Keysight Technologies L4437A
32-Channel Form A/Form C General Purpose Switch

Data Sheet

– LXI compliance includes built-in Ethernet connectivity
– Fully-featured graphical web interface
– 28 Form C channels up to 1 A, 60 W
– 4 Form A channels up to 5 A, 150 W
– Armature latching relays
– Relay counter
– Temperature sensor for overheating conditions
– Simultaneous channel switching
– Software drivers for most common programming environments

KEYSIGHT
TECHNOLOGIES

Introduction

General purpose switch offers high-power signal switching

The Keysight Technologies L4437A is a general purpose switch that is LXI Class C compliant. With its small size and Ethernet connectivity, this switch can be placed wherever your application needs it.

The L4437A has 32 general purpose switches that can be used to cycle power to products under test, control status lights, and to actuate external power relays and solenoids.

28 channels are Form C switches for basic switching needs. Four additional Form A channels are offered for high-power switching needs.

Using this LXI instrument, you'll get all the benefits of an Ethernet connection, instrument web server, standard software drivers and more. The LXI standard is supported by multiple vendors, enabling lower cost of test with accelerated test integration and development.

Versatile switching for your high-power switching needs

The L4437A general purpose switch can be used to route signals or to control other system devices. This switch is ideal for device actuation and switching loads or power supplies.

The L4437A switch has 28 independent single-pole, double-throw (SPDT) 1 A relays and 4 single-pole, single-throw (Form A) 5 A relays. The 28 Form C channels have 300V, 1 A contacts and can handle up to 60 W. The form A channels are 30 VDC/250 VAC, 5 A contacts and can handle up to 150W, enough for many power line-switching applications.

These switches are made of latching armature relays where multiple channels can be closed at the same time. Additionally, for switching reactive loads, the optional terminal blocks have pads for snubbing circuits.

The sequence feature defines switch closures and controls and can be used to easily change between different switch setups. Assign a sequence, give it a name and then execute it with the custom name you created. External trigger capabilities make it easy for you to time and synchronize switch closures and openings.

The L4437A also includes a relay counter to monitor and help predict when relays are nearing their end of life.

System connections you can trust

The L4437A comes with 2 heavy duty 50-pin Dsub connectors that allow for simple, reliable connection options. Each connector uses 30 micro-inches of gold to ensure a repeatable, accurate measurement. Other connection options include:

– Detachable terminal blocks with strain relief
– Low-cost, standard 50-pin Dsub connector kits and cables
– Mass interconnect solutions

Ethernet connectivity enables simple connection to the network and remote access to measurements

The Ethernet interface offers high-speed connections, enabling remote access and control. You can set up a private network to filter out unwanted LAN traffic and speed up the I/O throughput, or take advantage of the remote capabilities and distribute your tests worldwide. Monitor, troubleshoot, or debug your application remotely. Ethernet communication also can be used with the support of LAN sockets connections.
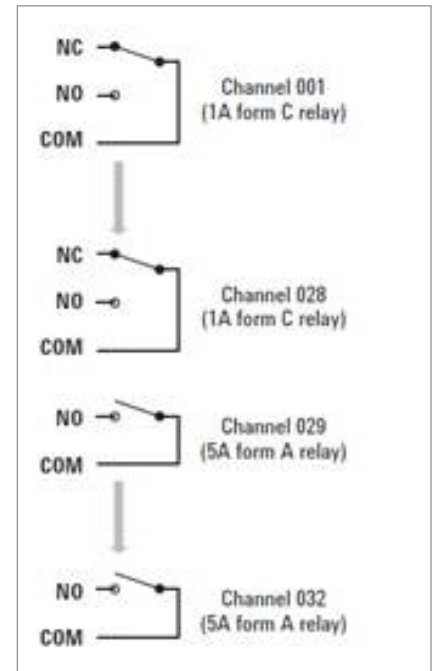

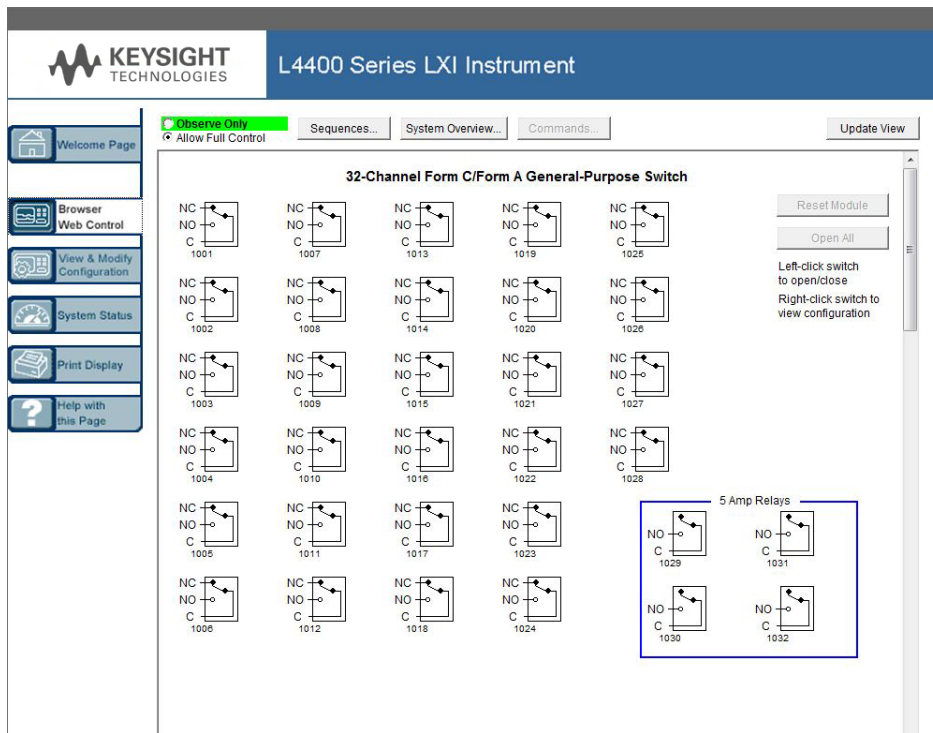Figure 1. L4437A 32-Ch General Purpose Switch.

Figure 2. The Web interface makes it easy to set up, troubleshoot and monitor your test remotely.

The optional GPIB interface has many years of proven reliability and can be used for easy integration into existing applications.

The L4437A ships with the Keysight E2094N I/O Libraries Suite, which enables connections for Keysight and non-Keysight modular and traditional instruments. This makes it easy for you to configure and integrate instruments into your system.

Fully-featured graphical web interface makes it easy to set up and troubleshoot your tests from anywhere in the world

The built-in web interface provides remote access and control of the instrument via a Java-enabled browser such as Internet Explorer. Using the web interface, you can set up, troubleshoot, and monitor your instrument from remote locations.

– View and modify instrument setup
– Open or close switches
– Send, receive or view SCPI commands
– Define and execute switch sequences
– View error queue
– Get status reports on relay counts, firmware revisions, and more

Additionally, since the web interface is built into the instrument, you can access it on any operating system that supports a web browser without having to install special software. Password protection and LAN lockout are also provided to limit access for additional security.

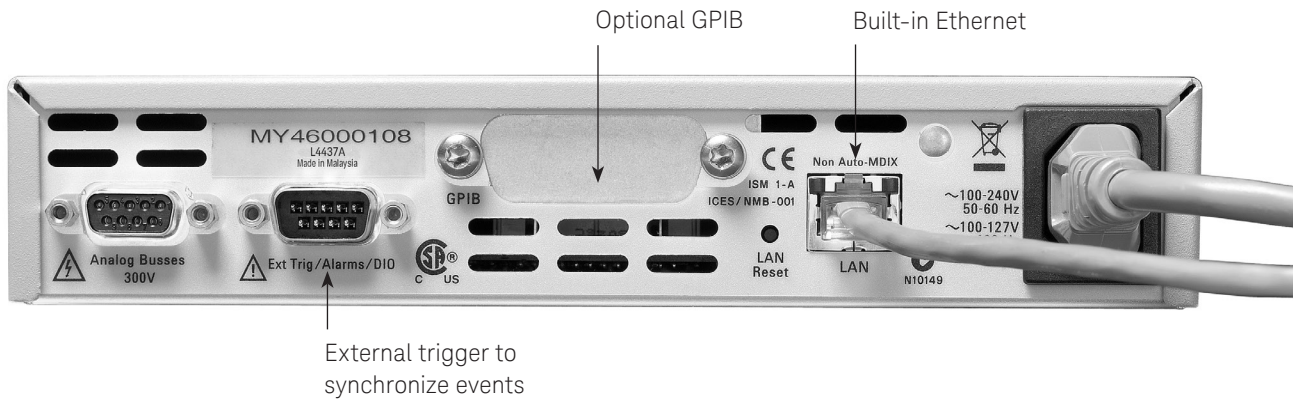## Software for most popular programming environments

Full support for standard programming environments ensures compatibility and efficiency. You can use direct I/O with your own software, or use standard IVI and LabVIEW software drivers that provide compatibility with the most popular development environments:

– Keysight VEE Pro
– National Instruments LabVIEW, LabWindows/CVI, TestStand, and Switch Manager
– Microsoft C/C++ and Visual Basic

High-performance switching wherever your application needs it

Power button

Status LEDs

Easy connection options with terminal blocks, standard 50-pin cables or connector kits

Optional GPIB

Built-in Ethernet

External trigger to synchronize events

Product specifications

Specifications and characteristics			
	Channels/configurations		28 form C 4 form A
	Switch type		Armature latching
Input characteristics (per channel)			
	Max volts (DC, AC RMS) [1]		Form C, 300 V Form A, 30 VDC/250 VAC
	Max current (DC, AC RMS)		Form C, 1 A switch (2 A carry) Form A, 5 A switch (8 A carry)
	Power (W, VA) [2]		Form C, 60 W Form A, 150 W
	Volt-Hertz limit		10^8
General specifications			
	Offset voltage		< 3 uV
	Initial closed channel resistance		Form C, 125 mΩ Form A, 50 mΩ
	DC isolation (ch-ch, ch-earth)		>10 GΩ
AC characteristics			
	Bandwidth at terminal block [3]		10 MHz
	Crosstalk at terminal block (ch-ch) [3]	100 kHz 1 MHz 10 MHz	55 dB 35 dB 15 dB
	Capacitance at terminal block	Ch-Ch Ch-earth	Form C, 12 pF/Form A 10 pF75 pF Form C, 21 pF/Form A 19 pF
General characteristics			
	Relay life typical		Form C, 100 M/100 k Form A, 50 M/30 k
	Open / close time, typical		Form C, 4 ms/4 ms Form A, 10 ms/10 ms
	Initial/reset relay state		Form C, maintains state Form A, user configurable
	Analog bus connection		No

1. DC or AC RMS voltage, channel-to-channel or channel-to-earth
2. Limited to 6 W of channel resistance power loss
3. 50 Ohm source, 50 Ohm load, differential measurements verified (S21)

Product specifications (continued)

General system specifications		
	Power supply	Universal 100 V to 240 V ±10%
	Power line frequency	50 Hz to 60 Hz ±10% automatically sensed
	Power consumption	15 VA
	Operating environment	Full accuracy for 0°C to 55°C Full accuracy to 80% R.H. at 40 °C Pollution degree 1 of IEC 61010-1
	Storage environment	-40°C to 70°C
	Dimensions (H x W x L)	40.9 x 212.3 x 379.3 mm 1.61 x 8.36 x 14.93 in
	Weight	3.8 kg, 8.4 lbs
	Safety conforms to	CSA, UL/IEC/EN 61010-1
	EMC conforms to	IEC/EN 61326-1, CISPR 11
Memory		
	States	5 instrument states with user label in non-volatile memory
Software		
	Keysight connectivity software included	Keysight I/O Libraries Suite version 14 or greater (E2094N)
Minimum system requirements		
	PC hardware	Intel Pentium 100 MHz, 64 Mbyte RAM, 210 Mbyte disk space
		Display 800x600, 256 colors, CD-ROM drive
	Operating system [1]	Windows 98 SE/NT/2000/XP
Computer interfaces		
		Standard LAN 10BaseT/100BaseTx
		Optional IEEE 488.2 GPIB
Software driver support for programming languages		
	Software drivers	IVI-C and IVI-COM for Windows NT/2000/XP, LabVIEW
	Keysight	VEE Pro
	National Instruments	TestStandMeasurement Studio, LabWindows/CVI, LabVIEW, Switch Executive
	Microsoft	VisualStudio.NET, C/C++, Visual Basic 6

1. Load I/O Libraries Version M for Windows NT support or version 14.0 for Windows 98 SE support

Ordering information

L4433A Dual/Quad 4x8 Reed Matrix
Includes User's guide on CD, power cord, and Quick Start package

Option GPIB
Adds GPIB interface

Option 0B0
Deletes printed manual set, full documentation included on CD ROM

Option ABA
English printed manual set

Connection Options
Select terminal block for discrete wiring, cables or connector kits. Cables and connector kits require 2 per instrument.

34937T
Terminal block for
34937A and L4437A General Purpose Switch

Y1135A
1.5 m 50-pin Dsub, M/F twisted pair with outer shield cable – 300 V

Y1136A
3 m 50-pin Dsub, M/F twisted pair with outer shield cable – 300 V

Y1139A
Solder cup connector kit with female 50-pin Dsub

Other accessories

Y1160A
Rack mount kit for L4400 series instruments-racks 2 instruments side-by-side with sliding tray

Note: when using the L4400 Series Rack Mount Kit, use the Y1139A solder cup connector kit rather than the 34921T terminal block.

For additional information please visit:
http://www.keysight.com/find/L4437A
Related literature

Related literature

Data sheets

5988-6302EN, *Keysight VEE Pro*

5989-1439EN, *Keysight E2094N I/O Libraries Suite 15.5*