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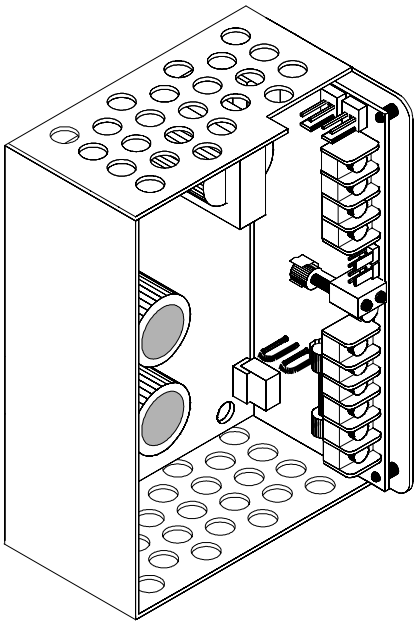

APS-6RF Auxiliary Power Supply

Installation Instructions

Document 50893
4/15/98 Revision: A
PN 50893:A ECN 98-055

Installation Precautions

Adherence to the following will aid in problem-free installation with long-term reliability:

WARNING - *Several different sources of power can be connected to the fire alarm control panel.* Disconnect all sources of power before servicing. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized. Do not attempt to install, service, or operate this unit until this manual is read and understood.

CAUTION - *System Reacceptance Test after Software Changes:* To ensure proper system operation, this product must be tested in accordance with NFPA 72-1993 Chapter 7 after any programming operation or change in site-specific software. Reacceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring.

All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must be tested and proper system operation verified.

This system meets NFPA requirements for operation at 0-49^{O} C/32-120^{O} F and at a relative humidity of 85% RH (non-condensing) at 30^{O} C/86^{O} F. However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and its peripherals be installed in an environment with a nominal room temperature of 15-27^{O} C/60-80^{O} F.

Verify that wire sizes are adequate for all initiating and indicating device loops. Most devices cannot tolerate more than a 10% I.R. drop from the specified device voltage.

Like all solid state electronic devices, this system may operate erratically or can be damaged when subjected to lightning induced transients. Although no system is completely immune from lightning transients and interferences, proper grounding will reduce susceptibility. *Overhead or outside aerial wiring is not recommended, due to an increased susceptibility to nearby lightning strikes.* Consult with the Technical Services Department if any problems are anticipated or encountered.

Disconnect AC power and batteries prior to removing or inserting circuit boards. Failure to do so can damage circuits.

Remove all electronic assemblies prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries from the sides or rear. Before making modifications, verify that they will not interfere with battery, transformer, and printed circuit board location.

Do not tighten screw terminals more than 9 in-lbs. Over tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

This system contains static-sensitive components. Always ground yourself with a proper wrist strap before handling any circuits so that static charges are removed from the body. Use static suppressive packaging to protect electronic assemblies removed from the unit.

Follow the instructions in the installation, operating, and programming manuals. These instructions must be followed to avoid damage to the control panel and associated equipment. FACP operation and reliability depend upon proper installation.

Fire Alarm System Limitations

While installing a fire alarm system may make lower insurance rates possible, it is not a substitute for fire insurance!

An automatic fire alarm system - typically made up of smoke detectors, heat detectors, manual pull stations, audible warning devices, and a fire alarm control with remote notification capability can provide early warning of a developing fire. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire.

Any fire alarm system may fail for a variety of reasons:

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in walls, or roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level or floor of a building. A second floor detector, for example, may not sense a first floor or basement fire. Furthermore, all types of smoke detectors - both ionization and photoelectric types, have sensing limitations. No type of smoke detector can sense every kind of fire caused by carelessness and safety hazards like smoking in bed, violent explosions, escaping gas, improper storage of flammable materials, overloaded electrical circuits, children playing with matches, or arson.

IMPORTANT! ***Smoke detectors*** *must be installed in the same room as the control panel and in rooms used by the system for the connection of alarm transmission wiring, communications, signaling, and/or power.* If detectors are not so located, a developing fire may damage the alarm system, crippling its ability to report a fire.

Audible warning devices such as bells may not alert people if these devices are located on the other side of closed or partly open doors or are located on another floor of a building.

A fire alarm system will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time.

Rate-of-Rise heat detectors may be subject to reduced sensitivity over time. For this reason, the rate-of-rise feature of each detector should be tested at least once per year by a qualified fire protection specialist.

Equipment used in the system may not be technically compatible with the control. It is essential to use only equipment listed for service with your control panel.

Telephone lines needed to transmit alarm signals from a premise to a central monitoring station may be out of service or temporarily disabled.

The most common cause of fire alarm malfunctions, however, is inadequate maintenance. All devices and system wiring should be tested and maintained by professional fire alarm installers following written procedures supplied with each device. System inspection and testing should be scheduled monthly or as required by National and/or local fire codes. Adequate written records of all inspections should be kept.

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1. Overview

Introduction

This document contains information for installing, servicing, and configuring the APS-6RF Auxiliary Power Supply. Table 1 contains a list of document sources for supplemental information:

Control Panels	Refer to...	Part Number
Sensiscan 2000	Sensiscan 2000 Installation Manual	15017
Sensiscan 200	Sensiscan 200 Manual	15032
All	Fire•Lite Device Compatibility Document	15384

Table 1 Supplemental Documentation

Description

The APS-6RF Auxiliary Power Supply is a 150W cabinet-mounted power supply, designed to power devices that require filtered, regulated, non-resettable power, such as Notification Appliance Circuit Modules and Control Modules. The APS-6RF provides two 24 VDC (filtered) output circuits (3 A each, 6 A total, 4 A continuous). Figure 1 shows an exploded view of the APS-6RF that identifies the features and components of the power supply:

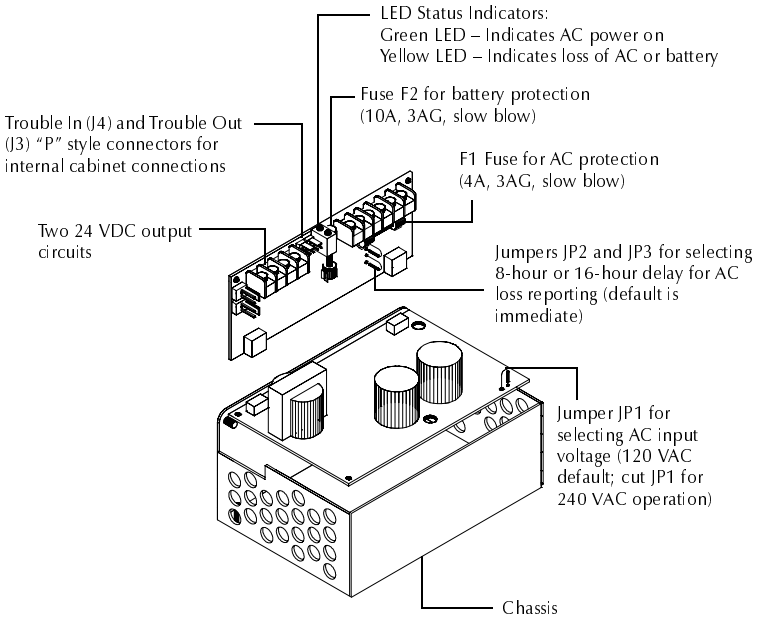

Figure 1 APS-6RF Assembly

Specifications

The APS-6RF is compatible with the Sensiscan 2000, and Sensiscan 200 control panels. Specifications for the APS-6RF are:

Electrical Specifications	
AC primary input power (TB1) Wire Size: #14 AWG with 600 VAC insulation	120 VAC, 60 Hz, 2.5 A 240 VAC, 50 Hz, 1.2 A
24 VDC Secondary input power (lead-acid batteries only) TB3-1 (+) TB3-1 (–)	Current draw with AC power loss 25 mA DC standby current 16 mA DC standby current (with AC fail delay operating) 6 amps maximum alarm current
Use these values in battery calculations for Fire Alarm Control Panel. **Note**: Batteries are charged by the system power supply.	
24 VDC output power (TB2) Circuit 1 (TB2-1, TB2-2; or J1) Circuit 2 (TB2-3, TB2-4; or J2)	Total 6 A (4 A continuous) 3 A @24 VDC power-limited (+10, –15%) 3 A @24 VDC power-limited (+10, –15%)
Fuses F1 (AC supervision) F2 (battery supervision)	 250 VAC, 4A, 3 AG, slow blow 32 VAC, 10 A, 3 AG, slow blow
Trouble supervision bus J3 output J4 input Note: J3 and J4 can be interchanged.	 Form-A contact (open collector) Form-A contact (open collector)
Loss of AC Indication	Immediate indication (default) 8 hour delay (cut JP2) 16 hour delay (cut JP2 and JP3)
Mechanical Specifications	
Size of APS-6RF in enclosure	6.09 in. x 4.23 in. x 2.92 in.
Cabinets for mounting	CAB-A3F or CAB-B3F, using CHS-4F chassis, for Sensiscan 2000 control panel. **Sensiscan 200** can mount one APS-6RF.
Note: An optional module (such as an IC-4F) without an expansion card can mount above an APS-6RF in a CHS-4F and a Sensiscan 200.	

Table 2 APS-6RF Specifications

2. Installation

WARNING: Use extreme caution when working with the APS-6RF—high voltage and AC line-connected circuits are present in the APS-6RF. Turn off and remove all power sources. To reduce the risk of electric shock—make sure to properly ground the APS-6RF.

Before field wiring, install the APS-6RF cover (Figure 4 on page 7). When finished field wiring, install the press-fit terminal block cover (Figure 4 on page 7) over TB1.

Introduction

This section contains instructions for field-wiring the APS-6RF to a control panel, field-wiring multiple APS-6RFs, and mounting the APS-6RF. Table 3 contains the installation topics covered in detail:

Topic	Refer to...
Mounting the APS-6RF to a CAB-200 Backbox	Figure 2 on page 5
Mounting the APS-6RF to a CAB-A3F, CAB-B3F	Figure 3 on page 6
Installing the Plastic Cover	Figure 4 on page 7
Wiring the APS-6RF	Figure 5 on page 8
Wiring Multiple APS-6RFs	Figure 6 on page 9
Connecting the APS-6RF to an IC-4F/ICE-4F Module	Figure 7 on page 11
Configuring the APS-6RF	Figure 8 on page 12
Servicing the APS-6RF	Figure 9 on page 13

Table 3 Installation Topics

Mounting the APS-6RF

This section contains instructions for mounting the APS-6RF to the following:

- CAB-200 Backbox
- CAB-A3F or CAB-B3F cabinets

Mounting an APS-6RF in a CAB-200 Backbox

Mount the APS-6RF to a CAB-200 as shown in Figure 2. To mount the APS-6RF, follow these instructions:

1. Place the APS-6RF onto the mounting studs in the CAB-200 (Figure 2).
2. Insert a standoff through each of the APS-6RF mounting slots; then thread each standoff to the mounting stud.
3. Tighten the standoffs until the APS-6RF is securely fastened to the CAB-200.
4. Install the APS-6RF plastic cover (Figure 4 on page 7) and the press-fit terminal block cover over TB1 AC connections.

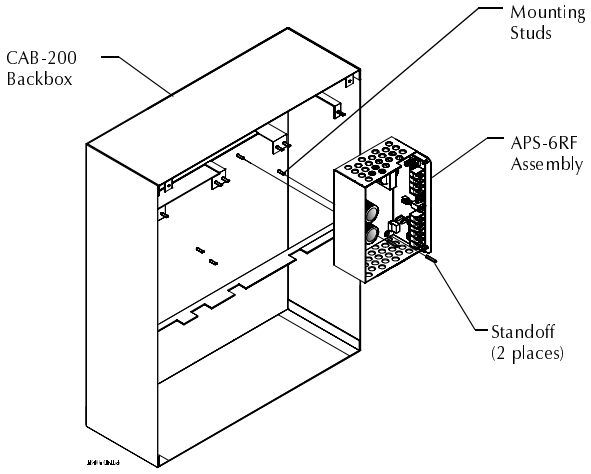

Figure 2 Mounting an APS-6RF to a CAB-200 Backbox

Mounting an APS-6RF in a CAB-A3F or CAB-B3F

An APS-6RF can mount to a CHS-4F (Figure 3) chassis for use in a CAB-A3F or CAB-B3F cabinet. To mount the APS-6RF, follow these instructions:

1. Place the APS-6RF onto the mounting studs of the CHS-4F chassis.
2. Insert a standoff through each of the APS-6RF mounting slots; then thread each standoff to the mounting stud on the chassis.
3. Tighten the standoffs until the APS-6RF is securely fastened to the chassis.
4. Mount the CHS-4F to the cabinet backbox.
5. Install the APS-6RF plastic cover (Figure 4 on page 7) and the press-fit terminal block cover over TB1 AC connections.

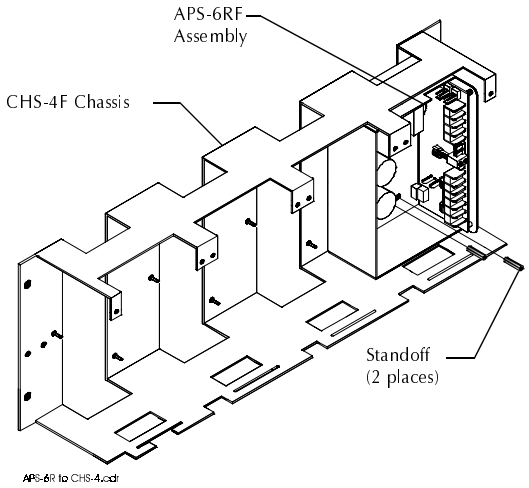

Figure 3 Mounting the APS-6RF to a CHS-4F Chassis

Wiring the APS-6RF

WARNING: Use extreme caution when working with the APS-6RF—high voltage and AC line-connected circuits are present in the APS-6RF. Turn off and remove all power sources. To reduce the risk of electric shock—make sure to properly ground the APS-6RF.

Before field wiring, install the APS-6RF cover (Figure 4 on page 7). When finished field wiring, install the press-fit terminal block cover (Figure 4 on page 7) over TB1.

This section contains instructions for wiring the APS-6RF assembly as follows:

- Typical field wiring from an APS-6RF to a control panel and optional devices.
- Wiring multiple APS-6RF power supplies.

Installing the Plastic Cover

Install the plastic cover as follows:

1. Insert the tabs into the slots on the APS-6RF chassis (Figure 4).
2. Snap the plastic cover into place as shown in Figure 4.
3. Install the press-fit terminal block cover over TB1 AC connections.

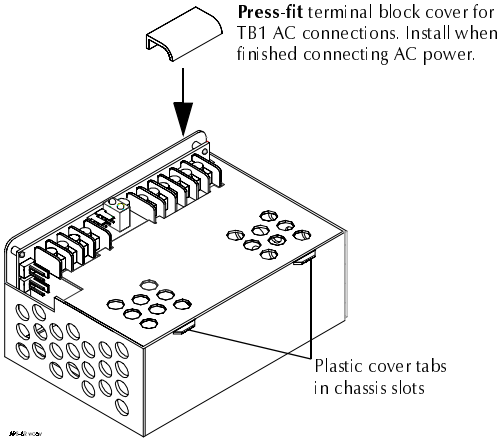

Figure 4 APS-6RF with the Plastic Cover

Field Wiring an APS-6RF

WARNING: Use extreme caution when working with the APS-6RF—high voltage and AC line-connected circuits are present in the APS-6RF. Turn off and remove all power sources. To reduce the risk of electric shock—make sure to properly ground the APS-6RF.

Before field wiring, install the APS-6RF cover (Figure 4 on page 7). When finished field wiring, install the press-fit terminal block cover (Figure 4 on page 7) over TB1.

Figure 5 shows typical field wiring for an APS-6RF:

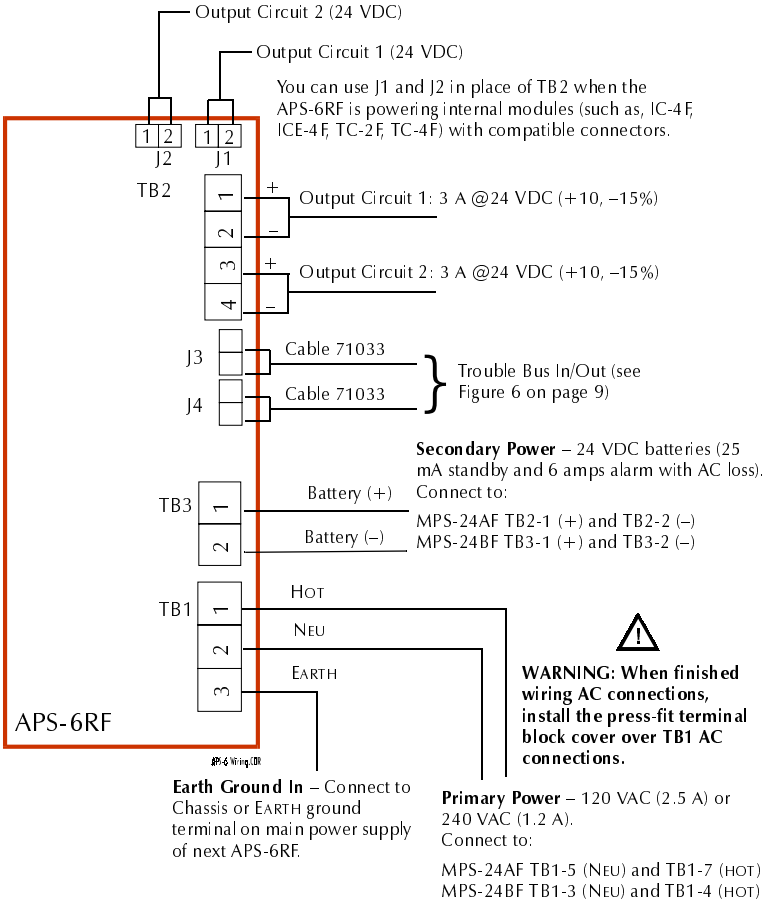

Figure 5 Typical Wiring for an APS-6RF

Connecting Multiple APS-6RF Power Supplies

WARNING: Use extreme caution when working with the APS-6RF—high voltage and AC line-connected circuits are present in the APS-6RF. Turn off and remove all power sources. To reduce the risk of electric shock—make sure to properly ground the APS-6RF.

Before field wiring, install the APS-6RF cover (Figure 4 on page 7). When finished field wiring, install the press-fit terminal block cover (Figure 4 on page 7) over TB1.

Figure 6 shows typical trouble bus connections for multiple APS-6RF power supplies using trouble connectors J3 and J4:

Notes:
1. Use Cable 71033 or 75098 (same cables; different lengths) for all wiring.
2. APS-6RF J3 and J4 and AVPS-24F P1 and P2 can be interchanged.

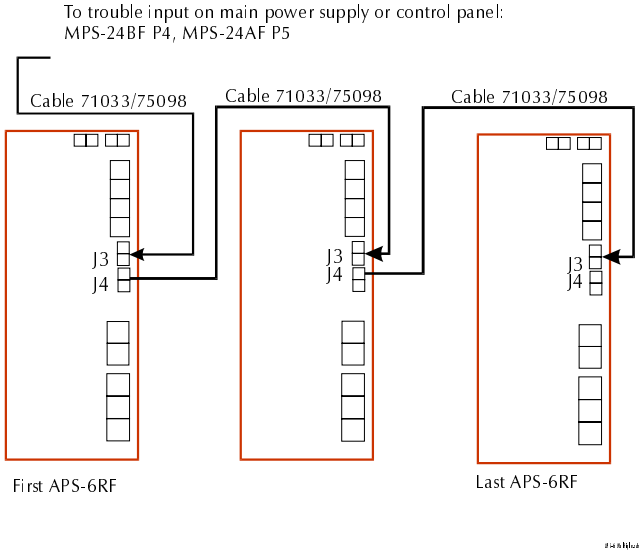

Figure 6 Trouble Bus Connections for Multiple APS-6RF Power Supply Configurations

Wiring Applications

WARNING: Use extreme caution when working with the APS-6RF—high voltage and AC line-connected circuits are present in the APS-6RF. Turn off and remove all power sources. To reduce the risk of electric shock—make sure to properly ground the APS-6RF.

Before field wiring, install the APS-6RF cover (Figure 4 on page 7). When finished field wiring, install the press-fit terminal block cover (Figure 4 on page 7) over TB1.

This section contains instructions for wiring the APS-6RF assembly as follows:

- Connecting the APS-6RF to an IC-4F/ICE-4F module

Connecting the APS-6RF to an IC-4F/ICE-4F Module

WARNING: Use extreme caution when working with the APS-6RF—high voltage and AC line-connected circuits are present in the APS-6RF. Turn off and remove all power sources. To reduce the risk of electric shock—make sure to properly ground the APS-6RF.

Before field wiring, install the APS-6RF cover (Figure 4 on page 7). When finished field wiring, install the press-fit terminal block cover (Figure 4 on page 7) over TB1.

Figure 7 shows typical connections for wiring an APS-6RF to any IC-4F /ICE-4F module:

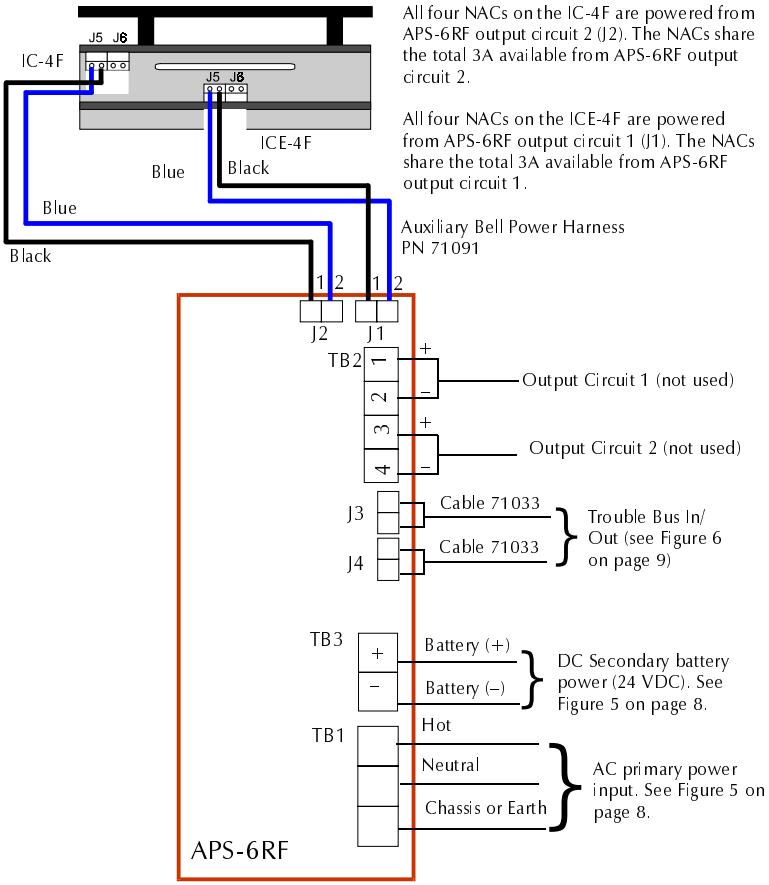

Figure 7 Typical APS-6RF Wiring to an IC-4F/ICE-4F Module

Configuring the APS-6RF

WARNING: Use extreme caution when working with the APS-6RF—high voltage and AC line-connected circuits are present in the APS-6RF. Turn off and remove all power sources. To reduce the risk of electric shock—make sure to properly ground the APS-6RF.

Before field wiring, install the APS-6RF cover (Figure 4 on page 7). When finished field wiring, install the press-fit terminal block cover (Figure 4 on page 7) over TB1.

Figure 8 shows how to configure the APS-6RF for the following:

- 8-hour delay for reporting loss of AC: cut jumper JP2.
- 16-hour delay for reporting loss of AC: cut jumper JP2 and JP3.
- 120 VAC/240 VAC operation.

Figure 8 contains an exploded view of the APS-6RF, that shows the location of jumpers JP2 and JP3.

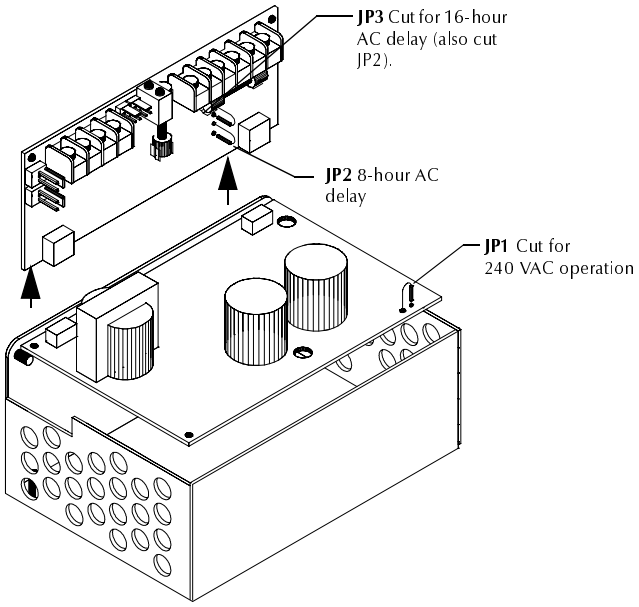

Figure 8 Configuring the APS-6RF

Servicing the APS-6RF

WARNING: Use extreme caution when working with the APS-6RF—high voltage and AC line-connected circuits are present in the APS-6RF. Turn off and remove all power sources. To reduce the risk of electric shock—make sure to properly ground the APS-6RF.

Before field wiring, install the APS-6RF cover (Figure 4 on page 7). When finished field wiring, install the press-fit terminal block cover (Figure 4 on page 7) over TB1.

The only serviceable components on the APS-6RF are fuses F1 and F2. If a fuse fails, replace with a fuse of the same type and rating (see specs). If replacing fuse F1 (AC), remove the vertical PC board as follows:

1. Turn off and remove all power sources.
2. Remove the two retaining screws (Figure 9).
3. Unplug the vertical PC board from the connectors as shown in Figure 9.

Figure 9 contains an exploded view of the APS-6RF that shows how to remove the APS-6RF PC boards from the chassis.

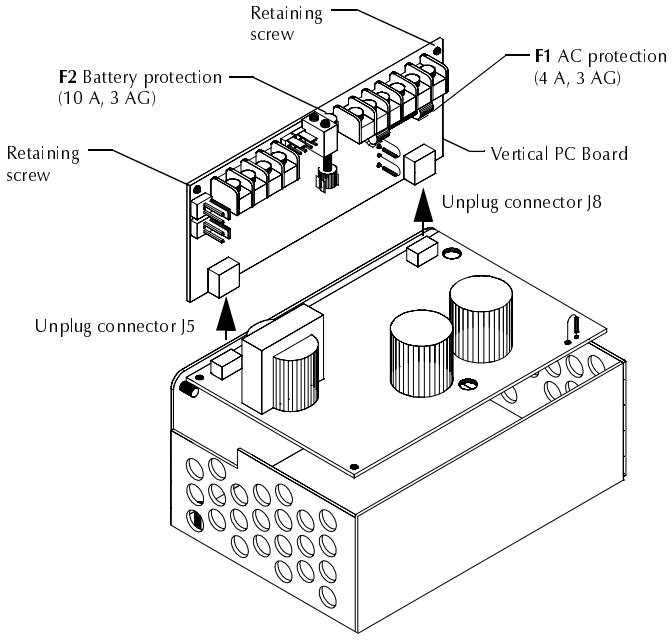

Figure 9 Servicing the APS-6RF

Notes

Notes

Limited Warranty

Fire-Lite® warrants its products to be free from defects in materials and workmanship for eighteen (18) months from the date of manufacture, under normal use and service. Products are date stamped at time of manufacture. The sole and exclusive obligation of **Fire-Lite**® is to repair or replace, at its option, free of charge for parts and labor, any part which is defective in materials or workmanship under normal use and service. For products not under **Fire-Lite**® manufacturing date-stamp control, the warranty is eighteen (18) months from date of original purchase by **Fire-Lite**®'s distributor unless the installation instructions or catalog sets forth a shorter period, in which case the shorter period shall apply. This warranty is void if the product is altered, repaired or serviced by anyone other than **Fire-Lite**® or its authorized distributors or if there is a failure to maintain the products and systems in which they operate in a proper and workable manner. In case of defect, secure a Return Material Authorization form from our customer service department. Return product, transportation prepaid, to **Fire-Lite**®, 12 Clintonville Road, Northford, Connecticut 06472-1653.

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