

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..... 8 × 16, 2-wire matrix
4 × 32, 2-wire matrix

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 (such as 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 ($\leq 42.4 V_{pk}/60 VDC$) 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 30 W, 37.5 VA.

Maximum switching power30 W, 37.5 VA
(per channel)

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

Maximum carry current2 A
(per channel)

Maximum module current8 A

DC path resistance

Initial.....<1 Ω

End of life $\geq 2 \Omega$

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 rate110 crosspoints/s

Relay operate time (at 20 $^{\circ}\text{C}$)4 ms maximum

Release time (at 20 °C) 4 ms maximum

Expected relay life

Mechanical 5×10^7 cycles

Electrical

30 V, 100 mA, resistive 5×10^5 cycles

30 V, 1 A, resistive 1×10^5 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



Note The NI PXI-2529 can recognize trigger pulse widths that are 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,
Front panel

Pulse width Programmable (1 μ s to 62 μ s)

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 high-density
interconnect (HDI)

PXI power requirement 6 W at 5 V
2.5 W at 3.3 V

Dimensions (W × H × D).....Single PXI slot, 3U,
 2.0 cm × 10.0 cm × 17.5 cm
 (0.8 in. × 3.9 in. × 6.9 in.)

Weight410 g (15 oz)

Environment

The PXI-2529 is intended for indoor use only.

Operating temperature0 °C to 55 °C

Storage temperature–20 °C to 70 °C

Relative humidity5% to 85% noncondensing

Pollution Degree2

Approved at altitudes up to 2,000 m.

Accessories

Visit ni.com for more information about the following accessories.

Table 1. NI Accessories for the NI PXI-2529

Accessory	Part Number
NI TB-2634 terminal block (4 × 32, 2-wire matrix)	778840-01
NI TB-2635 terminal block (8 × 16, 2-wire matrix)	778839-01



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 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

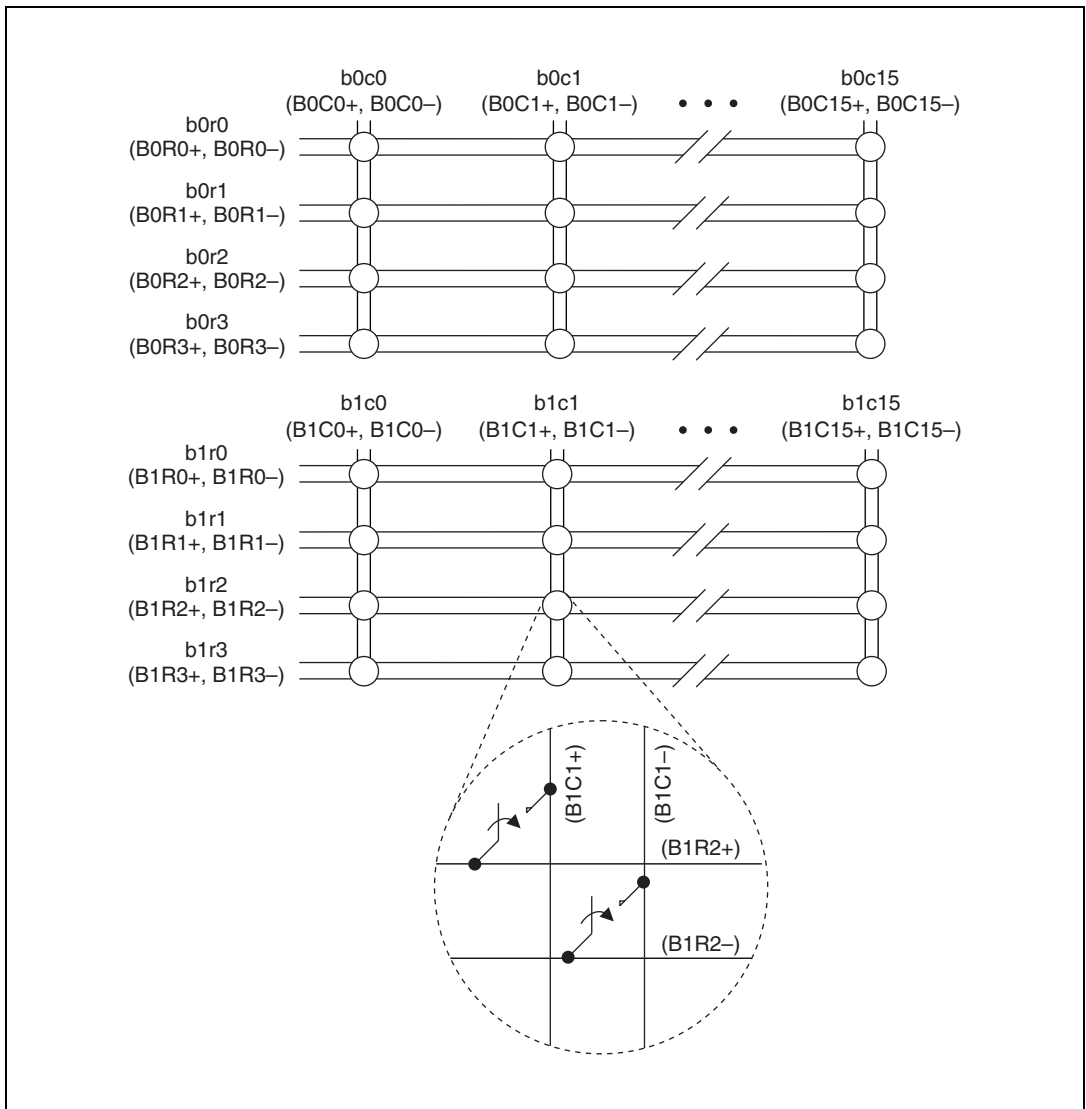


Figure 1. NI PXI-2529 Dual 4 x 16, 2-Wire Matrix Configuration

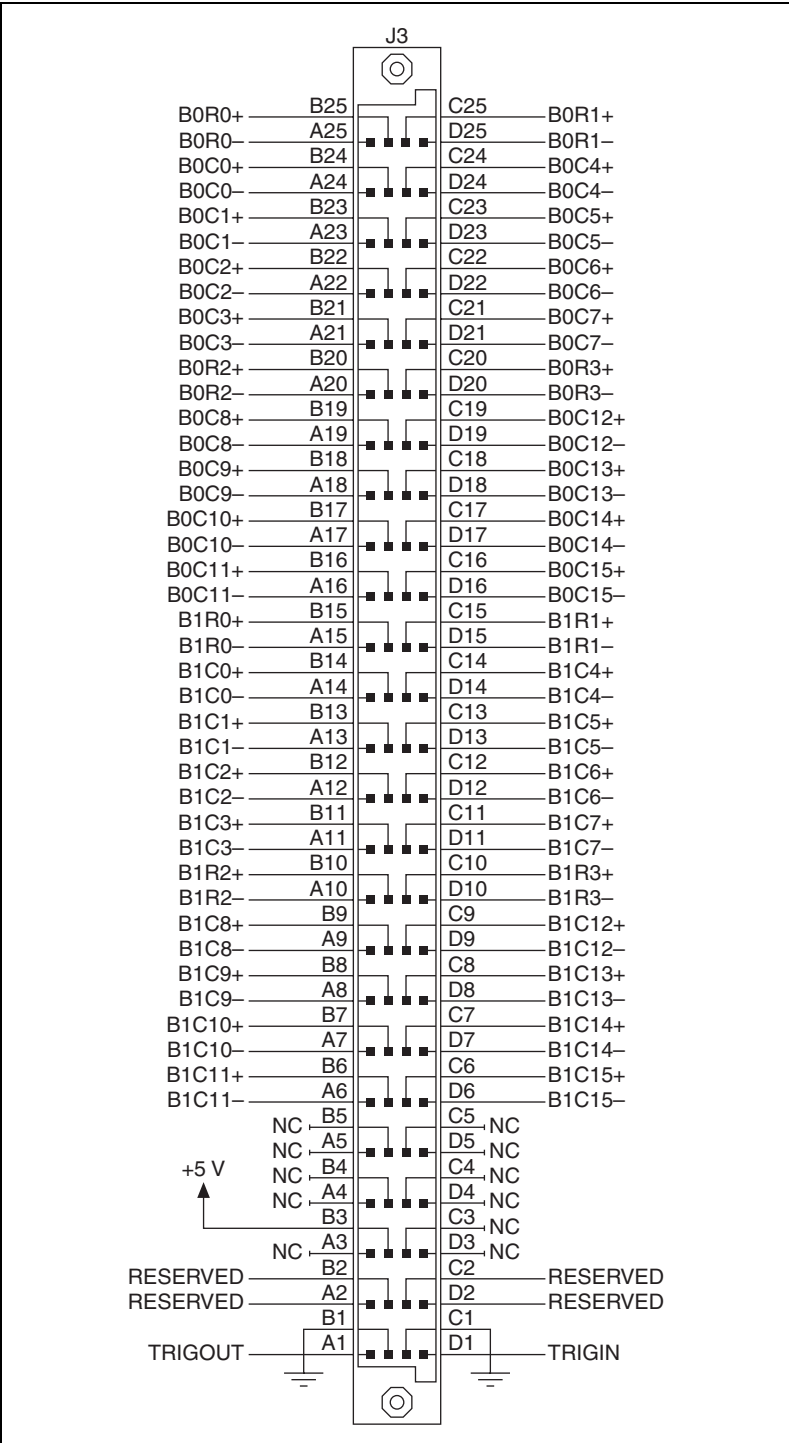


Figure 2. NI PXI-2529 Front Connector Pinout

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.

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