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SCXI-1130

INSTALLATION INSTRUCTIONS

NI SCXI™-1379

Terminal Block for the NI SCXI-1130

このドキュメントには、日本語ページも含まれています。

This guide describes how to install and connect signals to the National Instruments SCXI-1379 terminal block to configure the SCXI-1130 as an 8x32, 1-wire matrix.

The SCXI-1379 terminal block, which installs in front of the SCXI-1130 switch module, uses screw terminals to connect signals and the trigger input and trigger output signals to the switch.

Refer to the *NI Switches Getting Started Guide* to determine when to install the terminal block.

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 tip, which alerts you to advisory information.

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.

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 and information on hardware labels.

NATIONAL INSTRUMENTS™

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 when you handle 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 the chassis before you remove 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 on a switch module.

Store the terminal block in the antistatic package when not in use.

2. Verify the Components

Make sure that you have the following items:

❏ SCXI-1379 terminal block

❏ SCXI chassis

❏ SCXI-1130 switch module

❏ 1/8 in. flathead screwdriver

❏ Phillips screwdriver

❏ Wire cutter

❏ Wire insulation stripper

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

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

Tip NI recommends using 28 AWG wire (ribbon or discrete) for use with the SCXI-1379 terminal block.
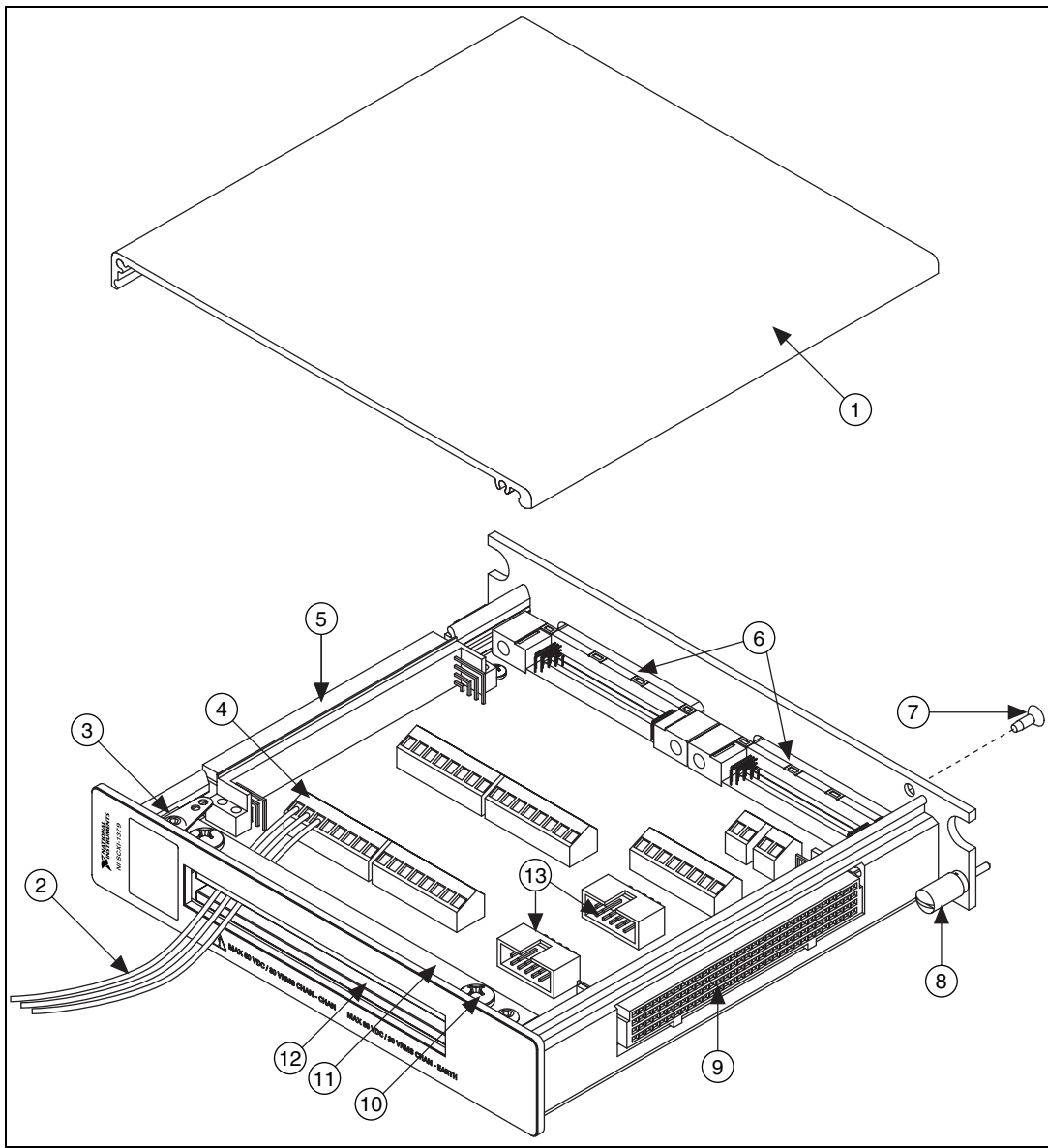
3. Connect Signals

To connect signals to the terminal block, refer to Figures 1 and 2 while completing the following steps:

1. Prepare the signal wire by stripping the insulation no more than 7 mm.

2. Remove the top cover screw.

3. Unsnap and remove the top cover.

4. Loosen the two strain-relief screws on the strain-relief assembly.

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 induced failure.
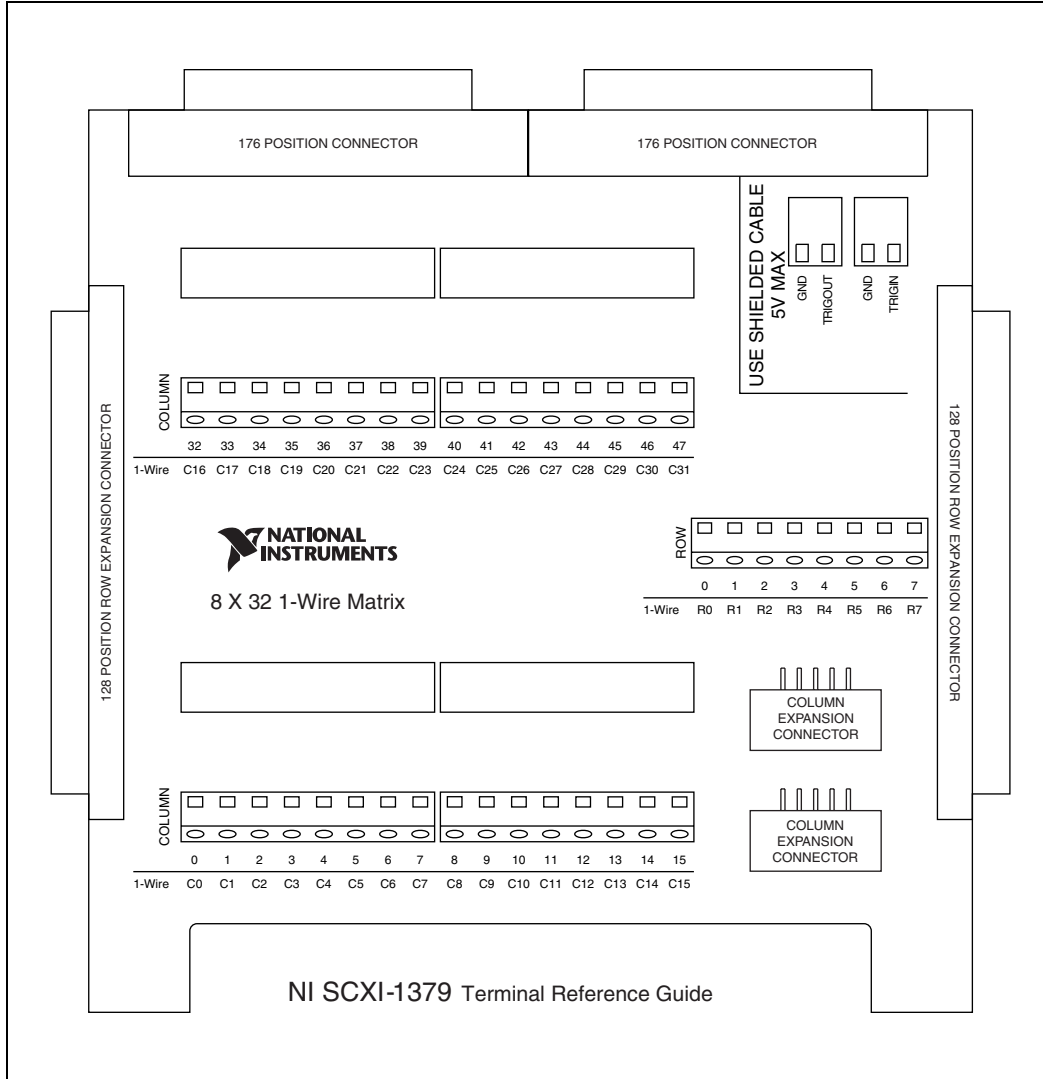
Note When connecting signals to the SCXI-1379, refer to Table 1 to determine where to connect signals for the 8x32, 1-wire matrix topology.

7. Tighten the two screws on the strain-relief assembly to secure the cables.

8. Reinstall the top cover.

9. Replace the top cover screw.

1	Terminal Block Top Cover	8	Thumbscrew
2	Signal Wires	9	Column Connector
3	Safety Ground Lug	10	Strain-Relief Screw
4	Screw Terminals	11	Strain-Relief Bar
5	Column Connector	12	Strain-Relief Opening
6	Rear Connectors	13	Row Connector
7	Top Cover Screw		

Figure 1. SCXI-1379 Terminal Block

Figure 2. SCXI-1379 Terminal Block Signal Connections

176 POSITION CONNECTOR

176 POSITION CONNECTOR

USE SHIELDED CABLE
5V MAX

GND

TRIGOUT

GND

TRIGIN

COLUMN

32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47

1-Wire C16 C17 C18 C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31

128 POSITION ROW EXPANSION CONNECTOR

128 POSITION ROW EXPANSION CONNECTOR

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8 X 32 1-Wire Matrix

ROW

0   1   2   3   4   5   6   7

1-Wire R0 R1 R2 R3 R4 R5 R6 R7

COLUMN EXPANSION CONNECTOR

COLUMN EXPANSION CONNECTOR

COLUMN

0   1   2   3   4   5   6   7   8   9   10 11 12 13 14 15

1-Wire C0 C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13 C14 C15

NI SCXI-1379 Terminal Reference Guide

Table 1. 8x32, 1-Wire Matrix Topology Mapping

| Software	Hardware	Software	Hardware	Software	Hardware
r0	ROW 0	c6	COLUMN 6	c19	COLUMN 35
r1	ROW 1	c7	COLUMN 7	c20	COLUMN 36
r2	ROW 2	c8	COLUMN 8	c21	COLUMN 37
r3	ROW 3	c9	COLUMN 9	c22	COLUMN 38
r4	ROW 4	c10	COLUMN 10	c23	COLUMN 39
r5	ROW 5	c11	COLUMN 11	c24	COLUMN 40
r6	ROW 6	c12	COLUMN 12	c25	COLUMN 41
r7	ROW 7	c13	COLUMN 13	c26	COLUMN 42
c0	COLUMN 0	c14	COLUMN 14	c27	COLUMN 43
c1	COLUMN 1	c15	COLUMN 15	c28	COLUMN 44
c2	COLUMN 2	c16	COLUMN 32	c29	COLUMN 45
c3	COLUMN 3	c17	COLUMN 33	c30	COLUMN 46
c4	COLUMN 4	c18	COLUMN 34	c31	COLUMN 47
c5	COLUMN 5				

4. Expanding Rows & Columns

The SCXI-1379 terminal block offers convenient methods for expanding the rows and/or columns of a matrix using two or more SCXI-1379 terminal blocks. If you are not expanding the rows or columns of the matrix, skip to the *Install the Terminal Block* section. For more information about expanding matrices, refer to the *NI Switches Help*.

Row Expansion

Figure 3 shows how to expand the rows of a 4x32 matrix using a matrix expansion plug. The matrix expansion plug connects columns to expand the rows. To expand the rows of a matrix, complete the following steps:

1. Connect two SCXI-1379 terminal blocks to the front connectors of the two adjacent SCXI-1130 modules.

2. Tighten the top and bottom chassis screws on the back of the terminal block rear panels to hold them securely in place.

3. Connect a matrix expansion plug to the top or bottom column connectors of the two SCXI-1379 terminal blocks.

| 1 | Matrix Expansion Plug | 3 | Column Connector |
| 2 | Thumbscrews | | |
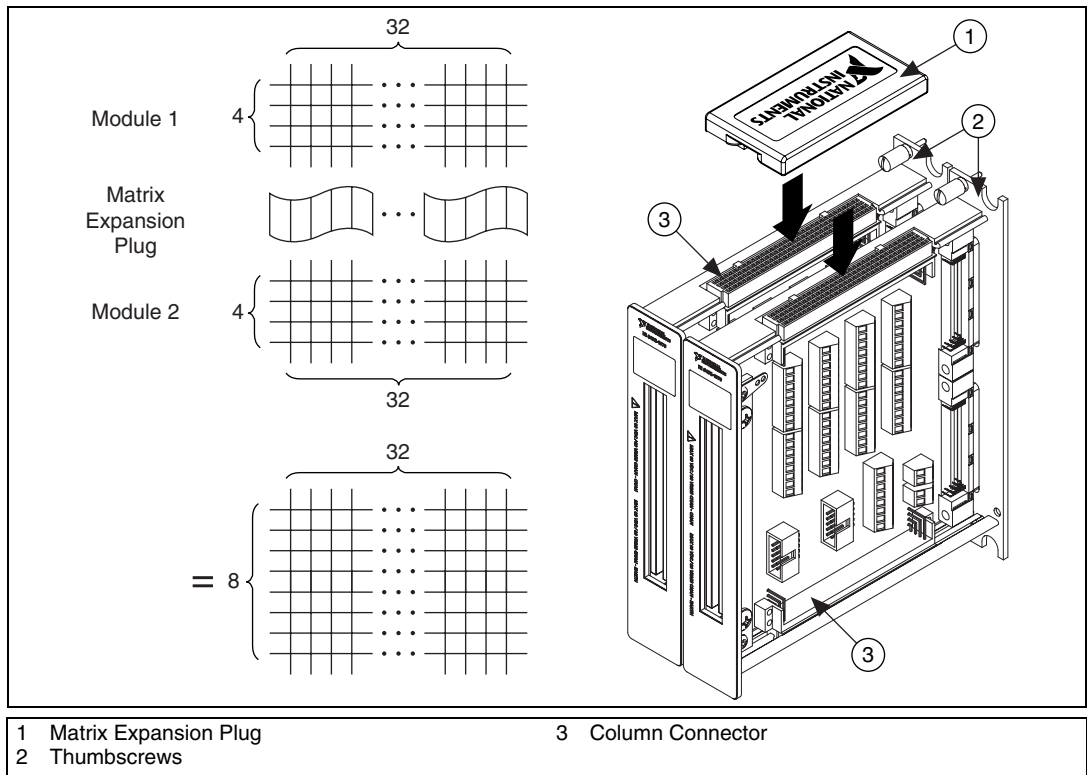
Figure 3. Row Expansion with the SCXI-1379

Column Expansion

Figure 4 shows how to expand the columns of a 4x32 matrix using a matrix expansion cable. The matrix expansion cable connects rows to expand the columns. To expand the columns of a matrix, complete the following steps:

1. Connect one end of the matrix expansion cable to one of the ROW CONNECTION CABLE terminals in one of the SCXI-1379 terminal blocks.

2. Connect the other end of the matrix expansion cable to one of the ROW CONNECTION CABLE TERMINALS in another SCXI-1379.

3. Connect the two SCXI-1379 terminal blocks to the front connectors of the two SCXI-1130 modules.

4. Tighten the top and bottom chassis screws on the back of the terminal block rear panels to hold them securely in place.


| 1 | SCXI-1379 | 3 | ROW CONNECTION CABLE Terminals |
| 2 | Matrix Expansion Cable | | |
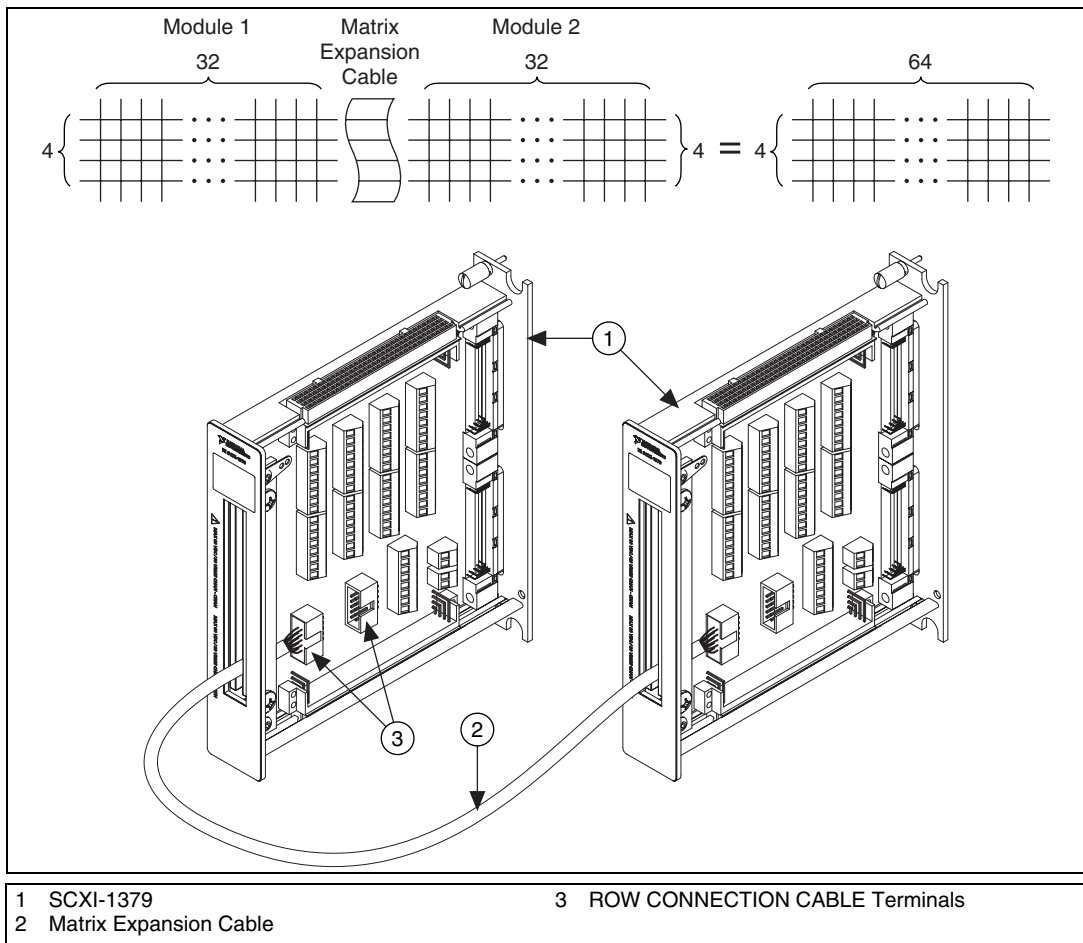
Figure 4. Column Expansion with the SCXI-1379

5. Install the Terminal Block

To connect the SCXI-1379 terminal block to the SCXI-1130 front panel, refer to Figure 5 and complete the following steps (the SCXI-1130 should already be installed in an SCXI chassis):

1. Plug the SCXI-1379 onto the front connectors of the SCXI-1130.

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

| 1 | Thumbscrew | 3 | SCXI-1130 |
| 2 | Front Connectors | 4 | SCXI-1379 |
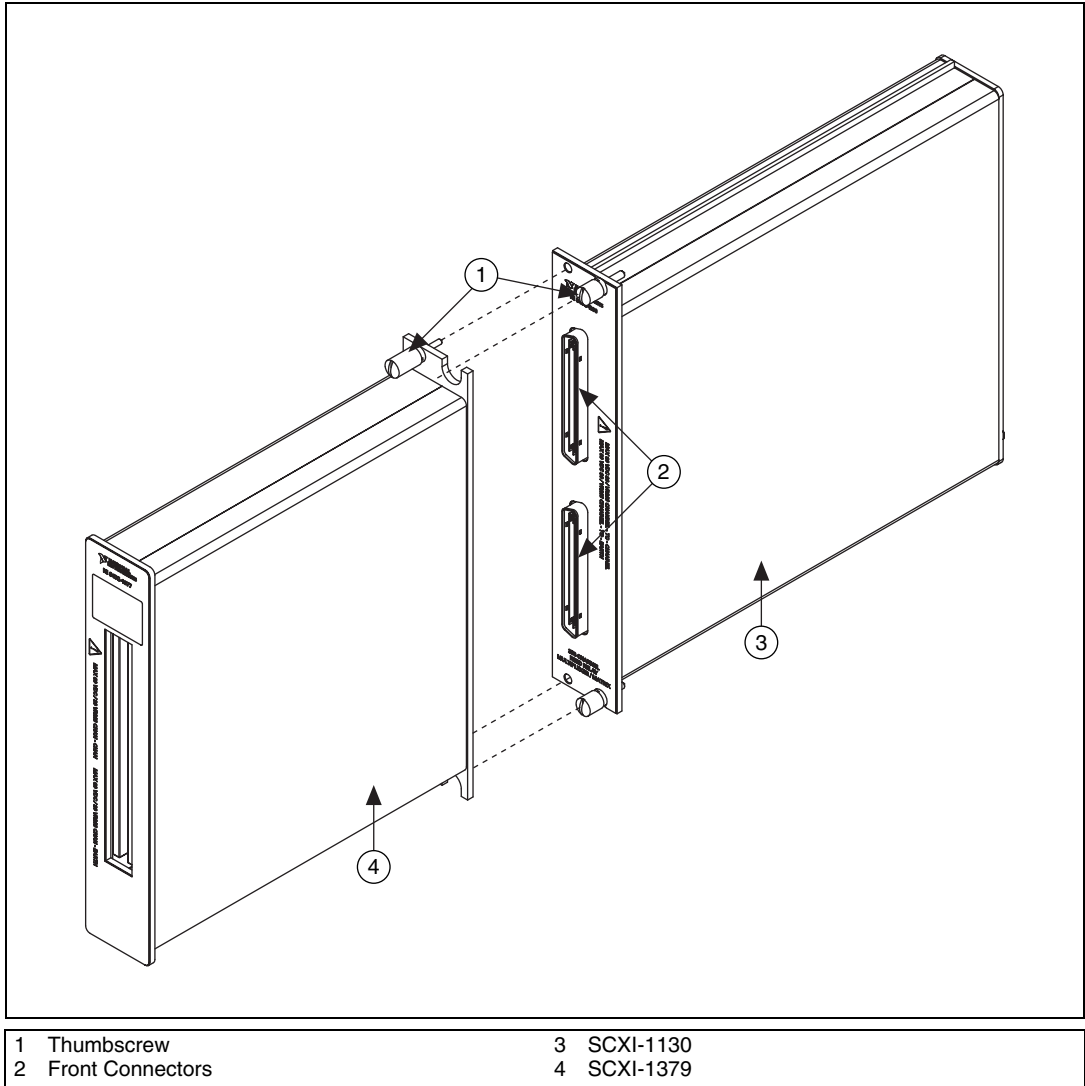
Figure 5. Installing the SCXI-1379 Terminal Block

Compliance and Certifications

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/certification`, 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/certification`, search by model number or product line, and click the appropriate link in the Certification column.