

Thermocouple Type Non Contact Temperature Sensors : ST-100

■ Features

When contact thermocouple was used for measuring a surface temperature of moving objects such as roller and rotationalary objects, it causes tremendous consumption to the sensor or damages to the surface of the measured object, this caused error in measurement due to friction heat.

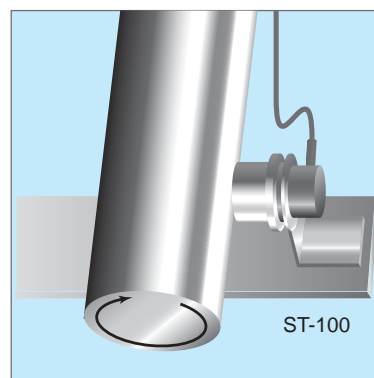
This problem can be solved by putting a distance between a sensor and a measured object, however, there still causes influence of disturbance by thermal connection failure, slower response of temperature for measuring object, poor linearization or slower response (thermocouples).

Change of connection method and use of movable structure have solved these problems.

Moreover, it can be used with connecting indicator and controller for K type thermocouple since output characteristics is similar to traditional contact-type thermocouple



Example of Application



Example of non-contact temperature measurement for rotating heat roller

■ Specifications

Application : Roller and Moving objects (Sheets)

Measuring method : Non-contact

Measuring element : Thermocouple K (Diameter of element : $\phi 0.08$)

Measuring range : Ambient temperature to 300°C

Response time : Approx.30 sec (Response of 98%)

Approx. 6 sec (Response of 63%)

* At metal surface measuring

Measuring accuracy : Within $\pm 3^\circ\text{C}$ (at 200°C)

* When output is adjusted at the middle of the measuring range.

Measuring distance : Distance between sensor surface of ST-100 and measured object should be kept 0.5 to 1.5mm

Keep a certain distance when measuring.

(1mm when it is with distancer)

Output signal : Thermocouple K output

Lead wire : $\phi 6$ Silicone rubber protection lead (KX type, 3m)

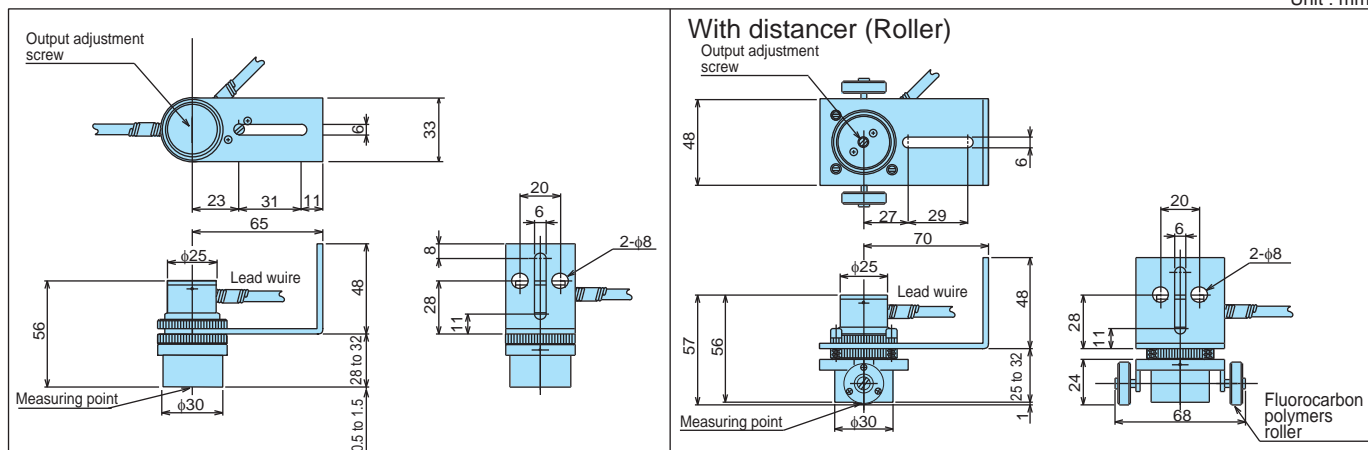
Output impedance : 50 Ω

■ Model Code

Specifications	Model and Suffix Code	
	ST-100 -	K-□□□□-□ / □*□
Thermocouple type	Type K	K
Lead wire length (unit: mm)	1000 to 20000mm (Standard :3000mm) *1000 to 5000mm (Specify 500mm each) 6000 to 20000mm (Specify 1000mm each)	□□□□
Lead wire termination	Spade lugs for JIS standard "M3" size screw Spade lugs for JIS standard "M4" size screw No terminal lugs No terminal lugs *terminal soldered	Y3 Y4 C N
Lead protection	Silicone rubber (Blue)	D
Distancer (Roller)	None With distancer (Roller)	No symbol D

■ External Dimension

Unit : mm



Thermocouple Type Non-Contact Temperature Sensors : ST-100K

Features

ST-100K, a compacted type of ST-100, is a non-contact thermocouple sensor for surface measurement of moving objects such as roller, rotating objects, and sheet.

Specifications

Application : Insulator surface (Roller and Moving objects (Sheets))
 Measuring method : Non-contact
 Measuring element : Thermocouple K, Class 2 (Diameter of element : $\phi 0.076$)
 Measuring range : Ambient temperature to 260°C
 (Maximum continuous operating temperature : 200°C)
 Measuring accuracy : Within $\pm 2^\circ\text{C}$ (Ambient temperature to 150°C)
 Within $\pm 5^\circ\text{C}$ (150 to 260°C)
 * Measuring distance : 0.5mm
 If a measuring distance will become within 0.5mm, indicated value is higher than actual temperature.
 Measuring distance : 0.5mm (Fixed)
 Spring stroke : 0.5 to 2mm (ST-100K)
 0.2 to 1mm (ST-100K1)
 Output signal : Thermocouple K output
 Lead wire : Fiberglass
 * Response time (reference values) : Approx.3.5 sec (90%) Typ.



Model Code

Specifications	Model and Suffix Code		
	ST-100K- ST-100K1-	-□□□□□-□□-□□	
Lead wire length (unit: mm)	500 to 5000mm * 500 to 990mm (Specify 100mm each) 1000 to 5000mm (Specify 500mm each)	□□□□□	
Lead protection	Fiberglass		EXF
Lead wire termination	Spade lugs for JIS standard "M3" size screw Ring lugs for JIS standard "M4" size screw Thermocouple connector (CSP01-K + CLP-A) Thermocouple connector (CMP01-K + CLP-B) No terminal lugs *terminal soldered		Y3 R4 TE1 TE3 N

External Dimension

Unit : mm

