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Find the *National Instruments SCXI-1308* at our website: *Click HERE*

SCXI-1308 32-Channel Current Input Terminal Block

This guide describes how to install and use the SCXI-1308 terminal block with SCXI-1102, SCXI-1102B, SCXI-1102C, and SCXI-1100 modules.

Introduction

The SCXI-1308 32-channel current input terminal block is a shielded board with screw terminals that connects to the SCXI-1102/B/C and the SCXI-1100 modules. The SCXI-1308 has thirty-two 249 Ω precision resistors to convert current to voltage when measuring 0–20 mA and 4–20 mA process current sources.

The terminal block has 78 screw terminals for easy connection. Thirty-two pairs of screw terminals connect to the 32 differential inputs of the SCXI modules. One pair of terminals connects to the module's chassis ground pins. Three terminals connect to the SCXI module OUPUT and AOREF pins and to the SCXIbus guard. All of the other terminals—OUT0+, OUT0–, OUT1+, OUT1–, OUT2+, OUT2–, OUT3+, OUT3–, and AIREF—are reserved for future use.

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What You Need to Get Started

To set up and use your SCXI-1308, you will need the following items:

- ❑ SCXI-1308 32-channel current input terminal block
- ❑ *SCXI-1308 32-Channel Current Input Terminal Block Installation Guide*
- ❑ SCXI chassis
- ❑ SCXI-1102/B/C or SCXI-1100 module
- ❑ No. 1 and No. 2 Phillips-head screwdrivers
- ❑ $^1/_{10}$ in. and $^1/_4$ in. flathead screwdrivers

Current-Loop Resistors

The SCXI-1308 is used with the SCXI-1102/B/C and SCXI-1100 for measuring 0–20 mA and 4–20 mA sources. The SCXI-1308 contains a precision 249 Ω, 0.1%, 10 ppm, 1/4 W resistor across each channel to convert current to voltage. The SCXI module then measures the voltage and the data acquisition board acquires the voltage.

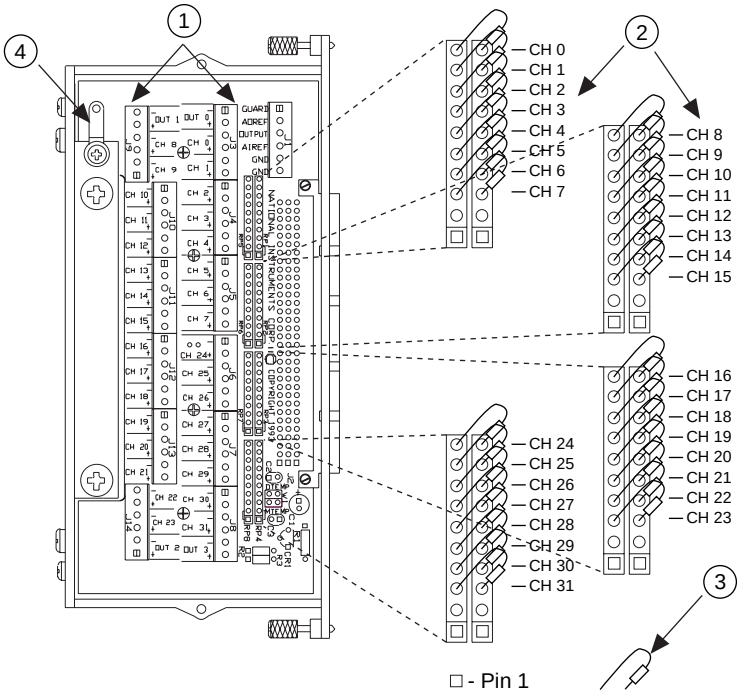
To convert the voltage read by the SCXI module to actual current being measured, use the following formula:

current = measured voltage / 249

The voltage measured for a 4–20 mA current source will be in the range of 0.996–4.98 VDC.

The SCXI-1308 can measure both current sources and voltage sources. When measuring voltage signals, you must remove the current-loop resistor for that input channel. The resistor for a particular channel can be identified in Figure 1.

Figure 1 shows the SCXI-1308 signal connections.



1 Screw Terminals	3 Current-Loop Resistors	4 Product Name, Assembly Number, Revision Letter, and Serial Number
2 Channel Number for Resistors		

Figure 1. SCXI-1308 Signal Connections

Signal Connection

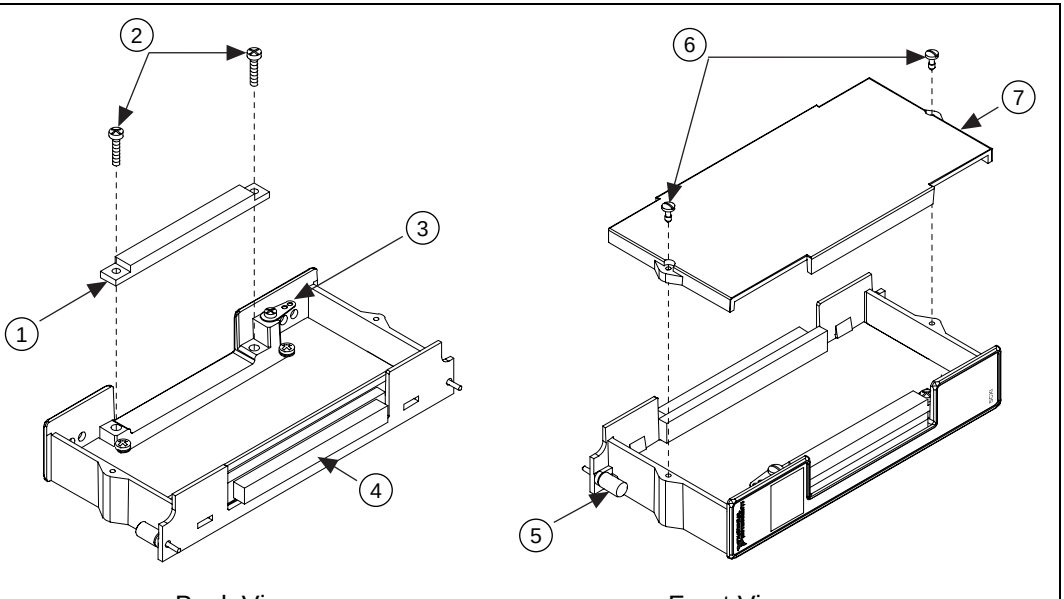
When connecting your signals to the SCXI-1308, follow the labeling on the SCXI-1308 for the appropriate module, as indicated in Figure 1.

To connect the signal to the terminal block, perform the following steps, referring to Figures 2 and 1 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.
6. Tighten the screw terminal to a torque of 5–7 in.-lb.
7. Connect your shield or earth ground to the earth ground solder lug.
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 2 shows the SCXI-1308 terminal block parts locator diagram.



1	Strain-Relief Bar	3	Earth Ground Solder Lug	4	Mating Connector	6	Top Cover Screws
2	Strain-Relief Screws			5	Thumbscrew	7	Top Cover

Figure 2. SCXI-1308 Parts Locator Diagram

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

Current-loop resistor

- Resistance ..... 249 Ω
- Tolerance 0.1%
- Temperature coefficient ..... ±10 ppm
- Wattage ..... 1/4 W

Maximum voltages

- Channel to channel ..... 30 Vrms and 42.4 Vpeak or 60 VDC
- Channel to earth ..... 30 Vrms and 42.4 Vpeak or 60 VDC
- Intra-channel (+) or (–) ..... 10 VDC or 10 Vrms

Maximum input current ..... 20 mA

Environmental

- Altitude ..... < 2,000 meters
- Operating temperature ..... 0° to 50° C
- Storage temperature ..... –20° to 70° C
- Relative humidity ..... 5% to 90% noncondensing

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