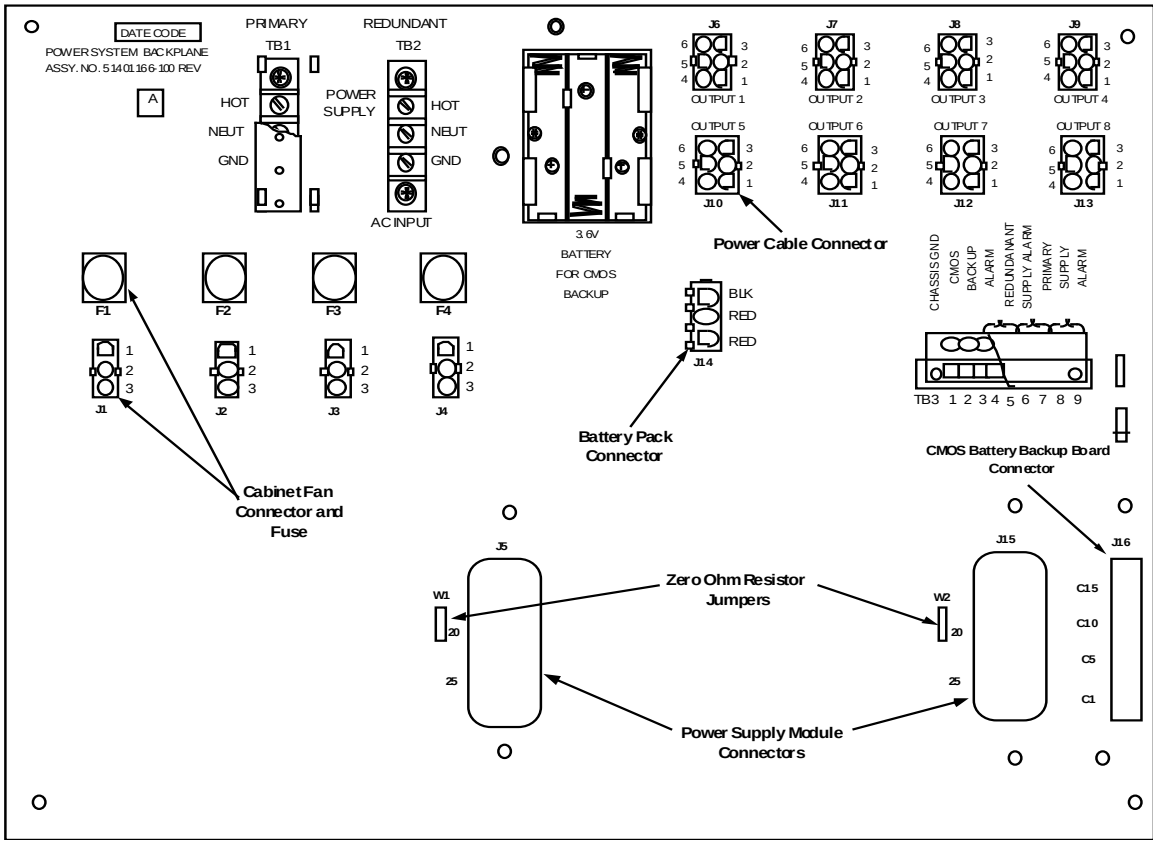
48 Volt Battery switch

A 48 Volt Battery switch that is located at the left side of the Standard Power System chassis provides a means of preventing the Power Supply Modules from discharging the Battery Backup Module when ac power is removed from one or both Power Supply Modules. Placing the switch in the off position disconnects the battery to Power Supply Module paths.

No battery backup (early production Standard Power System)

When there is no battery backup, a battery backup failure is reported unless the zero-ohm resistor jumpers, W1 and W2, located next to the Power Supply Module connectors, are cut. This is done at the factory before shipping. If a battery backup is later installed, the connections must be restored. The following figure is a view of the Standard Power System backpanel.

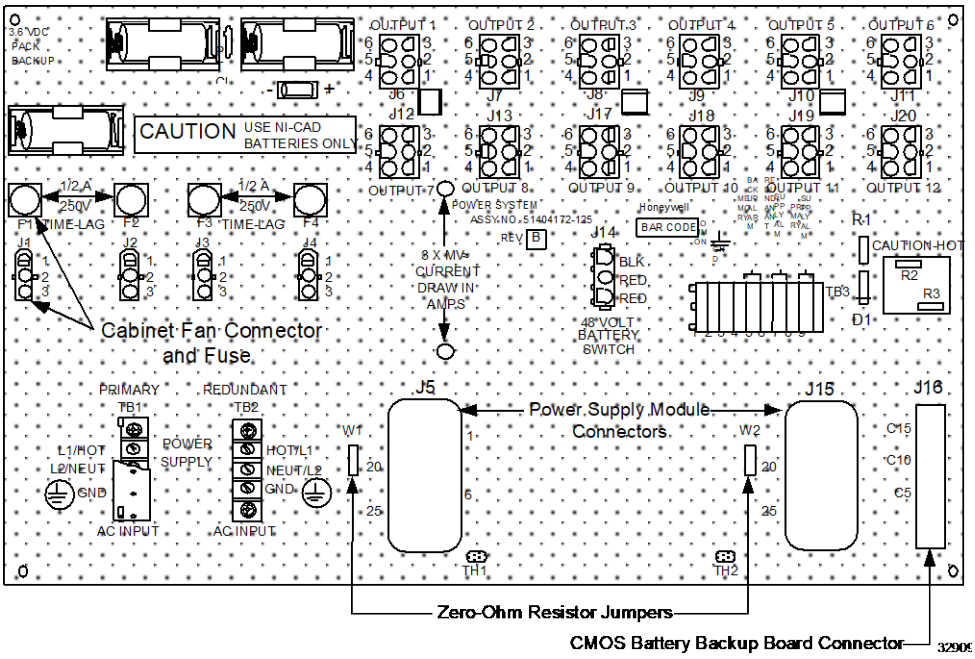
Figure 31 Standard Power System Backpanel (Early Production)



No battery backup (HPM Standard Power System)

When there is no battery backup, a battery backup failure is reported unless the zero-ohm resistor jumpers, W1 and W2, located next to the Power Supply Module connectors, are cut. This is done at the factory before shipping. If a battery backup is later installed, the connections must be restored. The following figure is a view of the HPM Standard Power System backpanel.

Figure 32 HPM Standard Power System Backpanel



CMOS Battery Backup

Depending on the Power System configuration, three rechargeable NiCad or three nonrechargeable alkaline batteries provide a nominal 3.6 Vdc for CMOS memory backup power. The batteries support all the memory circuits in the HPMM(s) and IOPs. NiCad batteries are long-lived, and they are automatically tested periodically. Every 8 seconds the batteries' output voltage is tested for the proper level, and every 2 hours a load is applied to the batteries and the voltage level is again tested.

The early production Standard Power System uses 3 “AA” size NiCad batteries which provide approximately 12 hours of backup. The enhanced Standard HPM Power System uses 3 “C” size NiCad batteries which provide approximately 45 hours of backup.

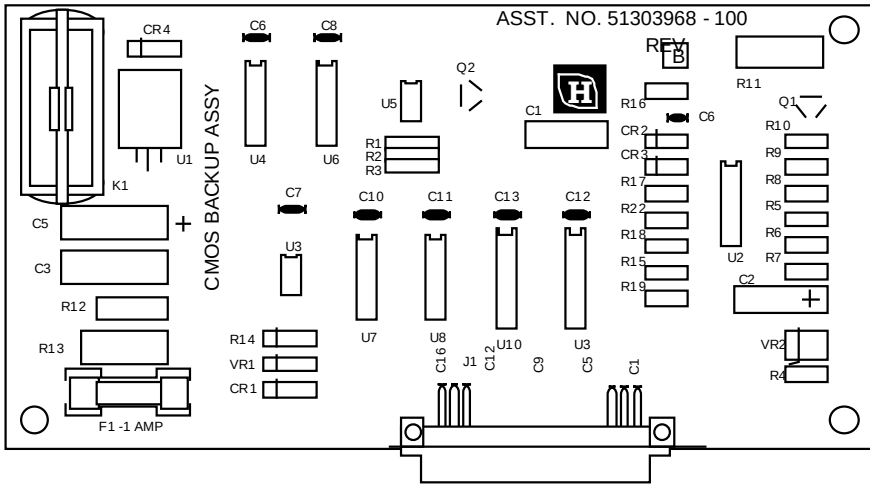
Standard Power System (early production)

Refer to the following figure for the location of the CMOS Battery Backup Assembly mating connector on the backpanel.

The early production Standard Power System has NiCad batteries located at the upper center of the Power System chassis backpanel, and the supporting CMOS Battery Backup Assembly is inserted into a connector at the lower right-hand side of the backpanel. The right Power Supply Module must be removed to view the assembly. The assembly provides both charging circuitry and a monitoring circuitry for failure alarm reporting.

See the following figure for an illustration of the CMOS Battery Backup Assembly.

Figure 33 CMOS Battery Backup Assembly (Early Production)



Note: F1 is a 0.5 A time-delay fuse.

2510

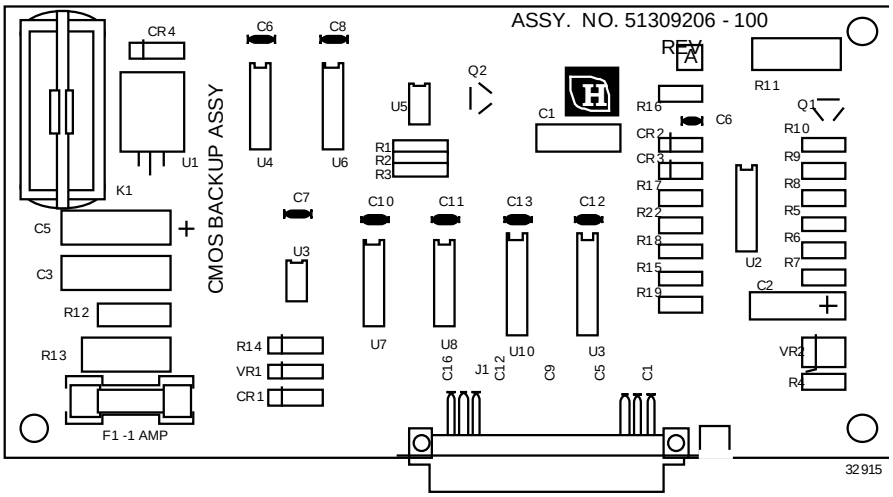
HPM Standard Power System

Refer to Figure 32 for the location of the CMOS Battery Backup Assembly mating connector on the backpanel.

The Standard Power System configuration has NiCad batteries located at the upper left of the Power System chassis backpanel, and the supporting CMOS Battery Backup Assembly is inserted into a connector at the lower right-hand side of the backpanel. The right Power Supply Module must be removed to view the assembly. The assembly provides both charging circuitry and a monitoring circuitry for failure alarm reporting. The new version (CMOS Battery Backup Assembly) is backward compatible with the early production version. The older version is not forward compatible.

See the following figure for an illustration of the latest version of CMOS Battery Backup Assembly.

Figure 34 CMOS Battery Backup Assembly (HPM Standard Power System)



ATTENTION

A bad batteries alarm occurs when the CMOS batteries are discharged or when a High-Performance Comm/Control card is not present in an HPMM card file with or without power applied to the card file. Both the High-Performance Comm/Control and the High-Performance I/O Link cards must either be present or absent in order to charge the batteries.

AC Only Power System

The AC Only Power System uses alkaline batteries which must be replaced frequently. The three alkaline batteries are located at the center of the AC/DC Distribution Assembly as shown in Figure 29. No charging circuitry or monitoring circuitry for failure alarm reporting exists.

A new set of batteries will provide approximately 55 hours of backup time.

6.15 CMOS Backup Assembly Replacement

Introduction

Replacement of the CMOS Backup Assembly requires the removal of the redundant (right side) Power Supply Module. See subsection “Power Supply Module Replacement” (“Removal and Replacement” section) for removal of the Power Supply Module.

Figure 33 and Figure 34 are illustrations of the CMOS Battery Backup assembly, and Figure 31 and Figure 32 illustrate the layout of the Standard Power System backpanel with the location of the CMOS Battery Backup assembly connector.

Replacement procedure

Use the procedure in the following table to replace the CMOS Backup assembly.

Step	Action
1	Remove the screw located at the front middle of the CMOS Backup Assembly.
2	Extract the circuit board from the Power System backpanel assembly.
3	Insert the replacement circuit board in the connector on the Power System backpanel assembly and fasten the screw.

6.16 Cabinet



SHOCK HAZARD

Troubleshooting, opening this equipment and removing any panels or covers will expose the **user** to the risk of a shock hazard. There are no **user** serviceable parts inside this equipment. Refer all servicing only to **qualified service personnel**.

Cabinet side panels (Markhon)

To remove the cabinet side panels, either for cabinet complexing or for service requirements, remove the two external Phillips screws, lift up on the side panel approximately 1 to 2 inches, and pull the panel outwardly. If the panel does not release, additional lifting of the panel may be required.

Cabinet side panels (Rittal)

To remove the cabinet side panels, either for cabinet complexing or for service requirements, remove the six internal Phillips screws, lift up on the side panel approximately 1 to 2 inches, and pull the panel outwardly. If the panel does not release, additional lifting of the panel may be required.

Table 88 Non-Conformally Coated HPM ORU Parts List

Name	Description	Part Number
AC/DC Distribution Assembly	AC Only power control and distribution board 230 Vac dual PSMs	51401135-300
AC/DC Distribution Assembly	AC Only power control and distribution board 230 Vac single PSM	51401135-400
CMOS Battery Backup Assembly	PM/APM PS Charger/monitor for CMOS memory	51303968-100
	HPM PS Charger/monitor for CMOS memory	51309206-100
HPMM CARDS/MODULE		
High-Performance Comm/Control	HPMM Communications/Control card	51401635-100 (obsolete) 51403988-150
High-Performance I/O Link	HPMM I/O Link Interface card	51309276-150 51307190-150
HPM UCN Interface	HPMM UCN Interface module	51402573-100 (obsolete) 51402573-250 (obsolete) 51402573-450
IOP CARDS		
HLAI IOP (MU-PAIH02)	High Level Analog Input card (Replaced by 51304754-100)	51304489-100
HLAI IOP (MU-PAIH03)	High Level Analog Input card	51304754-100
LLAI IOP (MU-PAIL02)	Low Level Analog Input card	51304481-100
LLMux IOP (MU-PLAM02)	Low Level Multiplexer card	51304362-100
RHMUX (MU-PRHM01)	Remote Hardened Low Level Multiplexer card	51404109-125
DI IOP (MU-PDIX02)	Digital Input card	51304485-100
DI IOP (MU-PDIY22)	Digital Input card	80363972-100
AO IOP (MU-PAOX02)	Analog Output	51304483-100
AO IOP (MU-PAOX03)	Analog Output card (Replaced by 51309152-175)	51304672-100
AO IOP (MU-PAOX03)	Analog Output card (Conformally Coated)	51309152-175
AO IOP (MU-PAOY22)	Analog Output card	80363969-100
DO IOP (MU-PDOX02)	Digital Output card	51304487-100
DO IOP (MU-PDOY22)	Digital Output card	80363975-100
STI IOP (MU-PSTX02)	Smart Transmitter Interface card (Replaced by 51304516-200)	51304516-100