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Find the *National Instruments PXI-2565* at our website: *Click HERE*

High-Density Multiconfiguration Multiplexer/Matrix

NI PXI-2530, NI SCXI™-1130

- 14 multiplexer/matrix configurations
- Scanning speed up to 900 operations/s
- Maximum switch capacity
  - Up to 60 VDC, 30 V_{rms}
  - Up to 400 mA
- 32,000-step scan list for deterministic scanning
- Fully software programmable
- Tight synchronization with instruments through hardware triggers

NI PXI-2530

- 128x1 (1-wire), 64x1 (2-wire), 32x1 (4-wire), or 8 banks of 16x1 (1-wire)
- 4x32 (1-wire), 8x16 (1-wire), 4x16 (2-wire) matrix configurations

NI SCXI-1130

- 256x1 (1-wire), 128x1 (2-wire), 64x1 (4-wire), or 16 banks of 16x1 (1-wire)
- 4x64 (1-wire), 8x32 (1-wire), 4x32 (2-wire) matrix configurations

Operating Systems

- Windows 2000/NT/XP

Recommended Software

- LabVIEW™
- LabWindows™/CVI™
- Measurement Studio
- NI Switch Executive

Other Compatible Software

- Visual Basic
- C/C++

Driver Software (included)

- NI-SWITCH



Overview

The National Instruments PXI-2530 and SCXI-1130 are high-density, multiconfiguration multiplexer/matrix switches. With 14 possible configurations and multiple expansion options, these modules offer an excellent solution for large or complex-channel-count systems. The NI PXI-2530 and NI SCXI-1130 incorporate reed relays into the PXI and SCXI platforms for long-life functionality. At up to 10 times the speed of traditional armature relays, the PXI-2530 and SCXI-1130 are an ideal front-end for high-speed measurement devices, such as the NI PXI-4070 6½-digit FlexDMM.

Modes of Operation

The PXI-2530 and SCXI-1130 are completely software configurable to operate as a multiplexer, matrix, or independent switch bank. For matrix and multiplexer hardware options, see Table 1.

	Accessory	Type	Configuration	Connectivity
NI PXI-2530	TB-2630	Multiplexer	128x1 (1-wire), 64x1 (2-wire), 32x1 (4-wire) or 8 banks of 16x1 (1-wire)	Ribbon cable headers
	TB-2631	Matrix	4x32 (1-wire) and 4x16 (2-wire)	Screw terminals
	TB-2632	Matrix	8x16 (1-wire)	Screw terminals
NI SCXI-1130	SCXI-1377	Multiplexer	256x1 (1-wire),128x1 (2-wire), 64x1 (4-wire) or 16 banks of 16x1 (1-wire)	Spring terminals
	SCXI-1378	Matrix	4x64 (1-wire) and 4x32 (2-wire)	Screw terminals
	SCXI-1379	Matrix	8x32 (1-wire)	Screw terminals

Table 1. Matrix and Multiplexer Hardware Options

Multiplexer

You can configure the PXI-2530 and SCXI-1130 in several different multiplexer configurations. The 1 and 2-wire modes are designed for measuring/sourcing voltage or 2-wire resistance measurements. For improved accuracy of resistance measurements, configure the PXI-2530 and SCXI-1130 in 4-wire mode.

Matrix

Configured as a matrix, the PXI-2530 or SCXI-1130 becomes a general-purpose signal router. With the TB-2631, the PXI-2530 forms a 4x32 matrix in 1-wire mode and a 4x16 matrix in 2-wire mode. The TB-2632 is also available to configure the PXI-2530 into an 8x16 1-wire matrix. Using the SCXI-1378 terminal block, the SCXI-1130 can form a 4x64 1-wire or a 4x32 2-wire configuration matrix. With the SCXI-1379, an 8x32 1-wire matrix is available. Through software, you can control the matrix to connect any row(s) to any column(s).

You can connect the rows and columns of multiple modules to expand an NI matrix system and meet the needs of high-channel-count systems. With the SCXI-1130, you can use expansion cables and plugs to externally connect the rows and columns of the matrix modules. For example, to create a 4x128 matrix, connect two SCXI-1378 terminal blocks together with a matrix expansion cable to double the number of columns.

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High-Density Multiconfiguration Multiplexer/Matrix

Independent

When the PXI-2530 and SCXI-1130 are configured with software as independent switch banks, you can control the state of any relay on the module. Use this mode for custom applications, where the banks of 16x1 multiplexers can be combined to form other multiplexer sizes or operate independently.

Automatic Scanning

The PXI-2530 and SCXI-1130 are able to maximize throughput in automated test applications by the use of scanning. Scanning improves throughput by downloading a list of up to 32,000 connections to the switch modules and cycling through the list using an event (trigger) without any interruption from the host processor. Scanning is most efficiently accomplished by mating the PXI-2530 or SCXI-1130 with an instrument, such as the NI PXI-4070 FlexDMM, that issues a trigger after each measurement.

SCXI Module Control

Every SCXI switch system requires an external switch controller. The switch controller uses the digital communications bus on the SCXI chassis to control the switch circuitry. An NI 4021 Switch Controller, available for both PCI and PXI, is the recommended SCXI switch controller.

Signal Connections

Terminal blocks provide screw terminals, spring terminals, or ribbon cable terminals for easy connections. The terminal blocks for the SCXI-1130 are twice as deep as traditional SCXI terminal blocks, such as the SCXI-1300 and SCXI-1303.

Software

All National Instruments PXI and SCXI switch modules are shipped with NI-SWITCH, an IVI-compliant driver offering complete functionality for all switch modules. For additional assistance in configuring, programming, and managing higher-channel-count switching systems, NI Switch Executive software offers an easy-to-use, intelligent switch management and visual routing environment.

Ordering Information

NI PXI-2530 778660-01
NI SCXI-1130 778661-01
Includes NI-SWITCH driver software.

Accessories

NI TB-2630 778733-01
NI TB-2631 778734-01
NI TB-2632 778735-01
NI SCXI-1377 778716-01
NI SCXI-1378 778731-01
NI SCXI-1379 778732-01
NI PCI-4021 778277-01
NI PXI-4021 778278-01

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High-Density Multiconfiguration Multiplexer/Matrix

Specifications

PXI-2530

- Multiplexer sizes: 128x1 (1-wire), 64x1 (2-wire), 32x1 (4-wire), 16x1 (1-wire) (8)
- Matrix sizes: 4x32 (1-wire), 8x16 (1-wire), 4x16 (2-wire)

SCXI-1130

- Multiplexer sizes: 256x1 (1-wire), 128x1 (2-wire), 64x1 (4-wire), 16x1 (1-wire) (16)
- Matrix sizes: 4x64 (1-wire), 8x32 (1-wire), 4x32 (2-wire)

Input Characteristics

- Maximum switching voltage: 60 VDC, 30 V_{rms}, CAT I (channel-to-channel and channel-to-ground)
- Maximum current: 0.4 A (per terminal or internal path)
- Maximum switching power: 10 W (per channel, resistive)
- Typical DC path resistance (channel-to-common)
  - Initial: <2 Ω
  - End of life: ≥3 Ω

Dynamic Characteristics

- Maximum scan rate: 900 channels/s
- Expected relay life
  - Mechanical: 10^9 operations
  - Electrical: 10^8 operations (10 V, 100 mA, resistive)

Physical

- Relay types: reed
- Contact material: rhodium
- I/O connectors: 176-pin docking station plug
- Dimensions
  - PXI-2530: 2 x 10 x 16 cm (.8 x 3.9 x 6.4 in.)
  - SCXI-1130: 3.0 x 17.2 x 20.3 cm (1.2 x 6.9 x 8.0 in.)

Environment

- Operating temperature: 0 to 55 °C
- Storage temperature: -40 to 70 °C
- Relative humidity: 5 to 85% noncondensing
- Pollution degree: 2

Indoor use only

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

CE Compliance CE

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

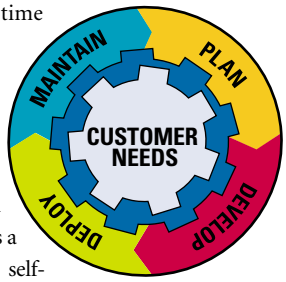
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