ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *National Instruments SCXI-1161* at our website: *Click HERE*

General-Purpose Relays

NI SCXI-1161

- 8 independent SPDT electromechanical relays
- Nonlatching relays
- Switching capacity
  - 8 A at 125 V_{rms}
  - 6 A at 250 V_{rms}
  - 5 A at 30 VDC
- 3 operations/s
- Fully software programmable

NI SCXI-1160

- 16 independent SPDT electromechanical relays
- Latching relays
- Switching capacity
  - 2 A at 250 V_{rms}
  - 2 A at 30 VDC
- 50 operations/s
- Fully software programmable

Operating Systems
- Windows 2000/NT/XP

Recommended Software
- LabVIEW
- LabVIEW Real-Time Module
- LabWindows/CVI
- Measurement Studio
- NI Switch Executive

Other Compatible Software
- Visual Basic
- C/C++

Driver Software (included)
- NI-SWITCH

Certifications
- UL



Overview

The National Instruments SCXI-1160 and SCXI-1161 are general-purpose relay switching modules. The SCXI-1160 has 16 independent SPDT (Form C) latching relays with very low on-resistance and low thermal offset. With power capabilities of up to 2 A at 250 V_{rms} or 30 VDC, these relays are suitable for switching, routing, and controlling medium-level signals. The SCXI-1161 has eight independent SPDT nonlatching relays. Because the SCXI-1161 relays can switch up to 8 A at 125 V_{rms}, 6 A at 250 V_{rms}, or 5 A at 30 VDC, they are suitable for higher power applications. Each channel on both modules has a normally closed (NC), normally open (NO), and common (COM) terminal. You can use two or more SCXI-1160s and SCXI-1161s in one or more chassis to switch and control thousands of signals.

Extended Features and Specifications

National Instruments switch modules are built with a number of core features that are covered in detail in the Switch Overview section.

For additional information about the SCXI-1160 and SCXI-1161, including software, certifications and compliance, relay control, etc., please see page 20. For detailed specifications, please see page 506.

Ordering Information

NI SCXI-1160 776572-60
NI SCXI-1161 776572-61
Includes switch module and NI-SWITCH driver software.

Accessories
SCXI-1324 terminal block 777687-24
PXI-4021 switch controller 778278-01
PCI-4021 switch controller 778277-01

For information on extended warranty and value added services, see page 20.
See page 499 for accessory and cable options.

BUY ONLINE!
Visit ni.com/products and enter scxi1160 and/or scxi1161.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Switch Specifications

Specifications (continued)

Physical

Dimensions ..... 17.2 by 20.3 by 3.0 cm (6.8 by 8.0 by 1.2 in.)

Environment

Operating temperature ..... 0 to 50 °C
Storage temperature ..... -20 to 70 °C
Relative humidity ..... 5 to 90% noncondensing

[1]Transfer rate depends largely on the computer and software. These tests were made using an AT-MIO-16E-2 installed in a 450 MHz Pentium III computer running LabVIEW and Windows NT.

PXI-2566, SCXI-1166

Input Characteristics

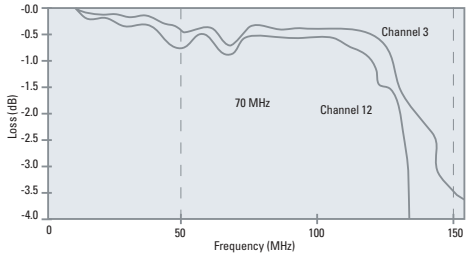
Maximum switching voltage
- Channel-to-channel ..... 150 VDC, 125 VAC, CAT I
- Channel-to-ground ..... 150 VDC, 125 VAC, CAT I

Simultaneous channels at maximum switching current (≤25 °C)
- PXI-2566 16
- SCXI-1166 32

Maximum carry current ..... 5 ADC, 5 AAC (per channel)
Simultaneous channels at maximum carry current (≤25 °C)
- PXI-2566 9
- SCXI-1166 8

Maximum switching power ..... 60 W, 62.5 VA (DC to 60 Hz) (per channel)
DC path resistance
- Initial ..... <1.0 Ω
- End of life ..... ≥1.0 Ω

Thermal EMF ..... <9 µV (typical at 23 °C)
Minimum switching capacity ..... 10 µA at 10 mVDC
Bandwidth (-3 dB) ..... ≥70 MHz



Crosstalk (Typical at 23 °C)

Channel-to-channel
- 10 kHz ..... ≤-75 dB
- 100 kHz ..... ≤-65 dB
- 1 MHz ..... ≤-45 dB
- 10 MHz ..... ≤-25 dB

Isolation (Typical at 23 °C)

Open channel
- 100 kHz ..... ≥65 dB
- 1 MHz ..... ≥45 dB
- 10 MHz ..... ≥25 dB

Dynamic Characteristics

Maximum speed ..... 115 operations/s
Relay operate time
- Typical ..... 2 ms
- Maximum ..... 4.4 ms

Expected relay life
- Mechanical ..... 10^8 operations
- Electrical
  - 30 VDC, 1 A resistive ..... $5x10^5$ operations
  - 30 VDC, 2 A resistive ..... 10^5 operations
  - 125 VAC, 0.2 A resistive ..... $3x10^5$ operations
  - 125 VAC, 0.5 A resistive ..... 10^5 operations

Physical Characteristics

Relay type ..... Electromechanical, nonlatching
Relay contact material ..... Gold clad silver alloy
I/O connectors ..... Two 62-pin D-Sub
Dimensions
- PXI-2566 ..... 10 by 16 cm (3.9 by 6.3 in.)
- SCXI-1166 ..... 3.0 by 17.3 by 19.6 cm (1.2 by 6.7 by 7.6 in.)

Environment

Operating temperature ..... 0 to 50 °C
Storage temperature ..... -20 to 70 °C
Relative humidity ..... 5 to 85% noncondensing
Pollution degree 2
Approved at altitudes up to 2,000 m

Safety

This product is designed to meet the requirements of the following standards of safety for electricalequipment 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

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

SCXI-1160, SCXI-1161

Input Characteristics

Number of relays
- SCXI-1160 16
- SCXI-1161 8

Relay type
- SCXI-1160 ..... SPDT (Form C), latching
- SCXI-1161 ..... SPDT (Form C), nonlatching

Maximum input voltage
- Channel-to-channel ..... 250 VDC, 250 V_{rms}
- Channel-to-ground ..... 250 VDC, 250 V_{rms}

Maximum switching voltage
- SCXI-1160 ..... 250 VDC, 250 V_{rms}
- SCXI-1161 ..... 250 VDC, 250 V_{rms}

Maximum switching capacity
- SCXI-1160 ..... 2 A at 250 V_{rms}, 0.6 A at 48 VDC, 2 A at 30 VDC
- SCXI-1161 ..... 8 A at 125 V_{rms}, 6 A at 250 V_{rms}, 5 A at 30 VDC

Minimum current load
- SCXI-1160 ..... 100 µA
- SCXI-1161 ..... 100 mA

Channel on resistance
- SCXI-1160 (includes terminal block) ..... 75 mΩ (initially)
- SCXI-1161 ..... 175 mΩ (initially)

Contact material
- SCXI-1160 ..... Gold-clad silver alloy
- SCXI-1161 ..... Silver alloy

Thermal offset
- SCXI-1160 ..... 3 µV

Dynamic Characteristics

Relay operate time
- SCXI-1160 ..... 10 ms
- SCXI-1161 ..... 15 ms

Relay release time
- SCXI-1160 ..... 10 ms
- SCXI-1161 ..... 15 ms

Maximum switching rate
- SCXI-1160 ..... 50 operations/s
- SCXI-1161 ..... 3 operations/s

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Specifications (continued)

Expected life for SCXI-1160/1161
- Mechanical ..... 10^8 operations at 2 A, 30 VDC
- Electrical ..... 10^5 operations at 2 A, 250 V_{rms}

Physical
Dimensions ..... 3.0 by 17.2 by 20.3 cm (1.2 by 6.8 by 8.0 in.)

Enviroment
Operating temperature ..... 0 to 50 °C
Operating temperature ..... -20 to 70 °C
Relative humidity ..... 5 to 90% noncondensing

PXI-2565

Input Characteristics
Number of relays ..... 16 SPST
Common-mode voltage
- Channel-to-channel ..... 250 V_{rms}, 250 VDC
- Channel-to-ground ..... 250 V_{rms}, 250 VDC

Maximum switching voltage
- AC ..... 250 V_{rms}
- DC ..... 125 VDC

Maximum switching capacity per channel
- 30 VDC (resistive load) ..... 5 A
- 250 VAC (resistive load) ..... 7 A

Maximum switching power per channel ..... 1750 VA, 150 W
Maximum combined channel current ..... 80 A
Channel on resistance ..... 30 mΩ
Contact material ..... Gold-flash over silver alloy

Dynamic Characteristics
Relay operate time (20 °C) ..... 5 ms typical, 10 ms maximum
Relay release time (20 °C) ..... 4 ms typical, 10 ms maximum
Maximum switching rate ..... 5 operations/s per channel

Expected life
- Mechanical (3 operations/s) ..... $5x10^7$ operations
- Electrical at maximum switching capacity ..... 10^5 operations (exceeding maximum switching capacity decreases electrical life)

PXI bus interface ..... Slave

PXI Trigger Bus
Trigger lines 8
Star trigger 1

Power Requirement
+5 VDC ..... 350 mA (all relays open) 1.4 A (all relays closed)

Physical
Dimensions ..... 10x16 cm (3.9 x 6.3 in.) 2 slots wide
I/O connector ..... 16x2 minicombicon header
I/O mating connector ..... Two 16x1 minicombicon connectors

Environment
Operating temperature ..... 0 to 50 °C
Storage temperature ..... -20 to 70 °C
Relative humidity ..... 5 to 85% noncondensing

Shock and Vibration
Functional shock ..... MIL-T-28800E Class3 (30 g half-sine shock pulse) also meets IEC 60068-2-27
Random vibration ..... MIL-T-28800E, MIL-STD-810E Category 1
- Operational ..... 5 to 500 Hz, 0.3 g_{rms}
- Nonoperational ..... 5 to 500 Hz, 2.4 g_{rms}

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP