



C015 series

Sensor for simple compensation type surface temperature measurement

INSTRUCTIONS

1. Models and Measurement objects

1.1 Models

C015-□□

Measuring range and Compensation lead wire length

- 1: Room temperature to 250°C and Compensation lead wire length 5m
- 2: Room temperature to 250°C and Compensation lead wire length 10m
- 3: Room temperature to 500°C and Compensation lead wire length 5m *
- 4: Room temperature to 500°C and Compensation lead wire length 10m *

Type

- 1: Standard type
- 2: With reflector type
- 3: With distance type (* mark is disable)

1.2 Measurement objects

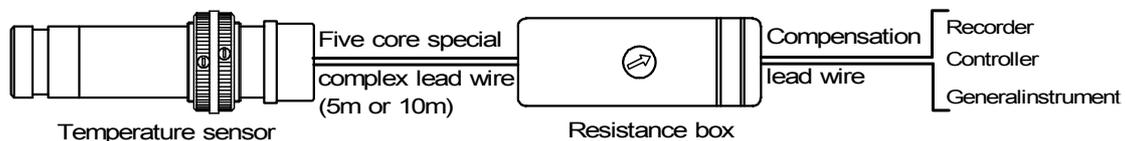
Type	Measurement objects
C015-□1	<ul style="list-style-type: none"> ·C015□1 series is suited to the surface temperature measurement of case that there are few outside rebellions comparatively in a measurement surroundings condition and the measurement distance is becoming stable between 1 to 2 mm. ·C015 series is able to use it for the surface temperature measurement such as the rolling roller, the winding rollers, the heating rollers, travelling belts and sheets in a various kinds industry.
C015-□2	<ul style="list-style-type: none"> ·It is the surface temperature sensor equipped with a reflection board. ·C015□2 series is able to use it in the case that there are many outside rebellions in the surroundings of the place that measure or in the case that want to take measurement distance to about 3 mm largely.
C015-□3	<ul style="list-style-type: none"> ·C015□3 series is suited to the surface temperature measurement of case that measurement distance always fluctuates such as the decentering roller or axis fluctuation belt. ·C015□3 series is possible to stabilized measurement because constantly the teflon roller sticks to the measuring object within the range of±5 mm.

2. System configuration

This C015 series [Sensor for simple compensation type surface temperature measurement] is composed of temperature sensor and resistance box.

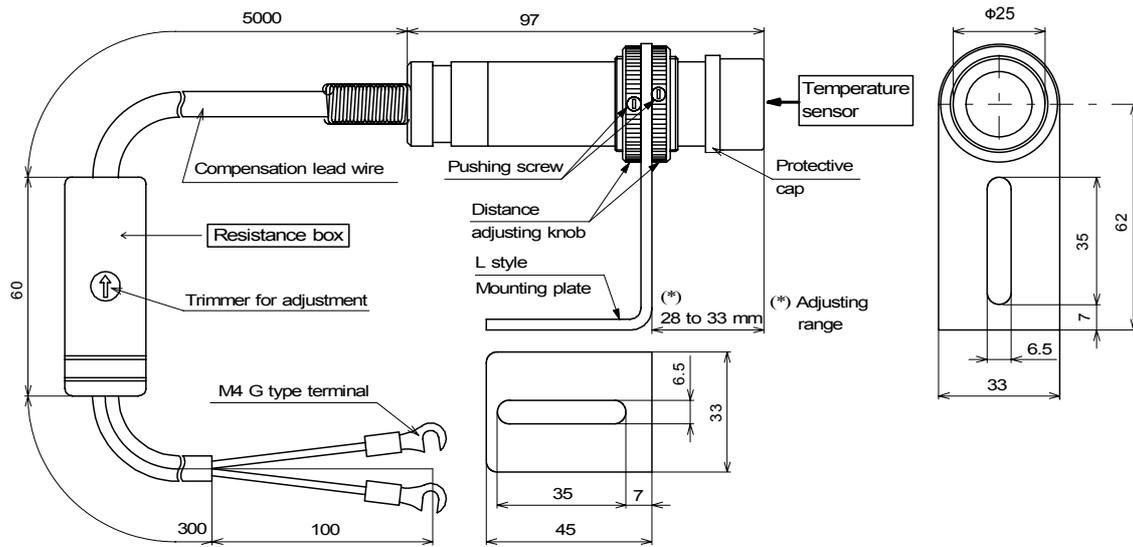
The temperature sensor is made from 3 pairs of sensor elements arranged in a coil state and be raising heat efficiency by the reflector. The filter of the temperature sensor surface is doing the protection of an element besides it intends the stability of output.

The resistance box is including the trimmer that decides compensation quantity.

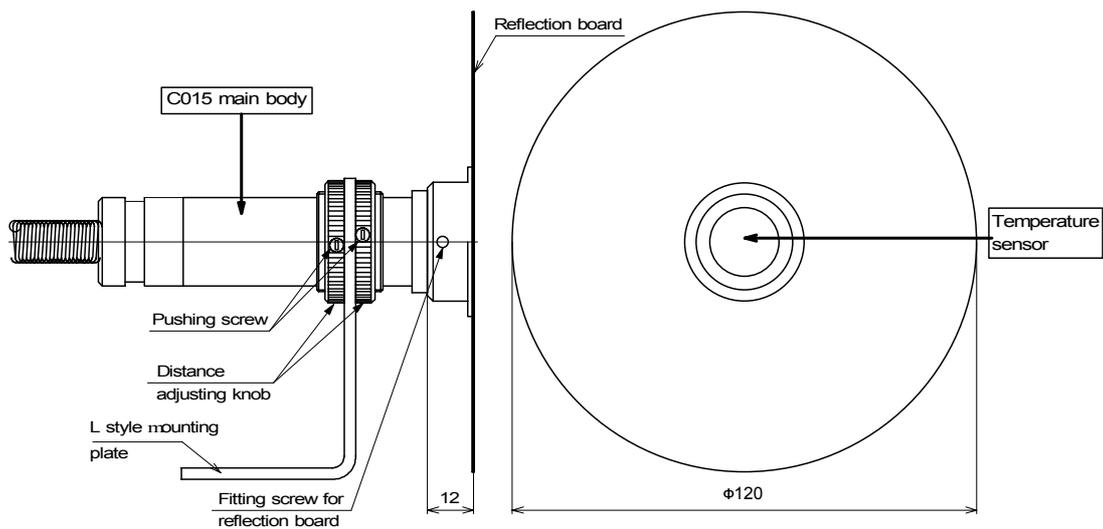


3. Names of component parts and external dimensions figure

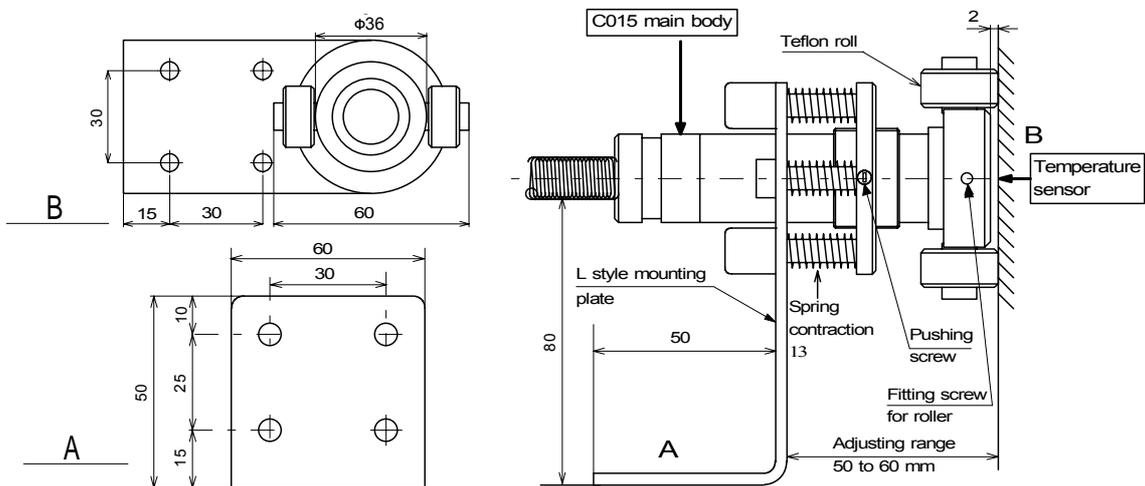
3.1 General type: Model C015-□1



3.2 Reflector type: Model C015-□2



3.3 Distancer type: Model C015-□3



4. Installation and mounting

Caution Don't supply the load to the connection leading wire such as "pull" or "twisted"

Caution Don't operate the C015 series in places where combustible or volatile gas is existed.

Caution Though a little dirt by dust or oil can make no obstacles, too much of them may occur poor responsibility.

4.1 For general type (Model C015-□1)

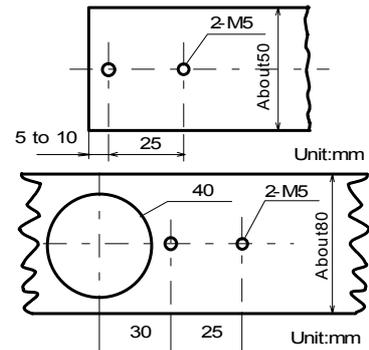
1) Remove the protection cap covering the temperature sensor surface.

Caution Pay attention to handling, because the filter of the temperature sensor surface is easy to crack thinly.

2) Set this sensor by using L style mounting plate at an interval of 1 to 2 mm distance between the temperature sensor surface and a measuring object. As for the processing of the mounting plate at the installation, please refer to the figure on the right.

3) Fine adjustment of measuring distances within 5 mm length shall be made by turning the distance adjusting knob. Tighten the screw attached to the adjusting knob by minus driver when the measuring distance is set.

4) Connect the C015-□1 to a receiver of K thermocouple type.



4.2 Reflector type: Model C015-□2

1) Remove the protection cap covering the temperature sensor surface.

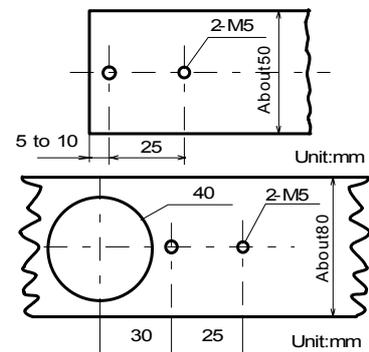
Caution Pay attention to handling, because the filter of the temperature sensor surface is easy to crack thinly.

2) Equip the reflector to a temperature sensor and tightens the fitting screw for reflection board by exclusive 6 corner wrench.

3) Set this sensor by using L style mounting plate at interval of 1 to 2 mm distance between the temperature sensor surface and the measuring objects. As for the processing of the mounting plate at the installation, please refer to the figure on the right.

4) Fine adjustment of measuring distances within 5 mm length shall be made by turning the distance adjusting knob. Tighten the screw attached to the adjusting knob by minus driver when the measuring distance is set.

5) Connect the C015-□2 to a receiver of K thermocouple type.



4.3 Distancer type: Model C015-□3

1) Loosen the adjusting knob after loosening the unity of the connection leading wire and remove the L style metal fittings from a connection leading wire side.

2) After removing 2 pieces of the distance adjusting knob and L style mounting plate, pass the distancer from connection chip side of the connection leading wire and screw into the main body.

3) Remove the protection cap covering the temperature sensor surface.

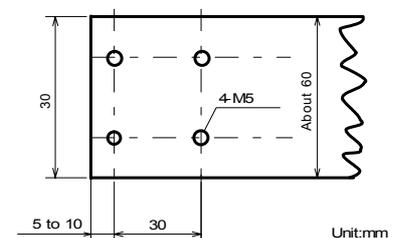
Caution Pay attention to handling, because the filter of the temperature sensor surface is easy to crack thinly.

4) Mount the roller to the temperature sensor.

5) Set this sensor by using L style mounting plate to the position where the roller and measuring object contact. As for the processing of the mounting plate at the installation, please refer to the figure on the right. Fine adjustment of distancer within 10 mm length shall be made. The fluctuation possibility distance by spring contraction is ± 5 mm.

6) Tighten the pushing screw to the distancer by minus driver.

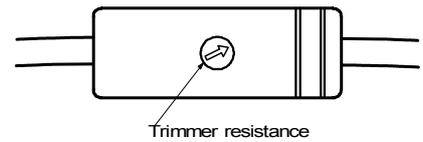
7) Connect the C015-□3 to a receiver of K thermocouple type.



5. Adjustment and Measurement

5.1 In the case that the receiver is an automatic balance type.

- 1) Let the measuring object be in operation and stabilize its temperature.
- 2) Measure the temperature of the measuring object by a contact type surface thermometer. If the measuring object is in moving surface, stop the moving temporarily and measure the measuring object.
- 3) Turn the trimmer resistance inside the resistance box by a minus driver and adjust the output of C015 series to the measured value of contact type surface thermometer.



5.2 In the case that the receiver is a moving coil type.

- 1) Let the measuring object be in operation and stabilize its temperature.
- 2) Adjust the external resistance of receiver.
(External resistance of C015 series is 15 to 22 Ω)
- 3) Measure the temperature of the measuring object by a contact type surface thermometer. If the measuring object is in moving surface, stop the moving temporarily and measure the measuring object.
- 4) Turn the trimmer resistance inside the resistance box by a minus driver and adjust the output of C015 series to the measured value of contact type surface thermometer.
- 5) Do above procedures

6. General specification

Temperature sensor	K thermocouple	
Element line diameter	Φ 0.1mm	
Measuring range	Common type	Room temperature to 250°C
	High temperature type	Room temperature to 500°C
Ambient temperature	Common type	Max. 100°C
	High temperature type	Max. 230°C
Measuring accuracy	Max. \pm 0.5 deg. For 200 deg measuring range (When the compensating is given at about a half way of the measuring range)	
Measuring distance	1 to 2mm (That it is becoming stable)	
Responsibility	About 6 seconds. (Time constant)	
Output signal	K thermocouple output	
Output impedance	15 to 22 Ω (19 to 26 Ω for a 10m length lead wire)	
Filter of the temperature	Thickness 0.7 mm. Amber mica	
Compensation lead wire	Common type	Φ 7mm heat-resisting vinyl lead wire
	High temperature type	Φ 7mm silicon rubber lead wire

CHINO CORPORATION

32-8, KUMANO-CHO, ITABASHI-KU, TOKYO 173-8632

Telephone: +81-3-3956-2171

Facsimile: +81-3-3956-0915

Web site <http://www.chino.co.jp/>