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Find the *National Instruments TB-2621* at our website: *Click HERE*

INSTALLATION GUIDE

TB-2621 Terminal Block

This guide describes how to install and use the National Instruments TB-2621 37-pin D-SUB high-voltage (150 V, CAT II) PXI front-mounting terminal block. The TB-2621 has 40 screw terminals for connecting up to 37 I/O signals. Use 16–30 AWG wire to connect to the TB-2621 terminals.

You can use the TB-2621 terminal block with low-voltage or high-voltage products. When hazardous voltages (>42.4 V_{pk}/60 VDC) are present on any terminal, safety low voltage (≤42.4 V_{pk}/60 VDC) cannot be connected to any other terminal.

Caution Failure to connect the cable to the high-voltage NI device using the following precautionary steps can result in electrical shock or death.

Caution Before you begin installation, ensure that no high-voltage signals are connected to your accessory.

Caution Signal connections should be made by a qualified technician or service personnel.

Conventions

This guide uses the following conventions:

»

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 icon is marked on the product, refer to the *Read Me First: Safety and Radio-Frequency Interference* document, shipped with the product, for precautions to take.

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When symbol is marked on a product, it denotes a warning advising you to take precautions to avoid electrical shock.



When symbol is marked on a product, it denotes a component that may be hot. Touching this component may result in bodily injury.

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.

What You Need to Get Started

The following items are necessary for setting up and using the TB-2621 terminal block:

- ❑ Hardware
  - TB-2621
  - 37-pin D-SUB PXI device and chassis
  - Cabling and sensors as required for your application
  - (Optional) 37-pin high-voltage accessory keying kit
- ❑ Documentation
  - *Read Me First: Safety and Radio-Frequency Interference*
  - *DAQ Getting Started Guide*
  - Documentation for your PXI device and chassis
  - (Optional) *37-Pin High-Voltage Accessory Keying and Installation Guide*



Note These documents are available at `ni.com/manuals`.

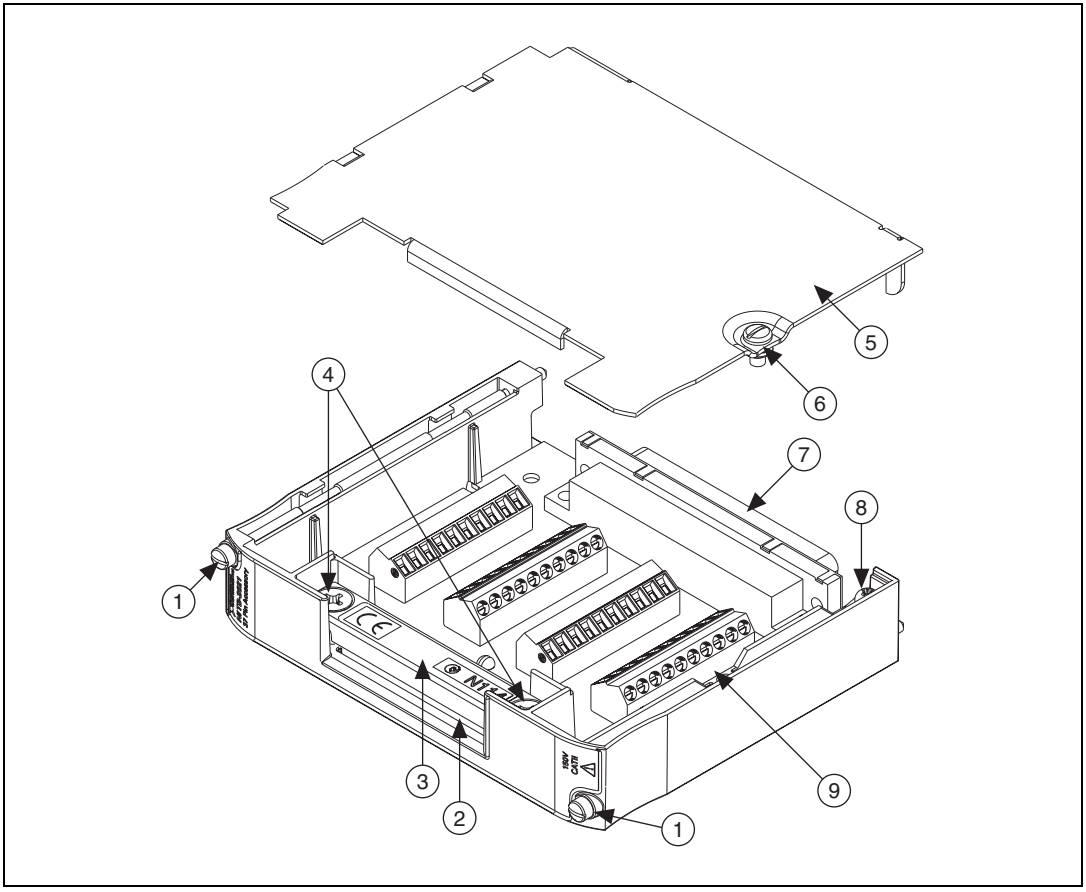
- ❑ Tools
  - 1/8 in. flathead screwdriver
  - Long-nose pliers
  - Wire cutter
  - Wire insulation stripper

Connecting the Signals

Note Refer to the *Read Me First: Safety and Radio-Frequency Interference* document before removing equipment covers or connecting or disconnecting any signal wires.

To connect signals to the TB-2621 terminal block, refer to Figure 1 while completing the following steps:

1. If you are using the TB-2621 with a high-voltage 37-pin D-SUB NI device, install the keying plug by following the installation instructions provided in the 37-pin high-voltage accessory kit. This kit is included with your high-voltage device and is also available as an accessory from `ni.com`.
2. Unscrew the top cover screw, and remove the top cover.
3. Loosen the strain-relief screws, and remove the strain-relief bar.
4. Prepare the 16–30 AWG signal wire by stripping the insulation no more than 4.0 mm (0.16 in.).
5. Run the signal wires through the strain-relief opening. If necessary, add insulation or padding.
6. Insert the stripped ends of the signal wires into the terminals. Make sure no bare wire extends from the terminal.
7. Tighten the screws to a torque of 0.3 N · m (2.7 lb - in.).
8. Solder an earth-ground wire to the earth-ground lug.
9. Reinstall the strain-relief bar, and tighten the strain-relief screws.
10. Reinstall the top cover, and tighten the top cover screws.



1	Chassis Screws	4	Strain-Relief Screws	7	Rear Connector
2	Strain-Relief Opening	5	Top Cover	8	Earth-Ground Lug
3	Strain-Relief Bar	6	Top Cover Screw	9	Screw Terminals

Figure 1. PXI-2621 Parts Locator Diagram

Installing the Terminal Block

Refer to Figure 2 as you complete the following steps to connect the terminal block to the PXI module I/O connector.

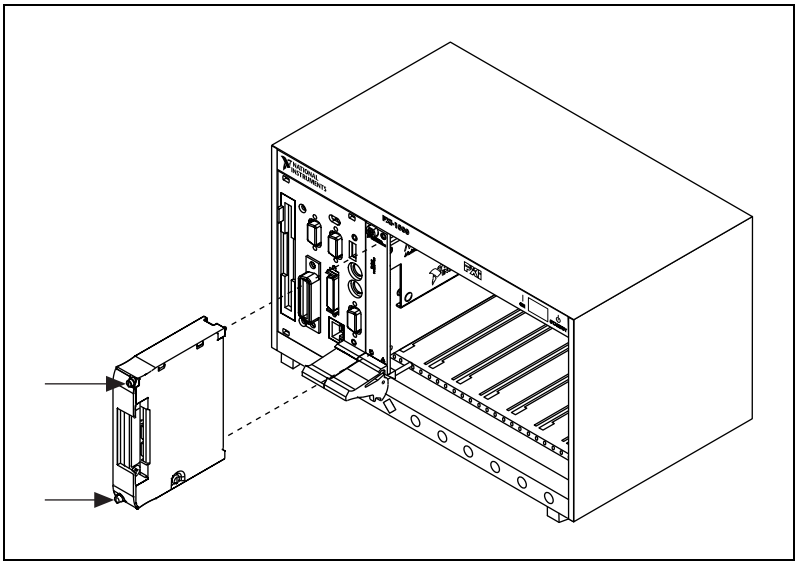


Figure 2. Connecting the TB-2621 to a PXI Module

Caution The connectors of both the PXI module and the terminal block are polarized. You can attach them in only one way. Do *not* force the terminal block when inserting it into or removing it from the PXI module I/O connector. Make sure that the chassis is powered off before inserting the PXI module.

1. Install the PXI module into the chassis and tighten the two module screws. You must install the TB-2621 terminal block on the PXI module *after* the module is installed in the chassis.
2. Guide the terminal block onto the PXI module D-SUB connector.
3. Tighten the two terminal block mounting screws to a torque of 0.3 N · m (2.7 lb - in.).

Caution You must completely screw in and tighten the TB-2621 mounting screws. These screws provide a safety earth-ground connection through the PXI chassis screws. Failure to completely tighten the TB-2621 screws will result in the device not being connected to earth-ground and may expose the user to hazardous voltages (≤42.4 V_{pk}/60 VDC), if present.

Specifications

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

Electrical

Coupling .....DC[1]

Terminal wire size .....16 to 30 AWG

Field-wiring connectors

- Number of screw terminals .....40 (37 used for connecting to I/O signals)
- Earth-ground lugs 1
- Strain relief .....Strain relief at terminal-block entrance

Maximum current .....2 A per conductor

Mechanical

Dimensions .....10.4 cm × 8.9 cm × 1.8 cm (4.1 in. × 3.5 in. × 0.7 in.)

Weight .....285 g (10 oz)

Maximum Working Voltage

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

Channel-to-earth .....150 V, Measurement[2] Category II

Environmental

Operating temperature .....0 to 50 °C

Storage temperature .....–20 to 70 °C

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

Maximum altitude.....2,000 meters

Pollution Degree (indoor use only) 2

[1] In instrumentation terminology, *DC coupling* means that both DC and AC signals are passed.

[2] *Measurement Category* is also referred to as *Installation Category.*

Safety

The TB-2621 terminal block meets the requirements of the following standards for safety and electrical equipment for measurement, control, and laboratory use:

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

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, operate this device with shielded cabling.

CE Compliance

The TB-2621 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.

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