2551-A 8-Channel Isolated Thermocouple Input Module

Description

The 2551-A is a high-speed 8-channel isolated thermocouple input module designed to be compatible with the CTI 2500 Series® and Simatic® 505 I/O base in local, remote I/O, and Profibus configurations. The 2551-A translates thermocouple and millivolt input signals into a scaled temperature value.

Features

- Simatic® 505 I/O base format
- 1500 V channel-to-channel isolation
- 1500 V channel-to-PLC backplane isolation
- Fast 2 mSec update time per channel
- On-board cold junction compensation for each thermocouple input
- Microprocessor self-diagnostics

Specifications

- Input Channels: 8 isolated input channels, individually configurable for thermocouple or millivolt input
- Thermocouple Types: J or K, jumper selectable for each channel
- Millivolt Input: 0 - 55 mV
- Digital Filtering Time Constant: 0.3 Sec
- Output Units: Degrees C or F, (jumper selectable for all outputs)
- Repeatability: 0.05%
- Accuracy: Type J: ±1° from 0° to 760°C
  Type K: ±1° from 0° to 1372°C
- Millivolt Resolution: 0.3°C, 0.6°F thermocouple input
  .020 millivolt input
- Common Mode Rejection: >110db @ 60Hz (digital filtering disabled)
- Normal Mode Rejection: >45db @ 60Hz (digital filtering enabled)
- Input ESD Protection: 20,000 V
- Overrange Protection: 20 VAC for 1 minute (all input terminals)
- Isolation: 1500 VDC channel-to-channel 1500 VDC channel-to-PLC
- Connector: Fixed
- Wire Gauge: 18-24 AWG
- Backplane Power: 2.4 Watts
- Module Size: Single-wide
- Shipping Weight: 1.5 lb (0.68 Kg)

Additional Product Information:

On CTI's Website you will find links to the 2500 Series Standard Environmental Specifications and the UL Agency Certificates of Compliance.
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**NOTE:**
Custom (R, S, T, E, and other) thermocouple configurations available by special request.

**NOTE:**
Connect the shield wire for each channel to the G terminal only.

### 2551-A Input Connector

<table>
<thead>
<tr>
<th>Channel 1</th>
<th>1 +</th>
<th>2 -</th>
<th>3 G1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel 2</td>
<td>4 +</td>
<td>5 -</td>
<td>6 G2</td>
</tr>
<tr>
<td>Channel 3</td>
<td>7 +</td>
<td>8 -</td>
<td>9 G3</td>
</tr>
<tr>
<td>Channel 4</td>
<td>10 +</td>
<td>11 -</td>
<td>12 G4</td>
</tr>
<tr>
<td>Channel 5</td>
<td>13 +</td>
<td>14 -</td>
<td>15 G5</td>
</tr>
<tr>
<td>Channel 6</td>
<td>16 +</td>
<td>17 -</td>
<td>18 G6</td>
</tr>
<tr>
<td>Channel 7</td>
<td>19 +</td>
<td>20 -</td>
<td>21 G7</td>
</tr>
<tr>
<td>Channel 8</td>
<td>22 +</td>
<td>23 -</td>
<td>24 G8</td>
</tr>
</tbody>
</table>

**Thermocouple Wiring Application**

**NOTE:**
The following equations describe the digital word transferred to the PLC. Thermocouple Mode WX = Degrees × 10 Millivolt Mode WX = Millivolts × 100 Digital WX value to PLC

**Millivolt Wiring Application**

**NOTE:**
Use 16 gauge wire or smaller for millivolt applications.