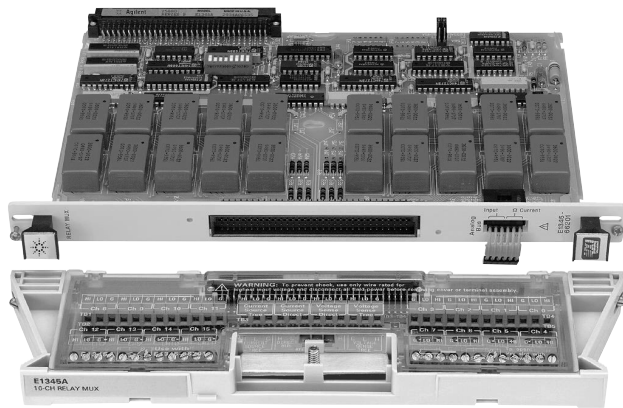


# Agilent E1345A 16-Channel Low-Offset Relay Multiplexer

## Data Sheet

- 1-Slot, B-size, register based
- General purpose, low-offset relay multiplexer
- Low thermal offset reed relays,  $<4 \mu\text{V}$
- 16-channel 3-wire or 8-channel 4-wire multiplexer
- Shunt/series signal conditioning elements
- Channel scanning with Agilent DMMs



Agilent E1345A

### Description

The Agilent E1345A General-Purpose Reed Relay Multiplexer is a **B-size, 1-slot, register-based VXI module** that switches 16 channels of high, low, and guard each. The multiplexer has low thermal offset performance. This module consists of a B-size component card (labeled E1345-66201) and a screw terminal block that plugs onto the component card. The E1345A is functionally similar to the E1347A.

The E1345A multiplexer is arranged into two banks of eight switches, each having its own common high, low, and guard screw terminals accessible on the terminal block. Tree-switched common high, low, and guard screw terminals and analog bus connections provide access to all 16 channels. The module may be programmed as either a single 1x16 three-wire multiplexer, two independent 1x8 three-wire multiplexers (for four-wire  $\Omega$ ), or a 1x8 six-wire multiplexer.

Refer to the Agilent Technologies Website for instrument driver availability and downloading instructions, as well as for recent product updates, if applicable.

### Configuration

One analog bus cable is shipped with each module, making it easy to connect common outputs together for slot-adjacent modules. If you are using a B-size mainframe, Agilent E1300B or E1301B, use the analog bus cable shipped with the E1326B DMM to connect it to the multiplexer(s).

### C-size Adapter

For installing the E1345A in a C-size mainframe, the E1403C active adapter is recommended.



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## Product Specifications

### Input

#### DC:

Maximum voltage (any terminal to any other terminal or chassis): 120 Vdc

#### AC rms:

Maximum voltage (any terminal to any other terminal or chassis): 120 V rms

Maximum current (per channel common, non-inductive): 50 mA

Maximum power per channel: 1 VA

### DC

Maximum thermal offset per channel, differential

Hi-Lo: 4  $\mu$ V

Closed channel resistance: 100  $\Omega \pm 10\%$

Insulation resistance (between any two points): 10E9  $\Omega$

Insulation resistance (Hi to Lo, power off): n/a

### AC

Minimum bandwidth (-3 dB, 50  $\Omega$  source/load): 10 MHz (protection resistors shorted)

Crosstalk (channel-to-channel):

100 kHz: -70 dB

10 MHz: -20 dB

Both: n/a

Closed channel capacitance: <150 pF Hi-Lo, <150 pF Lo-Guard, <2000 pF Guard-Chassis

## General Characteristics

Relays:	Reed relays Break-before-make Relays open on power down Relays open on power up
Minimum relay life:	
No load:	10E8 operations
Rated load:	10E7 operations
Screw terminal wire size:	16 to 26 AWG (1.5, 1.2, 0.9, 0.75, 0.5 mm)
Scanning rate:	600 channels/s typ.

## General Specifications

### VXI Characteristics

VXI device type:	Register based, A16, slave only
Size:	B
Slots:	1
Connectors:	P1
Shared memory:	None
VXI busses:	None
C-size compatibility:	Requires E1403C

### Instrument Drivers

See the Agilent Technologies Website ([http://www.agilent.com/find/inst\\_drivers](http://www.agilent.com/find/inst_drivers)) for driver availability and downloading.

Command module firmware:	Downloadable
Command module firmware rev:	A.01
I-SCPI Win 3.1:	Yes
I-SCPI Series 700:	Yes
C-SCPI LynxOS:	Yes
C-SCPI Series 700:	Yes
Panel Drivers:	Yes
VXIplug&play Win Framework:	Yes
plug&play Win 95/NT Framework:	Yes
VXIplug&play HP-UX Framework:	No

## Module Current

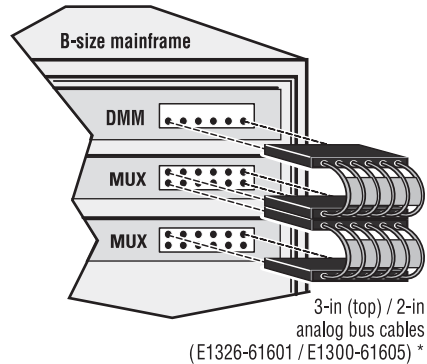
	$I_{PM}$	$I_{DM}$
+5 V:	0.2	0.01
+12 V:	0.13	0.01
-12 V:	0	0
+24 V:	0	0
-24 V:	0	0
-5.2 V:	0	0
-2 V:	0	0

## Cooling/Slot

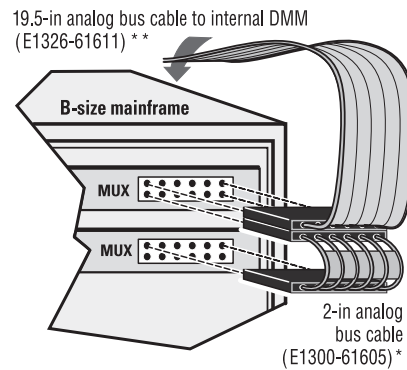
Watts/slot:	1.00
$\Delta P$ mm H <sub>2</sub> O:	0.02
Air Flow liter/s:	0.10

## Ordering Information

Description	Product No.
16-Channel Low-Offset Relay Multiplexer	E1345A
Service Manual	E1345A 0B3
Japan - Japanese Localization	E1345A ABJ
3 Yr. Retn. to Agilent to 1 Yr. OnSite Warr.	E1345A W01
Extra terminal block for the E1345A	E1345-80001



**Analog bus cables for MUX-to-MUX and MUX-to-multimeter connections**

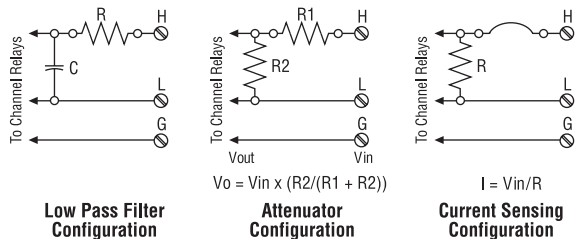
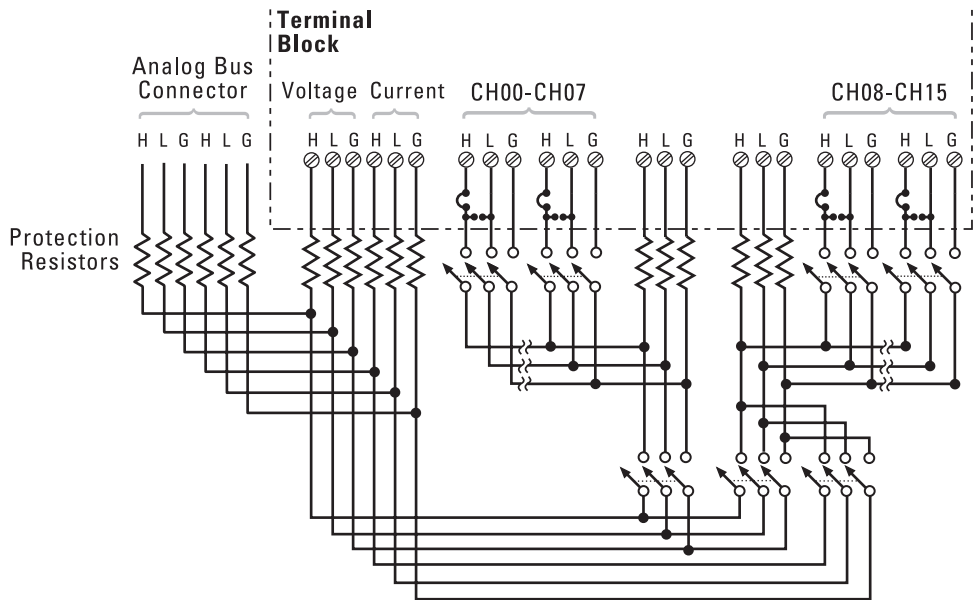


\* DMM-to-MUX and MUX-to-MUX analog bus cables are provided with the purchase of the DMM and MUX modules respectively.

\*\* 19.5-in analog bus cable is provided with purchase of E1300/01B Series B mainframe with internal DMM option.

**Analog bus cables for MUX-to-MUX and MUX-to-multimeter connections**

# E1345A Circuit Diagram



## Signal Conditioning Components/Current Shunt

## Related Literature

*2000 Test System and VXI Catalog CD-ROM*,  
Agilent Pub. No. 5980-0308E (detailed specifications for VXI products)

*2000 Test System and VXI Catalog*,  
Agilent Pub. No. 5980-0307E (overview of VXI products )

*1998 Test System and VXI Products Data Book*,  
Agilent Pub. No. 5966-2812E

## Online

Internet access for Agilent product information, services and support  
[www.agilent.com/find/tmdir](http://www.agilent.com/find/tmdir)

VXI product information  
[www.agilent.com/find/vxi](http://www.agilent.com/find/vxi)

Defense Electronics Applications  
[www.agilent.com/find/defense\\_ATE](http://www.agilent.com/find/defense_ATE)

Agilent Technologies VXI Channel Partners  
[www.agilent.com/find/vxichanpart](http://www.agilent.com/find/vxichanpart)

Agilent Technologies' HP VEE Application Website  
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**near you.**

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