

# NI PXI-2568 Specifications

## 31-Channel SPST Relay Module

This document lists specifications for the NI PXI-2568 general-purpose relay module. All specifications are subject to change without notice. Visit [ni.com/manuals](http://ni.com/manuals) for the most current specifications.

Configuration ..... 31-channel SPST (form A),  
latching

## Input Characteristics

---

All input characteristics are DC,  $AC_{rms}$ , or a combination unless otherwise specified.

Maximum switching voltage

Channel-to-channel ..... 150 V

Channel-to-ground ..... 150 V, CAT I



**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 VAC. Refer to the *Read Me First: Safety and Radio-Frequency Interference* document for more information on measurement categories.

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



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

Maximum switching power .....60 W, 62.5 VA (DC to 60 Hz)  
(per channel)

Maximum current .....2 A  
(switching or carry, per channel)

Simultaneous channels  
at maximum current ( $\leq 55\text{ }^{\circ}\text{C}$ ).....31

DC path resistance

Initial..... $<0.15\ \Omega$

End of life ..... $\geq 1\ \Omega$

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  $\Omega$ . Load ratings apply to relays used within the specification before the end of relay life.

Thermal EMF (typical at  $23\text{ }^{\circ}\text{C}$ )..... $\leq 12\ \mu\text{V}$

Bandwidth ( $-3\text{ dB}$ , typical at  $23\text{ }^{\circ}\text{C}$ )  
 $50\ \Omega$  termination..... $\geq 40\text{ MHz}$

Crosstalk (typical at  $23\text{ }^{\circ}\text{C}$ ,  $50\ \Omega$  termination)

Channel-to-channel

10 kHz ..... $\leq -85\text{ dB}$

100 kHz ..... $\leq -70\text{ dB}$

1 MHz..... $\leq -50\text{ dB}$

10 MHz..... $\leq -30\text{ dB}$

Isolation (typical at  $23\text{ }^{\circ}\text{C}$ ,  $50\ \Omega$  termination)

Open channel

10 kHz .....  $\geq 85\text{ dB}$

100 kHz .....  $\geq 65\text{ dB}$

1 MHz.....  $\geq 45\text{ dB}$

10 MHz.....  $\geq 25\text{ dB}$

# Dynamic Characteristics

---

Maximum cycle speed ..... 145 cycles/s

Relay operate time

Typical ..... 1 ms

Maximum ..... 3.4 ms



**Note** Certain applications may require additional time for proper settling. For information about including additional settling time, refer to the *NI Switches Help*.

Expected relay life

Mechanical .....  $1 \times 10^8$  cycles

Electrical

10 VDC, 100 mADC

resistive .....  $2.5 \times 10^6$  cycles

10 VDC, 1 ADC resistive .....  $1 \times 10^6$  cycles

30 VDC, 1 ADC resistive .....  $5 \times 10^5$  cycles

30 VDC, 2 ADC resistive .....  $1 \times 10^5$  cycles

# Trigger Characteristics

---

Input trigger

Sources ..... PXI trigger lines 0–7

Minimum pulse width ..... 150 ns



**Note** The NI PXI-2568 can recognize trigger pulse widths less than 150 ns by disabling digital filtering. For information about disabling digital filtering, refer to the *NI Switches Help*.

Output trigger

Destinations ..... PXI trigger lines 0–7

Pulse width ..... Programmable (1  $\mu$ s to 62  $\mu$ s)

# Physical Characteristics

---

Relay type ..... Electromechanical, latching

Relay contact material ..... Palladium-ruthenium,  
gold covered

I/O connector .....	62-pin D-subminiature, male
PXI power requirement .....	6 W at 5 V 2.5 W at 3.3 V
Dimensions (W × H × D).....	Single PXI slot, 3U 2 cm × 10 cm × 17.4 cm (0.8 in. × 3.9 in. × 6.9 in.)
Weight .....	227 g (8 oz)

## Environment

The PXI-2568 is intended for indoor use only.

Operating temperature .....0 °C to 55 °C

Storage temperature .....–20 °C to 70 °C

Relative humidity .....5% to 85% noncondensing

Pollution Degree .....2

Approved at altitudes up to 2,000 m.

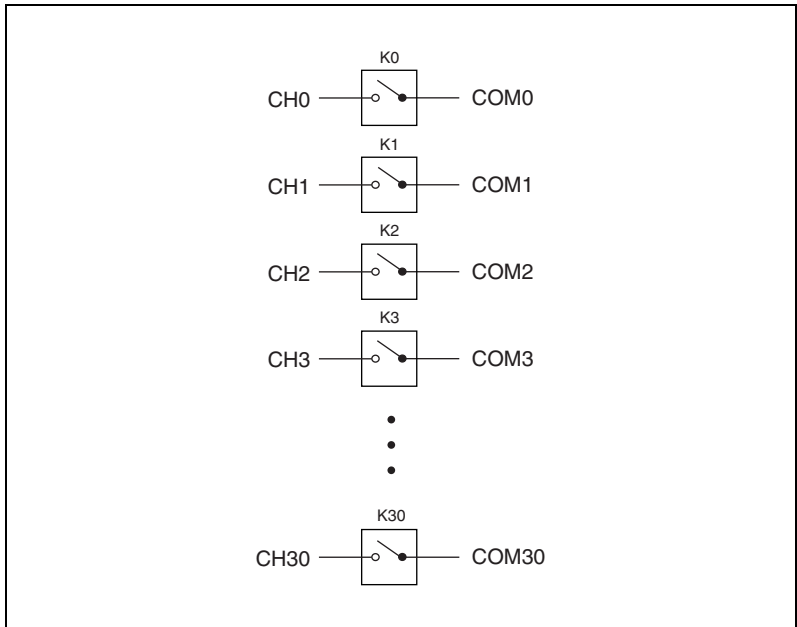
## Accessories



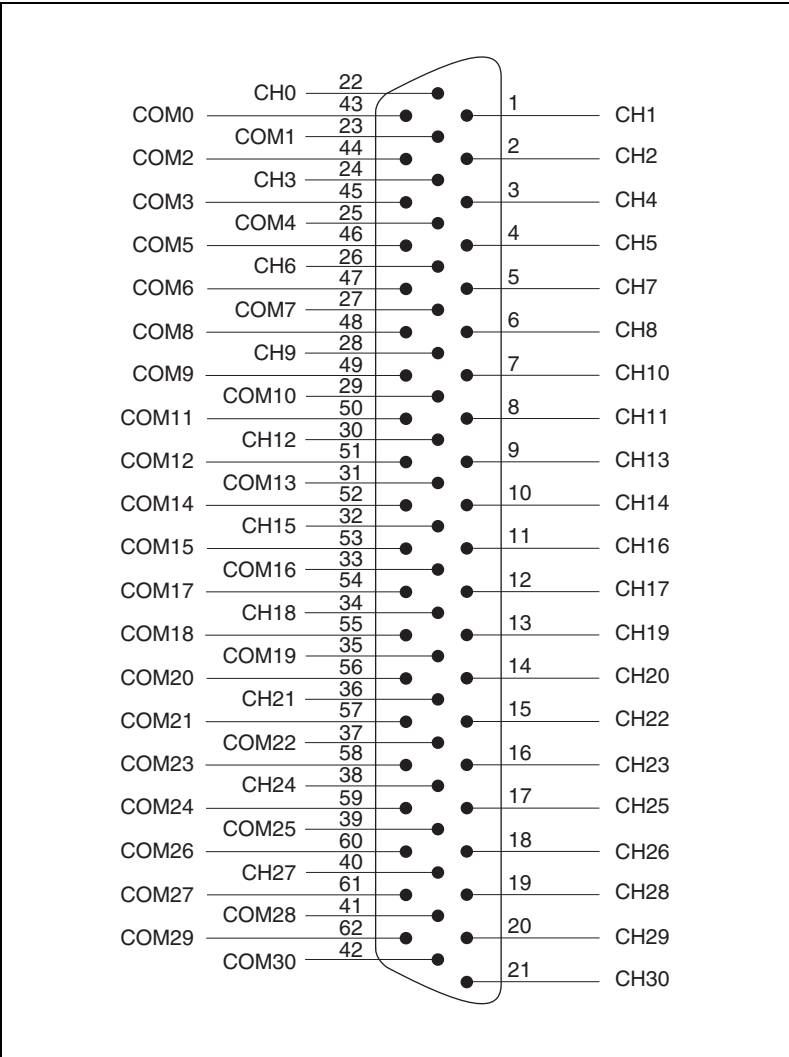
**Caution** You must install mating connectors according to local safety codes and standards and according to the specifications provided by the connector manufacturer. You are responsible for verifying safety compliance of third-party connectors and their usage according to the relevant standard(s), including UL and CSA in North America and IEC and VDE in Europe.

**Table 1.** Third-Party Accessory for the NI PXI-2568

Accessory	Description	Manufacturer
Mating front panel connector	62-position D-subminiature, female	Any



**Figure 1.** NI PXI-2568 Configuration (Relay Shown in Power-On State)



**Figure 2.** NI PXI-2568 Front Connector Pinout

# Compliance and Certifications

---

## Safety

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

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



**Note** For UL and other safety certifications, refer to the product label or visit [ni.com/certification](http://ni.com/certification), search by model number or product line, and click the appropriate link in the Certification column.

## Electromagnetic Compatibility

Emissions ..... EN 55011 Class A at 10 m  
FCC Part 15A above 1 GHz

Immunity ..... EN 61326:1997 + A2:2001,  
Table 1

CE, C-Tick, and FCC Part 15 (Class A) Compliant



**Note** For EMC compliance, you *must* operate this device with shielded cabling.

## CE Compliance

This product meets the essential requirements of applicable European Directives, as amended for CE marking, as follows:

Low-Voltage Directive (safety) ..... 73/23/EEC

Electromagnetic Compatibility  
Directive (EMC) ..... 89/336/EEC



**Note** Refer to the Declaration of Conformity (DoC) for this product for any additional regulatory compliance information. To obtain the DoC for this product, visit [ni.com/certification](http://ni.com/certification), search by model number or product line, and click the appropriate link in the Certification column.

National Instruments™, NI™, and ni.com™ are trademarks of National Instruments Corporation. Product and company names mentioned herein are trademarks or trade names of their respective companies. For patents covering National Instruments products, refer to the appropriate location: **Help» Patents** in your software, the `patents.txt` file on your CD, or [ni.com/patents](http://ni.com/patents).

© 2004 National Instruments Corp. All rights reserved.



373787B-01

Sep04