SCXI™-1354 CABLE ASSEMBLY FOR THE DAQCARD™-1200

This guide describes how to install the National Instruments (NI) SCXI-1354 cable assembly between an SCXI module and a DAQCard-1200. The SCXI-1354 consists of an SCXI-1341 cable adapter and a 50-pin PR50-50F ribbon cable. The cable attaches the DAQCard-1200 I/O connector to the rear connector of the SCXI-1341, which has latches to secure the cable. The SCXI-1341 has a right-angle female connector that plugs into the rear of the SCXI module. In addition, the SCXI-1341 has an extra male breakout connector that enables you to use the unmodified signals of the DAQCard-1200 with other accessories. For example, you can connect this male breakout connector to an SCXI-1180 feedthrough panel to bring the DAQCard-1200 pinout to the front of the SCXI chassis.

What You Need to Get Started

To install the SCXI-1354 cable assembly, you need the following items:

❑ SCXI-1354 cable assembly for the DAQCard-1200 kit
- – SCXI-1341 cable adapter
- – PR50-50F cable (1.0 m)
- – Two small screws

❑ *SCXI-1354 Cable Assembly for the DAQCard-1200 Installation Guide*

❑ DAQCard-1200

❑ One of the following chassis:
- – SCXI-1000
- – SCXI-1000DC
- – SCXI-1001 chassis

- [ ] SCXI module

- [ ] Small flat blade screwdriver

- [ ] The computer

Conventions

The following conventions are used in this manual:

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.

✏️   This icon denotes a note, which alerts you to important information.

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

The following section contains important safety information that you *must* follow when installing and using the product.

Do *not* operate the product in a manner not specified in this document. Misuse of the product can result in a hazard. You can compromise the safety protection built into the product if the product is damaged in any way. If the product is damaged, return it to NI for repair.

Do *not* substitute parts or modify the product except as described in this document. Use the product only with the chassis, modules, accessories, and cables specified in the installation instructions. You *must* have all covers and filler panels installed during operation of the product.

Do *not* operate the product in an explosive atmosphere or where there may be flammable gases or fumes. Operate the product only at or below the pollution degree stated in the *Specifications* section. Pollution is foreign matter in a solid, liquid, or gaseous state that can reduce dielectric strength or surface resistivity. The following is a description of pollution degrees:

- Pollution degree 1 means no pollution or only dry, nonconductive pollution occurs. The pollution has no influence.

- Pollution degree 2 means that only nonconductive pollution occurs in most cases. Occasionally, however, a temporary conductivity caused by condensation must be expected.

- Pollution degree 3 means that conductive pollution occurs, or dry, nonconductive pollution occurs that becomes conductive due to condensation.

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

You *must* insulate signal connections for the maximum voltage for which the product is rated. Do *not* exceed the maximum ratings for the product. Remove power from signal lines before connecting them to or disconnecting them from the product.

Operate this product only at or below the installation category stated in the *Specifications* section.

The following is a description of installation categories:

- Installation category I is for measurements performed on circuits not directly connected to MAINS[1]. This category is a signal level such as voltages on a printed wire board (PWB) on the secondary of an isolation transformer.

  Examples of installation category I are measurements on circuits not derived from MAINS and specially protected (internal) MAINS-derived circuits.

- Installation category II is for measurements performed on circuits directly connected to the low-voltage installation. This category refers to local-level distribution such as that provided by a standard wall outlet.

  Examples of installation category II are measurements on household appliances, portable tools, and similar equipment.

- Installation category III is for measurements performed in the building installation. This category is a distribution level referring to hardwired equipment that does not rely on standard building insulation.

  Examples of installation category III include measurements on distribution circuits and circuit breakers. Other examples of installation category III are wiring including cables, bus-bars, junction
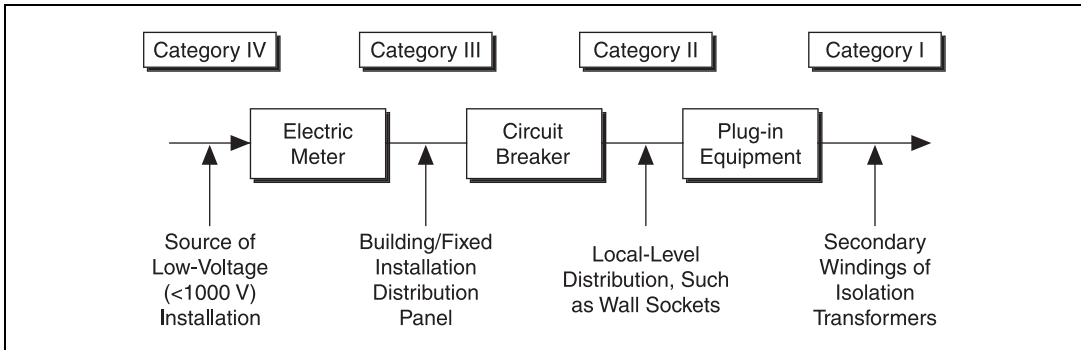
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[1] MAINS is defined as the electricity supply system to which the equipment concerned is designed to be connected either for powering the equipment or for measurement purposes.

boxes, switches, socket outlets in the building/fixed installation, and equipment for industrial use, such as stationary motors with a permanent connection to the building/fixed installation.

- Installation category IV is for measurements performed at the source of the low-voltage (<1,000 V) installation.

  Examples of category IV are electric meters, and measurements on primary overcurrent protection devices and ripple-control units.

Below is a diagram of a sample installation.

Category IV	Category III	Category II	Category I

| | Electric Meter | | Circuit Breaker | | Plug-in Equipment | |

| Source of Low-Voltage (<1000 V) Installation | Building/Fixed Installation Distribution Panel | Local-Level Distribution, Such as Wall Sockets | Secondary Windings of Isolation Transformers |

Installing the SCXI-1354

Figure 1 shows how the SCXI-1354 connects an SCXI module installed in a SCXI chassis to the DAQCard-1200.

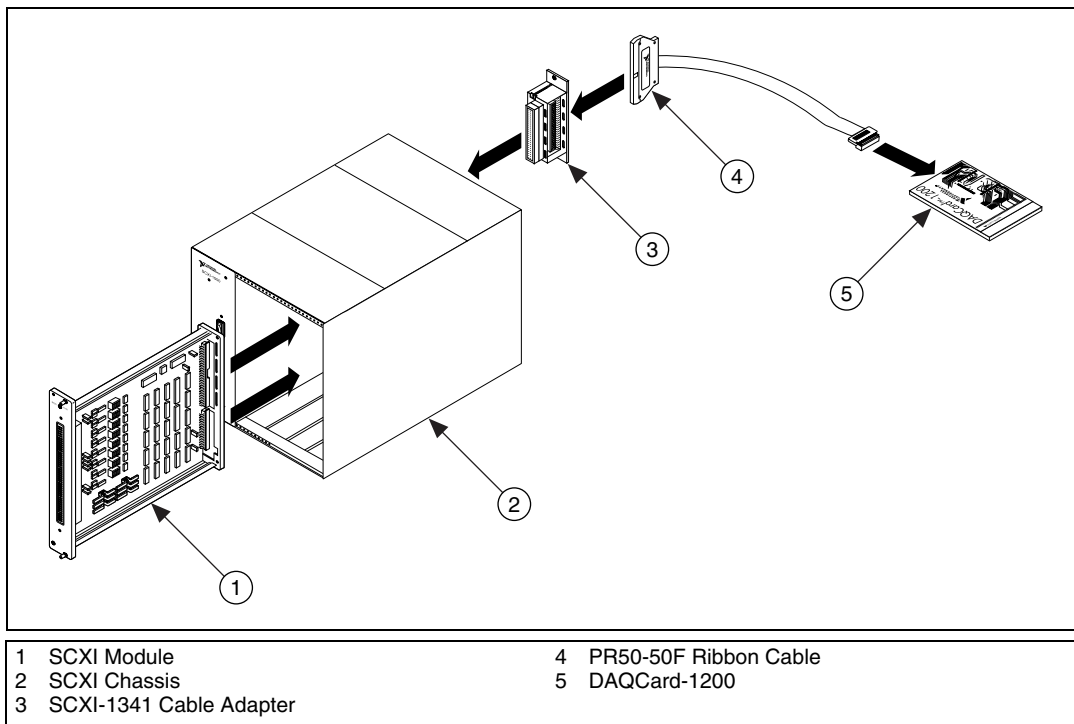| 1	SCXI Module	4	PR50-50F Ribbon Cable
2	SCXI Chassis	5	DAQCard-1200
3	SCXI-1341 Cable Adapter		

Figure 1. Connecting the DAQCard-1200 and SCXI Module

Perform the following steps to connect the DAQCard-1200 and SCXI module:

1. Power off the computer and the SCXI chassis.

2. Unplug the SCXI chassis.

3. Install the SCXI module in the chassis. Refer to the module and chassis documentation for instructions.

4. Set the SCXI-1354 jumper W1 shown in Figure 2. Table 1 shows the two possible jumper positions. In position A, the factory-default position, jumper W1 connects pin 43 of the DAQCard-1200 to module pin 46. Position B breaks this connection.

Note Leave W1 in position A unless you are using an SCXI-1140 module and are not supplying the HOLDTRIG signal to the module from the DAQCard-1200.
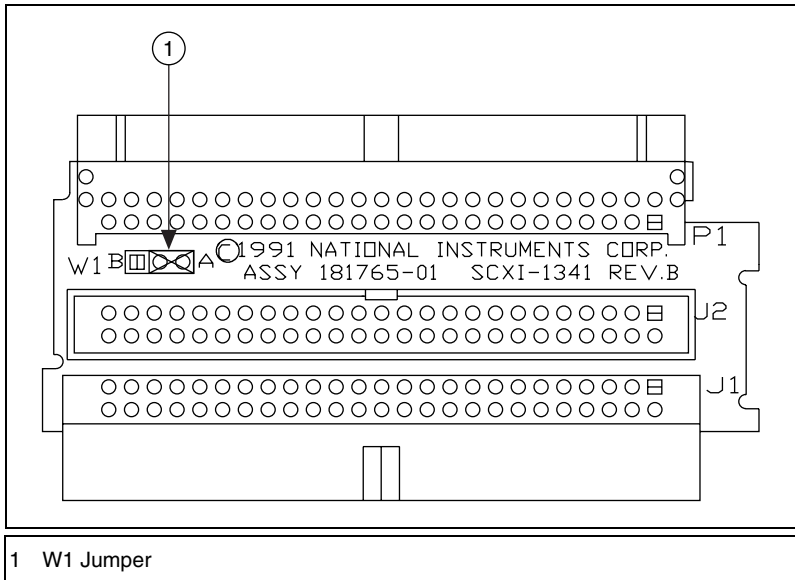
| 1 | W1 Jumper |

Figure 2. Jumper Position Diagram

Table 1. Jumper W1 Settings

Jumper	Position	HOLDTRIG
B [• ▬▬] A	A	Connected
B [▬▬ •] A	B	Disconnected

5. Plug the female right-angle module connector of the SCXI-1341 into the rear signal connector of the SCXI module.

6. Secure the SCXI-1341 by screwing the two screws through the rear panel of the SCXI-1341 and into the threaded strips in the rear of the SCXI chassis.

7. Install the DAQCard-1200 in a PCMCIA slot in the computer and connect the small end of the PR50-50F cable to the I/O connector of the DAQCard-1200.

8. Connect the large, female end of the PR50-50F cable to the rear connector of the SCXI-1341.

SCXI-1354 Pin Connections

Table 2 lists the way that the SCXI-1354 cable assembly connects pins from the DAQCard-1200 50-pin I/O connector to the SCXI module.

Table 2. SCXI Pin Connections

SCXI-1354 Male Breakout Connector Pin	SCXI-1341 Rear Connector Pin	SCXI Module Connector Pin	DAQCard-1200 Signal Name
1	1	3	ACH0
2	2	5	ACH1
3	3	7	ACH2
4	4	9	ACH3
5	5	11	ACH4
6	6	13	ACH5
7	7	15	ACH6
8	8	17	ACH7
9	9	1, 2	AISENSE/AIGND
10	10	20	DAC0OUT
11	11	23	AGND
12	12	21	DAC1OUT
13	13	24, 33	DGND
14	14	NC	PA0
15	15	NC	PA1
16	16	NC	PA2
17	17	NC	PA3
18	18	NC	PA4
19	19	NC	PA5
20	20	NC	PA6
21	21	NC	PA7
22	22	NC	PB0
23	23	NC	PB1
24	24	NC	PB2
25	25	NC	PB3
26	26	25	PB4

Table 2. SCXI Pin Connections (Continued)

SCXI-1354 Male Breakout Connector Pin	SCXI-1341 Rear Connector Pin	SCXI Module Connector Pin	DAQCard-1200 Signal Name
27	27	27	PB5
28	28	29	PB6
29	29	37	PB7
30	30	NC	PC0
31	31	26	PC1
32	32	28	PC2
33	33	NC	PC3
34	34	NC	PC4
35	35	NC	PC5
36	36	NC	PC6
37	37	NC	PC7
38	38	NC	EXTTRIG
39	39	NC	EXTUPDATE*
40	40	36	EXTCONV*
41	41	NC	OUTB0
42	42	NC	GATB0
43	43	46	OUTB1
44	44	NC	GATB1
45	45	NC	CLKB1
46	46	NC	OUTB2
47	47	NC	GATB2
48	48	NC	CLKB2
49	49	34, 35	+5 V
50	50	24, 33	DGND
NC: Not Connected			

Specifications

Maximum Working Voltage

Maximum working voltage refers to the signal voltage plus the common-mode voltage.

Channel-to-earth.................................... 30 VAC or 60 VDC, installation category I

Channel-to-channel .... 30 VAC or 60 VDC, installation category I

Environmental

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

Storage temperature .... –20 to 70 °C

Humidity .... 10 to 95% RH, noncondensing

Maximum altitude .... 2000 meters

Pollution degree (indoor use only)......... 2

Safety

The SCXI-1354 meets the requirements of the following standards for safety and electrical equipment for measurement, control, and laboratory use:

*   EN 61010-1:1993/A2:1995, IEC 61010-1:1990/A2:1995
*   UL 3111-1:1994
*   CAN/CSA c22.2 no. 1010.1:1992/A2:1997

Electromagnetic Compatibility

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 61326:1997/
A1:1998, Table 1

Note For full EMC compliance, you must operate this device with shielded cabling. In addition, all covers and filler panels must be installed. Refer to 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 the product, and a link to the DoC appears in Adobe Acrobat format. Click the Acrobat icon to download or read the DoC.

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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