

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *National Instruments PXIe-4309* at our website: *Click HERE*

GETTING STARTED GUIDE AND TERMINAL BLOCK SPECIFICATIONS

PXIe-4309 and TB-4309 (ST)/TB-4309 (MT)

32 Ch (8 ADC), 2 MS/s, 18 - 28 bit, Flexible Resolution PXI Analog Input Module

Français Deutsch 日本語 한국어 简体中文

ni.com/manuals

This document explains how to install, configure, and set up the PXIe-4309 module with the TB-4309 (ST) screw terminal and TB-4309 (MT) mass termination terminal blocks. Driver support for the PXIe-4309 was first available in NI-DAQmx 17.1. For the list of devices supported by a specific release, refer to the *NI-DAQmx Readme*, available on the version-specific download page or installation media.

Note The keying of this terminal block prevents it from connecting to other modules that could be damaged by the voltage present on the terminal block. Only use terminal blocks with their supported modules.

Caution This icon denotes a caution, which advises you of precautions to take to avoid injury, data loss, or a system crash.

Contents

Electromagnetic Compatibility Guidelines 2
What You Need to Get Started 3
Installation 3
- Install the Software 3
- Create a Simulated Device 4
- Unpack the Kit 4
- Install the Hardware 4
- Connect the Signals 6
- Install the Terminal Block 12
- Confirm PXIe-4309 Module Recognition 13
- Run Test Panels 15
- Take an NI-DAQmx Measurement 15
  - NI-DAQmx Channels and Tasks 15
  - Configure a Task Using the DAQ Assistant in MAX 15

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Use Your PXIe-4309 Module in an Application 16
Programming Examples 16
Terminal Block Removal 17
Module Removal 18
More Information 19
Troubleshooting 19
Specifications 19
Calibration 19
Electrical 19
Mechanical 19
Physical Characteristics 20
Environmental 21
Operating Environment 21
Storage Environment 21
Shock and Vibration 21
Safety 22
Safety Standards 22
Electromagnetic Compatibility 22
CE Compliance 23
Online Product Certification 23
Environmental Management 23
Worldwide Support and Services 24

Electromagnetic Compatibility Guidelines

This product was tested and complies with the regulatory requirements and limits for electromagnetic compatibility (EMC) stated in the product specifications. These requirements and limits provide reasonable protection against harmful interference when the product is operated in the intended operational electromagnetic environment.

This product is intended for use in industrial locations. However, harmful interference may occur in some installations, when the product is connected to a peripheral device or test object, or if the product is used in residential or commercial areas. To minimize interference with radio and television reception and prevent unacceptable performance degradation, install and use this product in strict accordance with the instructions in the product documentation.

Furthermore, any modifications to the product not expressly approved by National Instruments could void your authority to operate it under your local regulatory rules.

Caution To ensure the specified EMC performance, operate this product only with shielded cables and shielded accessories. Use only twisted, shielded pair cables for channel connections. Refer to the *PXIe-4309 User Manual* for specific guidance on terminating cable shields.

Caution To ensure the specified EMC performance, the length of all I/O cables must be no longer than 3 m (10 ft).

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

What You Need to Get Started

To set up and use a PXIe-4309 module with a TB-4309 (ST)/TB-4309 (MT) terminal block, you need the following items:

☐ Hardware
- PXIe-4309 module
- TB-4309 (ST) or TB-4309 (MT) terminal block
- PXI Express chassis
- Cabling as required for your application

☐ Tools
- Number 1 and 2 Phillips-head screwdrivers
- 1/8 in. flathead screwdriver
- Long-nose pliers
- Wire cutter
- Wire insulation stripper

☐ Documentation
- *PXIe-4309 and TB-4309 (ST)/TB-4309 (MT) Getting Started Guide and Terminal Block Specifications*
- *PXIe-4309 User Manual*
- *PXIe-4309 Specifications*
- PXI Express chassis user manual

You can download needed documents from ni.com/manuals.

Installation

Install the Software

Note You must be an administrator to install NI software and devices on your computer.

Ensure that the following software is installed before installing the PXIe-4309 and TB-4309 (ST)/TB-4309 (MT) hardware:

1. Your application software, such as LabVIEW, LabWindows™/CVI™, or .NET.
2. NI-DAQmx—PXIe-4309 modules were first supported in NI-DAQmx 17.1.

Note For detailed NI software version support, refer to the *NI-DAQmx Readme*. Back up any applications before upgrading software or modifying the application.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Create a Simulated Device

To run examples without the hardware installed, use an NI-DAQmx simulated device. To create a simulated device in MAX:

1. Launch MAX.
2. Right click **Devices and Interfaces»Create New**.
3. From the dialog, select **Simulated NI-DAQmx Device or Modular Instrument**.
4. Type `4309` in the text box at the top of the window.
5. Select the device from the list provided.
6. Click **OK**.

Unpack the Kit

The PXIe-4309 module ships in an antistatic package to prevent electrostatic discharge from damaging module components. To prevent such damage when handling the module, ground yourself using a grounding strap or by holding a grounded object, and complete the following steps:

1. Touch the antistatic package to a metal part of the grounded object before removing the module from package.
2. Remove the module from the package and inspect the module for loose components or any other sign of damage.

Caution Never touch the exposed pins of connectors.

3. Unpack any other items and documentation from the kit.

Notify NI if the module appears damaged in any way. Do not install a damaged module into your system. Store the module in the antistatic package when not in use.

Install the Hardware

Complete the following steps to install the PXIe-4309 module while referring to Figures 1 and 2:

Note To maintain forced air cooling in the PXI Express system, refer to the *Maintain Forced-Air Cooling Note to Users*.

1. Plug in your chassis before installing the PXIe-4309. The power cord grounds the chassis and protects it from electrical damage while you install the module.
2. Make sure the chassis is powered off.

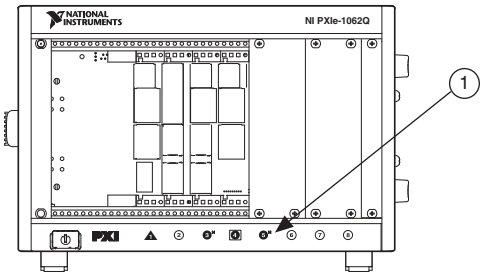
Caution To protect yourself, the chassis, and the PXIe-4309 from electrical hazards, leave the chassis powered off until you finish installing the PXIe-4309 module.

3. Touch a metal part on the chassis to discharge any accumulated static electricity.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

4. Identify a supported PXIe slot in the chassis. PXIe-4309 modules can be placed only in the supported slot types identified in Table 1. Figure 1 shows the slot type symbols of the various slot types. Refer to your chassis documentation for more details.

Figure 1. Symbols for PXI Express/PXI Express Hybrid/PXI Slots



1 Slot Type Symbol Location

Table 1. PXIe-4309 Supported Slot Types

PXI Chassis Slot Type Symbol	Supported Slot Type Description
●	PXIe Peripheral
●H	PXI/PXIe Hybrid Peripheral
◉	PXIe System Timing or PXIe Peripheral

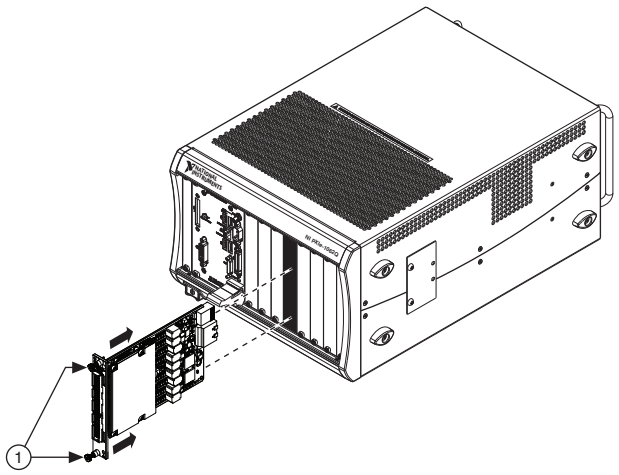
5. Remove the PXIe filler panel. Touch your finger to any metal part of the chassis to discharge static electricity.
6. Align the PXIe-4309 with the card guides on the top and bottom of the selected slot.

Caution When installing the module, make sure both edges are positioned inside the guides and that the module components do not come into contact with adjacent modules.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

7. Slide the module along the guides until it reaches the rear connector, then seat the module by pushing the front panel until it is flush with the front panel of the chassis, as shown in Figure 2.
8. Secure the module to the chassis using the front-panel captive screws, shown in Figure 2. Tighten the screws to 0.31 N · m (2.7 lb · in.).

Figure 2. Installing PXIe-4309 Modules



1 Captive Screws

Connect the Signals

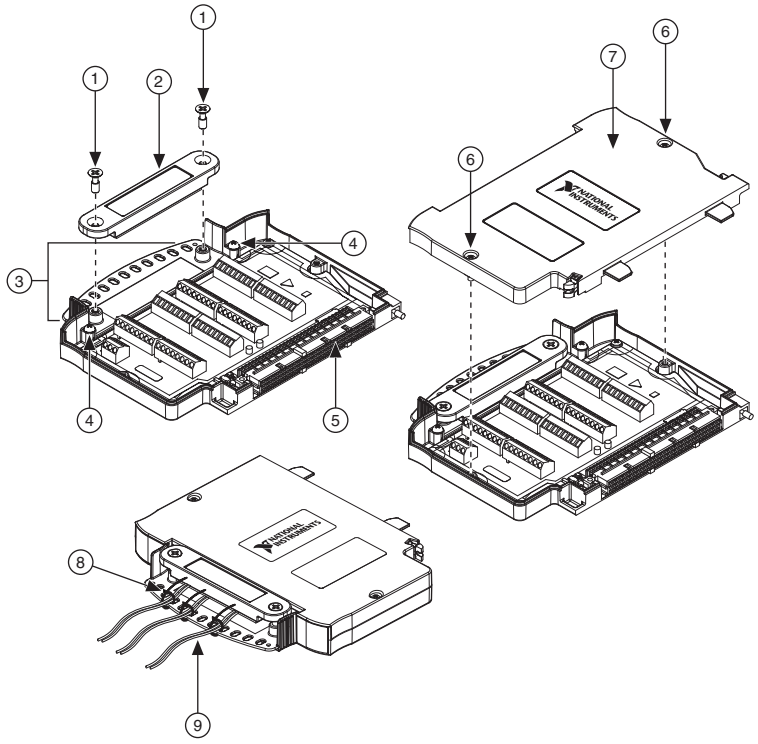
To connect signals to the TB-4309 (ST), refer to Figures 3 and 4 while completing the following steps:

Note You can find the pinout names and locations in Measurement & Automation Explorer (MAX) at any time by right-clicking the device name under **Devices and Interfaces** and selecting **Device Pinouts**.

1. Loosen the captive top cover screws and remove the top cover.
2. Loosen the captive strain-relief screws and remove the strain-relief bar.
3. Prepare the shielded signal wire by stripping the insulation no more than 7 mm (0.28 in.).
4. Run the shielded signal wires through the strain-relief opening.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Figure 3. TB-4309 (ST) Parts Locator Diagram



1	Captive Strain-Relief Screw	4	Chassis Ground Screw	7	Top Cover
2	Strain-Relief Bar	5	Terminal Block to Module Connector	8	Tie Wraps
3	Tie Wrap Holes	6	Captive Top Cover Screw	9	Shielded Signal Wires

Caution Make sure no exposed wire extends past the screw terminal. Exposed wire increases the risk of a short circuit that can cause circuit failure.

5. Insert the stripped end of the shielded signal wires into the appropriate terminal.

Note Refer to the label next to each screw terminal to determine the function of the terminal.

Note Refer to the *PXIe-4309 User Manual* for wiring diagrams showing how to connect signals to the TB-4309 (ST)/TB-4309 (MT).

6. Tighten the terminal screws to a torque of 0.2 to 0.25 N · m (1.77 to 2.21 lb · in.).

Caution Any wires connected to ground must be sufficiently insulated from any voltage present.

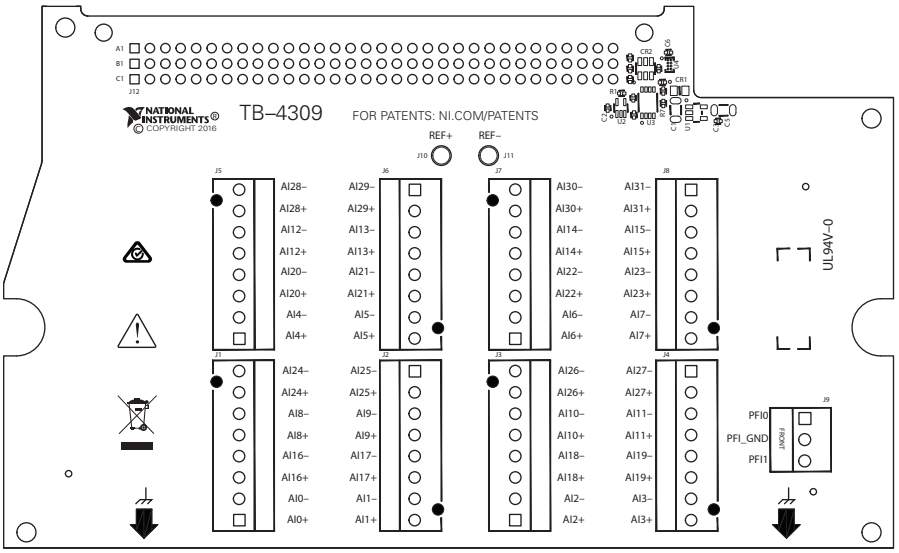
Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

7. Attach a ring terminal to the signal-wire shielding and secure the ring terminal using one of the chassis ground screws.

Note Refer to the *PXIe-4309 User Manual* for details about shielding the signals.

8. Reinstall the strain-relief bar and tighten the captive strain-relief screws.
9. Use tie wraps to connect the shielded signal wires to the tie-wrap holes for additional strain relief when necessary.
10. Reinstall the top cover and tighten the captive top cover screws.

Figure 4. TB-4309 (ST) Circuit Board Parts Locator Diagram

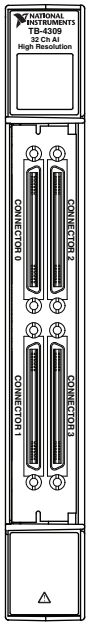


Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

To connect signals to the TB-4309 (MT), use a cable with a VHDCI connector to mate with the TB-4309 (MT), and a breakout accessory. The recommended NI accessories are the SHC68-68-EPM cable and SCB-68A terminal block. Figure 5 illustrates the TB-4309 (MT) receptacle locations. Figures 6 and 7 show the pin assignments for each connector.

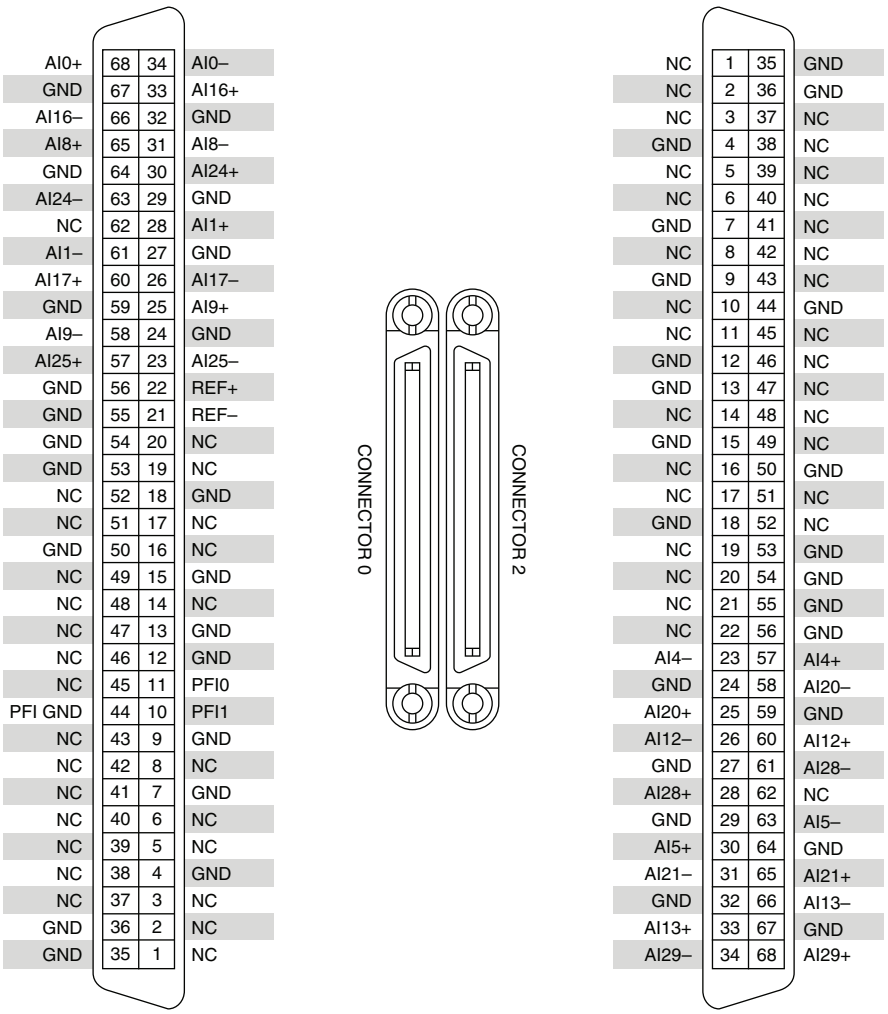
Note You can find the pinout names and locations in Measurement & Automation Explorer (MAX) at any time by right-clicking the device name under **Devices and Interfaces** and selecting **Device Pinouts**.

Figure 5. TB-4309 (MT) Front Panel Connector Locator Diagram



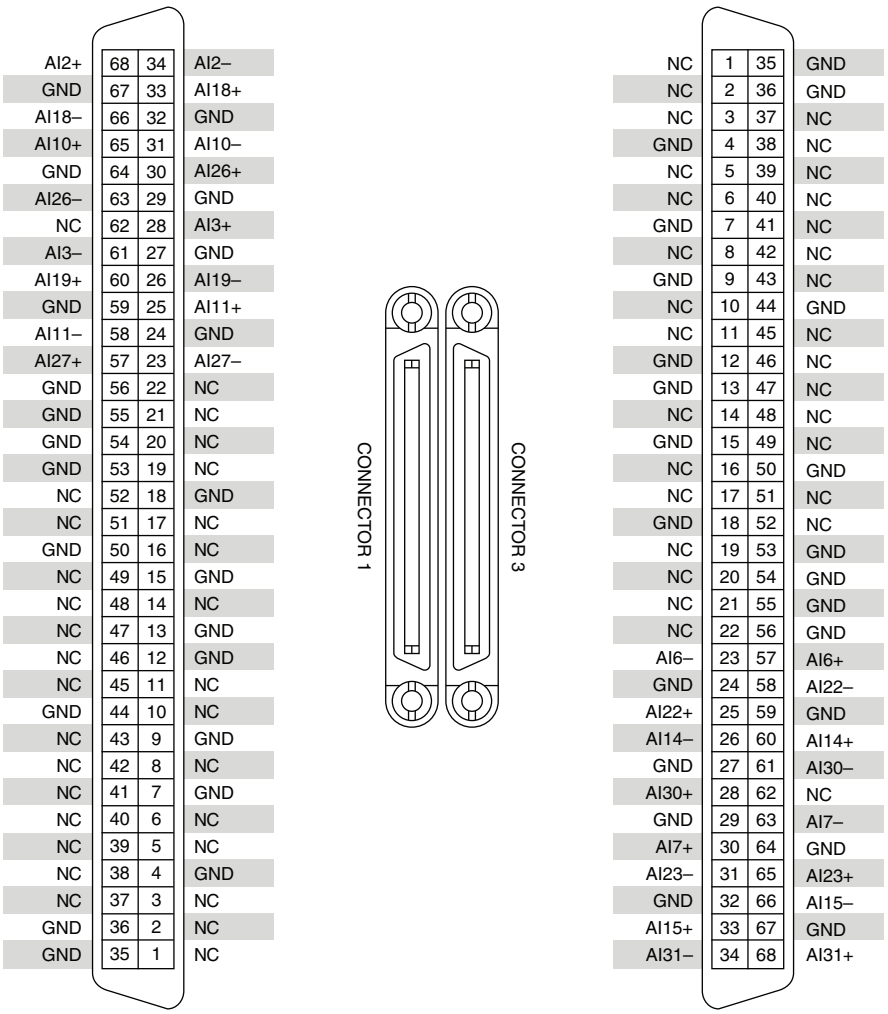
Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Figure 6. TB-4309 (MT) Connector 0 and 2 Signal Pin Assignments



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Figure 7. TB-4309 (MT) Connector 1 and 3 Signal Pin Assignments



Note Printable quick reference labels for the TB-4309 (MT) and SCB-68A are available in the *NI 43xx Pinout Labels for the SCB-68A Note to Users* available at ni.com/manuals.

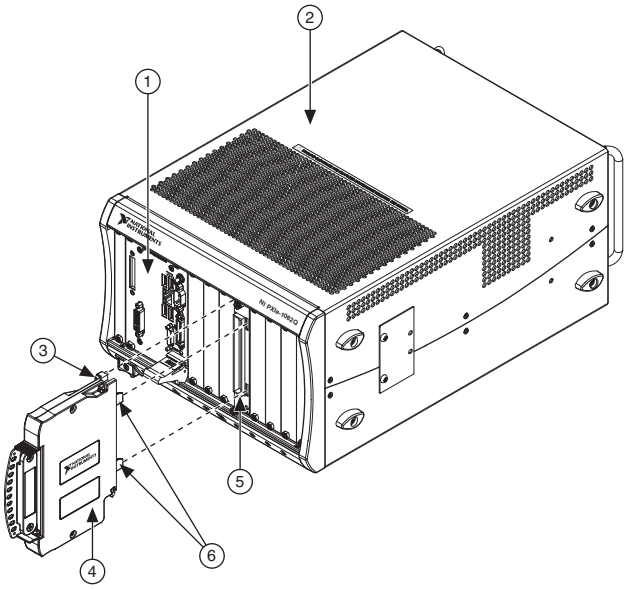
Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Install the Terminal Block

Refer to Figure 8 to install the TB-4309 (ST) or TB-4309 (MT) and complete the following steps:

1. Remove the protective plastic cover from the terminal block mounting screw.
2. Move the terminal block into position in front of the module and engage the alignment feature with the guide on the associated module.

Figure 8. Installing the Terminal Block on the Module



1	PXI Express Controller	3	Mounting Screw	5	Module
2	PXI Express Chassis	4	TB-4309 (ST) Terminal Block Shown	6	Alignment Feature

3. Attach the terminal block to the module by pushing the terminal block straight into the module. A spring mechanism will lock in the bottom of the terminal block.
4. Tighten the mounting screw at the top of the terminal block to secure the terminal block to the module.

Note For safety purposes and to prevent damage to equipment, all PXIe-4309 modules and TB-4309 (ST)/TB-4309 (MT) terminal blocks are keyed to prevent connection between incompatible terminal blocks, modules, and/or cables.

5. Power on the chassis.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Confirm PXIe-4309 Module Recognition

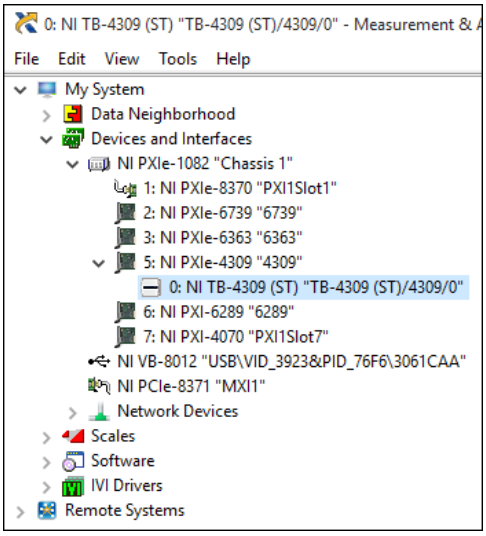
To confirm module recognition, complete the following steps:

Note Software support for the PXIe-4309 is provided by NI-DAQmx. The *Read Me First: NI-DAQmx and DAQ Device Installation Guide*, which you can download at ni.com/manuals, offers step-by-step NI-DAQmx instructions for installing software and hardware. For detailed NI software version support, refer to the *NI-DAQmx Readme*.

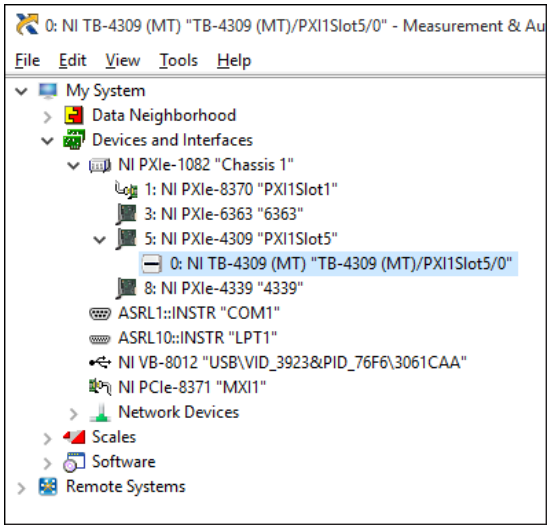
1. Launch MAX.



2. Expand **Devices and Interfaces**, and expand the chassis in which the module is located to confirm that MAX detects the module and terminal block. The terminal block should appear beneath its associated module. If your module or terminal block is not listed, press <F5> to refresh MAX. If the module is still not recognized, go to ni.com/support/daqmx.



Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com



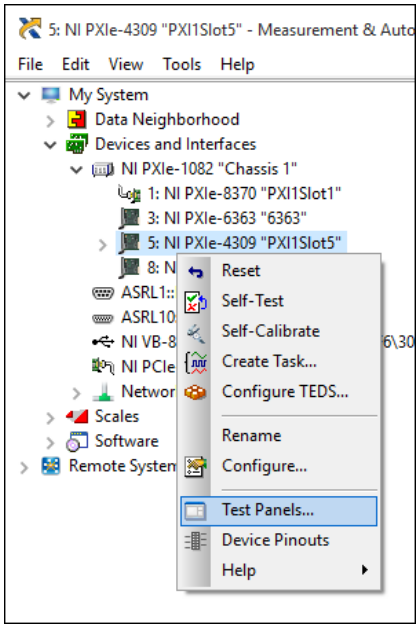
Tip Using an NI-DAQmx simulated device, you can test NI-DAQmx applications without installing hardware. Refer to the *Create a Simulated Device* section for instructions for creating NI-DAQmx simulated devices.

3. Right-click the module name and select **Self-Test**. When the self-test completes, a verification message appears. If an error occurs, refer to `ni.com/support/daqmx`.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Run Test Panels

1. In MAX, expand **Devices and Interfaces** select the chassis in which the module is located.
2. Right-click the device, and select **Test Panels**.



3. Click **Start** to test device functions, or **Help** for operating instructions.

To troubleshoot errors, refer to the *NI-DAQmx Help*, or go to `ni.com/support`.

Take an NI-DAQmx Measurement

NI-DAQmx Channels and Tasks

Refer to the *NI-DAQmx Help* for complete information about channels and tasks.

Use the DAQ Assistant to configure virtual channels and tasks in MAX or in your application.

Configure a Task Using the DAQ Assistant in MAX

Complete the following steps to create a task using the DAQ Assistant in MAX:

1. In MAX, right-click **Data Neighborhood** and select **Create New** to open the DAQ Assistant.
2. Select **NI-DAQmx Task** and click **Next**.
3. Select **Acquire Signals**.
4. Select the measurement type, such as Analog Input - Voltage.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

5. Select the physical channel(s) to use and click **Next**.
6. Name the task and click **Finish**.
7. Configure the individual channel settings. Each physical channel you assign to a task receives a virtual channel name. To modify the input range or other settings, select the channel. Click **Details** for physical channel information. Configure the timing and triggering for your task. Click **Run**.

Use Your PXIe-4309 Module in an Application

For NI software version compatibility, refer to the *NI-DAQmx Readme*, available from **Start» All Programs»National Instruments»NI-DAQmx**.

To get started with data acquisition in your application software, refer to the tutorials listed in Table 2.

Table 2. DAQ Assistant Tutorial Locations

Application	Tutorial Location
LabVIEW	Go to `ni.com` and search for `Taking an NI-DAQmx Measurement in LabVIEW`.
LabWindows/CVI	Go to **Help»Contents**. Next, go to **Using LabWindows/CVI» Data Acquisition»Taking an NI-DAQmx Measurement in LabWindows/CVI**.
Measurement Studio	Go to **NI Measurement Studio Help»Getting Started with the Measurement Studio Class Libraries»Measurement Studio Walkthroughs»Walkthrough: Creating a Measurement Studio NI-DAQmx Application**.
NI SignalExpress*	Go to **Help»Taking an NI-DAQmx Measurement in SignalExpress**.
* NI SignalExpress, an easy-to-use configuration-based tool for data logging applications, is at **Start» All Programs»National Instruments»NI SignalExpress**.	

Programming Examples

NI-DAQmx includes example programs to help you get started developing an application. LabVIEW and CVI examples are located at **Help»Find Examples** in your application software. Text-based code examples are located at **All Programs»National Instruments»NI-DAQmx» NI-DAQmx Examples**. Modify example code and save it in an application, or use examples to develop a new application or add example code to an existing application.

For other examples, go to `ni.com/info` and enter the Info Code `daqmxexp`.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

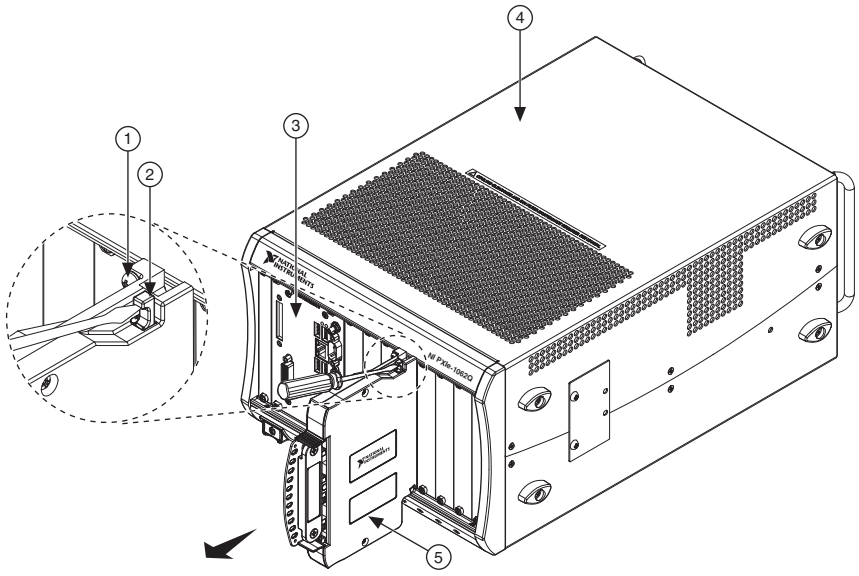
Terminal Block Removal

To remove the terminal block, refer to Figure 9 and complete the following steps:

Note The chassis can be powered on or off when removing the terminal block.

1. Ensure that the devices and circuits connected to the terminal block are powered down.
2. Loosen the terminal block mounting screw located at the top of the terminal block.
3. To remove the terminal block:
   a. Raise the latch release using a flathead screwdriver to disengage the latch.
   b. With the latch release raised, grasp the terminal block and pull it away from the module.

Figure 9. Removing the Terminal Block from the Module



1	Mounting Screw	3	PXI Express Controller	5	Terminal Block
2	Latch Release	4	PXI Express Chassis		

4. Store the terminal block in an antistatic protective bag.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Module Removal

Caution Do *not* remove a module with the chassis power on. Doing so can damage the module.

To remove the module, refer to Figure 10 and complete the following steps:

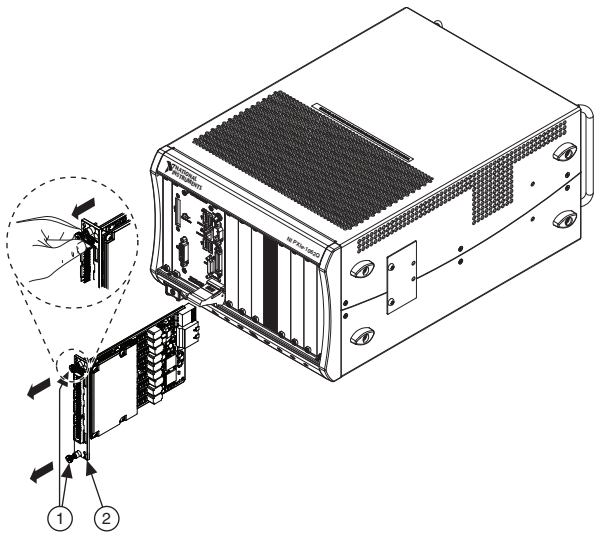
Note To maintain forced air cooling in the PXI Express system, refer to the *Maintain Forced-Air Cooling Note to Users*.

1. Make sure that the chassis is powered off before removing the module front panel.
2. Loosen the captive screws on the top and bottom of the module.

Caution Do *not* pull the front panel to remove the module. Doing so may cause module components to come into contact with adjacent modules, causing damage to the modules.

3. Pull the captive screws to unseat the module and slowly slide the module along the guides.
4. Replace the filler panel in the empty slot.
5. Store the module in an antistatic protective bag.

Figure 10. Removing PXIe-4309 Modules



1 Captive Screws 2 Module Front Panel

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

More Information

After you install NI-DAQmx, the NI-DAQmx documentation is available from **Start»All Programs»National Instruments»NI-DAQmx**. Additional resources are online at ni.com/gettingstarted.

You can access online device documentation by right-clicking your module in MAX and selecting **Help»Online Device Documentation**. A browser window opens to ni.com/manuals with the results of a search for relevant documents. If you do not have web access, documents for supported modules are included on the NI-DAQmx media.

Troubleshooting

- Go to ni.com/support/install or ni.com/kb.
- If you need to return your National Instruments hardware for repair or device calibration, go to ni.com/info and enter rdsenn to start the Return Merchandise Authorization (RMA) process.

Specifications

Note PXIe-4309 module specifications are located in the *PXIe-4309 Specifications* document.

All performance specifications are *typical* unless otherwise noted. These specifications are valid within the full operating temperature range.

Calibration

Calibration interval ..... No calibration

Electrical

Input range ..... ±0.1 V, ±1.0 V, ±10 V, ±15 V

Mechanical

Screw terminal wire gauge ..... 1.5 mm^2 (16 AWG), max

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Physical Characteristics

Figure 11. TB-4309 (ST) Terminal Block Dimensions

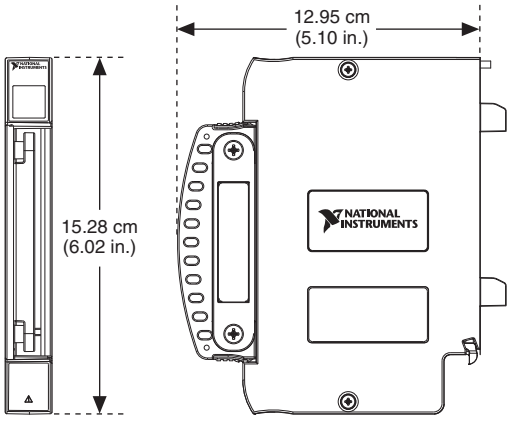
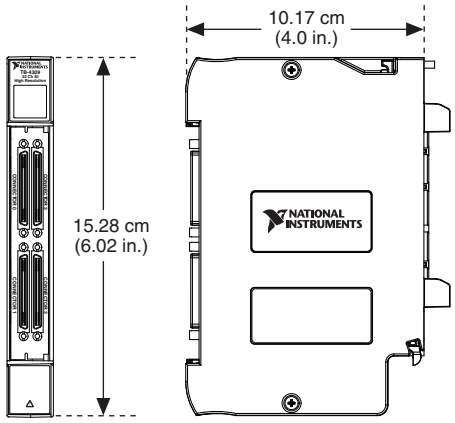


Figure 12. TB-4309 (MT) Terminal Block Dimensions



Weight

TB-4309 (ST).....615 g (21.7 oz)

TB-4309 (MT) .....483 g (17.0 oz)

Caution Clean the hardware with a soft, nonmetallic brush. Make sure that the hardware is completely dry and free from contaminants before returning it to service.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Environmental

Maximum altitude..... 2,000 m (800 mbar), at 25 °C ambient temperature

Pollution Degree..... 2

Indoor use only

Operating Environment

Ambient temperature range..... 0 °C to 55 °C
(Tested in accordance with IEC 60068-2-1 and IEC 60068-2-2. Meets MIL-PRF-28800F Class 3 low temperature limit and MIL-PRF-28800F Class 2 high temperature limit.)

Relative humidity range..... 10% to 90%, noncondensing
(Tested in accordance with IEC 60068-2-56.)

Storage Environment

Ambient temperature range..... -40 °C to 71 °C
(Tested in accordance with IEC 60068-2-1 and IEC 60068-2-2. Meets MIL-PRF-28800F Class 3 limits.)

Relative humidity range..... 5% to 95%, noncondensing
(Tested in accordance with IEC 60068-2-56.)

Shock and Vibration

Operating shock..... 30 g peak, half-sine, 11 ms pulse
(Tested in accordance with IEC 60068-2-27. Meets MIL-PRF-28800F Class 2 limits.)

Random vibration

- Operating..... 5 Hz to 500 Hz, 0.3 g_{rms}
- Non-operating..... 5 Hz to 500 Hz, 2.4 g_{rms}
  (Tested in accordance with IEC 60068-2-64. Non-operating test profile exceeds the requirements of MIL-PRF-28800F, Class 3.)

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Safety

Measurement Category[1]..... O

Caution Do *not* connect the TB-4309 (ST)/TB-4309 (MT) to signals or use for measurements within Measurement Categories II, III, or IV.

Caution The protection provided by the TB-4309 (ST)/TB-4309 (MT) can be impaired if it is used in a manner not described in this document.

Safety Standards

This product meets the requirements of the following standards of safety for electrical equipment for measurement, control, and laboratory use:

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

Note For UL and other safety certifications, refer to the product label or the *Online Product Certification* section.

Electromagnetic Compatibility

This product meets the requirements of the following EMC standards for electrical equipment for measurement, control, and laboratory use:

- EN 61326-1 (IEC 61326-1): Class A emissions; Basic immunity
- EN 55011 (CISPR 11): Group 1, Class A emissions
- EN 55022 (CISPR 22): Class A emissions
- EN 55024 (CISPR 24): Immunity
- AS/NZS CISPR 11: Group 1, Class A emissions
- AS/NZS CISPR 22: Class A emissions
- FCC 47 CFR Part 15B: Class A emissions
- ICES-001: Class A emissions

Note In the United States (per FCC 47 CFR), Class A equipment is intended for use in commercial, light-industrial, and heavy-industrial locations. In Europe, Canada, Australia and New Zealand (per CISPR 11) Class A equipment is intended for use only in heavy-industrial locations.

Note Group 1 equipment (per CISPR 11) is any industrial, scientific, or medical equipment that does not intentionally generate radio frequency energy for the treatment of material or inspection/analysis purposes.

[1] Measurement Categories CAT I and CAT O are equivalent. These test and measurement circuits are not intended for direct connection to the MAINS building installations of Measurement Categories CAT II, CAT III, or CAT IV.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Note For the standards applied to assess the EMC of this product, refer to the *Online Product Certification* section.

CE Compliance CE

This product meets the essential requirements of applicable European Directives as follows:

- 2014/35/EU; Low-Voltage Directive (safety)
- 2014/30/EU; Electromagnetic Compatibility Directive (EMC)

Online Product Certification

Refer to the product Declaration of Conformity (DoC) for additional regulatory compliance information. To obtain product certifications and 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.

Environmental Management

NI is committed to designing and manufacturing products in an environmentally responsible manner. NI recognizes that eliminating certain hazardous substances from our products is beneficial to the environment and to NI customers.

For additional environmental information, refer to the *Minimize Our Environmental Impact* web page at ni.com/environment. This page contains the environmental regulations and directives with which NI complies, as well as other environmental information not included in this document.

Waste Electrical and Electronic Equipment (WEEE)

EU Customers At the end of the product life cycle, all products *must* be sent to a WEEE recycling center. For more information about WEEE recycling centers, National Instruments WEEE initiatives, and compliance with WEEE Directive 2002/96/EC on Waste and Electronic Equipment, visit ni.com/environment/weee.

电子信息产品污染控制管理办法 （中国 RoHS）

中国客户 National Instruments 符合中国电子信息产品中限制使用某些有害物质指令 (RoHS)。关于 National Instruments 中国 RoHS 合规性信息，请登录 ni.com/environment/rohs_china。 (For information about China RoHS compliance, go to ni.com/environment/rohs_china.)

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Worldwide Support and Services

The NI website is your complete resource for technical support. At ni.com/support you have access to everything from troubleshooting and application development self-help resources to email and phone assistance from NI Application Engineers.

Visit ni.com/services for NI Factory Installation Services, repairs, extended warranty, and other services.

Visit ni.com/register to register your NI product. Product registration facilitates technical support and ensures that you receive important information updates from NI.

A Declaration of Conformity (DoC) is our claim of compliance with the Council of the European Communities using the manufacturer's declaration of conformity. This system affords the user protection for electromagnetic compatibility (EMC) and product safety. You can obtain the DoC for your product by visiting ni.com/certification. If your product supports calibration, you can obtain the calibration certificate for your product at ni.com/calibration.

NI corporate headquarters is located at 11500 North Mopac Expressway, Austin, Texas, 78759-3504. NI also has offices located around the world. For telephone support in the United States, create your service request at ni.com/support or dial 1 866 ASK MYNI (275 6964). For telephone support outside the United States, visit the Worldwide Offices section of ni.com/niglobal to access the branch office websites, which provide up-to-date contact information, support phone numbers, email addresses, and current events.

Refer to the *NI Trademarks and Logo Guidelines* at ni.com/trademarks for more information on National Instruments trademarks. Other product and company names mentioned herein are trademarks or trade names of their respective companies. For patents covering National Instruments products/technology, refer to the appropriate location: **Help»Patents** in your software, the patents.txt file on your media, or the *National Instruments Patents Notice* at ni.com/patents. You can find information about end-user license agreements (EULAs) and third-party legal notices in the readme file for your NI product. Refer to the *Export Compliance Information* at ni.com/legal/export-compliance for the National Instruments global trade compliance policy and how to obtain relevant HTS codes, ECCNs, and other import/export data. NI MAKES NO EXPRESS OR IMPLIED WARRANTIES AS TO THE ACCURACY OF THE INFORMATION CONTAINED HEREIN AND SHALL NOT BE LIABLE FOR ANY ERRORS. U.S. Government Customers: The data contained in this manual was developed at private expense and is subject to the applicable limited rights and restricted data rights as set forth in FAR 52.227-14, DFAR 252.227-7014, and DFAR 252.227-7015.

© 2017 National Instruments. All rights reserved.

377028A-01 May17

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP