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` 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.

NATIONAL INSTRUMENTS

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 (≤55 °C).....31

DC path resistance

- Initial.....<0.15 Ω
- End of life.....≥1 Ω

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 Ω. Load ratings apply to relays used within the specification before the end of relay life.

Thermal EMF (typical at 23 °C).....≤12 µV

Bandwidth (–3 dB, typical at 23 °C)
50 Ω termination.....≥40 MHz

Crosstalk (typical at 23 °C, 50 Ω termination)

- Channel-to-channel
  - 10 kHz .....≤–85 dB
  - 100 kHz .....≤–70 dB
  - 1 MHz..... ≤–50 dB
  - 10 MHz..... ≤–30 dB

Isolation (typical at 23 °C, 50 Ω termination)

- Open channel
  - 10 kHz ..... ≥85 dB
  - 100 kHz ..... ≥65 dB
  - 1 MHz..... ≥45 dB
  - 10 MHz..... ≥25 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 ..... 1×10^8 cycles
- Electrical
  - 10 VDC, 100 mADC resistive ..... 2.5×10^6 cycles
  - 10 VDC, 1 ADC resistive ..... 1×10^6 cycles
  - 30 VDC, 1 ADC resistive ..... 5×10^5 cycles
  - 30 VDC, 2 ADC resistive ..... 1×10^5 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 µs to 62 µs)

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

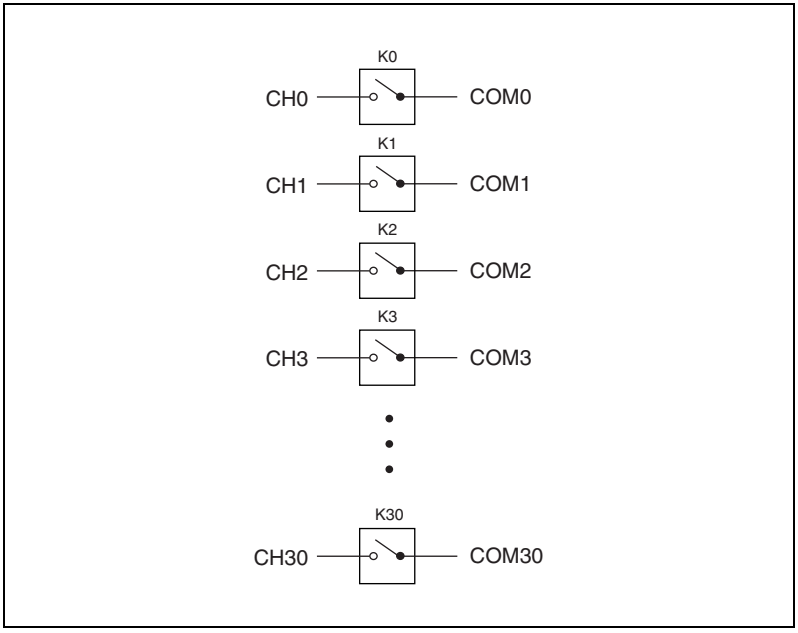

Figure 1. NI PXI-2568 Configuration (Relay Shown in Power-On State)

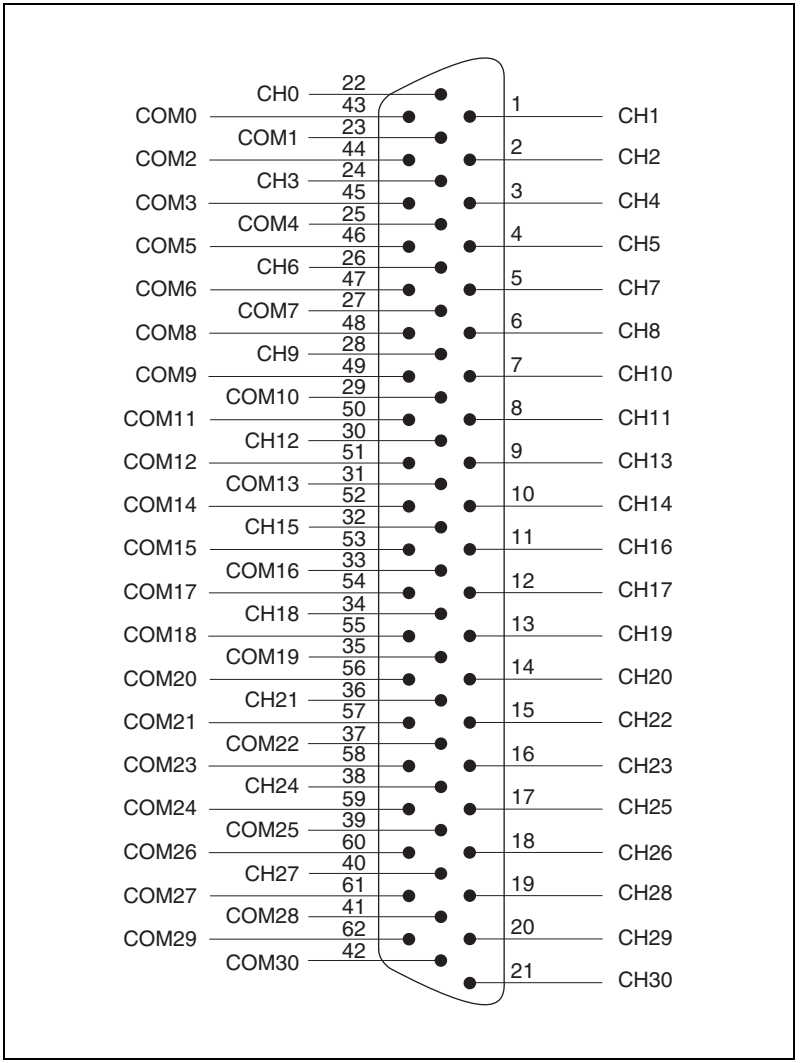

Figure 2. NI PXI-2568 Front Connector Pinout

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`, 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`, search by model number or product line, and click the appropriate link in the Certification column.

373787B-01 Sep04