Agilent E1343A

16-Channel GP High-Voltage Relay Multiplexer

Data Sheet

- 1-Slot, B-size, register based
- General purpose, high-voltage relay multiplexer
- High-voltage measurements up to 250 V
- 16-channel 3-wire or 8-channel 4-wire multiplexer
- Shunt/series signal conditioning elements
- Channel scanning with Agilent DMMs

Configuration

The 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. Closing the channel switches and tree switches using the SCPI command [ROUTe:]CLOSe operates the module as either a single 1x16 three-wire multiplexer, two independent 1x8 three-wire multiplexers (for four-wire Ω), or a 1x8 six-wire multiplexer. The E1343A component card is also used in the E1344A.

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 E1343A in a C-size mainframe, the E1403C active adapter is recommended.

Product Specifications

Input

DC:

Maximum voltage (any terminal to any other terminal or chassis):	250 Vdc

AC rms:

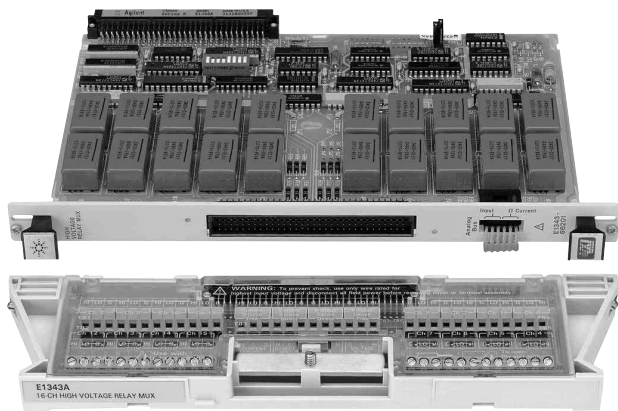|	
Maximum voltage (any terminal to any other terminal or chassis):	250 V rms
Maximum current (per channel common, non-inductive):	50 mA
Maximum power per channel:	1 VA

DC

Maximum thermal offset per channel, differential Hi-Lo:	10 μV
Closed channel resistance:	100 Ω ± 10%
Insulation resistance (between any two points):	10E9 Ω
Insulation resistance (Hi to Lo, power off):	n/a

Agilent E1343A

Description

The Agilent E1343A General-Purpose Reed Relay Multiplexer is a **B-size, 1-slot, register-based Agilent VXI module with high-voltage capability.** It switches 16 channels of high, low, and guard each. This multiplexer consists of a B-size component card (labeled E1343-66201) and a screw terminal block that plugs onto the component card. The E1343A is functionally similar to the E1344A.

Tree-switched common high, low, and guard screw terminals and analog bus connections provide access to all 16 channels. This module can operate as either a single 1x16 three-wire multiplexer, two independent 1x8 three-wire multiplexers (for four-wire Ω), 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.

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AC

Minimum bandwidth (–3 dB, 50 Ω source/load):	10 MHz (protection resistors shorted)
Crosstalk (channel-to-channel):	
100 kHz:	–80 dB
10 MHz:	–40 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
Power down state:	Relays open on power down
Power up state:	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:	350 channels/s typ.

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) for driver availability and downloading.

Command module firmware:	Downloadable
Command module firmware rev:	A.06
I-SCPI Win 3.1:	Yes
I-SCPI Series 700:	Yes
C-SCPI LynxOS:	Yes
C-SCPI Series 700:	Yes
Panel Drivers:	Yes
VXI*plug&play* Win Framework:	Yes
VXI*plug&play* Win 95/NT Framework:	Yes
VXI*plug&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
ΔP mm H$_2$0:	0.02
Air Flow liter/s:	0.10

Ordering Information

Description	Product No.
16-Channel High Voltage Relay Multiplexer	E1343A
Service Manual	E1343A 0B3
E1343A Screw Terminal Module	E1343-80001
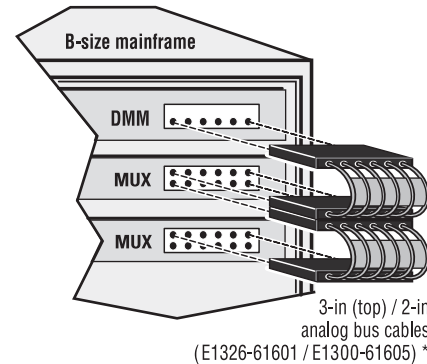
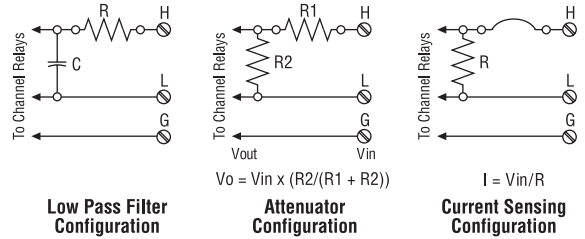**Analog bus cables for MUX-to-MUX and MUX-to-multimeter connections**

19.5-in analog bus cable to internal DMM
(E1326-61611) **

B-size mainframe

MUX

MUX

2-in analog
bus cable
(E1300-61605) *
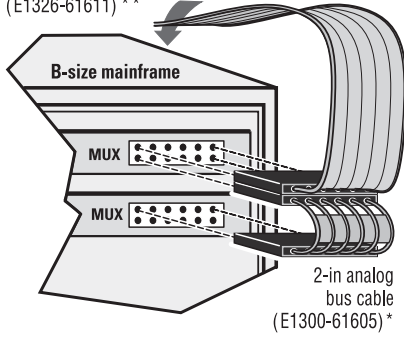
* DMM-to-MUX and MUX-to-MUX analog bus cables are
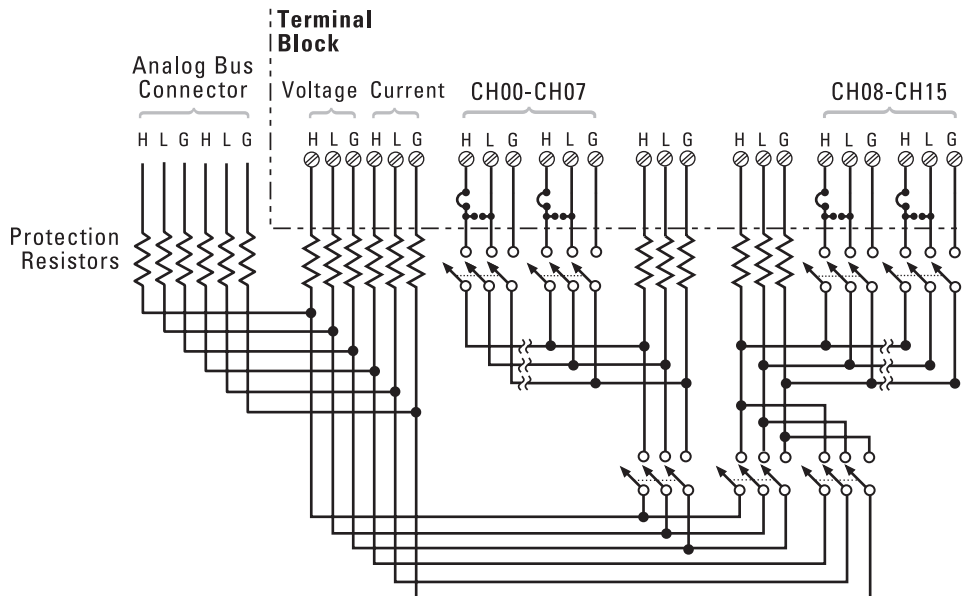provided with the purchase of the DMM and MUX
modules respectively.

** 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

$$Vo = Vin \times (R2/(R1 + R2))$$

Low Pass Filter Configuration **Attenuator Configuration** **Current Sensing Configuration**

$$I = Vin/R$$

Signal Conditioning Components/Current Shunt

E1343A Circuit Diagram

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

VXI product information
 www.agilent.com/find/vxi

Defense Electronics Applications
 www.agilent.com/find/defense_ATE

Agilent Technologies VXI Channel Partners
 www.agilent.com/find/vxichanpart

Agilent Technologies' HP VEE Application Website
 www.agilent.com/find/vee

Agilent Technologies Data Acquisition and Control Website
 www.agilent.com/find/data_acq

Agilent Technologies Instrument Driver Downloads
 www.agilent.com/find/inst_drivers

Agilent Technologies Electronics Manufacturing Test Solutions
 www.agilent.com/go/manufacturing

Get assistance with all your test and measurement needs at
www.agilent.com/find/assist
**or check your local phone book for the Agilent office
near you.**

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