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NI DAQ Device Custom Cables, Replacement Connectors, and Screws

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Overview

If you are trying to create a custom DAQ cable, create a custom fixture or breakout, modify an existing cable, repair or replace the connector on your cable or printed circuit board (PCB), or require replacement jackscrews or jackscrew fasteners, this document provides descriptions, part numbers, and vendor information to achieve these tasks.

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Using this DAQ Cable and Accessory Guide

This guide is intended to cover connectors, backshells, screws and washers designed for use with NI DAQ devices. It does not explicitly cover other NI product families such as [HSDIO](#), [Switches](#), C Series, or reconfigurable I/O (formerly R Series), although some models may use similar or the same parts. It also does not cover legacy or End of Life (EOL) parts or products.

- To find more information about other NI DAQ accessories and general information that applies to all DAQ accessories, visit [DAQ Multifunction I/O Accessory Guide Main Page](#).
- To find more information about NI DAQ cables and general information that applies to all DAQ cables, visit [DAQ Multifunction I/O Cable Guide Main Page](#).
- To determine compatibility of your terminal or connector block accessory with your NI DAQ device or module, or your NI DAQ cable, visit [DAQ Multifunction I/O Cable and Accessory Compatibility](#).

Mating Connectors and Backshells with Part Numbers

These connectors or receptors are found on most NI DAQ devices. Refer to the [Glossary](#) for any questions regarding connector terminology.

- 0.050 - Pins on this D-Type connector are spaced 0.050 inches apart. This connector is commonly found on NI 60xxE, 61xx, 65xx, 66xx, and 67xx DAQ devices.
- 0.8 mm - Pins on this connector are spaced 0.8 mm apart. This connector is commonly found on NI 62xx and 63xx DAQ devices.

Check out the [Popular NI DAQ Models and their Connectors](#) section, the [DAQ Accessory Guide](#), the [DAQ Cable Guide](#), or the [product manual](#) for your product for more information on what connector is featured on your device. Additionally, [NI Dimensional Drawings](#) contains drawings for many connectors and the devices, modules, cables and accessories they are used on.

Notes:

- In the following table connector pins are referred to as position formally, but may also be referred to as 37-pin, 50-pin, 68-pin, and 100-pin.
- When using board mount connectors with NI cables, NI recommends mounting the connector to a panel, enclosure, or similar mechanical support to ensure proper strain relief.

Identify the part and part number of the board-mount, cable connectors and backshells used on NI DAQ cables and accessories.

Part Description	NI Orderable Part Number	Manufacturer Part Number
0.8 mm VHDCI Board-Mount Connectors		
68-Position Right Angle Single Stack PCB-Mount VHDCI (Receptacle)	785633-01	Honda HDRA-EC68LFDT2+
68-Position Right Angle Dual Stack PCB-Mount VHDCI (Receptacle)	785634-01	Honda HDRA-E68W1LFDT1EA+
68-Position Vertical Single Stack PCB-Mount VHDCI (Receptacle)	785753-01	Honda HDRA-EC68FDT+
50-Position Right Angle PCB-Mount VHDCI (Receptacle)	N/A	TE Connectivity 5787096-1
0.8 mm VHDCI Cable Connectors		
68-Position Offset IDC Cable Connector (Plug) (SHC68-*)	N/A	Molex 71425-30011 ¹
50-Position Offset IDC Cable Connector (Plug)	N/A	TE Connectivity 5787131-1
68-Position 0.050 D-Type Board-Mount Connectors		
68-Position Right Angle PCB-Mount Connector (Male)	777600-01	TE Connectivity 2-5174225-5
68-Position Vertical PCB-Mount Connector (Male)	777601-01	TE Connectivity 2-5174339-5
68-Position 0.050 D-Type Cable Connectors		
68-Position IDC-Type Connector (Female)	N/A	TE Connectivity 5749699-7
Backshell for 68-Position IDC-Type Connector (Female)	N/A	TE Connectivity 5749195-2
NI 68-Position Kit including Solder-Cup Connector (Female) and Backshell, and Jackscrews	776832-01	N/A. NI kit contains the Honda solder-cup connector and backshell, below.
68-Position Solder-Cup Connector (Female)	N/A	Honda PCS-E68FS+
Backshell for 68-Position Solder-Cup Connector (Female), and Jackscrews	N/A	Honda PCS-E68LKAU2N
100-Position 0.050 D-Type Board-Mount Connectors		
100-Position Right Angle PCB-Mount Connector (Female)	777778-01	TE Connectivity 5787169-9
100-Position Vertical PCB-Mount Connector (Female)	777779-01	TE Connectivity 5749070-9
100-Position 0.050 D-Type Cable Connectors		

100-Position IDC-Type Connector (Male)	N/A	TE Connectivity 5749111-8
Backshell for 100-Position IDC-Type Connector (Male), includes Jackscrews	N/A	TE Connectivity 5749081-1
37-Position D-Sub Cable Connectors		
NI 37-Position Kit including Solder-Cup Connector (Female) and Backshell, no Jackscrews	779184-01	N/A
Backshell for 37-Position Solder-Cup Connector (Female). Is a 62-position backshell that also fits 37-position Solder-Cup connector.	N/A	TE Connectivity 5206478-4
37-Position Solder-Cup Connector (Male), 5 Amp	N/A	L-com SD37P
37-Position Solder-Cup Connector (Male), 3 Amp	N/A	Surplus Electronic Technology 010337-00002230

¹This product is currently in the maintenance phase. For more information see NI [Hardware Product Life Cycle Policies](#).

Jack screws, Jacksockets, and Washers with Part Numbers

To provide a more secure cable attachment, NI now uses jackscrews to secure 68-pin cables to DAQ devices and accessories. Each side of the cable connector contains two jackscrews that tighten into jacksockets located on all DAQ devices and accessories. To make this conversion, use the Jacksocket Kit for Connecting Screw Latching Cables in the following table. Other replacement jackscrew, jacksocket, screwlock, thumbscrew and washer information is also provided.

Identify the part, part number, size and threading of the screws and washers used on NI DAQ cables and accessories.

Part Description	NI Orderable Part Number	Manufacturer Part Number
Latching Cable to Jackscrew Conversion Kit		
(1) 4 Piece Jacksocket Kit for Connecting Screw Latching Cables	187949-01	N/A
(10) 4 Piece Jacksocket Kits for Connecting Screw Latching Cables	187949-10	N/A
Replacement Screws and Washers		
68-Position SCSI-II Jackscrew, Molded Head, Overmold; 2-56 Threads	N/A	Custom
68-Position SCSI-II Jacksocket, M2.5 Screw, .348" Length, .148" Head Length	187539-01	Custom
68-Position VHDCI Connector Screwlock, Board Mount, Nylon Patched	N/A	TE Connectivity 787004-3
100-Position SCSI-II Jackscrew, Molded Head, Overmold, 2-56 Threads	N/A	Custom
100-Position SCSI-II Jacksocket, 2-56 Threads	N/A	N/A
68 or 100-Position SCSI Connector Washers, M2.5, Flat, .030 Thick, SS	N/A	N/A
37-Position D-Sub Standoff/Screwlock, 4-40 Threads, 3/16" Hex Head, 3/16" Head Length, 5/16" Thread Length, 0.13" Min Female Depth, SS, Threads Fully Nylon Patched	N/A	Custom
37-Position Thumbscrew, 4-40 threads, 46.9mm Long, For High Voltage Cables	N/A	Custom

Ordering Information

For more information on any of the listed NI orderable parts, please visit <http://www.ni.com/contact-us/> to contact an NI representative. NI orderable parts listed in this guide without a product page can still be purchased by contacting NI.

For parts with a manufacturer part number, please contact the manufacturer or their vendors for further information about the product and purchasing. Manufacturer part numbers represent functionally equivalent replacements that are currently available from the specified manufacturer. This may differ from the part found on your device, module, cable or accessory as NI continuously revises and improves their products.

Some parts are custom made for NI or are common parts in industry, and do not have orderable part numbers. Please use the specifications provided to find an appropriate part.

Connectors Found on Popular NI DAQ Products

Below is a list of the connectors referenced in this guide that are found on the most popular NI DAQ products. This is not intended to be a complete nor comprehensive list of all NI DAQ products. Similar cables and connectors may be used with other NI products, and are not included here. You should first check your [device's manual](#), or reference the [NI DAQ Cable and Accessory Compatibility Guide](#) to ensure you are referencing the right connector for your device or module.

Note: These tables do not indicate compatibility between devices, modules, cables and accessories. Although they may share the same connector type, different wire mappings are used in different configurations.

Use this table to quickly identify connector types found on many NI DAQ devices and modules. Click to open the compatibility guide.

Devices/Modules	Connector Types
X Series (63xx)	68-position 0.8mm VHDCI
M Series (62xx)	68-position 0.8mm VHDCI 68-position 0.050 D-Type 37-position D-Sub
S Series (61xx)	68-position 0.8mm VHDCI 68-position 0.050 D-Type 37-position D-Sub
E Series (60xxE)	100-position 0.050 D-Type 68-position 0.8mm VHDCI 68-position 0.050 D-Type
Analog Output (67xx)	68-position 0.8mm VHDCI 68-position 0.050 D-Type
Counter/Timer (66xx)	100-position 0.050 D-Type 68-position 0.050 D-Type
Digital I/O (650x, 651x, 652x)	100-position 0.050 D-Type 37-position D-Sub

Use this table to quickly identify connector types found on many NI DAQ cables. Click the link to open the cable guide or dimensional drawing, if available.

Cables	Connector Types
SHC68-68-EPM ¹ SH68-C68-S ¹ SHC68-68 ¹ RC68-68 ¹	68-position 0.8mm VHDCI 68-position 0.050 D-Type
SH68-68-EPM SH68-68R1-EP SH68-68-D1 R68-68	68-position 0.050 D-Type
DB37M-DB37F-EP SH37F-37M SH37F-P-4	37-position D-Sub
SH100M-100M Flex ²	100-position 0.050 D-Type

¹These cables include the 68-pin .8mm VHDCI connector on the end to be connected to the module or device and the 68-pin 0.050 D-Type connector on the end to be connected to the accessory.

² The SH100M-100M Flex cable was formerly named SH100-100-F.

Use this table to quickly identify connector types found on many NI DAQ terminal and connector blocks. Click the link to open the accessory guide, if available.

Accessories	Connector Types
SCB-68A SCB-68 CB-68LP CB-68LPR TBX-68 BNC-2110 BNC-2111 BNC-2115 BNC-2120 BNC-2121 BNC-2090A BNC-2090	68-position 0.050 D-Type
CB-37FV CB-37FH CB-37F-LP CB-37F-HVD	37-position D-Sub
SCB-100 SCB-100A	100-position 0.050 D-Type

Glossary of Terms Used

- 0.050 D-Type** - Industry standard SCSI connector standard featuring 0.050 pin spacing that is used in 50, 68 and 100-position DAQ cable and accessory connections. [Click here for an example \(68-pin\).](#)
- Backshell** - Surrounds the male or female cable connector to protect the cable connections and to provide cable strain relief. [Click here for an example.](#)
- Cable Connector** - Found on the end of the cable, may connect to a device, another cable, or an accessory through a mating connector. [Click here for an example.](#)
- Dual Stack** - Two combined connectors stacked onto each other on a PCB-mount connector. Each connector accepts its own cable. [Click here for an example.](#)
- D-Sub** - Industry standard D-Sub (DSUB) connector that is used on 37-pin DAQ cable and accessory connections. [Click here for an example.](#)
- Insulation Displacement Connector (IDC)** - Also known as insulation-piercing contact (IPC). A type of cable connector that allows multiple conductor connections to a connector without soldering. [Click here for an example.](#)
- Jackscrew** - Usually found on the cable end. Torqued down to connect to either a PCB-mount connector or cable-end jacksocket. [Click here for an example.](#)
- Jacksocket** - Fixed mating connector receptacle for the jackscrew. [Click here for an example.](#)
- PCB-Mount Connector** - Also known as board-mount connector. Found on printed circuit boards (PCB), printed wiring boards (PWB) and other custom interface boards, normally soldered on. Typically a cable connector plugs into the PCB-mount connector to provide connection to an accessory or other device. [Click here for an example.](#)
- Single Stack** - A single connector end per cable or PCB-Mount interconnect. [Click here for an example.](#)
- Solder-Cup Connector** - Opposite of the mating surface, wires are attached to the connector by soldering individual wires into cups. [Click here for an example.](#)
- Very-High-Density Cable Interconnect (VHDCI)** - An improvement on a SCSI connector allowing a smaller footprint and fewer bent pins during connection. [Click here for an example.](#)

Additional Information

NI DAQ Cable and Accessory Resources

- [Learn about specifications, model differences and other common questions for DAQ cables.](#)
- [Learn about NI DAQ connector and terminal block accessories, including common questions and needs.](#)
- [Learn about the compatibility of NI DAQ devices and modules with NI DAQ cables and accessories.](#)
- [Dimensional Drawings](#)
- [Product Manuals, Specifications and More for NI Data Acquisition Products](#)
- [Product Documentation: Retrofitting Your PCI/PXI DAQ Device or Accessory \(Archived\)](#)

Other NI Cable and Accessory Resources

- [Find the parts needed to make a custom cable, breakout fixture, or replace connectors and screws with NI Digital Instrument hardware.](#)
- [Find the parts needed to make a custom cable, breakout fixture, or replace connectors and screws with NI Switch hardware.](#)
- [Learn about cable and accessory compatibility for NI Digital Instruments.](#)
- [Learn about cable and accessory compatibility for C Series \(cDAQ or cRIO\) Modules.](#)