

# INSTALLATION INSTRUCTIONS

## LFH160 Cable

このドキュメントには、日本語ページも含まれています。

This guide describes how to connect and use the National Instruments LFH160 cable which has a maximum voltage rating of 100 VDC, CAT I. Use the LFH160 cable to connect the NI PXI-2576 switch module to your application. As illustrated in Figure 1, one end of the LFH160 cable connects to the NI PXI-2576, and the other end of the cable terminates with four 50-pin female D-SUB connectors.

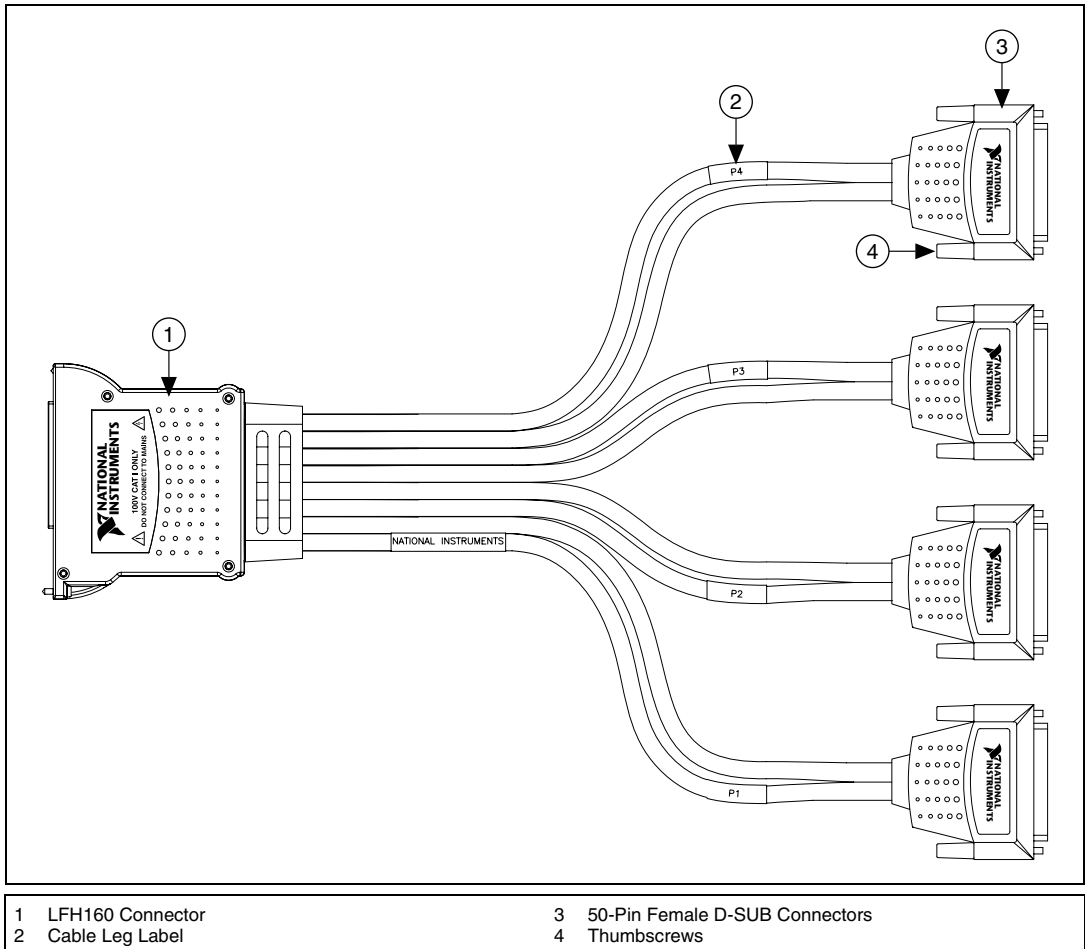


Figure 1. LFH160 Cable

# Contents

What You Need to Get Started .....	2
Getting Started with the LFH160 Cable .....	2
Cable Configuration.....	3
Specifications.....	11
Environment.....	12
Accessories .....	12
Where to Go for Support .....	13

## What You Need to Get Started

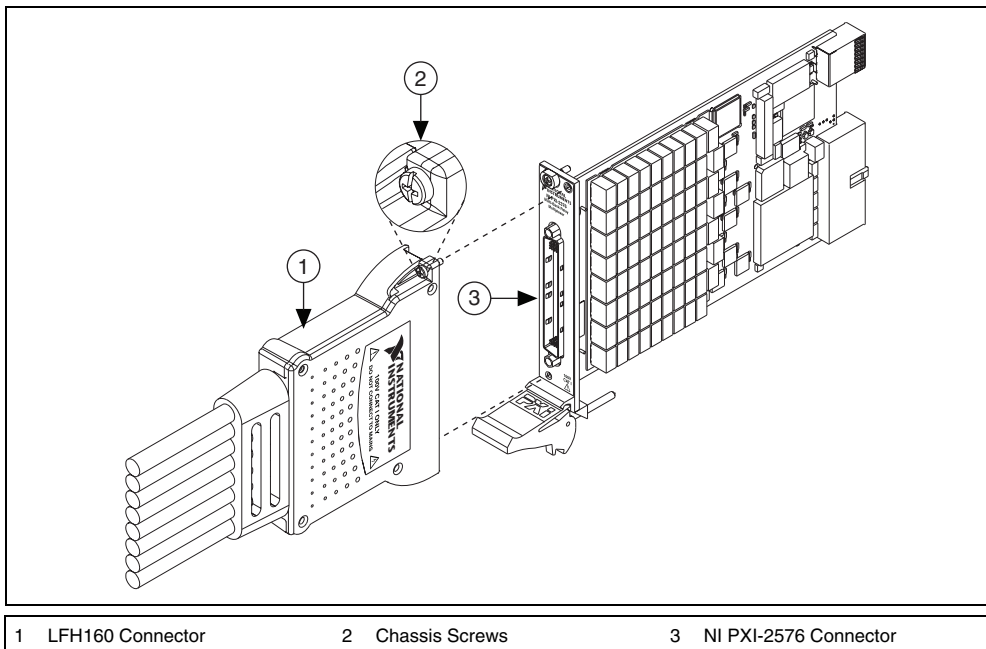
To use the LFH160 cable, you need the following items:

- LFH160 cable
- NI PXI-2576 switch module and documentation
- #1 Phillips screwdriver

## Getting Started with the LFH160 Cable

Complete the following steps to connect the LFH160 cable to the NI PXI-2576 and your application.

1. Connect the LFH160 connector to the NI PXI-2576 connector on the switch module as shown in Figure 2.



**Figure 2.** Connecting the LFH160 Cable to the NI PXI-2576

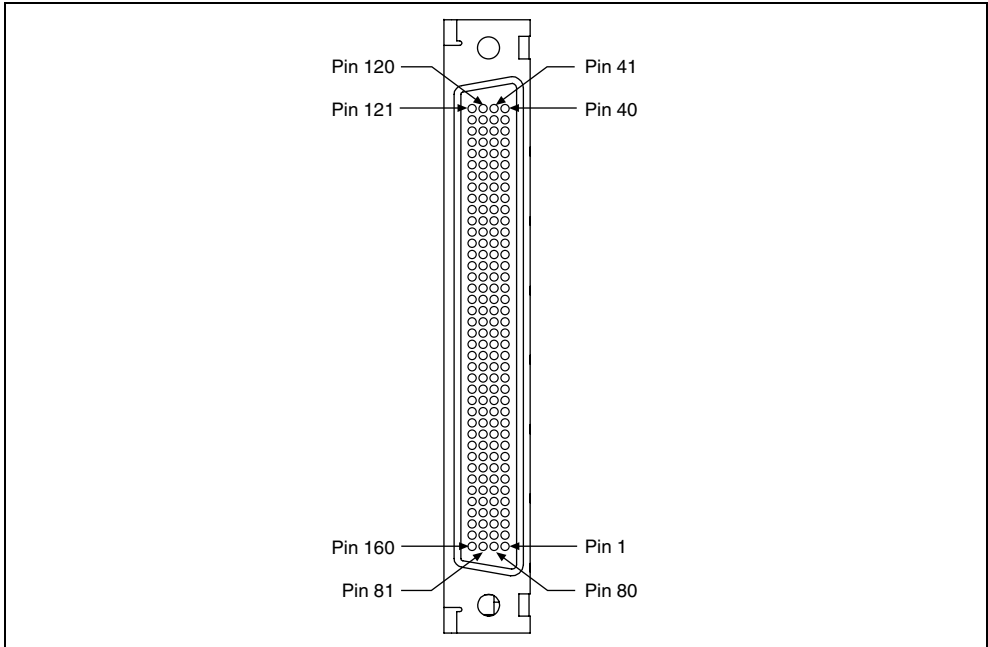
2. Tighten the chassis screws on the LFH160 cable.
3. Connect the D-SUB connectors on the LFH160 cable to your application. Refer to Tables 1 through 4 in the [Cable Configuration](#) section to determine how to connect signals to your application.

## Cable Configuration

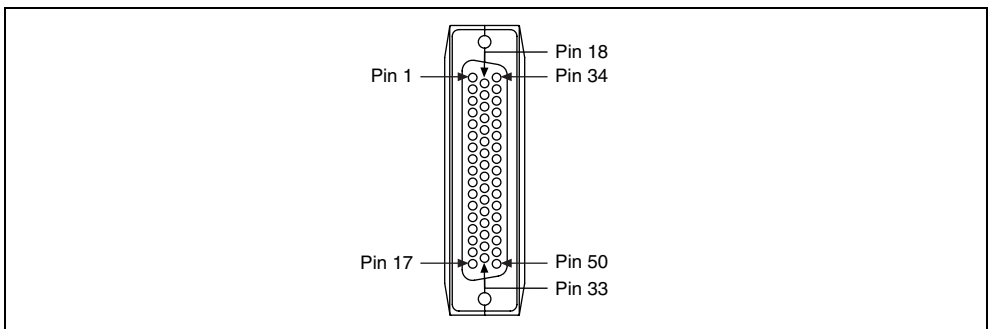
The LFH160 connector and the four 50-pin female D-SUB connectors, on the LFH160 cable provide connection to the NI PXI-2576 and your application, respectively. Figures 3 and 4 show the pinouts for both connectors.

Use the pinouts and the pin assignments listed in Tables 1 through 4 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 3.** LFH160 Connector



**Figure 4.** 50-Pin Female D-SUB Connector

**Table 1.** Pin Assignment for LFH160 Backshell 1

<b>50-Pin D-SUB Backshell 1</b>		
<b>NI PXI-2576 Channel</b>	<b>Cable</b>	
	<b>LFH Pin</b>	<b>50-Pin D-SUB Pin</b>
COM0-	159	P1.20
COM0+	160	P1.19
CH0-	157	P1.2
CH0+	158	P1.1
CH1-	155	P1.4
CH1+	156	P1.3
CH2-	153	P1.35
CH2+	154	P1.34
CH3-	151	P1.37
CH3+	152	P1.36
COM1-	82	P1.24
COM1+	81	P1.23
CH4-	84	P1.6
CH4+	83	P1.5
CH5-	86	P1.8
CH5+	85	P1.7
CH6-	88	P1.39
CH6+	87	P1.38
CH7-	90	P1.41
CH7+	89	P1.40
Shield_GND1	161	P1 shell
COM2-	79	P1.28
COM2+	80	P1.27
CH8-	77	P1.10
CH8+	78	P1.9
CH9-	75	P1.12
CH9+	76	P1.11
CH10-	73	P1.43
CH10+	74	P1.42
CH11-	71	P1.45
CH11+	72	P1.44

**Table 1.** Pin Assignment for LFH160 Backshell 1 (Continued)

<b>50-Pin D-SUB Backshell 1</b>		
<b>NI PXI-2576 Channel</b>	<b>Cable</b>	
	<b>LFH Pin</b>	<b>50-Pin D-SUB Pin</b>
COM3-	2	P1.32
COM3+	1	P1.31
CH12-	4	P1.14
CH12+	3	P1.13
CH13-	6	P1.16
CH13+	5	P1.15
CH14-	8	P1.47
CH14+	7	P1.46
CH15-	10	P1.49
CH15+	9	P1.48
Shield_GND2	161	P1 shell
No Connect	—	P1.17
No Connect	—	P1.18
No Connect	—	P1.21
No Connect	—	P1.22
No Connect	—	P1.25
No Connect	—	P1.26
No Connect	—	P1.29
No Connect	—	P1.30
No Connect	—	P1.33
No Connect	—	P1.50

**Table 2.** Pin Assignment for LFH160 Backshell 2

<b>50-Pin D-SUB Backshell 2</b>		
<b>NI PXI-2576 Channel</b>	<b>Cable</b>	
	<b>LFH Pin</b>	<b>50-Pin D-SUB Pin</b>
COM4-	149	P2.20
COM4+	150	P2.19
CH16-	147	P2.2
CH16+	148	P2.1
CH17-	145	P2.4
CH17+	146	P2.3
CH18-	143	P2.35
CH18+	144	P2.34
CH19-	141	P2.37
CH19+	142	P2.36
COM5-	92	P2.24
COM5+	91	P2.23
CH20-	94	P2.6
CH20+	93	P2.5
CH21-	96	P2.8
CH21+	95	P2.7
CH22-	98	P2.39
CH22+	97	P2.38
CH23-	100	P2.41
CH23+	99	P2.40
Shield_GND3	161	P2 shell
COM6-	69	P2.28
COM6+	70	P2.27
CH24-	67	P2.10
CH24+	68	P2.9
CH25-	65	P2.12
CH25+	66	P2.11
CH26-	63	P2.43
CH26+	64	P2.42
CH27-	61	P2.45
CH27+	62	P2.44

**Table 2.** Pin Assignment for LFH160 Backshell 2 (Continued)

<b>50-Pin D-SUB Backshell 2</b>		
<b>NI PXI-2576 Channel</b>	<b>Cable</b>	
	<b>LFH Pin</b>	<b>50-Pin D-SUB Pin</b>
COM7-	12	P2.32
COM7+	11	P2.31
CH28-	14	P2.14
CH28+	13	P2.13
CH29-	16	P2.16
CH29+	15	P2.15
CH30-	18	P2.47
CH30+	17	P2.46
CH31-	20	P2.49
CH31+	19	P2.48
Shield_GND4	161	P2 shell
No Connect	—	P2.17
No Connect	—	P2.18
No Connect	—	P2.21
No Connect	—	P2.22
No Connect	—	P2.25
No Connect	—	P2.26
No Connect	—	P2.29
No Connect	—	P2.30
No Connect	—	P2.33
No Connect	—	P2.50

**Table 3.** Pin Assignment for LFH160 Backshell 3

<b>50-Pin D-SUB Backshell 3</b>		
<b>NI PXI-2576 Channel</b>	<b>Cable</b>	
	<b>LFH Pin</b>	<b>50-Pin D-SUB Pin</b>
COM8-	139	P3.20
COM8+	140	P3.19
CH32-	137	P3.2
CH32+	138	P3.1
CH33-	135	P3.4
CH33+	136	P3.3
CH34-	133	P3.35
CH34+	134	P3.34
CH35-	131	P3.37
CH35+	132	P3.36
COM9-	102	P3.24
COM9+	101	P3.23
CH36-	104	P3.6
CH36+	103	P3.5
CH37-	106	P3.8
CH37+	105	P3.7
CH38-	108	P3.39
CH38+	107	P3.38
CH39-	110	P3.41
CH39+	109	P3.40
Shield_GND5	162	P3 shell
COM10-	59	P3.28
COM10+	60	P3.27
CH40-	57	P3.10
CH40+	58	P3.9
CH41-	55	P3.12
CH41+	56	P3.11
CH42-	53	P3.43
CH42+	54	P3.42
CH43-	51	P3.45
CH43+	52	P3.44



**Table 3.** Pin Assignment for LFH160 Backshell 3 (Continued)

<b>50-Pin D-SUB Backshell 3</b>		
<b>NI PXI-2576 Channel</b>	<b>Cable</b>	
	<b>LFH Pin</b>	<b>50-Pin D-SUB Pin</b>
COM11-	22	P3.32
COM11+	21	P3.31
CH44-	24	P3.14
CH44+	23	P3.13
CH45-	26	P3.16
CH45+	25	P3.15
CH46-	28	P3.47
CH46+	27	P3.46
CH47-	30	P3.49
CH47+	29	P3.48
Shield_GND6	162	P3 shell
No Connect	—	P3.17
No Connect	—	P3.18
No Connect	—	P3.21
No Connect	—	P3.22
No Connect	—	P3.25
No Connect	—	P3.26
No Connect	—	P3.29
No Connect	—	P3.30
No Connect	—	P3.33
No Connect	—	P3.50

**Table 4.** Pin Assignment for LFH160 Backshell 4

<b>50-Pin D-SUB Backshell 4</b>		
<b>NI PXI-2576 Channel</b>	<b>Cable</b>	
	<b>LFH Pin</b>	<b>50-Pin D-SUB Pin</b>
COM12-	129	P4.20
COM12+	130	P4.19
CH48-	127	P4.2
CH48+	128	P4.1
CH49-	125	P4.4
CH49+	126	P4.3
CH50-	123	P4.35
CH50+	124	P4.34
CH51-	121	P4.37
CH51+	122	P4.36
COM13-	112	P4.24
COM13+	111	P4.23
CH52-	114	P4.6
CH52+	113	P4.5
CH53-	116	P4.8
CH53+	115	P4.7
CH54-	118	P4.39
CH54+	117	P4.38
CH55-	120	P4.41
CH55+	119	P4.40
Shield_GND7	162	P4 shell
COM14-	49	P4.28
COM14+	50	P4.27
CH56-	47	P4.10
CH56+	48	P4.9
CH57-	45	P4.12
CH57+	46	P4.11
CH58-	43	P4.43
CH58+	44	P4.42
CH59-	41	P4.45
CH59+	42	P4.44

**Table 4.** Pin Assignment for LFH160 Backshell 4 (Continued)

50-Pin D-SUB Backshell 4		
NI PXI-2576 Channel	Cable	
	LFH Pin	50-Pin D-SUB Pin
COM15-	32	P4.32
COM15+	31	P4.31
CH60-	34	P4.14
CH60+	33	P4.13
CH61-	36	P4.16
CH61+	35	P4.15
CH62-	38	P4.47
CH62+	37	P4.46
CH63-	40	P4.49
CH63+	39	P4.48
Shield_GND8	162	P4 shell
No Connect	—	P4.17
No Connect	—	P4.18
No Connect	—	P4.21
No Connect	—	P4.22
No Connect	—	P4.25
No Connect	—	P4.26
No Connect	—	P4.29
No Connect	—	P4.30
No Connect	—	P4.33
No Connect	—	P4.50

## Specifications

Maximum voltage ..... 100 VDC, CAT I, 1 A



**Caution** Do *not* connect to MAINs supply circuits (e.g., wall outlets) of 115 or 230 VAC. Refer to the *Read Me First: Safety and Radio-Frequency Interference* document for more information about Measurement Categories.

Weight ..... 1088.6 g (38.4 oz)

## 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](http://ni.com) for information about the following accessory.

**Table 5.** NI Accessory for the LFH160 Cable

Accessory	Part Number
TBX-50 terminal block, with screw connection and 50 position D-Subminiature pin strip	779305-01



**Caution** You must install mating connectors according to local safety codes and standards and according to the specifications provided by the connector manufacturer. You are responsible for verifying safety compliance of third-party connectors and their usage according to the relevant standard(s), including UL and CSA in North America and IEC and VDE in Europe.

Refer to Table 6 for information about third-party accessories for the LFH160 Cable.

**Table 6.** Third-Party Accessories for the LFH160 Cable

Accessory	Manufacturer	Part Number
VARIOFACE module, with screw connection and 50 position D-Subminiature pin strip	Phoenix Contact	FLKM-D50 SUB/S
VARIOFACE module, with screw connection and 50 position D-Subminiature pin strip	Phoenix Contact	FLKMS-D50 SUB/S
VARIOFACE module, with screw connection and 50 position D-Subminiature pin strip, with LED indicators	Phoenix Contact	FLKM-D50 SUB/S/LA
Right-angle 50 position male D-SUB connector*	Amp	747497-4
* Small quantity orders are available from Digi-Key Corporation (part number A23398-ND).		

## Where to Go for Support

---

The National Instruments Web site is your complete resource for technical support. At [ni.com/support](http://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.

National Instruments corporate headquarters is located at 11500 North Mopac Expressway, Austin, Texas, 78759-3504. National Instruments also has offices located around the world to help address your support needs. For telephone support in the United States, create your service request at [ni.com/support](http://ni.com/support) and follow the calling instructions or dial 512 795 8248. For telephone support outside the United States, contact your local branch office:

Australia 1800 300 800, Austria 43 662 457990-0, Belgium 32 (0) 2 757 0020,  
Brazil 55 11 3262 3599, Canada 800 433 3488, China 86 21 5050 9800,  
Czech Republic 420 224 235 774, Denmark 45 45 76 26 00, Finland 358 (0) 9 725 72511,  
France 01 57 66 24 24, Germany 49 89 7413130, India 91 80 41190000, Israel 972 3 6393737,  
Italy 39 02 41309277, Japan 0120-527196, Korea 82 02 3451 3400, Lebanon 961 (0) 1 33 28 28,  
Malaysia 1800 887710, Mexico 01 800 010 0793, Netherlands 31 (0) 348 433 466,  
New Zealand 0800 553 322, Norway 47 (0) 66 90 76 60, Poland 48 22 3390150,  
Portugal 351 210 311 210, Russia 7 495 783 6851, Singapore 1800 226 5886,  
Slovenia 386 3 425 42 00, South Africa 27 0 11 805 8197, Spain 34 91 640 0085,  
Sweden 46 (0) 8 587 895 00, Switzerland 41 56 2005151, Taiwan 886 02 2377 2222,  
Thailand 662 278 6777, Turkey 90 212 279 3031, United Kingdom 44 (0) 1635 523545

National Instruments, NI, ni.com, and LabVIEW are trademarks of National Instruments Corporation. Refer to the *Terms of Use* section on [ni.com/legal](http://ni.com/legal) for more information about National Instruments trademarks. Other product and company names mentioned herein are trademarks or trade names of their respective companies. For patents covering National Instruments products, refer to the appropriate location: **Help»Patents** in your software, the `patents.txt` file on your CD, or [ni.com/patents](http://ni.com/patents).