32-Channel (2-Wire), 300 V Multiplexer Switch

NI PXI-2527

- 64x1 1-wire, 32x1 2-wire, or 16x1 4-wire multiplexer
- Maximum switch capacity
  - Up to 300 VDC/300 VAC, CAT I
  - Up to 2 A switching/2 A carry
  - Up to 60 W or 62.5 VA
- Onboard relay counting
- 140 cycles/s
- Full software programmability
- Deterministic operation with hardware triggers
- 32,000-step scan list

Operating Systems

- Windows 2000/NT/XP

Recommended Software

- NI Switch Executive
- LabVIEW
- LabWindows/CVI
- Measurement Studio for Visual C++

Other Compatible Software

- Visual Basic
- C/C++

Driver/Measurement Services Software (included)

- NI-SWITCH
- NI-DAQmx

Compliance

- UL
- CE

Overview and Applications

The National Instruments PXI-2527 is a high-voltage multiplexer switch module designed for medium- to high-density automated test systems. With a switching capacity of up to 300 VDC/300 VAC and up to 2 A, the NI PXI-2527 is the perfect front end for the NI 4070 and NI 4072 digital multimeters, offering simple channel expansion for voltage, current, resistance, capacitance, or inductance measurements. Multiple-channel configurations are available including 64x1 1-wire, 32x1 2-wire, and 16x1 4-wire. Each channel, using robust electromechanical relays, is capable of scanning up to 140 channels/s. A cold-junction compensation (CJC) sensor is also included in the front-mounting terminal block to assist in thermocouple scanning applications.

Automatic Scanning

The PXI-2527 is 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 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-2527 with an instrument, such as an NI 407x FlexDMM, which issues a trigger after each measurement.

Relay Count Tracking

The PXI-2527 counts relay closures on each of its individual relays. Relay counts are incremented each time a relay is actuated. You can retrieve programmatically and use the counts, stored on board the module, for predictive maintenance to reduce unexpected system downtime.

Simplified Signal Connectivity

Signal connections for the PXI-2527 are made in the TB-2627 front-mounting screw-terminal block. Additionally, connectivity with a DMM has been simplified through the use of the HV6-BAN4 cable, which connects the banana jack inputs of a DMM to the COMs of each multiplexer bank.

Software

All National Instruments PXI 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. Use the NI-SWITCH soft front panel for simple relay operations or debugging switch code/execution.

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Ordering Information

NI PXI-2527 778572-27
Includes NI-SWITCH driver software.

Accessories

TB-2627 Terminal Block 779358-01
HV6-BAN4 DMM Connectivity Cable 192795-0R2
NI Switch Executive
Development system.....778546-01
Deployment engine.....778548-00

BUY NOW!

For complete product specifications, pricing, and accessory information, call (800) 813 3693 (U.S. only) or go to **ni.com/switches**.

Specifications

Typical at 25 °C unless otherwise noted.

Input Characteristics

Maximum switching voltage
Channel-to-ground..... 300 V, CAT I
Channel-to-channel ..... 300 V
Maximum switching/carry current..... 2 A
Maximum switching power
AC systems..... 60 W, 62.5 VA
DC systems..... Refer to Figure 1

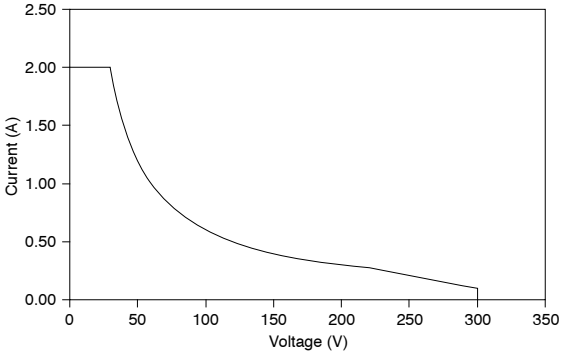


Figure 1. Maximum Switching Power for DC Loads (per channel)

Typical DC path resistance
Initial..... <1 Ω
End of life ..... ≥2 Ω
Differential thermal emf
Typical..... 2.5 µV
Maximum..... <12 µV
Bandwidth (-3 dB)
1-wire..... ≥30 MHz
2-wire..... ≥25 MHz

Dynamic Characteristics

Maximum speed ..... 140 cycles/s
Relay operate time
Typical..... 1 ms
Maximum..... 3.4 ms

Expected relay life
Mechanical ..... $1x10^8$ cycles
Electrical
<30 mV, <10 mA, resistive..... $2.5x10^6$ cycles
30 VDC, 2 ADC resistive..... $1x10^5$ cycles
300 VDC, 60 mADC resistive..... $5x10^5$ cycles

Physical

Relay types..... Electromechanical, latching
Contact material..... Palladium-ruthenium, gold covered
I/O connectors..... 100 POS HDI right-angle, male
Dimensions..... 2 by 10 by 17.4 cm (0.8 by 3.9 by 6.9 in.) single-slot, 3U

Environment

Operating temperature..... 0 to 55 °C
Note: If you are using the NI PXI-2527 with the NI PXI-101x or the NI PXI-1000B chassis, operating temperature for the NI PXI-2527 is 0 to 45°C.

Storage temperature..... -20 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:

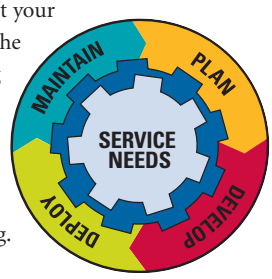
- IEC 61010-1, EN 61010-1
- UL 61010-1
- CAN/CSA-C22.2 No. 61010-1

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

NI Services and Support

NI has the services and support to meet your needs around the globe and through the application life cycle – from planning and development through deployment and ongoing maintenance. We offer services and service levels to meet customer requirements in research, design, validation, and manufacturing. Visit ni.com/services.



Training and Certification

NI training is the fastest, most certain route to productivity with our products. NI training can shorten your learning curve, save development time, and reduce maintenance costs over the application life cycle. We schedule instructor-led courses in cities worldwide, or we can hold a course at your facility. We also offer a professional certification program that identifies individuals who have high levels of skill and knowledge on using NI products. Visit ni.com/training.

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Hardware Services

NI Factory Installation Services

NI Factory Installation Services (FIS) is the fastest and easiest way to use your PXI or PXI/SCXI combination systems right out of the box. Trained NI technicians install the software and hardware and configure the system to your specifications. NI extends the standard warranty by one year on hardware components (controllers, chassis, modules) purchased with FIS. To use FIS, simply configure your system online with ni.com/pxiadvisor.

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