
PXI-2520

Specifications

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PXI-2520 Specifications

This document lists specifications for the PXI-2520 . 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.

Cleaning the Module

Clean devices and terminal blocks by brushing off light dust with a soft, nonmetallic brush. Remove other contaminants with a soft, lint-free, dampened cloth. Do not use detergent or chemical solvents. The unit must be completely dry and free from contaminants before returning to service.

Cautions



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 V AC or 230 V AC. Refer to the **Read Me First: Safety and Electromagnetic Compatibility** document for more information about measurement categories.



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

Input Characteristics

Maximum switching voltage	
Channel-to-channel	150 V
Channel-to-ground	150 V, CAT I
Maximum switching current	2.0 A (per channel)
Maximum carry current	2.0 A (per channel)
Maximum switching power	60 W, 62.5 VA (DC to 60 Hz) (per channel)

Simultaneous channels at maximum current ($\leq 43\text{ }^{\circ}\text{C}$)	30
Minimum switching conditions	20 mV/1 mA



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

Initial	$<0.5\ \Omega$
End-of-life	$\geq 1.0\ \Omega$



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

Thermal EMF (typical at $23\text{ }^{\circ}\text{C}$)	12 μV
Bandwidth (-3 dB, typical at $23\text{ }^{\circ}\text{C}$, $50\ \Omega$ termination)	$\leq 35\text{ MHz}$
Crosstalk (typical at $23\text{ }^{\circ}\text{C}$, $50\ \Omega$ termination), Channel-to-channel	
10 kHz	$\leq -80\text{ dB}$
100 kHz	$\leq -60\text{ dB}$
Isolation (typical at $23\text{ }^{\circ}\text{C}$, $50\ \Omega$ termination), Open channel	

10 kHz	≥80 dB
100 kHz	≥60 dB

Derating PXI-2520 Load at >43 °C

To verify you are operating the PXI-2520 within supported 2-wire derating conditions, complete the following steps:

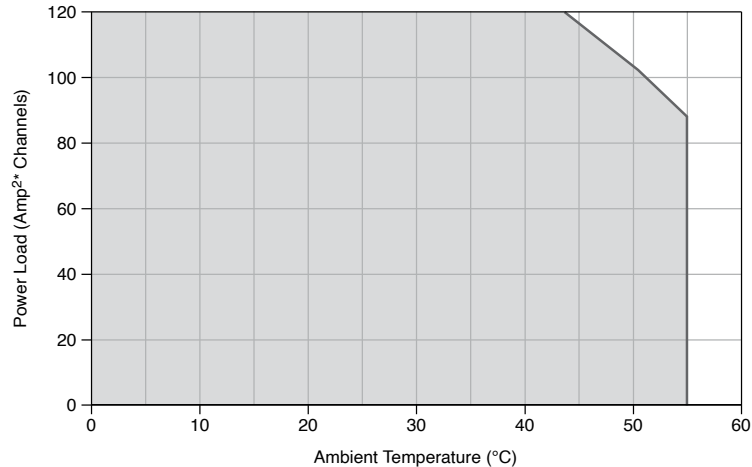
1. Use the following equation to calculate the load:

$$\text{Load} = \text{Channels}_1 \times (\text{Current}_1)^2 + \text{Channels}_2 \times (\text{Current}_2)^2 + \dots + \text{Channels}_n \times (\text{Current}_n)^2$$

where **Channels** is the number of channels that simultaneously carry a signal, **Current**, for 1, ... , n.

2. Verify that the load at your ambient operating temperature falls within the shaded region of the following figure.

Figure 1. PXI-2520 Load Derating



Examples of Load Derating

The following examples calculate supported derating conditions for the PXI-2520 .

Example 1

$$(30 \times 1.7^2) + (10 \times 1.5^2) = 109.2A^2 \times \text{channels}$$

$$(30 \times 1.7^2) + (10 \times 1.5^2) = 109.2A^2 \times \text{channels}$$

where	30 channels carry 1.7 A
	10 channels carry 1.5 A

You can use the module at ambient temperatures between 0 °C and 47 °C.

Example 2

$$(25 \times 1.55^2) + (5 \times 2.0^2) = 80.06A^2 \times \text{channels}$$

$$(25 \times 1.55^2) + (5 \times 2.0^2) = 80.06A^2 \times \text{channels}$$

where	25 channels carry 1.55 A
	5 channels carry 2.0 A

You can use the module at ambient temperatures between 0 °C and 55 °C.