

Auxiliary Power Supply
APS2-6R/E
Instruction Manual



Fire Alarm & Emergency Communication System Limitations

While a life safety system may lower insurance rates, it is not a substitute for life and property 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 panel (FACP) 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.

An emergency communication system—typically made up of an automatic fire alarm system (as described above) and a life safety communication system that may include an autonomous control unit (ACU), local operating console (LOC), voice communication, and other various interoperable communication methods—can broadcast a mass notification message. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire or life safety event.

The Manufacturer recommends that smoke and/or heat detectors be located throughout a protected premises following the recommendations of the current edition of the National Fire Protection Association Standard 72 (NFPA 72), manufacturer's recommendations, State and local codes, and the recommendations contained in the Guide for Proper Use of System Smoke Detectors, which is made available at no charge to all installing dealers. This document can be found at <http://www.systemsensor.com/appguides/>. A study by the Federal Emergency Management Agency (an agency of the United States government) indicated that smoke detectors may not go off in as many as 35% of all fires. While fire alarm systems are designed to provide early warning against fire, they do not guarantee warning or protection against fire. A fire alarm system may not provide timely or adequate warning, or simply may not function, for a variety of reasons:

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in or behind walls, on 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.

Particles of combustion or "smoke" from a developing fire may not reach the sensing chambers of smoke detectors because:

- Barriers such as closed or partially closed doors, walls, chimneys, even wet or humid areas may inhibit particle or smoke flow.
- Smoke particles may become "cold," stratify, and not reach the ceiling or upper walls where detectors are located.
- Smoke particles may be blown away from detectors by air outlets, such as air conditioning vents.
- Smoke particles may be drawn into air returns before reaching the detector.

The amount of "smoke" present may be insufficient to alarm smoke detectors. Smoke detectors are designed to alarm at various levels of smoke density. If such density levels are not created by a developing fire at the location of detectors, the detectors will not go into alarm.

Smoke detectors, even when working properly, have sensing limitations. Detectors that have photoelectronic sensing chambers tend to detect smoldering fires better than flaming fires, which have little visible smoke. Detectors that have ionizing-type sensing chambers tend to detect fast-flaming fires better than smoldering fires. Because fires develop in different ways and are often unpredictable in their growth, neither type of detector is necessarily best and a given type of detector may not provide adequate warning of a fire.

Smoke detectors cannot be expected to provide adequate warning of fires caused by arson, children playing with matches (especially in bedrooms), smoking in bed, and violent explosions (caused by escaping gas, improper storage of flammable materials, etc.).

Heat detectors do not sense particles of combustion and alarm only when heat on their sensors increases at a predetermined rate or reaches a predetermined level. 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. Heat detectors are designed to protect property, not life.

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, compromising its ability to report a fire.

Audible warning devices such as bells, horns, strobes, speakers and displays 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. Any warning device may fail to alert people with a disability or those who have recently consumed drugs, alcohol, or medication. Please note that:

- An emergency communication system may take priority over a fire alarm system in the event of a life safety emergency.
- Voice messaging systems must be designed to meet intelligibility requirements as defined by NFPA, local codes, and Authorities Having Jurisdiction (AHJ).
- Language and instructional requirements must be clearly disseminated on any local displays.
- Strobes can, under certain circumstances, cause seizures in people with conditions such as epilepsy.
- Studies have shown that certain people, even when they hear a fire alarm signal, do not respond to or comprehend the meaning of the signal. Audible devices, such as horns and bells, can have different tonal patterns and frequencies. It is the property owner's responsibility to conduct fire drills and other training exercises to make people aware of fire alarm signals and instruct them on the proper reaction to alarm signals.
- In rare instances, the sounding of a warning device can cause temporary or permanent hearing loss.

A life safety system will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time and only if the batteries have been properly maintained and replaced regularly.

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

Telephone lines needed to transmit alarm signals from a premises to a central monitoring station may be out of service or temporarily disabled. For added protection against telephone line failure, backup radio transmission systems are recommended.

The most common cause of life safety system malfunction is inadequate maintenance. To keep the entire life safety system in excellent working order, ongoing maintenance is required per the manufacturer's recommendations, and UL and NFPA standards. At a minimum, the requirements of NFPA 72 shall be followed. Environments with large amounts of dust, dirt, or high air velocity require more frequent maintenance. A maintenance agreement should be arranged through the local manufacturer's representative. Maintenance should be scheduled as required by National and/or local fire codes and should be performed by authorized professional life safety system installers only. Adequate written records of all inspections should be kept.

Limit-D2-2016

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 inter-connecting cables while the unit is energized. Do not attempt to install, service, or operate this unit until manuals are read and understood.

CAUTION - System Re-acceptance Test after Software

Changes: To ensure proper system operation, this product must be tested in accordance with NFPA 72 after any programming operation or change in site-specific software. Re-acceptance 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 also be tested and proper system operation verified.

This system meets NFPA requirements for operation at 0-49° C / 32-120° F and at a relative humidity 93% ± 2% RH (non-condensing) at 32°C ± 2°C (90°F ± 3°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 normal room temperature of 15-27° C/60-80° 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 interference, 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, or 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.

Units with a touchscreen display should be cleaned with a dry, clean, lint free/microfiber cloth. If additional cleaning is required, apply a small amount of Isopropyl alcohol to the cloth and wipe clean. Do not use detergents, solvents, or water for cleaning. Do not spray liquid directly onto the display.

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.

Precau-D2-11-2017

FCC Warning

WARNING: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual may cause interference to radio communications. It has been tested and found to comply with the limits for class A computing devices pursuant to Subpart B of Part 15 of FCC Rules, which is designed to provide reasonable protection against such interference when devices are operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user will be required to correct the interference at his or her own expense.

Canadian Requirements

This digital apparatus does not exceed the Class A limits for radiation noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

HARSH™, NIS™, and NOTI-FIRE-NET™ are all trademarks; and Acclimate® Plus™, eVance®, FlashScan®, FAAST Fire Alarm Aspiration Sensing Technology®, Honeywell®, Intelligent FAAST®, NOTIFIER®, ONYX®, ONYXWorks®, SWIFT®, VeriFire®, and VIEW® are all registered trademarks of Honeywell International Inc. Microsoft® and Windows® are registered trademarks of the Microsoft Corporation. Chrome™ and Google™ are trademarks of Google Inc. Firefox® is a registered trademark of The Mozilla Foundation.

©2019 by Honeywell International Inc. All rights reserved. Unauthorized use of this document is strictly prohibited.

Software Downloads

In order to supply the latest features and functionality in fire alarm and life safety technology to our customers, we make frequent upgrades to the embedded software in our products. To ensure that you are installing and programming the latest features, we strongly recommend that you download the most current version of software for each product prior to commissioning any system. Contact Technical Support with any questions about software and the appropriate version for a specific application.

Documentation Feedback

Your feedback helps us keep our documentation up-to-date and accurate. If you have any comments or suggestions about our online Help or printed manuals, you can email us.

Please include the following information:

- Product name and version number (if applicable)
- Printed manual or online Help
- Topic Title (for online Help)
- Page number (for printed manual)
- Brief description of content you think should be improved or corrected
- Your suggestion for how to correct/improve documentation

Send email messages to:

FireSystems.TechPubs@honeywell.com

Please note this email address is for documentation feedback only. If you have any technical issues, please contact Technical Services.

Table of Contents

Section 1: Introduction	6
1.1: Installation Standards and Codes	6
1.2: UL 864 9th and 10th Edition	6
1.3: Compatible Equipment	6
1.4: Related Documentation	6
1.5: Cautions, Warnings, and Notes	7
Section 2: Overview	8
2.1: Description	8
2.2: Features	8
2.3: Specifications	8
2.4: Board Layout	10
Section 3: Installation	11
3.1: Mounting Options	11
3.1.1: In a CAB-3/4 Series Backbox	11
3.1.2: In an AFP-200 Cabinet	11
3.2: UL Power-limited Wiring Requirements	12
3.3: Wiring an APS2-6R	12
3.3.1: Field Wiring	12
3.3.2: AC Fail/Brownout Detection	12
3.3.3: Trouble Supervision Bus	13
3.3.4: Connecting Multiple APS2-6R Power Supplies	13
3.4: Configuring the APS2-6R	13
3.5: Servicing the APS2-6R	14
Appendix A: UL 864 10th Edition Configurations	15
A.1: NFS2-3030	15
A.1.1: Connecting to the AMPS-24 and NFS2-3030	15
A.2: NFS2-640 and NFS-320	16
A.2.1: Connecting to the CPS-24 and CPU2-640/NFS-320	16
Appendix B: UL 864 8th Edition Configurations	18
B.1: Panel Circuits	18
B.2: AFP-200	19
B.2.1: Connecting the APS2-6R to the AFP-200	19
B.3: AFP-300/AFP-400	20
B.3.1: Connecting to the MPS-400 Power Supply	20
B.4: AM2020/AFP-1010 and System 5000	21
B.4.1: Connecting the APS2-6R to an MPS-24A	21
B.4.2: Connecting to an MPS-24B/RB	22
B.5: NFS-640	23
B.5.1: Connecting to a CPU-640	23
B.6: NFS-3030	24
B.6.1: Connecting to the AMPS-24 and CPU-3030	24
B.7: XPIQ Transponder	25
B.7.1: Connecting to the XPIQ-MB and XPIQ-PS	25
Index	26

Section 1: Introduction

This document contains information for installing, servicing, and configuring the APS2-6R Auxiliary Power Supply. Section 1.4 lists part numbers for manuals of compatible equipment such as control panels.

1.1 Installation Standards and Codes

This power supply complies with the standards set forth by the following regulatory agencies:

NFPA Standards

- NFPA 72 National Fire Alarm Code

Underwriters Laboratories:

- UL 864 Standard for Control Units and Accessories for Fire Alarm Systems
- ULC-S527-11 Standard for Control Units for Fire Alarm Systems

In addition, the installer should be familiar with the following standards:

- NEC Article 300 Wiring Methods
- Applicable Local and State Building Codes
- Requirements of the Local Authority Having Jurisdiction
- The Canadian Electrical Code, Part 1

1.2 UL 864 9th and 10th Edition

- Per the UL Continuing Certification Program, UL 864 9th edition fire alarm control equipment will retain certification after the rollout of UL 10th edition (12/2/2018).
- Installations of UL 864 10th Edition certified equipment are permitted to use UL864 9th Edition certified equipment when approved by the local Authority Having Jurisdiction (AHJ).

For product compliance, refer to the UL/ULC listing cards located on the UL online certification directory.

<http://iq.ulprospector.com>

The following products have not received UL 864 9th or 10th Edition certification and may only be used in retrofit applications. Operation of the APS2-6R/E with products not tested for UL 864 9th or 10th Editions have not been evaluated and may not comply with NFPA 72 and/or the latest edition of UL 864. These applications will require the approval of the local Authority Having Jurisdiction (AHJ).

- XPIQ
- System 5000
- AM2020/AFP1010
- AFP-200
- XP Series
- NFS-3030
- NFS-640
- AFP-300/AFP-400
- ICM/ICE

1.3 Compatible Equipment

For a complete list of compatible devices, refer to the *Device Compatibility Document*.

- NFS2-3030
- NFS2-640
- NFS-320
- NFS-3030
- NFS-640
- AM 2020/AFP-1010
- System 5000
- APS-6R
- HS-NCM Series
- AFP-300/400
- AFP-200
- IPDACT-2
- Noti•Fire Net Gateway
- BACNet Gateway
- RM-1
- XPIQ
- Notifier Web Server
- ACS Series Annunciators

1.4 Related Documentation

The table below contains a list of document sources for supplemental information:

Document Name	Part Number
NFS2-3030 Installation Manual	52544
NFS2-640 Installation Manual	52741
NFS-320 Installation Manual	52745
NFS-3030 Installation Manual	51330
NFS-640 Installation Manual	51332
AM2020/AFP1010 Manual	15088
AFP-200 Manual	15511
AFP-300/AFP-400 Manual	50253
System 5000 Installation Manual	15583
XPIQ Transponder Manual	51013
ACS Annunciator Manual	15842
LCD-160 Manual	51850
LCD-80 Manual	15037
XP6-C Transponder Installation Document	156-1805-012
XP Series Transponder Manual	15888
XP5 Series Transponder Manual	50786
CAB-3/4 Series Cabinets Installation Document	15330
EQ Cabinet Series Installation Instructions	53412

Document Name	Part Number
IPDACT Series Installation Document	53109
NWS Notifier Web Server Manual	51990
RM-1 Remote Microphone Installation Document	51138
OnyxWorks NFN Gateway (PC Platform)	52307
OnyxWorks NFN Gateway (Embedded Platform)	52306
BACNet Gateway	51659
HS-NCM Series Installation Document	54014
Notifier Device Compatibility Document	15378

1.5 Cautions, Warnings, and Notes

This manual contains cautions, warnings, and notes to alert the reader as follows:



CAUTION: SUMMARY

INFORMATION ABOUT PROCEDURES THAT COULD CAUSE PROGRAMMING ERRORS, RUNTIME ERRORS, EQUIPMENT DAMAGE.



WARNING: SUMMARY

INDICATES INFORMATION ABOUT PROCEDURES THAT COULD CAUSE IRREVERSIBLE EQUIPMENT DAMAGE, IRREVERSIBLE LOSS OF PROGRAMMING DATA, OR PERSONAL INJURY.



NOTE: Supplemental information for a topic, such as tips and references.

Section 2: Overview

2.1 Description

The APS2-6R Auxiliary Power Supply is a 150W cabinet-mounted power supply, designed to power devices that require filtered, non-resettable power. The APS2-6R provides three 24 VDC (filtered) output circuits.

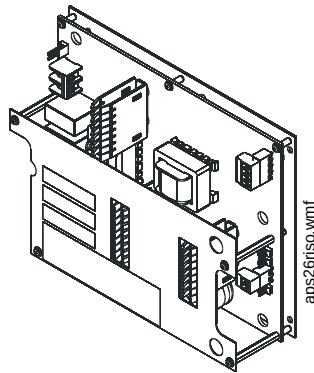


Figure 2.1 APS2-6R Auxiliary Power Supply



NOTE: Unless otherwise indicated in this manual, the name APS2-6R refers to both the APS2-6R and APS2-6RE.

2.2 Features

- Integrated AC/DC power supply operating from a nominal 120V (220-240V for APS2-6RE version)
- Three (3) 24 VDC output circuits (6A total during a fire alarm, 4A continuous power)
 - Two (2) special application, filtered, power-limited 24 VDC outputs each rated at 3A
 - One (1) special application, filtered, non-power-limited 24 VDC output rated at 6A
- Immediate brownout detection (default) and reporting via trouble bus or relay contacts
- Delayed one to two (1-2) hour(s), or two to three (2-3) hours brownout reporting via trouble bus
- Battery voltage supervision
- Disconnect of deeply discharged battery (low battery disconnect)
- Trouble supervision bus by Form A contact
- UL 864 10th Edition compliant

2.3 Specifications

■ AC Power - TB1

APS2-6R - 120VAC, 50/60 Hz, 2.9A max

APS2-6RE - 220-240 VAC, 50/60 Hz, 1.5A max

Earth Ground - Connects to chassis or earth ground terminal on main power supply. If two units are connected, the second unit connects to earth ground on the previous APS2-6R in the chain.

Supervised

Wire Size: 12-14 AWG (3.31-2.08 mm²) with 600 VAC insulation

■ 24 VDC Secondary Input Power (Battery Connection) - TB3

41 mA DC standby current

Supervised

Wire Size: 12-14 AWG (3.31 - 2.08 mm²)

Batteries (2) must be installed in the same or closely coupled separate cabinet which is to be mounted up to 20 feet (6.096 m) away from the APS2-6R, in the same room. When a separate cabinet is used, wiring must be in conduit.



NOTE: The APS2-6R is not equipped with a battery charger. Batteries are charged by the system power supply.

■ 24 VDC Output Power - TB2

Total 6A (4A continuous) power

Two (2) Class B power-limited circuits - 3A @ 24 VDC (20V - 26.39V) each

Supervised by an end-of-line listed power supervision relay

Wire Size: 12-18 AWG (3.31 - 0.82mm²)

Special applications- refer to the *Device Compatibility Document*.



NOTE: The APS2-6R can provide up to 6A for releasing applications, limited by the FCM-1-REL.

■ 24 VDC Output Power - J9

Total 6A (4A continuous) power

One (1) Class B non-power-limited circuit - 6A @ 24 VDC (20V - 26.39V)

Supervised by the XPIQ transponder or a UL-listed end-of-line power supervision relay

Cable: P/N 75121 only

Special applications- refer to Section 3.3.1



NOTE: The combined total of all three output circuits is 6A during a fire alarm or 4A of continuous power.

■ Trouble Supervision Bus - J3, J4

J3 output, J4 input

Form-A contact (open collector)

Cable: P/N 71033

For trouble supervision, connect cable p/n 71033 from J3 to a trouble bus connection of a fire panel, main power supply or J4 of another APS2-6R. Sections 3.3.3, 3.3.4, and A.1.1

■ Fuse - F2

F2-Battery Supervision: 32 VAC, 10A, MINI® Fast-Acting Automotive Blade Fuse (serviceable, replacement P/N 12067)

■ Loss of AC Indication - TB4 (UL 864 10th Edition Applications)

Monitored by FMM-1 or equivalent monitor module over the SLC

Wire Size: 12-18 AWG (3.31 - 0.82mm²), UL1015, stranded.

Immediate indication provided by the relay contacts for local notification. The FACP follows its own programmed schedule for failure reporting.

■ Combining Troubles - JP4 (UL 864 8th Edition Applications)

Installation of the shunt across jumper JP4 provides compatibility with retrofit applications by combining all existing troubles. JP1 and JP2 can be used to delay AC trouble reporting. See Section 3.4 for more information.

Removal of the shunt from JP4 separates the AC loss trouble from other existing troubles and works with the TB4 relay contacts for immediate trouble annunciation.

■ Diagnostic LEDs

LED1- Green- Indicates presence of AC power

LED2- Yellow- Illuminates when an AC or battery trouble exists

2.4 Board Layout

The figures below identify the layout of the APS2-6R power supply:

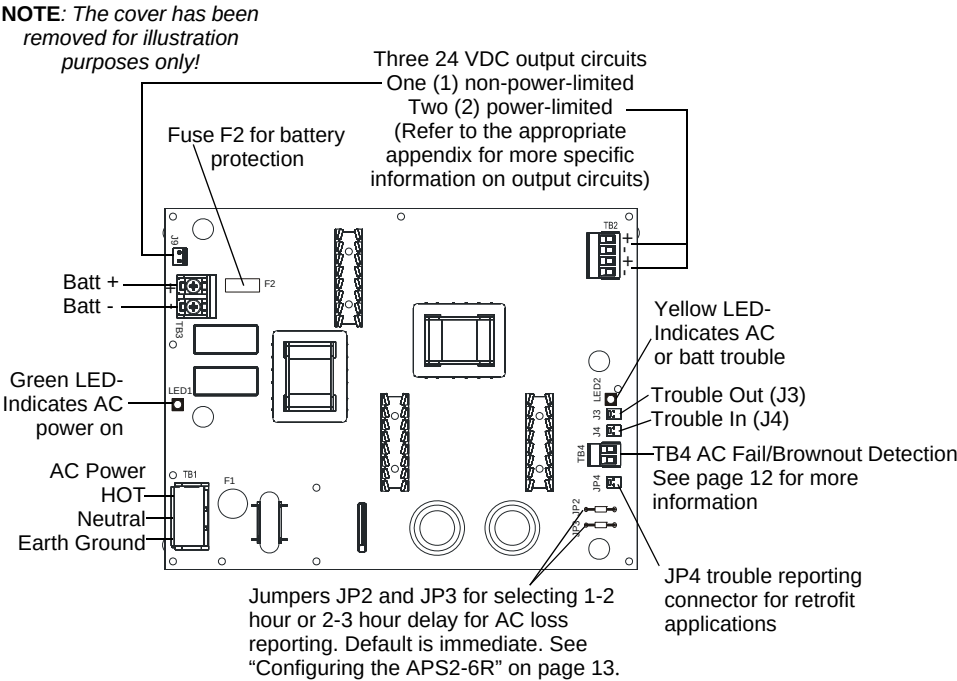


Figure 2.2 APS2-6R Board Layout

Hardware Kit

A hardware kit is included for use in assembling and mounting the APS2-6R. It consists of the following items:

Quantity	Description	Part No.
2	#6-32 x 1.25 in. (10 mm) long,.25 in. (2mm) hex standoff	42026
2	#6-32 self-tapping screw	38164
1	Trouble supervision cable	71033

Table 2.1 Hardware Kit Components

Section 3: Installation



WARNING: HIGH VOLTAGES PRESENT

USE EXTREME CAUTION WHEN WORKING WITH THE APS2-6R. HIGH VOLTAGE AND AC LINE-CONNECTED CIRCUITS ARE PRESENT. TURN OFF AND REMOVE ALL POWER SOURCES. TO REDUCE THE RISK OF ELECTRIC SHOCK MAKE SURE TO PROPERLY GROUND THE UNIT. BE SURE TO APPLY AND TEST AC POWER BEFORE CONNECTING BATTERIES.



NOTE: A surge suppressor, model EDCO HSP121BT-1RU (for 120VAC operations), is required when using the FCM-1-REL for releasing applications. The APS2-6RE power supply is not suitable for releasing.

3.1 Mounting Options

3.1.1 In a CAB-3/4 Series Backbox

The APS2-6R can be mounted into a CAB-3/4 Series backbox using the CHS-4 Series chassis. For more information on mounting the chassis to the backbox, refer to the *CAB-3/4 Series Installation Document*.

1. Place the APS2-6R onto the mounting studs of the chassis. See Figure 3.1 below.
2. Insert a standoff through both of the printed circuit board mounting holes, threading each standoff to the mounting studs on the chassis. Use two (2) #6-32 x 1.25" hex standoffs.
3. Tighten the standoffs until the APS2-6R is securely fastened to the chassis.

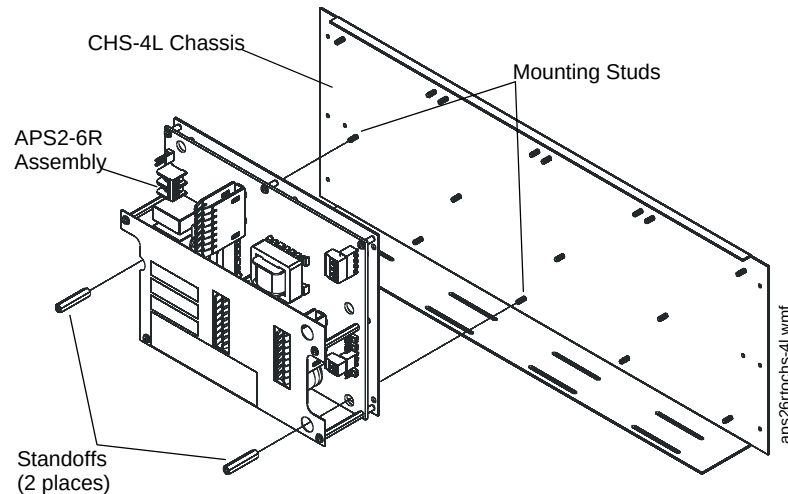


Figure 3.1 Mounting an APS2-6R to a CHS-4L Chassis



NOTE: The illustration above shows an APS2-6R being mounted in a CHS-4L chassis. Mounting in a CHS-4 is accomplished in the same way.

3.1.2 In an AFP-200 Cabinet

The APS2-6R mounts behind the AFP-200 Fire Alarm Control Panel (FACP). The AFP-200 must be removed in order to mount the APS2-6R power supply. For information on wiring the APS2-6R to the AFP-200, refer to Section B.2 on page 19 and the *AFP-200 Installation Manual*.

1. Disconnect all power sources.
2. Access the AFP-200 cabinet to remove the FACP. Remove the CPU board assembly by unscrewing the four screws in the corners of the board. Set the CPU board aside in a safe, clean place. Avoid static discharge which may damage the board.
3. Align the APS2-6R over the mounting holes of the cabinet. Observe orientation of the power supply when installing it into the cabinet. See Figure 3.2 below.
4. Insert a self-tapping screw, from the hardware kit, through each of the printed circuit board mounting holes, threading each screw to the mounting holes on the cabinet.
5. Tighten the screws until the APS2-6R is securely fastened to the cabinet.

6. Reinstall the AFP-200 CPU board assembly.

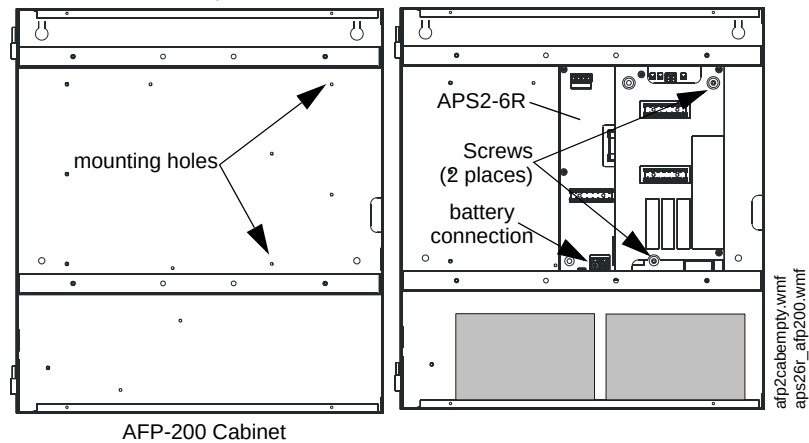


Figure 3.2 Mounting an APS2-6R into an AFP-200 Cabinet

3.2 UL Power-limited Wiring Requirements

Power-limited wiring must remain separated from non-power-limited wiring by at least 0.25 in. (6.4 mm), and must enter the enclosure through different knockouts. Install tie wraps and adhesive squares to secure the wiring.

3.3 Wiring an APS2-6R

3.3.1 Field Wiring

Output Circuit #3 (J9) can be used as a source of power for the XPIQ Audio Transponder only. See Section B.7 for wiring connections. For primary and secondary power connections, see the appropriate appendix for specific system information.



WARNING: HIGH VOLTAGE

WHEN FINISHED WIRING AC CONNECTIONS, SECURE TERMINAL BLOCK COVER ON TB1.

3.3.2 AC Fail/Brownout Detection

The APS2-6R monitors for power loss. In the event there is an AC failure or brownout, the APS2-6R will switch to battery back-up. The AC Fail Relay (TB4) is monitored by an FMM-1 or equivalent monitor module on the SLC (Signaling Line Circuit), and in this event, a trouble message will be displayed on the control panel. The monitor module must be mounted within the same enclosure as the APS2-6R or in a closely coupled enclosure with wiring not exceeding 20 feet (6.1 m) in length.

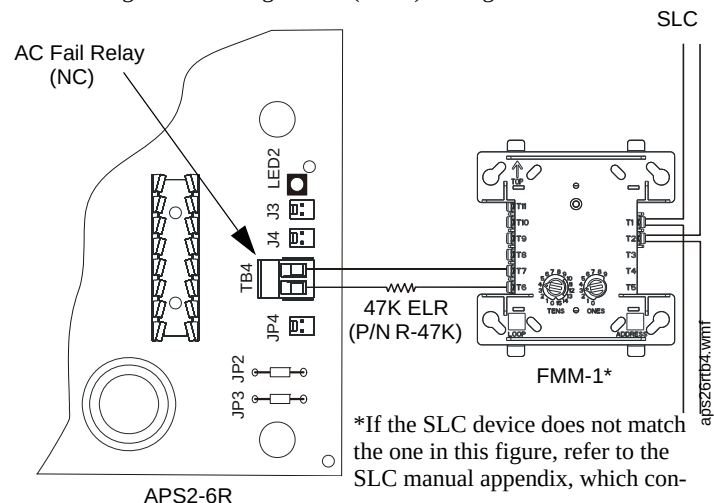


Figure 3.3 Wiring for AC Fail/Brownout Detection



NOTE: TB4 is for UL 864 10th Edition applications only. See Appendix B for UL 864 8th Edition applications and wiring.

3.3.3 Trouble Supervision Bus

The APS2-6R supervises battery power. If the battery voltage should drop, the APS2-6R will generate and transmit a trouble to the control panel via trouble supervision cable #71033.

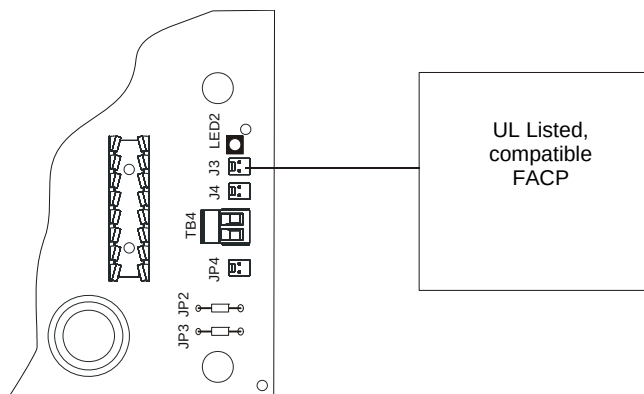


Figure 3.4 Trouble Bus Wiring

3.3.4 Connecting Multiple APS2-6R Power Supplies

The power supplies must be mounted in a CHS-4/L chassis oriented as shown in Figure 3.5 to accommodate all field wiring. Cable #71033 must be used for all trouble bus connections. For more information on specific panel wiring, see the appropriate appendix.

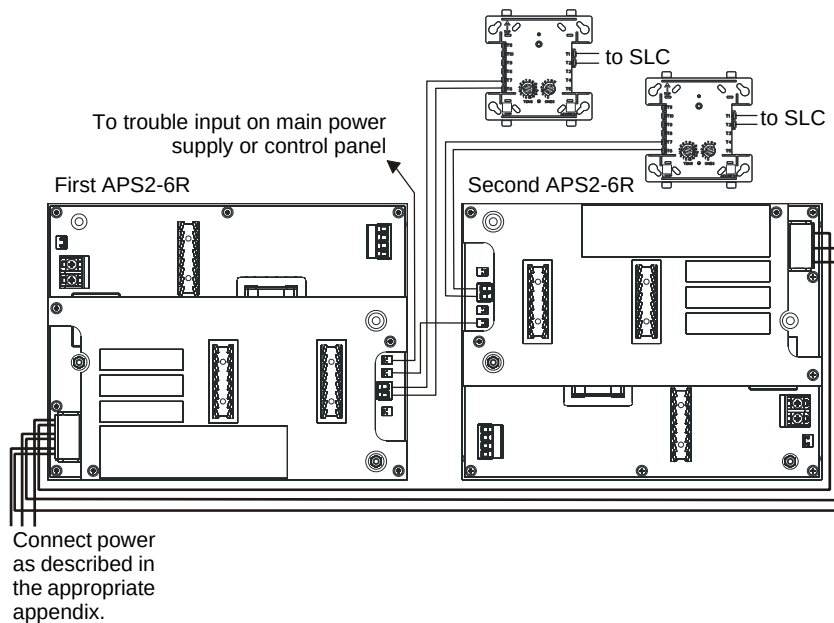


Figure 3.5 Wiring Multiple APS2-6R Power Supplies

3.4 Configuring the APS2-6R

The APS2-6R may be configured for the following:

- No delay for reporting loss of AC power (default)
- 1-2 hour delay for reporting loss of AC power: cut jumper JP2.

- 2-3 hour delay for reporting loss of AC power: cut jumpers JP2 and JP3.

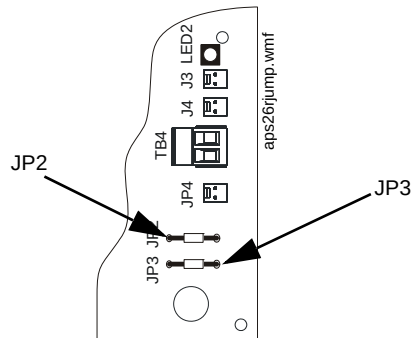


Figure 3.6 Configuring the APS2-6R



NOTE: Refer to TB4 specifications on page 9 for more information.

3.5 Servicing the APS2-6R

The only serviceable part on the APS2-6R is a reverse battery protection fuse, F2. If this fuse fails, replace it with a fuse of the same type and rating. See Section 2.3 for more information on F2.

1. Turn off and remove all power sources.
2. Replace fuse as required.
3. Reconnect power.

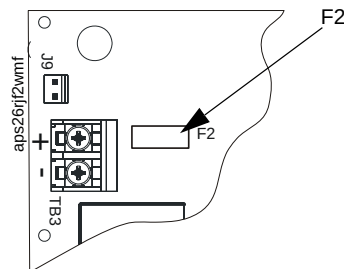


Figure 3.7 Servicing the APS2-6R

Appendix A: UL 864 10th Edition Configurations

The APS2-6R does not come equipped with a battery charger. Therefore, it must be connected to the control panel's main power supply. This section details wiring for UL 864 10th Edition applications. All wiring must comply with typical UL power-limited wiring requirements detailed in Section 3.2 and illustrated in Figure A.1.



WARNING: RISK OF ELECTRICAL SHOCK

REMOVE ALL POWER SOURCES TO EQUIPMENT WHILE CONNECTING ELECTRICAL COMPONENTS. LEAVE THE EXTERNAL, MAIN POWER BREAKER OFF UNTIL INSTALLATION OF THE ENTIRE SYSTEM IS COMPLETE. TO REDUCE THE RISK OF ELECTRIC SHOCK MAKE SURE TO PROPERLY GROUND THE UNIT. APPLY AND TEST AC POWER BEFORE CONNECTING BATTERIES.



WARNING: RISK OF EQUIPMENT DAMAGE

SEVERAL SOURCES OF POWER CAN BE CONNECTED TO THE CONTROL PANEL AND/OR POWER SUPPLY. BEFORE SERVICING THE CONTROL PANEL, DISCONNECT ALL SOURCES OF INPUT POWER INCLUDING THE BATTERY. WHILE ENERGIZED, THE CONTROL PANEL AND ASSOCIATED EQUIPMENT CAN BE DAMAGED BY REMOVING AND/OR INSERTING CARDS, MODULES, OR INTERCONNECTING CABLES.



NOTE: When two conductors are connected to the same terminal, the same gauge wire must be used.

A.1 NFS2-3030

The APS2-6R must be mounted to the CHS-4/L chassis in the CAB-3/4 Series backbox. See “In a CAB-3/4 Series Backbox” on page 11.

A.1.1 Connecting to the AMPS-24 and NFS2-3030

1. Connect trouble output from **J3** on the APS2-6R to the **J5** Trouble Bus connection on the CPU2-3030.
2. Connect AC Fail supervision relay output from **TB4** on the APS2-6R to an FMM-1 or equivalent monitor module on the SLC (Signaling Line Circuit).
3. Connect primary power from **TB1** on the APS2-6R to **TB1** on the AMPS-24.
4. Connect AC power to **TB1** on the AMPS-24. Make sure to properly ground the unit to the backbox.



WARNING:

BE SURE TO FINISH INSTALLATION BEFORE APPLYING POWER. TEST AC POWER BEFORE CONTINUING.

5. Connect batteries to **TB3** on the AMPS-24.
6. Connect secondary power from **TB3** on the APS2-6R to **TB3** on the AMPS-24.
7. Attach battery interconnect cable.



NOTE: If your AMPS-24 does not look like the one pictured in Figure A.1, but looks like the one pictured in Figure B.7, connect secondary power from TB3 on the APS2-6R to TB4 and TB5 on the AMPS-24. Note that the main power output on this AMPS-24 is Non-Power-Limited.

Note: Maintain 0.25" spacing between Power-limited and Non-power-limited wiring. Install tie wraps and adhesive squares to secure the wiring.

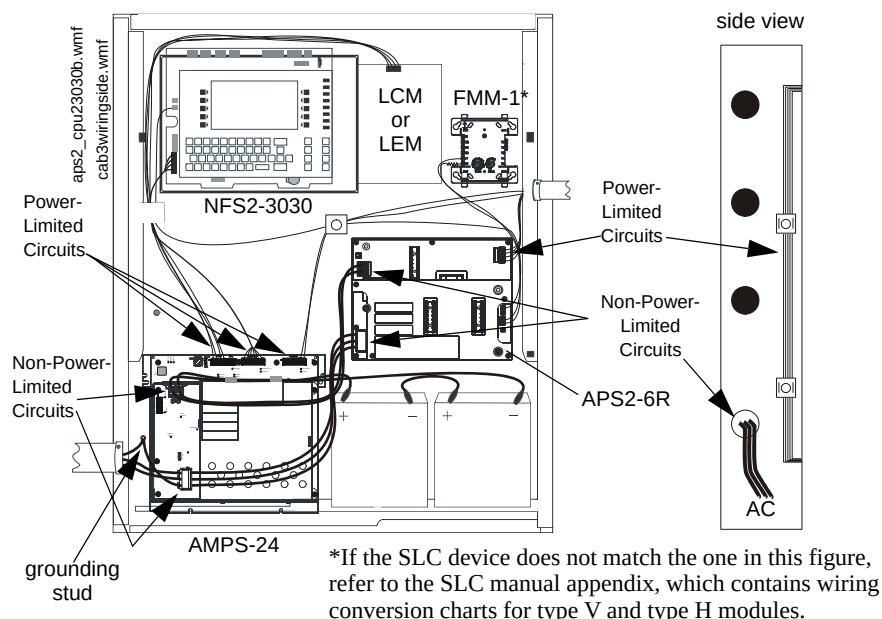


Figure A.1 Wiring to AMPS-24 and NFS2-3030

A.2 NFS2-640 and NFS-320

The APS2-6R must be mounted to the CHS-4/L chassis in the CAB-3/4 Series backbox. See "In a CAB-3/4 Series Backbox" on page 11.

A.2.1 Connecting to the CPS-24 and CPU2-640/NFS-320

1. Connect trouble output from **J3** on the APS2-6R to the **J6** Trouble Bus connection on the CPU2-640/CPU-320.
2. Connect AC Fail supervision from **TB4** on the APS2-6R to an FMM-1 or equivalent monitor module on the SLC.
3. Connect primary power from **TB1** on the APS2-6R to **TB1** on the CPS-24 (onboard power supply for the CPU2-640/CPU-320).
4. Connect AC power to **TB1** on the CPS-24. Make sure to properly ground the unit to the backbox.



WARNING:

BE SURE TO FINISH INSTALLATION BEFORE APPLYING POWER. TEST AC POWER BEFORE CONTINUING.

5. Connect batteries to **TB3** on the CPS-24.
6. Connect secondary power from **TB3** on the APS2-6R to **TB3** on the CPS-24.

7. Attach battery interconnect cable.

Note: Maintain 0.25" spacing between Power-limited and Non-power-limited wiring. Install tie wraps and adhesive squares to secure the wiring.

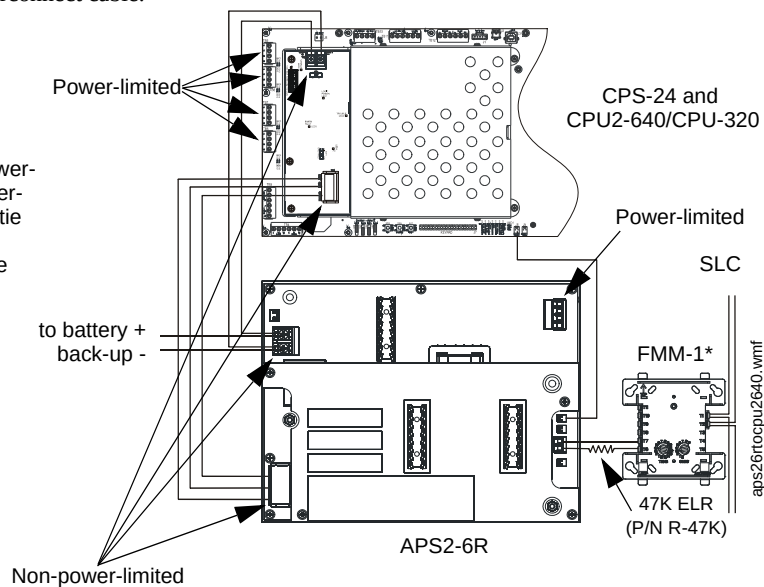


Figure A.2 Wiring to CPS-24 and CPU2-640/CPU-320

*If the SLC device does not match the one in this figure, refer to the SLC manual appendix, which contains wiring conversion charts for type V and type H modules.

Appendix B: UL 864 8th Edition Configurations

The APS2-6R does not come equipped with a battery charger. Therefore, it must be connected to the control panel's main power supply. This section details wiring for UL 864 8th Edition applications. All wiring must comply with typical UL power-limited wiring requirements detailed in Section 3.2 and illustrated in Figure A.1.



WARNING: RISK OF ELECTRICAL SHOCK

REMOVE ALL POWER SOURCES TO EQUIPMENT WHILE CONNECTING ELECTRICAL COMPONENTS. LEAVE THE EXTERNAL, MAIN POWER BREAKER OFF UNTIL INSTALLATION OF THE ENTIRE SYSTEM IS COMPLETE. TO REDUCE THE RISK OF ELECTRIC SHOCK MAKE SURE TO PROPERLY GROUND THE UNIT. APPLY AND TEST AC POWER BEFORE CONNECTING BATTERIES.



WARNING: RISK OF EQUIPMENT DAMAGE

SEVERAL SOURCES OF POWER CAN BE CONNECTED TO THE CONTROL PANEL AND/OR POWER SUPPLY. BEFORE SERVICING THE CONTROL PANEL, DISCONNECT ALL SOURCES OF INPUT POWER INCLUDING THE BATTERY. WHILE ENERGIZED, THE CONTROL PANEL AND ASSOCIATED EQUIPMENT CAN BE DAMAGED BY REMOVING AND/OR INSERTING CARDS, MODULES, OR INTERCONNECTING CABLES.



NOTE: When two conductors are connected to the same terminal, the same gauge wire must be used.

B.1 Panel Circuits

All four (4) NACs (Notification Appliance Circuits) on the ICM and all four (4) on the ICE are powered from TB2 on the APS2-6R. The NACs share the total 6A available from that circuit. Auxiliary power harness (P/N 71091) needs to have the header cut off and wired to the terminal block.

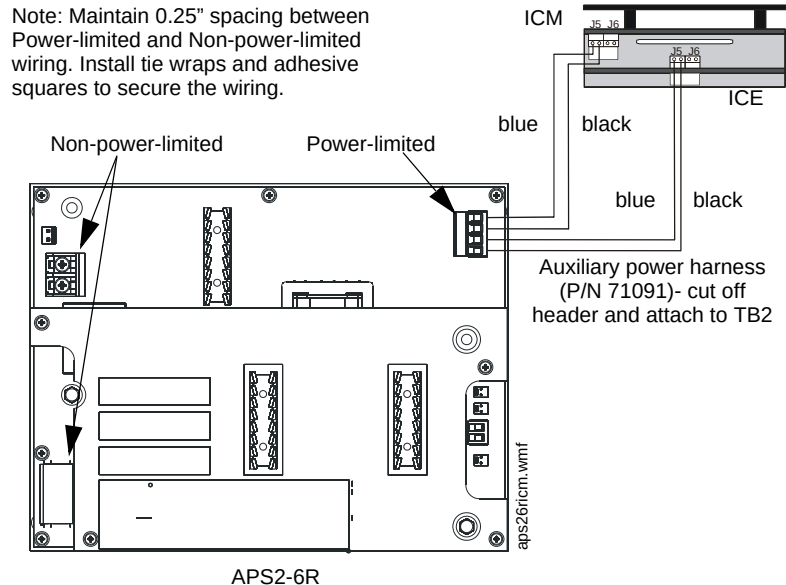


Figure B.1 Wiring to an ICM/ICE Module

B.2 AFP-200

The APS2-6R is mounted behind the control panel in the AFP-200 backbox. See “In an AFP-200 Cabinet” on page 11 for instructions on how to mount the APS2-6R in the backbox.

B.2.1 Connecting the APS2-6R to the AFP-200

1. Connect trouble output from **J3** on the APS2-6R to **J11** on the AFP-200.
2. Place shunt across both pins of **JP4** on the APS2-6R.
3. Connect primary power from **TB7** on the AFP-200 to terminal block **TB1** on the APS2-6R, using wire nuts to make the connections. Make sure to properly ground the unit to the backbox.



WARNING:

BE SURE TO FINISH INSTALLATION BEFORE APPLYING POWER. TEST AC POWER BEFORE CONTINUING.

4. Cut the battery cable supplied with the AFP-200 into two pieces.
5. Connect the batteries to **TB3** on the APS2-6R. Use wire nuts to attach one half of the battery cable to 18 AWG wire.
6. Connect secondary power from **TB3** on the APS2-6R to terminal block **J3** (+ and -) on the AFP-200 using the second piece of battery cable.
7. Attach battery interconnect cable.

Note: Maintain 0.25" spacing between Power-limited and Non-power-limited wiring. Install tie wraps and adhesive squares to secure the wiring.

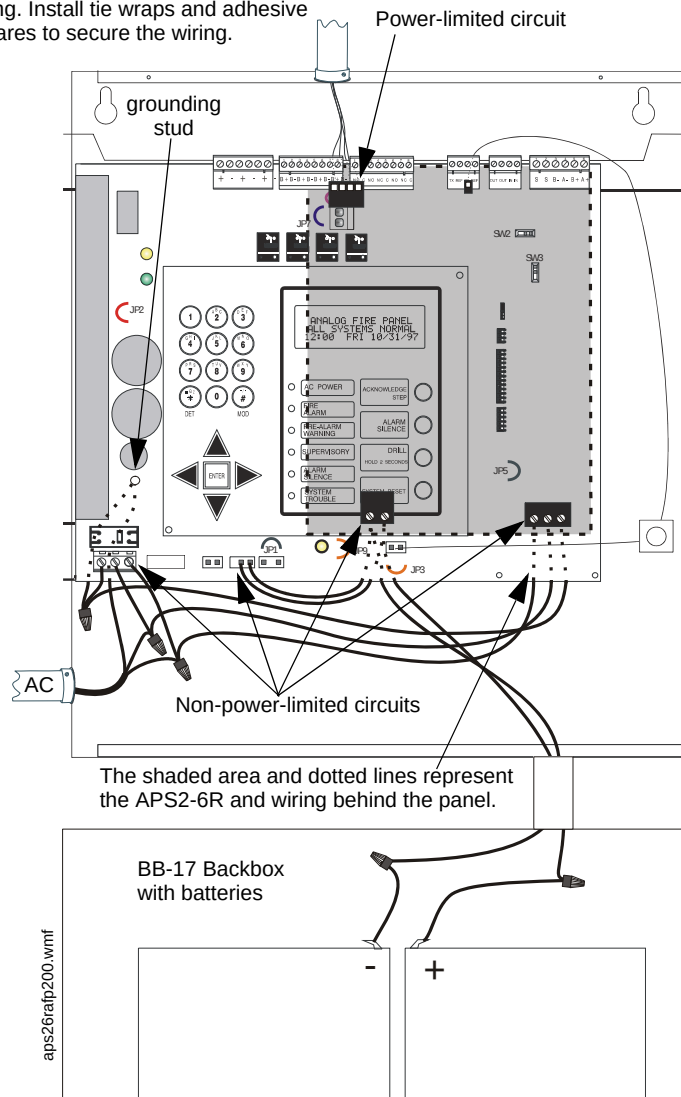


Figure B.2 Wiring to AFP-200

B.3 AFP-300/AFP-400

The APS2-6R must be mounted to the CHS-4/L chassis in the CAB-3/4 Series backbox. See “In a CAB-3/4 Series Backbox” on page 11.

B.3.1 Connecting to the MPS-400 Power Supply

1. Connect trouble output from **J3** on the APS2-6R to **J4** on the MPS-400.
2. Place shunt across both pins of **JP4** on the APS2-6R.
3. Connect primary power from **TB1** on the APS2-6R to terminal block **TB1** (NEUT and HOT) on the MPS-400.
4. Connect AC power to **TB1** on the MPS-400. Make sure to properly ground the unit to the backbox.



WARNING:

BE SURE TO FINISH INSTALLATION BEFORE APPLYING POWER. TEST AC POWER BEFORE CONTINUING.

5. Connect batteries to **TB1** on the MPS-400
6. Connect secondary power from **TB3** on the APS2-6R to terminal block **TB1** (+ and -) on the MPS-400.
7. Attach battery interconnect cable.

Note: Maintain 0.25" spacing between Power-limited and Non-power-limited wiring. Install tie wraps and adhesive squares to secure the wiring.

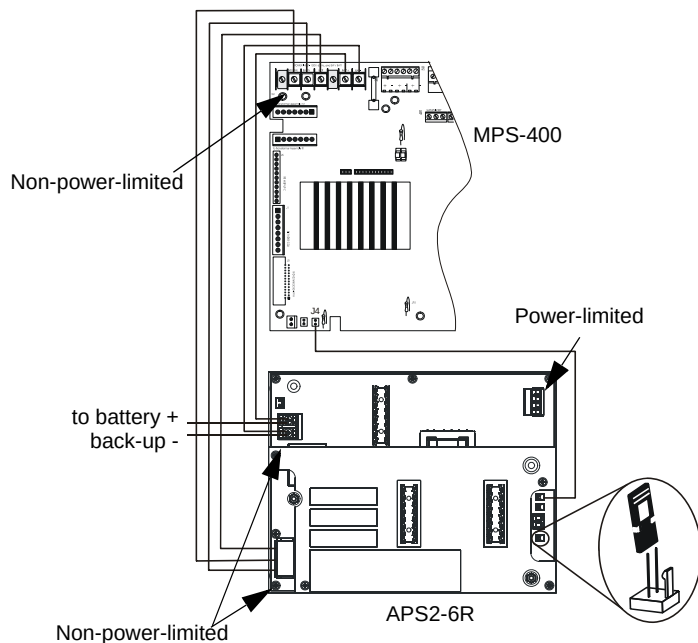


Figure B.3 Wiring to MPS-400

B.4 AM2020/AFP-1010 and System 5000

The APS2-6R must be mounted to the CHS-4/L chassis in the CAB-3/4 Series backbox. See “In a CAB-3/4 Series Backbox” on page 11.

B.4.1 Connecting the APS2-6R to an MPS-24A

1. Connect trouble output from **J3** on the APS2-6R to **P5** on the MPS-24A.
2. Place shunt across both pins of **JP4** on the APS2-6R.
3. Connect primary power from **TB1** on the APS2-6R to MPS-24A terminal block **TB1**, Pin 5(NEUT) and Pin 7(HOT).
4. Connect AC power to **TB1** on the MPS-24A. Make sure to properly ground the unit to the backbox.



WARNING:

BE SURE TO FINISH INSTALLATION BEFORE APPLYING POWER. TEST AC POWER BEFORE CONTINUING.

5. Connect batteries to TB2 on the MPS-24A.
6. Connect secondary power from **TB3** on the APS2-6R to MPS-24A terminal block **TB2**, Pin 1(+) and Pin 2(-).
7. Attach battery interconnect cable.

Note: Maintain 0.25" spacing between Power-limited and Non-power-limited wiring. Install tie wraps and adhesive squares to secure the wiring.

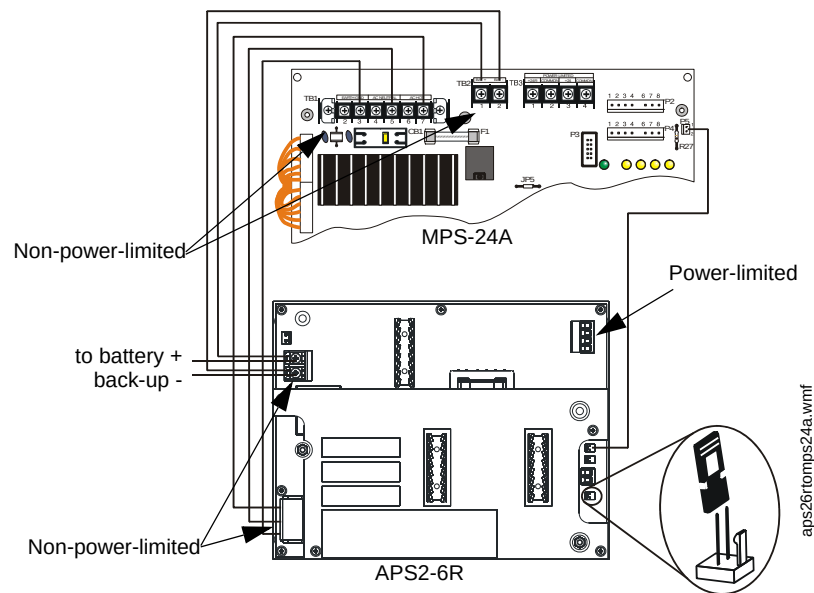


Figure B.4 Wiring to MPS-24A

B.4.2 Connecting to an MPS-24B/RB

1. Connect trouble output from **J3** on the APS2-6R to **P4** on the MPS-24BRB.
2. Place shunt across both pins of **JP4** on the APS2-6R.
3. Connect primary power from **TB1** on the APS2-6R to MPS-24B/RB terminal block **TB1**, Pin **3** (NEUT) and Pin **4** (HOT).
4. Connect AC power to TB1 on the MPS-24B/RB. Make sure to properly ground the unit to the backbox.



WARNING:

BE SURE TO FINISH INSTALLATION BEFORE APPLYING POWER. TEST AC POWER BEFORE CONTINUING.

5. Connect batteries to TB3 on the MPS-24B/RB.
6. Connect secondary power from **TB3** on the APS2-6R to MPS-24B/RB terminal block **TB3**, Pin **1**(+) and Pin **2**(-).
7. Attach battery interconnect cable.

Note: Maintain 0.25" spacing between Power-limited and Non-power-limited wiring. Install tie wraps and adhesive squares to secure the wiring.

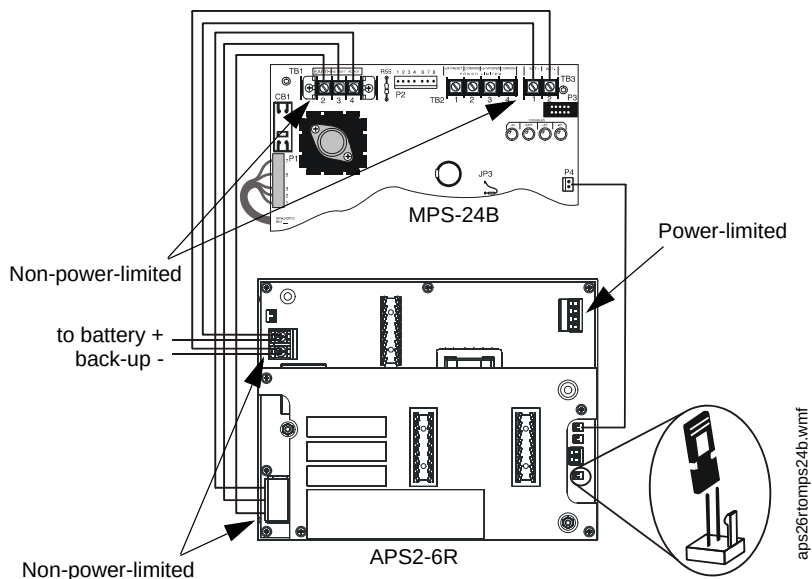


Figure B.5 Wiring to MPS-24B

B.5 NFS-640

The APS2-6R must be mounted to the CHS-4/L chassis in the CAB-3/4 Series backbox. See “In a CAB-3/4 Series Backbox” on page 11.

B.5.1 Connecting to a CPU-640

1. Connect trouble output from **J3** on the APS2-6R to **J11** on the CPU-640.
2. Place shunt across both pins of **JP4** on the APS2-6R.
3. Connect primary power from **TB1** on the APS2-6R to **TB2** on the CPU-640.
4. Connect AC Power to **TB2** on the CPU-640. Make sure to properly ground the unit to the backbox.



WARNING:

BE SURE TO FINISH INSTALLATION BEFORE APPLYING POWER. TEST AC POWER BEFORE CONTINUING.

5. Connect batteries to **TB1** on the CPU-640.
6. Connect secondary power from **TB3** on the APS2-6R to **TB1** on the CPU-640.
7. Attach battery interconnect cable.

Note: Maintain 0.25" spacing between Power-limited and Non-power-limited wiring. Install tie wraps and adhesive squares to secure the wiring.

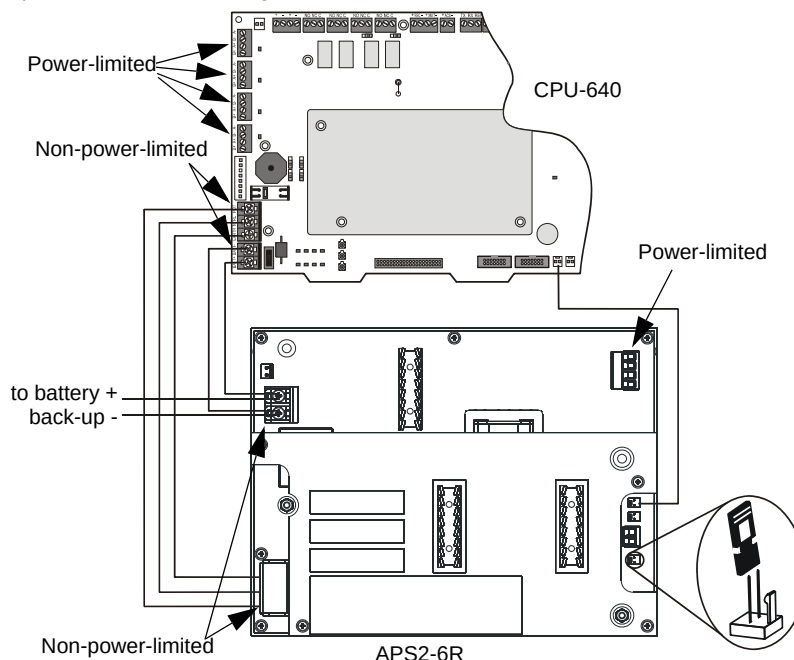


Figure B.6 Wiring to CPU-640

B.6 NFS-3030

The APS2-6R must be mounted to the CHS-4/L chassis in the CAB-3/4 Series backbox. See “In a CAB-3/4 Series Backbox” on page 11.

B.6.1 Connecting to the AMPS-24 and CPU-3030

1. Connect trouble output from **J3** on the APS2-6R to **J5** on the CPU-3030.
2. Place shunt across both pins of **JP4** on the APS2-6R.
3. Connect primary power from **TB1** on the APS2-6R to **TB3** on the AMPS-24.
4. Connect AC power to **TB3** on the AMPS-24. Make sure to properly ground the unit to the backbox.



WARNING:

BE SURE TO FINISH INSTALLATION BEFORE APPLYING POWER. TEST AC POWER BEFORE CONTINUING.

5. Connect batteries to **TB4** (BAT IN +) and **TB5** (BAT IN-) respectively on the AMPS-24.
6. Connect secondary power from **TB3** on the APS2-6R to **TB4** (BAT OUT +) and **TB5** (BAT OUT-) respectively on the AMPS-24.
7. Attach battery interconnect cable.

Note: Maintain 0.25" spacing between Power-limited and Non-power-limited wiring. Install tie wraps and adhesive squares to secure the wiring.

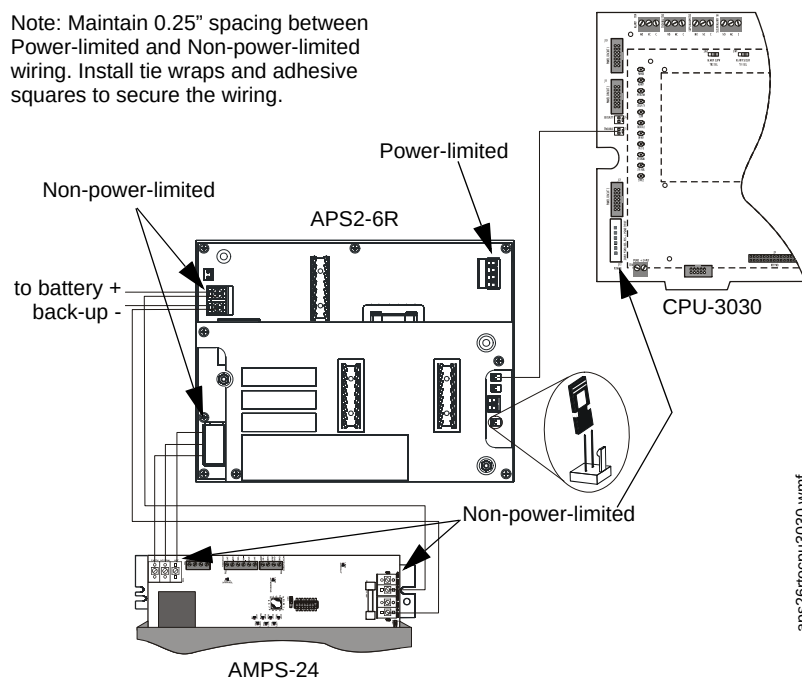


Figure B.7 Wiring to AMPS-24 and CPU-3030

B.7 XPIQ Transponder

The APS2-6R must be mounted to the CHS-4/L chassis in the CAB-3/4 Series backbox. See “In a CAB-3/4 Series Backbox” on page 11.

B.7.1 Connecting to the XPIQ-MB and XPIQ-PS

1. Connect trouble output from **J3** on the APS2-6R to **J9** on the XPIQ.
2. Place shunt across both pins of **JP4** on the APS2-6R.
3. Connect cable P/N 75121 from **J9** on the APS2-6R to **TB9** on the XPIQ-MB to supply non-power-limited power. See the *XPIQ Instruction Manual* for information.
4. Connect primary power from **TB1** on the APS2-6R to **TB1** on the XPIQ-PS.
5. Connect AC power to **TB1** on the XPIQ-PS. Make sure to properly ground the unit to the backbox.



WARNING:

BE SURE TO FINISH INSTALLATION BEFORE APPLYING POWER. TEST AC POWER BEFORE CONTINUING.

6. Connect batteries to **TB2** on the XPIQ-PS.
7. Connect secondary power from **TB3** on the APS2-6R to **TB2** on the XPIQ-PS.
8. Attach battery interconnect cable.

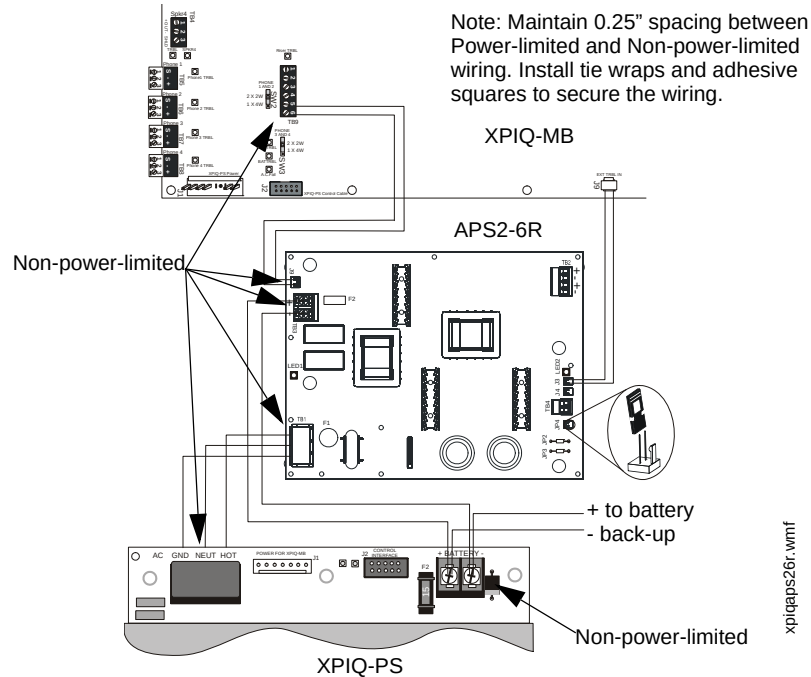


Figure B.8 Wiring to XPIQ

Index

A

AC loss detection **12, 15, 16**
AC loss detection, delay **8, 9, 10, 13**
AC power **8**
ACS annunciators **6**
AFP-200 **6, 11, 19**
 battery cable **19**
AFP-200 cabinet **11**
AFP-300 **20**
AFP-300/AFP-400 **6**
AFP-400 **20**
AM2020/AFP-1010 **6, 21**
AMPS-24 **15, 24**

B

BACNet Gateway **7**
battery **8**
brownout detection **8, 10, 12**

C

CAB-3/4 Series cabinets **6, 11**
cable for trouble bus wiring **13**
CHS-4/L chassis **11**
compatibility document **7**
compatible equipment **6**
configuration **13**
connections
 to AFP-200 **19**
 to CPU2-3030 **15**
 to CPU2-640 **16**
 to CPU-3030 **24**
 to CPU-640 **23**
 to MPS-24A **21**
 to MPS-24B/RB **22**
 to MPS-400 **20**
 to NFS-320 **16**
 to XPIQ **25**
CPS-24 **16**
CPU2-3030 **15**
CPU2-640 **16**
CPU-3030 **24**
CPU-320 **16**
CPU-640 **23**

E

earth ground **8**
EQ Cabinet **6**

F

features of the APS2-6R **8**
field wiring **12**
FMM-1 **12, 15, 16**
fuse **9, 10, 14**

H

hardware kit **10**
HS-NCM Series **7**

I

ICE-4 **18**
ICM-4 **18**
IPDACT Internet Protocol DACT **7**

J

JP2 jumper **10**
JP3 jumper **10**
jumper **13**

L

LCD-160 **6**
LCD-80 **6**
LED status indicators **9, 10**

M

monitor module **12, 15, 16**
mounting options **11**
MPS-24A **21**
MPS-24B/RB **22**
MPS-400 **20**
multiple power supplies, trouble bus connections
13

N

NFS2-3030 **6, 15**
NFS2-640 **6, 16**
NFS-3030 **6, 24**
NFS-320 **6, 16**
NFS-640 **6, 23**
non power-limited circuit **10**
NWS Notifier Web Server **7**

O

OnyxWorks NFN Gateway **7**
output circuits **8, 10, 12**
 for use with XPIQ **12**

P

panel circuit wiring **18**
parts kit **10**
power connections **12**
power-limited circuit **10**
primary power **15, 16, 19, 20, 21, 22, 23, 24, 25**

R

related documentation **6**
replacing fuse **14**
RM-1 Remote Microphone **7**

S

secondary power **15, 16, 19, 20, 21, 22, 23, 24, 25**
shunt **19, 20, 21, 22, 23, 24, 25**
SLC **12, 15, 16**
specifications **8**
 output circuits **8**

 primary power **8**
 secondary power circuit **8**
status indicators **9, 10**
System 5000 **6, 21**

T

trouble bus **8, 9, 10, 13, 15, 16, 19, 20, 21, 22, 23, 24, 25**

W

wiring **12**
wiring, multiple **13**

X

XP Series Transponder **6**
XP5 Series Transponder **6**
XP6 Transponder **6**
XPIQ Transponder **6, 12, 25**

Manufacturer Warranties and Limitation of Liability

Manufacturer Warranties. Subject to the limitations set forth herein, Manufacturer warrants that the Products manufactured by it in its Northford, Connecticut facility and sold by it to its authorized Distributors shall be free, under normal use and service, from defects in material and workmanship for a period of thirty six months (36) months from the date of manufacture (effective Jan. 1, 2009). The Products manufactured and sold by Manufacturer are date stamped at the time of production. Manufacturer does not warrant Products that are not manufactured by it in its Northford, Connecticut facility but assigns to its Distributor, to the extent possible, any warranty offered by the manufacturer of such product. This warranty shall be void if a Product is altered, serviced or repaired by anyone other than Manufacturer or its authorized Distributors. This warranty shall also be void if there is a failure to maintain the Products and the systems in which they operate in proper working conditions.

MANUFACTURER MAKES NO FURTHER WARRANTIES, AND DISCLAIMS ANY AND ALL OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE PRODUCTS, TRADEMARKS, PROGRAMS AND SERVICES RENDERED BY MANUFACTURER INCLUDING WITHOUT LIMITATION, INFRINGEMENT, TITLE, MERCHANTABILITY, OR FITNESS FOR ANY PARTICULAR PURPOSE. MANUFACTURER SHALL NOT BE LIABLE FOR ANY PERSONAL INJURY OR DEATH WHICH MAY ARISE IN THE COURSE OF, OR AS A RESULT OF, PERSONAL, COMMERCIAL OR INDUSTRIAL USES OF ITS PRODUCTS.

This document constitutes the only warranty made by Manufacturer with respect to its products and replaces all previous warranties and is the only warranty made by Manufacturer. No increase or alteration, written or verbal, of the obligation of this warranty is authorized. Manufacturer does not represent that its products will prevent any loss by fire or otherwise.

Warranty Claims. Manufacturer shall replace or repair, at Manufacturer's discretion, each part returned by its authorized Distributor and acknowledged by Manufacturer to be defective, provided that such part shall have been returned to Manufacturer with all charges prepaid and the authorized Distributor has completed Manufacturer's Return Material Authorization form. The replacement part shall come from Manufacturer's stock and may be new or refurbished. THE FOREGOING IS DISTRIBUTOR'S SOLE AND EXCLUSIVE REMEDY IN THE EVENT OF A WARRANTY CLAIM.

Warn-HL-08-2009.fm

NOTIFIER
12 Clintonville Road
Northford, CT 06472-1610 USA
203-484-7161
www.notifier.com

