

E1442A VXI Form A or C Switch

64-Channel, 1-amp, C-Size



Description

The Keysight Technologies E1442A 64-Channel General-Purpose Switch is a C-size, 1-slot, register-based VXI module that contains non-latching Form C type relays. They can be used for device actuation, as digital output modules, or to create flexible

Each product has two parts—a component card containing the relays, that plugs into the mainframe, and a removable terminal block that plugs onto the component card. The component card has 64 Form C relays with three independent axial component locations per relay. These locations can be used for jumpers, fuses, or pullup/down and protection resistors. All three relay terminals can be connected through such components to one of three internal buses.

Key Features

- 1-Slot, C-size, register-based
- Non-latching, armature relays
- Any combination of channels can be closed or opened
- External devices can be actuated
- QUIC easy-to-use terminal block included
- Internal buses simplify wiring

Terminal Block Configuration

The E1442A terminal block comes standard with solder lugs that allow full access to the Form C (SPDT) capability of the component module relays. There are two options:

- Option 010 provides complete Form C connectivity with more customization versatility. Includes the ability to add dual 96-pin DIN-C connectors or solder wires directly to terminal block pc board (0.055 moh holes, 20 AWG max recommended)
- Option 020 provides a screw terminal block that allows access to the Form A (SPST) contacts only (16 AWG maximum)

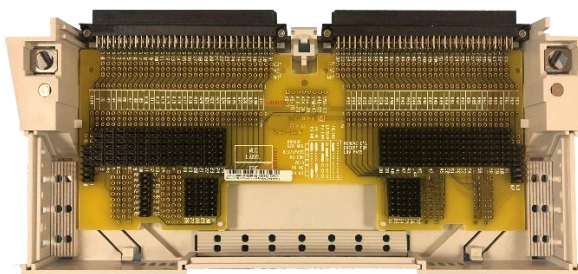


Figure 1. Option 010 Terminal Block

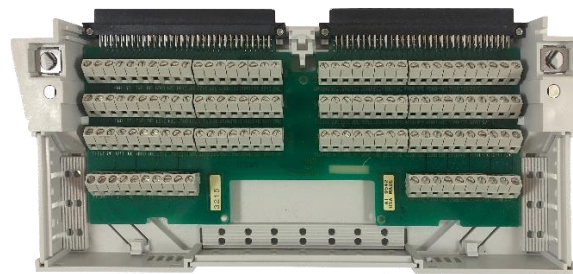


Figure 2. Option 020 Terminal Block

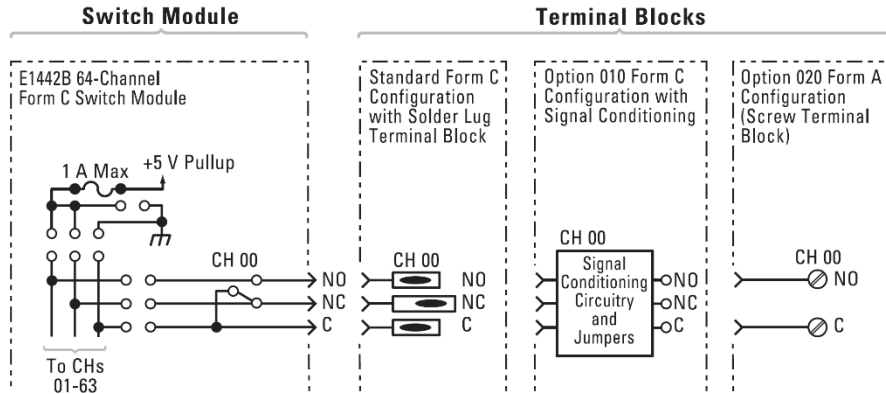


Figure 3. E1442A Block Diagram

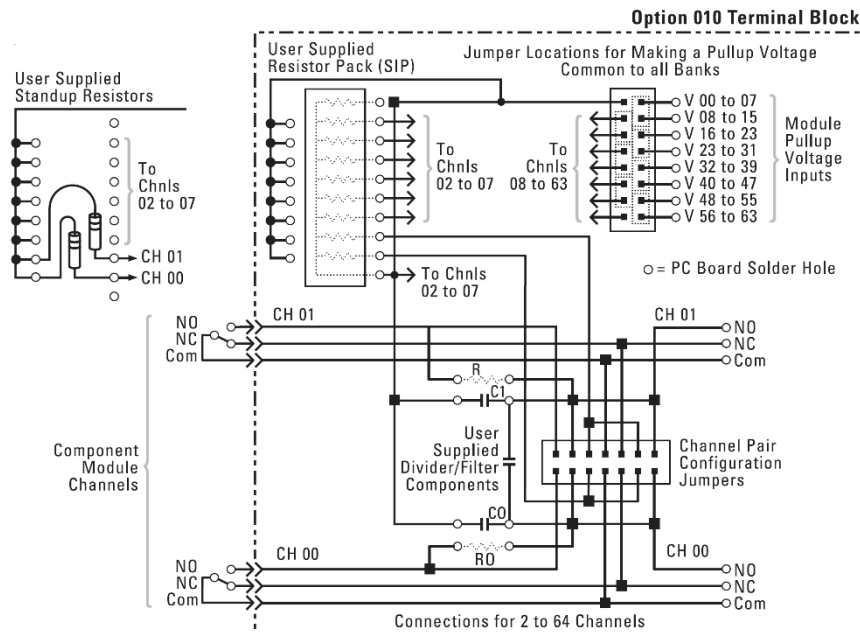


Figure 4. Option 010 Block Diagram

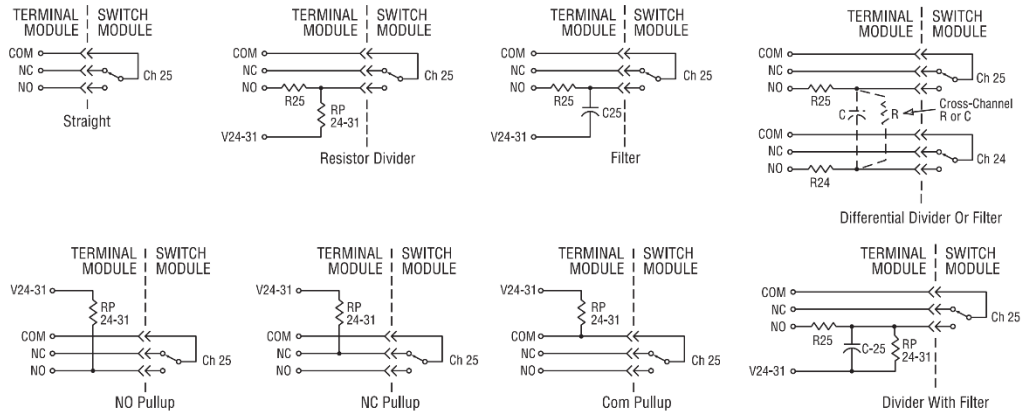


Figure 5. Option 010 Connection Examples

Technical Specifications and Characteristics

Input Characteristics		
Maximum voltage (C to NC or NO or any terminal-to-chassis)		
DC	150 V	
AC rms	150 V	
AC peak	210 V	
Maximum current (noninductive)		Per Switch
DC	1 A	
AC rms	1 A	
Maximum power		Per switch
DC	40 W	Per module
AC	40 VA	320 VA

DC	
Maximum thermal offset	70 μ V
Closed channel resistance	
Initial	1.5 Ω typ
End of life	<3.5 Ω
Insulation resistance (between any two points)	
$\leq 40^{\circ}\text{C}$, $\leq 65\%$ RH	NA
$\leq 40^{\circ}\text{C}$, $\leq 95\%$ RH	$>10^7 \Omega$
$\leq 25^{\circ}\text{C}$, $\leq 40\%$ RH	$>10^8 \Omega$

AC	
Typical bandwidth (-3dB)	10 MHz
Crosstalk (channel-to-channel)	
<100 kHz	< -70 dB
<10 MHz	< -28 dB
Closed channel capacitance	
Channel-to-channel	<30 pF
Channel-to-common	<40 pF

General Characteristics		
Time to close or open a channel (register programming)	13 ms	
Connector type, wire size	Screw, ≥18 AWG (1.2 mm) using option 020	
Power up/down states	All open (non-latching)	
Typical relay life		
No load	> 5 x 10 ⁶	
Rated load	> 10 ⁵	
VXI characteristics		
VXI device type	Register-based, A16, slave only	
Size	C	
Slots	1	
Connectors	P1/P2	
Shared memory	None	
VXI busses	None	
Module current	I _{PM}	I _{DM}
+5 V	0.1	0.11
+12 V	0	0
-12 V	0	0
+24 V	0	0
- 24 V	0	0
- 5.2 V	0	0
-2 V	0	0
Cooling/slot		
Watts/slot	5.0	
ΔP mm H ₂ O	0.15	
Air flow liters/s	0.42	

Definitions and Conditions

Specification (spec)

The warranted performance of a calibrated instrument that has been stored for a minimum of 1 hour within the operating temperature range of 0 to 50 °C and after a 30-minute warm up period. All specifications account for the effects of measurement and calibration-source uncertainties and were created in compliance with ISO-17025 methods. In addition, a driver session must be opened to initialize the power supplies. This can be done programmatically or by opening SFP and connecting to the instrument. Data published in this document are specifications (spec) only where specifically indicated.

Typical (typ)

The characteristic performance, which 80% or more of manufactured instruments will meet. This data is not warranted, does not include measurement uncertainty or calibration-source, and is valid only at room temperature (approximately 25°C).

Nominal (nom)

The mean or average characteristic performance, or the value of an attribute that is determined by design such as a connector type, physical dimension, or operating speed. This data is not warranted and is measured at room temperature (approximately 25°C).

Measured (meas)

An attribute measured during the design phase for purposes of communicating expected performance, such as amplitude drift vs. time. This data is not warranted and is measured at room temperature (approximately 25°C).

Additional Information

All data are measured from multiple units at room temperature and are representative of product performance within the operating temperature range unless otherwise noted. The data contained in this document is subject to change.

Ordering Information

Model	Description
E1442A	64-Channel Form C/A Switch w/QUIC Interface
E1442A-010	Form C, solder terminal block with signal conditioning terminal module
E1442A-020	Form A, QUIC interface, screw terminal block
E1442A-106	Form C, old style (non-QUIC) front panel and solder lug terminal block
E1442A-116	Form C, old style (non-QUIC) front panel, solder terminal w/signal conditioning
E1442A-126	Form A, old style (non-QUIC) front panel and screw terminal block
E1442A-STD	Form C, QUIC interface, solder terminal block
Related Products	
E8401A	13-slot, C-size, VXI Mainframe with 550W Power Supply and basic monitoring
E8403A	13-slot, C-size, VXI Mainframe with 1000W Power Supply and basic monitoring
E8404A	13-slot C-size VXI Mainframe, 1000W PS, Enhanced monitor, color graphic display
E1406A	VXI GPIB Command Module; C-size