

C015 Series

Surface Temperature Sensor (Thermocouple)

This sensor is a non-contact type thermocouple for surface temperature measurement and has a built-in automatic compensation circuit for difference of close air temperature and true temperature.

Its applications are temperature measurement of rollers, running belts, plastic sheets, etc.



Standard type



With distancer

With reflector

Features

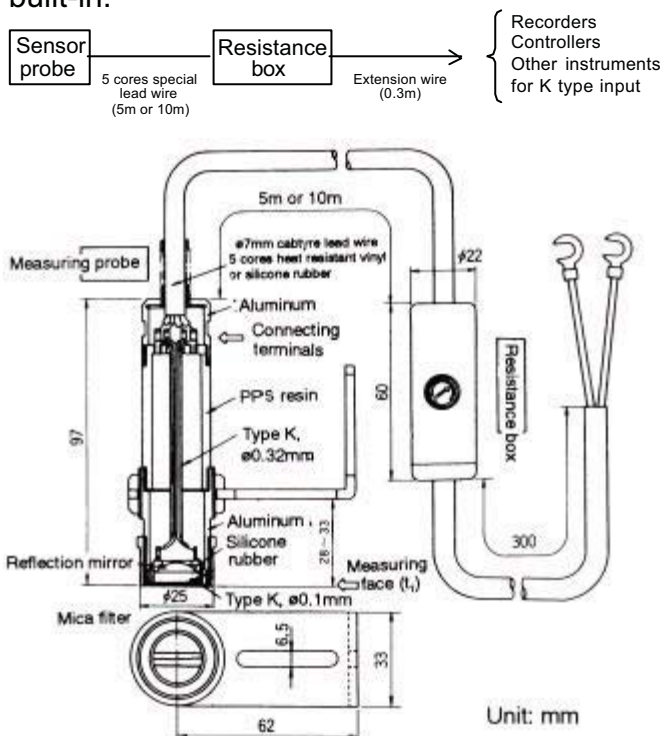
- Non-contact temperature measurement from room temperature to 250°C or to 500°C with a constant distance (1 to 2mm)
- Accurate temperature measurement by automatic compensation for variation of object temperature and environmental temperature
- Stable temperature measurement by a stabilizing filter
- No emissivity compensation for object material, surface, etc.
- A K type thermocouple is used for a detecting element.

Models

	Shape			Measuring Range		Lead Wire		Description
	Standard	With reflector	With distancer	Room to 250°C	Room to 500°C	5m	10m	
C015-11	○			○		○		This model is suitable for temperature measurement in case that measurement environment has relatively little disturbance and measuring distance is constant (1 to 2mm). It can be used for press rollers, rollers, heating rollers, running belts, sheets, etc. in various industries.
C015-21	○			○			○	
C015-31	○				○	○		
C015-41	○				○		○	
C015-12		○		○		○		This model is with a reflector. It can be used in case that measurement environment has much disturbance and measuring distance is long as about 3mm..
C015-22		○		○			○	
C015-32		○			○	○		
C015-42		○			○		○	
C015-13			○	○		○		This model is suitable for temperature measurement in case that measuring distance varies like as eccentric rollers, axis-variation belts, etc. Stable measurement is possible by teflon rollers that contact to objects up to ±5mm of measurement surface variation.
C015-23			○	○			○	

Construction

This sensor is consisted of a sensor probe and a resistance box. The sensor probe consists of three sensing elements made up in coils and with a miller for effective heat receiving. A filter is inserted in front of the element for stabilization of output as well as for protection of the element. A trimmer resistor for compensation constant is built-in.



General Specifications

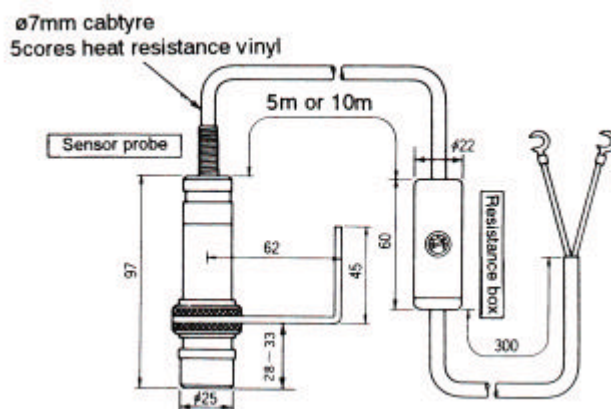
Measuring element: K type thermocouple
 Element diameter: ø0.1mm
 Measuring range: General – Room temp to 250°C
 High temp – Room temp to 500°C
 Ambient temperature: General – up to 100°C
 High temp. – up to 230°C
 Measuring accuracy: Within $\pm 5^\circ\text{C}$ in measuring range of 200°C span
 (When the compensation constant is given at halfway of the measuring range)
 Measuring distance: 1 to 2mm (fixed)
 Response time: About 6 seconds (time constant)
 Output signal: E.M.F. of L type thermocouple
 Output impedance: 15 to 22
 Output stabilizing filter: 0.07mm thick amber mica
 Lead wire: ø7mm heat resistant vinyl cord or silicone rubber covered lead wire 5m (10m)

Measuring Method

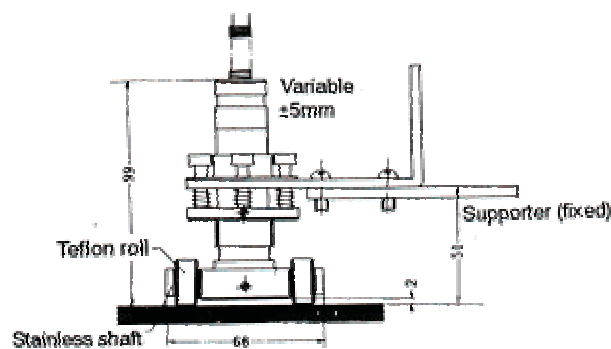
1. Measure temperature of an object by a contact type surface temperature sensor. For a running surface, stop it temporary and measure temperature
2. By adjusting a trimmer resistor in the resistance box by a minus driver, adjust an output of this sensor to the measured value by the contact type surface temperature sensor.

External Dimensions

- Standard surface temperature sensor



- Surface temperature sensor with a distancer



- Surface temperature sensor with a reflector
- 1. Reflector

