INSTALLATION INSTRUCTIONS

NI SCXI™-1334

Terminal Block for the NI SCXI-1129

This guide describes how to install and connect signals to the National Instruments SCXI-1334 terminal block to configure the SCXI-1129 switch module as a 4×64 matrix.

Screw terminals on the SCXI-1334 allow you to access the 4×64 matrix. The SCXI-1334 also contains terminals for scanner advanced output and external input trigger signals, two 128-pin DIN connectors for connecting columns between modules, and 10-pin headers for connecting rows between modules using expansion cables.

Refer to the *NI Switches Getting Started Guide* to determine when to install the terminal block. Visit ni.com/switches for information on other switching solutions.

Conventions

The following conventions are used in this guide:

»   The » symbol leads you through nested menu items and dialog box options to a final action. The sequence **File»Page Setup»Options** directs you to pull down the **File** menu, select the **Page Setup** item, and select **Options** from the last dialog box.

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. When this symbol is marked on a product, refer to the *Read Me First: Safety and Radio-Frequency Interference* document for information about precautions to take.

bold   Bold text denotes items that you must select or click in the software, such as menu items and dialog box options. Bold text also denotes parameter names.

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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.
`monospace`	Text in this font denotes text or characters that you should enter from the keyboard, sections of code, programming examples, and syntax examples. This font is also used for the proper names of disk drives, paths, directories, programs, subprograms, subroutines, device names, functions, operations, variables, filenames and extensions, and code excerpts.

1. Unpack the Terminal Block

To avoid damage in handling the terminal block, take the following precautions:

⚠ **Caution** *Never* touch the exposed pins of connectors.

- Ground yourself using a grounding strap or by touching a grounded object.
- Touch the antistatic package to a metal part of your computer chassis before removing the terminal block from the package.

Remove the terminal block from the package and inspect the terminal block for loose components or any sign of damage. Notify NI if the terminal block appears damaged in any way. Do *not* install a damaged terminal block into your system.

Store the SCXI-1334 in the antistatic envelope when not in use.

2. Verify the Components

Make sure that you have the following items:

❑ SCXI-1334 terminal block

❑ SCXI chassis

❑ SCXI-1129 switch module

❑ 1/8 in. flathead screwdriver

❑ Numbers 1 and 2 Phillips screwdrivers

❑ Long-nose pliers

❑ Wire cutter

❑ Wire insulation stripper

❑ Matrix expansion plug (to expand the number of rows of a matrix)

❑ Matrix expansion cable (to expand the number of columns of a matrix)

3. Connect Signals

To connect the signal(s) to the terminal block, refer to Figures 1 and 2 while completing the following steps:

⚠️ **Caution** This module is rated for Measurement Category I and intended to carry signal voltages no greater than 150 V. This module can withstand up to 800 V impulse voltage. Do not use this module for connection to signals or for measurements within Categories II, III, or IV. Do not connect to MAINS supply circuits (for example, wall outlets) of 115 or 230 VAC. Refer to the *NI Switches Getting Started Guide* for more information on measurement categories.

When hazardous voltages (>42.4 V_{pk}/60 VDC) are present on any relay terminal, safety low-voltage (≤42.4 V_{pk}/60 VDC) cannot be connected to any other relay terminal.

1. Prepare the signal wire by stripping the insulation no more than 7 mm from the end of the wire.
2. Remove the top cover screw.
3. Unsnap and remove the top cover.
4. Loosen the two strain-relief screws on the strain-relief bar.
5. Run the signal wires through the strain-relief opening.
6. Insert the stripped end of the wire fully into the terminal. Secure the wire by tightening the screw of the terminal. No bare wire should extend past the screw terminal. Exposed wire increases the risk of a short-circuit causing a failure.
7. Connect the safety earth ground to the safety ground lug.
8. Tighten the two screws on the strain-relief assembly to secure the cables.
9. Reinstall the top cover.
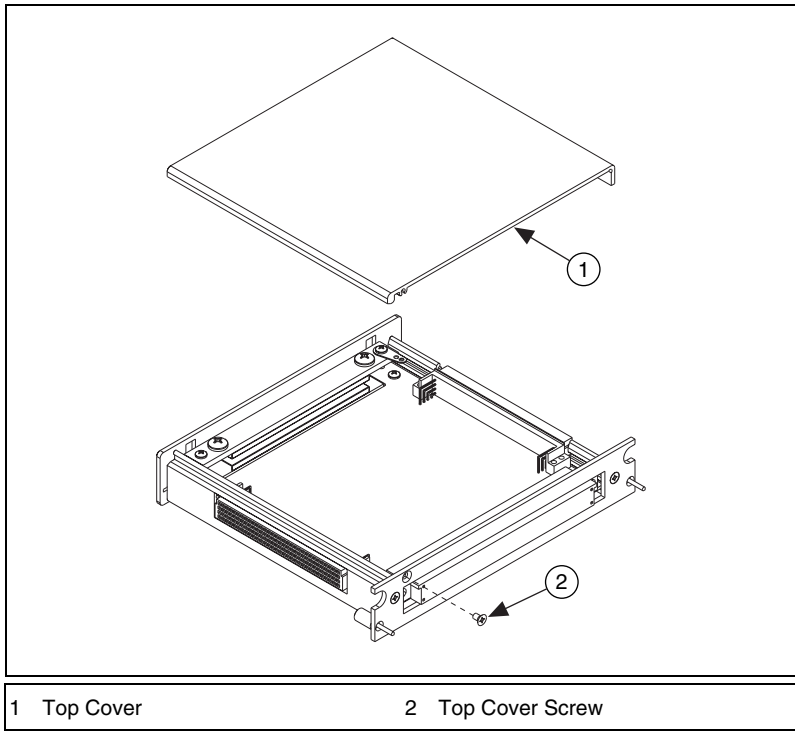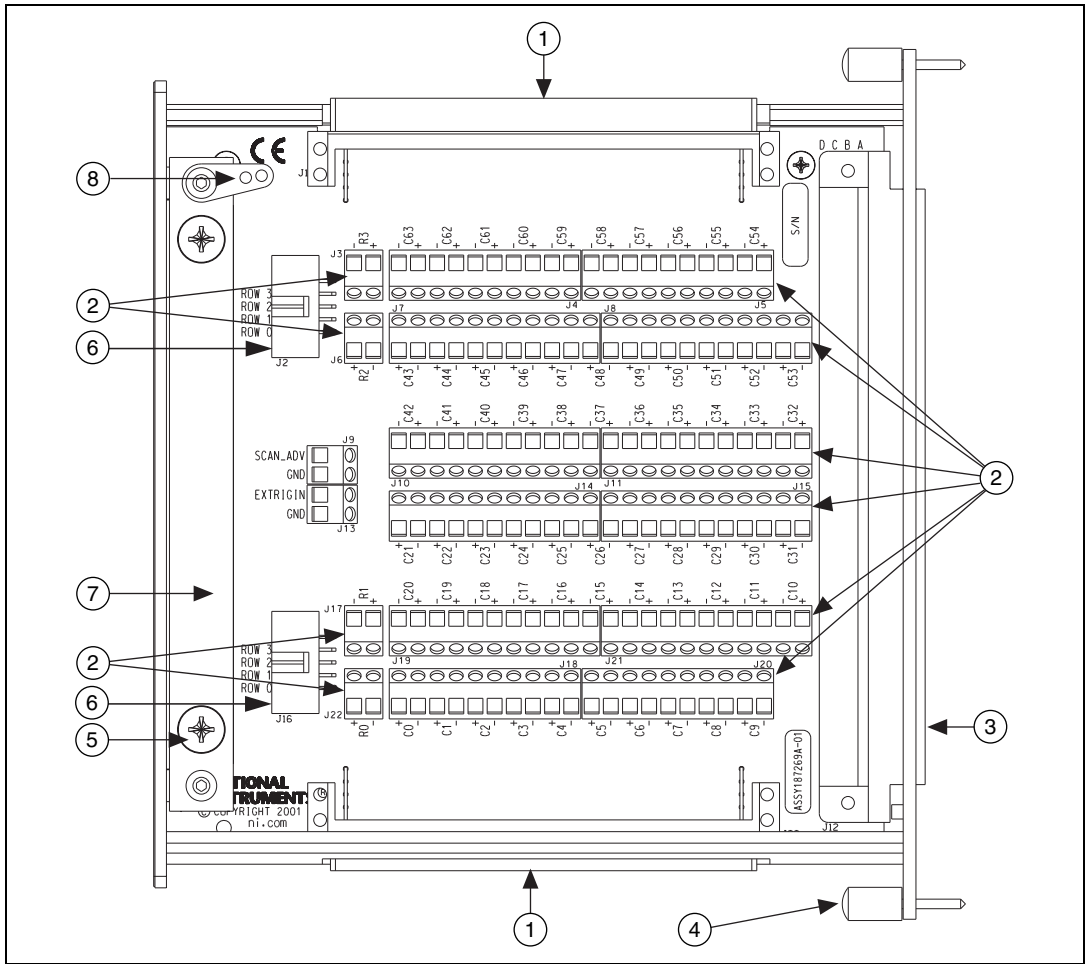10. Replace the top cover screw.

1 Top Cover	2 Top Cover Screw

Figure 1. SCXI-1334 Top Cover Diagram

1	Column Connectors	5	Strain-Relief Screw
2	Screw Terminals	6	Row Connectors
3	Rear Connector	7	Strain-Relief Bar
4	Thumbscrew	8	Safety Ground Lug

Figure 2. SCXI-1334 Parts Locator Diagram

4. Expand the Number of Columns

The SCXI-1334 offers convenient methods for expanding the number of columns of a matrix using two or more SCXI-1334 terminal blocks.

⚠ **Caution** When using matrix expansion cables, only connect terminal blocks of the same type together. Connecting different types of terminal blocks can damage the module or the equipment connected to the module. For example, you can connect two or more SCXI-1334 terminal blocks; however, do *not* connect the SCXI-1334 with any other type of terminal block.

If you are not expanding the number of columns of the matrix, skip to the *5. Install the Terminal Block* step. For more information about expanding matrices, refer to the *NI Switches Help*.

Figure 3 shows how to use a matrix expansion cable with SCXI terminal blocks to expand the number of columns of a 4×32 matrix, as an example. The matrix expansion cable connects rows to expand the number of columns. To expand the number of columns of a matrix, complete the following steps:

1. Connect one end of the matrix expansion cable to a row connection cable terminal in one of the terminal blocks.

2. Connect the other end of the matrix expansion cable to a row connection cable terminal in another terminal block.
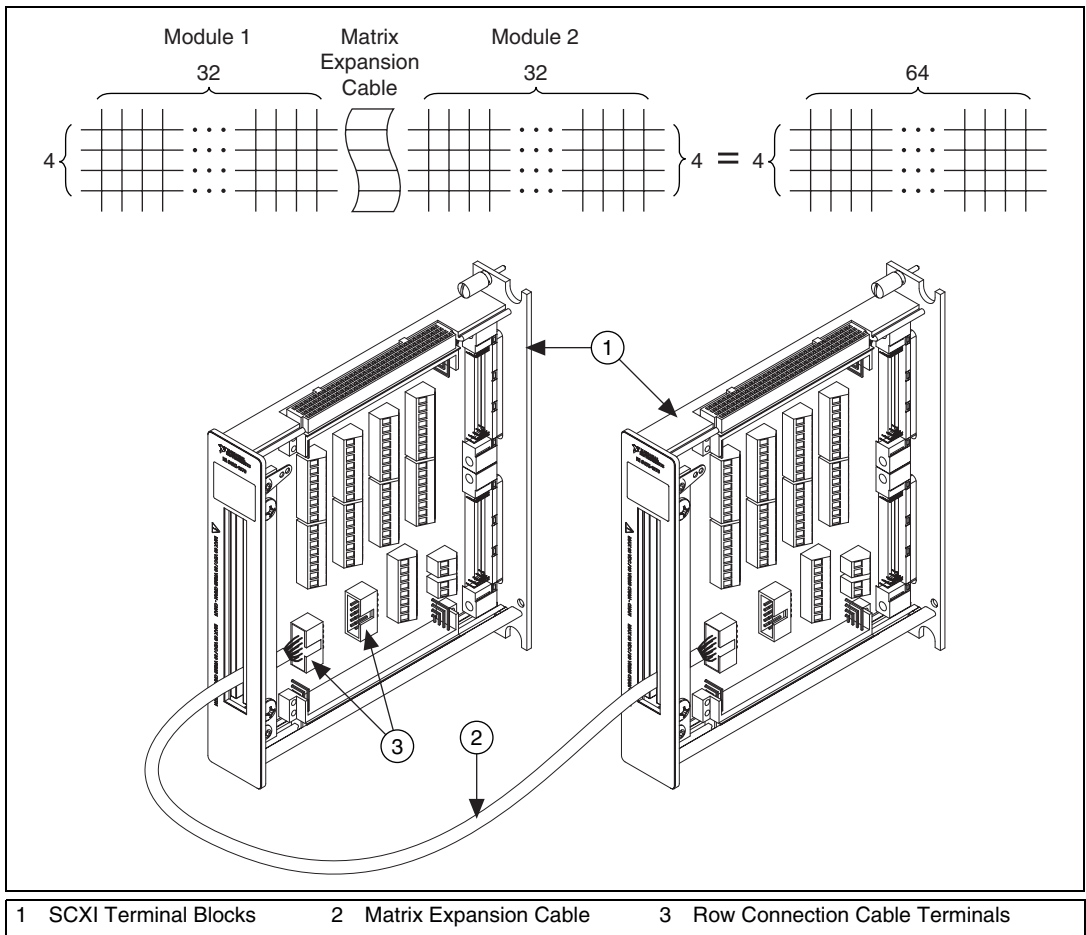
| 1 | SCXI Terminal Blocks | 2 | Matrix Expansion Cable | 3 | Row Connection Cable Terminals |

Figure 3. Expanding the Number of Columns with the Matrix Expansion Cable

The SCXI-1334 configures the SCXI-1129 as a 4×64 matrix. Connecting two SCXI-1334 terminal blocks as described above creates a 4×128 matrix.

5. Install the Terminal Block

To connect the SCXI-1334 to the SCXI-1129 front panel, refer to Figure 4 and complete the following steps:

✎ **Note** Install the SCXI-1129 if you have not already done so. Refer to the *NI Switches Getting Started Guide* for more information.

1. Plug the SCXI-1334 onto the front connector of the SCXI-1129.

2. Tighten the top and bottom thumbscrews on the terminal block rear panel to hold it securely in place.
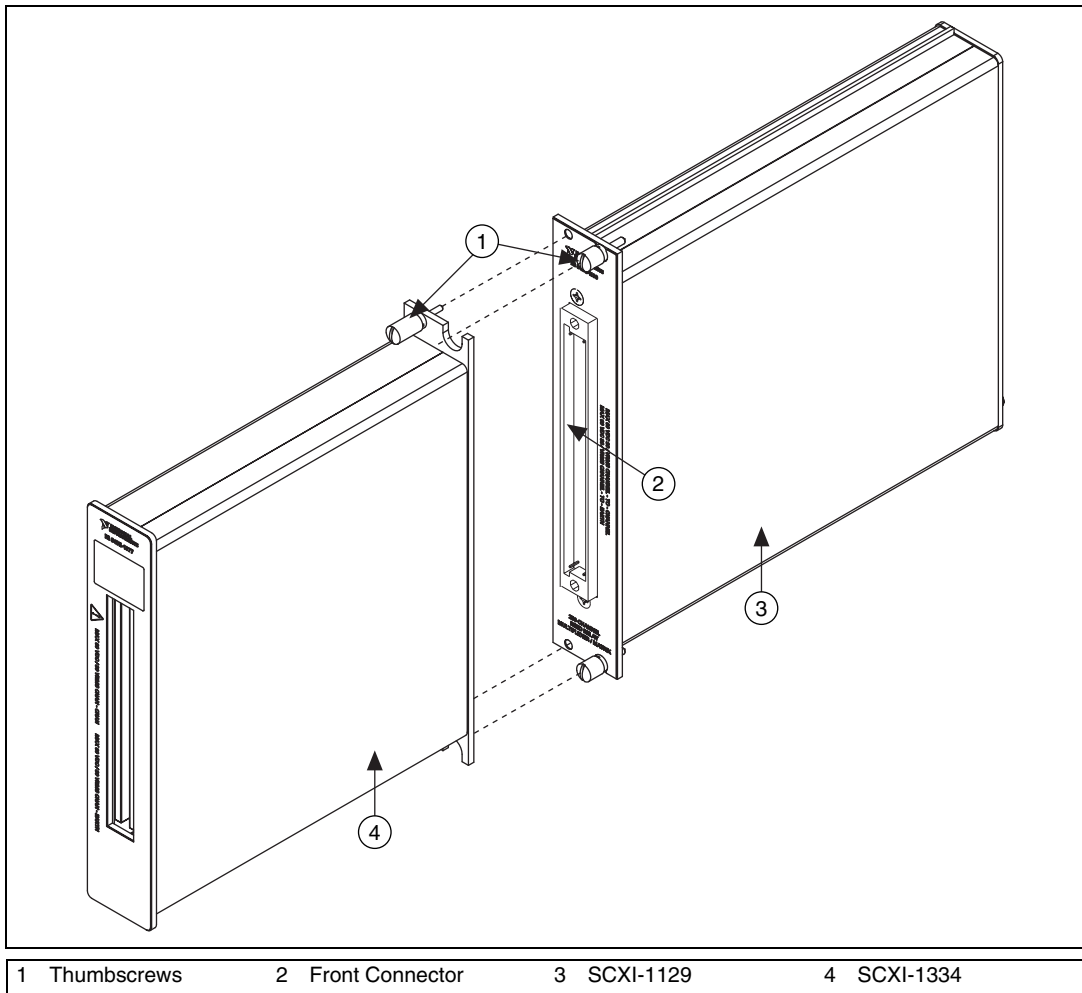

1	Thumbscrews	2	Front Connector	3	SCXI-1129	4	SCXI-1334

Figure 4. Installing the SCXI-1334 Terminal Block

6. Expand the Number of Rows

The SCXI-1334 offers convenient methods for expanding the number of rows of a matrix using two or more SCXI-1334 terminal blocks.

⚠️ **Caution** When using matrix expansion plugs, only connect terminal blocks of the same type. Connecting different types of terminal blocks can damage the module or the equipment connected to the module. For example, you can connect two or more SCXI-1334 terminal blocks; however, do *not* connect the SCXI-1334 with any other type of terminal block.

Figure 5 shows how to use a matrix expansion plug with SCXI terminal blocks to expand the number of rows of a 4×32 matrix, as an example. The matrix expansion plug connects columns to expand the number of rows. To expand the number of rows of a matrix, connect a matrix expansion plug to the top or bottom column connectors of the two terminal blocks.
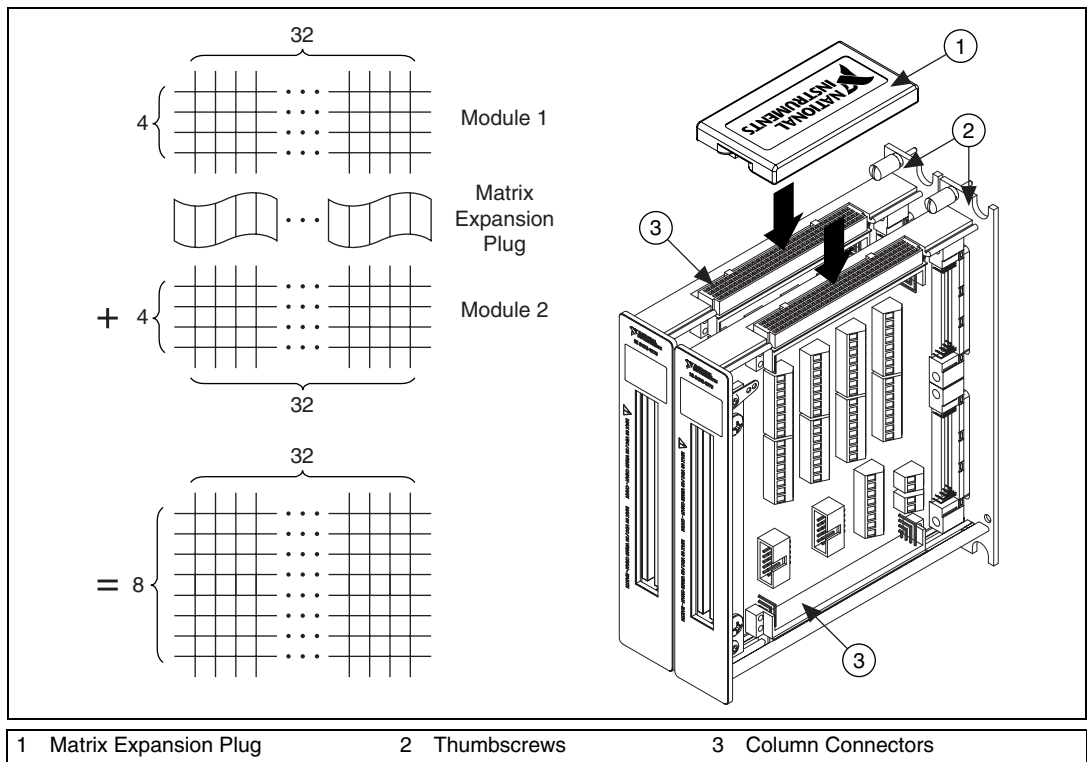

1	Matrix Expansion Plug	2	Thumbscrews	3	Column Connectors

Figure 5. Expanding the Number of Rows with the Matrix Expansion Plug

The SCXI-1334 configures the SCXI-1129 as a 4×64 matrix. Connecting the SCXI-1334 terminal blocks as described above creates an 8×64 matrix.

Specifications

Maximum Working Voltage

Maximum working voltage refers to the signal voltage plus the common-mode voltage.

Channel-to-earth ....150 V, Installation Category I

Channel-to-channel................................150 V

Maximum Current

Maximum current
(per channel) ....2 ADC, 2 AAC

Environmental

Operating temperature ....0 to 50 °C

Storage temperature ....–20 to 70 °C

Humidity ....10 to 90% RH, noncondensing

Pollution Degree 2

Approved at altitudes up to 2,000 m

Indoor use only

Safety

This product is designed to meet the requirements of the following standards of safety for electrical equipment for measurement, control, and laboratory use:

- IEC 61010-1, EN 61010-1
- UL 3111-1, UL 61010B-1
- CAN/CSA C22.2 No. 1010.1

Note For UL and other safety certifications, refer to the product label, or visit ni.com/hardref.nsf, search by model number or product line, and click the appropriate link in the Certification column.

Electromagnetic Compatibility

Emissions .... EN 55011 Class A at 10 m
FCC Part 15A above 1 GHz

Immunity .... EN 61326:1997 + A2:2001,
Table 1

EMC/EMI... CE, C-Tick, and FCC Part 15
(Class A) Compliant

Note For EMC compliance, you *must* operate this device with shielded cabling.

CE Compliance

This product meets the essential requirements of applicable European
Directives, as amended for CE marking, as follows:

Low-Voltage Directive (safety) 73/23/EEC

Electromagnetic Compatibility
Directive (EMC) 89/336/EEC

Note Refer to the Declaration of Conformity (DoC) for this product for any additional
regulatory compliance information. To obtain the DoC for this product, visit
ni.com/hardref.nsf, search by model number or product line, and click the
appropriate link in the Certification column.

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