PXI-2584 Specifications

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PXI-2584 Specifications

This document lists specifications for the PXI-2584. All specifications are subject to change without notice.

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	1-wire 12 × 1 multiplexer 1-wire dual 6 × 1 multiplexers 2-wire 6 × 1 multiplexer

	2-wire 11 × 1 interleaved multiplexer Independent

Input Characteristics

Caution The PXI-2584 is not EMC protected and may generate emissions interference or disturbance. Relay contact actuation can cause unwanted emission disturbance in which case the installer or user will be required to take suppression measures such as, shielded cables, metal conduits, grounding, filtering, and protection techniques necessary to mitigate the source of interference or disturbance. The PXI-2584 is intended for use in industrial installations in which the user provides EMC controls.

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.

Caution This module is rated for 300 V Category II and 600 V Category I. This module can withstand up to 2,500 V impulse voltage. Do not use this module for connection to signals or for measurements within Categories III or IV. Do not connect this module to MAINs Category II circuits when operated above 300 V.

Maximum switching voltage	
Channel-to-ground	300 V, Measurement Category II 600 V DC, V ACpk, Measurement Category I[1]
Channel-to-channel	300 V

Caution The switching power is limited by the maximum switching current and the maximum voltage. Switching power must not exceed 10 W.

Maximum switching power (per channel)	
DC systems	10 W
Maximum current (switching or carry, per channel or common)	0.5 A

Note 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.

DC path resistance (1-wire path)	
Initial	≤1.1 Ω
End-of-life	>2 Ω

DC path resistance typically remains low for the life of the relay. At the end of relay life, the path resistance rapidly rises above 2 Ω. Load ratings apply to relays used within the specification before the end of relay life.

Minimum switching capacity	0.5 V 1 mA
Bandwidth (-3 dB, 50 Ω termination)	≥900 kHz, typical
Isolation (50 Ω termination)	
Open channel	

10 kHz	>86 dB, typical
100 kHz	>76 dB, typical
1 MHz	>58 dB, typical

DC open channel isolation	>1.0×10^{11} Ω, typical
Thermal EMF (1-wire path, channel-to-common)	<50 µV, typical

Dynamic Characteristics

Relay operate time	0.4 ms, typical 0.81 ms, maximum
Maximum scan rate	600 channels/s

Expected relay life

Mechanical

1 V at 10 mA resistive	3×10^8 cycles

Electrical

600 V at 7 mA90 pF capacitive	1.8×10^7 cycles
600 V at 16.5 mA90 pF capacitive	7×10^6 cycles

Note Reed relays are highly susceptible to damage from in-rush currents. Switching capacitive loads without resistive or inductive protection can weld the relay contacts in less than 5×10^5 cycles.

Note Relays are field replaceable. Refer to the **NI Switches Help** at ni.com/manuals for more information about replacing a failed relay.

Trigger Characteristics

Input trigger	
Sources	PXI trigger lines <0...7>
Minimum pulse width[2]	150 ns
Output trigger	
Destinations	PXI trigger lines <0...7>
Pulse width	Software-selectable: 1 µs to 62 µs

Physical

Relay type	Reed
Relay contact material	Rhodium
I/O connector	MINI-COMBICON, 3.81 mm (16 position)
PXI power requirement	1.6 W at 5 V 0.2 W at 3.3 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	212 g (7.5 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]

[2] The PXI-2584 can recognize trigger pulse widths less than 150 ns if you disable digital filtering. Refer to the **NI Switches Help** for information about disabling digital filtering.