

# NI PXI-2575 Specifications

## 196 × 1 Relay Multiplexer

This document lists specifications for the NI PXI-2575 196 × 1 multiplexer relay module. All specifications are subject to change without notice. Visit [ni.com/manuals](http://ni.com/manuals) for the most current specifications.

Configurations..... 196 × 1, 1-wire multiplexer  
98 × 1, 2-wire multiplexer

Refer to the *Accessories* section for more information about the 98 × 1, 2-wire multiplexer topology.

The following specifications are typical at 23 °C unless otherwise specified.

## Input Characteristics

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All input characteristics are DC,  $AC_{rms}$ , or a combination unless otherwise specified.

Maximum switching voltage

Channel-to-channel ..... 100 V

Channel-to-ground ..... 100 V, CAT I



**Caution** This module is rated for Measurement Category I and intended to carry signal voltages no greater than 100 V. This module can withstand up to 500 V impulse voltage. Do not use this module for connection to signals or for measurements within Categories II, III, or IV. Do not connect to MAINS supply circuits (for example, 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.

When hazardous voltages ( $>42.4 V_{pk}/60 VDC$ ) are present on any relay terminal, safety low-voltage ( $<42.4 V_{pk}/60 VDC$ ) cannot be connected to any other relay terminal.

Maximum switching power .....60 W, 62.5 VA (DC to 60 Hz)  
(per channel)

Maximum total current .....1 A  
(switching or carry)

DC path resistance

Initial.....<0.5  $\Omega$

End of life ..... $\geq 1 \Omega$

DC path resistance typically remains low for the life of the relay. At the end of relay life, the path resistance rapidly rises above 1  $\Omega$ . Load ratings apply to relays used within the specification before the end of relay life.

Differential thermal EMF .....<12  $\mu$ V

Bandwidth (-3 dB, 50  $\Omega$  termination)

1-wire.....>20 Mhz

2-wire.....>8 Mhz

Channel-to-channel isolation (50  $\Omega$  termination)

Each relay in the NI PXI-2575 is shared by two channels. Refer to Table 4 for a list of channel pairings.

1-wire channels in different relays

10 kHz .....>90 dB

100 kHz .....>70 dB

1 MHz.....>50 dB

1-wire channels in the same relay

10 kHz .....>75 dB

100 kHz .....>55 dB

1 MHz.....>35 dB

2-wire channels

10 kHz .....>95 dB

100 kHz .....>75 dB

1 MHz.....>55 dB

Open channel isolation (50  $\Omega$  termination)

10 kHz .....>85 dB

100 kHz .....>65 dB

1 MHz.....>48 dB

# Dynamic Characteristics

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Maximum scan rate ..... 140 channels/s

Relay operate time

Typical ..... 1 ms

Maximum ..... 3.4 ms



**Note** Certain applications may require additional time for proper settling. For information about including additional settling time, refer to the *NI Switches Help*.

Expected relay life

Mechanical .....  $1 \times 10^8$  cycles

Electrical

10 VDC,

100 mADC resistive .....  $2.5 \times 10^6$  cycles

10 VDC, 1 ADC resistive .....  $1 \times 10^6$  cycles

30 VDC, 1 ADC resistive .....  $5 \times 10^5$  cycles

60 VDC, 1 ADC resistive .....  $1 \times 10^5$  cycles



**Note** The relays used in the NI PXI-2575 are field replaceable. Refer to the *NI Switches Help* for information about replacing a failed relay.

# Trigger Characteristics

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Input trigger

Sources ..... PXI trigger lines 0–7

Minimum pulse width ..... 150 ns



**Note** The NI PXI-2575 can recognize trigger pulse widths less than 150 ns by disabling digital filtering. For information about disabling digital filtering, refer to the *NI Switches Help*.

Output trigger

Destinations ..... PXI trigger lines 0–7

Pulse width ..... Programmable (1  $\mu$ s to 62  $\mu$ s)

# Physical Characteristics

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Relay type .....	Electromechanical, latching
Relay contact material .....	Palladium-ruthenium, gold covered
I/O connector .....	200 POS LFH Matrix 50, receptacle
PXI power requirement .....	6 W at 5 V, 2.5 W at 3.3 V
Dimensions (W × H × D).....	Single PXI slot, 3U 2 cm × 10 cm × 17.5 cm (0.8 in. × 3.9 in. × 6.9 in.)
Weight .....	289 g (10.2 oz)

## Environment

The NI PXI-2575 is intended for indoor use only.

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

Storage temperature .....–20 °C to 70 °C

Relative humidity .....5% to 85%, noncondensing

Pollution Degree .....2

Approved at altitudes up to 2,000 m.

## Accessories

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Visit [ni.com](http://ni.com) for more information about the following accessories.

**Table 1.** NI Accessories for the NI PXI-2575

Accessory	Part Number
SH200LFH-4xDB50F-S, 1 m cable assembly to 4 × 50-pin D-SUB	779038-02
SH200LFH-BARE WIRE, 2 m cable assembly to bare wire	779038-01



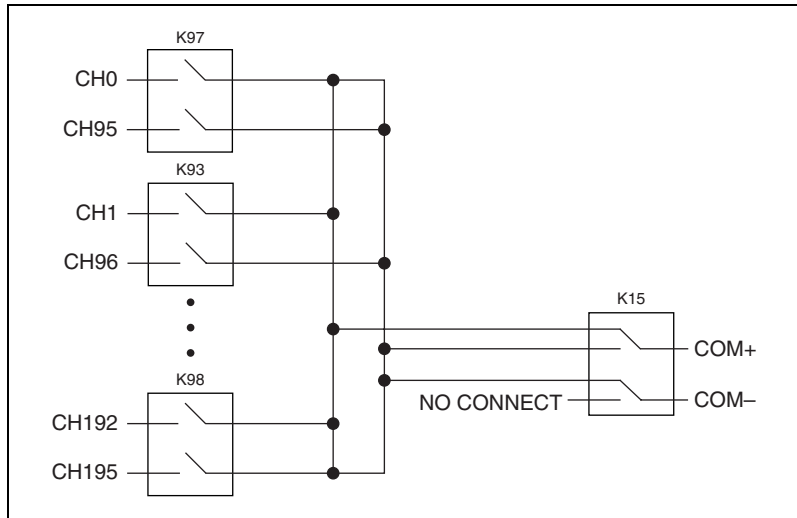
**Note** When using either the SH200LFH-4xDB50F-S or SH200LFH-BARE WIRE cable with the NI PXI-2575 in the 98 × 1, 2-wire topology, CH95, CH96, and CH97 will have lower RF performance than the other 95 channels because they are not in twisted pairs in the cable. To avoid using these channels, NI-SWITCH has support for a 95 × 1, 2-wire topology that does not include CH95, CH96, and CH97.

**Table 2.** Third-Party Accessories for the NI PXI-2575

Accessory	Manufacturer	Part Number
Terminal pin rows (four required per module)	Molex	71715-4002
Plug connector subassembly	Molex	71719-3000
Backshell only	Jevons	JDC200B-832
Mass interconnect cable assembly, 20 in.	Virginia Panel	540105010105
Mass interconnect cable assembly, 36 in.	Virginia Panel	540105010205
Mating ITA module (one required per module)	Virginia Panel	510108131
Mating ITA PC (198 required per module)	Virginia Panel	720101101

**Table 3.** Third-Party Accessories for the SH200LFH-4xDB50F-S/SH200LFH-BARE WIRE Cable

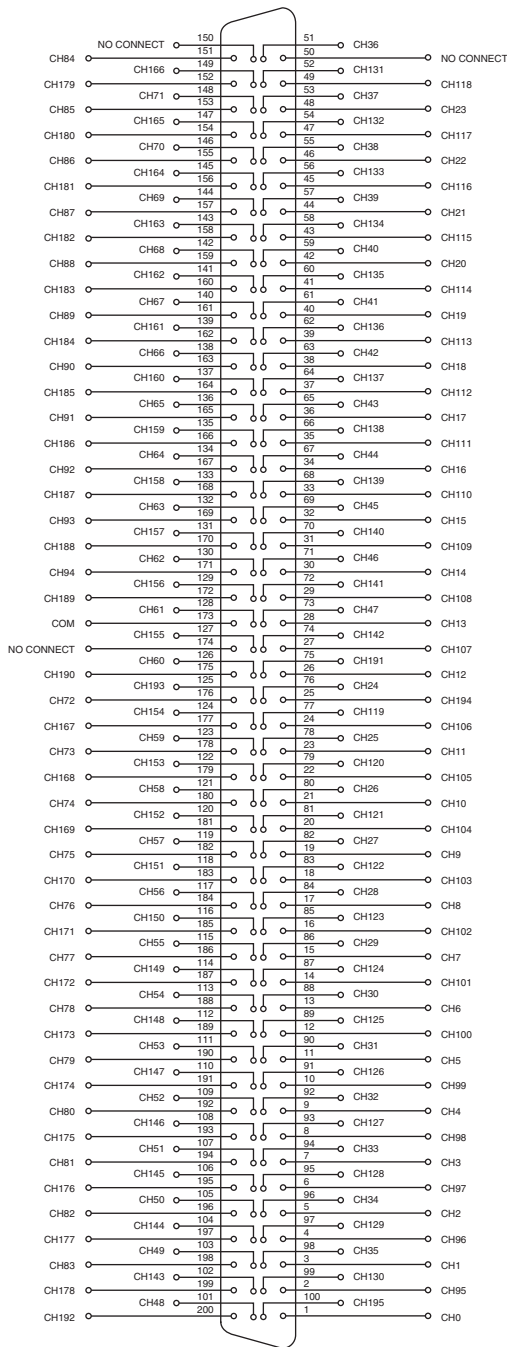
Accessory	Manufacturer	Part Number
VARIOFACE module, with screw connection and 50 position D-Subminiature pin strip	Phoenix Contact	FLK-D50 SUB/S
VARIOFACE module, with screw connection and 50 position D-Subminiature pin strip	Phoenix Contact	FLKM-D50 SUB/S
VARIOFACE module, with screw connection and 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



**Figure 1.** NI PXI-2575 Configuration (Relay Shown in Power-On State)

**Table 4.** NI PXI-2575 Channel Pairs

Channel Pair	Channel Pair	Channel Pair	Channel Pair	Channel Pair	Channel Pair
CH0, CH95	CH17, CH112	CH34, CH129	CH51, CH146	CH68, CH163	CH85, CH180
CH1, CH96	CH18, CH113	CH35, CH130	CH52, CH147	CH69, CH164	CH86, CH181
CH2, CH97	CH19, CH114	CH36, CH131	CH53, CH148	CH70, CH165	CH87, CH182
CH3, CH98	CH20, CH115	CH37, CH132	CH54, CH149	CH71, CH166	CH88, CH183
CH4, CH99	CH21, CH116	CH38, CH133	CH55, CH150	CH72, CH167	CH89, CH184
CH5, CH100	CH22, CH117	CH39, CH134	CH56, CH151	CH73, CH168	CH90, CH185
CH6, CH101	CH23, CH118	CH40, CH135	CH57, CH152	CH74, CH169	CH91, CH186
CH7, CH102	CH24, CH119	CH41, CH136	CH58, CH153	CH75, CH170	CH92, CH187
CH8, CH103	CH25, CH120	CH42, CH137	CH59, CH154	CH76, CH171	CH93, CH188
CH9, CH104	CH26, CH121	CH43, CH138	CH60, CH155	CH77, CH172	CH94, CH189
CH10, CH105	CH27, CH122	CH44, CH139	CH61, CH156	CH78, CH173	CH190, CH193
CH11, CH106	CH28, CH123	CH45, CH140	CH62, CH157	CH79, CH174	CH191, CH194
CH12, CH107	CH29, CH124	CH46, CH141	CH63, CH158	CH80, CH175	CH192, CH195
CH13, CH108	CH30, CH125	CH47, CH142	CH64, CH159	CH81, CH176	—
CH14, CH109	CH31, CH126	CH48, CH143	CH65, CH160	CH82, CH177	—
CH15, CH110	CH32, CH127	CH49, CH144	CH66, CH161	CH83, CH178	—
CH16, CH111	CH33, CH128	CH50, CH145	CH67, CH162	CH84, CH179	—



**Figure 2.** NI PXI-2575 Pinout for the Default 196 × 1, 1-Wire Topology

# Compliance and Certifications

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## Safety

This product is designed to meet 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
- CAN/CSA-C22.2 No. 61010-1



**Note** For UL and other safety certifications, refer to the product label or visit [ni.com/certification](http://ni.com/certification), search by model number or product line, and click the appropriate link in the Certification column.

## Electromagnetic Compatibility

Emissions .....	EN 55011 Class A at 10 m FCC Part 15A above 1 GHz
Immunity .....	EN 61326:1997 + A2:2001, Table 1
EMC/EMI .....	CE, C-Tick, and FCC Part 15 (Class A) Compliant



**Note** For EMC compliance, operate this device with shielded cabling.

## CE Compliance

This product meets the essential requirements of applicable European Directives, as amended for CE marking, as follows:

Low-Voltage Directive (safety) .....	73/23/EEC
Electromagnetic Compatibility Directive (EMC) .....	89/336/EEC



**Note** Refer to the Declaration of Conformity (DoC) for this product for any additional regulatory compliance information. To obtain the DoC for this product, visit [ni.com/certification](http://ni.com/certification), search by model number or product line, and click the appropriate link in the Certification column.

