**2500-40F / 2559-FPC**

**I/O Connectors**

---

**Description**

Most 2500-Series I/O modules employ a specially-designed 40-position screw-terminal connector for terminating the field I/O wiring. This connector allows termination of multiple wires with access to both the wire and the screw clamp from the front of the module.

**Features**

- 2500-40F Replaces Siemens® 2587705-8011
- Front access to screws and wires
- 14-22 AWG
- 15A, 300V rating
- Special 2559-FPC 40-position connector includes cold junction compensation for the 2556-A and the 2559-TC Thermocouple input module

**Important Note:** Do not tighten screws beyond 4.55 in-lb (0.508 N-m) torque rating, as damage can occur.

---

**Specifications**

- **Housing:** Glass filled polyester UL recognized flammability classification 94V-0, black, 130°C max operating temperature
- **Contacts:** Copper alloy, selective gold over nickel
- **Screws:** #3-48 steel, zinc plating with clear chromate coating
- **Wire cage:** Steel, zinc plating with clear chromate coating
- **Cam:** Steel alloy, zinc plating with clear chromate coating
- **Ratings:** 15A, 300V, (limited space ratings)
- **Wire range:** 14-22 AWG (0.32 - 2 mm²) (solid or stranded)
- **Tightening torque:** 3.5 to 4.5 in-lb (0.395 N-m to 0.508 N-m)
2500-40F / 2559-FPC I/O Connectors

IO Selection Guide

These modules require the 2500-40F. The 2500-40F is ordered separately for each module.

<table>
<thead>
<tr>
<th>Module Model Number</th>
<th>Module Model Number</th>
<th>Module Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 2501</td>
<td>• 2558</td>
<td>• 2590-A</td>
</tr>
<tr>
<td>• 2502</td>
<td>• 2559-RTD</td>
<td>• 2590-EF</td>
</tr>
<tr>
<td>• 2530</td>
<td>• 2560-A</td>
<td>• 2591-A</td>
</tr>
<tr>
<td>• 2531</td>
<td>• 2562</td>
<td>• 2591-EF</td>
</tr>
<tr>
<td>• 2532</td>
<td>• 2580</td>
<td>• 2596</td>
</tr>
<tr>
<td>• 2534</td>
<td>• 2581</td>
<td>• 2596-8</td>
</tr>
<tr>
<td>• 2541</td>
<td>• 2582</td>
<td>• 2597</td>
</tr>
<tr>
<td>• 2550-A</td>
<td>• 2588-8</td>
<td>• 2598</td>
</tr>
<tr>
<td>• 2554-A</td>
<td>• 2589-A</td>
<td>• 2598-8</td>
</tr>
<tr>
<td>• 2555-A</td>
<td>• 2589-B</td>
<td>• 2599</td>
</tr>
</tbody>
</table>

These modules require the 2559-FPC which provides CJC connections for Thermocouple modules. The 2559-FPC is ordered separately for each module.

Refer to the Installation and Operation Guide for each module’s wiring connections and label.

Wire Stripping Dimensions

The stripping dimensions are the same for all wire gauges.

- Insulated Wire
- Bare Stripped Wire - Strip the insulation back approximately 0.375 inches or 9.525 mm.

- Once the wire is stripped it is ready to insert into the front of the connector. With the wire inserted tighten the front connector screw down using a torqueing screw driver. Tighten the screw to 4.5 in-lb or 0.508 N-m. Do not over tighten.
2559-FPC  I/O Connectors for the 2556-A

The correct label for using a 2559-FPC with a 2556-A

There are different wiring labels for the 2556-A and the 2559-TC. The appropriate label must be applied to the 2559-FPC depending on which module the connector is being installed with. Labels are included with the module packaging. Below is the correct label for the 2556-A

**2556-A Wiring Label**

Below is the label for the 2556-A. The label is included with the 2556-A when shipped. There are 2 labels one is for the component side and the other is for the solder side. Please refer to the Installation and Operation Guide for additional details.

**2556-A Wiring Diagram**

Below is the wiring diagram for the 2556-A. The labeling should match the diagram.
2559-FPC  I/O Connectors for the 2559-TC

The correct label for using a 2559-FPC with 2559-TC

There are different wiring labels for the 2556-A and the 2559-TC. The appropriate label must be applied to the 2559-FPC depending on which module the connector is being installed with. Labels are included with the module packaging. Below is the correct label for the 2559-TC.

2559-TC Wiring Label

Below is the label for the 2556-A. The label is included with the 2556-A when shipped. There are 2 labels one is for the component side and the other is for the solder side. Please refer to the Installation and Operation Guide for additional details.

2559-TC Wiring Diagram

Below is the wiring diagram for the 2559-TC. The labeling should match the diagram.
2500-40F / 2559-FPC I/O Connectors

Inserting a 2500-40F or a 2559-FPC on a 2500 Module

New connectors can sometimes be difficult to install the first few times they are plugged onto a module. If you encounter this difficulty, you can use the “rolling” technique shown in the pictures below to attach the connector gradually from top to bottom.

Step 1: Starting at the top insert the connector part of the way and start rolling the connector keeping the top inserted.

Step 2: Once the connector is inserted at the top roll the connector down while pushing the connector in to completely insert it on the board.

Step 3: Once you have rolled the connector all the way down and fully inserted onto the PCB you can finish the installation by screwing the Thumb Screws down. Do not overtighten.