INSTALLATION GUIDE

Safety Interlock Cable Assembly Kit

8 in. and 48 in. Safety Interlock Cable Assembly

Note Before you begin, install your PXIe-4135/4136/4137 source measure unit.

This document explains how to install the 8 in. and 48 in. Safety Interlock Cable Assembly Kit. The Safety Interlock Cable Assembly Kit is an accessory designed to connect safety features of systems to the interlock circuit of the PXIe-4135/4136/4137. Correct use of the interlock circuit is required to output voltage above 40 V.

To access Safety Interlock Cable Assembly Kit documentation, navigate to **Start»All Programs»National Instruments»NI-DCPower»Documentation**.

Installing the Safety Interlock Cable Assembly Kit

1. Install the PXIe-4135/4136/4137 in your chassis. Refer to the device-specific getting started guide for installation instructions.
2. Ensure the AC power source is connected to the chassis before installing the connector.

   The AC power cord grounds the chassis and protects it from electrical damage.
3. Power off the chassis.
4. Touch any metal part of the chassis to discharge static electricity.
5. Prepare a 48-in. safety interlock cable to connect your system safety relay.

   Strip and prepare the interlock cable for the specific connection used in your system.
   a) Measure and mark your strip length on the cable.
   b) Use an insulation strip tool to strip back the insulation to the appropriate length.
   c) Wire the cable to the test system enclosure at the user access points as instructed in the product specifications.
6. To extend your safety interlock circuit to additional SMUs, connect either an 8-inch or 48-inch safety interlock cable to the interlock connector in the previous step.

NATIONAL INSTRUMENTS

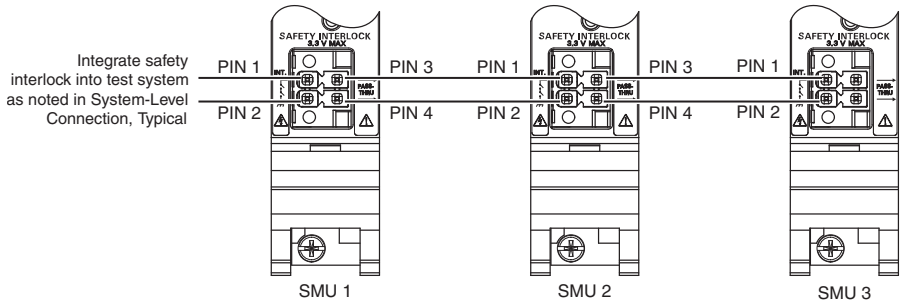
Use an 8-inch cable to pass the interlock circuit to an SMU that will be placed one to four slots away, or use a 48-inch cable to pass the interlock circuit to an SMU that will be placed more than four slots away or in another chassis.

Note If you use a 48-inch cable, measure and strip the cable as listed in the previous step.

Note Cables can be cut and stripped to shorter lengths as appropriate for your system.

Refer to the following diagram as you complete the following steps:

Figure 1. Safety Interlock Pass-Thru Connection



a) Connect the red safety interlock signal wire from a second interlock cable into pin 3 on the first interlock connector.

b) Connect the black ground safety interlock wire from a second interlock cable into pin 4 on the first interlock connector.

c) Repeat with additional cables until you've connected enough safety interlock connectors for your desired number of SMUs.

7. After inserting all of the cables, inspect for loose strands.
8. Attach the safety interlock connectors to the SMUs. For additional information on how to install your safety interlock connector, refer to your device-specific getting started guide at *ni.com/manuals*.
9. Tighten any retention screws on the safety interlock connectors to hold in place.
10. Power on the chassis.

Specifications

Maximum Voltage

Maximum voltage	3.3 V

Caution The interlock circuit is a passive circuit. Do not apply any voltage to the circuit.

Physical Characteristics

Dimensions	8 in. (203 mm) 48 in. (1219 mm)
Weight	
8 in. cable	70 g (2.5 oz.)
48 in. cable	100 g (3.5 oz.)

Environment

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

Compliance and Certifications

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 NI products must be disposed of according to local laws and regulations. For more information about how to recycle NI products in your region, 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`.)

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.

376630A-01 Oct16