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**SH96-96**

# SH96-96-1 Cable Specifications

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This document lists specifications for the SH96-96-1 shielded cable. These specifications are typical for the range of 0 °C to 55 °C unless otherwise stated. The system must be allowed to warm up for 15 minutes to achieve the rated accuracy. All specifications are subject to change without notice. Visit [ni.com/manuals](http://ni.com/manuals) for the most current specifications and product documentation.



**Note** Verify the accessory safety voltage to which you connect the cable by consulting the accessory specification document. If the accessory safety voltage is lower than the cable rating, use the accessory safety voltage rather than the cable rating.

## Electrical

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### Max working voltage

Any pin to any pin ..... 60 VDC

### Max current capacity

PWR and ISO\_GND ..... 250 mA

Wire gauge ..... 0.326 mm<sup>2</sup> (7/0.255 mm stranded),  
[22 AWG (7/30 stranded)]

All other I/O pins ..... 50 mA

Wire gauge ..... 0.081 mm<sup>2</sup> (7/0.127 mm stranded),  
[28 AWG (7/36 stranded)]

Connect only voltages that are within the following limits.

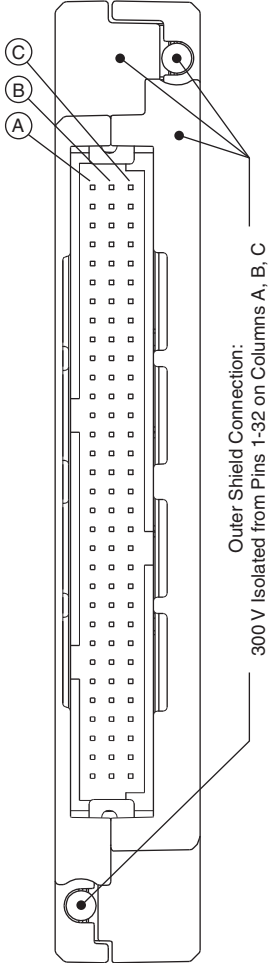
### NI PXIe-4353

Between any TC+ and TC- ..... ±80 mV

Between any TC terminal  
and COM ..... ±10 V

Between CJC+ and CJC- ..... ±1.024 V

**Table 1. Generic Pinout of SH96-96-1 Cable<sup>1</sup>**

Male Connector Diagram	Column A	Column B	Column C
 <p data-bbox="378 555 400 766">Outer Shield Connection: 300 V Isolated from Pins 1-32 on Columns A, B, C</p> <p data-bbox="109 1235 468 1289"><b>Note:</b> The outer shield is connected to earth ground.</p> <p data-bbox="203 1337 378 1362">RSVD—reserved</p>	A32	B32	C32
	A31	B31	C31
	A30	B30	C30
	A29	B29	C29
	A28	B28	C28
	A27	B27	C27
	A26	B26	C26
	A25	B25	C25
	A24	B24	C24
	A23	B23	C23
	A22	B22	C22
	A21	B21	C21
	A20	B20	C20
	A19	B19	C19
	A18	B18	C18
	A17	B17	C17
	A16	B16	C16
	A15	B15	C15
	A14	B14	C14
	A13	B13	C13
	A12	B12	C12
	A11	B11	C11
	A10	B10	C10
	A9	B9	C9
	A8	B8	C8
	A7	B7	C7
	A6	B6	C6
	A5	B5	C5
	A4	B4	C4
	A3	B3	C3
	A2 [RSVD]	B2 [ISO_GND]	C2 [RSVD]
	A1 [RSVD]	B1 [PWR]	C1 [RSVD]

<sup>1</sup> Refer to your NI PXIe module documentation for specific pinout details.

# Physical Requirements

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Dimensions (available lengths) .....	1 m (3.3 ft)
	3 m (9.8 ft)
	5 m (16.4 ft)

## Weights

1 meter .....	1187 g (42.2 oz)
3 meter .....	2040 g (72.6 oz)
5 meter .....	2894 g (102.1 oz)

## I/O connector

Male .....	96-pin Type R DIN 41612/IEC 60603-2
Female .....	96-pin Type C DIN 41612/IEC 60603-2

# Environmental Specifications

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Maximum altitude..... 2,000 m (800 mbar)

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

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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 <sub>rms</sub>
Non-operating .....	5 Hz to 500 Hz, 2.4 g <sub>rms</sub> (Tested in accordance with IEC-60068-2-64. Nonoperating test profile exceeds the requirements of MIL-PRF-28800F, Class 3.)

# Safety Voltages

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## Isolation

Channel-to-channel .....	None
Channel-to-earth ground	
Continuous .....	300 V <sub>rms</sub> , Measurement Category II
Withstand .....	3,000 V <sub>rms</sub> , verified by a 5 s dielectric withstand test

Measurement Category II is for measurements performed on circuits directly connected to the electrical distribution system.

This category refers to local-level electrical distribution, such as that provided by a standard wall outlet, for example, 115 V for U.S. or 230 V for Europe.



**Caution** Do *not* connect the SH96-96-1 to signals or use for measurements within Measurement Categories III or IV.



**Caution** The protection provided by the SH96-96-1 can be impaired if it is used in a manner not described in this document.

# Safety

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This product 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.

# Environmental Management

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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](http://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 and Electronic Equipment, visit [ni.com/environment/weee](http://ni.com/environment/weee).

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## Where to Go for Support

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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.

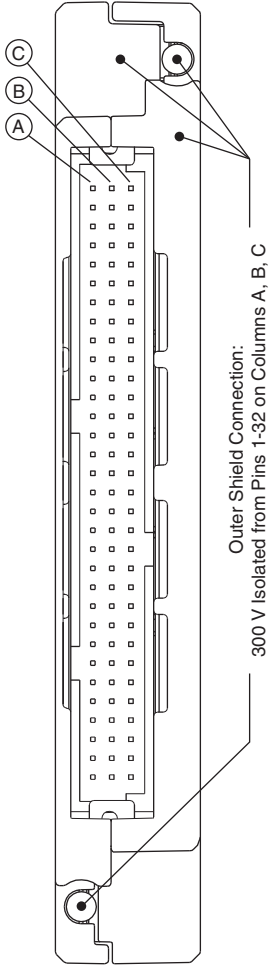
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## Appendix

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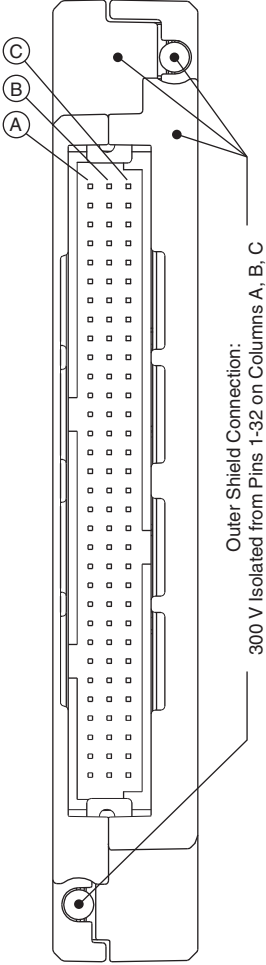
Tables 2 and 3 are provided to allow you to document pinout information for your specific application that is not otherwise documented.

**Table 2. Generic Pinout of SH96-96-1 Cable<sup>1</sup>**

Male Connector Diagram	Column A	Column B	Column C
 <p data-bbox="380 430 425 845">Outer Shield Connection: 300 V Isolated from Pins 1-32 on Columns A, B, C</p> <p data-bbox="112 1228 470 1284"><b>Note:</b> The outer shield is connected to earth ground.</p> <p data-bbox="201 1332 380 1364">RSVD—reserved</p>			

<sup>1</sup> Refer to your NI PXIe module documentation for specific pinout details.

**Table 3. Generic Pinout of SH96-96-1 Cable<sup>1</sup>**

Male Connector Diagram	Column A	Column B	Column C	
 <p data-bbox="396 437 437 852">Outer Shield Connection: 300 V Isolated from Pins 1-32 on Columns A, B, C</p> <p data-bbox="124 1235 482 1286"><b>Note:</b> The outer shield is connected to earth ground.</p> <p data-bbox="219 1334 389 1358">RSVD—reserved</p>				
	A2 [RSVD]	B2 [ISO_GND]	C2 [RSVD]	
	A1 [RSVD]	B1 [PWR]	C1 [RSVD]	
	<sup>1</sup> Refer to your NI PXIe module documentation for specific pinout details.			



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