

# NI SCXI™-1129 Specifications

## 256-Crosspoint Relay Matrix

This document lists specifications for the NI SCXI-1129 matrix module. All specifications are subject to change without notice. Visit [ni.com/manuals](http://ni.com/manuals) for the most current specifications.

Configurations..... Quad 4 × 16, 2-wire matrix  
4 × 64, 2-wire matrix  
8 × 32, 2-wire matrix  
16 × 16, 2-wire matrix  
Dual 4 × 32, 2-wire matrix  
Dual 8 × 16, 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-earth)



**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 *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 ( $\leq 42.4 V_{pk}/60 VDC$ ) cannot be connected to any other relay terminal.



**Caution** Modules that can connect to a common high-voltage analog backplane derate to their lowest common voltage rating. Refer to the *NI Switches Getting Started Guide* for more information.

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

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

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

Maximum module current .....5 A

DC path resistance

Initial.....<1  $\Omega$

End of life ..... $\geq 2 \Omega$

Path resistance is a combination of relay contact resistance and trace resistance. Contact resistance typically remains low for the life of a relay. At the end of relay life, the contact resistance rapidly rises above 1.0  $\Omega$ .

Thermal EMF .....<9  $\mu\text{V}$

## RF Performance Characteristics

---

Typical channel-to-channel isolation  
(50  $\Omega$  termination)

10 kHz .....>80 dB

100 kHz .....>65 dB

1 MHz.....>50 dB

## Dynamic Characteristics

---

Maximum scan rate .....125 crosspoints/s

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

Release time (at 20  $^{\circ}\text{C}$ ) .....4 ms max

Expected relay life

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

Electrical.....100,000 cycles  
(maximum load)

# Trigger Characteristics

---

## Input trigger

Sources ..... SCXI trigger lines 0–7,  
Rear connector,  
Front panel

Minimum pulse width ..... 150 ns

## Output trigger

Destinations ..... SCXI trigger lines 0–7,  
Front panel

Pulse width ..... 1  $\mu$ s

# Physical Characteristics

---

Relay types ..... Electromechanical,  
latching and nonlatching

Relay contact material ..... Gold/gold-clad silver

Power requirement, including  
optional internal drive power ..... 6.3 W at  $\pm 18.5$  V  
200 mW at 5 V

Dimensions (W  $\times$  H  $\times$  D) ..... 3.0 cm  $\times$  17.3 cm  $\times$  19.8 cm  
(1.2 in.  $\times$  6.8 in.  $\times$  7.8 in.)

Weight ..... 725 g  
(1 lb 10 oz)

# Environment

Operating temperature ..... 0  $^{\circ}$ C to 50  $^{\circ}$ C

Storage temperature ..... –20  $^{\circ}$ C to 70  $^{\circ}$ C

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

Pollution Degree ..... 2

Approved at altitudes up to 2,000 m

Indoor use only

# Accessories

Visit [ni.com](http://ni.com) for more information about the following accessories.

**Table 1.** Accessories Available for the NI SCXI-1129

Accessory	Part Number
NI SCXI-1333 terminal block (quad 4 × 16, 2-wire matrix)	777687-33
NI SCXI-1334 terminal block (4 × 64, 2-wire matrix)	777687-34
NI SCXI-1335 terminal block (8 × 32, 2-wire matrix)	777687-35
NI SCXI-1336 terminal block (16 × 16, 2-wire matrix)	777687-36
NI SCXI-1337 terminal block (dual 4 × 32, 2-wire matrix)	777687-37
NI SCXI-1339 terminal block (dual 8 × 16, 2-wire matrix)	777687-39
Matrix expansion plug	778364-01
0.40 m matrix expansion cable	185440-0R4
0.75 m matrix expansion cable	185440-0R75



**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 SCXI-1129

Accessory	Manufacturer	Part Number
180-pin HDI mating front panel connector, right-angle	AMP	532903-6
180-pin HDI connector key and ears	AMP	530341-7

# Compliance and Certifications

---

## Safety

This product meets the requirements of the following standards for safety and 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](http://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
EMC/EMI.....	CE, C-Tick, and FCC Part 15 (Class A) Compliant



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

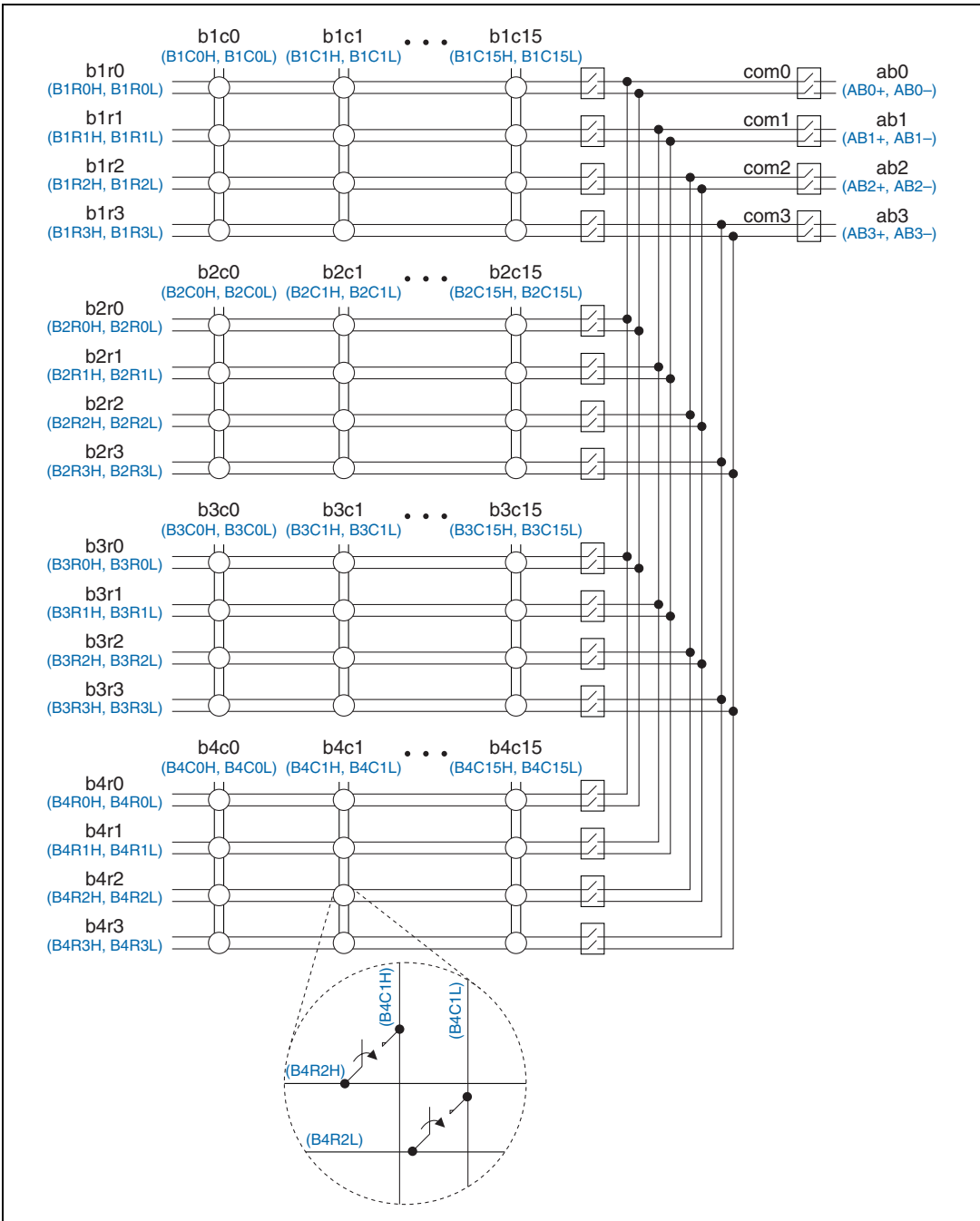
## CE Compliance

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](http://ni.com/hardref.nsf), search by model number or product line, and click the appropriate link in the Certification column.



**Figure 1.** NI SCXI-1129 Quad 4 × 16, 2-Wire Matrix Topology

National Instruments™, NI™, ni.com™, and SCXI™ 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).  
© 2003 National Instruments Corp. All rights reserved.



323472C-01

Dec03