Install Your IRT8I Input Module

The module mounts on a 1794-TB3G or 1794-TB3S terminal base.

1. Rotate the key switch (1) on the terminal base (2) clockwise to position 3 as required for this type of module.

2. Make sure the flexbus connector (3) is pushed all the way to the left to connect with the neighboring terminal base/adaptor. You cannot install the module unless the connector is fully connected.

3. Make sure the pins on the bottom of the module are straight so they will align properly with the connector in the terminal base.

WARNING
If you remove or insert the module while the backplane power is on, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

4. Position the module (4) with its alignment bar (5) aligned with the groove (6) on the terminal base.

5. Press firmly and evenly to seat the module in the terminal base module. The module is seated when the latching mechanism (7) is locked into the module.

Connect Wiring for the 1794-TB3G or 1794-TB3S Terminal Base

1. Connect individual input wiring and associated signal returns to numbered terminals on the 0...15 row (A) and the 16...33 row (B) as indicated in the table.

2. Use Belden 8761 cable for mV signal wiring, or the appropriate thermocouple wire for your thermocouples.

3. Signal wiring shields can be connected to terminals 16 or 33 on row B or terminals 40...45 on row C.

Connect the +VDC power lead to terminal 34 on the 34...51 row (C).

Connect the –VDC common return to terminal 35 on the 34...51 row (C).

ATTENTION
To reduce susceptibility to noise, power analog modules and digital modules from separate power supplies. Do not exceed a length of 3 m (9.8 ft) for DC power cabling.

ATTENTION
Do not daisy-chain power or ground from this terminal base module to any AC or DC digital module terminal base units.

5. If daisy-chaining power to the next terminal base unit, connect a jumper from terminal 50 (+VDC) on this base unit to +V terminal on the next terminal base unit.

Connect a jumper from terminal 51 (–VDC common) to the –VDC common terminal on the next terminal base unit.

6. If using cold junction compensators, make these connections as shown in the CJC sensor chart below.

Identify RTD Wire Pairs

If the RTD wires are colored-coded, the wires that are the same color are connected together. If the wires are not colored-coded, use an ohmmeter to test wire pairs as explained below.

How to Connect a 3-Wire RTD

If the 3-wire RTD wires are all different colors, use an ohmmeter to determine which leads are connected together. Either lead of the pair can be the compensation lead. Attach one lead of the 3-wire terminal and the other to –. Attach the single lead to –. Refer to the following table.
**Wire Connections for the Isolated Universal Input Module**

- **RTD/Resistance**
  - 2-wire
  - 4-wire
- **mV Source**
- **Thermocouple**

Numbers 0, 1, 2, and 3 are wiring numbers of the sensor used. For terminal numbers corresponding to channels 1, 2, 3, and 4, refer to Terminal Base Unit Wiring Connections below.

**Input Map and Configuration (EDT)**

The following information is presented for experienced users only. Refer to the user manual, publication 0100153-n, for complete information on programming and configuring your module.

**Input Map (Read)**

Input Type | CH7 | CH6 | CH5 | CH4 | CH3 | CH2 | CH1 | CH0
---|---|---|---|---|---|---|---|---
In 15 bit words: | Input Format | Filter | Return |
CH7 User Low Alarm Threshold | | | |
CH6 User Alarm | | | |
CH5 User Alarm Deadband | | | |
CH4 User High Alarm Threshold | | | |
CH3 User High Alarm Threshold | | | |
CH2 User High Alarm Threshold | | | |
CH1 User High Alarm Threshold | | | |
CH0 User Alarm Deadband | | | |
CH0 User Low Alarm Threshold | | | |
°F | | | |
DC | | | |
Data Format

| Bit 15 | Bit 14 | Bit 13 | Bit 12 | Format |
---|---|---|---|---|
| | | | | 0 | Analog value on broken input. |
| | | | | 1 | Set analog value to Min scale on broken input. |
| | | | | 2 | Set analog value to Max scale on broken input. |
| | | | | 3 | Threshold Value |

**Terminal Base Unit Wiring Connections**

- **1794-TB30** and **1794-TB35** Terminal Base Units

**Example of Thermocouple Wiring to a 1794-TB3G Terminal Base Unit**

**Input Filter**

- **Bit 7**
  - 0 | Analog Filter
  - 1 | Digital Filter
  - 2 | Disable Filter

**Data Format**

- **Bit 10**
  - 0 | Overrange Off
  - 1 | Overrange On

- **Bit 11**
  - 0 | Underrange Off
  - 1 | Underrange On

- **Bit 12**
  - 0 | Hourly Value
  - 1 | Decimal Value

**F0 through F7 (Channel n Fault Mode)**

**Input Type**

- **CH0**
  - 0 | Thermocouple
  - 1 | RTD/Resistance
  - 2 | User HI Alarm
  - 3 | User HI Alarm
  - 4 | User HI Alarm
  - 5 | User HI Alarm
  - 6 | User HI Alarm
  - 7 | User HI Alarm

**Publication**

0100153-05 Rev. A (1794X-RT30) January 2019
### Specifications

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Number of inputs</td>
<td>8 channels</td>
</tr>
<tr>
<td>Module Location</td>
<td>DIN Rail, 1746-1748-1765 Base Units</td>
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<tr>
<td>Terminal input voltage range</td>
<td>-40 V to +10 V</td>
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<tr>
<td>Supported RTD/Resistance types</td>
<td>Types B (600 °C)</td>
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<tr>
<td>Resistance</td>
<td>≤ 500 Ω</td>
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<tr>
<td>Data format</td>
<td>Engineering units: ±, Engineering units: uncalibrated counts</td>
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<tr>
<td>Input Impedance</td>
<td>5 kΩ</td>
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<tr>
<td>Current mode measure</td>
<td>OCV</td>
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<tr>
<td>Isolation voltage (continuous voltage withstanding)</td>
<td>OCV</td>
</tr>
<tr>
<td>Open circuit protection</td>
<td>OCV</td>
</tr>
<tr>
<td>Overvoltage capability</td>
<td>≤ 500 V DC continuous</td>
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<tr>
<td>Cold junction compensation range</td>
<td>≤ 50 °C</td>
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<tr>
<td>Power-Breakdown</td>
<td>≤ 291.2 mW at 10 V DC</td>
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<tr>
<td>Key switch position</td>
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</tbody>
</table>

### Accuracy Specifications

- **Two-point Accuracy with 4-20 mA Filter**: ±0.2% full scale (F.S.)
- **Accuracy with 4-20 mA Filter**: ±0.2% F.S.
- **Accuracy with 0-10 V Filter**: ±0.2% F.S.
- **Accuracy with 4-20 mA Filter**: ±0.2% F.S.

### Environmental Conditions

- **Temperature operating**: -40 °C to 50 °C (2 °C to 102 °F)
- **Temperature storage**: -40 °C to 85 °C (4 °C to 185 °F)
- **Relative humidity**: 5% to 95% non-condensing

### General Specifications

- **Voltage range**: 0-10 V, 4-20 mA
- **Supply current**: 24 mA max @ 24 VDC
- **Dimensions with module installed in base**: 5.8 x 4.6 x 2.7 in (148 x 116 x 69 mm)

### Dimensions (with module installed in base)

- **Height**: 2.7 in (69 mm)
- **Width**: 5.8 in (148 mm)
- **Depth**: 4.6 in (116 mm)

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