PXI-2566 Specifications

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Contents

PXI-2566 Specifications

> **Caution** The protection provided by the PXI-2566 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	16-SPDT (nonlatching) 8-DPDT

Input

Caution This module is rated for Measurement Category I and intended to carry signal voltages no greater than 150 V. This module can withstand up to 800 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 V AC.

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

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 voltage[1]	
Channel-to-channel	150 V DC, 125 V AC
Channel-to-ground	150 V DC, 125 V AC, CAT I[2]
Maximum switching power (per channel)	60 W, 62.5 VA (DC to 60 Hz)
Maximum switching current (per channel)	2 A DC, 2 A AC
Simultaneous channels at maximum switching current (≤25 °C)	16
Maximum carry current (per channel)	5 A DC, 5 A AC

Simultaneous channels at maximum carry current (≤25 °C)	9

Module Load Derating at >25 °C

Load derating is dependent on the ambient temperature and the sum of the current squared of each channel simultaneously carrying a signal. The result must fall within the shaded region of the following figure. The following examples represent this calculation:

Example 1: Five channels carry 4 A while ten channels carry 2 A.

$(5 \times 4^2) + (10 \times 2^2) = 120\ A^2 \times \text{channels}$

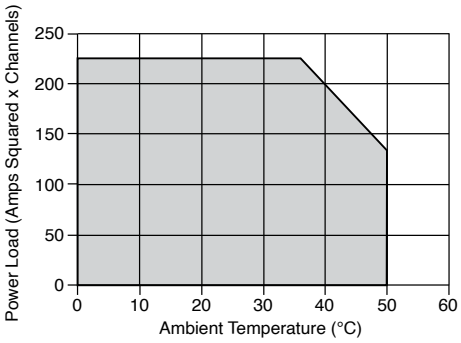
Example 1 can be used at ambient temperatures between 0 °C and 50 °C.

Example 2: Six channels carry 5 A while ten channels carry 2 A.

$(6 \times 5^2) + (10 \times 2^2) = 190\ A^2 \times \text{channels}$

Example 2 can be used at ambient temperatures between 0 °C and 41 °C.

Figure 1. Module Load Derating



DC path resistance[3]	
Initial	<0.1 Ω, warranted

Initial, with TB-2666[4]	<0.19 Ω, warranted
End of life	≥1.0 Ω
DC isolation	
Open channel, with TB-2666[4]	100 GΩ, typical
Channel-to-channel, with TB-2666[4]	100 GΩ, typical
Thermal EMF	<13 µV, typical
Minimum switching capacity	10 µA at 10 mV DC
Bandwidth (-3 dB, 50 Ω system)	≥70 MHz, typical
Bandwidth with TB-2666 (-3 dB, 50 Ω system)[4]	≥10 MHz, typical
Crosstalk (50 Ω system)	
Channel-to-channel	
10 kHz	≤-75 dB, typical
100 kHz	≤-65 dB, typical
1 MHz	≤-45 dB, typical

Dynamic

Relay operate time[5]	2 ms, typical 4.4 ms, maximum
Maximum cycle speed	115 cycles/s
Expected relay life[6]	
Mechanical	1×10^8 cycles
Electrical	
30 V DC, 1 ADC resistive	5×10^5 cycles
30 V DC, 2 ADC resistive	1×10^5 cycles
125 V AC, 0.2 AAC resistive	3×10^5 cycles
125 V AC, 0.5 AAC resistive	1×10^5 cycles

Trigger

Input trigger	
Sources	PXI trigger lines <0...7>

Minimum pulse width[7]	150 ns
Front panel/terminal block input voltage	-0.5 V, minimum +0.7 V, VL maximum +2.0 V, VH minimum +3.3 V, nominal +5.5 V, maximum

Output trigger	
Destinations	PXI trigger lines <0...7>
Pulse width	Software-selectable: 1 µs to 62 µs
Front panel voltage	3.3 V TTL, 8 mA, nominal

Physical

Relay type	Electromechanical, nonlatching
Relay contact material[8]	Gold-clad silver alloy
I/O connector	62-pin D-SUB connector, male
PXI power requirement	4.5 W at 5 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	250 g (9 oz.)

Environment

Operating temperature	0 °C to 55 °C
Storage temperature	-20 °C to 70 °C
Relative humidity	5% to 85%, noncondensing
Pollution Degree	2
Maximum altitude	2,000 m

Indoor use only.

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, 0.3 g_{rms}

Nonoperating	5 Hz to 500 Hz, 2.4 g_{rms} (Tested in accordance with IEC 60068-2-64. Nonoperating 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.)