
PXI-2575

Specifications

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Caution The protection provided by the PXI-2575 can be impaired if it is used in a manner not described in this document.

Definitions

Warranted specifications describe the performance of a model under stated operating conditions and are covered by the model warranty.

Characteristics describe values that are relevant to the use of the model under stated operating conditions but are not covered by the model warranty.

- **Typical** specifications describe the performance met by a majority of models.
- **Nominal** specifications describe an attribute that is based on design, conformance testing, or supplemental testing.

Specifications are **Typical** unless otherwise noted.

Related tasks

- [What Do the Specifications for NI Switch Products Mean?](#)

Conditions

Specifications are valid at 23 °C unless otherwise noted.

All voltages are specified in DC, AC_{pk}, or a combination unless otherwise specified.

Topology

Topologies	1-wire 196 × 1 multiplexer
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	2-wire 95 × 1 multiplexer
	2-wire 98 × 1 multiplexer

Input



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 Electromagnetic Compatibility** document for more information on measurement categories.



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

Maximum switching voltage

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



Caution The switching power is limited by the maximum switching current and the maximum voltage and must not exceed 60 W, 62.5 VA.

Maximum switching power (per channel)	60 W, 62.5 VA (DC to 60 Hz)
DC isolation resistance (between channel and COM terminals)	$>1 G\Omega$, typical at 25 °C

Maximum total current (switching or carry)	1 A
Minimum switch load ^{[1][2]}	20 mV / 1 mA
DC path resistance^[3] Initial <0.5 Ω , warranted End-of-life $\geq 1.0 \Omega$	
Differential thermal EMF	3 μV , typical ^[4] <12 μV , maximum
Bandwidth (-3 dB, 50 Ω termination) 1-wire >20 MHz 2-wire >8 MHz	
Channel-to-channel isolation (50 Ω termination)^[5]	
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 >68 dB 100 kHz >48 dB	

1 MHz	>28 dB
2-wire channels	
10 kHz	>95 dB
100 kHz	>75 dB
1 MHz	>55 dB
Open channel isolation (50 Ω termination)	
10 kHz	>90 dB
100 kHz	>70 dB
1 MHz	>50 dB

Dynamic

Relay operate time ^[6]	1 ms, typical 3.4 ms, maximum
Expected relay life^[7]	
Mechanical	1×10^8 cycles
Electrical	
10 VDC, 100 mADC resistive	2.5×10^6 cycles
10 VDC, 1 ADC resistive	1×10^6 cycles

30 VDC, 1 ADC resistive	5×10^5 cycles
60 VDC, 1 ADC resistive	1×10^5 cycles

Trigger

Input trigger

Sources	PXI trigger lines <0...7>
Minimum pulse width ^[8]	150 ns

Output trigger

Destinations	PXI trigger lines <0...7>
Pulse width	Software-selectable: 1 μ s to 62 μ s

Physical

Relay type	Electromechanical, latching
Relay contact material ^[9]	Palladium-ruthenium, gold covered
I/O connector	200 POS LFH Matrix 50, receptacle
Power requirement	
PXI	6 W at 5 V
	2.5 W at 3.3 V

PXI Express	7.5 W at 12 V 2.5 W at 3.3 V
Dimensions (L × W × H)	3U, one slot, PXI/cPCI module 21.6 × 2.0 × 13.0 cm (8.5 × 0.8 × 5.1 in.)
Weight	231 g (8.1 oz)

Environment

Maximum altitude	2,000 m (at 25 °C ambient temperature)
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.)
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.)
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Relative humidity range	5% to 95%, noncondensing (Tested in accordance with IEC 60068-2-56.)
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Shock and Vibration

Operational shock	30 g peak, half-sine, 11 ms pulse (Tested in accordance with IEC 60068-2-27. Test profile developed in accordance with MIL-PRF-28800F.)
Random vibration Operating 5 Hz to 500 Hz, 0.31 g _{rms} (Tested in accordance with IEC 60068-2-64.) Nonoperating 5 Hz to 500 Hz, 2.46 g _{rms} (Tested in accordance with IEC 60068-2-64. Test profile exceeds the requirements of MIL-PRF-28800F, Class 3.)	

Compliance and Certifications

Safety Compliance Standards

This product is designed to meet the requirements of the following electrical equipment safety standards for measurement, control, and laboratory use:

- IEC 61010-1, EN 61010-1
- UL 61010-1, CSA C22.2 No. 61010-1



Note For safety certifications, refer to the product label or the [Product Certifications and Declarations](#) section.

Electromagnetic Compatibility

This product meets the requirements of the following EMC standards for electrical equipment for measurement, control, and laboratory use:

- EN 61326-1 (IEC 61326-1): Class A emissions; Basic immunity
- EN 55011 (CISPR 11): Group 1, Class A emissions

- EN 55022 (CISPR 22): Class A emissions
- EN 55024 (CISPR 24): Immunity
- AS/NZS CISPR 11: Group 1, Class A emissions
- AS/NZS CISPR 22: Class A emissions
- FCC 47 CFR Part 15B: Class A emissions
- ICES-001: Class A emissions



Note In the United States (per FCC 47 CFR), Class A equipment is intended for use in commercial, light-industrial, and heavy-industrial locations. In Europe, Canada, Australia, and New Zealand (per CISPR 11), Class A equipment is intended for use only in heavy-industrial locations.



Note Group 1 equipment (per CISPR 11) is any industrial, scientific, or medical equipment that does not intentionally generate radio frequency energy for the treatment of material or inspection/analysis purposes.



Note For EMC declarations, certifications, and additional information, refer to the [Product Certifications and Declarations](#) section.

Product Certifications and Declarations

Refer to the product Declaration of Conformity (DoC) for additional regulatory compliance information. To obtain product certifications and the DoC for NI products, visit ni.com/product-certifications, search by model number, and click the appropriate link.


Environmental Management

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 **Engineering a Healthy Planet** web page at 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.

EU and UK Customers

-  Waste Electrical and Electronic Equipment (WEEE)—At the end of the product life cycle, all NI products must be disposed of according to local laws and regulations. For more information about how to recycle NI products in your region, visit ni.com/environment/weee.

电子信息产品污染控制管理办法 (中国 RoHS)

-  中国 RoHS—NI 符合中国电子信息产品中限制使用某些有害物质指令(RoHS)。关于 NI 中国 RoHS 合规性信息，请登录 ni.com/environment/rohs_china。(For information about China RoHS compliance, go to ni.com/environment/rohs_china.)

¹ The PXI-2575 is not recommended for 2-wire resistance measurements.

² Switching inductive loads (for example, motors and solenoids) can produce high voltage transients in excess of the module's rated voltage. Without additional protection, these transients can interfere with module operation and impact relay life. For more information about transient suppression, visit ni.com/info and enter the Info Code relayflyback.

³ DC path resistance typically remains low for the life of the relay. At the end of relay life, the path resistance rises rapidly above 1 Ω . Load ratings apply to relays used within the specification before the end of relay life.

⁴ To ensure the typical thermal EMF, power down all relays and avoid pulsing high currents near the channels you are measuring. For more information about powering down latching relays, refer to the Power Down Latching Relays After

Debounce property in NI-SWITCH or the Power Down Latching Relays After Settling property in NI-DAQmx.

⁵ Each relay in the PXI-2575 is shared by two channels.

⁶ Certain applications may require additional time for proper settling. Refer to **NI Switches Help** for more information about including additional settling time.

⁷ Relays are field replaceable. Refer to **NI Switches Help** for more information about replacing a failed relay.

⁸ The PXI-2575 can recognize trigger pulse widths less than 150 ns if you disable digital filtering. For information about disabling digital filtering, refer to the **NI Switches Help**.

⁹ Some versions of the PXI-2575 are built with silver, gold covered. Contact NI for more details on specific versions.