
Strain Measurements

Example SCPI commands with engineering units conversions follow:

Specify the gage factors:

—STRain:GFACTOR 2.11E-6,(@100:107)

Measure the unstrained reference:

—CALibration:STRain (@100:107)

Measure a Half Poisson bridge:

—MEASure:STRain:HPOisson (@100:103)

Strain measurements supported in SCPI with the above HP DMMs include:

- Quarter
- Bending Half
- Poisson Half
- Bending Full
- Poisson Full
- Bending Poisson Full

Diagnostics include:

- Leadwire Resistance
- Internal Half Bridge Voltage
- Guard Voltage
- Bridge Excitation Voltage
- Tension Shunt Diagnostic (not available)
- Compression Shunt Diagnostic (not available)

Configuration

One analog bus cable is shipped with each module, making it easy to connect multiplexer common outputs together for slot-adjacent modules. If you are using a B-size mainframe, HP E1300A/B or HP E1301A/B, 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 E1357A in a C-size mainframe, the HP E1403C active adapter is recommended.

Product Specifications

Input

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

DC:	16 Vpk
AC rms:	16 Vpk
Maximum current (per channel common, non-inductive):	1 mA

DC

Maximum thermal offset per channel, differential

Hi-Lo:	25 μ V (0 to 28 °C), 250 μ V (28 to 55 °C)
Closed channel resistance:	<3.1 k Ω
Insulation resistance (between any two points):	10E8 Ω , 10E3 Ω \pm 10% guard to chassis
Insulation resistance (Hi to Lo, power off):	>1 k Ω for Vin <14 V, >220 Ω for Vin >14 V

AC

Minimum bandwidth

(-3 dB, 50 Ω source/load):	500 kHz (1 M Ω 10 pF termination)
Closed channel capacitance:	<2000 pF Hi/Lo-Chassis, <200 pF Hi-Lo

General

Relays:	FETs Break-before-make
Power down state:	FETs open on power down
Power up state:	FETs open on power up
Minimum relay life:	
No load:	Unlimited
Rated load:	Unlimited
Reference junction measurement accuracy (18 to 28 °C operating):	n/a
Screw terminal wire size:	16 to 26 AWG (1.5, 1.2, 0.9, 0.75, 0.5 mm)
Strain gage excitation:	4.63 V \pm 10%, <400 mA
Scanning rate:	13,000 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 HP E1403C

Instrument Drivers

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

Command module firmware:	Downloadable
Command module firmware rev:	A.03
I-SCPI Win 3.1:	Yes
I-SCPI Series 700:	Yes
C-SCPI LynxOS:	Yes
C-SCPI Series 700:	Yes
HP Panel Drivers:	Yes
VXIplug&play Win Framework:	Yes
VXIplug&play Win 95/NT Framework:	Yes
VXIplug&play HP-UX Framework:	No

Module Current

	I_{PM}	I_{DM}
+5 V:	0.53	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

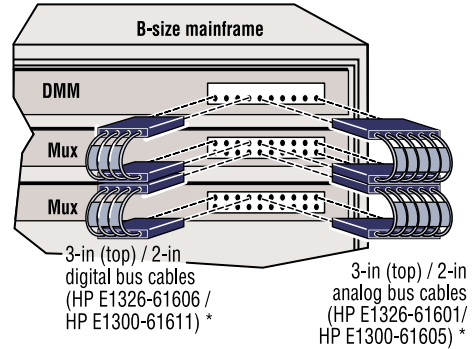
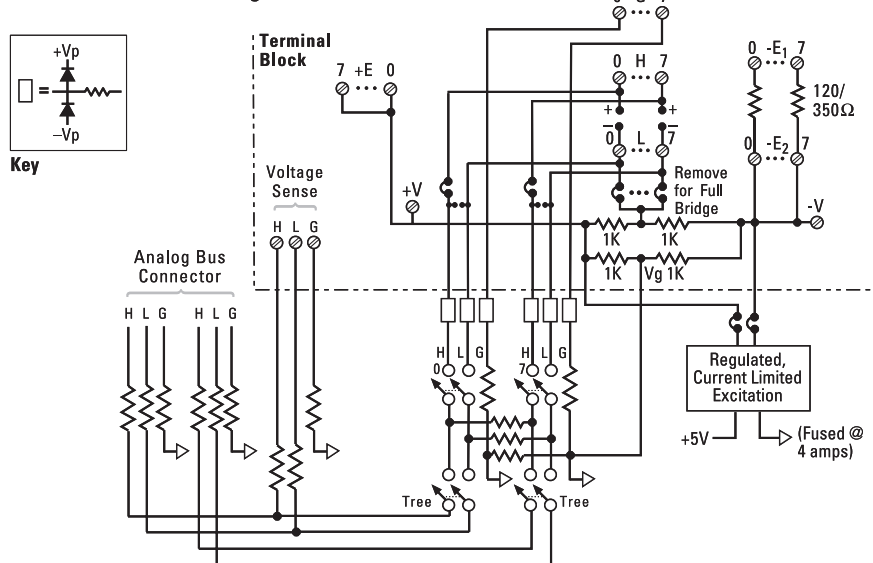
Cooling/Slot

Watts/slot:	2.00
ΔP mm H₂O:	0.02
Air Flow liter/s:	0.10

Ordering Information

Description	Product No.
8-Channel 120 Ohm Strain FET Multiplexer	HP E1357A
Service Manual	HP E1357A 0B3
3 Yr. Retn. to HP to 1 Yr. OnSite Warr.	HP E1357A W01
Term Card 8 Chan 120 Ohm Strain FET MUX	HP E1357-80001
Cable Kit, VM To B-Size FET Multiplexer	HP E1411-80001

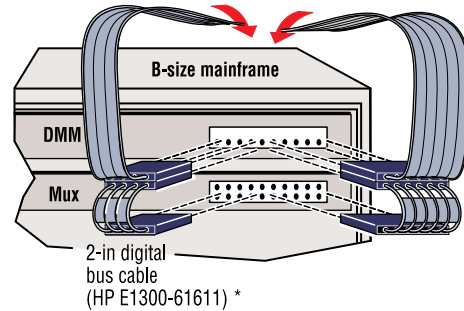
HP E1357A Circuit Diagram



Analog and Digital Bus Cables for MUX-to-MUX and MUX-to-Multimeter Connections

19.5-in digital cable to internal multimeter (HP E1326-61608) **

19.5-in analog cable to internal multimeter (HP E1326-61611) **



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

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

Analog and Digital Bus Cables for MUX-to-MUX and MUX-to-Multimeter Connections

Related Literature

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

1998 Test System and VXI Products Catalog,
HP Pub. No. 5966-2815

Warranty

Standard Hewlett-Packard VXIbus hardware products are warranted against defects in materials and workmanship for a period of three years unless otherwise noted. HP software and firmware products that are designated by HP for use with a hardware product, when properly installed on that hardware product, are warranted not to fail to execute their programming instructions due to defects in materials and workmanship.

For a complete and detailed warranty statement please see the *HP Test System and VXI Products Data Book* or visit the HP Website at <http://www.hp.com/go/vxi>.

HP Website Directory

Main HP Website
<http://www.hp.com>

HP Test and Measurement
<http://www.hp.com/go/tmdir>

HP VXI Product Information
<http://www.hp.com/go/vxi>

HP VXI Channel Partners
<http://www.hp.com/go/vxichanpart>

HP VEE Application Website
<http://www.hp.com/go/hpvee>

Data Acquisition and Control Website
http://www.hp.com/go/data_acq

HP Instrument Driver Downloads
http://www.hp.com/go/inst_drivers

For more information about Hewlett-Packard test & measurement products, applications, services, and for a current sales office listing, visit our website, <http://www.hp.com/go/tmdir>. You can also contact one of the following centers and ask for a test and measurement sales representative.

United States:

Hewlett-Packard Company
Test and Measurement Call Center
P.O. Box 4026
Englewood, CO 80155-4026
1 800 452 4844

Canada:

Hewlett-Packard Canada Ltd.
5150 Spectrum Way
Mississauga, Ontario L4W 5G1
(905) 206 4725

Europe:

Hewlett-Packard
European Marketing Centre
P.O. Box 999
1180 AZ Amstelveen
The Netherlands
(31 20) 547 9900

Japan:

Hewlett-Packard Japan Ltd.
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HP Publication No.: 5965-6323E