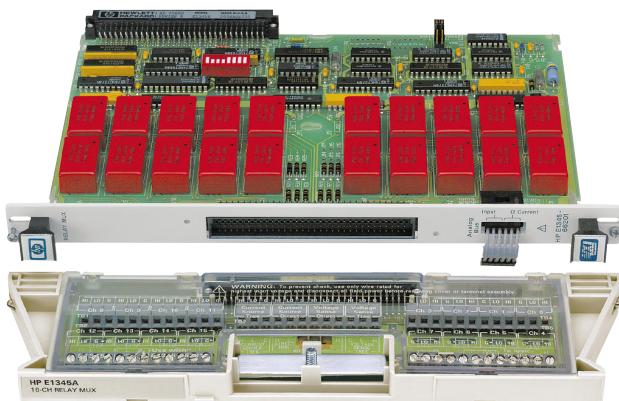

16-Channel Low-Offset Relay Multiplexer

HP E1345A

Technical Specifications

- 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 HP DMMs



Description

The HP 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 HP E1345A is functionally similar to the HP E1355A and E1356A.

The HP 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 3-wire multiplexer, two independent 1x8 3-wire multiplexers (for 4-wire Ohm), or a 1x8 6-wire multiplexer.

Refer to the HP Website for instrument driver availability and downloading instructions.

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, HP E1300A or HP E1301A, use the analog bus cable shipped with the HP E1326B DMM to connect it to the multiplexer(s).

C-size Adapter

For installing the HP E1343A in a C-size mainframe, the HP E1403B active adapter is recommended.

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 μ V
Closed channel resistance:	100 Ohm \pm 10%
Insulation resistance (between any two points):	10E9 Ohm
Insulation resistance (Hi to Lo, power off):	n/a

AC

Minimum bandwidth (-3 dB, 50 Ohm 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
Reference junction measurement accuracy (18 to 28 °C operating):	n/a
Strain gage excitation:	n/a
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.

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 E1403B

Instrument Drivers

See the HP Website (http://www.hp.com/go/inst_drivers) for driver availability and downloading.

Command module firmware:	ROM
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
HP VEE Drivers:	Yes
VXIplug&play Win Framework:	Yes
VXIplug&play Win95/NT Framework:	Yes
VXIplug&play HP-UX Framework:	No (not available at time of publication)

Module Current

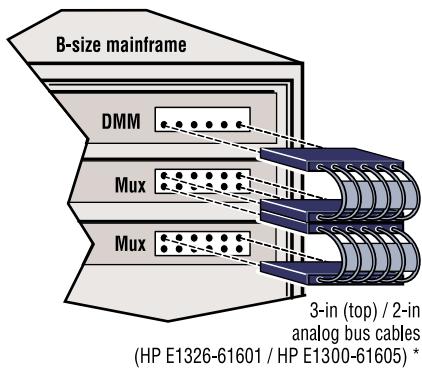
	I_{PM}	I_{DM}
+5 V:	0.2	0.01
+12 V:	0.13	0.01
-12 V:	0	0
+24 V:	0	0
-24 V:	0	0
-5.2 V:	0	0
-2 V:	0	0

Cooling/Slot

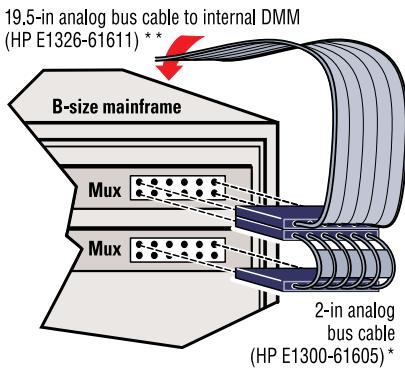
Watts/slot:	1.00
ΔP mm H ₂ O:	0.02
Air Flow liter/s:	0.10

Ordering Information

Description	Product No.
16-channel relay multiplexer	HP E1345A
Service manual	HP E1345A 0B3
Japan - Japanese localization	HP E1345A ABJ
3 yr. retrn. to HP to 1 yr. OnSite warr.	HP E1345A W01
Extra terminal block for the E1345A	HP E1345-80001



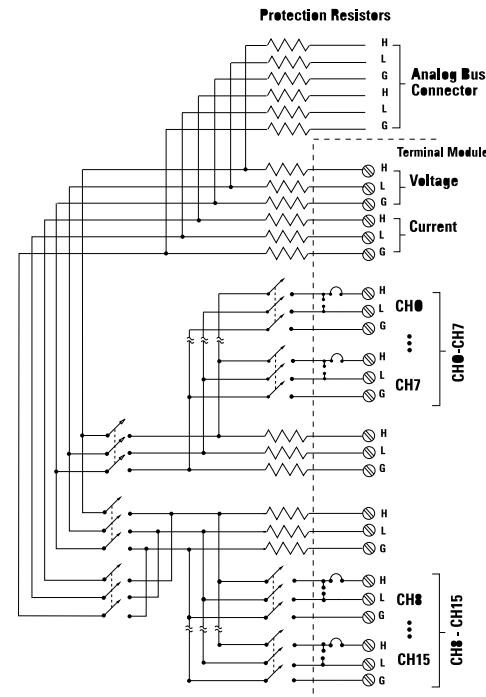
Analog bus cables for Mux-to-Mux and Mux-to-multimeter connections



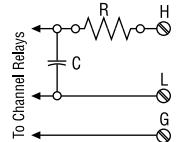
* DMM-to-Mux and Mux-to-Mux analog bus cables are provided with the purchase of the DMM and Mux modules respectively.

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

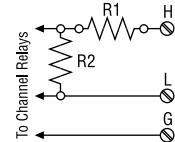
Analog bus cables for Mux-to-Mux and Mux-to-multimeter connections



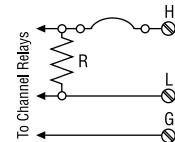
HP E1343A/E1345A Circuit Diagram



Low Pass Filter Configuration



Attenuator Configuration



I = Vin/R

Current Sensing Configuration

Signal Conditioning Components/Current Shunt

Data Subject to Change
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