Remote Sensor system / Analog signal Thermocouple / 2 signal transmission

Output Sensor: RS02E-R03EPU 
Transmitter: RS02T-R03K300

Attention for installation
(Read the 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-mode 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 malfunctions caused by induction noise, cable should be kept apart from motor or other power cables.

Dimension

Transmitter: RS02T-R03K300

Output sensor: RS02E-R03EPU

Specification of the System

<table>
<thead>
<tr>
<th>Transmitter</th>
<th>Output Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type code</td>
<td>Type code</td>
</tr>
<tr>
<td>RS02T-R03K300</td>
<td>RS02E-R03EPU_</td>
</tr>
</tbody>
</table>

Applicable to the following:

- RS02E-R03EPU
- RS02T-R03K300

Wiring diagram

[Diagram showing wiring connections]

[Table: Construction of the system]

<table>
<thead>
<tr>
<th>Detector</th>
<th>Transmitter</th>
<th>Output sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply</td>
<td>Power supply</td>
<td>Power supply</td>
</tr>
</tbody>
</table>

Function of each component

Detector: Two thermocouples type K 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

Typical Transmitting Diagram (made without at 3N/ non-fix mount)

[Diagram showing typical transmitting diagram]

Current output

Output sensor RS02E outputs the electric current as described below:

<table>
<thead>
<tr>
<th>Status</th>
<th>Output current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without Transmitter</td>
<td>0 mA</td>
</tr>
<tr>
<td>Receiving the temperature data from Transmitter</td>
<td>4 – 20 mA&lt;br&gt;at 0 deg C - 4mA at the highest temperature&lt;br&gt;Full measurement range: 20 mA</td>
</tr>
<tr>
<td>Thermocouple with &amp; without direct connection</td>
<td>21 mA</td>
</tr>
</tbody>
</table>

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 zone as described below.

- Surrounding metal
- Parallel installation

Typical Transmitting Diagram:

<table>
<thead>
<tr>
<th>Type code</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS02E-R03EPU</td>
<td>200</td>
<td>35</td>
<td>400</td>
</tr>
</tbody>
</table>

Caution

- The output signal is a primary 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.

- The Irone signal is an auxiliary signal for checking the output signal. If the Irone signal is established within the specification range, then the output signal is also within the specification range.