PXI-2576 Specifications

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Caution The protection provided by the PXI-2576 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.

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	Independent 2-wire sixteen 4 × 1 multiplexer 2-wire octal 8 × 1 multiplexer

	2-wire quad 16 × 1 multiplexer 2-wire dual 32 × 1 multiplexer 2-wire 64 × 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.

Caution When hazardous voltages (>42.4 Vpk/60 V DC) are present on any channel, safety low-voltage (≤42.4 Vpk/60 V DC) cannot be connected to any other channel.

Maximum switching voltage[1]	
Channel-to-channel	100 V
Channel-to-ground	100 V, Measurement Category I

Maximum current (per channel or common, switching or carry)	1 A
Maximum switching power (per channel)[2]	30 W, 37.5 VA

Maximum DC path resistance (channel-to-common)[3]	
Initial	<1.1 Ω
	0.5 Ω, typical

End-of-life	≥2 Ω

Thermal EMF	<10 µV, typical
Minimum switch load	20 mV/1 mA

Bandwidth

50 Ω system

4 × 1, 8 × 1 configurations	>30 MHz, typical
16 × 1 configuration	>20 MHz, typical
32 × 1 configuration	>15 MHz, typical
64 × 1 configuration	>10 MHz, typical

100 Ω system

4 × 1, 8 × 1 configurations	>60 MHz, typical
16 × 1 configuration	>40 MHz, typical
32 × 1 configuration	>20 MHz, typical
64 × 1 configuration	>10 MHz, typical

Bank-to-bank crosstalk (50 Ω or 100 Ω system, 4 × 1 configuration)

100 kHz	<-75 dB, typical
1 MHz	<-53 dB, typical

10 MHz	<-35 dB, typical

Open-channel isolation (50 Ω or 100 Ω system, 4 × 1 or 8 × 1 configuration)	
100 kHz	>79 dB, typical
1 MHz	>52 dB, typical
10 MHz	>40 dB, typical

Dynamic

Relay operate time[4]	2 ms, typical 3.4 ms, maximum

Expected relay life[5]	
Mechanical	5×10^7 cycles, typical

Electrical (resistive)	
30 V, 200 mA	2×10^6 cycles, typical
30 V, 400 mA	5×10^5 cycles, typical
30 V, 1 A	1×10^5 cycles, typical
100 V, 100 mA	2×10^6 cycles, typical
100 V, 200 mA	2.5×10^5 cycles, typical

100 V, 300 mA	1×10^5 cycles, typical

Trigger

Input trigger	
Sources	PXI trigger lines <0…7>
Minimum pulse width[6]	150 ns

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

Physical

Relay type	Electromechanical, latching
Relay contact material	Silver, gold covered
I/O connector	LFH matrix 50, 160 positions, male
PXI power requirement	2.5 W at 3.3 V 10 W at 5 V
Dimensions (L × W × H)	3U, one slot, PXI/cPCI module 21.6 cm × 2.0 cm × 13.0 cm (8.5 in. × 0.8 in. × 5.1 in.)

Weight	300 g (12 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.)
Relative humidity range	5% to 95%, noncondensing (Tested in accordance with IEC 60068-2-56.)

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] 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.

[2] The switching power is limited by the maximum switching current and the maximum voltage.

[3] Path resistance is a combination of relay contact resistance and trace resistance. Contact resistance typically remains low for the life of a relay. At the end of relay life, the contact resistance may rise rapidly above 1 Ω.

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

[5] Relays are field replaceable. Refer to the **NI Switches Help** for more information about replacing a failed relay.

[6] The PXI-2576 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**.