

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

This guide describes how to install and use the SCXI-1332 terminal block with your SCXI-1127 module.

Introduction

The SCXI-1332 terminal block is used with the SCXI-1127 module to create an 8 × 4 matrix without any extra wiring except for hooking up your 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 User Manual* to use multiple SCXI-1127/SCXI-1332 combinations to build matrices larger than 8 × 4.

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 to the left of bold italicized text denotes a note, which alerts you to important information.



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

bold italic

Bold italic text denotes an activity objective, note, caution, or warning.

italic

Italic text denotes variables, emphasis, a cross reference, or an introduction to a key concept.

What You Need to Get Started

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

- SCXI-1332 terminal block
- SCXI-1332 High-Voltage 8 × 4 Matrix Terminal Block Installation Guide*
- SCXI chassis
- SCXI-1127 module
- SCXI-1127 User Manual*
- No. 1 and No. 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 II 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 terminal block or module, disconnect the*

AC power line or any high-voltage sources, ($\geq 30 V_{rms}$ and $42.4 V_{peak}$ 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 ($\geq 30 V_{rms}$ and $42.4 V_{peak}$ or 60 VDC) are present, **YOU MUST CONNECT SAFETY EARTH GROUND TO THE STRAIN-RELIEF TAB OF THE TERMINAL BLOCK.** This 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 solder lug hardware when connecting the safety ground wire; to do so reduces the safety isolation between the high voltage and safety ground.

Signal Connection



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, perform the following steps, referring to Figures 1 and 2 as necessary:

1. Unscrew the top cover screws and remove the 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 shorting and causing a 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.

6. Tighten the screws to a torque of 5–7 in.-lb.
7. Connect safety earth ground to the safety ground solder 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.
10. Connect the terminal block to the module front connector as explained in the *Installation* section later in this guide.

Figure 1 shows the SCXI-1332 terminal block parts locator diagram.

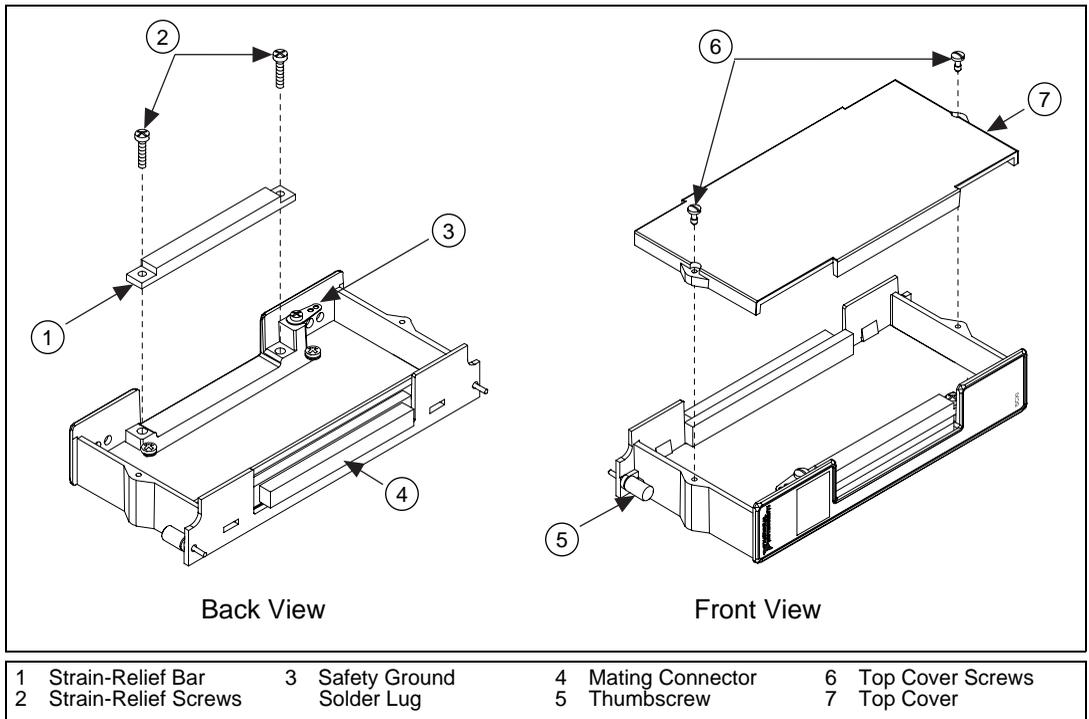


Figure 1. SCXI-1332 Parts Locator Diagram

Figure 2 shows the SCXI-1332 signal connections.

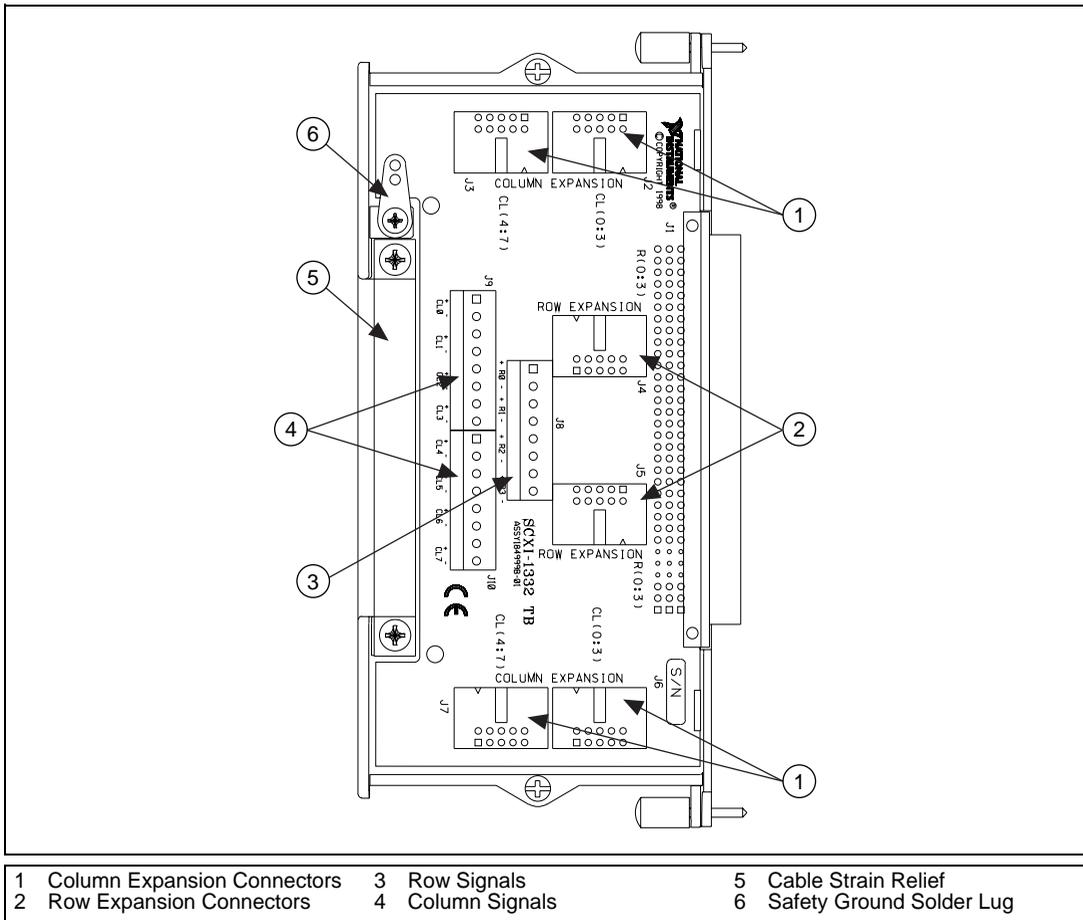


Figure 2. SCXI-1332 Signal Connections

Installation

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.

Cleaning the Terminal Block

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.

Specifications

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

Maximum Voltage

Terminal to earth..... 250 V_{rms} or VDC

Terminal to terminal..... 250 V_{rms} or VDC

Environment

Operating temperature..... 0 to 50 °C

Storage temperature -20 to 70 °C

Relative humidity 10 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

Approved at altitudes up to 2000 m

Indoor use only

Installation Category II

Pollution Degree 2

Support Information

Internet Support

E-mail: support@natinst.com

FTP Site: <ftp.natinst.com>

Web Address: <http://www.natinst.com>

Bulletin Board Support

BBS United States: 512 794 5422

BBS United Kingdom: 01635 551422

BBS France: 01 48 65 15 59

Fax-on-Demand Support

512 418 1111

Telephone Support (USA)

Tel: 512 795 8248

Fax: 512 794 5678

International Offices

Australia 03 9879 5166, Austria 0662 45 79 90 0, Belgium 02 757 00 20, Brazil 011 288 3336,
Canada (Ontario) 905 785 0085, Canada (Québec) 514 694 8521, Denmark 45 76 26 00, Finland 09 725 725 11,
France 01 48 14 24 24, Germany 089 741 31 30, Hong Kong 2645 3186, Israel 03 6120092, Italy 02 413091,
Japan 03 5472 2970, Korea 02 596 7456, Mexico 5 520 2635, Netherlands 0348 433466, Norway 32 84 84 00,
Singapore 2265886, Spain 91 640 0085, Sweden 08 730 49 70, Switzerland 056 200 51 51, Taiwan 02 377 1200,
United Kingdom 01635 523545

National Instruments Corporate Headquarters

6504 Bridge Point Parkway Austin, Texas 78730-5039 USA Tel: 512 794 0100



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