

SCXI™-1332 HIGH-VOLTAGE 4 × 8 MATRIX TERMINAL BLOCK

This guide describes how to make signal connections and install the SCXI-1332 terminal block with your SCXI-1127/1128 module.

Introduction

The SCXI-1332 terminal block is used with the SCXI-1127 or the SCXI-1128 module to create a 4 × 8 matrix without needing any extra wiring except for connecting the signals to the rows and columns of the matrix. You can use matrix expansion cables to expand the size of the matrix. Refer to the *SCXI-1127/1128 User Manual* to use multiple SCXI-1127/SCXI-1332 or SCXI-1128/SCXI-1332 combinations to build matrixes larger than 4 × 8.

The SCXI-1332 terminal block has 12 pairs of screw terminals—eight for accessing eight columns of the matrix and four for accessing four rows of the matrix. In addition to the screw terminals, the SCXI-1332 has six connectors for matrix expansion. Four of the six connectors are for column expansion and two are for row expansion.

Conventions Used in This Guide



The following conventions are used in this guide:

This icon denotes a note, which alerts you to important information.



This icon denotes a caution, which advises you of precautions to take to avoid injury, data loss, or a system crash.

italic

Italic text denotes variables, emphasis, a cross reference, or an introduction to a key concept. This font also denotes text that is a placeholder for a word or value that you must supply.

What You Need to Get Started

To set up and use your SCXI-1332 terminal block, you need the following items:

- SCXI-1332 terminal block
- This installation guide
- SCXI chassis
- SCXI-1127/1128 module
- SCXI-1127/1128 User Manual*
- Number 1 and 2 Phillips-head screwdrivers
- 1/8 in. flathead screwdriver
- Long-nose pliers
- Wire cutter
- Wire insulation stripper

Safety Information

The following cautions contain important safety information concerning hazardous voltages.



Cautions You *must* insulate all of your signal connections appropriately to the *highest* available voltage with which the terminal block may come in contact. Any voltage connected to the terminal block may appear on any other pin of this terminal block.

Equipment described in this document must be used in an Installation Category II¹ environment per IEC 60664. This category requires local level mains-connected installation.

Do *not* operate the module in an explosive atmosphere or where there may be flammable gases or fumes.

Shock hazard—This unit should only be opened by qualified personnel aware of the dangers involved. Disconnect all power before removing the cover. Always install the grounding screw. If signal wires are connected to the module or terminal block, dangerous voltages may exist even when the equipment is turned off. Before you remove any installed

¹ Category II refers to local-level power distribution such as that provided by a standard wall outlet.

terminal block or module, disconnect the AC power line or any high-voltage sources, ($\geq 30 V_{\text{rms}}$ and $42.4 V_{\text{peak}}$, or 60 VDC), that may be connected to any terminal block or module.

Do *not* operate damaged equipment. The safety-protection features built into this module can be impaired if the module becomes damaged in any way. If it is damaged, turn the module off and do *not* use it until service-trained personnel can check its safety. If necessary, return the module to National Instruments for service and repair to ensure that its safety is not compromised.

The terminal block must be used in a UL-listed SCXI chassis with a UL-listed SCXI module.

Use only 26–14 AWG wire with a voltage rating of 300 V and 60 °C for all signals that may come in contact with 250 V.

Do *not* substitute parts or modify equipment. Because of the danger of introducing additional hazards, do *not* install unauthorized parts or modify the terminal block. Return the module to National Instruments for service and repair to ensure that its safety features are not compromised.

When using the terminal block with high common-mode voltages, you *must* insulate your signal wires appropriately. National Instruments is *not* liable for any damages or injuries resulting from inadequate signal wire insulation.

Connections, including power signals to ground and vice versa, that exceed any of the maximum signal ratings on the SCXI-1332 can damage any or all of the modules connected to the SCXI chassis, the host computer, and the SCXI-1332. National Instruments is *not* liable for any damages or injuries resulting from incorrect signal connections.

If high voltages ($\geq 30 V_{\text{rms}}$ and $42.4 V_{\text{peak}}$, or 60 VDC) are present, you must connect safety earth ground to the strain-relief tab of the terminal block. This action maintains compliance with UL 3111-1 and IEC-61010, and protects against electric shock when the terminal block is not connected to the chassis. To connect the safety earth ground to the strain-relief tab, run an earth ground wire in the cable from the signal source to the terminal block. National Instruments is *not* liable for any damages or injuries resulting from inadequate safety earth ground connections.

Do *not* loosen or re-orient the safety ground lug hardware when connecting the safety ground wire; to do so reduces the safety isolation between the high voltage and safety ground.

Clean the terminal block by brushing off light dust with a soft, nonmetallic brush. Remove other contaminants with deionized water and a stiff nonmetallic brush. The unit must be completely dry and free from contaminants before returning to service.

Connecting Signals to the Terminal Block



Note Refer to the *Safety Information* section before removing equipment covers or connecting or disconnecting any signal wires.

To connect the signal to the terminal block, refer to Figure 1 while performing the following steps:

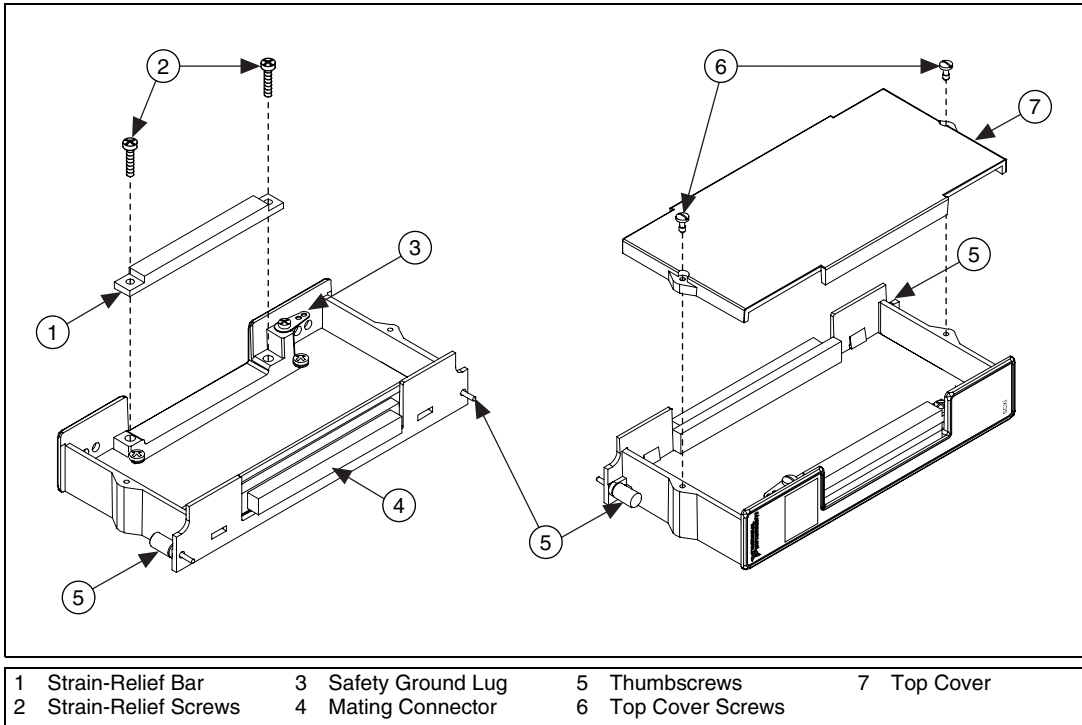


Figure 1. SCXI-1332 Parts Locator Diagram

1. Unscrew the top cover screws and remove the top cover.
2. Loosen the strain-relief screws and remove the strain-relief bar.
3. Run the signal wires through the strain-relief opening. You can add insulation or padding if necessary.
4. Prepare your signal wire by stripping the insulation no more than 7 mm.
5. Connect the wires to the screw terminals by inserting the stripped end of the wire fully into the terminal. No bare wire should extend past the screw terminal. Exposed wire increases the risk of short circuits and equipment failure.

When connecting your signals to the SCXI-1332, follow the labeling on the SCXI-1332 for the appropriate module, as indicated in Figure 2.

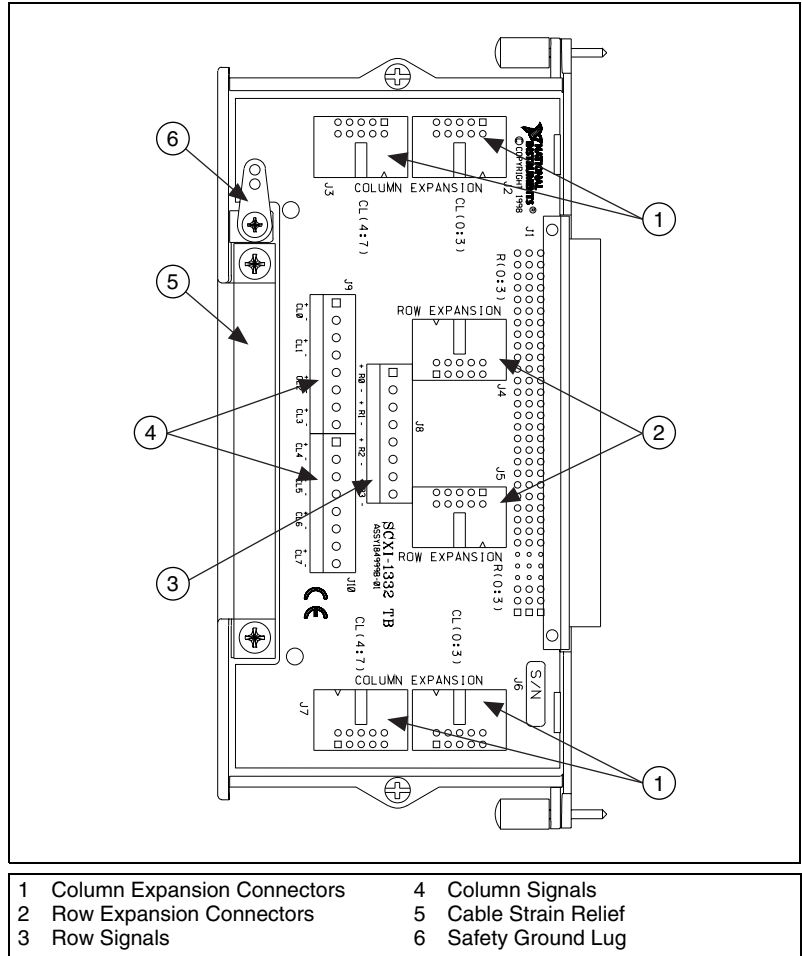


Figure 2. SCXI-1332 Signal Connections

6. Tighten the screws to a torque of 5–7 in.-lb.
7. Connect safety earth ground to the safety ground lug. Refer to the [Safety Information](#) section for connection information.
8. Reinstall the strain-relief bar and tighten the strain-relief screws.
9. Reinstall the top cover and tighten the top cover screws.

Installing the Terminal Block

To connect the terminal block to the SCXI module front connector, perform the following steps:

1. Connect the module front connector to its mating connector on the terminal block.
2. Tighten the top and bottom thumbscrews on the back of the terminal block to hold it securely in place.

Specifications

All specifications are typical at 25 °C unless otherwise specified.

Maximum Voltage

Terminal to earth250 V_{rms} or VDC

Terminal to terminal250 V_{rms} or VDC

Environment

Operating temperature0 to 50 °C

Storage temperature-20 to 70 °C

Relative humidity10 to 90%

Safety

Designed in accordance with IEC61010-1, UL 3111-1, and CAN/CSA C22.2 No. 1010.1 for electrical measuring and test equipment

For use at altitudes up to 2000 m

Indoor use only

Installation Category II

Pollution Degree 2

Electromagnetic Compatibility

EMC/EMI.....	CE, C-Tick and FCC Part 15 (Class A) Compliant
Electrical Emissions.....	EN 55011 Class A at 10 m; FCC Part 15A above 1 GHz
Electrical Immunity.....	Evaluated to EN 61326:1998, Table 1



Note This device should only be operated with shielded cabling for full EMC and EMI compliance. See the Declaration of Conformity for this product for any additional regulatory compliance information.

Technical Support Resources

NI Web Support

National Instruments Web support is your first stop for help in solving installation, configuration, and application problems and questions. Online problem-solving and diagnostic resources include frequently asked questions, knowledge bases, product-specific troubleshooting wizards, manuals, drivers, software updates, and more. Web support is available through the Technical Support section of ni.com

Worldwide Support

National Instruments has offices located around the world to help address your support needs. You can access our branch office Web sites from the Worldwide Offices section of ni.com. Branch office Web sites provide up-to-date contact information, support phone numbers, e-mail addresses, and current events.

If you have searched the technical support resources on our Web site and still cannot find the answers you need, contact your local office or National Instruments corporate. For telephone support in the United States, dial 512 795 8248. For telephone support outside the United States, contact your local branch office:

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Denmark 45 76 26 00, Finland 09 725 725 11, France 01 48 14 24 24,
Germany 089 741 31 30, Greece 30 1 42 96 427, Hong Kong 2645 3186,
India 91805275406, Israel 03 6120092, Italy 02 413091,

Japan 03 5472 2970, Korea 02 596 7456, Mexico 5 280 7625,
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