INSTALLATION INSTRUCTIONS
NI TBX-2808

Screw Terminal Accessory for the NI SwitchBlock

This installation guide describes how to install and connect signals to the NI TBX-2808 screw terminal accessory for use with NI SwitchBlock cards.

The NI TBX-2808 is an unshielded, DIN-rail mountable terminal breakout block that consists of a printed circuit board with screw terminals that provide connections to all channels of a single NI SwitchBlock card. The NI TBX-2808 includes a safety interlock resistor to engage the NI SwitchBlock card's safety relays, allowing connections to the NI SwitchBlock analog bus.

Specifications

Maximum voltage ..... 100 V, CAT I
(row/column-to-ground)

Maximum current (per screw terminal) ..... 2 A

Maximum current (per terminal block) ..... 64 A

Caution This product is rated for Measurement Category I. Do not use this product for connection to signals or for measurements within Categories II, III, or IV.

Caution The maximum voltage is limited to the lowest voltage of any component in the NI SwitchBlock system. Review the specifications of the NI SwitchBlock carrier and cards.

Caution The NI TBX-2808 must be installed inside a suitably rated enclosure with proper cable/wire strain relief(s) prior to use. There are no user serviceable parts inside. Do *not* change or alter this product in any way.

Caution NI products typically must be operated with shielded cables and accessories to ensure compliance with Electromagnetic Compatibility (EMC) requirements. To determine if shielded cables or accessories are required for the product that the NI TBX-2808 will be used with, refer to the EMC specifications in the product's user guide or manual. If shielded cables or accessories are required for EMC compliance, do not use unshielded cables or accessories unless they are installed in a shielded enclosure with properly designed and shielded input/output ports, and are connected to the NI product using a shielded cable. If unshielded cables or accessories are not properly installed and shielded, the EMC specifications for the product are no longer guaranteed.

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Caution The protection provided by this product may be impaired if it is used in a manner not described in this document.

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

Dimensions (L × W × H) .....19.8 × 12.8 × 8.5 cm
(7.8 × 5.0 × 3.4 in.)

Weight.....398 g (14 oz)

What You Need to Get Started

You need the following items to set up and use your screw terminal accessory:

- ❑ One NI SwitchBlock card and specifications
- ❑ NI TBX-2808 screw terminal accessory
- ❑ SH160F-160M-NI SwitchBlock cable
- ❑ 1/10 in. (2.5 mm) flathead screwdriver
- ❑ #1 Phillips-head screwdriver
- ❑ Wire cutters
- ❑ Wire insulation strippers

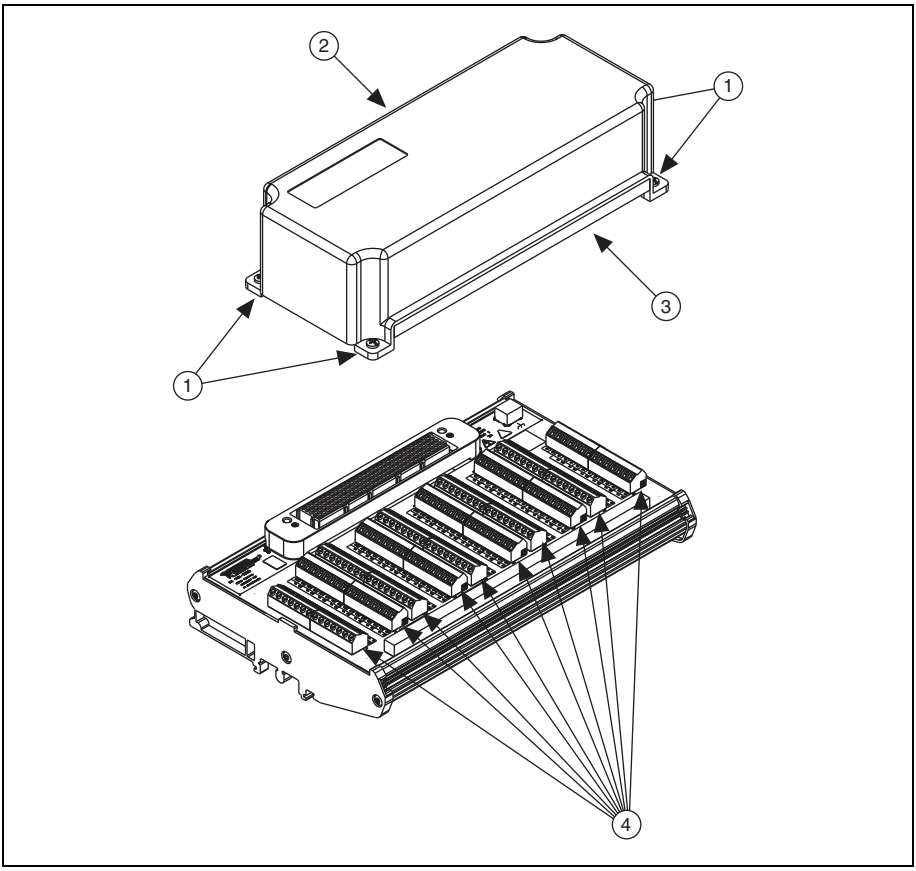
Signal Connection

Refer to Figure 1 and perform the following steps to connect your signals to your screw terminal accessory:

1. Unscrew the four cover screws with a Phillips-head screwdriver to remove the cover.
2. Use wire cutters and wire insulation strippers to strip the wire ends as necessary to connect them to screw terminals.
3. Loosen the screws in the screw terminals with a 1/10 in. (2.5 mm) flathead screwdriver.
4. Insert the stripped wires into the screw terminals, and tighten the screws with a 1/10 in. (2.5 mm) flathead screwdriver.
5. Allow the signal wires to exit through the cover opening.

Note The NI TBX-2808 screw terminal accessory does not provide strain relief for signal wires. Add strain relief and insulation for your signal wires, if necessary.

6. Replace the cover and tighten the cover screws.
7. If using a shielded cable, connect the cable shield to the earth ground terminal.



1	Cover Screws	3	Cover Opening
2	Cover	4	Screw Terminals

Figure 1. NI TBX-2808 Parts Locator Diagram

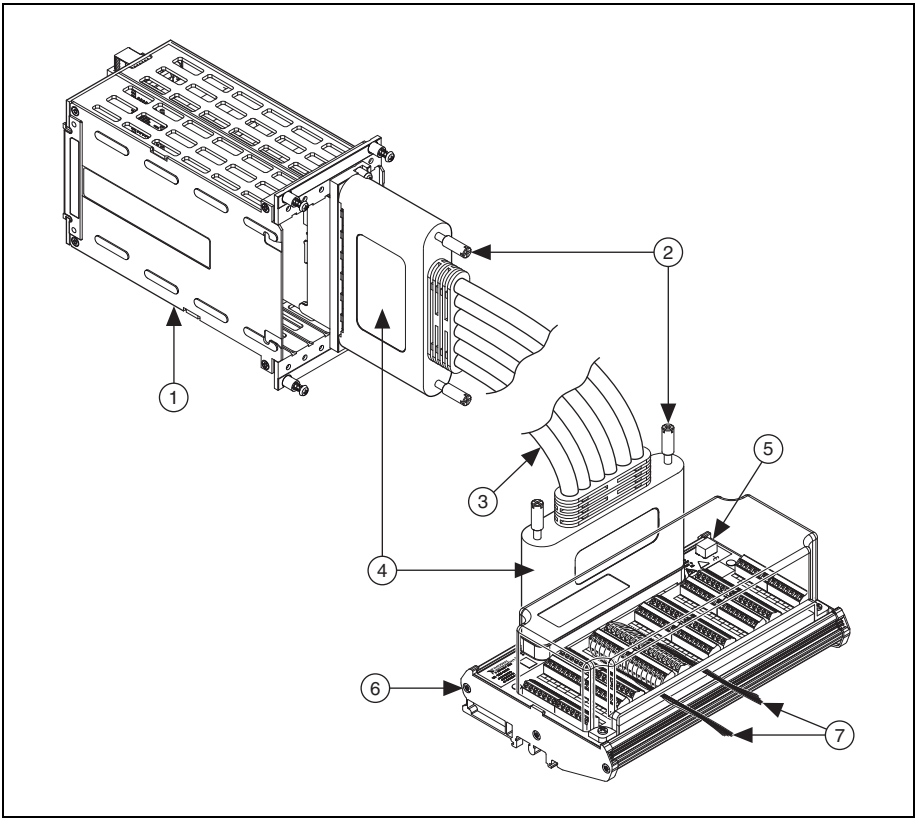
Installing Your Screw Terminal Accessory

Refer to Figure 2 and perform the following steps to connect the screw terminal accessory to the NI SwitchBlock card connector:

1. Securely fasten the connector on one end of the cable to the NI SwitchBlock card connector using the thumbscrews.
2. Securely fasten the connector on the other end of the cable to the screw terminal accessory connector using the thumbscrews.

To disconnect the cable, unscrew the cable and gently pull on the backshell. Do *not* pull the cable.

Caution The connectors of both the NI SwitchBlock card and the cable are polarized. You can attach them in only one way. Tie the ground terminal to an earth ground to ground the screw terminal end of the cable shield. Do not force the cable when inserting it into or removing it from the NI SwitchBlock card connector.



1	NI SwitchBlock carrier	4	Cable backshells	7	Signal wires
2	Thumbscrews	5	Ground terminal		
3	SH160F-160M-NI SwitchBlock cable	6	NI TBX-2808		

Figure 2. Connecting the Cable Assembly

Refer to Figure 3 for NI TBX-2808 pinouts.

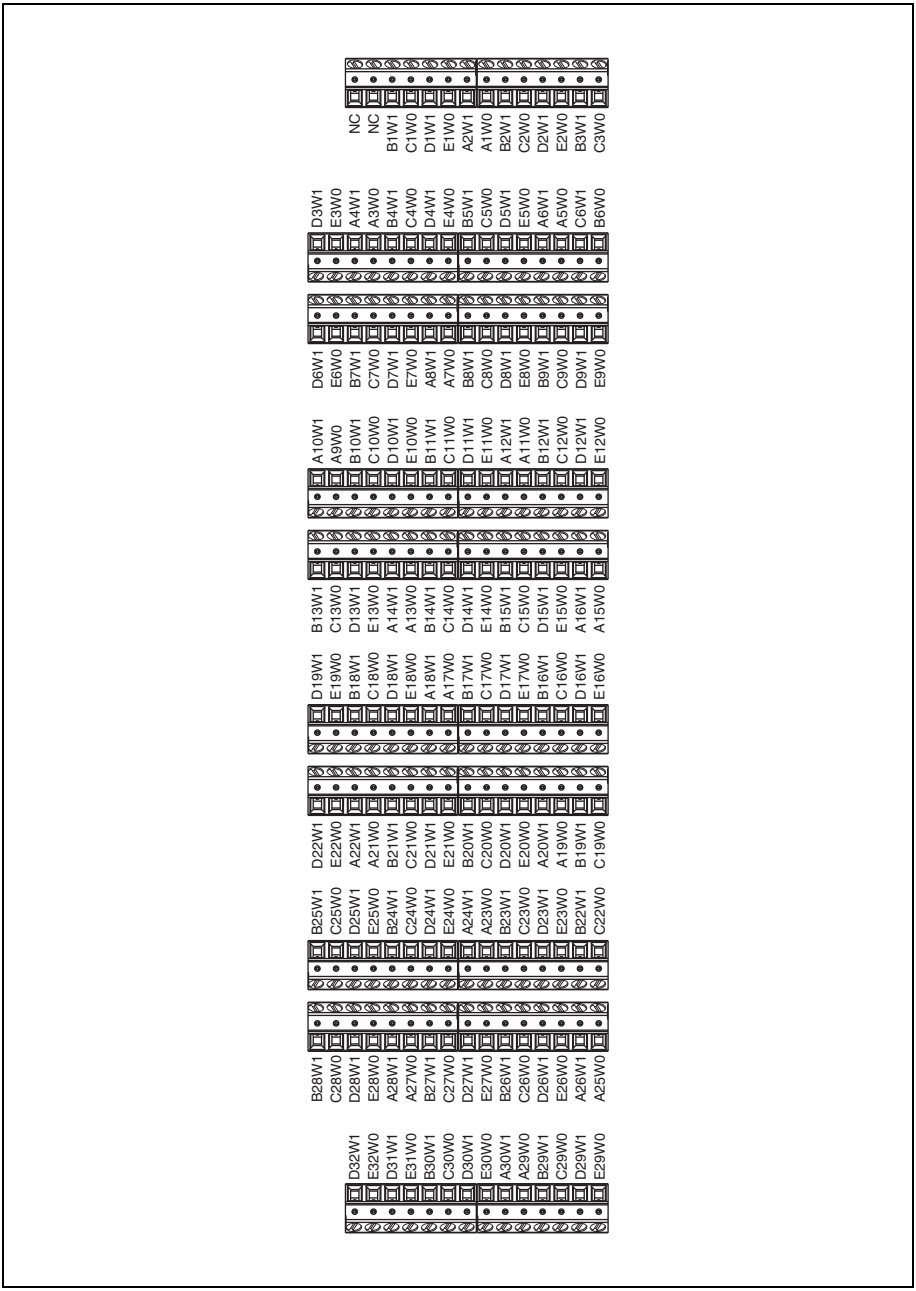


Figure 3. NI TBX-2808 Pinouts

Mounting the NI TBX-2808

When you have completed signal connections and terminal block installation, you can directly mount the NI TBX-2808 assembly onto a DIN rail with a firm push.

To unmount the NI TBX-2808 from the DIN rail, place a flathead screwdriver into the slot above the terminal block base and pry it away from the rail.

Environment

Operating temperature ..... 0 °C to 55 °C

Storage temperature ..... –20 °C to 70 °C

Relative humidity ..... 5% to 85%, noncondensing

Pollution Degree 2

Maximum altitude ..... 2,000 m

Indoor use only.

Compliance and Certifications

Safety

This product is UL Recognized as a component and 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 61010-1

Caution Refer to the *Read Me First: Safety and Electromagnetic Compatibility* document for important safety and electromagnetic compatibility information. To obtain a copy of this document online, visit `ni.com/manuals`, and search for the document title.

Note For UL and other safety certifications, refer to the product label or the *Environmental Management* section.

CE Compliance CE

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

- 2006/95/EC; Low-Voltage Directive (safety)
- 2004/108/EC; Electromagnetic Compatibility Directive (EMC)

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 *NI and the Environment* 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 Electrical and Electronic Equipment, visit ni.com/environment/weee.

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