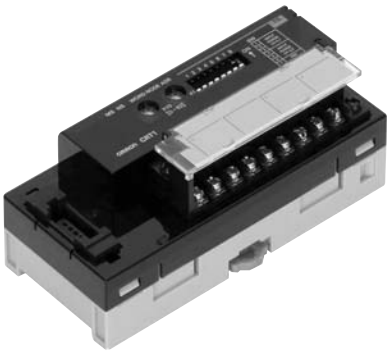
Temperature Input Units

# CRT1-TS04T/-TS04P

## High-speed Transfer of Temperature Data with CompoNet.

## Enhanced Smart Functions.



**You can use either of two types of temperature input sensors: Thermocouple and resistance thermometer.**
**Each Unit provides four temperature inputs. Plus, the Units support scaling, comparators, and other data processing, reducing the processing load on the ladder program.**

- Product lineup includes models with thermocouple inputs and models with resistance thermometer inputs.
- The node address, input types, and other settings can all be made using the switches on the Slave. (No Support Software is required.)
- Detachable terminal blocks enable easy maintenance without the need to remove wiring.
- Smart functions in the Slave reduce ladder programming and make maintenance easier. For example, scaling to convert input data to desired values, comparators to compare process values with preset upper and lower limits, and integrator to calculate the heat values of equipment or Sensors by from the temperature and measurement time.
- The Sensor open-circuit detection function reduces wiring errors.

## Ordering Information

| Name | Specifications | | | Model |
|---|---|---|---|---|
| | Input/Output | Points | Specifications | |
| Temperature Input Unit | Thermocouple Input | 4 inputs | Switchable between R, S, K, J, T, E, B, N, L, U, W, and PL2 | CRT1-TS04T |
| | Platinum-resistance thermometer input | | PT100 (-200 to 850°C)<br>PT100 (-200 to 200°C) | CRT1-TS04P |

## Performance Specifications

For Basic Performance Specifications of Slave Units, refer to page 30.

## Specifications

<table>
<tr><th>Item model</th><th>CRT1-TS04T</th><th>CRT1-TS04P</th></tr>
<tr><td>Input type</td><td>Switchable between R, S, K, J, T, E, B, N, L, U, W, and PL2<br>When set with CX-Integrator: Input types can be set individually for each input.<br>Wen set with DIP switch: The same input type setting applies to all 4 inputs.</td><td>Switchable between PT100 (–200 to 850°C) and PT100 (–200 to 200°C)<br>When set with CX-Integrator: Input types can be set individually for each input.<br>When set with DIP switch: The same input type setting applies to all 4 inputs.</td></tr>
<tr><td>Indicator accuracy</td><td>(±0.3% of indication value or ±1°C, whichever is larger) ±1 digit max.<br>Indicator Accuracy in Exceptional Cases
<table>
<tr><th>Input type and temperature range</th><th>Input accuracy</th></tr>
<tr><td>K, T, and N below –100°C</td><td>±2°C ±1 digit max.</td></tr>
<tr><td>U and L</td><td>±2°C ±1 digit max.</td></tr>
<tr><td>R and S below 200°C</td><td>±3°C ±1 digit max.</td></tr>
<tr><td>B below 400°C</td><td>Not specified.</td></tr>
<tr><td>W</td><td>±0.3% of indication value or ±3°C (whichever is larger) ±1 digit max.</td></tr>
<tr><td>PL2</td><td>±0.3% of indication value or ±2°C (whichever is larger) ±1 digit max.</td></tr>
</table></td><td>–200 to 850°C input range:<br>(±0.3% of indication value or ±0.8°C, whichever is larger) ±1 digit max.<br>–200 to 200°C input range:<br>(±0.3% of indication value or ±0.5°C, whichever is larger) ±1 digit max.</td></tr>
<tr><td>Conversion cycle</td><td colspan="2">250 ms/4 points</td></tr>
<tr><td>Temperature conversion data</td><td colspan="2">Binary data (4-digit hexadecimal when Normal Display Mode is selected or 8-digit hexadecimal when 1/100 Display Mode is selected.)</td></tr>
<tr><td>Isolation method</td><td colspan="2">Between input and communication lines: Photocoupler isolation<br>Between temperature input signals: Photocoupler isolation</td></tr>
<tr><td>Mounting method</td><td colspan="2">35-mm DIN track mounting</td></tr>
<tr><td>Communications power supply current</td><td>75 mA max. at 24 VDC<br>110 mA max. at 14 VDC</td><td>75 mA max. at 24 VDC<br>110 mA max. at 14 VDC</td></tr>
<tr><td>Weight</td><td>148 g max.</td><td>147 g max.</td></tr>
</table>

### Effects of Mounting Direction on Accuracy

A cold junction compensator is included in the Terminal Block of the CRT1-TS04T. The input accuracy depends on the mounting direction if only the Unit is replaced.

<table>
<tr><th>Mounting direction</th><th>Input accuracy</th></tr>
<tr><td>Mounted normally</td><td>As specified in the Performance Specifications.</td></tr>
<tr><td>Mounted in any direction other than the above</td><td>±0.3% of indication value or ±2°C (whichever is larger) ±1 digit max.<br>Indicator Accuracy in Exceptional Cases
<table>
<tr><th>Input type and temperature range</th><th>Input accuracy</th></tr>
<tr><td>K, T, and N below –100°C</td><td>±3°C ±1 digit max.</td></tr>
<tr><td>U and L</td><td>±3°C ±1 digit max.</td></tr>
<tr><td>R and S below 200°C</td><td>±4°C ±1 digit max.</td></tr>
<tr><td>B below 400°C</td><td>Not specified.</td></tr>
<tr><td>W</td><td>±0.3% of indication value or ±4°C (whichever is larger) ±1 digit max.</td></tr>
<tr><td>PL2</td><td>±0.3% of indication value or ±3°C (whichever is larger)</td></tr>
</table></td></tr>
</table>

## Dimensions

(Unit: mm)

**CRT1-TS04T**
**CRT1-TS04P**