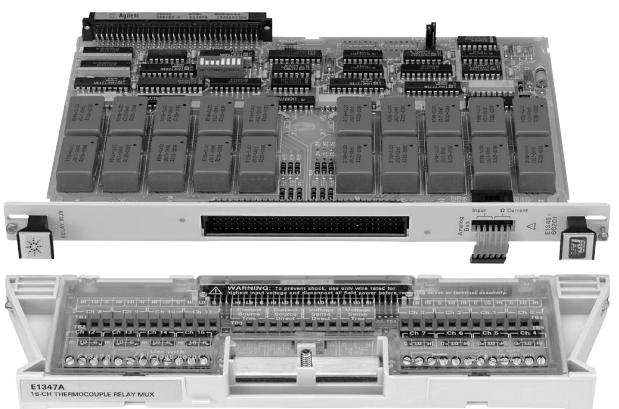
Agilent E1347A

16-Channel T/C Low-Offset Relay Multiplexer

Data Sheet

- **1-Slot, B-size, register based**
- **Low-thermal offset reed relays, <4 μV**
- **Built-in thermistor reference junction**
- **16-channel 3-wire or 8-channel 4-wire multiplexer**
- **Channel scanning with Agilent DMMs**
- **Measures, temperature, voltage, and current**



Agilent E1347A

Description

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

Using the E1326B or E1411B DMMs, the E1347A performs channel scanning with automatic conversions for many thermocouple types. Temperature measurements are made with automatic cold junction compensation. The card, in conjunction with Agilent VXI DMMs, also measure voltage, current, and two- and four-wire Ω.

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 the module, making it easy to connect multiplexer 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 E1347A 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 μV
Closed channel resistance: 100 Ω ± 10%
Insulation resistance (between any two points): 10E9 Ω
Insulation resistance (Hi to Lo, power off): n/a

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
Relays open on power down
Relays open on power up
- **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
- **Reference junction measurement accuracy (18 to 28 °C operating):** 0.3 °C
- **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.

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) 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

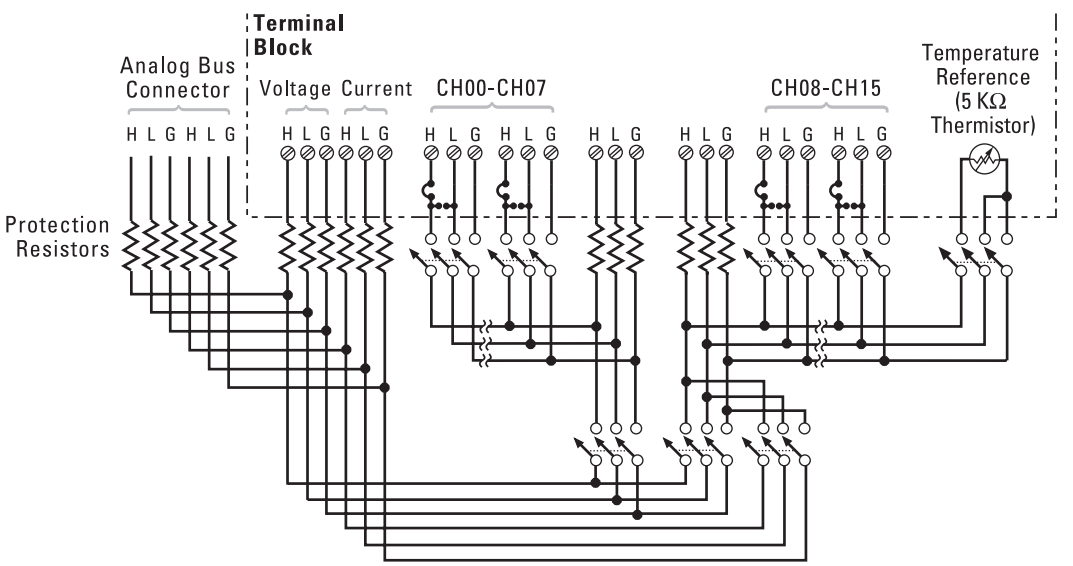
Cooling/Slot

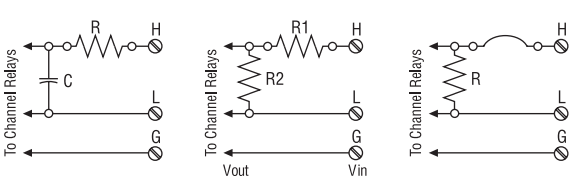
Watts/slot: 1.00
ΔP mm H_2O: 0.02
Air Flow liter/s: 0.10

Ordering Information

Description	Product No.
16-Ch. T/C Low-Offset Relay Multiplexer	E1347A
Service Manual	E1347A 0B3
Japan - Japanese Localization	E1347A ABJ
3 Yr. Retn. to Agilent to 1 Yr. OnSite Warr.	E1347A W01
Extra terminal block for the E1347A	E1347-80001

E1347A Circuit Diagram





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

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

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
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