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INSTALLATION INSTRUCTIONS
SH160F-160M-NI SwitchBlock Cable

This guide describes how to connect and use the National Instruments SH160F-160M-NI SwitchBlock shielded cable which has a maximum voltage rating of 150 V, CAT I.

Use the cable to connect an NI SwitchBlock card to your application. Both ends of the cable terminate with plastic, 160-pin DIN connectors. One side is male, the other is female.

What You Need to Get Started

To use the cable, you need the following items:

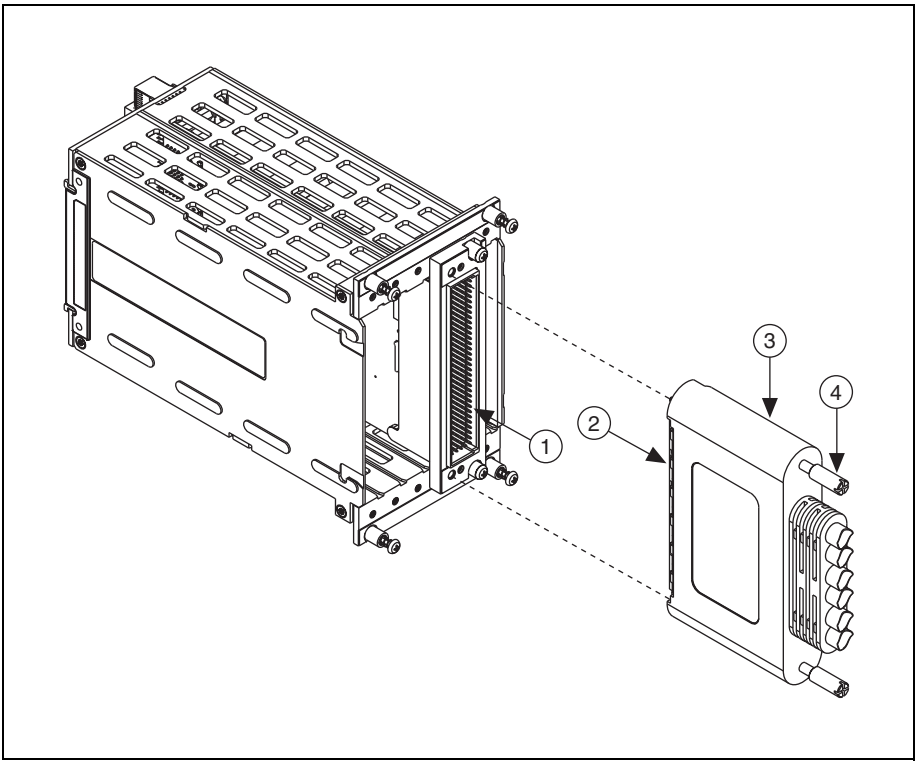
- ❑ SH160F-160M-NI SwitchBlock cable
- ❑ (Optional) NI TBX-2808 screw terminal accessory
- ❑ NI SwitchBlock card and documentation
- ❑ #1 Phillips screwdriver

Connecting the Cable

Complete the following steps to connect the cable to the NI SwitchBlock card and your application.

1. Connect the female end of the cable to the NI SwitchBlock card connector as shown in Figure 1. The keying pins must fit into the recesses in the front panel.

NATIONAL INSTRUMENTS™



1	NI SwitchBlock card connector	3	Cable backshell
2	Cable connector	4	Thumbscrew

Figure 1. Connecting the Cable to the NI SwitchBlock Card

2. Tighten the thumbscrews on the cable backshell. Be careful not to over-torque the thumbscrews.
3. Connect the male connector on the cable to your application. Refer to Table 1 in the *Cable Configuration* section to determine how to connect signals to your application. For screw terminal access, you can connect directly to an NI TBX-2808 screw terminal accessory.

Cable Configuration

The cable backshell and connectors provide connection to the NI SwitchBlock card and your application, respectively. Figure 2 shows the pinouts for the female and male connectors. Use the pinouts and the pin assignments listed in Table 1 to determine how to connect signals to your application.

Refer to the *NI Switches Help* for a complete listing of channel names and pinouts.

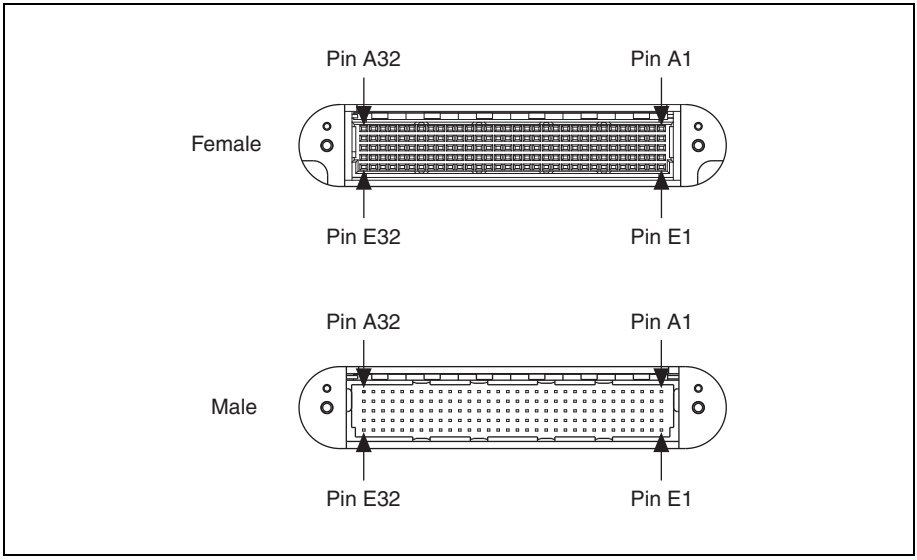


Figure 2. 160-Pin DIN Connectors

Table 1. Pin Assignment for DIN Backshell

160-Pin DIN Backshell	
DIN Pin (male)	**DIN Pin (female)**
A1	A32
A2	A31
A3	A30
⋮	⋮
E31	E2
E32	E1

Specifications

Maximum voltage ..... 150 V, CAT I
(row/column-to-ground)

Maximum current per pin ..... 2 A

Maximum current per cable ..... 64 A

Caution This module is rated for Measurement Category I and intended to carry signal voltages no greater than 150 V. This module can withstand up to 800 V impulse voltage. Do *not* use this module for connection to signals or for measurements within Categories II, III, or IV. Do *not* connect to MAINs supply circuits (for example, wall outlets) of 115 or 230 VAC. Refer to the *Read Me First: Safety and Electromagnetic Compatibility* document for more information on measurement categories.

Caution When hazardous voltages (>42.4 V_{pk}/60 VDC) are present on any relay terminal, safety low-voltage (<42.4 V_{pk}/60 VDC) cannot be connected to any other relay terminal. This includes all cards in the carrier and all cards in other carriers connected via the NI 2806 expansion bridge.

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

Weight ..... 1.0 kg (2.2 lbs)

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.

Accessories

Visit ni.com for information about the accessory in Table 2.

Caution This product must be operated with shielded cables and accessories to ensure compliance with Electromagnetic Compatibility (EMC) requirements. 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.

Table 2. NI Accessory for the SH160F-160M-NI SwitchBlock Cable

Accessory	Part Number
NI TBX-2808 screw terminal accessory for the NI SwitchBlock	781420-08

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

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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