

HP 75000
Series C

HP E1400B C-Size
VXIbus Mainframe
User's Manual

HP 75000 SERIES C

C-Size VXiBus Mainframe HP E1400B

User's Manual



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Safety Symbols



Instruction manual symbol affixed to product. Indicates that the user must refer to the manual for specific Warning or Caution information to avoid personal injury or damage to the product.



Indicates the field wiring terminal that must be connected to earth ground before operating the equipment—protects against electrical shock in case of fault.



Frame or chassis ground terminal—typically connects to the equipment's metal frame.



Alternating current (AC).



Direct current (DC).



Indicates hazardous voltages.

WARNING

Calls attention to a procedure, practice, or condition that could cause bodily injury or death.

CAUTION

Calls attention to a procedure, practice, or condition that could possibly cause damage to equipment or permanent loss of data.

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DO NOT operate the product in an explosive atmosphere or in the presence of flammable gases or fumes.

For continued protection against fire, replace the line fuse(s) only with fuse(s) of the same voltage and current rating and type. **DO NOT** use repaired fuses or short-circuited fuseholders.

Keep away from live circuits: Operating personnel must not remove equipment covers or shields. Procedures involving the removal of covers or shields are for use by service-trained personnel only. Under certain conditions, dangerous voltages may exist even with the equipment switched off. To avoid dangerous electrical shock, **DO NOT** perform procedures involving cover or shield removal unless you are qualified to do so.

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Getting Started

Manual Contents and Purpose

This manual is divided into the following chapters and appendixes:

- **Chapter 1. Getting Started** introduces you to the HP 75000 Series C Model E1400B Mainframe (HP E1400B Mainframe) and gives an overview of its features. This chapter also shows how to set the line voltage selector and install the proper line power fuse.
- **Chapter 2. Mainframe Hardware Description** gives a detailed description of the mainframe hardware, its backplane provisions, the cooling system, and shows how to install plug-in modules.
- **Chapter 3. Using the Mainframe Power Supplies** gives information on using the mainframe's seven power supplies.
- **Appendix A. Specifications** provides the hardware specifications for the mainframe.
- **Appendix B. Replaceable Parts** lists the part numbers and descriptions of replacement parts available for the mainframe from Hewlett-Packard.

Mainframe Description

The HP E1400B Mainframe is designed in full compliance with the VXIbus Specification (Revision 1.3) and VMEbus System Specification (Revision C.1). It contains 13 slots for plug-in modules in a compact 310.4 mm (12.22 in.) of vertical rack space. You can rack mount the mainframe in the forward or reverse position.

The mainframe is designed to provide the quiet EMC environment needed to support a multi-vendor VXIbus instrumentation system. It has variable-speed fan cooling, automatic bus grant connections to bypass empty slots, and the seven standard VXIbus power supplies. All supplies are over-voltage and over-current protected. The mainframe supports high-performance instruments with a total of 585 Watts cooling capacity, assuming 10° C internal rise.

Besides C-Size modules, the mainframe also accepts most A- and B-Size modules using the optional HP E1403A Active Adapter. For slave devices with the P1 connector only, the HP E1403A is preferred. Other A- and B-Size VXI modules can be installed in the mainframe using the optional HP E1408A A- and B-Size VXIbus Module Carrier. B-Size VMEbus modules can be installed using the optional HP E1402A VMEbus Adapter Module.

Setting the Line Voltage

The line voltage selector is located on the mainframe's rear panel (Figure 1-1). The plastic selector has two positions: 100/120V and 220/240V. The 100/120V position applies to the 90-132 VAC range and the 220/240V position applies to the 198-264 VAC range. Before changing the line voltage setting, make sure you remove the mainframe's power cord.

When the mainframe is shipped from the factory, the line voltage selector is set to the 100/120V position. To change the position of the selector, squeeze the finger tabs together and turn the selector over (Figure 1-1).

The plastic voltage selector is designed to change the position of a rocker switch inside the power supply. If you lose or break the plastic voltage selector, you can change the position of the rocker switch using a small flatblade screwdriver. If the rocker switch is set in the top position, the 100/120V position is selected. If the rocker switch is set in the bottom position, the 220/240V position is set. Figure 1-1 shows the rocker switch setting in the 100/120V position.

Installing the Line Power Fuse

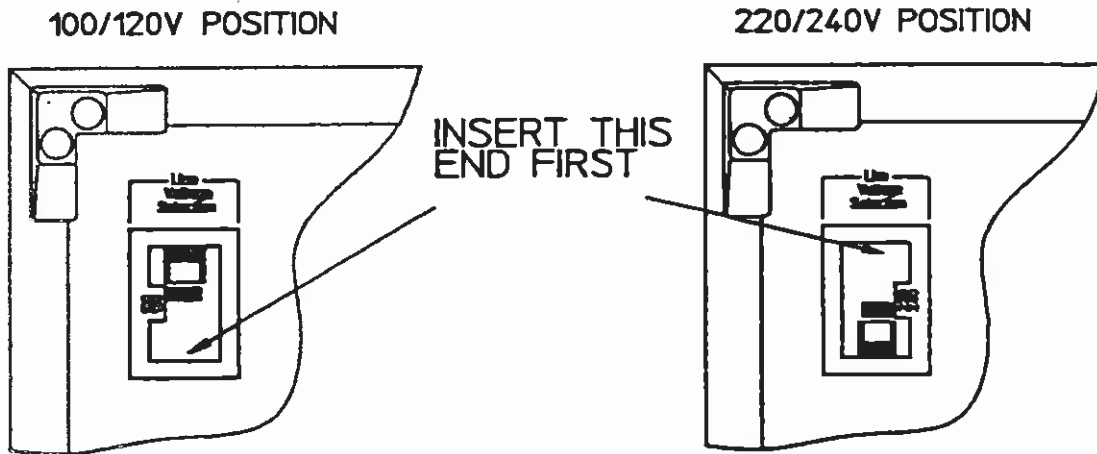
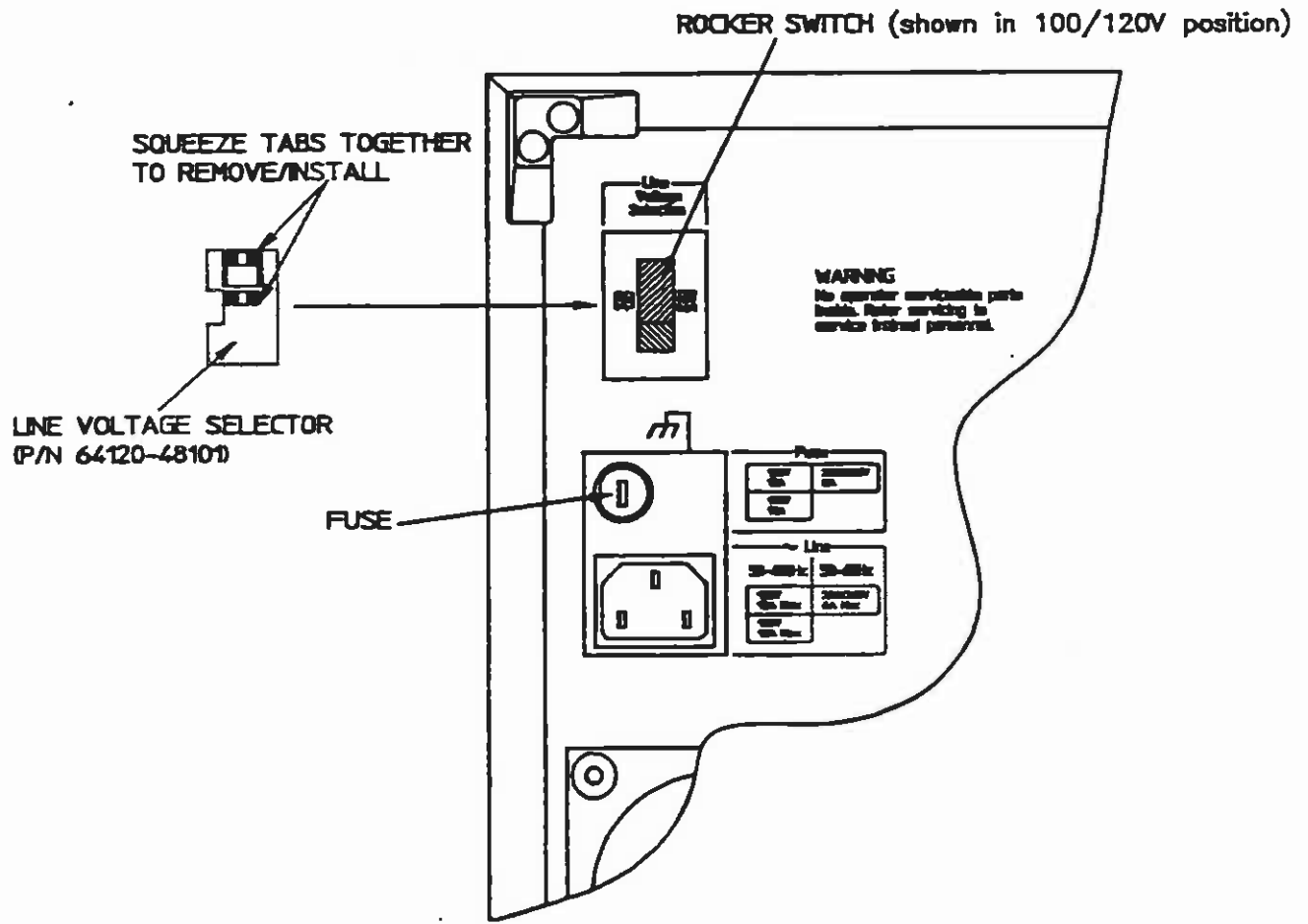
The mainframe does not have a line power fuse installed when shipped from the factory. Instead, three fuses and a fuseholder cap are provided (Table 1-1). Use this fuseholder cap (HP part number 2110-0565) with any of the three fuses.

The line power fuse holder is located on the mainframe's rear panel (Figure 1-1). Before installing a fuse, make sure you remove the mainframe's power cord. Insert one end of the fuse into the fuseholder cap. Insert the fuse/cap assembly into the fuse holder. With a small flatblade screwdriver, push in on the fuseholder cap and rotate it clockwise.

Table 1-1. Line Power Fuses

Voltage	Line Power Fuse	Fuse Part Number
100V	15A 250V	2110-0054
120V	12A 250V	2110-0249
220-240V	8A 250V	2110-0342

HP E1400B REAR PANEL



E1400A FI-1

Figure 1-1. Setting the Line Voltage

Power Cords

Figure 1-2 shows the various mainframe power cords and their Hewlett-Packard part numbers. If you received the wrong power cord, notify your HP Sales Office for replacement.

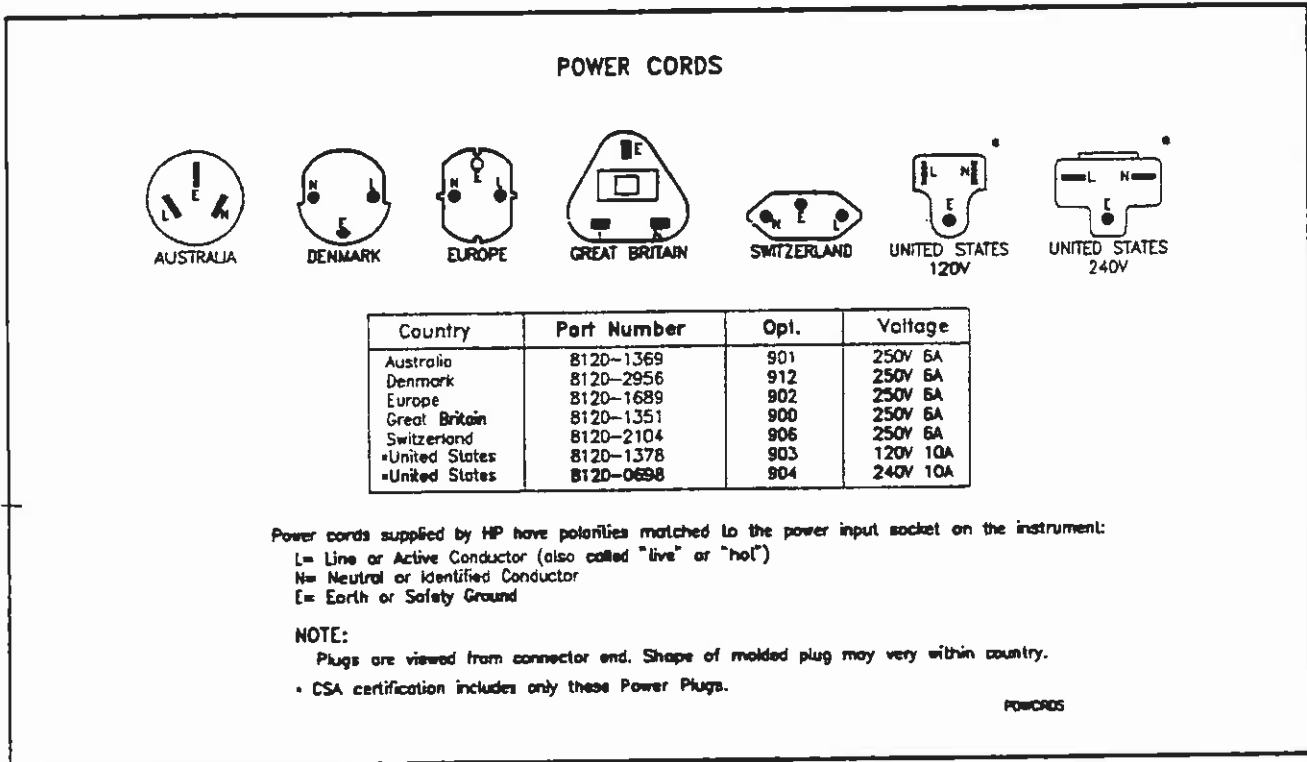


Figure 1-2. Power Cords

Mainframe Hardware Description

Chapter Contents and Purpose

This chapter gives a hardware description of the mainframe and contains the following sections:

- Backplane Description Page 2-1
- Mainframe Cooling System Description Page 2-4
- Requirements for Modules Page 2-8
- Installing Modules Page 2-9
- Using Chassis Shield and Backplane Connector Shields . . Page 2-11
- Using Faceplate Panels Page 2-11
- Rack Mounting the Mainframe. Page 2-12

Backplane Description

The mainframe's 13 slots are on 30.48 mm (1.2 in.) centers and provide the J1 and J2 VXIbus backplane connectors. All pins on J1 and J2 are fully implemented according to the VXIbus Specification (Revision 1.3). Both connectors are DIN 96-pin connectors with pin spacing on 2.54 mm (0.1 in.) centers.

Backplane J1 connectors automatically bypass empty slots for daisy-chained signals required by the VXIbus and VMEbus specifications. Switches internal to the connectors route the bus grant lines BG(0-3)IN* around an empty slot to the corresponding BG(0-3)OUT* lines. The connectors also route the IACKIN* line around an empty slot to the IACKOUT* line. Backplane jumpers or DIP switches are not necessary since the switches are activated by installing a module.

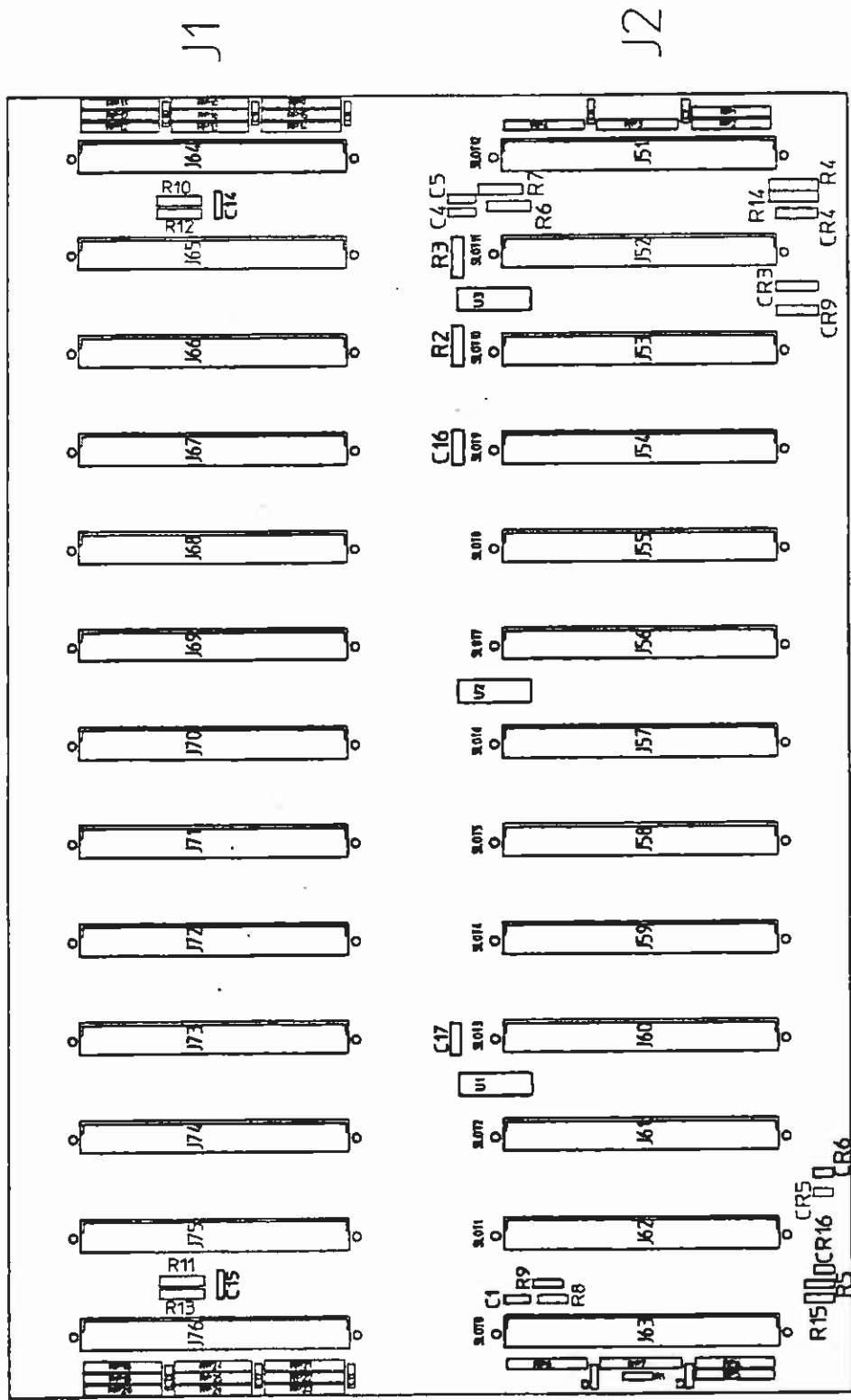
Note

In the discussion of hardware operations that follow, a mnemonic suffixed with an asterisk (e.g., IACKIN*) indicates reverse logic ("0" or low = true; "1" or high = false).

The backplane circuit board assembly uses a 12-layer circuit board with electrical components mounted on both sides. Figure 2-1 shows the location of components mounted on the component side. Figure 2-2 shows the location of components mounted on the circuit side. A three-page pinout schematic at the end of this manual shows the backplane pinout for the 13 mainframe slots.

Most components are mounted to the backplane circuit board in compression sockets for easy troubleshooting and replacement. Some components are soldered into solder cup sockets but no parts are soldered to the backplane itself.

TOP



IME101 E14008 F.2.1

Figure 2-1. Component Side-Backplane Component Diagram

TOP

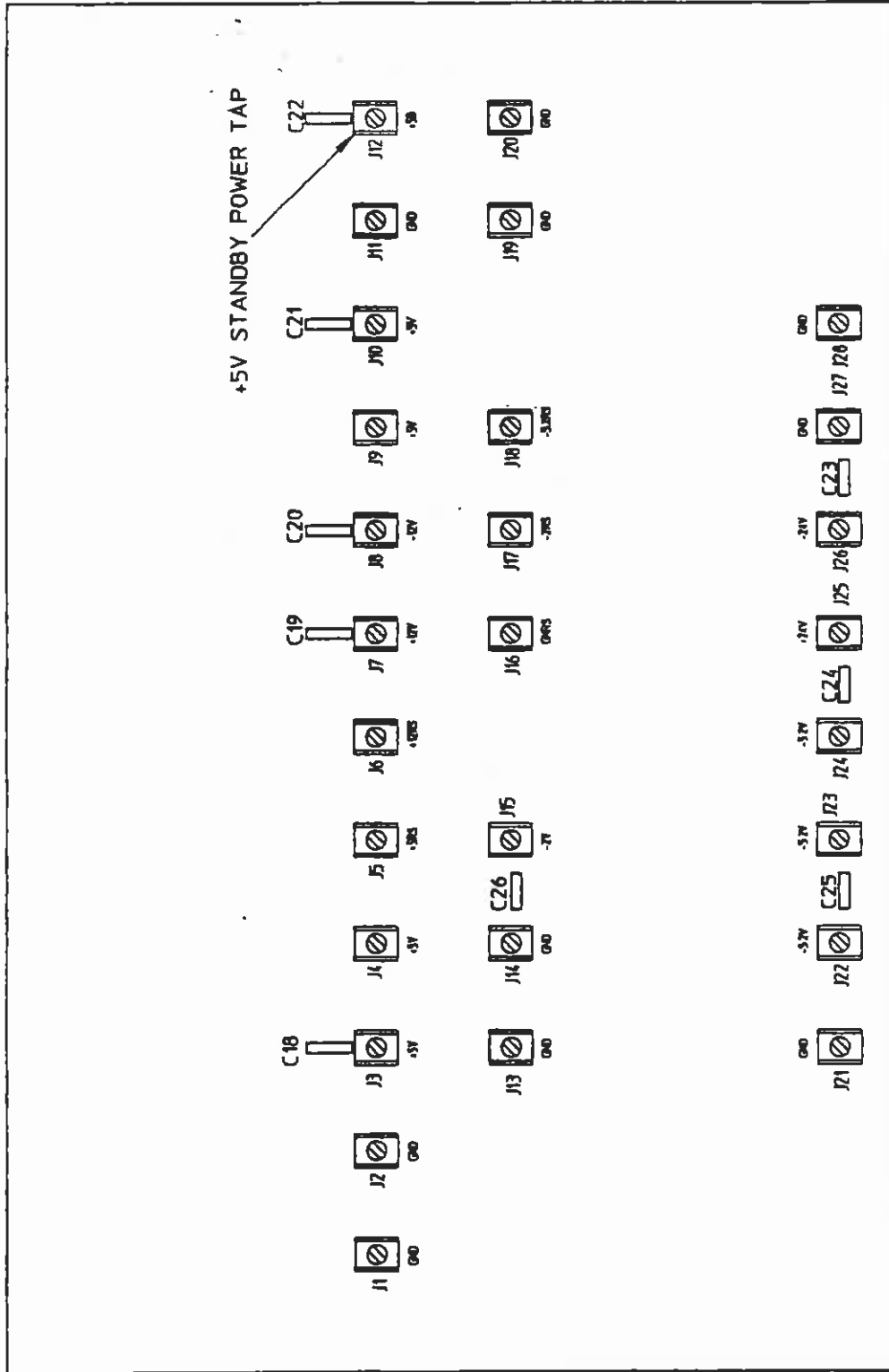


Figure 2-2. Circuit Side-Backplane Component Diagram

HW 21 000171

Mainframe Cooling System Description

The mainframe cooling system has a maximum cooling capacity of 585 Watts. It supplies each of the 13 module slots with enough circulation air to cool 45 Watts maximum while maintaining a 10°C rise across a module. Up to 60 Watts per slot may be dissipated if a 15°C rise is acceptable.

The mainframe rear panel assembly contains three circulation fans. The speed of these fans is controlled by the ambient temperature of the air drawn into the mainframe. Because of the mainframe's pressurized plenum design, the airflow to each slot is independent of loading on adjacent slots.

Filtered air enters the rear of the mainframe through the fans. The incoming air is forced downward to holes below each slot. The air is channeled upward into each slot and passes over each module's components. The air passes over the top of the modules and exits from the sides and top of the mainframe chassis.

Air outlet holes are provided on top of the mainframe for high-power applications. If any module exceeds 30 Watts, you should provide at least 44.5 mm (1.75 in.) of clearance above the mainframe. If no module exceeds 30 Watts, the outlet holes on the sides of the mainframe are sufficient.

Caution

When installing the mainframe in your system environment, use care to see that the air inlets and outlets are not obstructed. This will prevent damage to the mainframe and installed modules due to overheating.

Mainframe Cooling Capacity

Before installing modules in the mainframe, you must verify that the mainframe has enough cooling capacity. A quick check here is to compare the worst case power dissipation of any module against the mainframe's abbreviated cooling specification. For the HP E1400B Mainframe, this cooling specification is 45 Watts per slot.

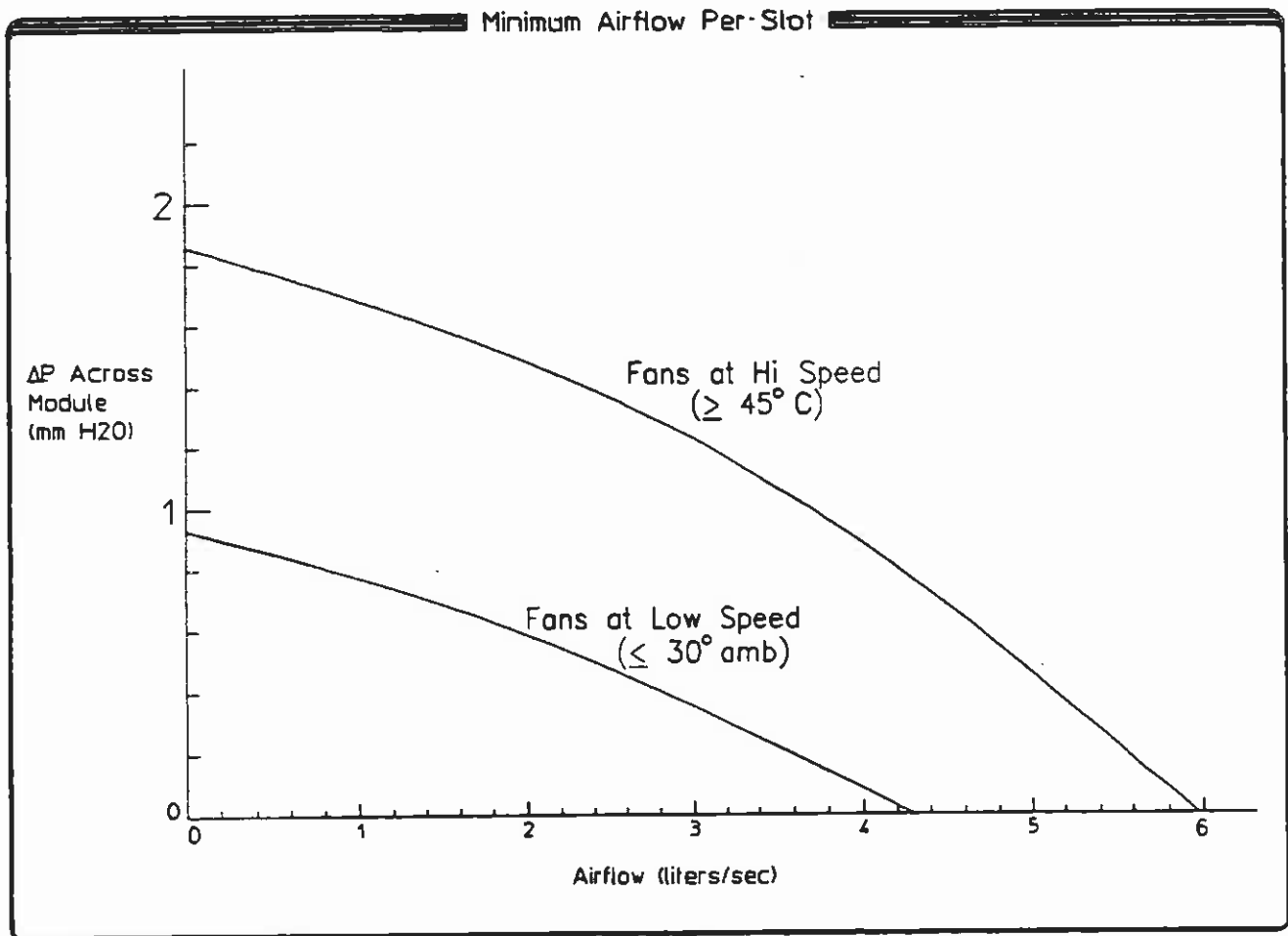
A more exact method to verify compatibility is to use the detailed VXIbus cooling specifications of the mainframe and modules. The detailed specification is given in terms of airflow rate versus back pressure (change in pressure across the module).

Figure 2-3 shows the graph of airflow volume (liters/second) versus change in pressure across the module (mm H₂O) for the mainframe. The values shown are the minimum airflow values available per slot. The slot with the lowest airflow was tested with all other slots empty. The airflow and change in pressure required is specified for each VXIbus module and must be below the appropriate ambient curve for the mainframe.

For most applications, you should compare the module's detailed cooling specification with the upper curve for the mainframe (ambient temperature 45°C). Cooling is most critical at the highest ambient temperatures. The lower curve (ambient temperature 30°C) provides only supplemental information.

Note

It is your responsibility to ensure adequate cooling is supplied to all modules installed in the mainframe. Section B.7.2.4 of the VXIbus Specification (Revision 1.3) discusses module cooling requirements. Section B.7.3.5 discusses mainframe cooling requirements.



E1400B F2-3A

Figure 2-3. Minimum Airflow Available Per Slot

Overriding the Variable-Speed Fan Control

Normally, the speed of the internal circulation fans is controlled by the ambient temperature of the air drawn into the mainframe. In a cool environment, the fans operate at a quiet but effective speed to reduce acoustic noise. When maximum cooling is needed, the fans automatically speed up to provide the required cooling. You can override the temperature-controlled speed of the fans by installing a jumper inside the mainframe power supply. With the jumper installed, the fans constantly operate at top speed to provide maximum cooling.

Figure 2-4 shows three connectors located inside the mainframe's power supply assembly. The 16-pin CN3 power supply connector has two fan bypass pins (pins 15 and 16) which you can jumper together. A recommended method to jumper the fan bypass pins is shown in Figure 2-4. Table 2-1 gives the pinout for connector CN3.

Connector CN3 is accessible through a hole in the side panel after removing the mainframe cover. It is not necessary to remove the power supply. Refer to figure 3-1 to remove the mainframe cover.

Table 2-1. Connector CN3 Pinout

Pin Number	Signal
1	FANOUT-
2	FANOUT +
3	FANOUT-
4	FANOUT +
5	FANOUT-
6	FANOUT +
7	GND
8	+5V
9	ROORTN
10	ROO
11	SYSRESET
12	GND
13	ACFAIL
14	No Connection
15	FAN BYPASS
16	FAN BYPASS RTN

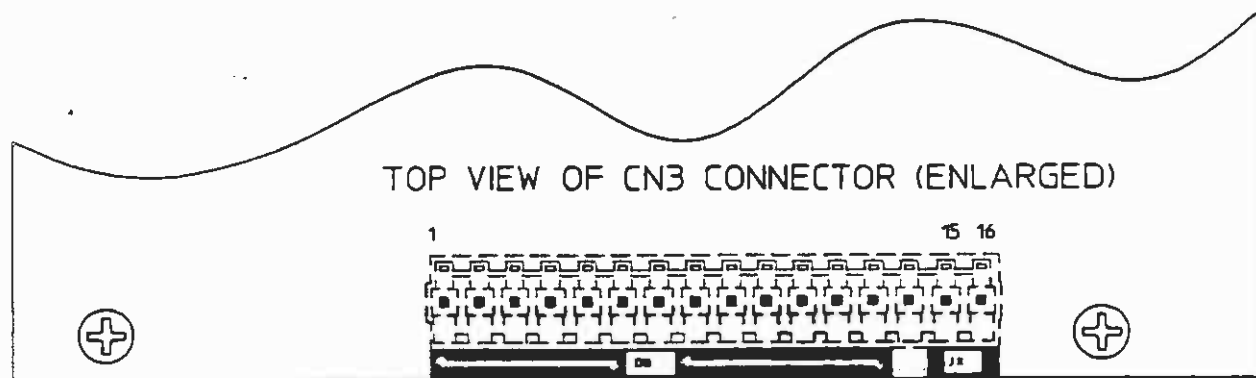
ROORTN: Remote ON/OFF Return (grounded at power supply)

ROO: Remote ON/OFF

RTN: Return

The components shown in Figure 2-4 for the fan bypass jumper can be ordered from:

Molex Products Company
Corporate Headquarters
2222 Wellington Court
Lisle, Illinois 60532 U.S.A.
(312) 969-4550

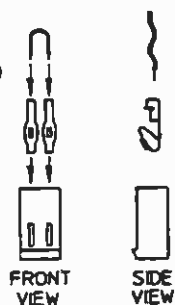


RECOMMENDED FAN BYPASS JUMPER

22 AWG Wire
2.54 cm (1 in.)

Trifurcon Terminals
(Molex 08-58-0189)

Terminal Housing
(Molex 26-03-4020)



INSTALL FAN BYPASS JUMPER HERE

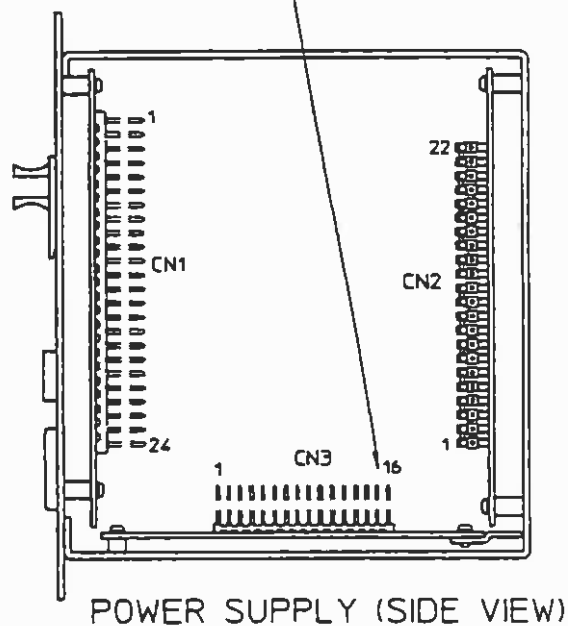


Figure 2-4. Installing a Fan Bypass Jumper

Requirements for Modules

Modules should be carefully inspected for compliance to the mechanical and electrical standards set forth in the VXIbus Specification (Revision 1.3). This manual does not consider any regulatory requirements for specific module applications. It is your responsibility to meet requirements for FCC/VDE emissions, safety, or any other regulatory requirements. Areas for consideration include:

- Mechanical dimensions
- Power requirements
- Cooling requirements
- Electrostatic discharge (ESD) susceptibility
- Conducted emissions/susceptibility
- Radiated emissions/susceptibility (shielding)
- Signal levels
- Timing
- Backplane protocol

It is your responsibility to ensure that power requirements of modules installed in the mainframe are in conformance with the Power Management Requirements. Power requirements are outlined in Section B.8.5 of the VXIbus Specification (Revision 1.3).

All power supply voltages used on modules installed in the mainframe should be fused on the module. This protects the modules and the mainframe and will satisfy most safety regulatory requirements. For example, the mainframe's +5 VDC supply is capable of supplying 40 Amps. An electrical short on an unfused module may cause backplane damage through the +5 VDC pins supplying power to the shorted module. Damage to the mainframe caused by a shorted module that is not properly fused may void all or part of the mainframe warranty.

Installing Modules

Besides C-Size modules, the mainframe also accepts most A- and B-Size modules using the optional HP E1403A Active Adapter. For slave devices with the P1 connector only, the HP E1403A is preferred. Other A- and B-Size VXI modules can be installed in the mainframe using the optional HP E1408A A- and B-Size VXIbus Module Carrier. B-Size VMEbus modules can be installed using the optional HP E1402A VMEbus Adapter Module.

If you are installing A- or B-Size modules using the HP E1402A or HP E1408A, install these modules first. You will generally need more visibility and working room to install the smaller modules. The procedure for installing the three module sizes is also slightly different.

WARNING

SHOCK HAZARD. Only service-trained personnel who are aware of the hazards involved should install, remove, or configure any plug-in modules. Before you touch any installed module, disconnect AC power from the mainframe.

To avoid electrical shock, always use the faceplate panels that came with the mainframe to cover unused slots. Refer to Appendix B in this manual for the faceplate panel part numbers if you wish to order additional panels.

Installing C-Size Modules

You can install C-Size modules directly into the mainframe by first placing the module's card edges into the front module guides (top and bottom). Then slide the module to the rear of the mainframe until the module connectors mate solidly with the backplane connectors. Finally, select the appropriate threaded hole in the top and bottom front panel mounting brackets. Secure the module's front panel to the mainframe chassis using the module's mounting screws.

Installing B-Size Modules

METHOD 1: The easiest way to install B-Size modules is with the optional HP E1403A Active Adapter. This product allows a B-Size module to be installed just like a C-Size module. The HP E1403A supports slave devices with the P1 connector only.

METHOD 2: B-Size modules may be installed by removing the module's front panel. With the front panel removed, insert the card edges into the front module guides and slide the module into the mainframe. The front module guides should align the card edges with the rear module guides. After verifying that the card edges properly enter the rear module guides, slide the module in until the backplane connectors are solidly mated. In this configuration, the module is supported only by the rear module guides and backplane connectors.

METHOD 3: If you cannot remove the module's front panel, you must remove the front top and bottom plastic module guides from the appropriate mainframe slot. To remove a module guide, grasp the guide firmly and apply a left and right rocking motion (Figure 2-5).

With the front top and bottom module guides removed, slide the module between the front panel mounting brackets and insert the card edges into the rear module guides. After verifying that the card edges properly enter the rear module guides, slide the module in until the backplane connectors are solidly mated. In this configuration, the module is supported only by the rear module guides and backplane connectors.

METHOD 4: The support of a B-Size module is improved if you mount the module to a shielded adapter such as the HP E1408A Module Carrier. A B-Size module mounted to the carrier can be installed much like a C-Size module. This can only be accomplished after the front module guides are removed. No modifications to the module are necessary and you don't have to remove the module's front panel.

Installing A-Size Modules

If the A-Size module is a slave-only device, we recommend you use the HP E1403A Active Adapter. Otherwise, you may mount your A-Size modules to a shielded adapter such as the HP E1408A Module Carrier. An A-Size module mounted to the carrier can be installed much like a C-Size module. See method 4 above. No modifications to the module are necessary and you don't have to remove the module's front panel.

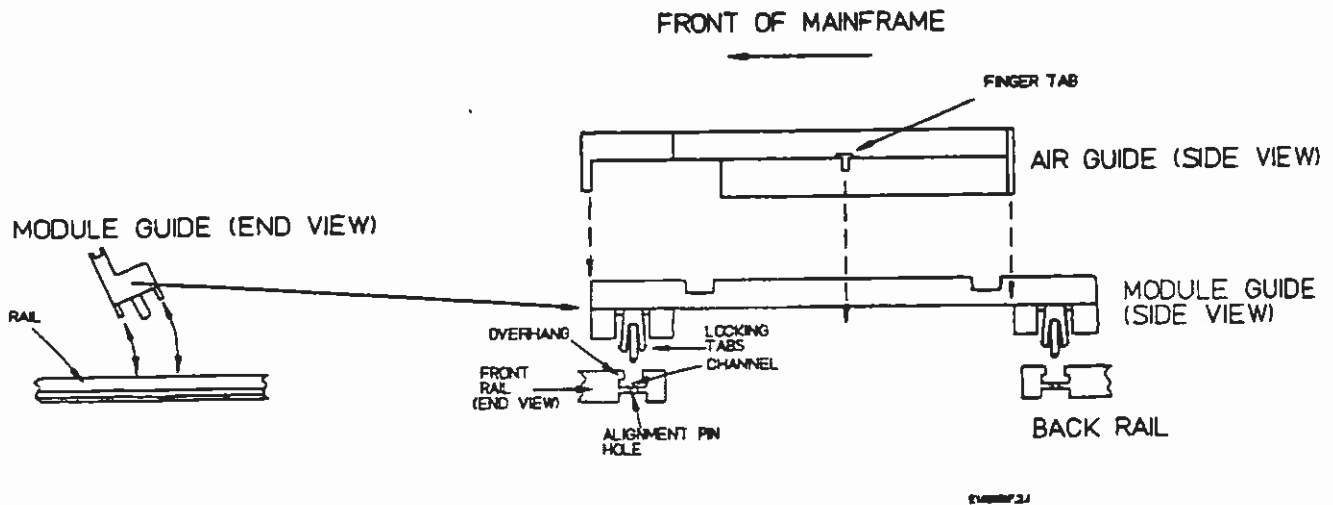


Figure 2-5. Plastic Module Guide Installation/Removal

Using Chassis Shield and Backplane Connector Shields

The HP E1409A Chassis Shield is the Hewlett-Packard implementation of Section B.7.3.4 of the VXIbus Specification (Revision 1.3) that allows grounded shielding between mainframe slots. Typical applications for the chassis shield include isolating modules that generate electromagnetic interference (EMI) at excessive levels, or protecting modules making sensitive measurements from noise sources.

The chassis shield assembly contains a plated steel shield with four conductive chassis shield guides and mounting hardware. Two adhesive-backed thermoplastic insulators are also included and can be attached to the chassis shield if desired. Since the chassis shield fits between slots in the mainframe, you don't lose the use of a slot by installing the shield.

The Backplane Connector Shield Kit (HP part number E1400-60202) is the Hewlett-Packard implementation of figure B.36 of the VXIbus Specification (Rev 1.3) that allows a contact surrounding the backplane connector. These contacts mate with spring fingers on some VXIbus modules. Typical applications include improving the ground return path and reducing EMI. The kit includes 26 contacts and mounting hardware.

Using Faceplate Panels

The mainframe is shipped from the factory with faceplate panels installed to cover the module slots. Three 1-slot panels, one 3-slot panel, and one 7-slot panel are installed to cover the 13 slots.

To avoid electrical shock, always use the faceplate panels to cover unused slots. Refer to Appendix B in this manual for the faceplate panel part numbers if you wish to order additional panels.

Rack Mounting the Mainframe

The mainframe can be used as a benchtop instrument or you can rack mount it in a standard 19-inch wide rack mounting cabinet. The mainframe mounts either in the front or rear of the rack cabinet. The rack mounting kits include all hardware required to mount the mainframe in the flush or recessed position. The kits include rack mount ears, recess mount flanges, support rails, and hardware such as screws and washers. The following kits are available:

- HP E1400B opt 908 (HP part number E1400-80908) Rack Mount Kit
- HP E1400B opt 909 (HP part number E1400-80909) Rack Mount Kit with Handles
- HP E1400B opt 915 (HP part number E1400-80915) Rack Mount Kit with Door (this hinged door is used with a recessed mainframe)

The HP E1400B opt 914 (HP part number E1400-80004) optional cable tray may be mounted to the bottom of the mainframe. The tray is 44.5 mm (1.75 in.) high and provides a convenient method for routing cables to the rear of the mainframe without compromising the flow of cooling air. Mounting hardware is included.

Rack slides may also be ordered as HP E1400B opt 913 (HP part number E1400-80003). This kit includes heavy duty rack slides, a cable tray, and mounting hardware. One of the above rack mount kits should be ordered with this option.

Using the Mainframe Power Supplies

Chapter Contents and Purpose

This chapter describes the mainframe power supplies and contains the following sections:

- Maximum Power Ratings. Page 3-1
- Backplane Voltage Pinouts. Page 3-2
- Power Supply Usages. Page 3-2

Maximum Power Ratings

All seven mainframe power supply outputs are over-voltage and over-current protected at their maximum rated outputs as shown in Table 3-1 and Table 3-2.

Table 3-1. Input Power*

Voltage	Maximum Current	Recommended Fuse
100V	12A	15A
120V	10A	12A
220-240V	6A	8A

*Nominal Frequency: 50/60/400 Hz
 Low Range: 45 to 66 Hz
 High Range: 360 to 440 Hz (100/120 VAC only)

Table 3-2. Power Supply Outputs (425 Watts)

DC Output Voltage	Peak DC Output Current (IMP*)	P-P Dynamic Current (IMD**)
+5V	40A	4.0A
12V	10A	1.0A
-12V	3A	0.3A
+24V	5A	2.5A
-24V	5A	2.5A
+5.2V	26A	2.5A
-2V	10A	1.0A
+5V STDBY	0A	0.0A

*IMP = Rated mainframe peak DC output current as defined by the VXIbus Specification.

**IMD = Rated mainframe peak-to-peak dynamic current as defined in the VXIbus Specification by a current versus frequency curve.

Backplane Voltage Pinouts

Table 3-3 shows the backplane J1 and J2 connector pin numbers from which the power supply voltages and ground returns are available. A three-page pinout schematic at the end of this manual shows the backplane pinout for the 13 mainframe slots.

Although traces are provided in each slot for +5V STDBY (connector J1, pin B31), this voltage is not provided by the mainframe. If this voltage is required, you must provide it (Figure 3-1).

Table 3-3. Backplane J1 and J2 Connector Pinouts

Voltage	Connector and Pin Numbers
+5 VDC	(J1) A32, B32, C32 (J2) A25, B1, B13, B32
-5.2 VDC	(J2) A7, A13, A19, C4, C19
+5V STDBY	(J1) B31
+24 VDC	(J2) C31
-24 VDC	(J2) C32
+12 VDC	(J1) C31
-12 VDC	(J1) A31
-2 VDC	(J2) A2, C13
GROUND	(J1) A9, A11, A15, A17, A19, B20, B23, C9
GOURND	(J2) A4, A10, A16, A22, A28, A31, B2, B12, B22
GROUND	(J2) B31, C3, C7, C10, C16, C22, C25, C28, C30

Power Supply Usages

The following is a list of recommended usages for the voltages available from backplane connectors J1 and J2.

- +5 VDC** Main power source for all systems. Supplies power to logic devices.
- 5.2 VDC** Power for ECL devices.
- +5V STDBY** Power to sustain memory, clocks, etc. when +5 VDC is lost. The HP E1400B Mainframe does not provide this voltage. You must supply this voltage if required for your application.

Figure 3-1 shows a routing hole on the rear panel to route your standby voltage wiring to the backplane. The standby voltage power tap "+5B" is located on the backplane circuit side (Figure 2-2).

- +24 VDC** General purpose power for high level output drivers. Used to derive voltages for precision analog devices (e.g., +15 VDC).

-24 VDC General purpose power for high level output drivers. Used to derive voltages for precision analog devices (e.g., -15 VDC).

+12 VDC General purpose power for switching power converters, analog devices, and disc drives.

-12 VDC General purpose power for analog devices and disc drives. Not recommended for power converters.

-2 VDC Power for ECL termination loads.

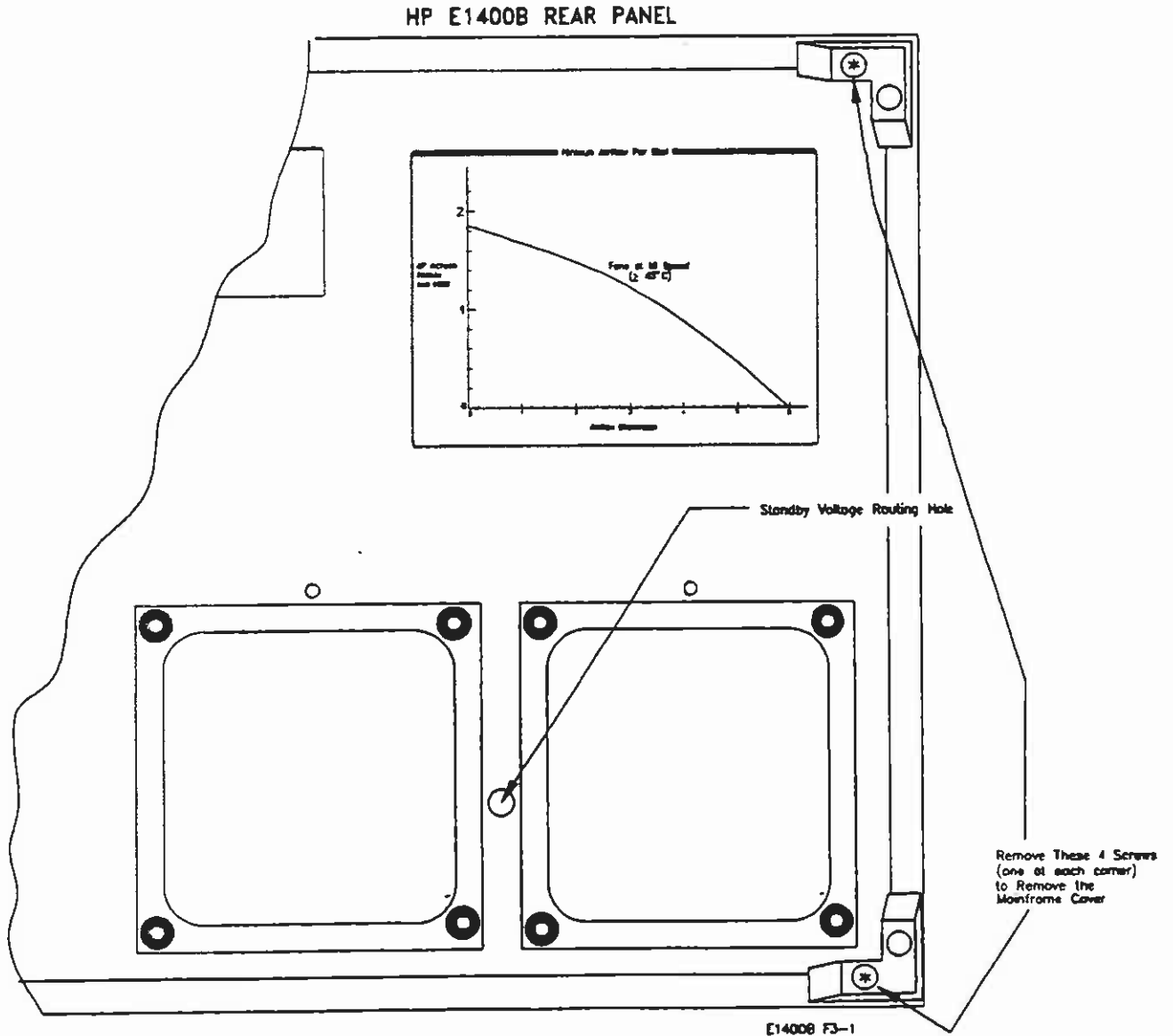


Figure 3-1. Standby Voltage Routing Hole



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Specifications

Mainframe Size:

Height: 310.4 mm (12.22 in.) with feet removed
 Width: 425.5 mm (16.75 in.)
 Depth: 586.4 mm (23.09 in.)

Mainframe Weight:

18.4 Kg (40.5 lbs) with no modules installed

Module Size:

Thirteen (13) C-Size slots. The mainframe also accepts A- or B-Size modules using the optional HP E1403A or E1408A Module Carrier. B-Size VMEbus modules can be installed using the optional HP E1402A VMEbus Adapter Module.

Input Power:

Voltage	Maximum Current	Recommended Fuse
100V	12A	15A
120V	10A	12A
220-240V	8A	8A

*Nominal Frequency: 50/60/400 Hz

Low Range: 45 to 66 Hz

High Range: 360 to 440 Hz (100/120 VAC only)

Power Supply Outputs (425 Watts):

DC Output Voltage	Peak DC Output Current (IMP*)	P-P Dynamic Current (IMD**)
+5V	40A	4.0A
+12V	10A	1.0A
-12V	3A	0.3A
+24V	5A	2.5A
-24V	5A	2.5A
-5.2V	28A	2.5A
-2V	10A	1.0A
+5V STDBY	0A	0.0A

*IMP = Rated mainframe peak DC output current as defined by the VXIbus Specification.

**IMD = Rated mainframe peak-to-peak dynamic current as defined in the VXIbus Specification by a current versus frequency curve.

Humidity:

95% Relative Humidity, 0°C to 40°C

Temperature Range:

Operating: 0°C to 55°C Storage: -40°C to +75°C

Cooling Provided:

Maximum 585 Watts/mainframe or 45 Watts/slot for 10°C rise. Maximum 780 Watts/mainframe or 60 Watts/slot for 15°C rise. (see airflow graph in Figure 2-3)

Acoustical Noise:

5.7 bels (49 dBA) at room temperature

Classification:

Classified under MIL-T-28800 as Type III, Class 5, Style E, Color R

EMC Testing:

Within the requirements of methods CE01, CE02 (relaxed 15 dB), CE07, RE01 (60 Hz only), RE02 (chassis bonded to ground), CS01, CS02, CS06, RS02, and RS03 of MIL-STD-461. Meets requirements of FTZ 1046, VDE Class B, and FCC Part 15-J.

Vibration and Shock:

Meets MIL-T-28800 test limits 3.7.4.1, 3.7.5.1, 3.7.5.3

Module Weight:

Maximum 3.5 Kg (7.7 lbs) per slot to comply with vibration and shock specifications. Heavier modules may be installed if vibration and shock environment is less severe.

Safety:

IEC 380 and 950, UL 1244, and CSA 1402

Additional Notes

- The HP E1400B mainframe is 100% compatible with the VXIbus Specification (Revision 1.3).
- The HP E1400B mainframe provides VXIbus connectors J1 and J2.
- To get a copy of the VXIbus Specification (Revision 1.3), order HP part number E1400-90003.
- To get a copy of the VMEbus Specification, order HP part number E1400-90004.