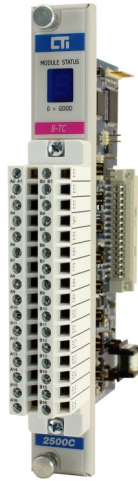




## 2500C-8-TC Thermocouple Input Module



### DESCRIPTION

The 2559-TC is a high-speed 8-point thermocouple input module designed to translate millivolt level signals from the thermocouple element into a scaled temperature value in a CTI 2500 Series Compact I/O base.

### FEATURES

- 8 Thermocouple inputs
- Supports Classic and Classic Plus Modes
- 7 Segment Display for Module Status indication
- No user calibration
- Supports J, K, T, E, R, S, & N thermocouples and millivolt inputs
- Software Configurable Range Selection
- Uses 2500C-32F-CJC removable wiring connector

| 2500-8-TC Default Shipment Settings |              |
|-------------------------------------|--------------|
| Operation Mode                      | Classic Mode |
| Logon                               | 8WX          |
| Thermocouple                        | J            |
| Digital Filtering                   | Enabled      |
| Offset Scaling                      | Disabled     |
| Temperature Units                   | Degrees C    |

| Input Specifications                    |   |                   |
|---|---|-------------------|
| Operation Mode Support (See Note 1)     | Classic Mode  | Classic Plus Mode |
| Module Logon                            | 8WX   | 8WX/8WY           |
| Module Update Time all modes            | 9mS   |                   |
| Digital Filtering Time Constant         | 80mS  | 80mS              |
| Thermocouple Measurement Ranges         | J: -210°C to 760°C (-350°F to 1400°F)<br>K: -270°C to 1372°C (-450°F to 2500°F)<br>T: -270°C to 400°C (-454°F to 752°F)<br>E: -270°C to 1000°C (-454°F to 1832°F)<br>R: 0°C to 1768°C (32°F to 3214°F)<br>S: 0°C to 1768°C (32°F to 3214°F)<br>N: -260°C to 1300°C (-436°F to 2372°F)<br>mV: -55 to +55mV   |                   |
| Accuracy :<br>Thermocouple Types and mV | J : +/-1°C from 0°C to 60°C<br>K: +/-1°C from 0°C to 60°C<br>T: +/-1°C from 0°C to 60°C<br>E: +/-1°C from 0°C to 60°C<br>R: +/-2°C from 0°C to 60°C*<br>S: +/-2°C from 0°C to 60°C*<br>N: +/-1°C from 0°C to 60°C<br>mV: +/-0.5% full scale or +/- 500µV<br>* reduced accuracy for measurements below 500°C |                   |
| Open Thermocouple Detection             | Less than 1 second  |                   |
| mV input impedance                      | 4.4MΩ DC, >10kΩ @ 60Hz  |                   |
| Repeatability                           | ±1°C, ±2°F for all Thermocouple Types   |                   |
| Measurement Units                       | Degrees C or Degrees F selectable   |                   |
| Resolution                              | 16 bits (15 bits plus sign)   |                   |
| Data Presentation w/scaling enabled     | 0-32000(temp)<br>-32000 to +32000(mV)   |                   |
| Data Presentation w/scaling disabled    | °C or °F x 10 (temp)<br>-10000 to +10000 (mV)   |                   |
| Common Mode Rejection                   | >110db @ 60Hz   |                   |
| Normal Mode Rejection                   | >60db @ 60Hz, >50db @ 50 Hz   |                   |
| Backplane Power (MAX)                   | 1.25 watts  |                   |
| Input ESD Protection                    | IEC 1000-4-2 Level 4  |                   |
| Isolation                               | Channel to Channel 200V±<br>Channel to Backplane 1500VDC  |                   |
| Operating Temperature Range             | 0°C to 60°C (32°F to 140°F)   |                   |
| Agency Approvals Pending                | UL, ULC, UL Class 1, Div 2, CE  |                   |
| Shipping Dimensions and Weight          | 223.84mm x 109.86mm x 34.93mm, 0.45kg   |                   |
| Storage Temperature Range               | -40°C to 85°C (-40°F to 185°F)  |                   |
| Relative Humidity                       | 5% to 95% (non-condensing)  |                   |



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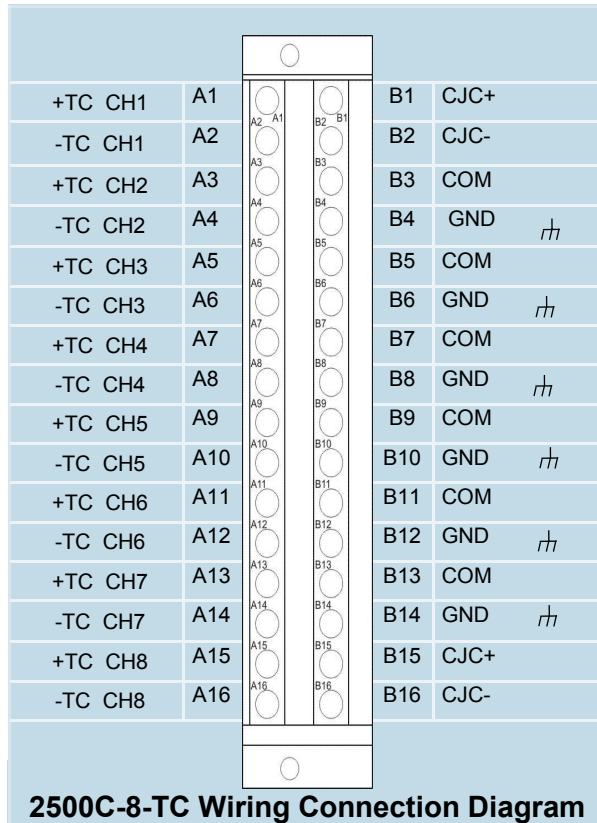




# 2500 Series™ Compact System

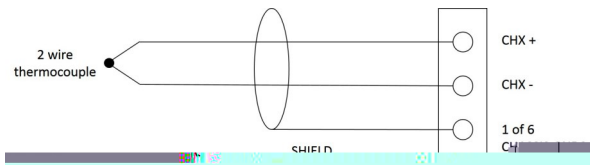


## 2500C-8-TC Thermocouple Input Module

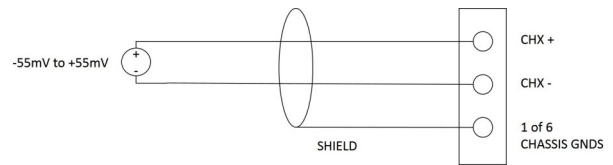


Note:  
The 2500C-8-TC Thermocouple Input Module uses CTI Wiring Connector 2500C-32F-CJC. This is a special version of the connector, that has built in CJC compensation. Please see the wiring connector specification table below. This connector is ordered separately from the module.

| 2500C-32F-CJC Specifications |                        |
|------------------------------|------------------------|
| Connector Style              | Removable              |
| Number of Wiring Connections | 32 point               |
| Wire Gauge                   | 14 to 22AWG            |
| Screw Torque Value           | 5.22 lb-in             |
| Current Rating               | 6A @ 300VAC            |
| Insulation Stripping Length  | 0.24"<br>6mm           |
| Approximate Weight           | 1.0 oz.<br>28.35 grams |
| Connector Material           |                        |
| Body:                        | Polycarbonate UL 94V0  |
| Screw :                      | M3 Zinc plated Steel   |
| Cage Clamp                   | Nickel Plated Brass    |
| Socket Contact Spring:       | Tin Plated Bronze      |
| Retaining Screw:             | M3 Zinc Plated Steel   |



Typical Internal Circuit—TC Mode



Typical Internal Circuit—mV Mode

| 7 Segment LED Code Description |                           |
|--------------------------------|---------------------------|
| 0                              | Normal Operation          |
| A                              | Internal RAM Fail         |
| b                              | Flash Failure             |
| C                              | Internal MOVx RAM Failure |
| d                              | Shared RAM Failure        |



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