

# NI SCXI™-1127 Specifications

## 32-Channel Relay Multiplexer/Matrix

This document lists specifications for the NI SCXI-1127 multiplexer/matrix module. All specifications are subject to change without notice. Visit [ni.com/manuals](http://ni.com/manuals) for the most current specifications.

Configurations..... 64 × 1, 1-wire multiplexer  
32 × 1, 2-wire multiplexer  
16 × 1, 4-wire multiplexer  
4 × 8, 2-wire matrix

## Input Characteristics

---

All input characteristics are DC, AC<sub>rms</sub>, or a combination unless otherwise specified.

Maximum switching voltage

Channel-to-channel ..... 250 V, CAT II

Channel-to-ground ..... 250 V



**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.

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, 60 VA.

Maximum switching power .....30 W, 60 VA  
(per channel)

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

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

Simultaneous channels  
at maximum carry current.....Up to 4

Minimum switching capacity .....10  $\mu$ A at 10 mVDC

DC path resistance  
Initial.....<2  $\Omega$   
End of life .....>4  $\Omega$

DC path resistance typically remains low for the life of the relay. At the end of relay life, the path resistance rises rapidly above 2  $\Omega$ . Load ratings apply to relays used within the specification before the end of relay life.

Thermal EMF (differential) .....<3  $\mu$ V

## RF Performance Characteristics

---

Typical bandwidth ..... $\geq$ 11 MHz  
(50  $\Omega$  termination)

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

10 kHz .....>70 dB

100 kHz .....>55 dB

1 MHz.....>50 dB

5 MHz.....>40 dB

10 MHz.....>25 dB

## Dynamic Characteristics

---

Maximum scan rate .....	100 channels/s
Relay operate time (at 20 °C).....	3 ms typical, 5 ms maximum
Release time (at 20 °C) .....	1.5 ms typical, 5 ms maximum
Expected relay life	
Mechanical.....	$5 \times 10^7$ cycles
Electrical	
30 V, 1 A .....	$2 \times 10^5$ cycles
250 V, 200 $\mu$ A .....	$1 \times 10^5$ cycles
250 V, 200 mA .....	$5 \times 10^4$ cycles

## Trigger Characteristics

---

Input trigger	
Sources .....	SCXI trigger line 0, Rear connector, Front panel
Minimum pulse width .....	500 ns
Scanner advanced trigger	
Destinations .....	SCXI trigger line 2, Front panel
Pulse width.....	1.1 $\mu$ s

## Physical Characteristics

---

Relay types .....	Electromechanical, non-latching
Relay contact material.....	Gold-clad silver alloy
Dimensions (W $\times$ H $\times$ D).....	$3.0 \times 17.3 \times 19.8$ cm ( $1.2 \times 6.8 \times 7.8$ in.)
Weight.....	680 g (1 lb 8 oz)

## Environment

The NI SCXI-1127 is intended for indoor use only.

Operating temperature .....0 °C to 50 °C

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

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

Recommended warm-up time.....5 minutes

Pollution Degree .....2

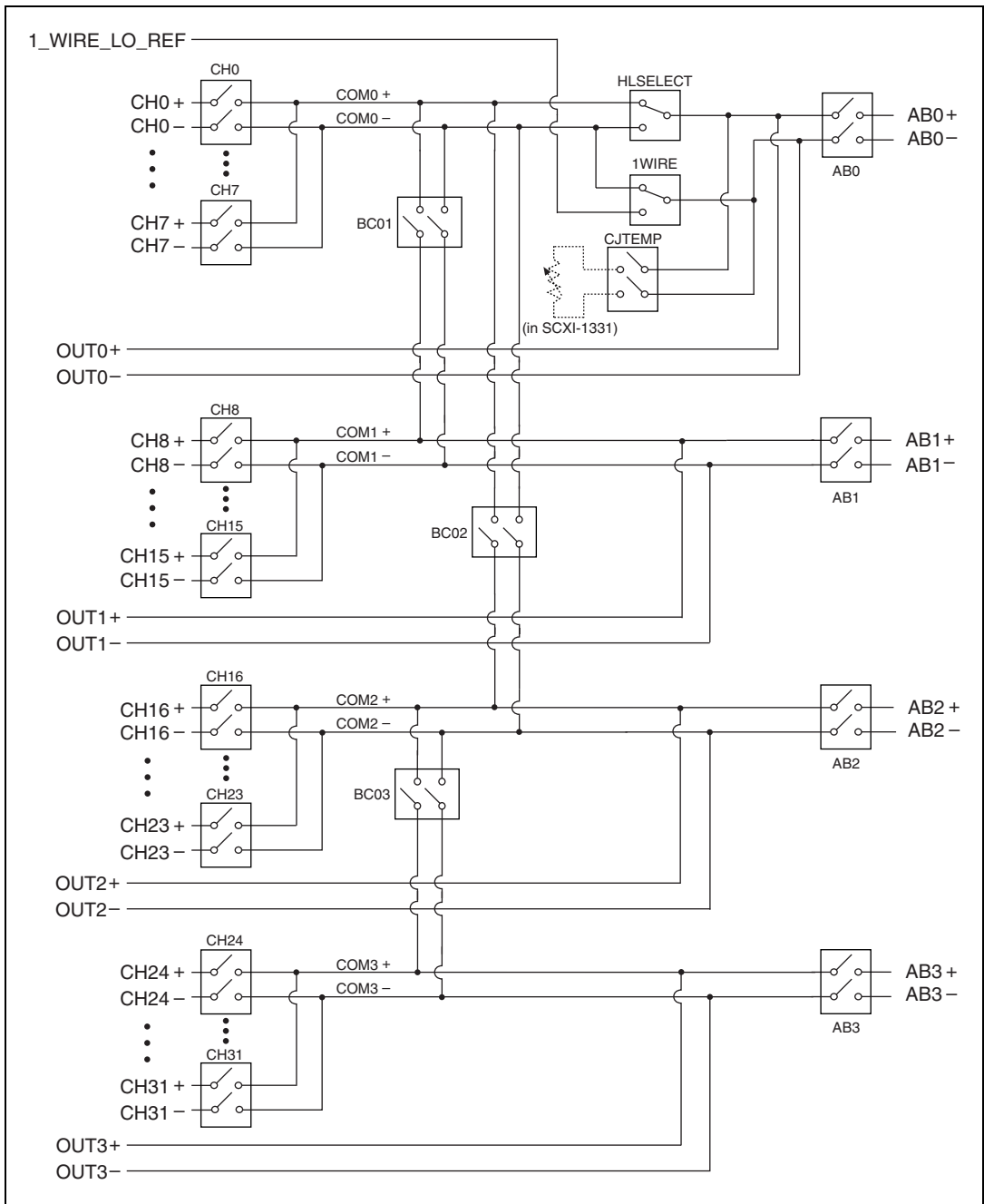
Approved at altitudes up to 2,000 m.

## Accessories

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

**Table 1.** Accessories Available for the NI SCXI-1127

Accessory	Part Number
NI SCXI-1331 terminal block (64 × 1 1-wire multiplexer) (32 × 1 2-wire multiplexer) (16 × 1 4-wire multiplexer)	777687-31
NI SCXI-1332 terminal block (4 × 8 2-wire matrix)	777687-32
0.40 m matrix expansion cable	185440-0R4
0.75 m matrix expansion cable	185440-0R75



**Figure 1.** NI SCXI-1127 Power-On State

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

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).  
© 2003–2004 National Instruments Corp. All rights reserved.



373470D-01

Oct04