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Find the *National Instruments TBX-96* at our website: *Click HERE*

TBX-96 TERMINAL BLOCK

This guide describes how to install and use the TBX-96 terminal block with the SCXI-1100, SCXI-1102B/C, SCXI-1104/C, and SCXI-1581 modules.

The TBX-96 is a shielded, DIN-rail mountable terminal block with 96 screw terminals for easy connection to the SCXI-1100, SCXI-1102B/C, SCXI-1104/C, and SCXI-1581 front connector. The TBX-96 mounts on most European standard DIN EN mounting rails.

What You Need to Get Started

To set up and use the TBX-96, you need the following:

- ❑ TBX-96 terminal block
- ❑ *TBX-96 Terminal Block Installation Guide*
- ❑ SCXI chassis and its documentation
- ❑ One of the following modules and its documentation
  - SCXI-1100
  - SCXI-1102B/C
  - SCXI-1104/C
  - SCXI-1581
- ❑ SH96-96 shielded cable or R96-96 ribbon cable assembly that includes the TBX cable adapter
- ❑ Wire strippers
- ❑ Combination flathead/Phillips screwdriver (included in kit)

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Conventions

The following conventions are used in this guide



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 on in the software, such as menu items and dialog box options. Bold text also denotes parameter names.

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.

Safety Information



Cautions Do *not* operate the terminal block in an explosive atmosphere or where there may be flammable gases or fumes.

Do *not* operate damaged equipment. The safety protection features built into this terminal block can become impaired if the device becomes damaged in any way. If the terminal block is damaged, turn the terminal block off and do *not* use it until service-trained personnel can check its safety. If necessary, return the terminal block to National Instruments for service and repair to ensure that its safety is not compromised.

Do *not* operate this equipment in a manner that contradicts the information specified in this document. Misuse of this equipment could result in a shock hazard.

Do *not* substitute parts or modify equipment. Because of the danger of introducing additional hazards, do *not* install unauthorized parts or modify the device. Return the device to National Instruments for service and repair to ensure that its safety features are not compromised.

You *must* insulate all of your signal connections to the highest voltage with which the TBX-96 can come in contact.

Connections, including power signals to ground and vice versa, that exceed any of the maximum signal ratings on the TBX terminal block can create a shock or fire hazard, or can damage any or all of the boards connected to the SCXI chassis, the host computer, and the TBX terminal block. National Instruments is *not* liable for any injuries or damage resulting from incorrect signal connections.

Clean the TBX-96 by brushing off light dust with a soft non-metallic brush. Remove other contaminants with a stiff non-metallic brush. The unit *must* be completely dry and free from contaminants before returning it to service.

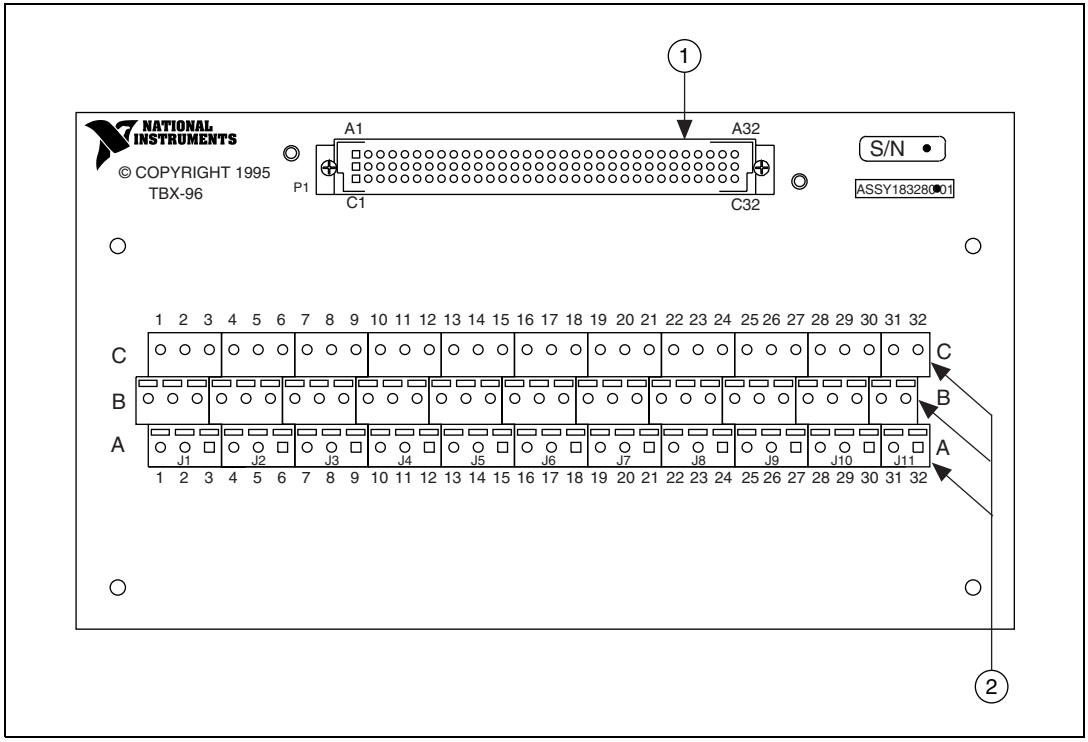
Connecting the Signals

Note Refer to the *Safety Information* section before removing equipment covers or connecting or disconnecting any signal wires.

Figure 1 shows the layout of the TBX-96 terminal block circuit board. To connect a signal to the terminal block, perform the following steps while referring to Figure 1:

1. Prepare your signal wire by stripping the insulation no more than 7 mm.
2. Connect the signal wires to the screw terminals by inserting the stripped end of the wire fully into the terminals. Refer to your SCXI module user manual for examples of how to connect to field signals and loads.
3. Tighten the terminals to a torque of 5-7 in.-lb (56-79 N-cm).

The signal connection is now complete.



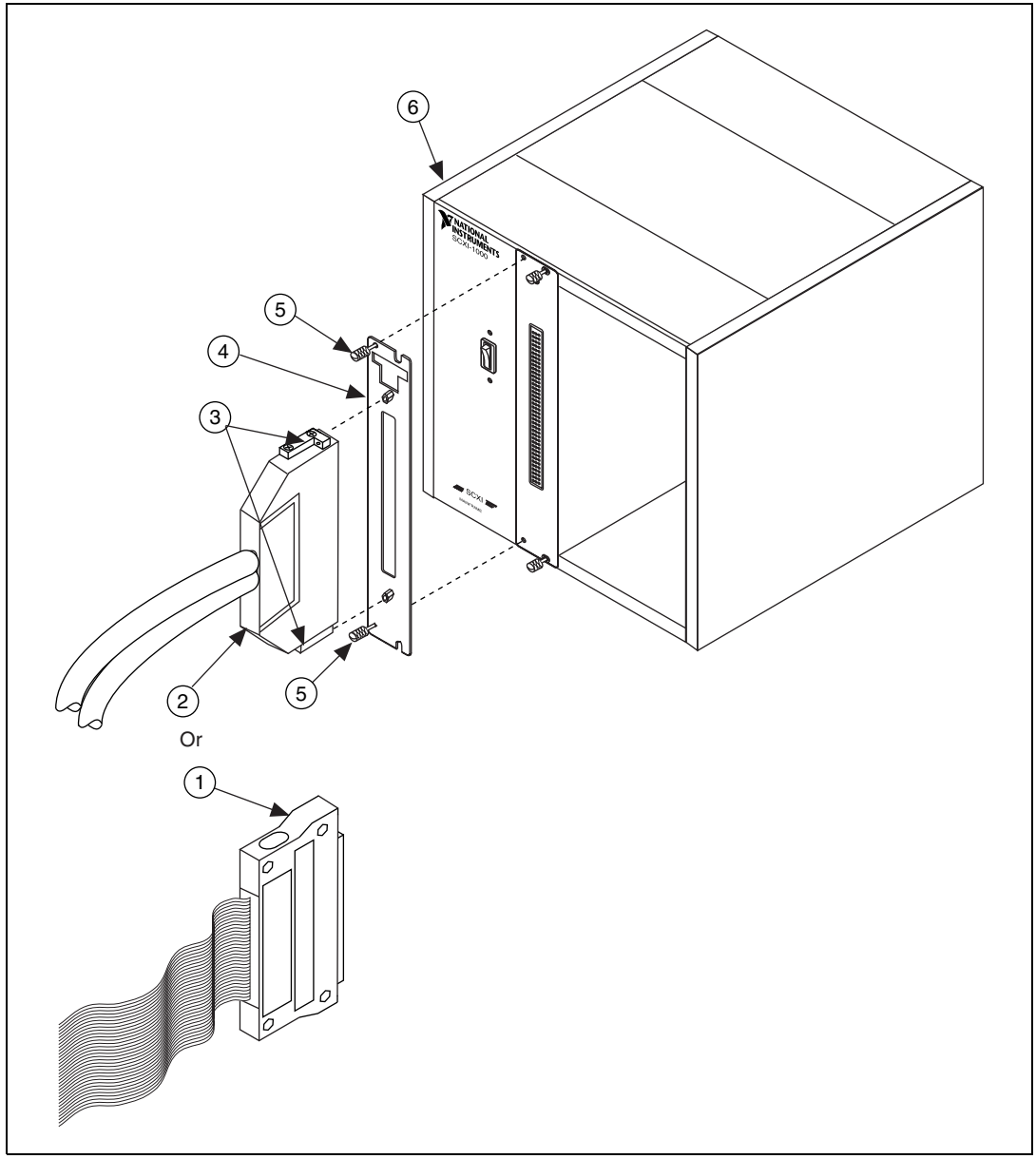
1	96-Pin Male DIN Connector	2	Screw Terminals

Figure 1. TBX-96 Parts Locator Diagram

Installing the Cable and Terminal Block

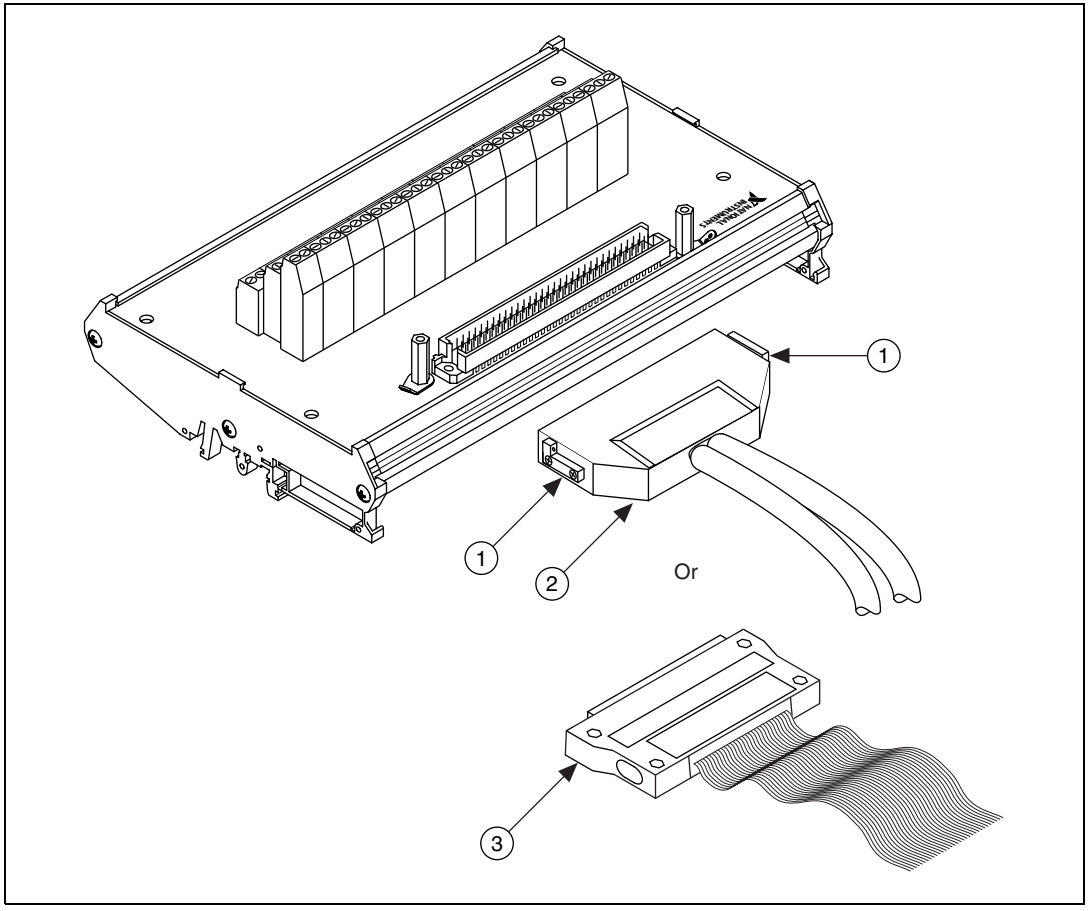
Perform the following steps to mount the SH96-96 or R96-96 cable assembly and to connect the TBX-96 to your SCXI module. Refer to Figures 2 through 4 as needed.

1. Turn off your SCXI chassis.
2. Turn off the computer that contains your data acquisition (DAQ) device or disconnect the DAQ device from your SCXI chassis.
3. Connect the TBX cable adapter to the appropriate SCXI module and secure it by tightening both thumb screws.
4. If you are using an SH96-96, verify that the two backshell mounting ears on each end of the cable assembly are in the position shown in Figure 2 and 3. If the backshell mounting ears are not in the position shown, remove the backshell mounting ears and install them in the position shown. If you are using an R96-96, the mounting screws are built into the backshell.



1	R96-96 Cable Assembly	4	TBX Cable Adapter
2	SH96-96 Cable Assembly	5	Thumb Screws
3	Backshell Mounting Screws and Ears	6	SCXI Chassis

Figure 2. Connecting the SH96-96 or R96-96 Cable to the SCXI Module



1 Backshell Mounting Screws and Ears 2 SH96-96 Cable Assembly 3 R96-96 Cable Assembly

Note: The SH96-96 and R96-96 cables are not shown in the exact position for proper connection to the terminal block connector. See Figure 4 for the completed connection.

Figure 3. Connecting the SH96-96 or R96-96 Cable to the TBX-96 Terminal Block

5. Connect one end of the cable assembly to your TBX cable adapter and secure the cable by tightening both backshell mounting screws.
6. Connect the other end of the cable assembly to your TBX-96 terminal block connector and secure the cable by tightening both backshell mounting screws.
7. Reconnect the DAQ device to your SCXI chassis.

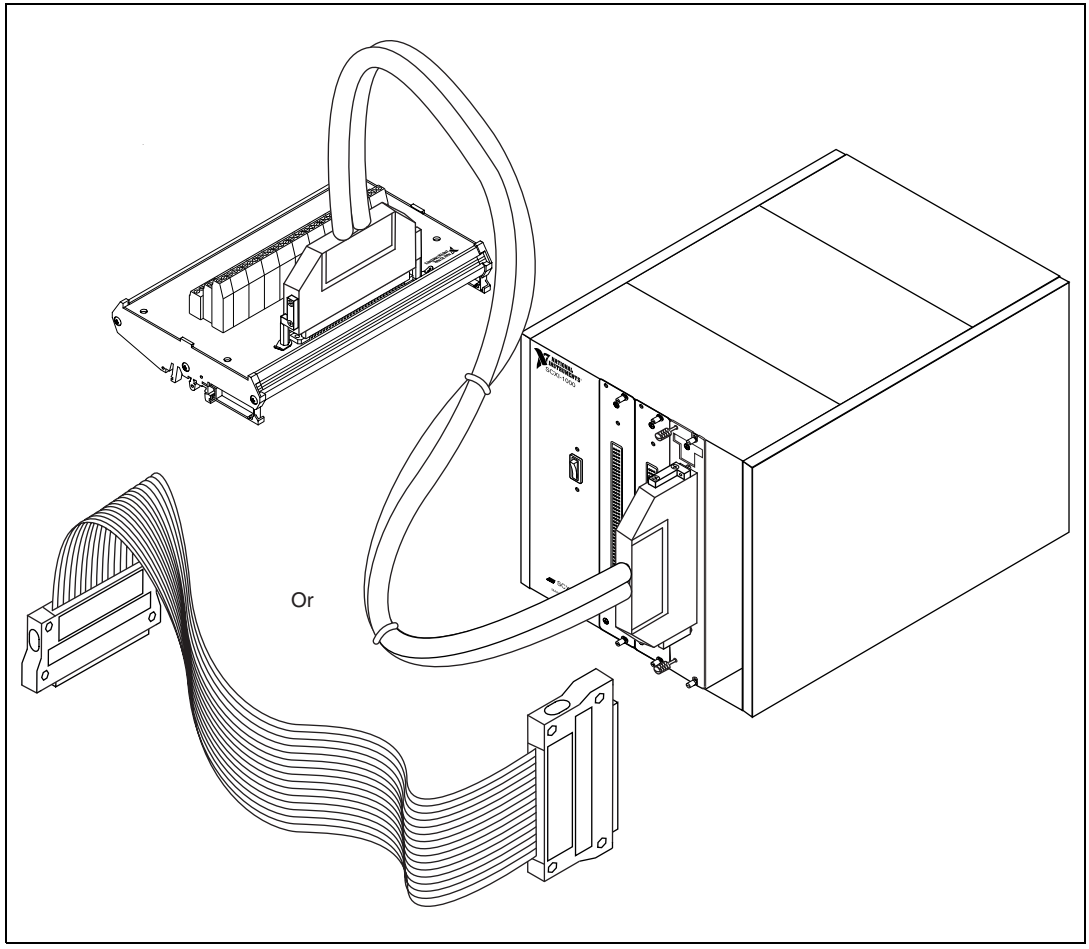


Figure 4. The Completed Installation

Mounting on and Removing from a DIN-Rail

To mount the TBX-96 terminal block onto the DIN rail, snap it into the DIN rail with a firm push. To remove the TBX-96 terminal block from the DIN rail, place a flathead screwdriver into the slot above the terminal block base and pry it from the rail.

Specifications

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

Electrical

Maximum working voltage .....30 V_{rms}, 42.4 V_{peak}, or 60 VDC

Maximum wire gauge.....14 AWG

Mechanical

Dimensions .....19.76 by 12.55 by 6.27 cm
(7.78 by 4.94 by 2.47 in.)

Weight .....315 gm
(11.2 oz.)

Compatible DIN rails.....DIN EN 50 022
DIN EN 50 035

Environmental

Operating temperature .....0 to 50 °C

Storage temperature.....–20 to 70 °C

Relative humidity .....10 to 90% noncondensing

Safety

Designed in accordance with IEC 61010-1, EN 61010-1, UL 3111-1, and CAN/CSA C22.2 No. 1010.1 for electrical measuring and test equipment.
For use at altitudes up to 2,000 meters.
Installation category I[1]
Pollution degree 2

[1] Category I is a signal level such as voltages on a printed wire board (PWB) on the secondary of an isolation transformer.

Electromagnetic Compatibility

EMC/EMI	CE, C-Tick, and FCC Part 15 (Class A) Compliant
Electrical emissions	EN 55011 Class A at 10 m FCC Part 15A above 1 GHz
Electrical immunity	Evaluated to EN 61326-1:1997 A1:1998, Table 1

Note For full EMC and EMI compliance, you must operate this device with shielded cabling. See the Declaration of Conformity (DoC) for this product for any additional regulatory compliance information. To obtain the DoC for this product, click **Declaration of Conformity** at `ni.com/hardref.nsf/`. This Web site lists the DoCs by product family. Select the appropriate product family, followed by your product, and a link to the DoC (in Adobe Acrobat format) appears. Click the Acrobat icon to download or read the DoC.

PWB Layout Dimensions

In the event your application requires individualized mounting, see Figure 5 for the circuit board layout dimensions of the TBX-96.

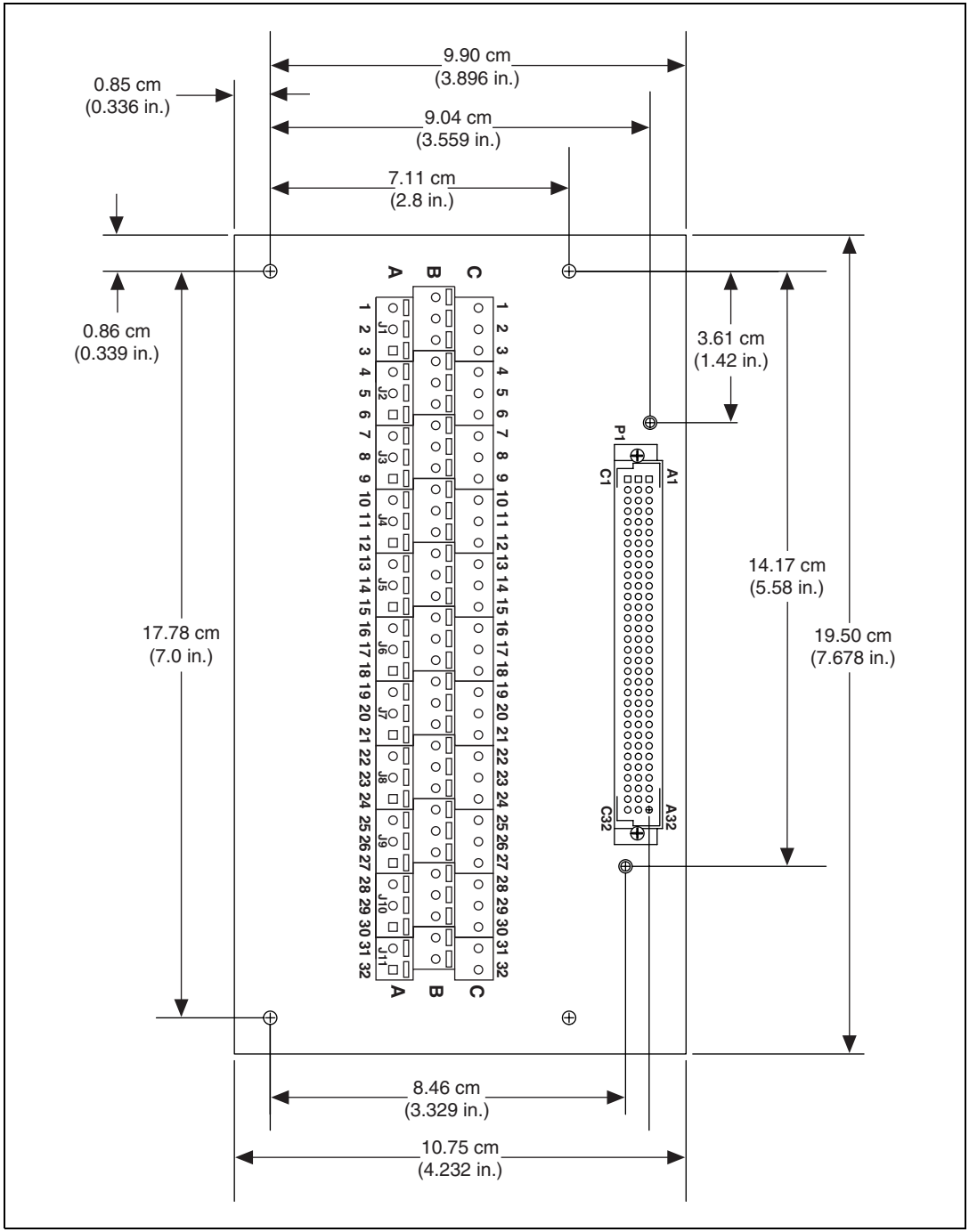


Figure 5. TBX-96 Circuit Board Layout Dimensions

Technical Support Resources

NI Web Support

National Instruments Web support is your first stop for help in solving installation, configuration, and application problems and questions. Online problem-solving and diagnostic resources include frequently asked questions, knowledge bases, product-specific troubleshooting wizards, manuals, drivers, software updates, and more. Web support is available through the Technical Support section of `ni.com`.

Worldwide Support

National Instruments has offices located around the world to help address your support needs. You can access our branch office Web sites from the Worldwide Offices section of `ni.com`. Branch office Web sites provide up-to-date contact information, support phone numbers, e-mail addresses, and current events.

If you have searched the technical support resources on our Web site and still cannot find the answers you need, contact your local office or National Instruments corporate. For telephone support in the United States, dial 512 795 8248. For telephone support outside the United States, contact your local branch office:

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