature measurement of asphalt during road paving



Reaction temperature measurement of chemical solutions.  
(Not available for corrosive liquids such as sulfuric acid.)



Temperature measurement for fryer oil and food



**JB-703**  
**JB-704**

For Semi-solid, Viscous Material and Liquids

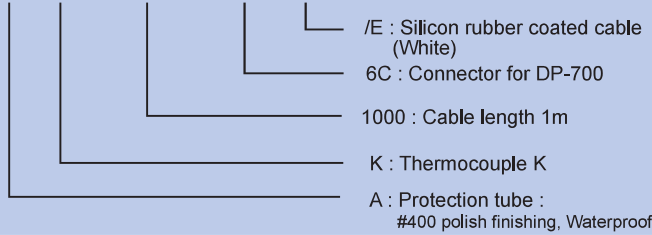
For Producing Foods

**JB-703 A-K-1000-6C/E**

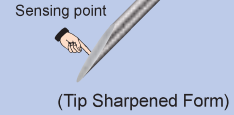
For DP-700

(Tip Sharpened Form)

- Waterproof
- #400 polish finishing
- Products with traceability option.



**JB-703**



**JB-703** Max. 400°C



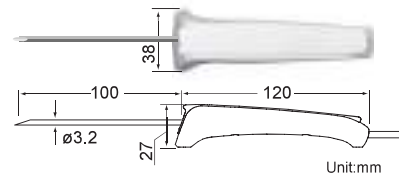
Sensing point

(Tip Sharpened Form, Polish Finishing)



- A stick type temperature sensor for food and general use. Exclusively designed for use with our DP-700. Its protecting tube is buff finished.
- IP67 waterproof structure. The sensor and DP-700 when connected together can be washed with water.
- JB-703, having a needle shaped protection tube tip, allows for insertion into a relatively solid object.

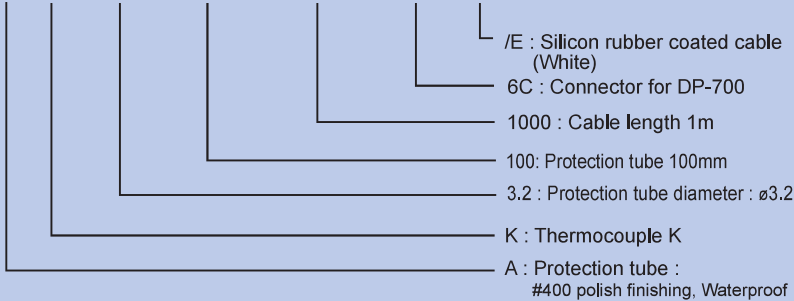
	Response of 90%	Resistance value (With cable 1m)
<b>JB-703</b>	1.1 sec (Boiling Water)	7.6Ω
Accuracy		
Less than 333°C : ±2.5°C More than 333°C : ±0.0075· t  (t=Measured temperature)		



**JB-704 A-K-3.2-100-1000-6C/E**

For DP-700

- Waterproof
- #400 polish finishing
- Products with traceability option.



**JB-704**



**JB-704** Max. 400°C

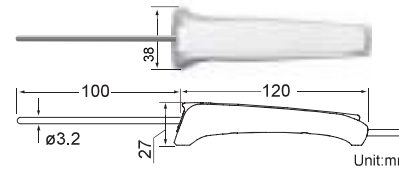


Sensing point

(Polish Finishing)

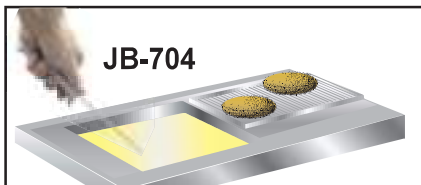
- A stick type temperature sensor for food and general use. Exclusively designed for use with our DP-700. Its protecting tube is buff finished.
- IP67 waterproof structure. The sensor and DP-700 when connected together can be washed with water.

	Response of 90%	Resistance value (With cable 1m)
<b>JB-704</b>	1.9 sec (Boiling Water)	18.5Ω
Accuracy		
Less than 333°C : ±2.5°C More than 333°C : ±0.0075· t  (t=Measured temperature)		

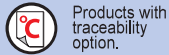


Attachable at the back of DP-700.  
Measurement can be done with one hand.

**Applications**



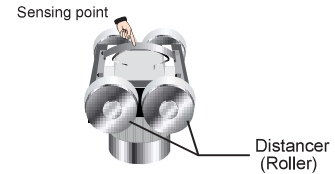
## ST-41-K-1000-□□



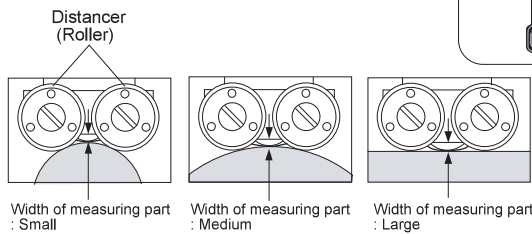
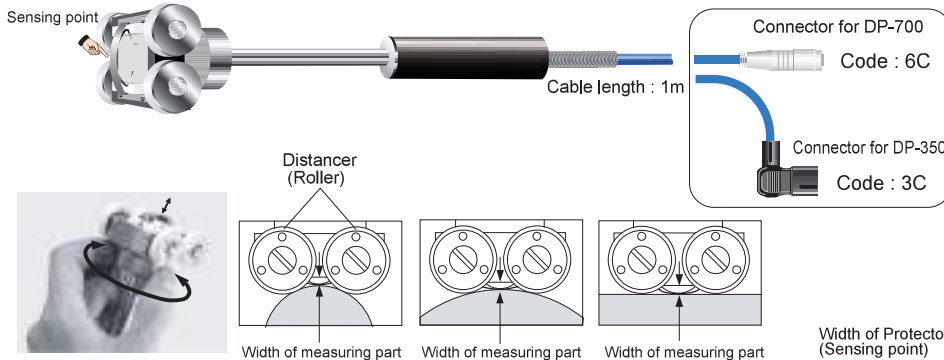
Products with traceability option.

- /A : Silicon rubber coated cable (Blue) Standard type
- /C : Spiral cable
- 3C : Connector for DP-350
- 6C : Connector for DP-700
- 1000 : Cable length 1m
- \* Please contact distributors for cable length more than 1m.
- K : Thermocouple K

- Optimum contact pressure is obtained with the distances for stable and accurate temperature measurement.
- The measuring part adjusts to fit the surface of the item to be measured.



### ST-41 Max. 300°C

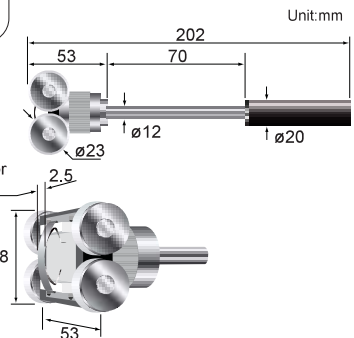


The measuring part is adjusts to fit the surface of the item to be measured.

	Response of 95%	Response of 63% (Time constant)	Resistance value (With cable 1m)
ST-41	0.7 sec (Metal Surface)	0.3 sec (Metal Surface)	1.6Ω

Accuracy (*)	Error due to frictional heat
±0.3%±1°C	Less than 1°C (Metal Roller Speed : 700mm/sec)

(\*) : Accuracy when temperature on copper metal surface is 100°C.



## ST-44-K-1000-□□

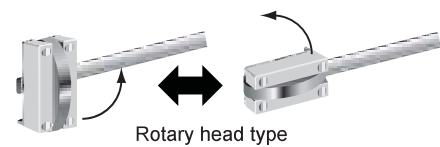
(Rotary head type)



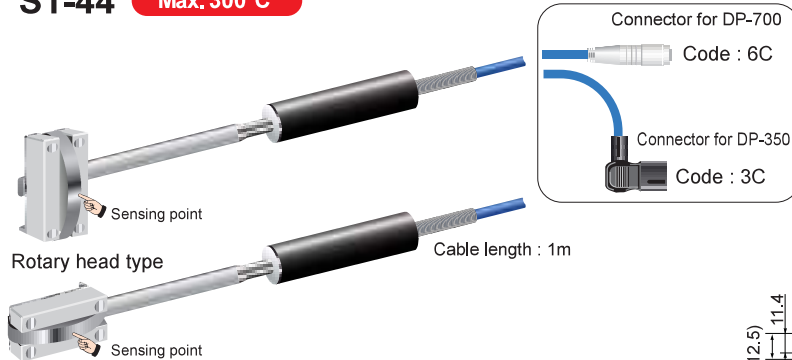
Products with traceability option.

- /A : Silicon rubber coated cable (Blue) Standard type
- /C : Spiral cable
- 3C : Connector for DP-350
- 6C : Connector for DP-700
- 1000 : Cable length 1m
- \* Please contact distributors for cable length more than 1m.
- K : Thermocouple K

- Swivel head sensor to cope with roller movement at different directions.
- Teflon resin head is applied. This temperature sensor is for rolling and moving objects and gives minimal damage to the other parts of measured objects.



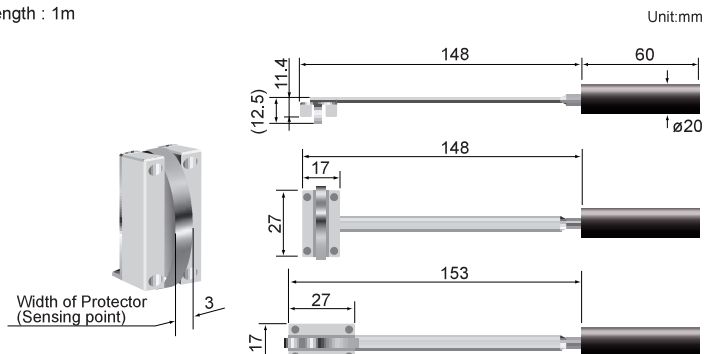
### ST-44 Max. 300°C



	Response of 95%	Response of 63% (Time constant)	Resistance value (With cable 1m)
ST-44	0.7 sec (Metal Surface)	0.2 sec (Metal Surface)	23Ω

Accuracy (*)	Error due to frictional heat
±0.3%±1°C	Less than 2°C (Metal Roller Speed : 700mm/sec)

(\*) : Accuracy when temperature on copper metal surface is 100°C.



**ST-36**  
**ST-37**

For Roller and Moving Objects

For Roller

**ST-36-K-1000-□□**

- /A : Silicon rubber coated cable (Blue) Standard type
- /C : Spiral cable
- 3C : Connector for DP-350
- 6C : Connector for DP-700

- 1000 : Cable length 1m
- \* Please contact distributors for cable length more than 1m.
- K : Thermocouple K

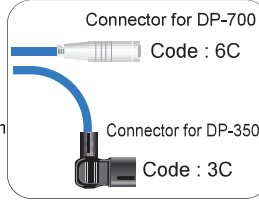
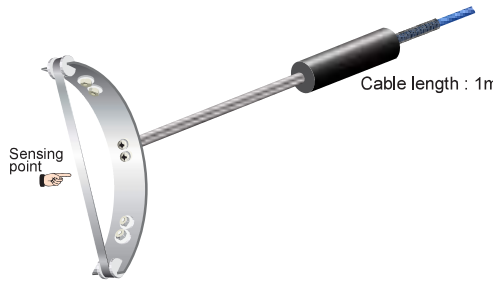


- An arc-shaped sensor is placed in contact with the roller surface of the object to measure surface temperature of the roller.
- Can be used for roller surface of various size (more than ø60mm diameter)



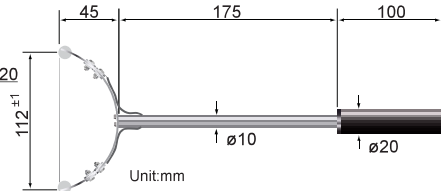
	Response of 95%	Response of 63% (Time constant)	Resistance value (With cable 1m)
ST-36	1.7 sec (Metal Surface)	0.4 sec (Metal Surface)	1.9Ω

**ST-36** Max. 300°C



Accuracy (*)	Error due to frictional heat
±0.5%±1°C	Less than 2°C (Metal Roller Speed : 700mm/sec)

(\*) : Accuracy when temperature on copper metal surface is 100°C.



**ST-37-K-1000-□□**

- /A : Silicon rubber coated cable (Blue) Standard type
- /C : Spiral cable
- 3C : Connector for DP-350
- 6C : Connector for DP-700

- 1000 : Cable length 1m
- \* Please contact distributors for cable length more than 1m.
- K : Thermocouple K

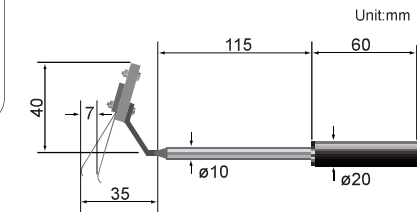
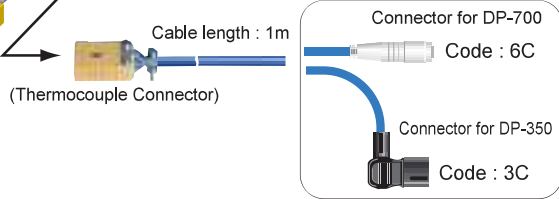
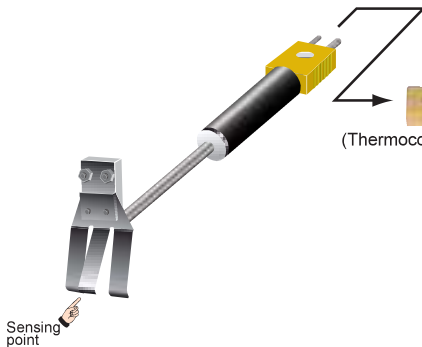


- Spring type temperature sensor of roller surface.
- Temperature measurement of moving and rolling objects.



	Response of 95%	Response of 63% (Time constant)	Resistance value (With cable 1m)
ST-37	2.2 sec (Metal Surface)	0.4 sec (Metal Surface)	4.0Ω

**ST-37** Max. 300°C

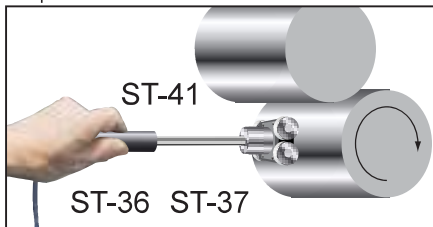


Accuracy (*)	Error due to frictional heat
±2%±1°C	Less than 1°C (Metal Roller Speed : 700mm/sec)

(\*) : Accuracy when temperature on copper metal surface is 100°C.

**Applications**

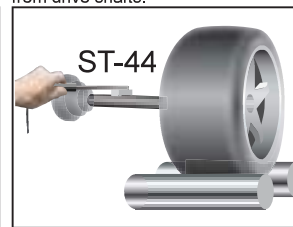
Temperature measurement of roller surface.



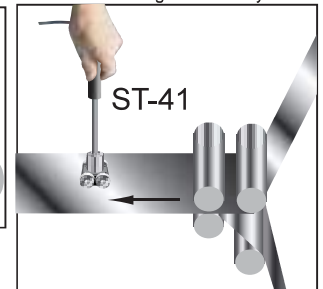
Temperature measurement of roller surface.



Measurement of heat generation from drive shafts.



Surface temperature measurement of steel sheet moving on a conveyor





Contact / Non-Contact Type (Installation Type)

If the moving/rolling objects are too fast to measure with a handheld sensor, a fixed type surface temperature measurement sensor (JBS-3898) is recommended.  
To reduce friction heat influence, ST-100 (for metallic surface) or ST-100K (for insulated surface) is recommended

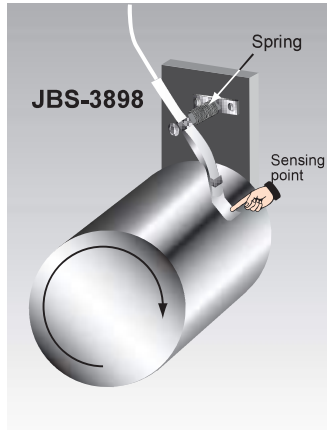
Only spade lug (Y-shaped lug) is available for lead wire terminal. Please use it with panel mount type indicators.

Contact type

Temperature Sensors  
For Rotating / Moving Surface  
**JBS-3898** Max. 300°C



• Right and left rolling types are available.



Panel Mounting Type Indicator

High Performance Indicator with Alarm  
**AG500**  
96×48×60mm (W×H×D)



Indicator with Alarm  
**AE500**  
96×48×100mm (W×H×D)



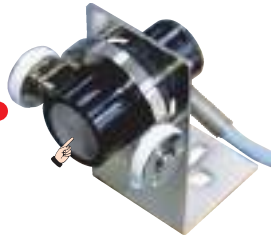
A table-top box is also available. This can be easily set up for use.



For Metal Surface, Non-Contact Type

Temperature Sensors  
For Rotating / Moving Surface

**ST-100**  
Max. 300°C



Non-contact temperature measurement of a shiny object surface is also possible. (with ST100 only)

Interconnected triple temperature sensing elements enable surface temperature measurement of shiny metallic object, which was not possible with an infrared pyrometer.

Moreover, it can be connected to an indicator and a controller for K type thermocouple since output characteristics are similar to traditional contact-type thermocouple

Keep a constant distance between the sensor and the measured object. Otherwise, measured values will change according to the change in the distance.

For Insulator surface, Non-Contact Type

Temperature Sensors  
For Rotating / Moving Surface

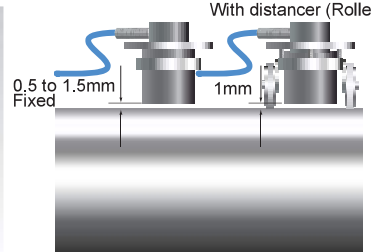
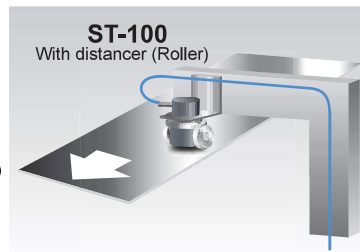
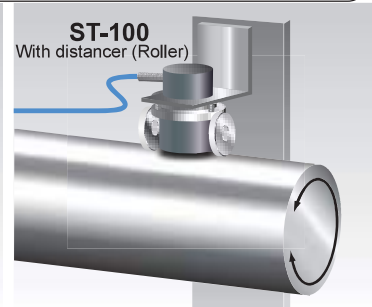
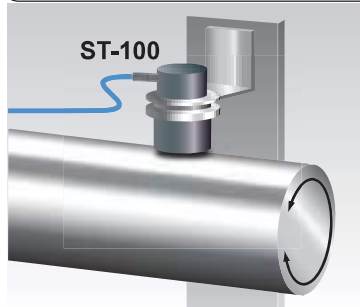
**ST-100K**  
Max. 260°C



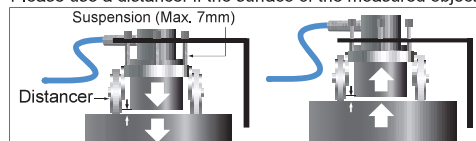
Sensing point

ST-100K is not designed for metal surface temperature measurement.

Measuring method : Non-contact  
Measuring element : Thermocouple K  
Element wire diameter : 0.08mm (ST-100)  
0.076mm (ST-100K)  
Measuring range : Ambient temperature to 300°C (ST-100)  
Ambient temperature to 260°C (ST-100K)  
Response time : Approx.30 sec (Response of 98%)  
Measuring accuracy : a) ST-100  
Within ±3°C (at 200°C)  
\* When output is adjusted in the middle of the measuring range.  
b) ST-100K  
Within ±2°C  
(Ambient temperature to 150°C)  
Within ±5°C (150 to 260°C)  
Measuring distance : a) ST-100 0.5 to 1.5mm  
Keep a certain distance when measuring.  
(1mm when it is with distancer)  
b) ST-100K 0.5mm (Fixed)  
Output signal : Thermocouple K output  
Lead wire : ST-100 : φ6 Silicone rubber protection lead (KX type, 3m)  
ST-100K : Fiberglass  
Output impedance : 50Ω (ST-100), 15.4Ω (ST-100K)



Please use a distancer if the surface of the measured object moves up and down.



Please refer to a separate catalog for more details.

**ST-43**

For Roller and Moving Objects

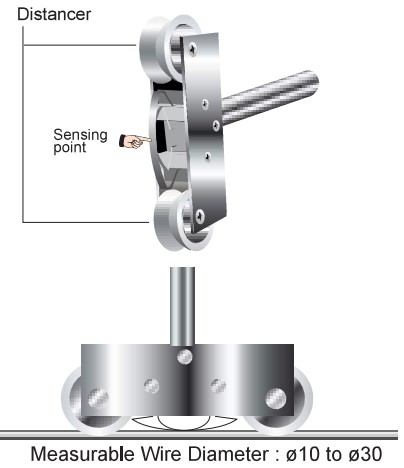
For Moving Wire

**ST-43-K-1000-□□\*□**

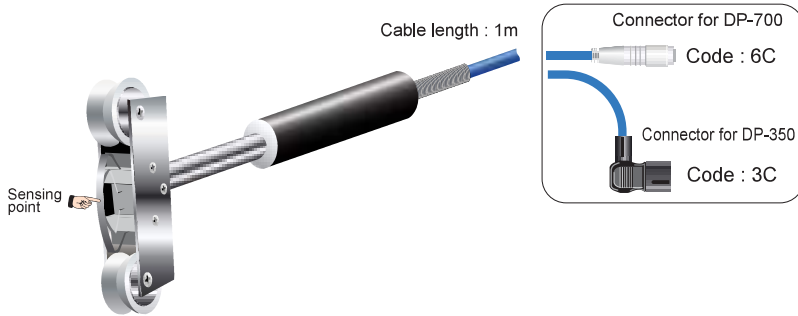
- P3 : Protector width 3mm
- P4 : Protector width 4mm
- /A : Silicon rubber coated cable (Blue) Standard type
- /C : Spiral cable
- 3C : Connector for DP-350
- 6C : Connector for DP-700
- 1000 : Cable length 1m
- Please contact distributors for cable length more than 1m.
- K : Thermocouple K



• Distancers are installed. They maintain appropriate distance between the sensors and the measured objects, and realize accurate and steady temperature measurement.



**ST-43** Max. 300°C

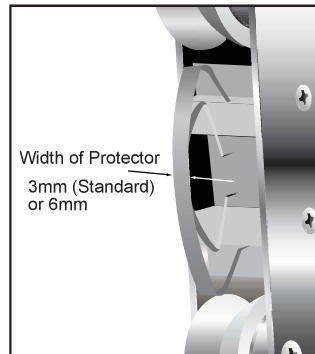
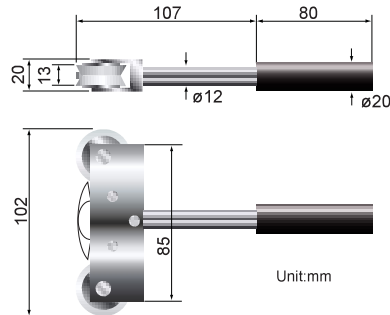
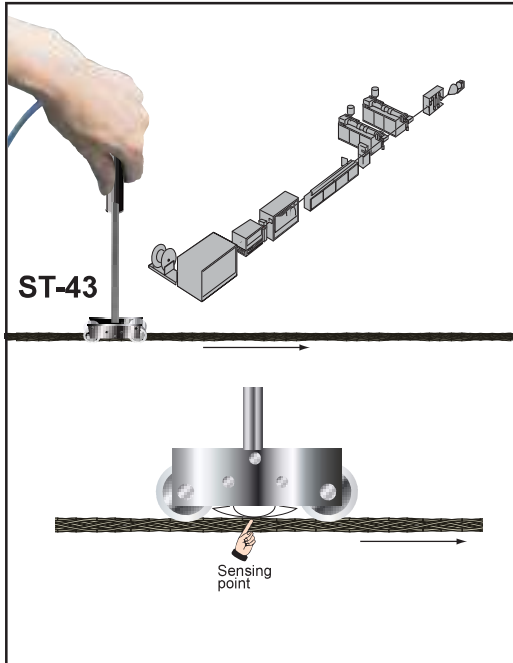


	Response of 95% (Metal Surface)	Response of 63% (Time constant) (Metal Surface)	Resistance value (With cable 1m)
<b>ST-43</b>	1.0 sec	0.3 sec	1.6Ω

Accuracy (°)	Error due to frictional heat
±0.5%±1°C	Less than 1°C (Metal Roller Speed : 700mm/sec)

(\*) : Accuracy when temperature on copper metal surface is 100°C.

Preliminary heat measurement in the wire extrusion process



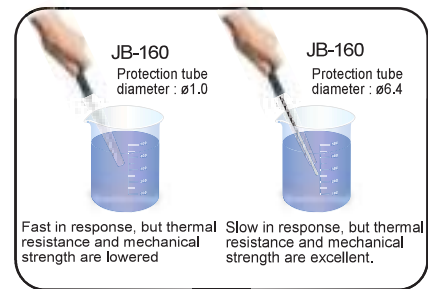
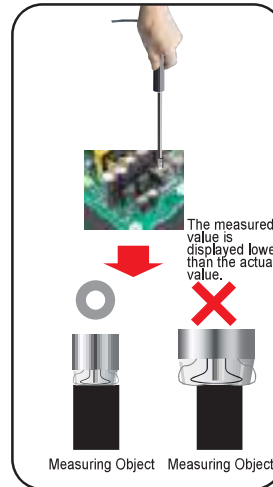
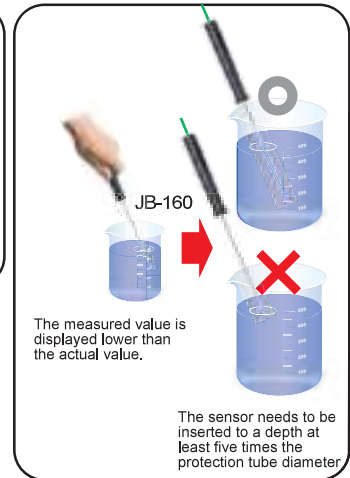
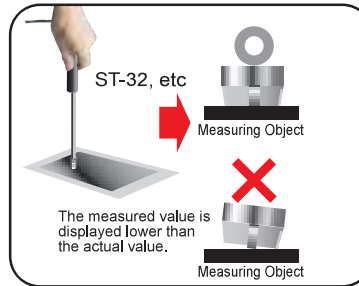


# Supplemental information

Measurement error and response	20
Precautions for Temperature Sensor	21
Traceability	
Test and Calibration	22
Calibration temperature ranges for each temperature sensor	23
Plug, Connecting terminal, Cable	24
Discontinued models and Replacements	25

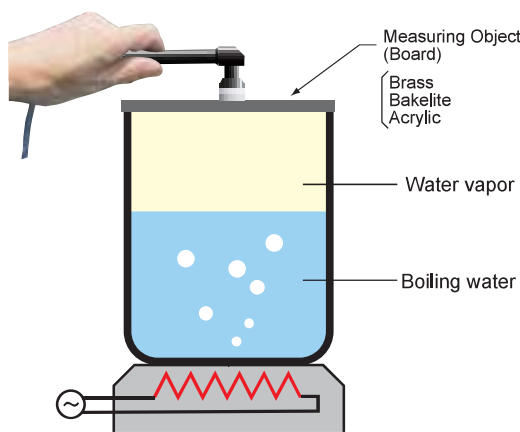
In the contact temperature measurement method, it is very important to keep the sensor in full contact with the object being measured. Read the values only after both temperatures equal each other. Occasionally you will find that the measured value is lower than the actual value or that the sensor response time is slow. In the case of the former, a lower measured value against the actual often occurs when the sensor and the measured object are loosely connected. Tightening the connection generally solves the problem.

With regard to response time, the sensor is usually the issue. The sensor can be replaced with another type that offers faster responses. This will often solve the problem. On the other hand, using sensors with faster response times can sometimes sacrifice mechanical strength and heat resistance capability which can cause a problem as well. In order to measure temperature quickly and accurately, it is most important to select the proper sensor to fit the application.



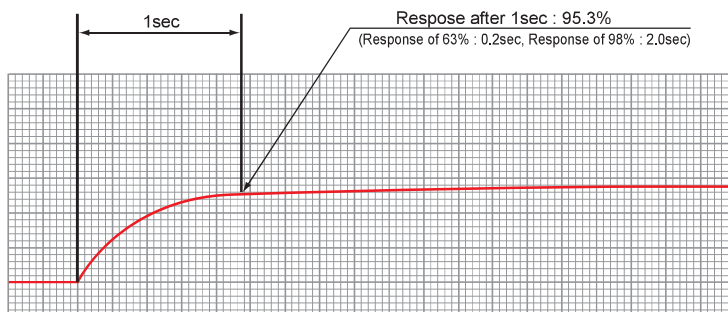
● Indication speed is largely affected by the material of the measured object

The response is determined by the material of the measured object. The higher the thermal conductivity, the faster the response. The table shows test data on "the relation between the indication speed and the material of the measured object." The test data was obtained as illustrated in the picture. In this test setup, water is boiled and the temperature of the object is measured as illustrated below.



Material	Measuring time	Response (%)	Measuring time	Response (%)	Measuring time	Response (%)	Measuring time	Response (%)		
Brass t=1	1sec	95.3	2sec	98.0	3sec	98.5	10sec	99.2		
	Bakelite Primary color t=5	6sec	92.7	10sec	95.0	14sec	95.7	16sec	96.2	
		Bakelite Black t=5	15sec	91.9	30sec	92.5	60sec	93.6	180sec	96.4
			Acrylic Transparency t=5	15sec	90.3	30sec	92.4	60sec	93.8	180sec

● Response



## Precautions for Temperature Sensor



### High Temperature Caution

Immediately after the temperature measurement, the measuring part of the sensor (head or tip) may be hot. Do not touch the measuring part soon after the measurement. Likewise, do not touch the measuring part soon after measuring low temperatures. If the surface is too cold and you may be injured.. Please wait until temperature returns to ambient temperature.

### ● Temperature Sensors for Stationary Surface

1. Measurement errors caused by position

Place the sensor head vertically in contact with the measured object or Error may be observed.

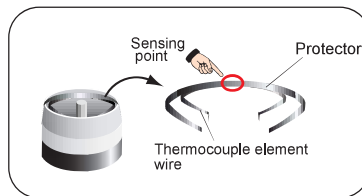
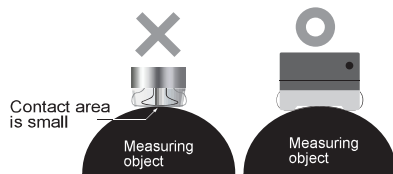
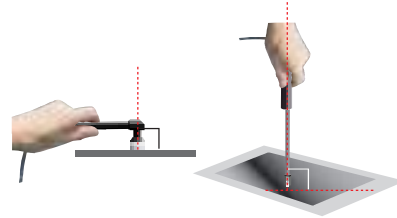
2. Stains on the surface of the measuring part

Stains or rusts on the measuring object may cause measurement errors.

3. Shape and size of the object

Basically, the measuring part should be bigger than the sensors' head. Objects smaller than the head may lose temperature to the protector and the head and measurement errors may occur.

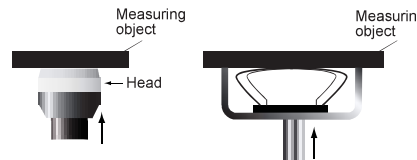
If there is unevenness on the object surface, measurement errors may occur because of the gap between the object and the measuring point (protector) or the insufficient contact between them. To avoid such errors, please select a sensor for measuring tiny objects or a sensor for rotating/moving items.



4. Contact pressure

Each sensor has a stopper to prevent damage to the guide and measuring part.

Place the sensor on the measured surface so that the guide is firmly in contact with the measured objects.



5. Other precautions

The sensor may be damaged if shifted horizontally or rotated during measurement.

Sensors may be damaged if used above the maximum operating temperature.

If the sensor is kept in contact with an object over a long period of time, used on a curved surface such as a roller, or pressed with a load exceeding the normal load range, a mark may be left on the measurement surface.

### ● Temperature Sensors for Rotating / Moving Surface

1. For curved and moving surface

Please choose a suitable sensor for measuring curved and moving surface. Use of unsuitable sensor may cause not only measurement errors but also damage to the sensor itself

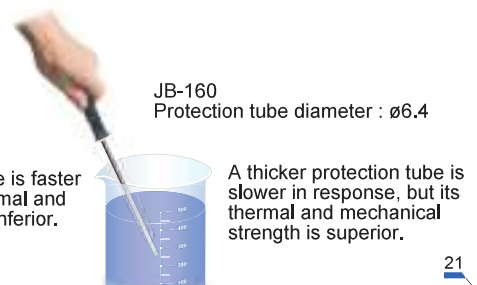
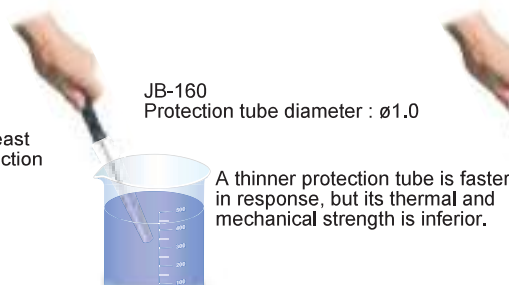
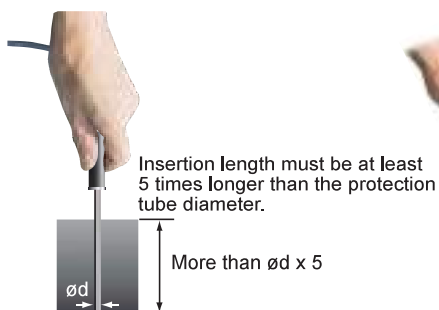
2. For fast moving and rotating measured objects

Fixed type sensor for a moving and rotating object is available. (Model code: JBS-3898) If the surface of the measured object is rough, friction heat may affect the accuracy. Please try to use this sensor for an object with a smooth surface.

If frictional heat is critical, a non-contact type thermocouple (Model ST-100) is available.

### ● Temperature Sensors for Semi-solid and Liquid

Sensors designed for measuring the internal temperature of liquid and semi-solid objects cannot be used for solid surface measurement. Temperature is measured at the tip of the protection tube, which needs to be inserted at least five times deeper than the protection tube diameter. A thinner protection tube is faster in response, but its thermal and mechanical strength is inferior. On the contrary, a thicker protection tube is slower in response, but its thermal and mechanical strength is superior.



Traceability certifies that the calibration/measuring equipment used in manufacturing is also calibrated and meet national standards.

● Structure of traceability documents

Traceability documents consist of 1. Traceability system chart, 2. Test report of Reference standards equipment, 3. Test report of Intermediate standards equipment, 4. Test report of Working standards equipment, and 5. Test report of the product.  
A set of traceability documents consists of all of the above documents (1-4) except for the test report of the product (5).

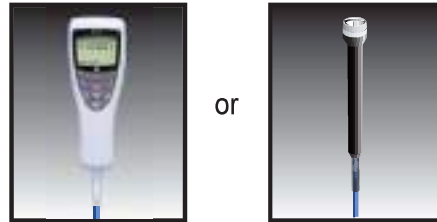
Testing and Calibration

● Testing and calibration of temperature sensor or indicator

We will test and calibrate either a specified temperature sensor or a specified indicator.

Temperature sensors are tested and calibrated using our calibration system, water baths, hot plate, etc., in comparison to the actual temperature.

For a temperature indicator, the output from the reference standard is given to the indicator for test and measurement in comparison with the actual temperature value.



● Testing and Calibration for a set of sensor and indicator

We will test and calibrate a specified temperature sensor and a specified indicator together as a set.

Test and calibration methods are the same as the case for the sensor. If you just need a certificate for the indicator only, we will prepare it as an option.



● A set of sensor and indicator received from a customer.

At our lab we can test and calibrate the temperature sensor and the indicator now in use at a customer's site. Methods of testing and calibration for the above are similar to that of a set of a sensor and a indicator

- Repair and/or calibration fee(s) may be charged.
- We may be able to conduct testing and calibration for products other than ours. Please consult with us for availability.



● Documents

Traceability documents

1. Traceability system chart
2. Test report of Reference standards equipment
3. Test report of Intermediate standards equipment
4. Test report of Working standards equipment (Attached if necessary)

■ Individual Documents

- Traceability system chart
- Test report of Reference standards equipment
- Calibration Certificate

Indicator Test Report



DP-350 Calibration temperature points (°C)  
-190.0, 0.0, 600, 1190°C (4 points)

Calibration temperature points not on the below chart are available. (please specify when ordering.)



DP-700 Calibration temperature points (°C)  
-190.0, -100.0, 0.0, 400.0, 800.0, 1000, 1300 (7 points)

Calibration temperature points not on the below chart are available. (please specify when ordering.)

Temperature Sensor Test Report

Calibration temperature points (°C) : See page 23

Test Report for a set of sensor and indicator

Calibration temperature points (°C) : See page 23

Traceability

Calibration Temperature Range

Model Code	Max. Operating Temperature	Calibration Temperature Range (°C)	Standard Calibration Temperature (3 points) <sup>*3</sup>
JB-150 <sup>*1</sup>	400	- 40 to 400	100, 200, 300°C
JB-16 <sup>*1, *2</sup>	750(ø3.2)	- 40 to 400	100, 200, 300°C
JB-160 <sup>*1, *2</sup>	750(ø3.2)	- 40 to 400	100, 200, 300°C
JB-703 <sup>*1</sup>	400	- 40 to 400	100, 200, 300°C
JB-704 <sup>*1</sup>	400	- 40 to 400	100, 200, 300°C
ST-23	300	30 to 300	100, 200, 300°C
ST-23L	300	30 to 300	100, 200, 300°C
ST-230	300	30 to 300	100, 200, 300°C
ST-230L	300	30 to 300	100, 200, 300°C
ST-29	800	30 to 500	100, 200, 300°C
ST-29L	800	30 to 500	100, 200, 300°C
ST-29H	1100	30 to 500	100, 200, 300°C
ST-29HL	1100	30 to 500	100, 200, 300°C
ST-30	300	30 to 300	100, 200, 300°C
ST-30L	300	30 to 300	100, 200, 300°C
ST-32	600	30 to 500	100, 200, 300°C
ST-32L	600	30 to 500	100, 200, 300°C
ST-36	300	30 to 300	100, 200, 300°C
ST-37	300	30 to 300	100, 200, 300°C
ST-41	300	30 to 300	100, 200, 300°C
ST-43	300	30 to 300	100, 200, 300°C
ST-44	300	30 to 300	100, 200, 300°C
ST-45L	300	30 to 300	50, 100, 150°C
ST-46	300	30 to 300	50, 100, 150°C
ST-46L	300	30 to 300	50, 100, 150°C

<sup>\*3</sup> : Calibration temperature points not on the below chart are available. (please specify when ordering.) (Without any specification, calibration temperature points are as on the chart.)

<sup>\*1</sup> : -70°C calibration temperature point is available.

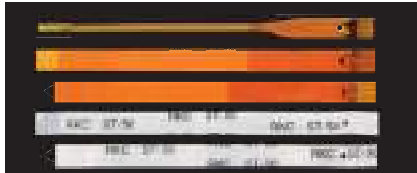
<sup>\*2</sup> : Please note that burns may be caused on the protection pipe for 800°C calibration temperature point for a sensor with ø6mm protection pipe.

**Caution**

For ST-50/ST-50B, and ST-51/ST-51S/ST-51B, traceability documents are is not available.

Tip Type Temperature Sensors

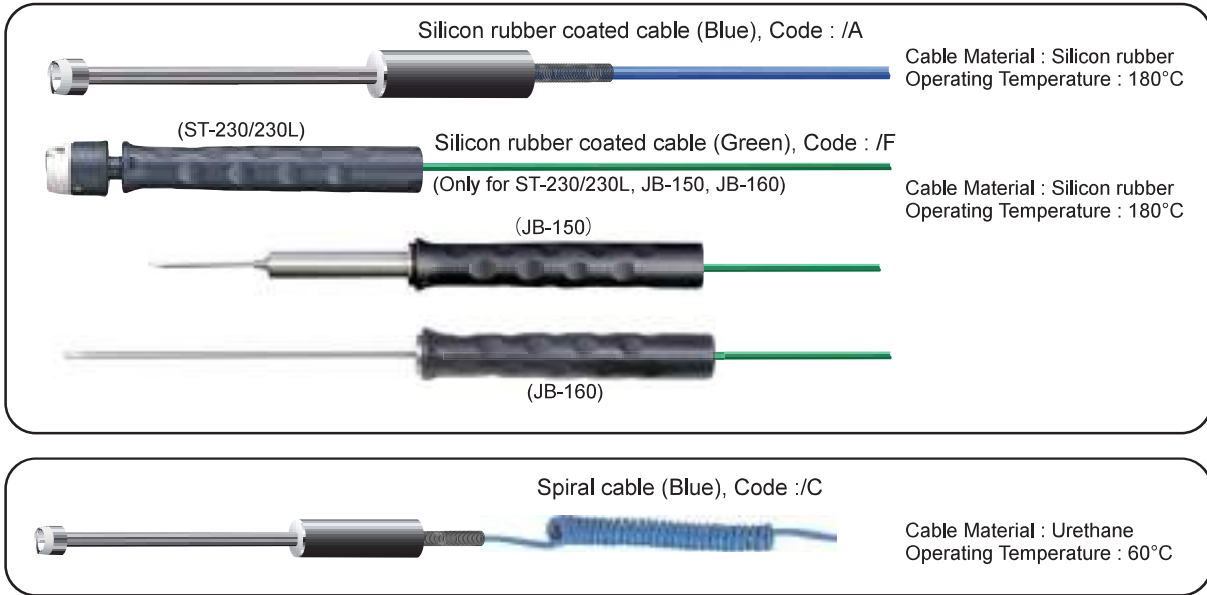
ST-50/50B  
ST-51/51S/51B



## Cable

● **Shape and material**

The standard sensor cable is straight, ø6mm, and blue silicon covered. (For ST-230/230L, JB-160 cable is straight, ø3.3mm, and green urethane covered.)  
 Spiral, ø3.5mm, and urethane covered type is also available. (Except some models)

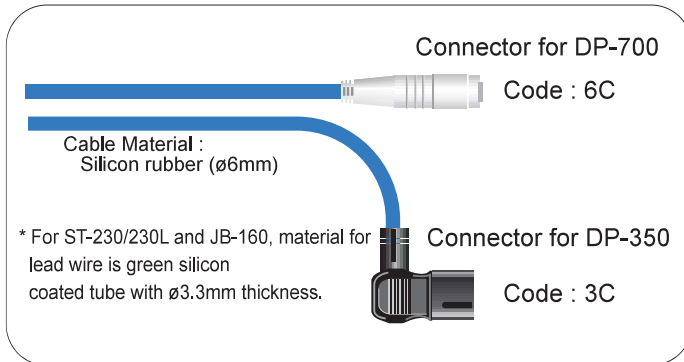


● **Cable length**


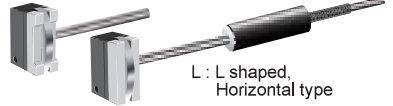
The standard cable length is 1 meter. If a cable longer than 1 meter is necessary, please contact with our local distributors.

## Connector and Terminal

Connecting plug for the handheld thermometer, 6C plug for DP-700 and 3C plug for DP-350, can be selected from the suffix code.

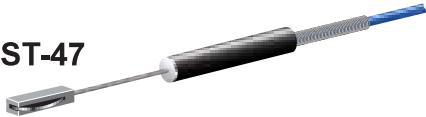


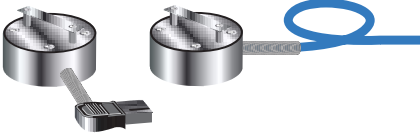


Discontinued Models and Models

Discontinued Models	Models
<p><b>JB-15</b></p>  <p>Final production date : MAR, 2019</p>	<p><b>JB-150</b></p> 
<p><b>ST-23</b></p>  <p><b>ST-23L</b></p>  <p>Final production date : NOV, 2016</p>	<p><b>ST-230</b> <b>ST-230L</b></p> 
<p><b>ST-31</b></p>  <p>A, B, C, D, E, F</p>  <p>Final production date : MAY, 2011</p>	<p><b>JB-16</b></p>  <p>Protection Tube Diameter : <math>\phi 1.6</math></p> <p><b>ST-230</b></p>  <p>Outer width of this head is 22mm. Unavailable for the measurement of the objects with less than <math>\phi 22</math>mm.</p> <p>A, B, E, F</p>  <p>No models</p> <p>For measurement of a tiny space, we recommend you to use our ST-50 and ST-55/56.</p>
<p><b>ST-42</b></p>  <p><b>ST-42LB</b></p> <p>L : L shaped, Vertical type</p>  <p><b>ST-42LA</b></p> <p>L : L shaped, Horizontal type</p>  <p>Final production date : MAY, 2011</p>	<p><b>ST-44</b></p>  <p>Rotary head type</p>



Discontinued Models and Models

Discontinued Models	Models
<p><b>ST-47</b></p>  <p>Final production date : MAY. 2011</p>	<p><b>ST-30L</b></p>  <p>• Height of this head is 18mm. Measurement is impossible when the gap is less than 20mm.</p> <p><b>ST-44</b> Rotary head type</p>  <p>• Height of this head is 12.5mm. Measurement is impossible when the gap is less than 14mm.</p>
<p><b>ST-91B</b>      <b>ST-91A</b></p>  <p>Final production date : MAY. 2011</p>	<p>No models</p>

# Handheld Thermometer

## Handheld Thermometer DP-700



• Temperature sensor is separate.

The DP-700 is a high accuracy thermometer with powerful functions, such as data logging, USB connection, peak high and low temperatures, burnout (broken sensor) display, remaining battery service display and automatic power off. The variety of functions supports managing temperature data efficiently.

Model Code :  
**DP-700A/E**

No USB

- Data Logging : 99 logs
- Waterproof/Dustproof : IP67

Accessories : LR6 (IEC and JIS) Alkaline battery, Strap

Model Code :  
**DP-700B/E**

With USB

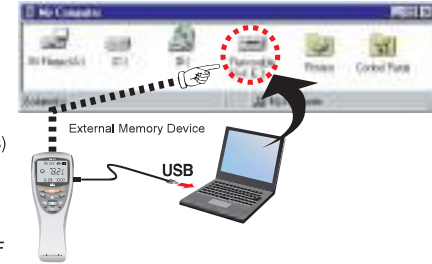
- Data Logging : 9999 logs
- Waterproof/Dustproof : IP54

Accessories : LR6 (IEC and JIS) Alkaline battery, Strap, USB cable 1m

### Specifications

Measuring Accuracy :  $\pm(0.1\%$  of reading + 1 digit) or  $\pm 0.3^{\circ}\text{C}$  ( $\pm 0.6^{\circ}\text{F}$ )  
(Whichever is larger)  
Sampling Time : Approx. 0.5 sec.  
Display : Reflective FSTN LCD  
External Dimensions : 57 x 152 x 46mm (W x H x D)  
Power Supply : Type LR6 (based on IEC and JIS) alkaline battery,  
One battery  
Weight : Approx 150g  
Major Functions : Data logging (DP-700A : 99 logs, DP-700B : 9999 logs)  
Logging interval time : 0 (Manual log mode)  
1 to 3600 sec. (Auto log mode)  
USB function (Only for DP-700B)  
Tag number / User name registration  
High/Low limit alarm, PV bias, PV digital filter  
Peak high and low temperature, Automatic Power OFF  
Battery alarm

Easy to read and manage data with PC



By connecting DP-700B to USB port, a PC recognizes DP-700B as outside media.  
\* OS : Windows 7/8.1/10  
Measured data can be stored in the file in the CSV format.



## Handheld Thermometer DP-350



• Temperature sensor is separate.

The DP-350 is an economical thermometer with a wide temperature range and useful functions, such as measured value and peak hold, sensor burnout, battery alarm, and automatic power off.

Model Code :  
**DP-350C \*A**

Accessories : LR6 (IEC and JIS) Alkaline battery, Strap

### Specifications

Measuring Accuracy :  $\pm(0.2\%$  of indicated value + 1 digit) or  $\pm 2^{\circ}\text{C}$  ( $4^{\circ}\text{F}$ )  
(Whichever is larger)  
Sampling Time : 0.3 sec.  
Display : Reflective TN LCD  
External Dimensions : 52 x 145 x 25mm (W x H x D)  
Power Supply : Type LR6 (based on IEC and JIS) alkaline battery, 2 pcs.  
Weight : Approx 140g  
Major Functions : Peak high and low temperature  
Automatic Power OFF, Battery alarm

### Panel Mounting Type Indicator

High Performance  
Indicator with Alarm

**AG500**

96x48x60mm  
(WxHxD)



Indicator with Alarm

**AE500**

96x48x100mm  
(WxHxD)



### DP-350 Optional

Anti-shock cover  
(Silicon jacket)



Hard carrying  
case



Soft case



### DP-350 Model Code

Model Code	Accessory (Optional)
DP-350C*A	No option
DP-350C*A-1	With anti-shock cover (Silicon jacket) *
DP-350C*A-2	With hard carrying case *
DP-350C*A-3	With soft case *

\* Purchase of each cover only is available.  
Refer to the following part numbers:  
350P-K01: Anti-shock cover (Silicon jacket)  
350P-K02: Hard carrying case  
350P-K03: Soft case