NI PXI-2529 Specifications

128-Crosspoint Relay Matrix

This document lists specifications for the NI PXI-2529 matrix module. All specifications are subject to change without notice. Visit `ni.com/manuals` for the most current specifications.

Configurations..... 8x16 2-wire matrix
4x32 2-wire matrix

Input Characteristics

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

Maximum switching voltage..... 150 V, CAT I
(channel-to-channel and channel-to-ground)

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 (such as wall outlets) of 115 or 230 VAC. Refer to the *NI Switches Getting Started Guide* 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.

Maximum switching current ..... 1 A
(per channel)

Maximum carry current ..... 2 A
(per channel)

Maximum module current..... 8 A

Maximum switching power ..... 30 W, 37.5 VA
(per channel)

NATIONAL INSTRUMENTS

DC path resistance

Initial.....<1 Ω

End of life.....≥2 Ω

Path resistance is a combination of relay contact resistance and trace resistance and is measured as the combined resistance of the high and low signal paths from one row to one column. Contact resistance typically remains low for the life of a relay. At the end of relay life, the contact resistance rises rapidly above 1.0 Ω.

Thermal EMF .....<9 µV

Minimum current.....10 µA

RF Performance Characteristics

Typical single crosspoint bandwidth .....>10 MHz
(50 Ω system, one row to one column)

Typical crosstalk
(50 Ω system)

10 kHz .....<–80 dB

100 kHz .....<–65 dB

1 MHz.....<–50 dB

Dynamic Characteristics

Maximum scan rate .....110 crosspoints/s

Relay operate time (at 20 °C) .....4 ms maximum

Release time (at 20 °C).....4 ms maximum

Expected relay life

Mechanical .....50,000,000 cycles

Electrical

30 V, 100 mA, resistive.....500,000 cycles

30 V, 1 A, resistive.....100,000 cycles

Trigger Characteristics

Input trigger

- Sources ..... PXI trigger lines 0–7, Front panel
- Minimum pulse width ..... 150 ns
- Front panel input voltage
  - Absolute minimum ..... –0.5 V
  - V_{IL} maximum ..... +0.7 V
  - V_{IH} minimum ..... +2.0 V
  - V_I nominal ..... +3.3 V
  - Absolute maximum ..... +5.5 V

Output trigger

- Destinations ..... PXI trigger lines 0–7, Front panel
- Pulse width ..... Programmable (1 µs to 62 µs)
- Front panel nominal voltage ..... +3.3 V TTL, 8 mA

Physical Characteristics

Relay type ..... Electromechanical, latching

Relay contact material ..... Silver palladium and gold

Front panel connector ..... 100-pin HDI

Dimensions (W × H × D) ..... 2.0 cm × 10.0 cm × 16.3 cm (0.8 in. × 3.9 in. × 6.4 in.)

Weight ..... 410 g (15 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

Approved at altitudes up to 2,000 m.

Indoor use only.

Accessories

Table 1. Accessories Available from NI for the NI PXI-2529

Accessory	Part Number
NI TB-2634 terminal block (4x32 2-wire matrix)	778840-01
NI TB-2635 terminal block (8x16 2-wire matrix)	778839-01

Visit `ni.com` for more information about these accessories.

Table 2. Third-Party Accessories for the NI PXI-2529

Accessory	Manufacturer	Manufacturer Part Number
Mating front panel connector, vertical	AMP	533285-1
Mating front panel connector, right-angle	AMP	532903-2

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 3111-1, UL 61010B-1
- CAN/CSA C22.2 No. 1010.1

Note For UL and other safety certifications, refer to the product label or visit `ni.com/hardref.nsf`, 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/hardref.nsf`, search by model number or product line, and click the appropriate link in the Certification column.

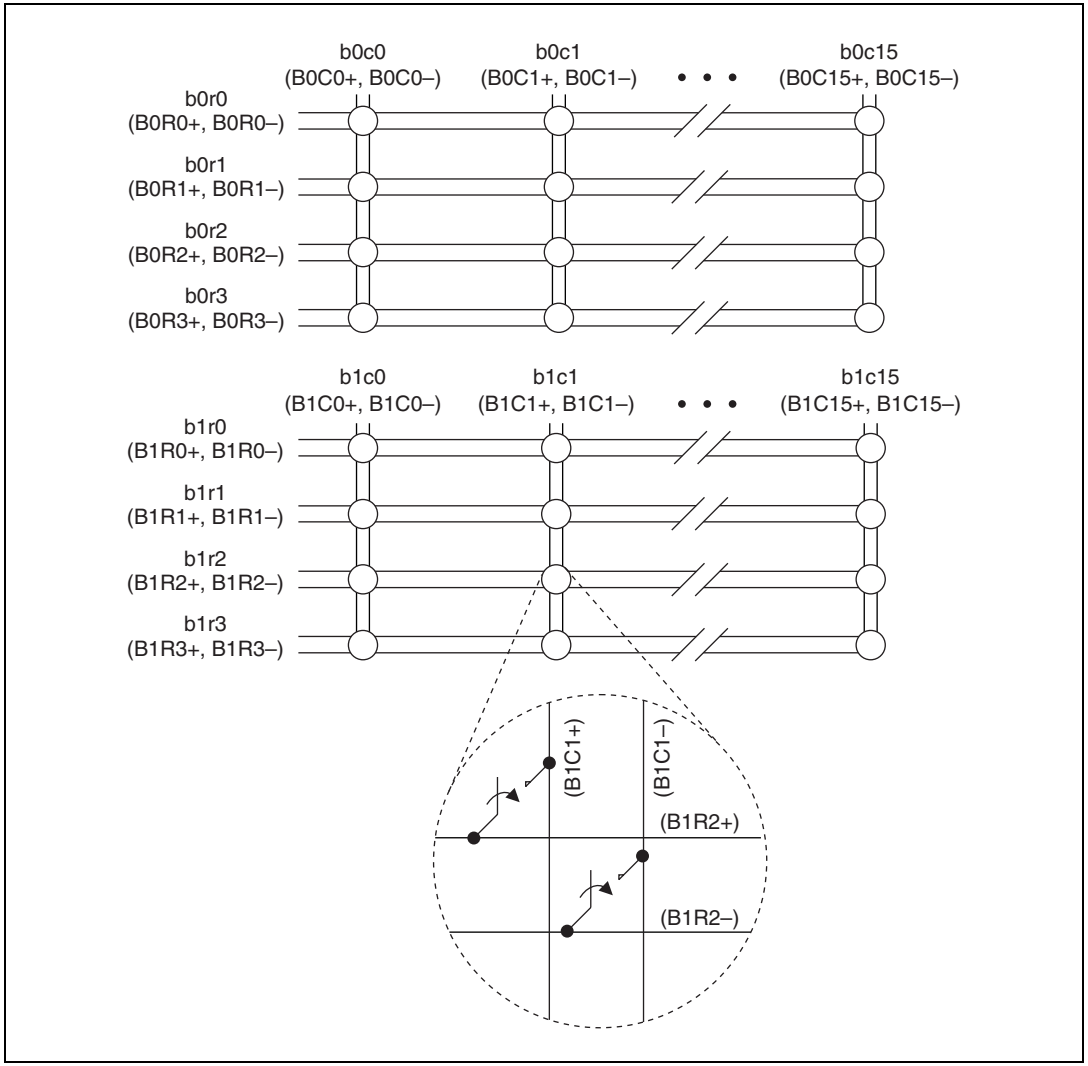

Figure 1. NI PXI-2529 Dual 4x16 2-Wire Matrix

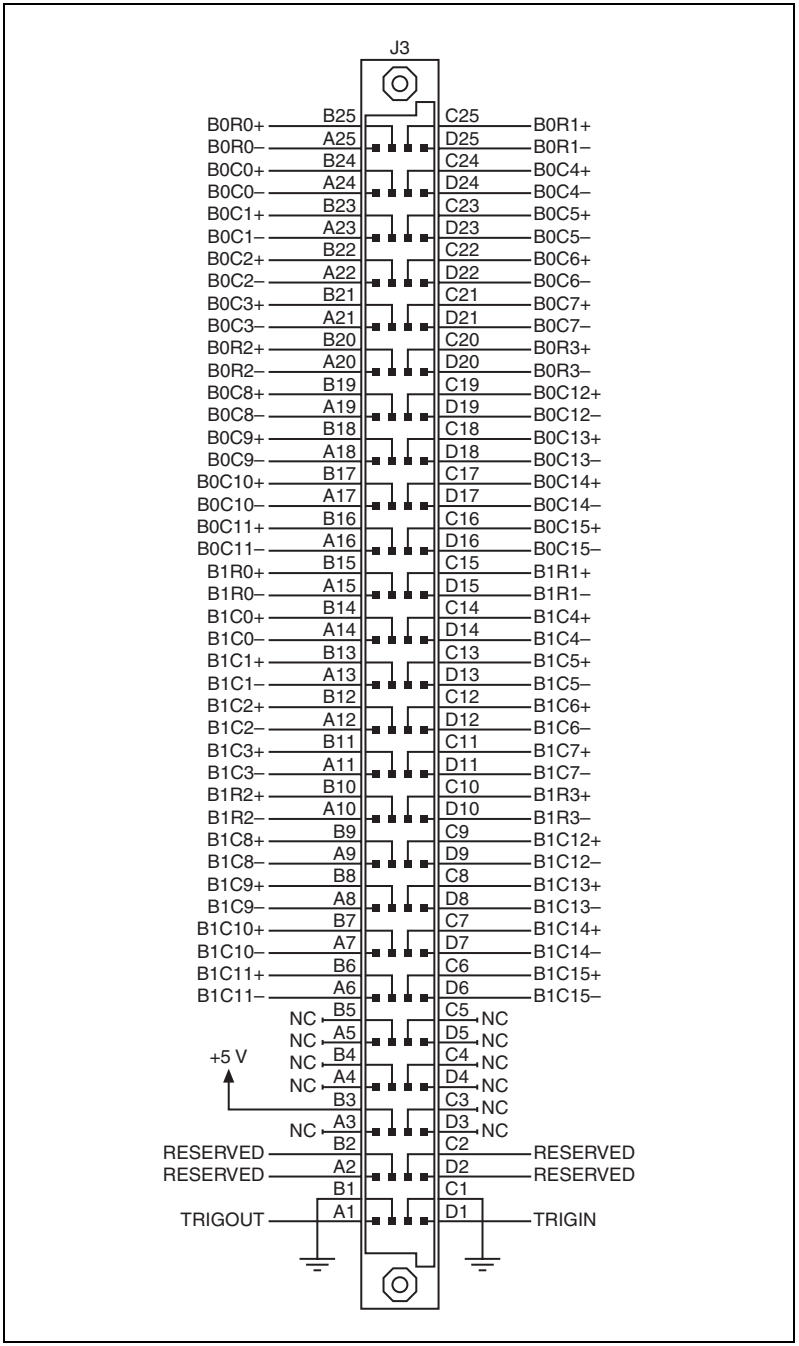

Figure 2. NI PXI-2529 Front Panel Pinout

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