

Remote Sensor system / Analog signal Thermocouple / 2 signal transmission
Output Sensor: RS02E-R01E-PU RS02T-R01-K1000 RS02T-R01-K300 RS02T-R01-J300

Attention for Installation

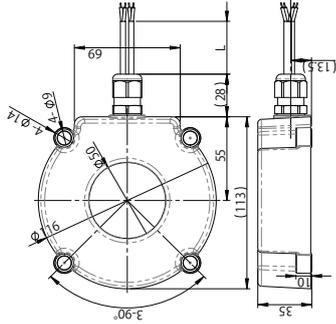
(Read this section thoroughly before installation.)

Before using the Remote Sensor, read this manual carefully. During installation and operation, pay close attention to the safety aspect.

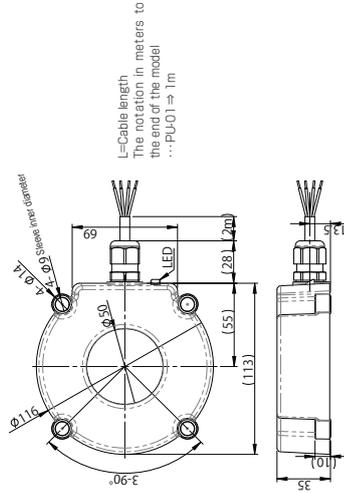
- ◆ Ensure the power is switched off during installation or maintenance operations.
- ◆ Use a regulated power supply, e.g. switch-model type. Simpler power supplies, such as a full-wave rectification type, will cause the permissible ripple rating to be exceeded and may cause malfunction.
- ◆ Ensure correct connections by reference to the wiring diagram.
- ◆ To avoid malfunction caused by induction noise, cable should be kept apart from motor or other power cable.

Dimension

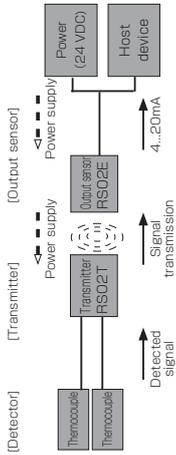
Transmitter : RS02T-R01-K1000, RS02T-R01-K300
RS02T-R01-J300



Output sensor : RS02E-R01E-PU_--



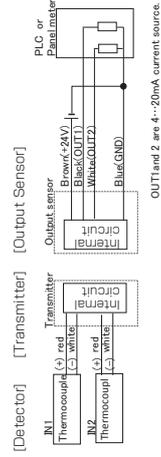
Construction of the system



[Function of each component]

- Detector** : Two thermocouples type K or J are used as a detector and it detects temperature.
- Transmitter** : (1) Detects the voltage of thermocouples which changes depending on temperature.
(2) The internal CPU converts the temperature data of (1) into digital signals and transmits the signals to the Output Sensor.
- Output Sensor**: Change the temperature data to analog signal (4...20mA) and output to external unit and supplies power for operation of Transmitter at the same time.

Wiring diagram



Cable length

Transmitter (RS02T-R01-K_ , RS02T-R01-J_) : max.3m
Output sensor (RS02E-R01E-PU) : max.10m

[Caution]

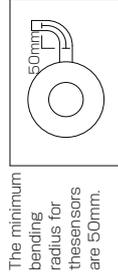
- Measure to static electricity
- When using RS02 in environment with the electrostatic discharge, take the ground to prevent influence by the static electricity on RS02.
- For a detector, please use a thermocouple K that meets JIS.
- The measurement temperature should be lower than upper limit of the temperature shown at the code end.
example : RS02T-R01-K300 : 0...300 degree C
- Output is current source , therefore please connect the load between output and GND.

Current output

Output sensor RS02E outputs the electric current as described below.

status	Output current
Without Transmitter	0 mA
Receiving the temperature data from Transmitter (at 0 deg. C : 4mA, at the highest temperature of the measurement range : 20 mA)	4 ... 20 mA
Thermocouple is not connected through the transmitter is in the transmitting range.	21 mA

Bending radius of Cable



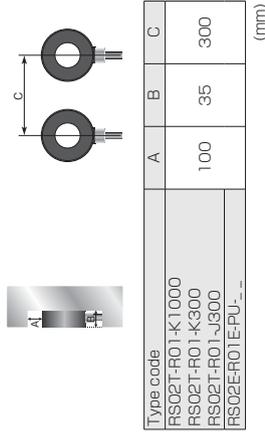
The minimum bending radius for these sensors are 50mm.

* Never pull the cable strongly installing

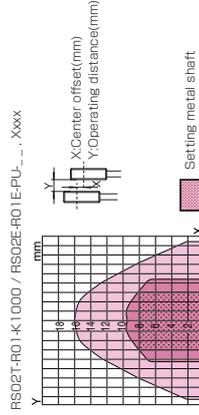
Installation notes

In order to avoid influence of surrounding metal, or to avoid mutual influence between parallel-mounted sensors, keep the minimum free zone as described below.

- Surrounding metal
- Parallel installation



Typical Transmitting Diagram (Supply voltage at 24V / non-flush mount)



Specification of the System

Transmitter		Output Sensor	
Type code	RS02T-R01-K1000 RS02T-R01-K300 RS02T-R01-J300	Type code	RS02E-R01E-PU_--
Applicable Output sensor	RS02E-R01E-PU_--	Appl. cable	RS02T-R01-K1000, RS02T-R01-K300
Rated transmitting distance	0...8 mm (Setting metal shaft)	Transmitter	RS02T-R01-J300
Center off-set	± 8mm (Setting metal shaft)	Supply voltage	24V DC ± 5 % (include ripple)
Input channel	2signals (1CH, 2CH)	Current consumption	≤ 150mA
Applicable thermal sensor	Thermocouple per K	LED	INZONE (data valid)
Measuring temperature range	0...1000°C	Output	4...20 mA X 2 線
Compensated cold junction	± ± 0.5°C	Load resistance	≤ 400 Ω
Cable	Compensation lead wire(JIS) φ1.0 9 mm x 2 All heat-resistant vinyl (90 deg. C)	Resolution	≤ 0.04 % full scale range
		Response speed	≤ 0.5 sec.
		Linearity	≤ ± 0.8 % full scale range
		Cable	PUR, φ 5mm/4X0.25mm ²
		◆ Please note that the signal may become unstable (false signal or chattering) when the transmission distance and the center offset are outside the specification range.	
		◆ The inzone signal is a preliminary signal for confirming that the output signal is established within the specification range. Please note that it does not guarantee signals output outside the specification range.	