# FireVac®7200 SERIES
## EMERGENCY VOICE/ALARM FIRE ALARM CONTROL

### INSTALLATION/OPERATING ADDENDUM



Part Number: 9000-0405
Version: 1.3

FIRE CONTROL INSTRUMENTS®

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# IMPORTANT INFORMATION

This manual is designed for use by factory trained installers and operators of the Fire Control Instruments, Inc. (FCI) 7200 Series Fire Alarm Control. All illustrations, functional descriptions, operating and installation procedures, and other relevant information are contained in this manual.

The contents of this manual are important, and the manual must be kept with the fire alarm control panel at all times. If building ownership is changed, this manual, including any testing and maintenance information, must be passed along to the new owner(s).

The fire alarm control panel is part of a system. Manuals and instructions for other devices forming part of the system should be kept together. Purchasers who install this system for use by others must leave the instructions with the user. A copy of these instructions is included with each product and is available from the manufacturer.

This equipment is Listed by various listing agencies for use in fire alarm systems. Use only components which are compatible with the FCI system. The installation **MUST** be in accordance with the instructions in this manual.

**THEREFORE:**

- DO NOT deviate from the procedures described in this manual.
- DO NOT assume any details not shown in the instructions.
- DO NOT modify any electrical or mechanical features.
- DO comply with all codes and standards set forth by the authority having jurisdiction.

The term “Authority Having Jurisdiction” has become a standard term in the fire alarm industry. An acceptable definition of “Authority Having Jurisdiction” is:

Fire alarm systems installed in the USA fall under the jurisdiction of some authority. In some areas this may be a local fire department; in other areas it may be a building inspector, insurance firm, etc. Different authorities may have their own local requirements for the way the fire alarm system is installed and used. Most local authorities base their requirements on the NFPA codes, but there may be important differences. You must install this system in the way in which the authority having jurisdiction requires. If you do not know which authority has jurisdiction in your area, contact your local fire department or building inspector for guidance.

It is important that you tell users to be aware of any requirements defined by the authority having jurisdiction.

The installation **MUST** be in accordance with the following standards:

- National Fire Alarm Code (NFPA 72)
- National Electrical Code (NFPA 70)
- Life Safety Code (NFPA 101)

**WARNING**: Touching components which are improperly installed, applied or operated could be hazardous and possibly fatal. Short circuits could cause arcing that could result in molten metal injuries. Therefore, only qualified technicians familiar with electrical hazards should perform checkout procedures. Safety glasses should be worn, and test equipment used for voltage measurements should be designed for this purpose and be in good working order.

## ENVIRONMENTAL CONSIDERATIONS:

It is important that this equipment be operated within its specifications:

| | |
|---|---|
| Recommended operating temperature range: | 60 to 80$^{o}$ F (15 to 27$^{o}$ C) |
| Absolute maximum operating temperature range: | 32 to 120$^{o}$ F (0 to 49$^{o}$ C) |
| Operating humidity: | not to exceed 85%, non-condensing at 90$^{o}$ F (32$^{o}$ C) |

Operating this equipment within the recommended temperature range will extend the useful life of the system standby batteries.

## INSTALLATION CONSIDERATIONS:

Check that you have all the equipment you need to make the installation. Follow the field wiring diagrams and installation notes in this manual.

Install the equipment in a clean, dry environment (minimal dust). Avoid installing equipment where vibrations will occur.

Remove all electronic assemblies prior to drilling, filing, reaming, or punching the enclosure. When possible, make all cable entries from the sides, being careful to separate the power limited conductors from the non-power limited conductors. Before making modifications, verify that they will not interfere with battery, transformer and printed circuit board location.

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

Disconnect all sources of power before servicing, removing, or inserting any circuit boards. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized.

## WIRING CONSIDERATIONS:

This fire alarm control panel contains power limited circuits. You cannot connect external sources of power to these circuits without invalidating their approval.

Verify that wire sizes are adequate for all initiating device and notification appliance circuits. Most devices cannot tolerate more than a 10% drop from the specified device voltage.

The installer must make sure that the wiring and devices installed in the system meet the current National Electrical Code, NFPA 70, and all applicable state and local building code requirements.

Use the conductor size and type required by local codes. (see NFPA 70, Article 760). Wiring resistance must not be more than that shown on the field wiring diagrams.

To reduce errors and help in servicing the system, all conductors should be tagged or otherwise coded and logged at installation to identify circuit assignment and polarity. If the conductors are logged with a code, keep the log that explains the code with the manual, so that it is available to other people working on the panel.

Like all solid state electronic devices, this system may operate erratically or be damaged when subjected to lightning induced transients. Although no system is completely immune to lightning transients and interference, proper grounding will reduce susceptibility. We do not recommend the use of overhead or outside aerial wiring due to the increased susceptibility to nearby lightning strikes. Consult with the FCI Technical Support Department if any problems are anticipated or encountered.

To prevent the spread of fire, use proper patching materials to areas where system wiring passes through fire-rated walls or floors.

## OTHER CONSIDERATIONS:

The equipment was tested according to EC directive 89/336/EEC for Class A equipment and was verified to the limits and methods of EN 55022.

**NOTE: System Reacceptance Test after Software Changes:** To ensure proper system operation, this product must be tested in accordance with NFPA 1996, 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 also be tested and proper system operation verified.

**FCC 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 device pursuant to Subpart B of Part 15 of FCC Rules, which is designed to provide reasonable protection against such interference when 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 own expense.

If these instructions are not clear, or if additional information or clarification is needed, please consult your local authorized Fire Control Instruments, Inc. distributor.

Because of design changes and product improvements, the information in this manual is subject to change without notice. FCI reserves the right to change hardware and/or software design, which may subsequently affect the contents of this manual. FCI assumes no responsibility for any errors that may appear in this manual.

Neither this manual nor any part of it may be reproduced without the advance written permission of Fire Control Instruments, Inc.

## FIRE ALARM SYSTEM LIMITATIONS

**An automatic fire alarm system** - Typically made up of smoke detectors, heat detectors, manual pull stations, audible/visual warning devices, and a fire alarm control panel 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, 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 smoke 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 such as smoking in bed, violent explosions, escaping gas, improper storage of flammable materials, overloaded electrical circuits, children playing with matches, or arson.

**Audible/visual warning devices** such as horns, bells or strobes may not alert people if these devices are located on the other side of closed or partly closed doors or are located on another floor of the 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 type detectors** may be subject to reduced sensitivity over time. For this reason, the rate-of-rise feature of each heat 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 panel. It is essential to use only equipment listed for service with this control panel.

**Telephone lines** required to transmit alarm signals from the 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.

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

**NOTICE** - Do not attempt to install, service, or operate this control panel until this manual is read and understood.

### CAUTION

To keep your fire alarm 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 Chapter 7 of NFPA 72, The National Fire Alarm Code, shall be followed. A preventive maintenance agreement should be arranged through the manufacturer's local representative. Though smoke detectors are designed for long life, they may fail at any time. Any smoke detector, fire alarm system or any component of that system which fails shall be repaired or replaced immediately.

# FOREWORD

The information in this manual is organized as follows:

**Chapter 1:** Overview: Provides an overview of the FireVac®7200 system audio specific components and related NFPA Standards.

**Chapter 2:** Installation/Terminal Descriptions: Furnishes descriptions of each major FireVac®7200 System component requiring installation and typical interequipment drawings.

**Chapter 3**: Power Up/Testing: Provides initial power-up and testing procedures for the FireVac®7200 system.

**Chapter 4:** Glossary: Includes commonly used FireVac®7200 related terms and definitions.

# SECTION ONE
# OVERVIEW

# SECTION ONE: OVERVIEW

This section provides an overview of the FireVac®7200 system audio-specific components and related NFPA standards.

## 1.1 Description

The FCI FireVac®7200 Audio Evacuation System is an integral part of the 7200 Series Fire Alarm Control. For 7200 Series system details and FireVac®7200 battery calculation information, see FCI manual P/N 9000-0176.

- Important audio evacuation capabilities supplied by the FireVac®7200 System include:
- Voice/alarm signaling service in accordance with NFPA 72
- Two-way telephone communications service in accordance with NFPA 72
- Manually controllable process monitoring system

The FireVac®7200 System is a microprocessor-based, field configurable fire alarm control unit that operates according to a user defined set of instructions. These instructions take the form of general alarm lists and input-to-output relationships among alarm initiating points, notification appliance circuits, and control points such as addressable output modules (AOM-2s). The general alarm lists and the input-to-output relationships are stored in the system non-volatile memory and become the basis of its automatic operation. For a description of how to create general alarm lists, input-to-output relationships and how to store these instructions in non-volatile memory, refer to FCI manual P/N 9000-0360, Field Configuration Program (FCP).

## 1.2 Configurations

The FireVac®7200 system can be configured in the following basic individual or combined systems:

- A selective signaling single or dual channel fire alarm system.
- A fire alarm system with general alarm voice evacuation signaling.
- A fire alarm system with two way telephone communications.
- A fire alarm system with manually controllable process monitoring.

NOTE: Dual Channel systems require a second amplifier.

### 1.2.1 A Selective Signaling Single or Dual Channel System

As a minimum, a single channel system notifies the occupants on the floor of fire origin to evacuate, while a dual channel system notifies ALL building occupants of the fire emergency. The minimum components for this system are:

- Basic System Unit (BSU) with Switching Power Supply Unit (SPSU-V)
- Audio Evacuation Unit, (AEU)
- Command Center with backplane, one (1) CCU-S/D, one (1) SIM-S/D and microphone
- Cabinet
- Basic System Amplifier(s)

### 1.2.2 Fire Alarm System with General Voice Evacuation Signaling.

The minimum components of a Fire Alarm System with General Voice Evacuation Signaling are:

- Basic System Unit (BSU) with Switching Power Supply Unit (SPSU-V)
- Cabinet
- Basic System Amplifier with microphone

### 1.2.3 Fire Alarm System with Two Way Telephone Communications

The minimum components of a Fire Alarm System with stand-alone telephone system are:

- Basic System Unit (BSU) with Switching Power Supply Unit (SPSU-V)
- Audio Evacuation Unit (AEU)
- Command Center with one (1) TCU, one (1) CCU-S, one (1) SIM-P and handset
- Cabinet

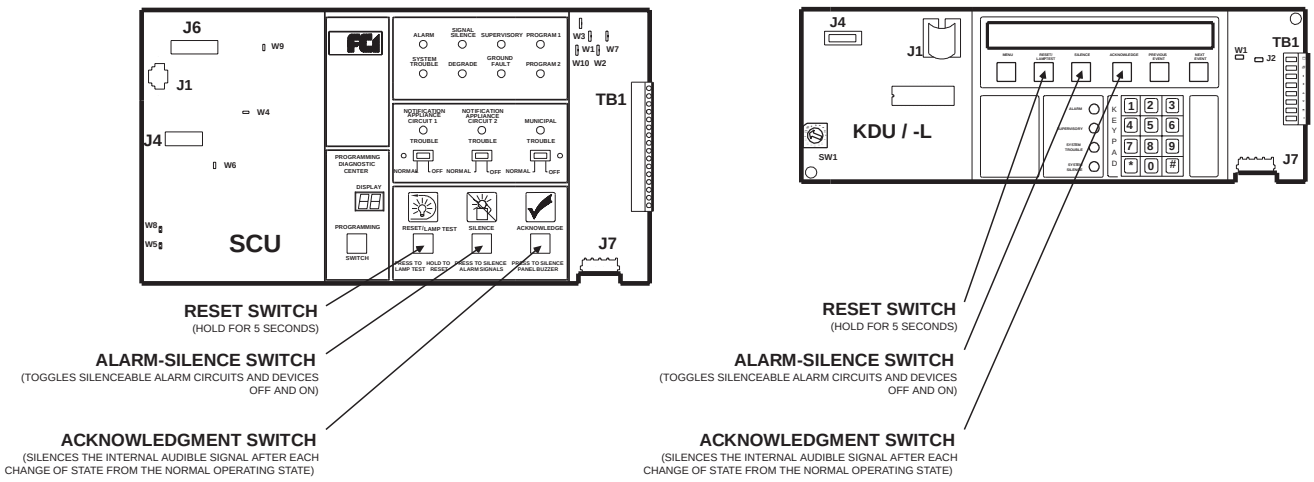



**Figure 1-1 7200 Series Command Controls**

### 1.2.4 Fire Alarm System with Manually Controllable Process Monitoring.

The minimum components of a fire alarm system with process monitoring are:

- Basic System Unit (BSU) with Switching Power Supply Unit (SPSU-V).
- Audio Evacuation Unit (AEU)
- Command Center with backplane, one (1) CCU-S and one (1) SIM-A.
- Cabinet

## 1.3 Audio Evacuation Unit (AEU)

The Audio Evacuation Unit (AEU) provides a signaling line circuit for communication with the 7200 Series System, the Command Control Units (CCUs), Telephone Control Units (TCUs) and the Switch Input Modules (SIMs).

The Signaling Line Circuit (SLC) monitors and communicates with up to 20 plug-in modules for a total of 100 control switches, and up to 99 output modules. Thus it can address up to 199 total points.

The AEU can be located in any available mounting position in the 7200 Series main or remote cabinets, and it occupies one unit space in the cabinet.

## 1.4 Command Center

The Command Center contains the controls used by the FireVac®7200 system. Figure 1-1 illustrates the 7200 Series command controls. The operator has manual control over the following fire alarm functions:

- System reset
- Event acknowledgment
- Alarm silence

The Command Center consists of the following basic components:

- Keyboard Display Unit (KDU)
- System Backplane with modules
- Card cage for plug-in modules with brackets for the command center
- Microphone and telephone handset (if required)

## 1.5 System Backplane

The System Backplane accepts individual modules. The modules plug into connectors on the backplane, which holds seven (7) modules. It also furnishes connections for the telephone handset and microphone, if required.

There are two types of backplanes, depending on the type of communication service. The first backplane has six (6) module connectors and one (1) TCU connector if the FireVac7200 System is providing two-way telephone service. The second backplane has seven (7) module connectors if two-way service is not provided, or if additional backplanes are required to accommodate all the plug-in modules.

### 1.5.1 Card Cage for Plug-in Modules

The Card Cage for the plug-in modules attaches to the 7200 Series cabinet. It provides the framework to hold the modules in place

## 1.6 Plug-in Modules

The following plug-in modules can be used with the system Backplane:

- Command Control Unit, Single Channel (CCU-S)
- Command Control Unit, Dual Channel (CCU-D)
- Switch Input Module-Speaker, Single Channel (SIM-SS)
- Switch Input Module-Speaker, Dual Channel (SIM-SD)
- Switch Input Module-Phone (SIM-P)
- Switch Input Module-Auxiliary (SIM-A)
- Telephone Control Unit (TCU)
- Telephone Control Unit-Remote (TCU-R)
- Status Indicator Board-10 Red (SIB-10R)
- Status Indicator Board-10 Yellow (SIB-10Y)

**A. Command Control Unit, Single Channel (CCU-S)**

The Command Control Unit, Single Channel (CCU-S) provides system wide, manual control of all the speaker circuits and alarm tones that are broadcast by these circuits. One CCU-S is required for each system that provides selective single channel signaling.

**B. Command Control Unit, Dual Channel (CCU-D)**

The Command Control Unit, Dual Channel (CCU-D) provides system wide, manual control of all the speaker circuits and alarm tones that are broadcast by these circuits. One CCU-D is required for each system that provides selective dual channel signaling.

**C. Switch Input Module-Speaker, Single Channel (SIM-SS)**

The Switch Input Module-Speaker, Single Channel (SIM-SS) has five, (5) two-position toggle switches for manual activation of one or more output devices such as addressable output modules. Each SIM-SS can manually activate up to five (5) evacuation zones.

**D. Switch Input Module-Speaker, Dual Channel (SIM-SD)**

The Switch Input Module-Speaker, Dual Channel (SIM-SD) has five, (5) three-position toggle switches for manual activation of one or more hardware devices such as addressable output modules. Each SIM-SD can manually activate up to five (5) evacuation zones.

**E. Switch Input Module-Auxiliary Circuit (SIM-A)**

The Switch Input Module-Auxiliary Circuit (SIM-A) has five, (5) three-position toggle switches for manual activation or deactivation of one or more output devices. Each SIM-A can manually activate or deactivate up to five (5) auxiliary circuits for functions such as fan control and elevator recall.

**F. Circuit Switch Input Module-Phone Circuit (SIM-P)**

The Switch Input Module-Phone Circuit (SIM-P) has five (5) two-position toggle switches for manual control of remote telephone handsets or warden stations. Detection of the plug-in handset connection or the off-hook condition at the warden station is initiated by the telephone system addressable output module (AOM-2). The AOM-2 also connects the portable handset or warden station to the two-way communications riser. Up to five (5) remote telephone handsets or warden stations can be actively connected to the system at any one time.

**G. Telephone Control Unit (TCU)**

The Telephone Control Unit (TCU) provides telephone preamplification for the telephone riser. It also includes a two-position toggle switch to permit selective or all call paging from a remote telephone handset or warden station.

**H. Telephone Control Unit-Remote (TCU-R)**

The Telephone Control Unit-Remote (TCU-R) is used in Remote Command and Control Centers.

**J. Status Indicator Board (SIB-10R, SIB-10Y)**

The Status Indicator Board (SIB-10R for red LEDs, SIB-10Y for yellow LEDs) is a programmable, 10-point LED module. Each LED on the SIB-10 can be programmed via the Field Configuration Program (FCP) to provide a status indication.

## 1.7 Microphone and Telephone Handset

Included with the card cage is a bracket for the command centers local microphone. The Telephone handset, if used, attaches to a bracket mounted below the card cage.

## 1.8 Cabinets

The FireVac7200 cabinets consist of a backbox, cabinet doors and mounting plate for the 7200 Series units. The doors are half-size, and two are required for a full-size enclosure. The doors are available with one or two windows and can be either right or left-hinged.

## 1.9 Basic System Amplifier

The Basic System Amplifier broadcasts alarm signals, recorded messages, or voice instructions to all remote distributed amplifiers. It consists of the following:

- FCI Motherboard (amplifier main circuit)
- One 25-watt modular amplifier

Options to the Basic System Amplifier include additional 25-watt modular amplifier(s).

## 1.10 Peripheral Devices

### 1.10.1 Addressable Output Modules (AOM)

Addressable Output Modules (AOMs) used for control functions such as speaker circuit switching, telephone control, and HVAC (Heating Ventilation Air Conditioning), are installed on the AEU signaling line circuit (SLC).

### 1.10.2 Remote Amplifiers

The system uses Remote Amplifiers whenever the power required to supply the system speakers exceeds 50 watts. Remote Amplifiers are similar to the basic system amplifier described earlier. The Remote Amplifier is activated by the Addressable Amplifier Input module (AAI).

### 1.10.3 Power Supply Module for Amplifiers (FCI-PSM)

Each distributed and dual channel amplifier requires a power supply (FCI-PSM). The integral battery charger can maintain batteries up to 17-AH capacity, and the remote amplifier cabinet can house two 17-AH batteries. An optional 240 VAC transformer is available.

### 1.10.4 Addressable Amplifier Interface Module (AAI)

An Addressable Amplifier Interface Module (AAI) serves as the interface between the main basic system unit and a remote distributed amplifier. The primary function of the AAI is to supervise and activate the remote amplifier, and to switch the alarm tone and/or recorded message from the basic system amplifier.

### 1.10.5 Remote Command Center

The system can accommodate a maximum of five (5) auxiliary Remote Command Centers with Audio Evacuation Units, manual controls (CCUs, TCU-R, SIMs), and a remote microphone and/or telephone. These Remote Command Centers mimic the functioning of the main Command Center.

**A. Push-to-Talk Driver Module (PTT-D)**

The Push-to-Talk Driver Module (PTT-D) pre-conditions and amplifies the voice instructions for the optional microphone in the Remote Command Center.

**B. Push-to-Talk Receiver Module (PTT-R)**

The Push-to-Talk Receiver Module (PTT-R) receives the preamplified signals from remote PTT-Ds. It is housed in the main basic system unit.

## 1.11 Amplifier Driver Card (ADC)

The Amplifier Driver Card (ADC) replaces the FCI-AAM-25 Amplifier Module in systems requiring higher power audio amplifiers. It provides the interface with the Bulk Amplifier Unit (BAU).

## 1.12 Bulk Amplifier Unit (BAU)

The Bulk Amplifier Unit (BAU) controls the operation of 120 and 250 watt audio amplifiers in systems using large, rack mounted amplifiers.

## 1.13 Amplifier, 120 Watt (PA-120R)

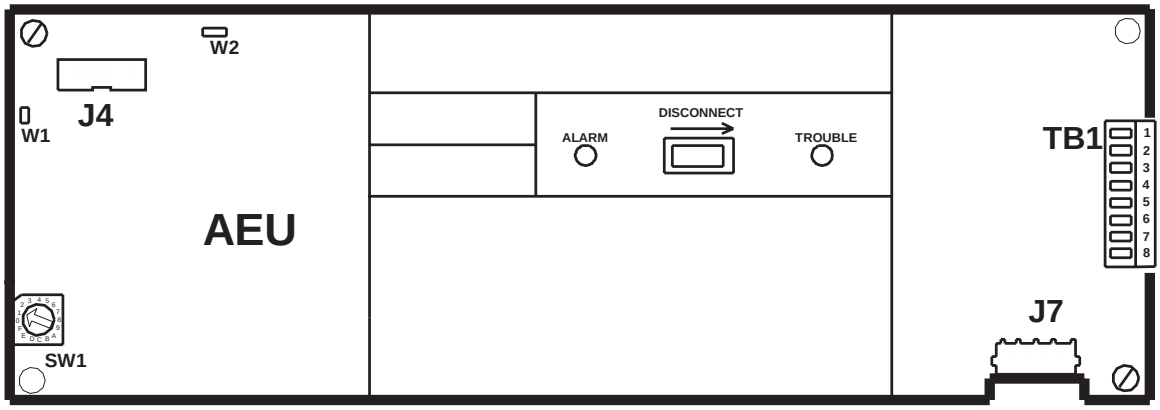
The PA-120R amplifier provides 120 watts of audio power at 25 or 70.7 VRMS.

## 1.14 Amplifier, 250 Watt (PA-250R)

The PA-250R amplifier provides 250 watts of audio power at 25 or 70.7 VRMS.

**NOTE**: For systems using the ADC, BAU and high power amplifiers, see Installation/Operating Manual, P/N 9000-0445.

# SECTION TWO
# INSTALLATION/TERMINAL DESCRIPTIONS




**Audio Evacuation Unit (AEU)**

# SECTION TWO: INSTALLATION/TERMINAL DESCRIPTIONS

## 2.1 Audio Evacuation Unit (AEU)

The Audio Evacuation Unit (AEU) provides one (1) Class A, Style 6/7 or Class B, Style 4 signaling line circuit (SLC). The signaling line circuit can accommodate 20 CCU/SIM (Switch Input Modules) with 5 points each and 99 addressable modules (AOM-2, AAI, PTT-R), for a maximum of 199 points per AEU. See Table 2-1. The AEU is a full-size unit. Additional AEUs can be added to a maximum of fifteen (15) AEUs per system.

**NOTE:** An additional system power supply is required for every five (5) AEU/ALUs. The Distributed Intelligent Unit (DIU) with its associated power supply meets this requirement.

**Table 2-1 AEU Connections, Jumpers, LEDs, Switches**

| Designation | Description | Comments |
|---|---|---|
| **FIELD WIRING CONNECTIONS** | | |
| TB1-1 | Loop 1 | Class B, Style 4, (+) positive, power limited. See Figure 2-1. |
| TB1-2 | | Class A, Style 6 (+) positive return, power limited. |
| TB1-3 | | Class A, Style 6 ( - ) negative return, power limited. |
| TB1-4 | | Class B, Style 4 ( - ) negative out, power limited. |
| TB1-5 thru-8 | | Not used. |
| **JUMPERS** | | |
| **W1** | | Factory use. (Out) |
| **W2** | 3-pin (2 position) | AOM/ AOM-2/AAI Degrade Operation:<br>Jumper **OUT** - Modules do not energize during degrade.<br>Jump Pins **1, 2** - Modules energize, can be silenced (SIL)<br>Jump Pins **2, 3** - Modules energize, cannot be silenced (NSIL). |
| **LEDs** | | |
| Trouble | Yellow | Lights to indicate trouble in the Signaling Line Circuit. |
| Alarm | Red | Lights to indicate alarm in the Signaling Line Circuit. |
| **SWITCHES** | | |
| SW-1 | rotary | 16-position address switch. See 2.1.1 |
| DISCONNECT (SW-2) | 2-pos. slide | Disconnect/walk test switch for Signaling Line Circuit. |
| **CONNECTORS** | | |
| **J4** | FCINET® | Communication from **J4** of previous unit to **J4** of next unit. |
| **J7** | 4-wire (rd-blk-yel-gry) | . Power from **J7** of previous unit to **J7** of next unit |

### 2.1.1 Address Switch

The Address Switch, SW1, is a 16-position rotary switch labeled “0" through ”9" and “A” through “F” (A=10, B=11 ...F=15). It is located in the lower left section of the AEU. If only one AEU is installed, the switch must be set to position “1" (one). The address switch must not be set to position ”0" (zero), and multiple AEU switches must not be set to the same address.

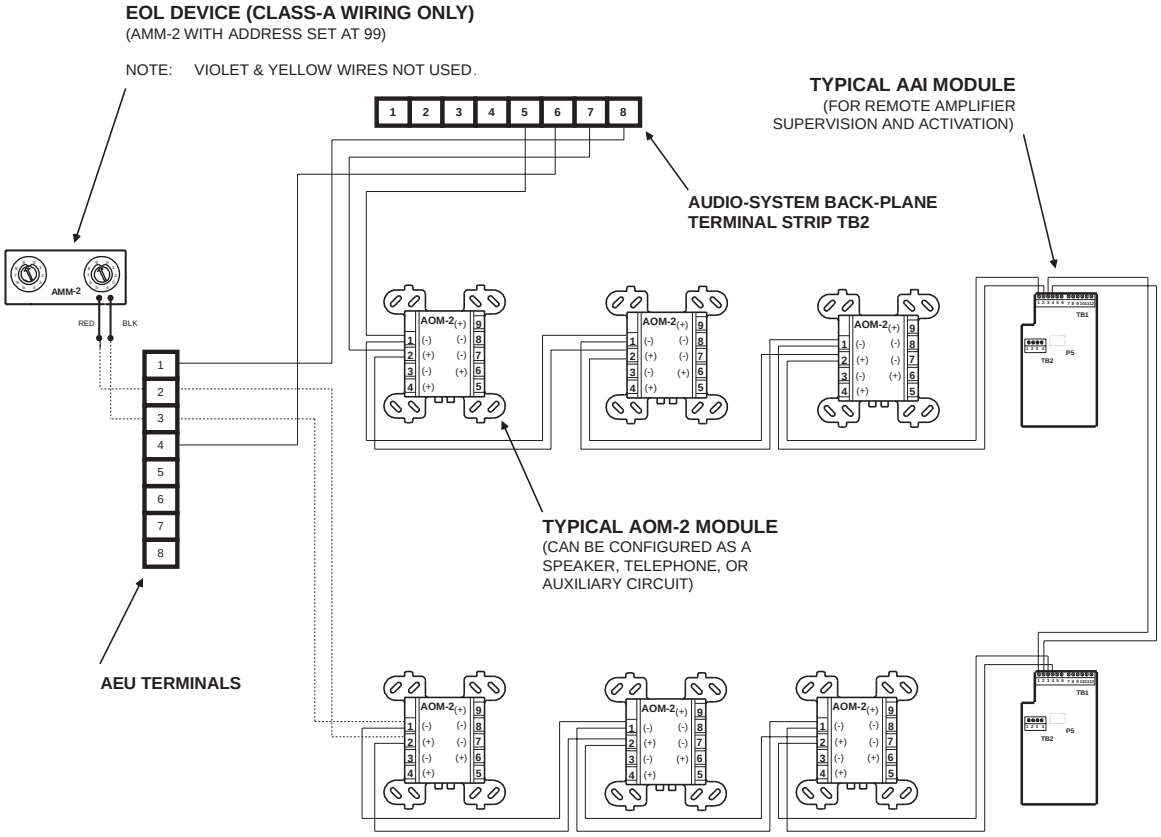
### 2.1.2 Audio Signaling Line Circuit Wiring
### A. Class A Wiring Instructions (similar to NFPA Style 6)

- Connect an electronic EOL device (consisting of an AMM-2 module, Address “99") (red and black wires) to the AEU as shown in Figure 2-1. (Yellow and violet wires are not used.)
- Be sure to observe polarity.
- Maximum allowable field wiring resistance is 40 ohms per circuit. Use unshielded, twisted pair cable.
- Maximum circuit capacitance is 0.5 uf.

**RATINGS**

| | |
|---|---|
| Voltage | 24 VDC (nominal) |
| Current | 0.065 amp. max. (supervisory) |
| | 0.085 amp. max. (alarm) |
| | 0.750 amp. max. (short ckt.) |

Power limited
Supervised




NOTE: DOTTED LINES ONLY FOR CLASS-A WIRING.

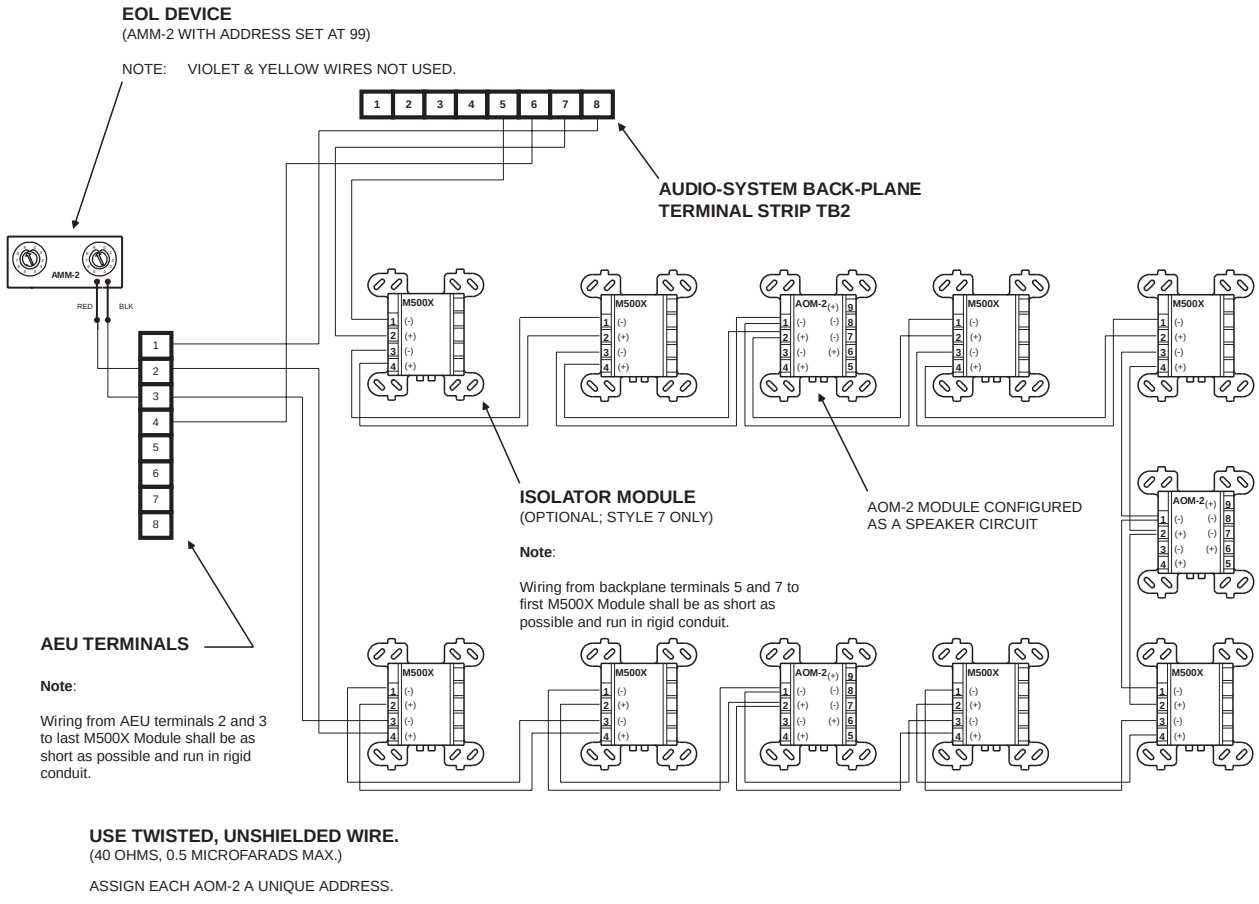
**Figure 2-1**

**B. Class A, Wiring Instructions (alternate wiring methods using isolators, NFPA 72 Style 7)**

Style 7 operation can be accomplished by isolating each addressable output device. The portion of the SLC to be protected must also have a Fault Isolator Module (M-500X) at each end as shown in Figure 2-2.

NFPA 72 Style 7 wiring can only be accomplished by installing two M500X Fault Isolators close-nippled to the single device being protected. These isolators are installed to protect the wires going to and coming from the protected device.

- Connect an electronic EOL device (consisting of an AMM-2 module, Address “99") (red and black wires) to the AEU as shown in Figure 2-2. (Yellow and violet wires are not used.)
- Be sure to observe polarity.
- Maximum allowable field wiring resistance is 40 ohms per circuit. Use unshielded, twisted pair cable.
- Maximum circuit capacitance is 0.5 uf.
- Power limited, supervised




NOTE: ONLY M500Xs AND AOM-2s USED AS SPEAKER CIRCUITS SHOWN FOR SIMPLICITY. SLC CAN ACCOMMODATE MANY MORE MODULES SUCH AS AOM-2s USED FOR EQUIPMENT INTERLOCKS. THE USE OF M500X MODULES IS OPTIONAL AND IS ONLY REQUIRED FOR CLASS-A, STYLE-7 CIRCUITS.

**Figure 2-2**

## 2.2 Backplane

Two Backplanes are available.

- The Main Backplane - has six (6) CCU/SIM connectors and one (1) TCU connector.
- The Expansion Backplane - has seven (7) CCU/SIM connectors.

The backplane is mounted inside the card cage and is the connection point for all of the plug-in SIMs, CCUs and TCUs. The AEU signaling line circuit is wired directly to this backplane before going out to the field for connections to AOM-2s for speaker, phone and auxiliary functions. See Figure 2-3.

Terminal block wiring is as follows:

- Terminal Block TB1 provides a connection to the wiring for the two-way telephone communication line.
- Terminal Block TB2 provides a connection to the AEU signaling line circuit (SLC).
- Terminal Block TB4 is the connection point between the backplane, the basic system amplifier(s), and the microphones of one or more remote command centers.

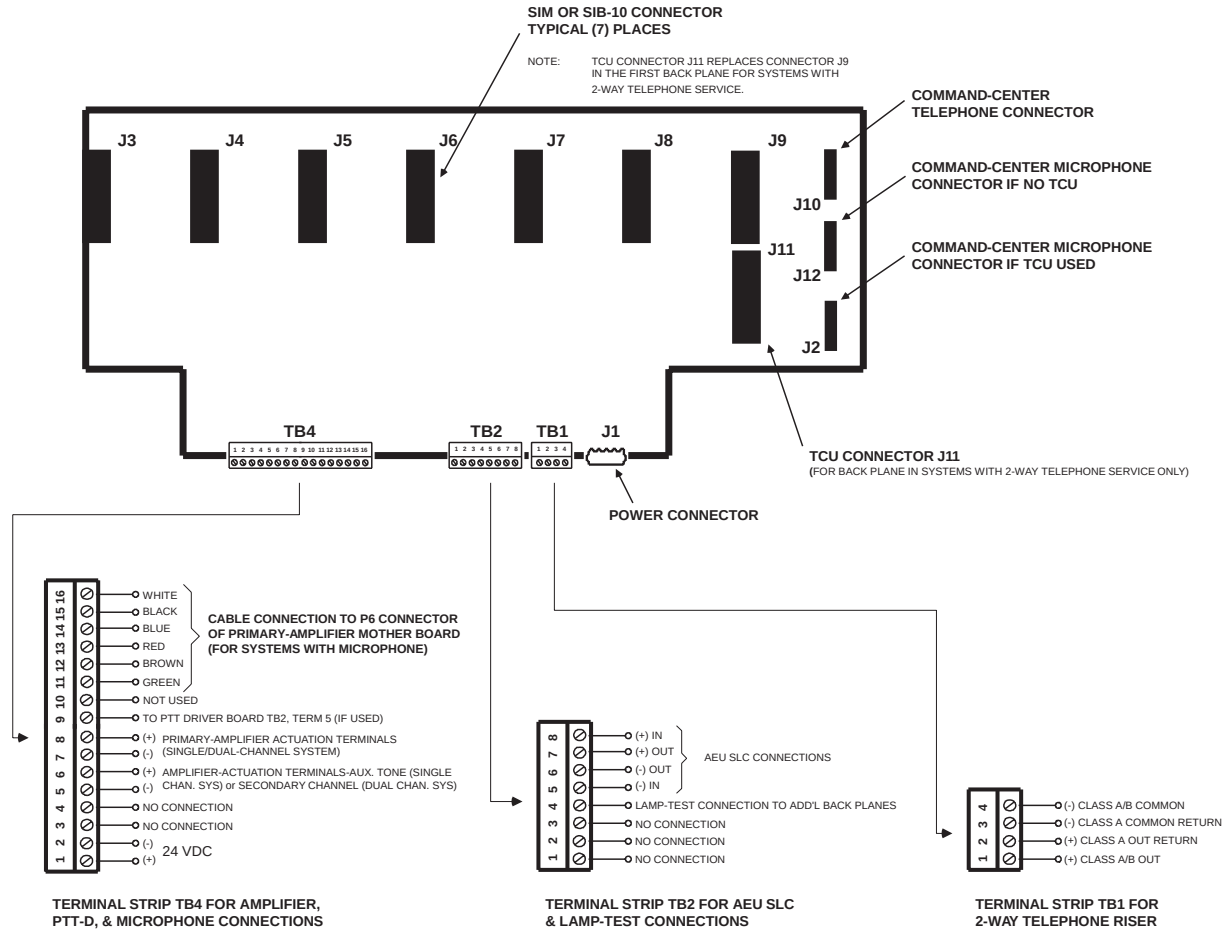



**Figure 2-3**

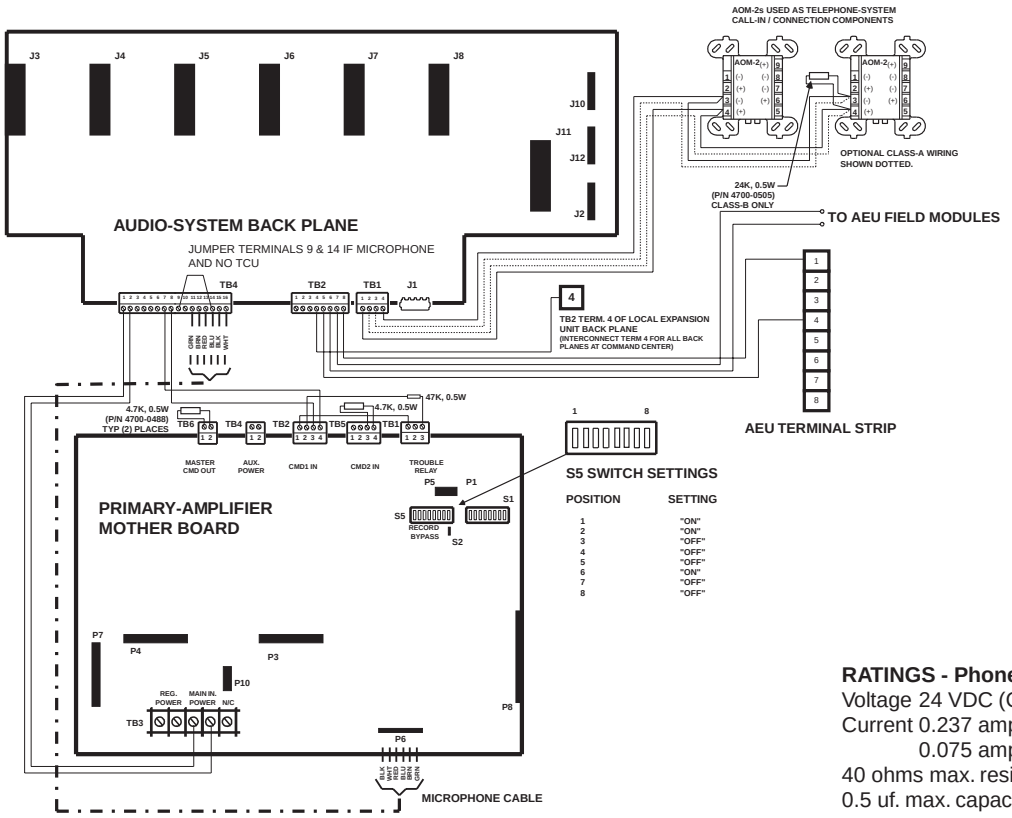
Typical wiring examples are as follows:

- Figure 2-4 shows the typical connections between the system backplane, the AEU SLC, primary amplifier motherboard, and the remote telephone interface modules (AOM-2) for a single-channel system without auxiliary tone.
- Figure 2-5 shows the same system with auxiliary tone.
- Figure 2-6 shows the connections among backplanes.
- Figure 2-7 shows the typical connections between the system backplane, the AEU SLC, primary amplifier mother board, and the addressable, remote telephone interface modules (AOM-2) for a dual-channel system without auxiliary tone. AEU SLC connections are identical to those shown in Figures 2-4 through 2-6.

**Table 2-2 Backplane**

**WIRING CONNECTIONS**

| Terminal | Designation | Description |
|---|---|---|
| TB1-1 | Phone Riser | Class B (+) positive, power limited. |
| TB1-2 | Supervised | Class A (+) positive, power limited. |
| TB1-3 | See Fig. 2-4 | Class A ( - ) negative, power limited. |
| TB1-4 | | Class B ( - ) negative, power limited. Class B EOL 24K, 0.5 W. (For connection to telephone AOMs and remote command and control centers). |
| TB2-1 thru -3 | | Not used. |
| TB2-4 | Lamp Test | Connects to TB2-4 of additional backplanes. |
| TB2-5 | AEU-SLC | In, negative ( - ), power limited/in from AEU TB1-4. |
| TB2-6 | Supervised | Out, negative ( - ), power limited/out |
| | See Fig. 2-1 | to additional backplanes/field devices. |
| TB2-7 | | Out, positive ( + ), power limited/out to additional backplanes/field devices. |
| TB2-8 | | In, positive ( + ) power limited/in from AEU TB1-1. |
| TB4-1 | Amplifier Pwr. | Positive, (+) power limited. Connects to FCI-MB TB3. |
| TB4-2 | 24 VDC (nom.) | Negative, ( - ) power limited. Connects to FCI-MB TB3. |
| TB4-3, -4 | | Not used. |
| TB4-5 | Amp. 2 Activation | Dual Channel Ampl. Output, negative ( - ), internal, power limited, connects to FCI-MB TB5-4. |
| TB4-6 | | Dual Channel Ampl. Output, positive ( + ), internal, power limited, connects to FCI-MB TB5-3. |
| TB4-7 | Amp. 1 Activation | Single Channel Ampl. Output, negative ( - ), internal, power limited, connects to FCI-MB TB2-4. |
| TB4-8 | | Single Channel Ampl. Output, positive ( + ), internal, power limited, connects to FCI-MB TB2-3. |
| TB4-9 | Mic. | Input from PPT-D, TB2-5. |
| TB4-10 | | Not used. |
| TB4-11 | Mic. Supervision | From PTT Cable P6 of FCI-MB, Green, internal, power limited |
| TB4-12 | | From PTT Cable P6 of FCI-MB, Brown, internal, power limited. |
| TB4-13 | Mic. SW ( - ) | From PTT Cable P6 of FCI-MB, Red, internal, power limited. |
| TB4 -14 | Mic. SW (+) | From PTT Cable P6 of FCI-MB, Blue, internal, power limited. |
| TB4-15 | Mic. | From PTT Cable P6 of FCI-MB, Black, internal, power limited |
| TB4-16 | Mic. | From PTT Cable P6 of FCI-MB, White, internal, power limited. |
| **CONNECTORS** | | |
| J1 | System Power | 4-wire power cable from J7 of last board in BSU. |
| J2 | Header | Microphone Connector if TCU is used. |
| J3 thru J9 | | Receptacles for SIM, SIB, CCU-S/D Units (J9 available on expansion backplane only). |
| J10 | | Telephone Handset Connector, Command Center. |
| J11 | | Connector to TCU/TCU-R (J11 Available on main backplane only). |
| J12 | | Microphone Connector if no TCU. |




**RATINGS - Phone Riser**
Voltage 24 VDC (Open circuit)
Current 0.237 amp. (Supervisory)
0.075 amp. (Short Ckt)
40 ohms max. resistance
0.5 uf. max. capacitance

**Figure 2-4**

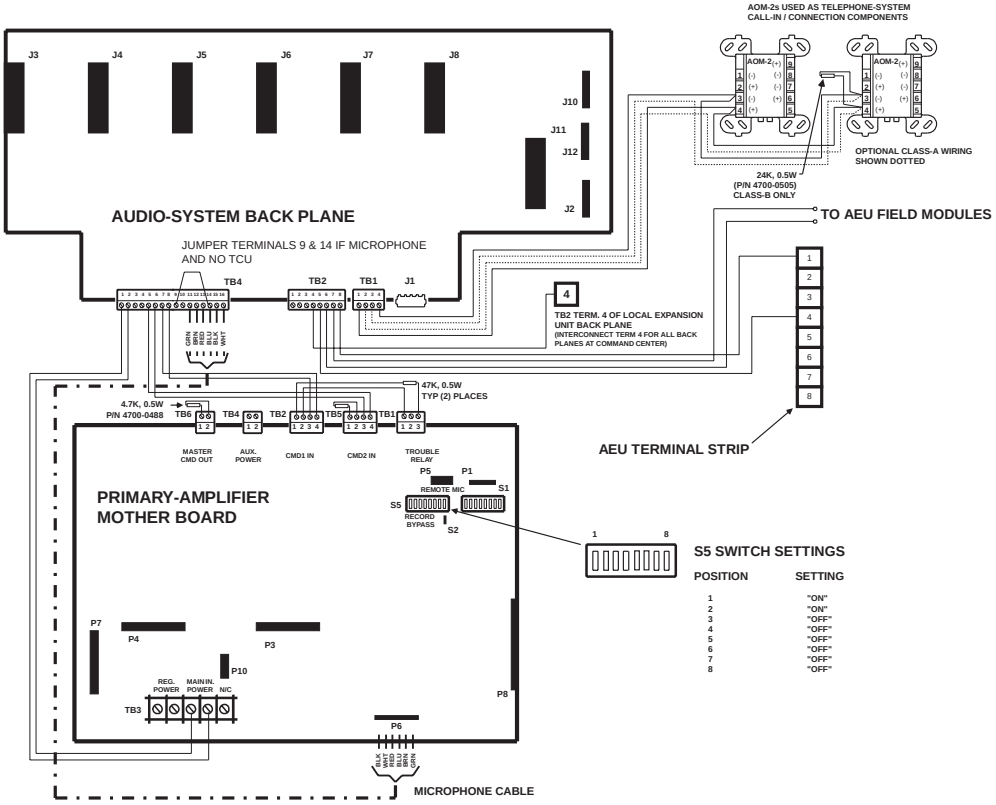



**Figure 2-5**

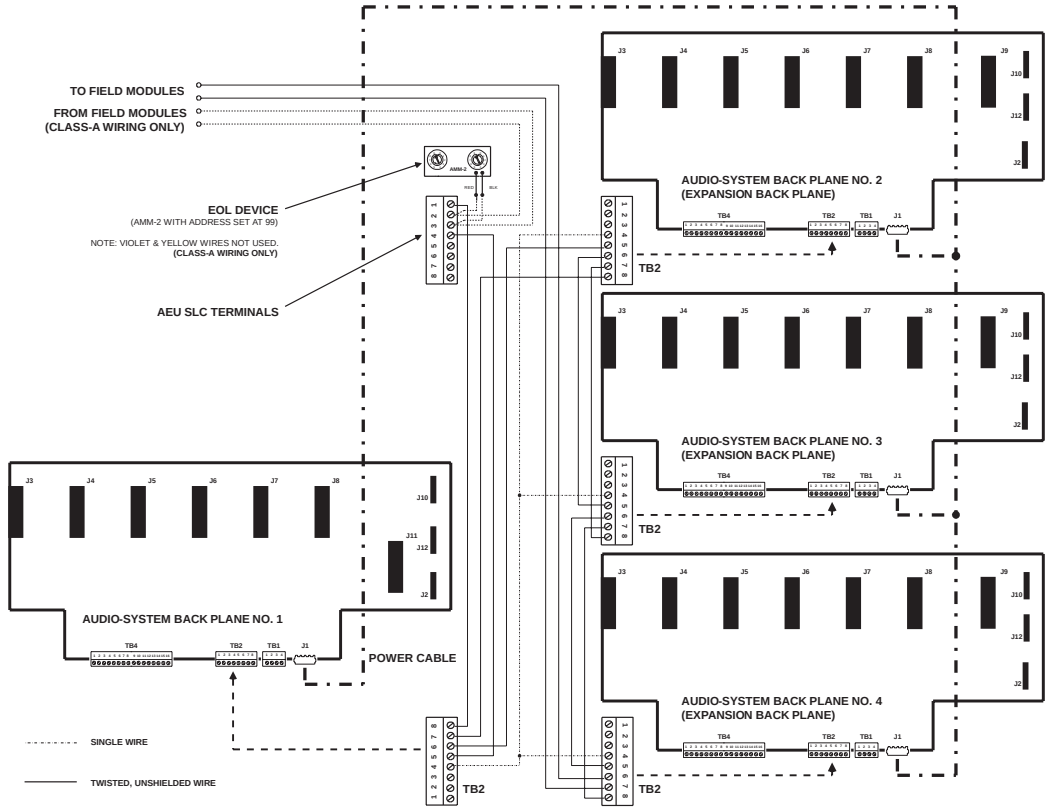



**Figure 2-6**

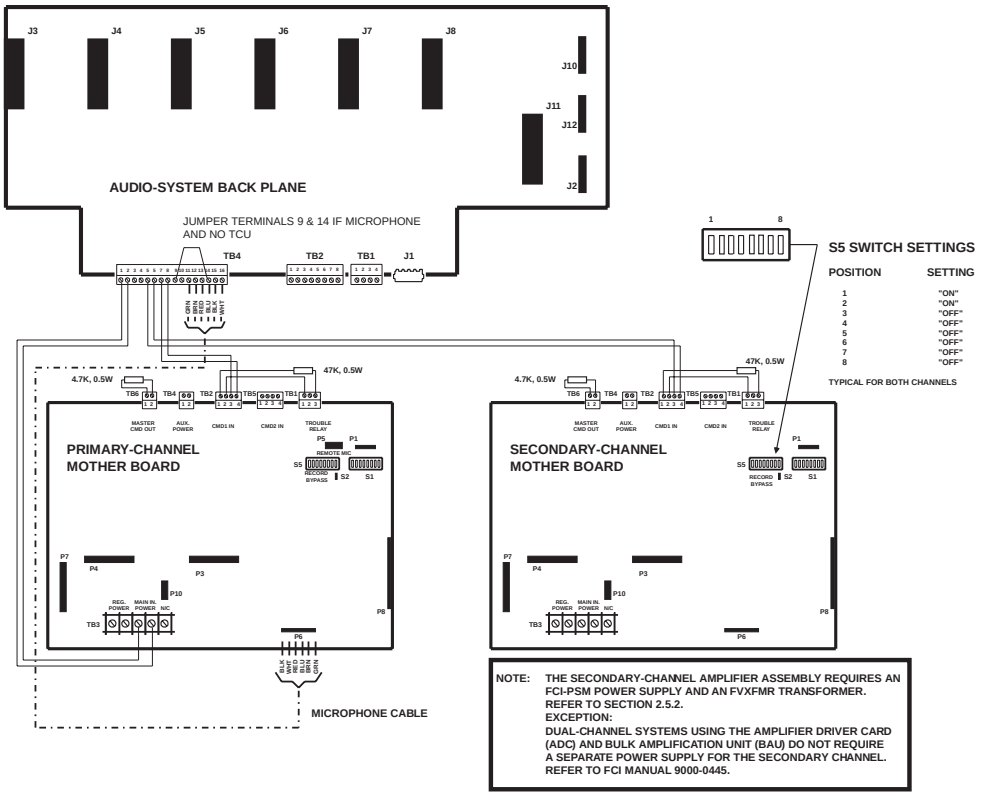



**Figure 2-7**

## 2.3 Card Cage Modules

The modules that can be mounted in the card cage are as follows:

| Module | | Reference |
|---|---|---|
| CCU-S | (Command Control Unit-Single Channel) | Figure 2-10 |
| CCU-D | (Command Control Unit-Dual Channel) | Figure 2-11 |
| SIM-SS | (Switch Input Module-Speaker, Single Channel) | Figure 2-12a |
| SIM-SD | (Switch Input Module-Speaker, Dual Channel) | Figure 2-12b |
| SIM-A | (Switch Input Module-Auxiliary) | Figure 2-12c |
| SIM-P | (Switch Input Module-Phone) | Figure 2-12d |
| SIB-10Y | (Status Indicator Board-10 Yellow) | Figure 2-12e |
| SIB-10R | (Status Indicator Board-10 Red) | Figure 2-12e |
| TCU | (Telephone Control Unit) | Figure 2-12f |
| TCU-R | (Telephone Control Unit-Remote) | Figure 2-12f |

**NOTE**: Inputs that are not assigned to groups activate only the system general outputs. These output lists are programmable for each output in the system. Any system output can be programmed to any of the available general output lists.

Table 2-3 shows a chart of the SIM/TCU/CCU addressing scheme.

For each module, five (5) address points are used.

Example: CCU-S @ “0" Uses address points 0-4
SIM-SS @ “5" Uses address points 5-9

The FCP assigns addresses in the following order:

CCU
SIM-SS
SIM-A
SIM-P
SIB-10
TCU

For example, a system with 1 CCU, 1 SIM-SS, 1 SIM-A, 1 SIM-P and 1 TCU would show the following addressing scheme:

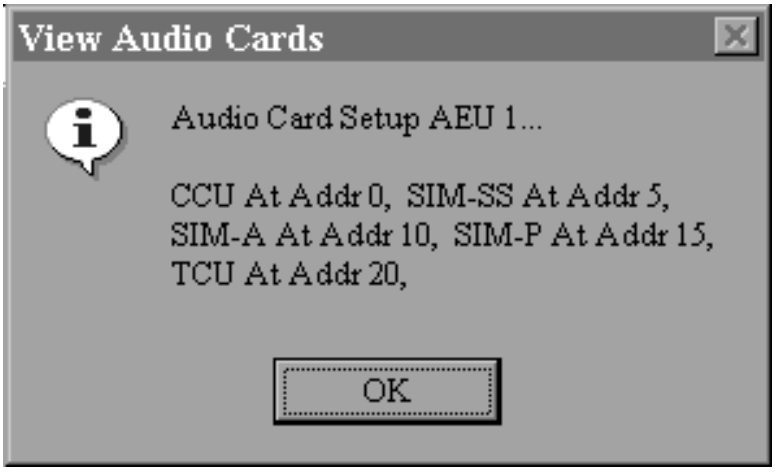



**Figure 2- 8**

**NOTE:** After an initial download of an FCP file, any modules added to an existing configuration will be added to the next available address. In the above example, adding a SIM-SS would cause the FCP to set the address of that SIM-SS to 25.

| Table 2-3 | | |
|---|---|---|
| **Switch Input Module Addresses** | **Rotary Switch Position (Tens)** | **Two Position Jumper (Ones)** |
| SIM Addresses 00 through 04 | 0 | Down |
| SIM Addresses 05 through 09 | 0 | Up |
| SIM Addresses 10 through 14 | 1 | Down |
| SIM Addresses 15 through 19 | 1 | Up |
| SIM Addresses 20 through 24 | 2 | Down |
| SIM Addresses 25 through 29 | 2 | Up |
| SIM Addresses 30 through 34 | 3 | Down |
| SIM Addresses 35 through 39 | 3 | Up |
| SIM Addresses 40 through 44 | 4 | Down |
| SIM Addresses 45 through 49 | 4 | Up |
| SIM Addresses 50 through 54 | 5 | Down |
| SIM Addresses 55 through 59 | 5 | Up |
| SIM Addresses 60 through 64 | 6 | Down |
| SIM Addresses 65 through 69 | 6 | Up |
| SIM Addresses 70 through 74 | 7 | Down |
| SIM Addresses 75 through 79 | 7 | Up |
| SIM Addresses 80 through 84 | 8 | Down |
| SIM Addresses 85 through 89 | 8 | Up |
| SIM Addresses 90 through 94 | 9 | Down |
| SIM Addresses 95 through 99 | 9 | Up |

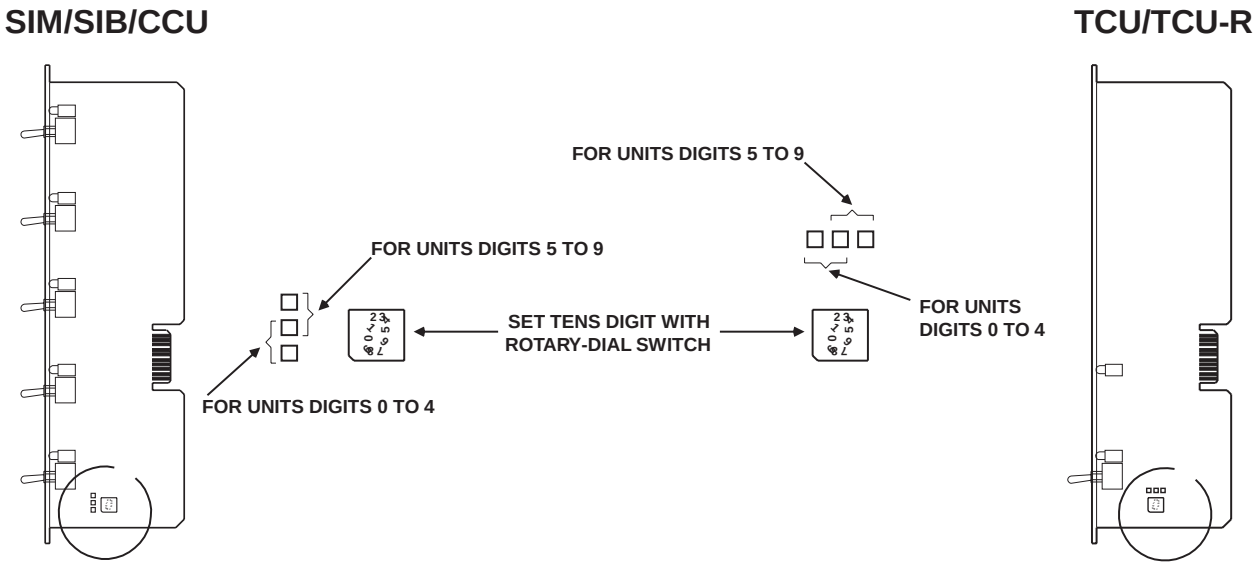



**Figure 2-9 Typical Address Switch/Jumper locations**

**ALL-CALL SWITCH**

MOVE TO "ALARM" POSITION TO ACTIVATE ALL SPEAKER CIRCUITS
LED ILLUMINATES TO CONFIRM ACTIVATION

MOVE TO "NORMAL" POSITION TO DEACTIVATE ALL
SPEAKER CIRCUITS ACTIVATED BY MOVE TO "ALARM" POSITION.
LED EXTINGUISHES TO CONFIRM DEACTIVATION

**MANUAL-SELECT SWITCH**

MOVE TO "ON" POSITION TO DEACTIVATE ALL AUTOMATICALLY-ACTIVATED
SPEAKER CIRCUITS. LED ILLUMINATES TO CONFIRM ACTIVATION

MOVE TO NORMAL POSITION TO REACTIVATE ALL
SPEAKER CIRCUITS DEACTIVATED BY MOVE TO "ON" POSITION.
LED EXTINGUISHES TO CONFIRM DEACTIVATION

**ALARM-TONE SWITCH**

MOVE TO "ON" POSITION TO REACTIVATE A SILENCED ALARM TONE
OR TO OVERRIDE A MANUALLY-ACTIVATED AUXILIARY TONE.
LED ILLUMINATES TO CONFIRM ACTIVATION.

MOVE TO "NORMAL" POSITION TO DEACTIVATE A MANUALLY-
ACTIVATED ALARM TONE OR TO PREPARE SYSTEM FOR
AUXILIARY-TONE ACTIVATION.
LED EXTINGUISHES TO CONFIRM DEACTIVATION.

**AUXILIARY-TONE SWITCH**

MOVE TO "ON" POSITION TO ACTIVATE AUXILIARY TONE
LED ILLUMINATES TO CONFIRM ACTIVATION.

MOVE TO "NORMAL" POSITION TO DEACTIVATE AUXILIARY TONE .
LED EXTINGUISHES TO CONFIRM DEACTIVATION.

ALARM TONE MUST BE SILENCED (IF AUTOMATICALLY ACTIVATED) OR
ALARM-TONE SWITCH MUST BE RESTORED TO "NORMAL" POSITION
BEFORE AUXILIARY TONE CAN BE BROADCAST

**LAMP-TEST SWITCH**

MOVE UP TO ACTIVATE ALL CCU-S, SIM-SS, SIM-A, SIM-P, AND TCU LEDs

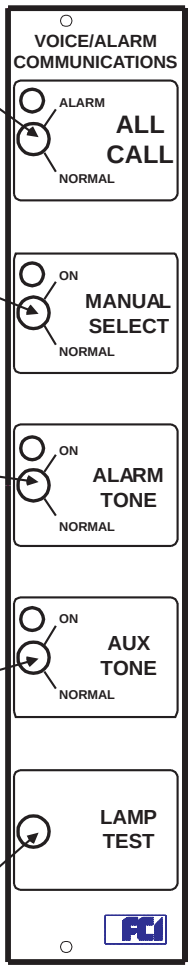



**Figure 2-10 Command Control Unit - Single Channel (CCU-S)**

## ALL-CALL SWITCH

MOVE TO "CHANNEL 1" POSITION TO ACTIVATE
ALL SPEAKER CIRCUITS AND BROADCAST ALARM TONE
LED ILLUMINATES TO CONFIRM ACTIVATION

MOVE TO "CHANNEL 2" POSITION TO ACTIVATE
ALL SPEAKER CIRCUITS AND BROADCAST AUXILIARY TONE.
LED ILLUMINATES TO CONFIRM ACTIVATION

## MANUAL-SELECT SWITCH

MOVE TO "ON" POSITION TO DEACTIVATE ALL AUTOMATICALLY-ACTIVATED
SPEAKER CIRCUITS. LED ILLUMINATES TO CONFIRM ACTIVATION

MOVE TO NORMAL POSITION TO REACTIVATE ALL
SPEAKER CIRCUITS DEACTIVATED BY MOVE TO "ON" POSITION.
LED EXTINGUISHES TO CONFIRM DEACTIVATION

## ALARM-TONE SWITCH

MOVE TO "ON" POSITION TO REACTIVATE A SILENCED ALARM TONE
LED ILLUMINATES TO CONFIRM ACTIVATION.

MOVE TO "NORMAL" POSITION TO DEACTIVATE A
MANUALLY-ACTIVATED ALARM TONE
LED EXTINGUISHES TO CONFIRM DEACTIVATION.

## AUXILIARY-TONE SWITCH

MOVE TO "ON" POSITION TO ACTIVATE AUXILIARY TONE
LED ILLUMINATES TO CONFIRM ACTIVATION.

MOVE TO "NORMAL" POSITION TO DEACTIVATE AUXILIARY TONE .
LED EXTINGUISHES TO CONFIRM DEACTIVATION.

ALARM TONE MUST BE SILENCED (IF AUTOMATICALLY ACTIVATED)
OR ALARM-TONE SWITCH MUST BE RESTORED TO "NORMAL"
POSITION BEFORE AUXILIARY TONE CAN BE BROADCAST

## LAMP-TEST SWITCH

MOVE UP TO ACTIVATE ALL CCU-D, SIM-SD, SIM-A, SIM-P, AND TCU LEDs

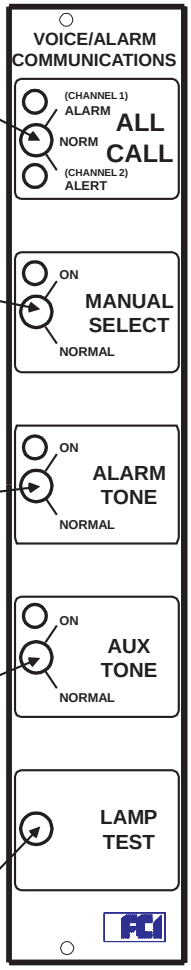



**Figure 2-11 Command Control Unit - Dual Channel (CCU-D)**

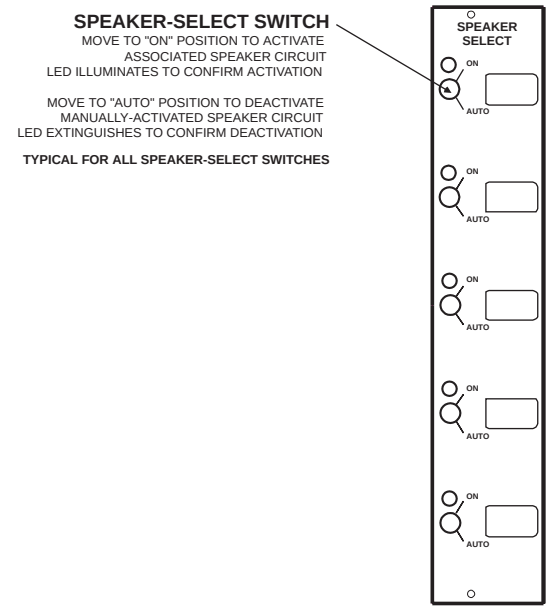



Fig. 2-12a Switch Input Module-Speaker (SIM-SS)

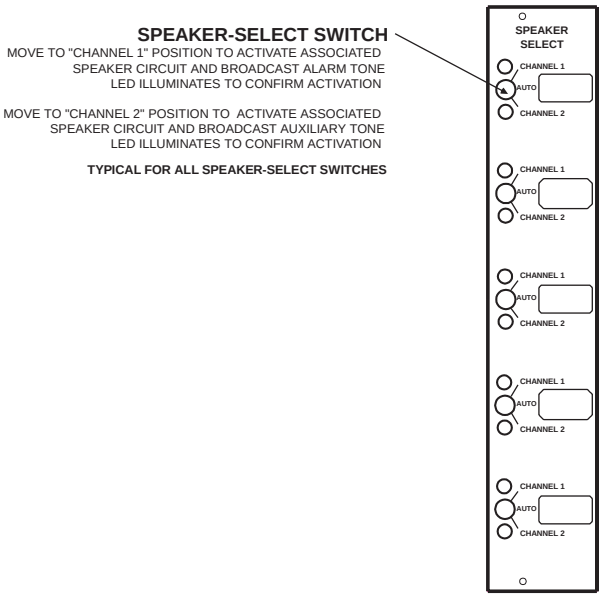



Fig. 2-12b Switch Input Module-Speaker (SIM-SD)

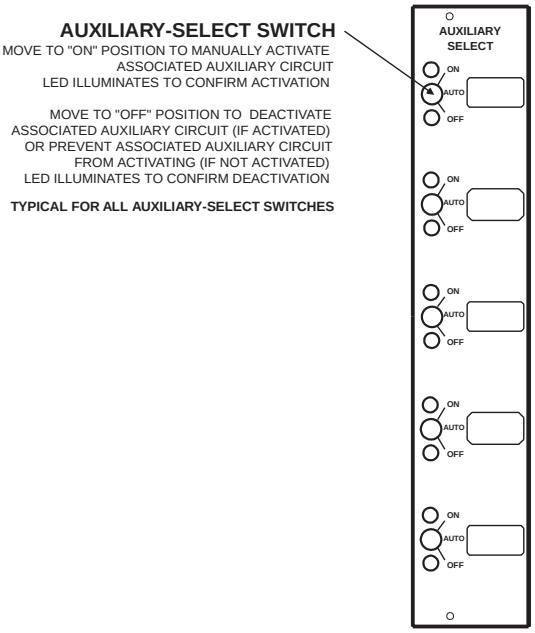



Fig. 2-12c Switch Input Module-Aux. (SIM-A)

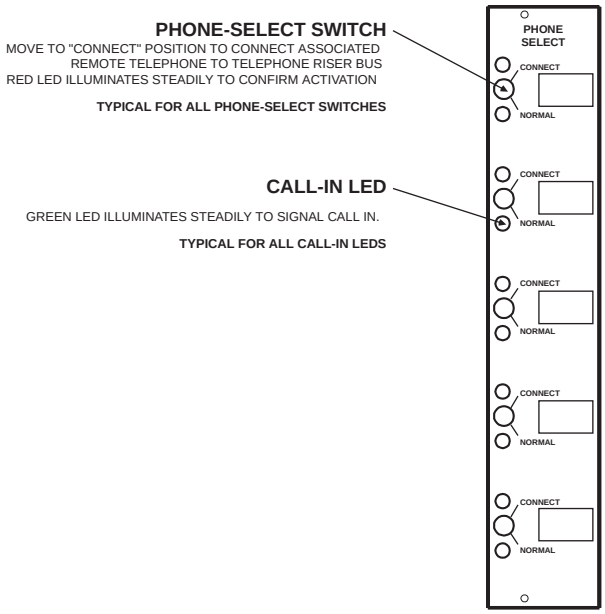
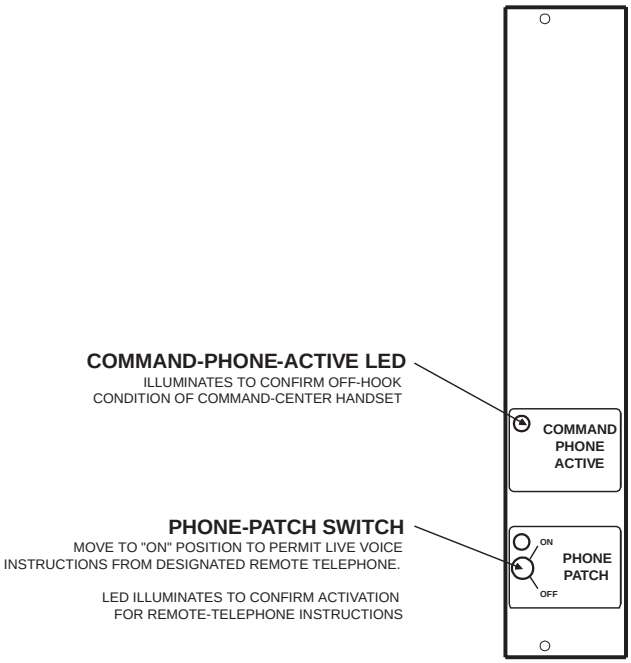
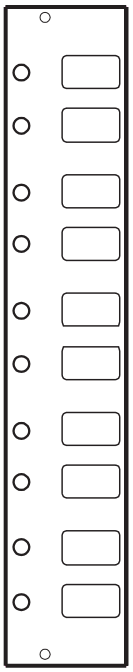



Fig. 2-12d Switch Input Module-Phone (SIM-P)



| Fig. 2-12e Telephone Control Unit (TCU, TCU-R) | Fig. 2-12f Status Indicator Board (SIB-10R, SIB-10Y) |
|---|---|

## 2.4 Basic System Amplifier

### 2.4.1 FCI-Motherboard (FCI-MB)

The FCI-MB microprocessor-based module controls and supervises the functions of the 25 VRMS amplifiers in the FireVac®7200. This module is “DIP" switch programmed and can house 1 or 2 amplifiers, each capable of supplying 25 Watts. These amplifiers (FCI-AAM-25) are activated either by hardwired input or, in the case of a distributed amplification system, via the AAI unit. Recorded messages are held in EEPROM memory on the FCI-MB.

**Table 2-4 FCI-MB Field Wiring, Switches, Connectors**

| **FIELD WIRING** | | |
|---|---|---|
| **Designation** | **Description** | **Comments** |
| TB1-1 | TRBL N/C | Trouble dry contacts, normally closed, power limited |
| TB1-2 | TRBL N/O | Trouble dry contacts, normally open, power limited |
| TB1-3 | TRBL COM | Trouble dry contacts, common, power limited |
| TB2-1 | Amp. 1 Activation ( - )* | |
| TB2-2 | Amp. 1 Activation ( +)* | |
| TB2-3 | Amp. 1 Activation (+)* | |
| TB2-4 | Amp. 1 Activation ( - )* | |
| TB3-1, -2 | | Not used. |
| TB3-3 | Amp. power | Power input ( - ), non-power limited. From Back plane TB4-1. |
| TB3-4 | 24 VDC (nom.) | Power input (+), non-power limited. From Back plane TB4-2. |
| TB3-5 | | Not used. |
| TB4-1, -2 | | Not used. |
| TB5-1 | Amp. 2 Activation ( - )* | Single Channel operation with aux. tone |
| TB5-2 | Amp. 2 Activation (+)* | Single Channel operation without aux. tone |
| TB5-3 | Amp. 2 Activation (+)* | Dual Channel operation |
| TB5-4 | Amp. 2 Activation ( - )* | Distributed Amplifier operation |
| TB6-1 | | Not used |
| **SWITCHES** | | |
| S1 | 8-pos. | |
| S5 | | Amplifier programming switches, See Figures 2, 3. |
| **CONNECTORS** | | |
| P3 | Header, Amp. 2 | Additional 25-watt amplifier connection point. |
| P4 | Header, Amp. 1 | Primary 25-watt amplifier connection point. |
| P5 | Header, AAI or PTT-R | Connection point for an AAI in a distributed amplifier, or for the PTT-R in a main amplifier. |
| P6 | Header, microphone | Connection point for the system paging microphone, power limited. This header is jumped out on a Dual Channel System, or with distributed amplifiers. |
| P7 | Header, aux. power supply | Connection point for the distributed amplifier power supply. |

*See Figure 2-4 for Single Channel operation without Aux. tone.
*See Figure 2-5 for Single Channel operation with Aux. tone.
*See Figure 2-7 for Dual Channel operation.
*See Figure 2-20 for Distributed Amplifier operation.

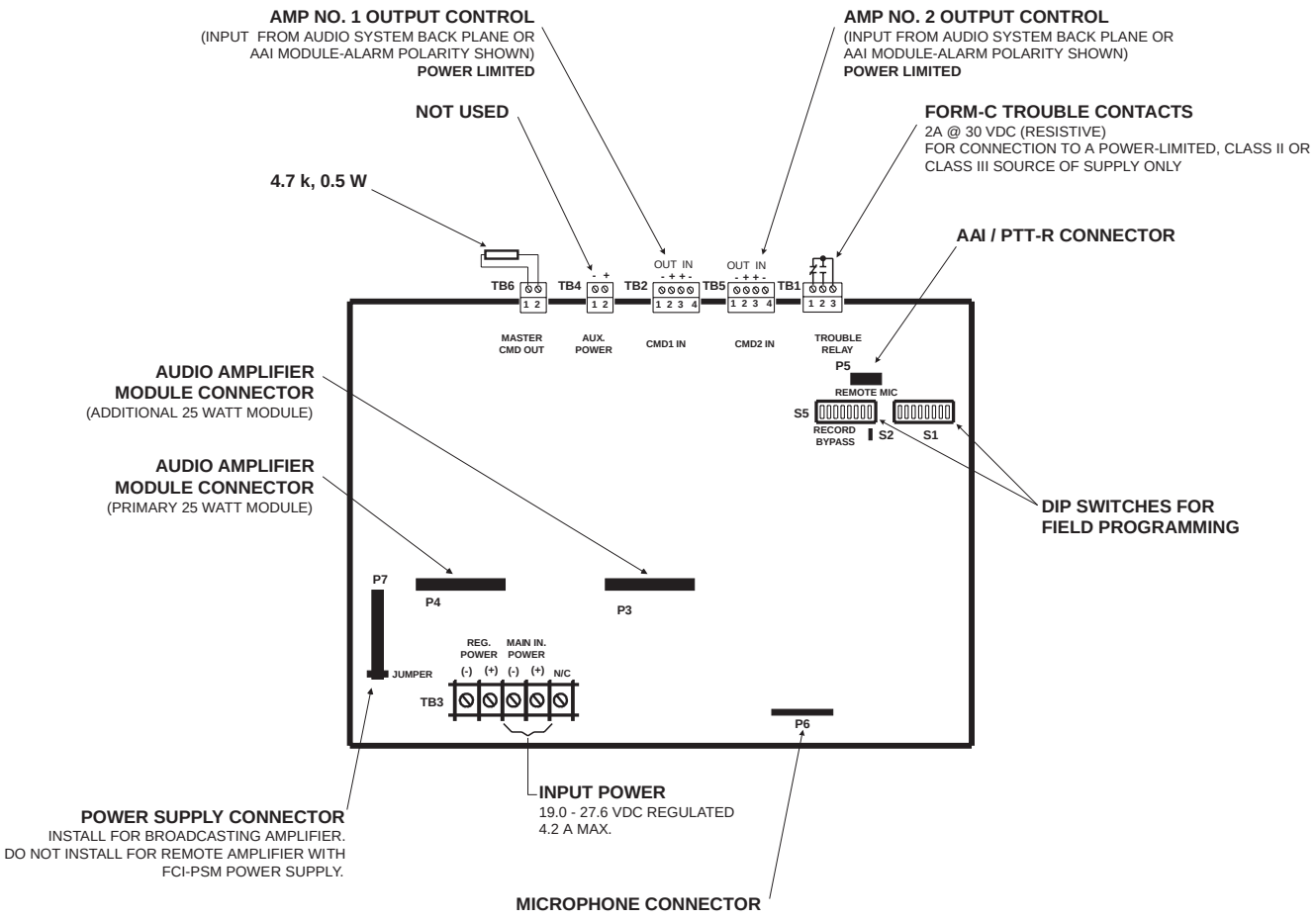



**Figure 2-13 Mother Board (FCI-MB)**

**CAUTION**: Disconnect all sources of power before servicing, removing, or inserting any circuit boards. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized.

The FCI-Motherboard (FCI-MB) contains connectors for either one or two 25-watt audio amplifier modules. The amplifier assembly is supplied with one amplifier module mounted on the Command Board. The optional second 25-watt amplifier module can also be mounted on the FCI-MB for an additional 25 Watt output.

Primary amplifier operation is determined by the settings of DIP Switches S1 and S5 on the FCI-MB. DIP Switch S1 selects the tone that the amplifier broadcasts, determines whether the tone is broadcast before and after a recorded message, and sets the number of tone and/or message repetitions.

Figures 2-14 and 2-15 illustrate the settings for DIP Switches S1 and S5.

**AMPLIFIER MOTHER BOARD DIP SWITCH S1**

"ON" (UP) "OFF" (DOWN)

**SWITCHES 6, 7, & 8:** USED TO DETERMINE THE NUMBER OF TIMES THAT VOICE MESSAGE WILL REPEAT

| SWITCH 6 | SWITCH 7 | SWITCH 8 | NO. OF MESSAGE REPETITIONS |
|---|---|---|---|
| OFF | OFF | OFF | TONE ONLY. NO VOICE* |
| ON | OFF | OFF | 3 |
| OFF | ON | OFF | 4 |
| ON | ON | OFF | 6 |
| OFF | OFF | ON | 8 |
| ON | ON | ON | CONTINUOUS (UNTIL SYSTEM IS RESET) |

* SOME JURISDICTIONS REQUIRE EVACUATION TONE ONLY. THIS OPTION PREVENTS VOICE MESSAGE FROM BEING GENERATED.

**SWITCH 5:** OFF - NO TONE AFTER MESSAGE
ON- TONE AFTER MESSAGE (FACTORY DEFAULT)

**SWITCH 4:** OFF - NO TONE BEFORE MESSAGE
ON- TONE BEFORE MESSAGE (FACTORY DEFAULT)

**SWITCHES 2 AND 3:** USED TO DETERMINE WHAT TONE WILL BE BROADCASTED BY THE SPEAKERS BEFORE AND AFTER MESSAGE IS BROADCAST. ALSO SELECTS BACK-UP TONE TO BE BROADCAST IF DIGITAL VOICE GENERATOR FAILS.

| SWITCH 2 | SWITCH 3 | TONE GENERATED |
|---|---|---|
| OFF | OFF | STEADY |
| OFF | ON | HI - LO |
| ON | OFF | SLOW WHOOP (FACTORY DEFAULT) |
| ON | ON | CHIME |

**SWITCH 1:** ON - TEMPORAL PATTERN PER ANSI S3.41 GENERATED (OVERRIDES TONE SELECTION OF SWITCHES 2 AND 3)
OFF- TONE GENERATED AS SELECTED BY SWITCHES 2 AND 3

**Figure 2-14**

**AMPLIFIER MOTHER BOARD DIP SWITCH S5**

"ON" (UP) "OFF" (DOWN)

**SWITCH 8:** OFF- FACTORY DEFAULT SETTING

**SWITCH 7:** OFF- FACTORY DEFAULT SETTING

**SWITCH 6:** ON - AMP2 ACTIVATED BY UNPOWERED, NORMALLY-OPEN CONTACT
OFF- AMP2 ACTIVATED BY NAC POLARITY REVERSAL

**SWITCH 5:** ON - AMP1 ACTIVATED BY UNPOWERED, NORMALLY-OPEN CONTACT
OFF- AMP1 ACTIVATED BY NAC POLARITY REVERSAL

**SWITCH 4:** ON- REMOTE AMPLIFIER
OFF- PRIMARY AMPLIFIER

**SWITCH 3:** OFF- FACTORY DEFAULT SETTING

**SWITCH 2:** DETERMINES WHICH MESSAGE WILL BE BROADCAST

ON: AMP1 INPUT (CMD1) ACTIVATES BOTH SPKR CKTS AND BROADCASTS UP TO 30-SEC. ALARM MESSAGE (I.E., FIRST RECORDED MESSAGE).

AMP2 INPUT (CMD2) ACTIVATES BOTH SPKR CKTS AND BROADCASTS UP TO 30-SEC. SECONDARY MESSAGE (I.E., SECOND RECORDED MESSAGE)

NOTE: MESSAGE #1 BROADCASTS IF BOTH CMD1 AND CMD2 ACTIVATED.

FACTORY DEFAULT SETTING

**SWITCH 1:** ON - FACTORY DEFAULT

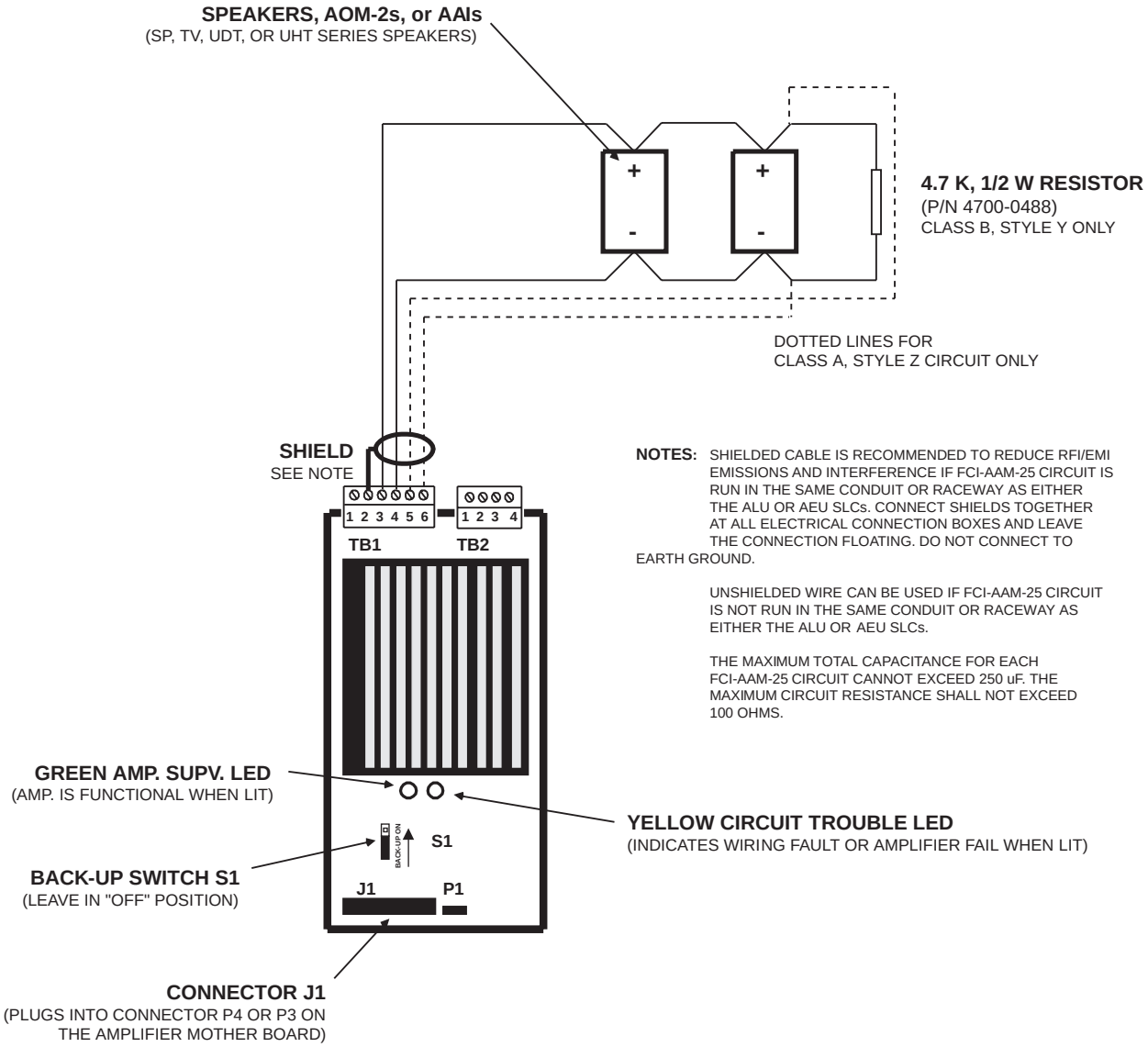
**Figure 2-15**

### 2.4.2 Audio Amplifier Module, 25-Watt (FCI-AAM-25)

The Audio Amplifier Module provides 25 watts at 25 VRMS for powering speakers, AOMs and AAIs that are mounted in distributed amplifiers. It attaches to connector P4 on the FCI-MB. See Figure 2-16.

A second Audio Amplifier Module can be attached to Connector P3 and used to back up the primary 25-watt amplifier supply or for an additional 25 watts of power from the FCI-MB.

Typical wiring to each of the 25-watt amplifier modules is shown in Figure 2-16.




**RATINGS - Audio Riser/Speaker Circuit**

| | |
|---|---|
| Voltage | 2 VDC (supervisory)<br>25 VRMS (alarm)<br>5 VDC (short ckt.) |
| Current | 0.001 amp. (supervisory)<br>1 amp. RMS (alarm)<br>0.001 amp. (short ckt.) |
| Resistance (max.) | 100 ohms |
| Capacitance (max.) | 250 uf. max. |

**Figure 2-16**

| Table 2-5 Audio Amplifier Module (FCI-AAM-25) | | |
|---|---|---|
| **Designation** | **Description** | **Comments** |
| TB1-1, -2 | | Shield termination point. |
| TB1-3 | Audio Amplifier Output | Class B (+) field wiring, power limited. Connect to speakers AOMs and AAIs. |
| TB1-4 | | Class B ( - ) field wiring, power limited. Connect to speakers AOMs and AAIs. |
| TB1-5 | | Class A (+) field wiring, power limited. Connect to speakers AOMs and AAIs. |
| TB1-6 | | Class A ( - ) field wiring, power limited. Connect to speakers AOMs and AAIs. |
| TB2-1 | Standby Audio Input | Input (+), internal, power limited. |
| TB2-2 | | Input ( - ), internal, power limited. |
| TB2-3 | | Output (+), internal, power limited. |
| TB2-4 | | Output ( - ), internal, power limited. |
| P1 | 5-position Header | Factory set with jumpers in positions 3 to 5 (left to right). This is the setting for 25 VRMS operation. **DO NOT REMOVE** |
| **LEDs** | | |
| LED1 | Green | Amplifier supervision. |
| LED2 | Yellow | Speaker circuit trouble |
| **Switch** | | |
| S1 | Back-up Mode Enable | When a second FCI-AAM-25 is used for 100% backup on the FCI-MB. |

The amplifier output can be wired for Class A, Style Z or Class B, Style Y operation. Amplifier output should use twisted, shielded wiring if being run in the same conduit or raceway as either an ALU or AEU signaling line circuit. Use twisted, unshielded wire if the amplifier audio output is run in a separate conduit or raceway. It is important to connect the shields of all entering and exiting wires at each electrical connection point, and to ensure that these shields are not connected to earth ground. Shields must be terminated on each FCI-AAM-25 at TB1-1 or TB1-2. All amplifier output power is inherently power limited.

**CAUTION**: Disconnect all sources of power before servicing, removing, or inserting any circuit boards. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized.

Figure 2-17 shows the optional second amplifier module wired for backup of the primary amplifier. A normally-lit green LED on each amplifier module indicates the amplifier is functional. A yellow LED indicates a field wiring or amplifier fault.

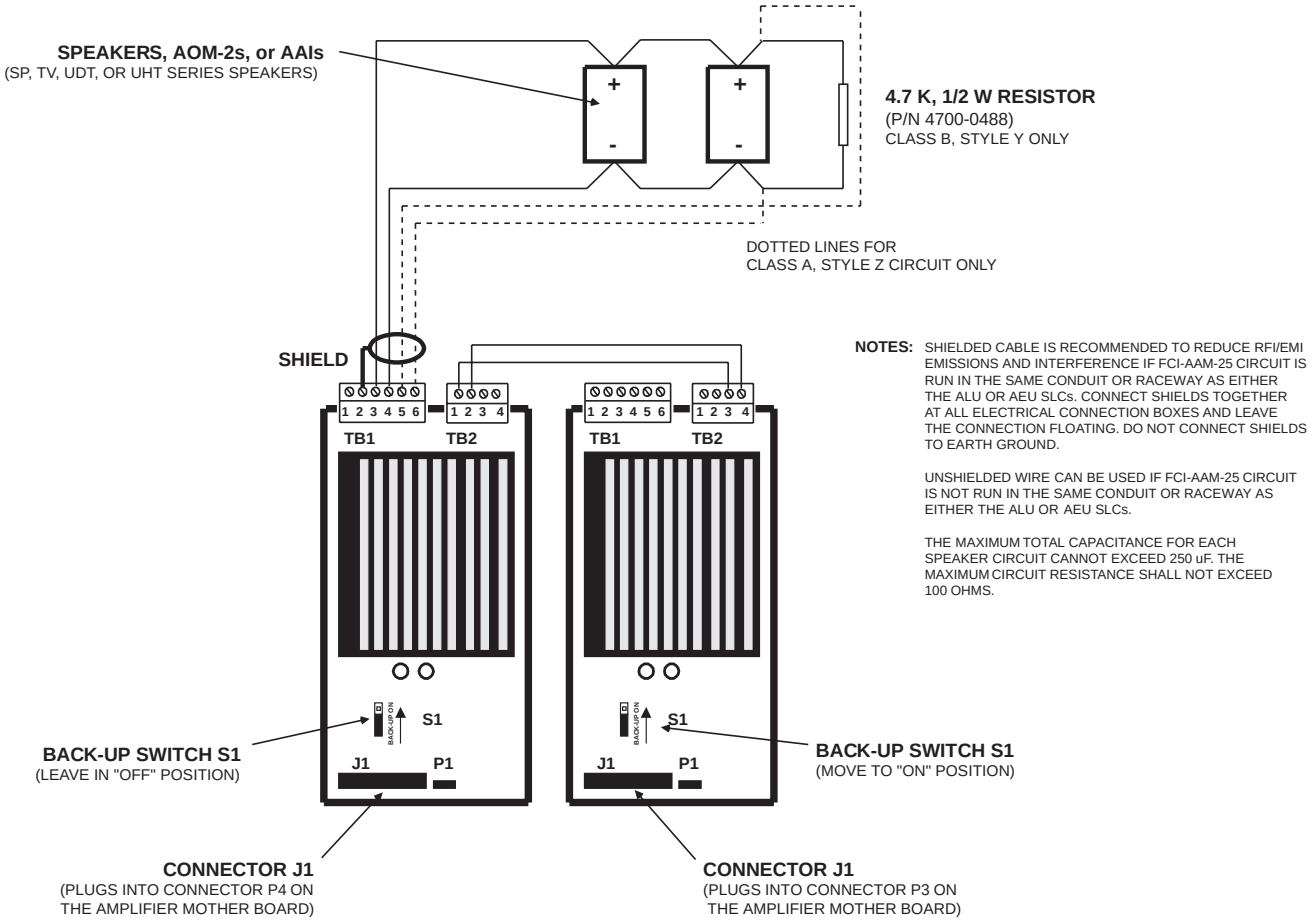



**Figure 2-17**

## 2.5 Distributed Amplification

### 2.5.1 Addressable Amplifier Interface (AAI)

**A. Single-Channel Distributed Amplification**

In a Single-Channel application, the main amplifier (FCI-MB & FCI-AAM- 25) is used to create an “audio riser”. Remote Distributed Amplifiers are installed along this audio riser supplying audio power to AOM-2’s distributed throughout the area .

**B. Dual-Channel Distributed Amplification**

In a Dual-Channel application, the main (Alarm Tone) amplifier is used to create an “alarm audio riser”. A separately powered amplifier is used to create the “pre-alert audio riser”.

A separately powered or Distributed Amplifier consists of an FCI-MB, FCI-PSM with TXA, one (1) or two (2) FCI-AAM-25’s and an AAI.

An Addressable Amplifier Interface Module (AAI) serves as the interface between the main audio amplifier and a remote distributed amplifier. The primary function of the AAI is to supervise and activate the distributed amplifier. The AAI switches primary alarm tone and/or recorded messages at the command center to its

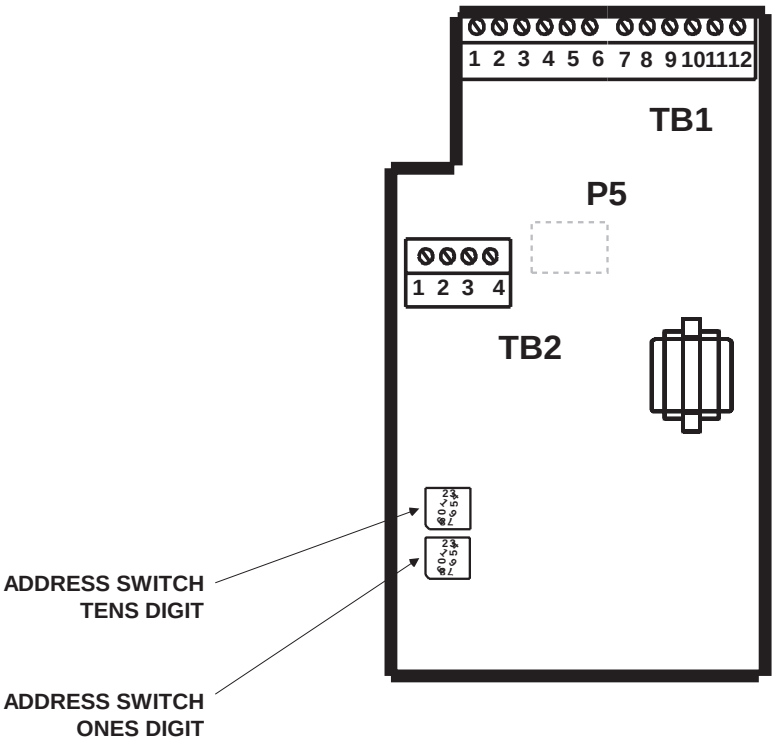



**Figure 2-18**

associated distributed amplifier.

**C. AAI Addressing information**

Switch SW1 (“ones” digit) and Switch SW2 (“tens” digit) can be addressed using Addresses 00 - 99. These addresses are interpreted by the Audio Evacuation Unit/Keyboard Display Unit (AEU/KDU) as Addresses 100 -199 (identically to the AOM-2s). To set the address of an AAI module, refer to the following example.

Figure 2-18 shows the location of the address switch.

**EXAMPLE:**

For Address 25, SW1 is set to “2" and Switch SW2 is set to ”5". (The AEU/KDU interprets switch address “25" as ”125".)

| Table 2-6 Addressable Amplifier Interface (AAI) | | |
|---|---|---|
| **Designation** | **Description** | **Comments** |
| TB1-1 | AEU - SLC | In, positive (+), power limited. From Backplane TB2-7. |
| TB1-2 | | In, negative ( - ), power limited. From Backplane TB2-6. |
| TB1-3 | | Out, positive (+), power limited, to additional AAIs, AOMs, and/or return to AEU. |
| TB1-4 | | Out, negative ( - ), power limited, to additional AAIs, AOMs, and/or return to AEU. |
| TB1-5 | Audio Riser | In, negative ( - ), power limited. |
| TB1-6 | Dual Channel | In, positive (+), power limited. |
| TB1-7 | | Out, negative ( - ), power limited, to additional AAIs, AOMs or Class A, Style Z return ( - ). |
| TB1-8 | | Out, positive (+), power limited, to additional AAIs, AOMs or Class A, Style Z return (+). |
| TB1-9 | Audio Riser | In, negative ( - ), power limited. |
| TB1-10 | Single Channel | In, positive (+), power limited. |
| TB1-11 | | Out, negative ( - ), power limited, to additional AAIs, AOMs or Class A, Style Z return ( - ). |
| TB1-12 | | Out, positive (+), power limited, to additional AAIs, AOMs or Class A, Style 6 return (+). |
| TB2-1 | Amplifier | Positive (+), power limited, to FCI-MB TB2-3 |
| TB2-2 | Activation | Negative ( - ), power limited, to FCI-MB TB2-4. |
| TB2-3 | Amplifier | Positive (+), power limited, to FCI-MB TB1-1 |
| TB2-4 | Supervision | Negative ( - ), power limited, to FCI-MB TB1-3. |
| **Switch** | | |
| SW1 | Address Switch | “Ones” digit. |
| SW2 | Address Switch | “Tens” digit. |
| **Connector** | | |
| P5 | FCI-MB interface | Connects to P5 header of FCI-MB. |

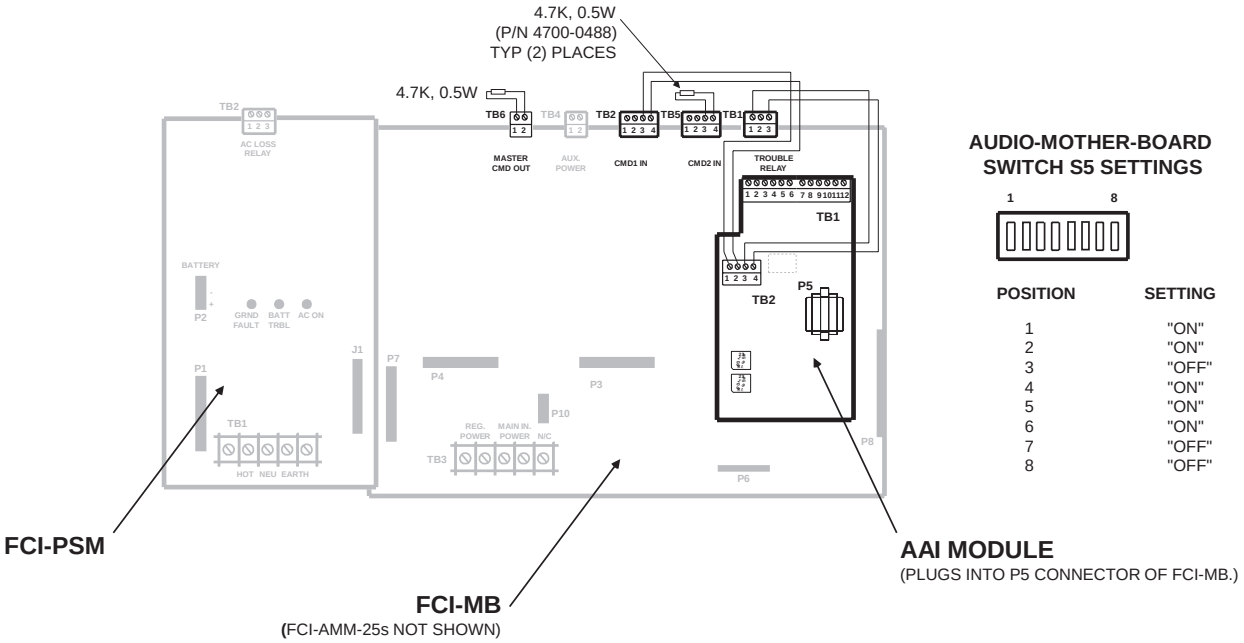



**Figure 2-19 AAI mounted on separately powered FCI-MB**

**WIRING FOR CLASS A, STYLE Z SHOWN DOTTED.**

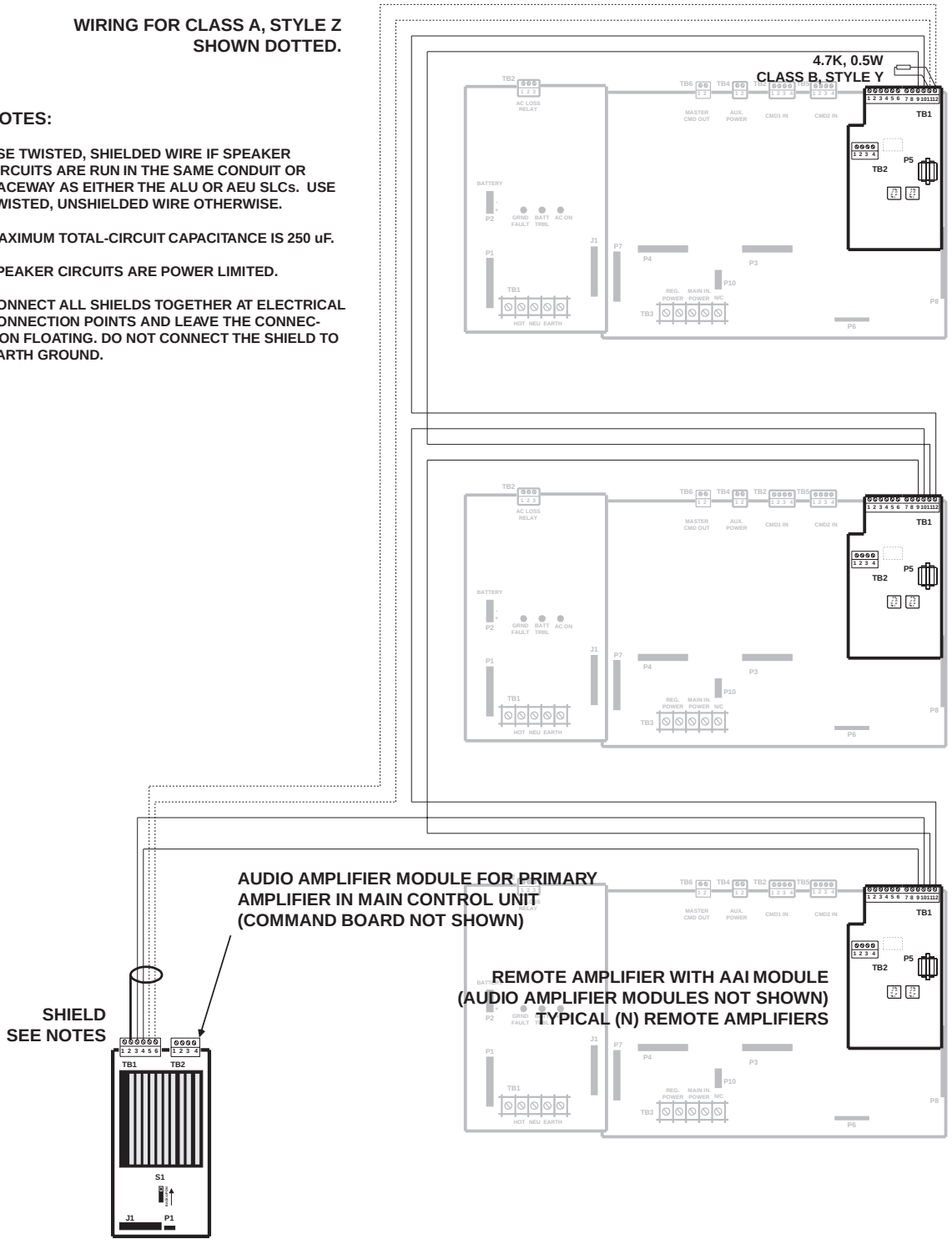
**NOTES:**

**USE TWISTED, SHIELDED WIRE IF SPEAKER CIRCUITS ARE RUN IN THE SAME CONDUIT OR RACEWAY AS EITHER THE ALU OR AEU SLCs. USE TWISTED, UNSHIELDED WIRE OTHERWISE.**

**MAXIMUM TOTAL-CIRCUIT CAPACITANCE IS 250 uF.**

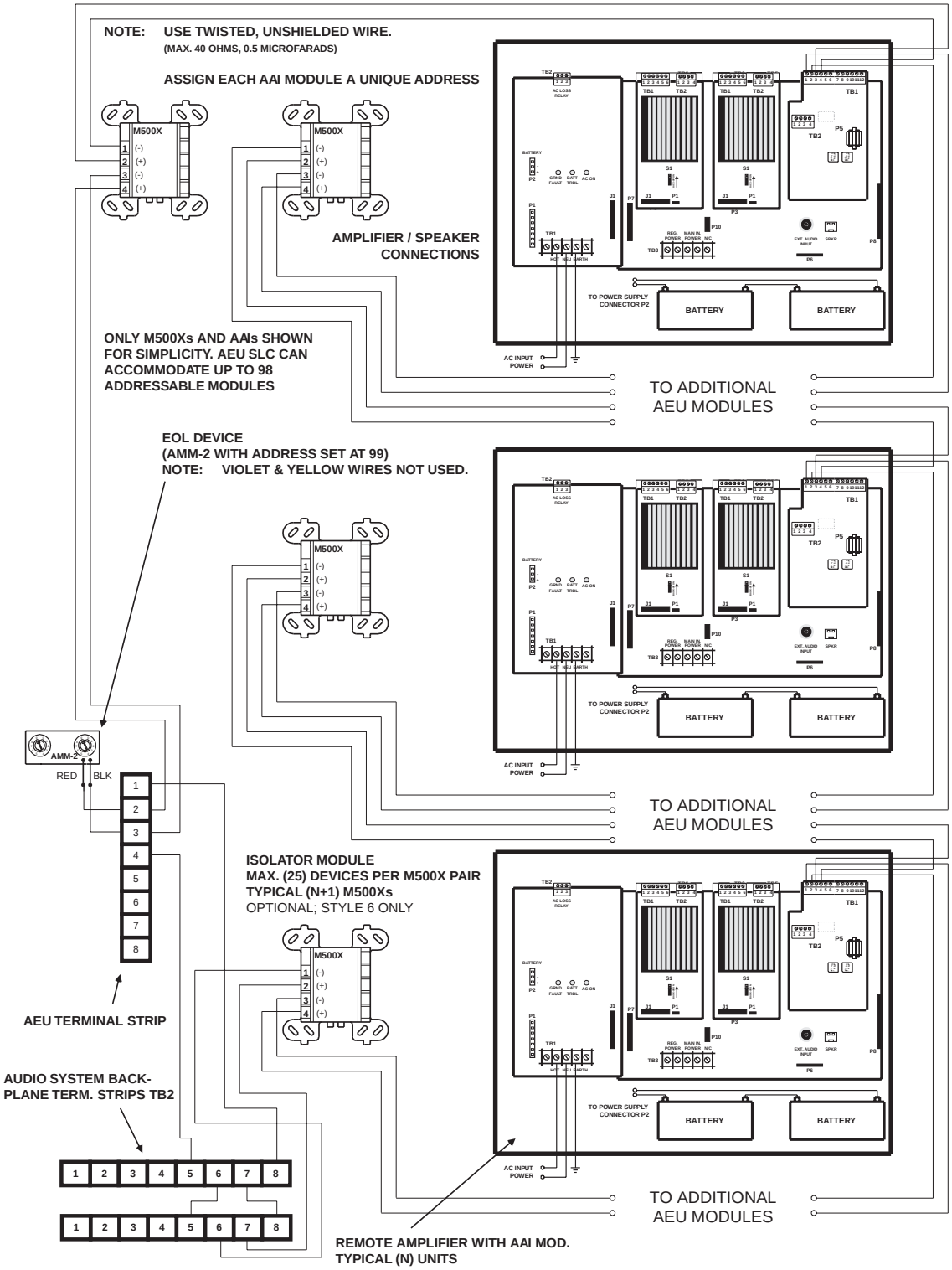
**SPEAKER CIRCUITS ARE POWER LIMITED.**

**CONNECT ALL SHIELDS TOGETHER AT ELECTRICAL CONNECTION POINTS AND LEAVE THE CONNECTION FLOATING. DO NOT CONNECT THE SHIELD TO EARTH GROUND.**




Multiple Distributed Amplifiers receiving an audio riser from a primary amplifier in the main control. See Figure 2-16 for ratings.

**Figure 2-20**



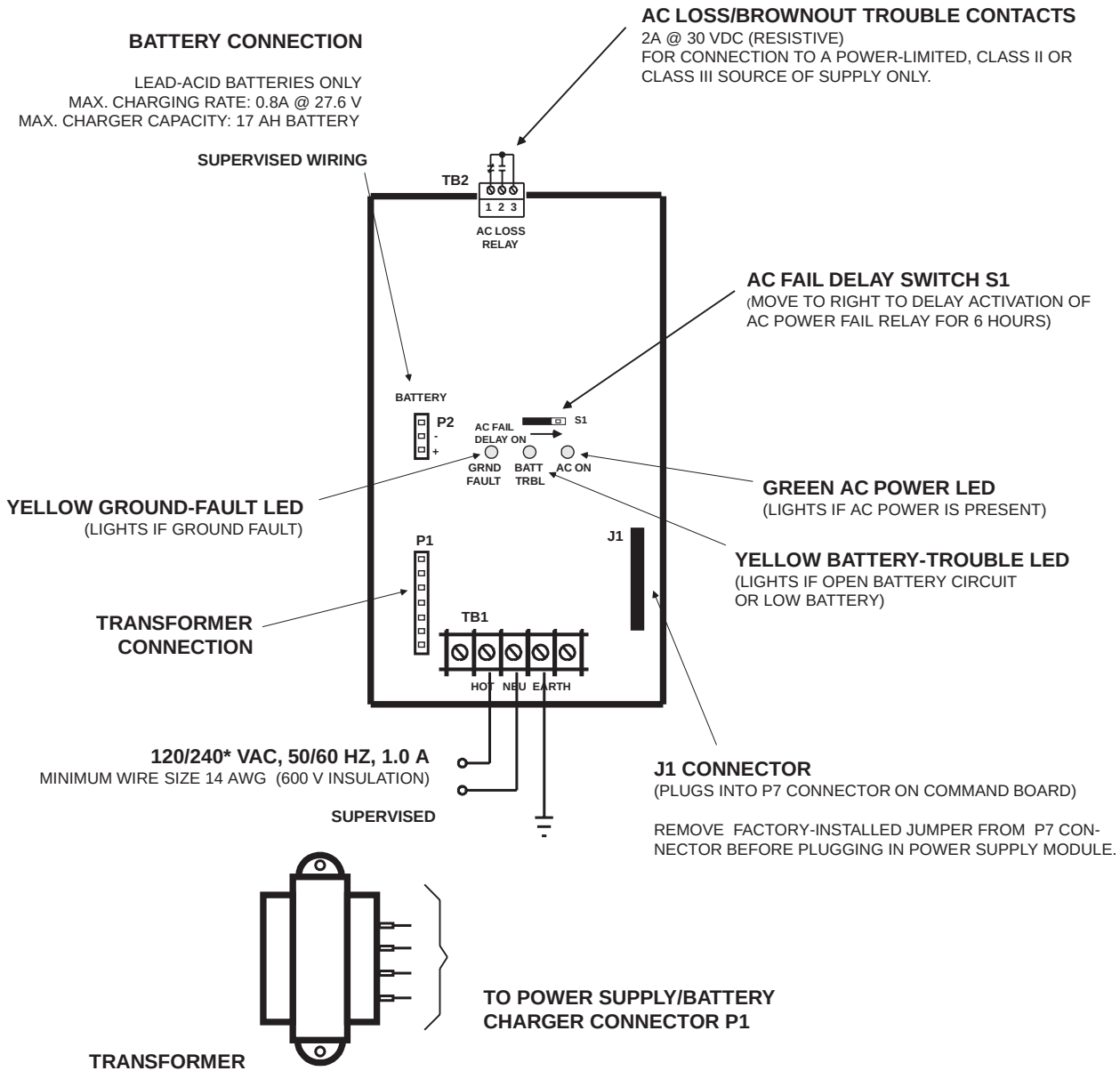

See Figure 2-1 for SLC ratings

**Figure 2-21 AEU/AAI Connections**

### 2.5.2 Power Supply Module & Transformer (FCI-PSM)

The Power Supply Module & Transformer (FCI-PSM) is equipped with a built-in battery charger that can charge batteries up to 17-AH capacity. The remote-amplifier cabinet can house two 17-AH batteries. Primary AC power is monitored by the FCI-PSM. The AC loss relay contacts change state and the “AC ON” LED extinguishes upon loss of AC power or brown-out. Switch S1 is used to select immediate or 6 hour delay of AC loss relay transfer.

The Model FVXFMR is used for 120 VAC input, while the Model FVXFMR 220 is used for 240 VAC input.




* USE FVXFMR-240 FOR 240 VAC APPLICATIONS

**Figure 2-22 FCI-PSM and Transformer**

| Table 2-7 Power Supply Module (FCI-PSM) | | |
|---|---|---|
| **Designation** | **Description** | **Comments** |
| **FIELD WIRING CONNECTIONS** | | |
| TB1-1 | | Not used. |
| TB1-2 | AC Hot | 120/240 VAC connection , Non-Power Limited. |
| TB1-3 | AC Neutral | 120 VAC Neutral/240 VAC hot connection, Non-Power limited |
| TB1-4 | Earth Ground | 120 VAC Earth ground connection/240 VAC neutral |
| TB1-5 | | Not used. |
| TB2-1<br>TB2-2<br>TB2-3 | A.C. Power.<br>Failure | N/C - Normally Closed<br>N/O - Normally Open<br>C - Common Form C, Dry Contact. |
| **CONNECTORS** | | |
| P1 | Header | AC Transformer Cable, Non-Power Limited |
| P2 | Header | Battery Cable, Non-Power Limited |
| **LEDs** | | |
| LED 1 | Yellow | Ground Fault LED |
| LED 2 | Yellow | Battery Fault LED |
| LED 3 | Green | AC Power On LED |
| **SWITCHES** | | |
| SW 1 | | AC Fail Switch, 6 hour delay. |

## 2.6 Remote Command Center

The FireVac®7200 System can accommodate up to five (5) Remote Command Centers, which communicate with the main command center via the FCINET®.

The AEUs and manual controls at the remote Command Center(s) are referred to as “shadow” AEUs. The system can support a maximum of five (5) remote Command Centers. These shadow AEUs, along with their associated controls, mimic the functioning of the AEU and Command Center in the main cabinet.

Each remote Command Center must be represented by a dedicated shadow AEU (with appropriate duplicated controls) in the system configuration. See Figure 2-23.

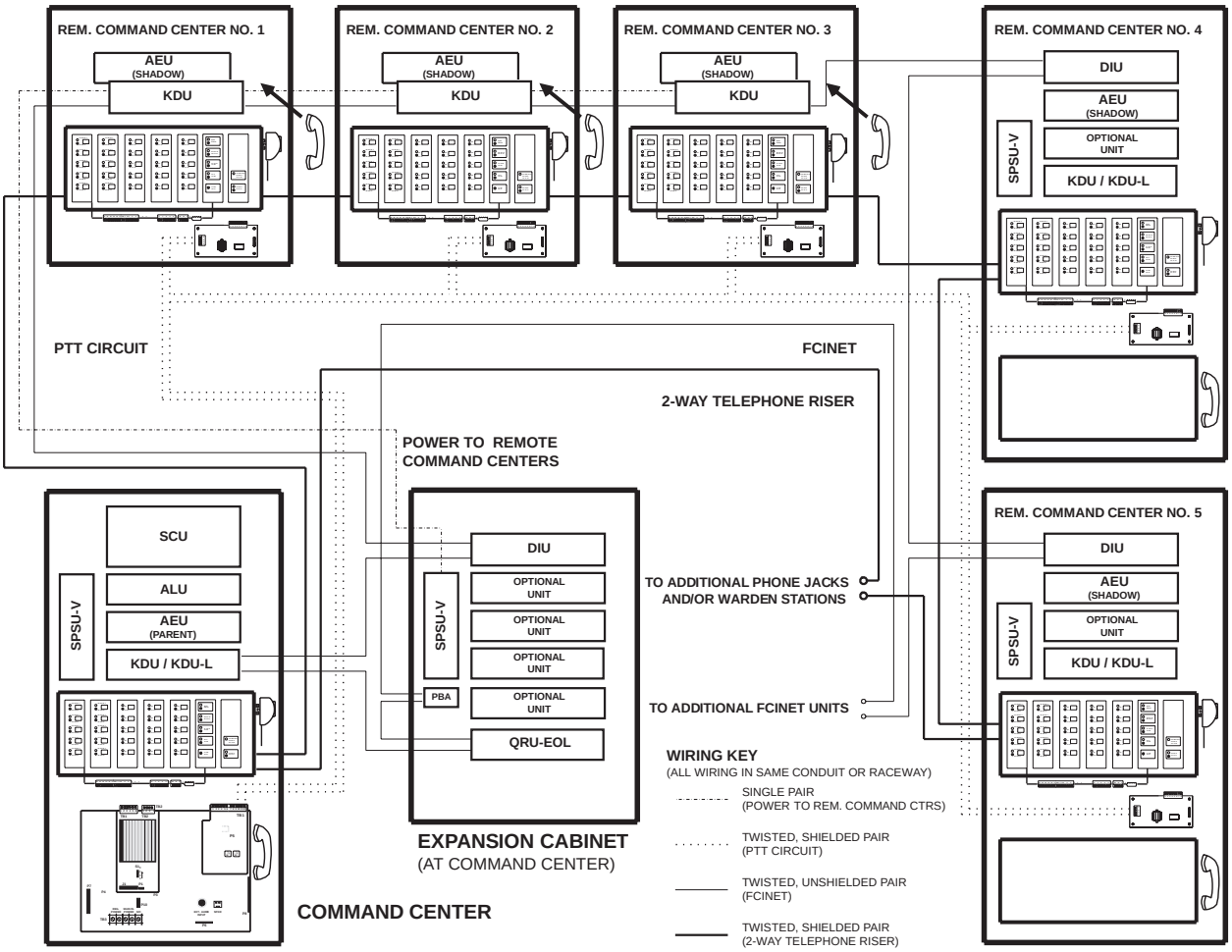



**Figure 2-23 System With Five Remote Command Centers**

A shadow AEU can control a set of manual switches that duplicate the switches controlled by its parent AEU, or it can duplicate a particular subset of the switches controlled by its parent AEU. It cannot control a set of switches that are not represented in the set controlled by its parent AEU.

The addresses of the CCU, TCU-R, and SIM modules at the shadow AEU must match the corresponding addresses at the parent AEU. Connections between the shadow AEU and its associated remote system backplane(s) are identical to those of its parent AEU to its associated system backplane(s) at the Command Center.

### 2.6.1 Push-to-Talk Driver Module (PTT-D)

The PTT Driver Module (PTT-D) conditions and amplifies instructions generated at a remote Command Center for transmission to the Command Center. A PTT-D is needed only when a microphone is installed in a Remote Command Center. The PTT-D is mounted in the Remote Command Center enclosure below the card cage. A maximum of five (5) PTT-Ds are allowed in a 7200 Series System.

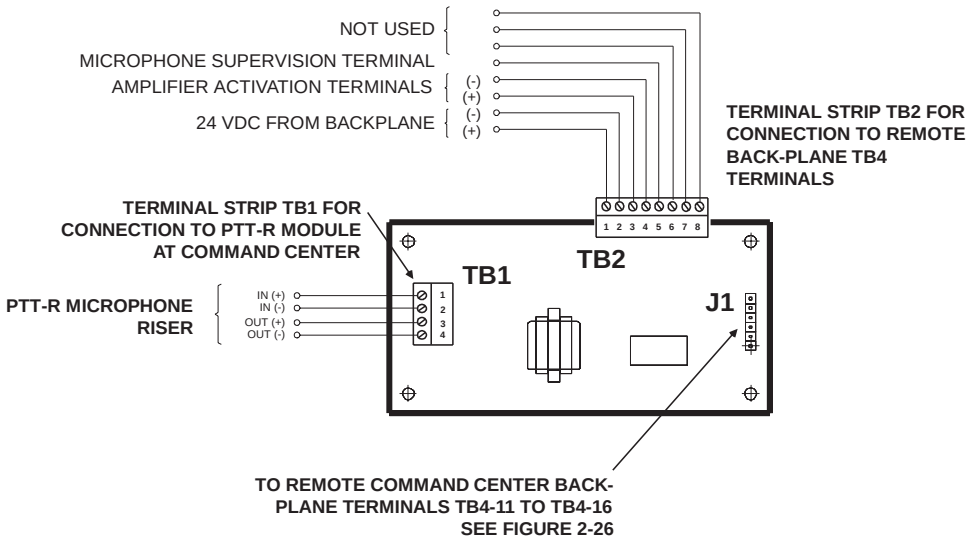
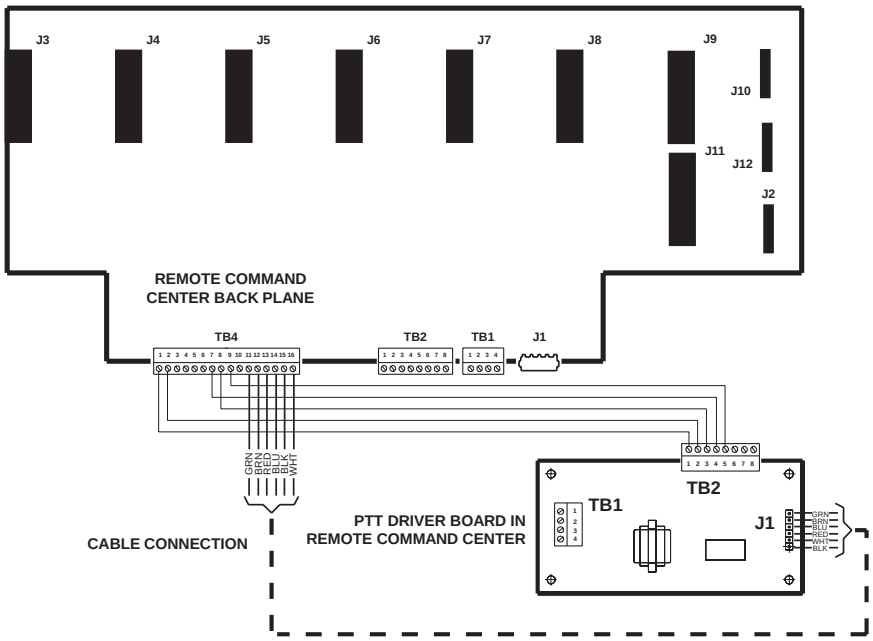



**Figure 2-24**

**Table 2-8 Push-to-Talk Driver (PTT-D)**

| Designation | Description | Comments |
|---|---|---|
| TB1-1 | Microphone | Input, positive (+), power limited, From PTT-R TB1-12. |
| TB1-2 | riser | Input, negative ( - ), power limited, to PTT-R TB1-11. |
| TB1-3 | (See Fig. 2-25 | Output, positive (+), power limited, to PTT-R TB1-10. |
| TB1-4 | for ratings) | Output, negative ( - ), power limited, From PTT-R TB1-9. |
| TB2-1 | 24 VDC | 24 VDC positive (+), internal, power limited, from Backplane TB4-1. |
| TB2-2 | | 24 VDC negative ( - ), internal, power limited, from Backplane TB4-2. |
| TB2-3 | Amplifier activation | Positive (+), power limited, internal. |
| TB2-4 | | Negative ( - ), power limited, internal. |
| TB2-5 | Microphone supv. | Internal. Power limited. |
| TB2-6 thru -8 | | Not used. |
| **CONNECTOR** | | |
| J1 | Header | Cable connection to Backplane TB4-11 to 16. |




**RATINGS**

| | |
|---|---|
| Voltage | 1.2 VRMS |
| Current | 0.237 amp. (Supervisory)<br>0.455 amp. (Active)<br>0.002 amp. (Short Circuit) |

**Figure 2-25 PTT Driver/Backplane Connections**

### 2.6.2 Push-to-Talk Receiver Module (PTT-R)

The PTT Receiver Module (PTT-R) receives the conditioned and amplified instructions generated at a remote Command Center. A PTT-R is needed only when a microphone is installed in a remote Command Center. The PTT-R is mounted in the main Command Center on the FCI-MB. One (1) PTT-R is required per system with a maximum of five (5) PTT-Ds allowed.

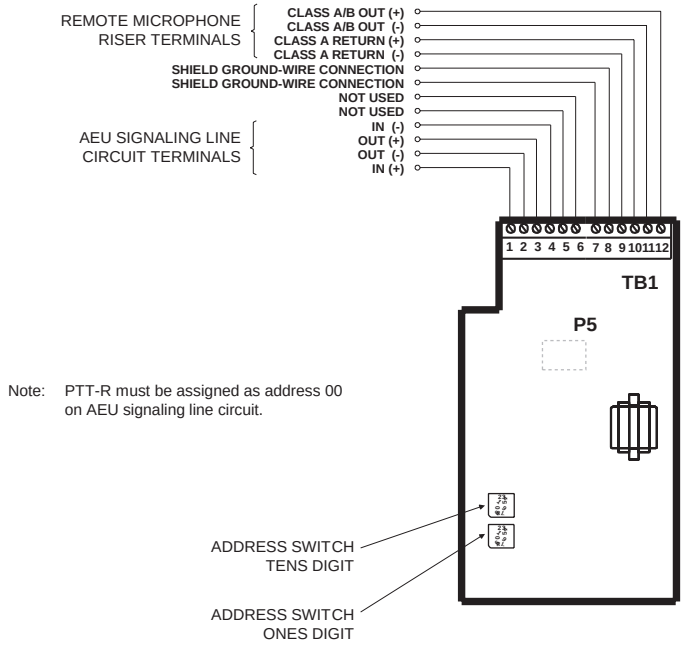



**Figure 2-26 Push-to-Talk Receiver, PTT-R**

#### A. PTT-R Addressing information

Switch SW1 (“ones" digit) and Switch SW2 (“tens” digit) can be addressed using addresses 00 - 99. These addresses are interpreted by the Audio Evacuation Unit/Keyboard Display Unit (AEU/KDU) as addresses 100 -199 (identically to the AOM-2s). To set the address of an PTT-R module, refer to the following example. A maximum of one PTT-R can be used per system

**EXAMPLE:**

For address 00, SW1 is set to “0" and Switch SW2 is set to ”0". (The AEU/KDU interprets switch address “00" as ”100".)

**Table 2-9 PTT-R Field Wiring**

| Designation | Description | Comments |
|---|---|---|
| TB1-1 | AEU-SLC | Input, positive (+), power limited, from backplane TB2-7. |
| TB1-2 | See Fig. 2-1 | Output, negative ( - ) power limited, out to additional devices. |
| TB1-3 | for ratings | Output, positive (+), power limited, out to additional devices. |
| TB1-4 | | Input, negative ( - ), power limited, from Backplane TB2-6. |
| TB1-5, -6 | | Not used. |
| TB1-7, -8 | | Shield ground points. |
| TB1-9 | Microphone | Input, negative ( - ), power limited, return from PTT-D TB1-4. |
| TB1-10 | riser | Input, positive (+), power limited, return from PTT-D TB1-3. |
| TB1-11 | See Fig. 2-25 | Output, negative ( - ), power limited, to PTT-D TB1-2. |
| TB1-12 | for ratings | Output, positive (+), power limited, to PTT-D TB1-1. |
| **CONNECTOR** | | |
| P5 | | Connects to P5 of the FCI-MB. |

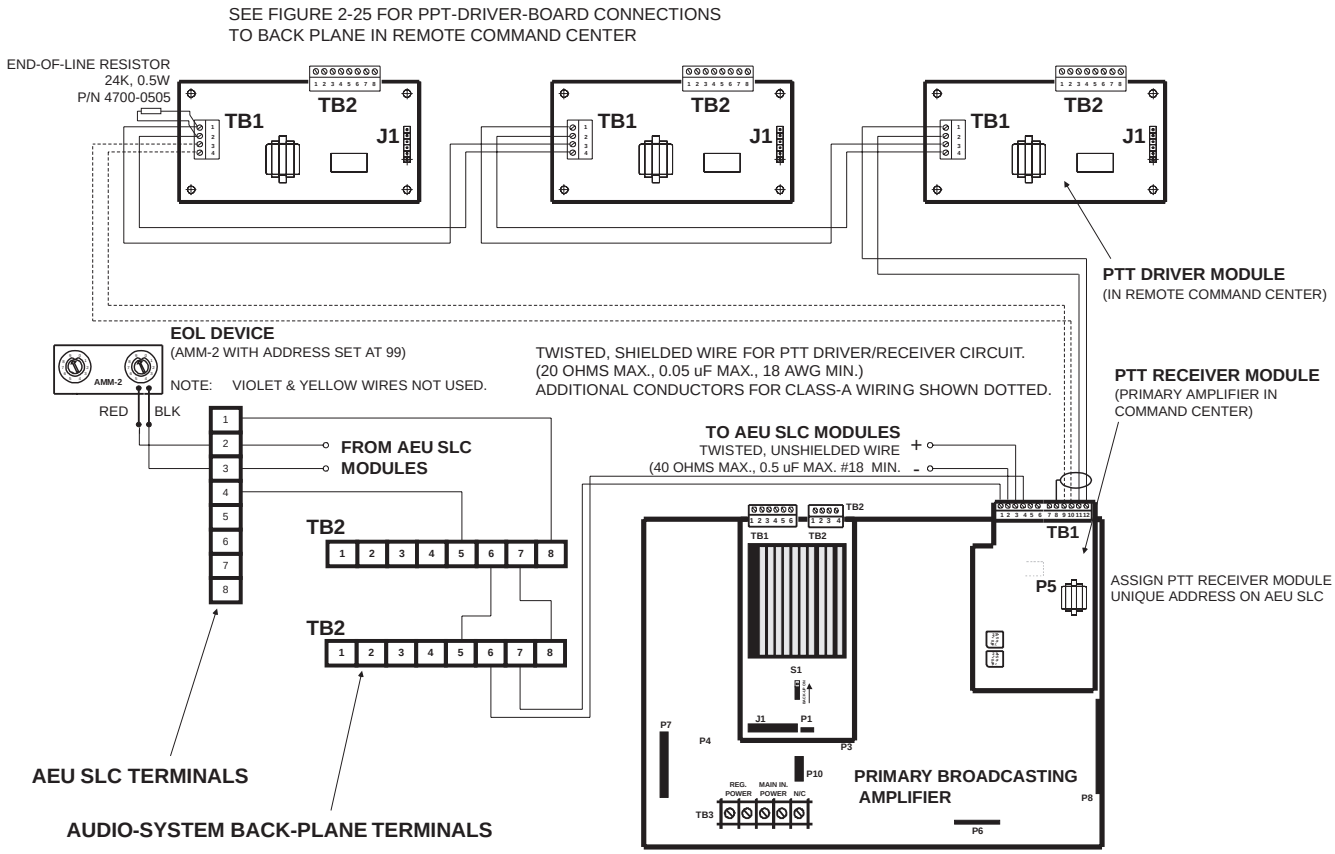



**Figure 2-27**

## 2.7 Fire Alarm System with General Alarm Voice Evacuation

Figure 2-28 shows the general arrangement of a system that primarily uses horns and strobes for alarm notification. The building has one or more areas of assembly that require voice signaling with microphone override. Selective alarm signaling is not required, and the voice signal, together with horns and strobes, comprise the general alarm notification.

The voice portion of the notification system does not require an AEU, module mounting assembly, or switch input modules because the system is configured for general alarm instead of signaling by zone. The amplifier mother board is activated by an AOM-2 module connected to the ALU signaling line circuit as shown in Figure 2-28. The Mother Board can also be activated by a notification appliance circuit.

The Supplementary Notification Appliance Panels (SNAC) are activated by reverse polarity signals from the SCU notification appliance circuits. It is most common to configure the audibles for silenceable operation, and the strobes non-silenceable.

## 2.8 Fire Alarm System with Two-Way Telephone Communication

Figure 2-29 shows a typical riser for a fire alarm system with two-way telephone.

Figure 2-30 shows the point-to-point wiring among the AEU terminal block, the backplane Terminal Blocks TB1 and TB2, and the AOM-2s used as telephone system call-in/connection devices. Note that the telephone riser for the two-way telephone system is connected to Terminal Block TB2 of the backplane.

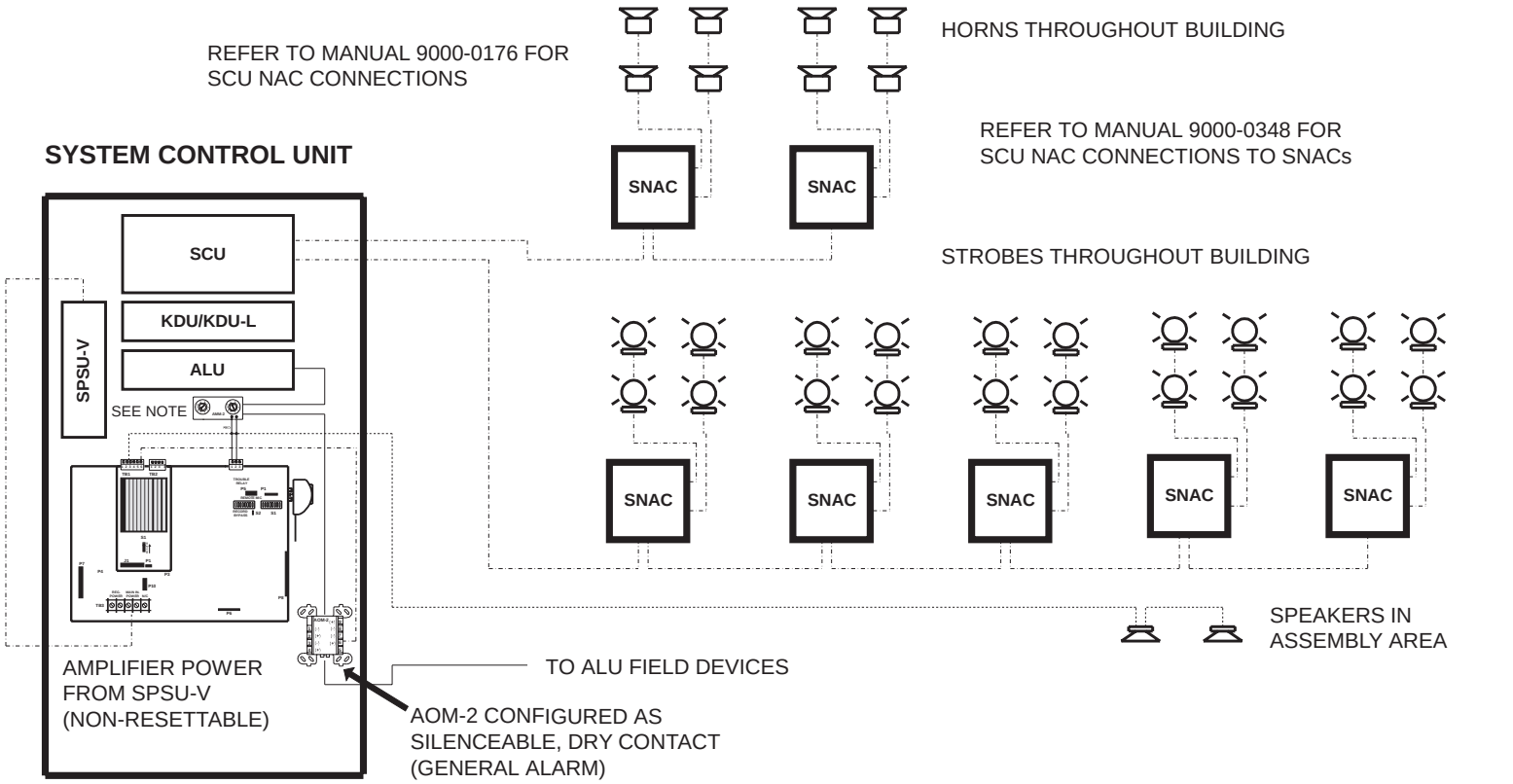
Figure 2-31 shows the point-to-point connections among the AOM-2s and either a warden station or a telephone jack.

**NOTE**: Use one AOM-2 for each telephone jack or warden station. The AOM-2 and its associated telephone jack or warden station must be close-nippled.

## 2.9 Fire Alarm System with Manually Controllable Process Monitoring

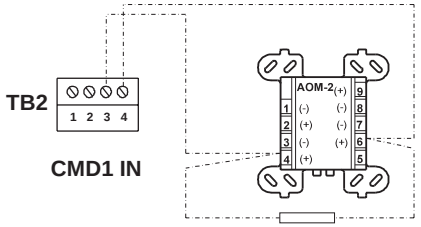
Figure 2-32 shows a typical arrangement of a fire alarm system with manually controllable process monitoring. Audible notification is via horns or bells.

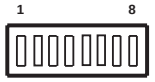
Figure 2-33 shows the point-to-point wiring between the AEU terminal block, the system backplane and the system AOM-2s.




## AMPLIFIER/AOM-2 CONNECTIONS

NOTE: USE AMM-2 TO MONITOR AMPLIFIER FOR TROUBLE.




**S5 SWITCH SETTINGS**

| POSITION | SETTING |
|---|---|
| 1 | "ON" |
| 2 | "ON" |
| 3 | "OFF" |
| 4 | "OFF" |
| 5 | "ON" |
| 6 | "OFF" |
| 7 | "OFF" |
| 8 | "OFF" |

**WIRING KEY**

(ALL WIRING IN COMMON CONDUIT OR RACEWAY)

- TWISTED, SHIELDED PAIR (SPEAKER CIRCUIT)
- TWISTED, UNSHIELDED PAIR (ALU SLC)
- SINGLE PAIR (ALL OTHER CIRCUITS)

**Figure 2-28 General Alarm Voice Evacuation System**

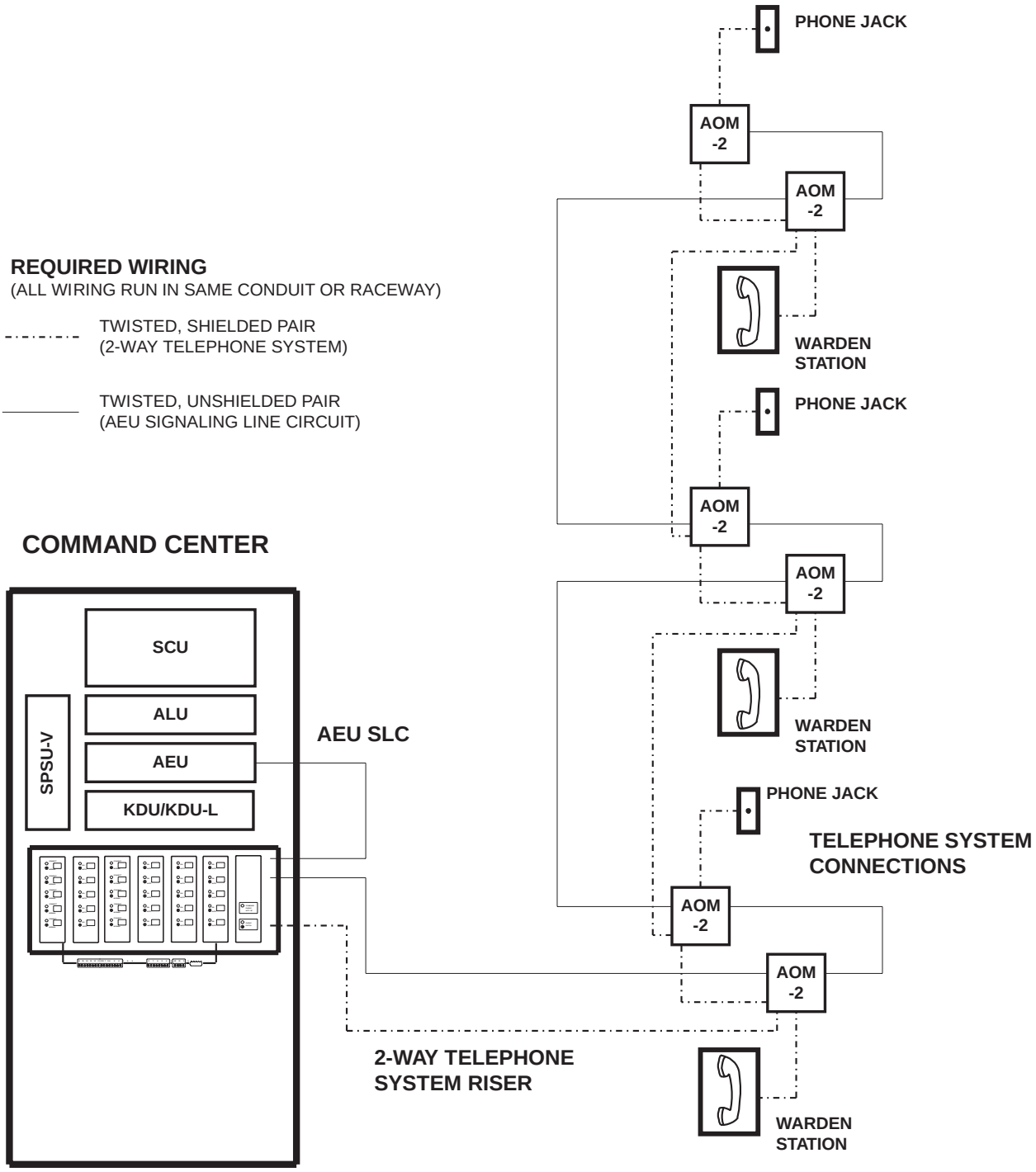



**Figure 2-29 Two-way Telephone System**

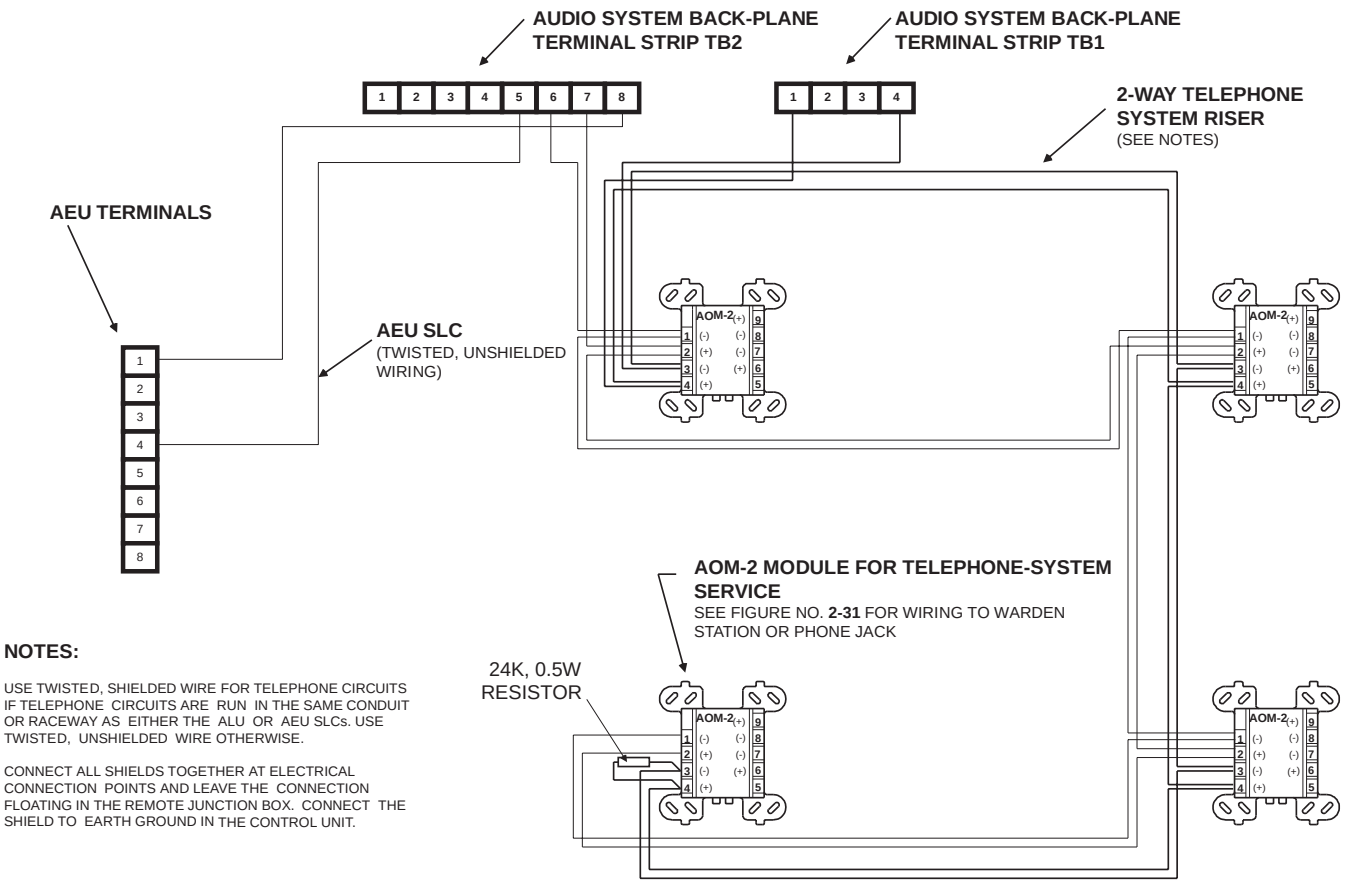
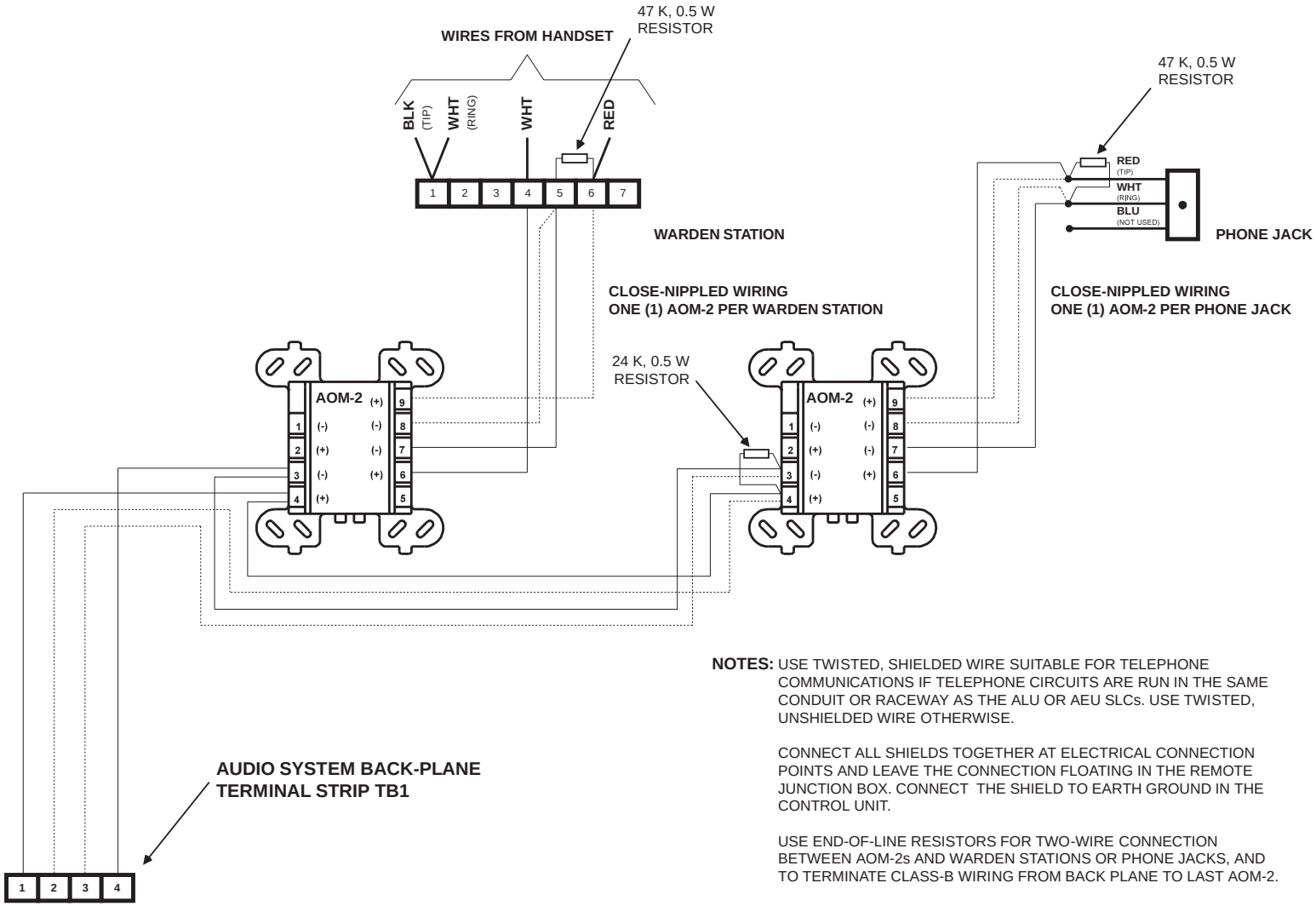



**Figure 2-30 AEU SLC and Telephone Riser Connections**




**NOTES:** USE TWISTED, SHIELDED WIRE SUITABLE FOR TELEPHONE COMMUNICATIONS IF TELEPHONE CIRCUITS ARE RUN IN THE SAME CONDUIT OR RACEWAY AS THE ALU OR AEU SLCs. USE TWISTED, UNSHIELDED WIRE OTHERWISE.

CONNECT ALL SHIELDS TOGETHER AT ELECTRICAL CONNECTION POINTS AND LEAVE THE CONNECTION FLOATING IN THE REMOTE JUNCTION BOX. CONNECT THE SHIELD TO EARTH GROUND IN THE CONTROL UNIT.

USE END-OF-LINE RESISTORS FOR TWO-WIRE CONNECTION BETWEEN AOM-2s AND WARDEN STATIONS OR PHONE JACKS, AND TO TERMINATE CLASS-B WIRING FROM BACK PLANE TO LAST AOM-2.

DOTTED LINES SHOW OPTIONAL WIRING FOR CLASS-A-TYPE TELEPHONE RISER AND CLASS-A-TYPE CONNECTIONS TO WARDEN STATIONS AND PHONE JACKS.

**USE ONE (1) CLOSE-NIPPLED AOM-2 PER PHONE JACK OR WARDEN STATION.**

**Figure 2-31 AOMs & Phone Jack/Warden Station Connections**

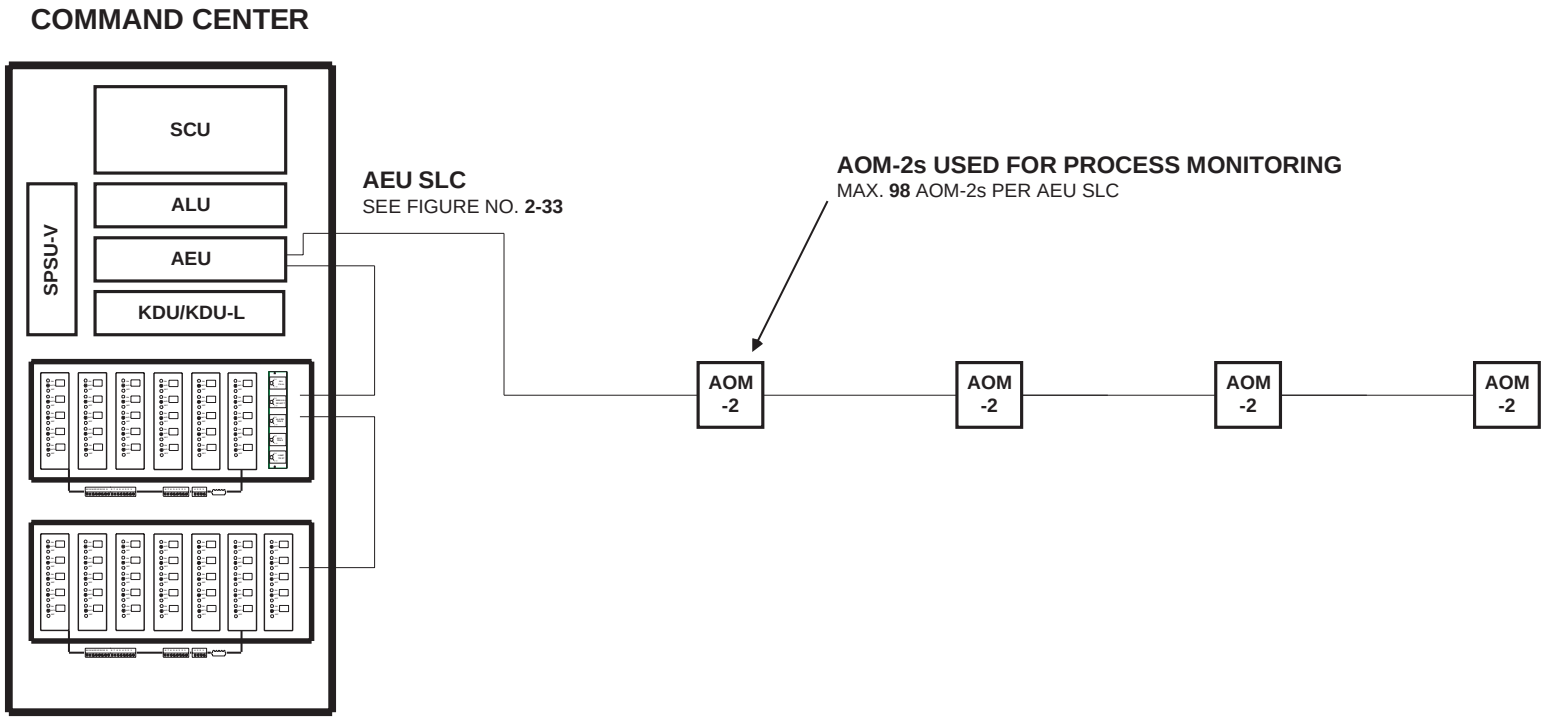



**Figure 2- 32 System with Manually Operable Aux. Controls**

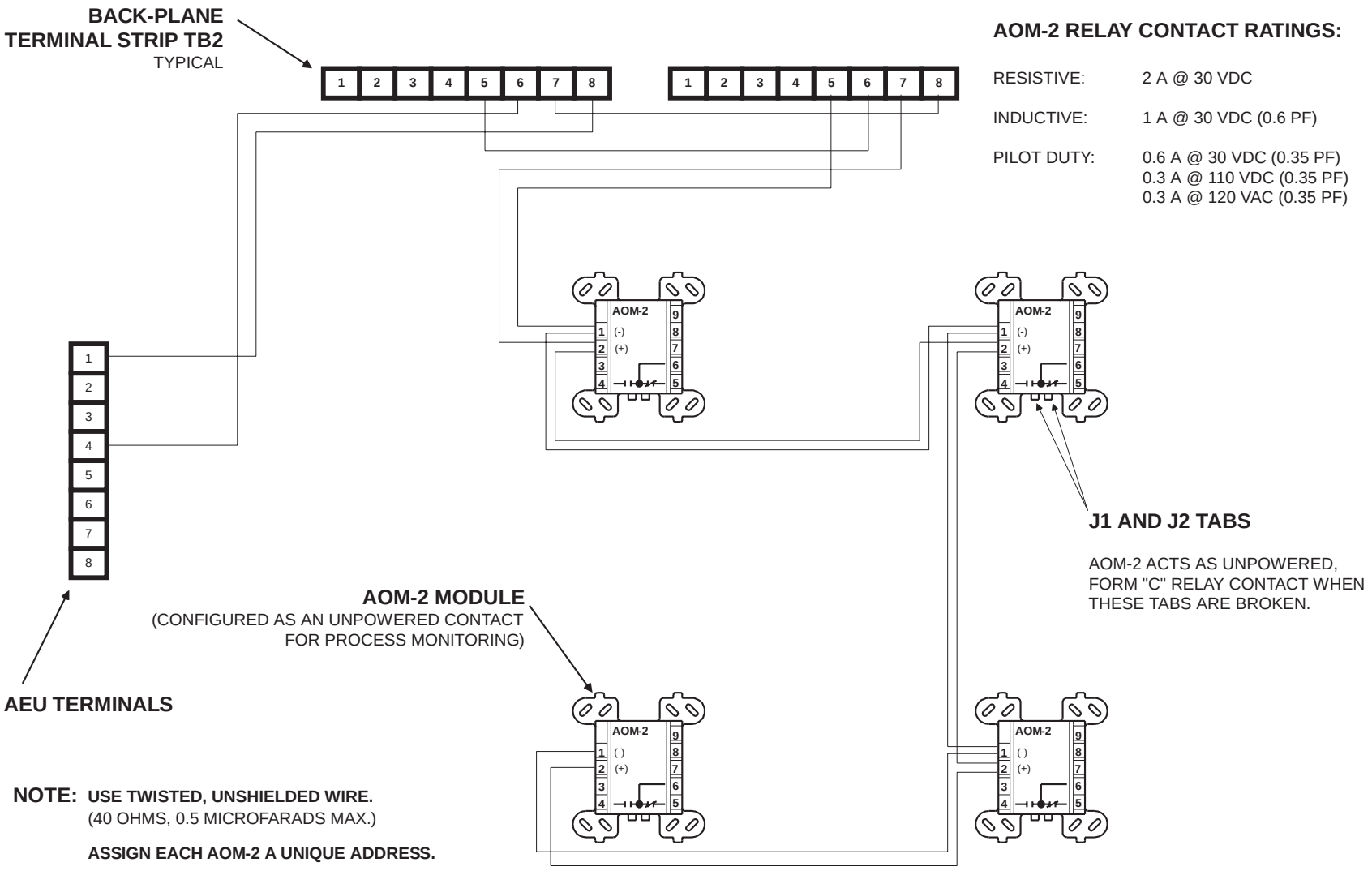



**Figure 2-33 AEU SLC Connections**

## 2.10 Notification Appliances

### 2.10.1 Speakers

In the FireVac®7200 System, loudspeakers are used to broadcast alarm tones, recorded messages and voice instructions. The speakers employ a blocking capacitor to allow direct current monitoring of the speaker circuit wiring. Use only the following Listed, FCI approved speakers:

- SP Series
- TV Series
- UDT and UHT Series

### 2.10.2 Strobes

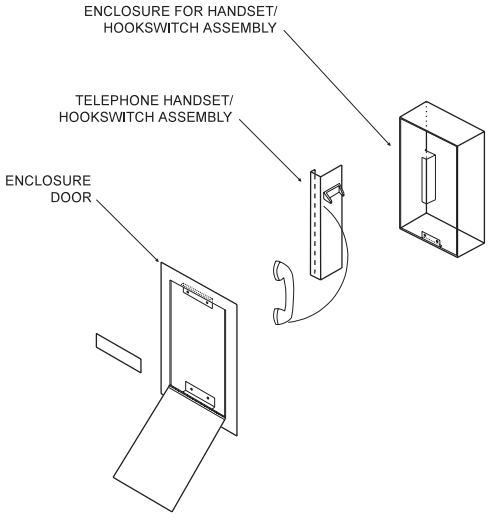
Strobes used in the FireVac®7200 System installations operate on 24 VDC (nominal) and are powered from the notification appliance circuits of the SCU, DIU, or DSU units. Use only the Listed, FCI approved strobes indicated in FCI Addendum, P/N 9000-0427.

## 2.11 Telephone System Hardware

Sections 2.11.1 and 2.11.2 below describe examples of hardware, warden stations and telephone receptacles used in the two-way telephone system.

### 2.11.1 Warden Station

A Warden Station consists of a telephone handset/hookswitch assembly installed in a locked surface or flush cabinet. Figure 2-34 shows an exploded view of a Warden Station.




**Warden Station Components**

| | |
|---|---|
| Enclosures | |
| Flush | ENF |
| Surface | ENS |
| **Telephone Assemblies** | |
| Coiled Cord, Surface | PHCS |
| " " Flush | PHCR |
| Armored Cord, Surface | PHAS |
| " " Flush | PHAR |
| **Doors** | |
| Solid, w/friction catch | SDF |
| Solid, w/lock | SDL |

**Figure 2-34**

### 2.11.2 Telephone Receptacle

The Telephone Receptacle is an exposed jack on a single-gang wall plate. It is available either flush or surface mounted and can be used in place of the Warden Station.

**NOTE** : Use one (1) AOM-2 for each Warden Station or Telephone Receptacle. The AOM-2 must be close-nippled to its associated device.

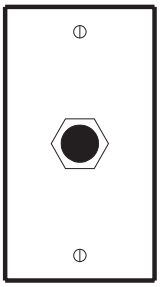


**Figure 2-35 1-gang Receptacle Model 3300**

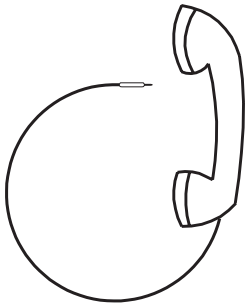


**Figure 2-36 Handset Model 3200**

## 2.12 Power Limited Field Wiring Circuits

U.L. Standard 864 requires that a minimum of 1/4 inch separation be maintained between power limited and non-power limited circuits. The control unit is designed so the separation between power limited and non-power limited circuits is maintained at the field wiring terminals. To comply with these requirements, however, the minimum 1/4 inch separation must also be maintained between the field wiring conductors of power limited and non-power limited circuits. This may be accomplished by routing the wiring as shown in Figure 2-37. Unless otherwise indicated on the unit, all field wiring circuits are power limited except:

- AC power circuit
- Standby battery circuit
- Municipal box (auxiliary) circuit

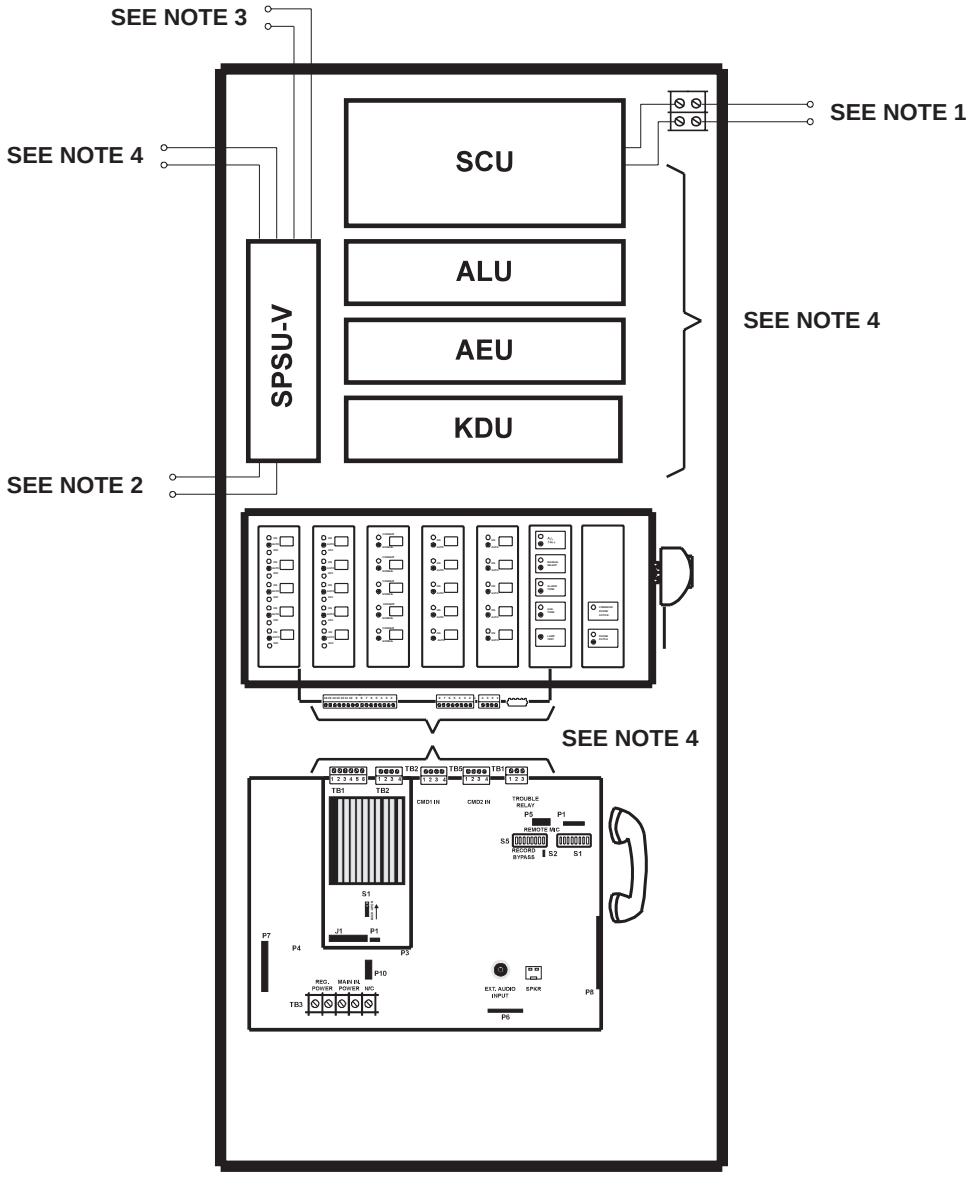



**Figure 2-37**

**NOTE 1**: Listed Secondary Protector, Ditek Model DTK-2LVLPSCP

Secure the protector to the enclosure in the location shown. Connect SCU Terminals TB1-1 and TB1-2 to any two terminals on the protector input terminal block and connect the municipal transmission circuit to the corresponding terminals on the protector output terminal block, routing all field wiring leads as shown. Connect the green lead from the protector to a reliable earth ground (ground wiring may be run through the power limited area of the enclosure).

**NOTE 2**: Route the field wiring for primary AC power connection to the enclosure knockout as shown.

**NOTE 3:** Route the factory-supplied standby battery leads as shown, securing the leads to studs and screws with clamps and/or wire ties to maintain required separation.

**NOTE 4**: This area of the enclosure is to be used for power limited circuit wiring only. Refer to the enclosure door label for identification of specific circuit types.

**NOTE 5:** Route all field wiring to maintain a minimum of 1/4 inch separation between power limited and non-power limited circuit types. Additional conduit connections may be made in the respective power limited and non-power limited areas of the enclosure if needed to maintain this required minimum separation.

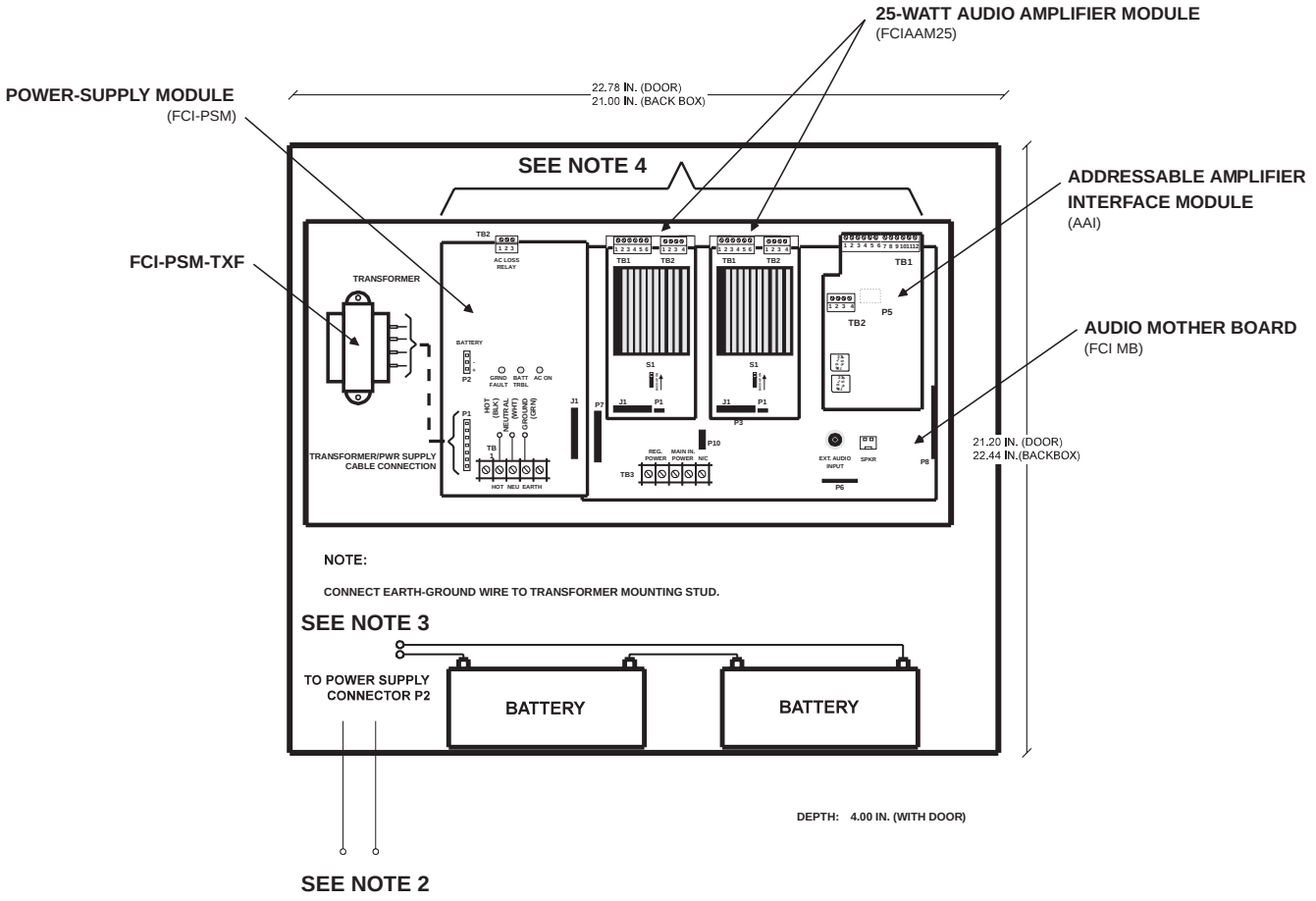



**Figure 2-38**

# SECTION THREE
# POWER UP/TEST PROCEDURE

# SECTION THREE: POWER UP/TEST PROCEDURE

## 3.1 General

1. Verify that the Control Panel has been properly installed.
2. Verify that notification appliance and municipal circuit wiring polarities are correct.
3. Verify that all switches are set to their correct positions.
4. Verify that all jumpers are installed properly according to their configuration requirements.
5. Verify that all mounting hardware is properly secured; especially module mounting screws.
6. Verify that all cables and connectors are securely installed.
7. Verify that all address switches are set properly.
8. Verify that AC input selector switches or jumpers on units so equipped are set properly for the transformer and AC input voltage.

## 3.2 Power Up

1. Verify that the batteries are disconnected from the system.
2. Turn on AC power to the Control Unit. The initialization sequence starts, which takes approximately 10 seconds. After the initialization period, the power LEDs and/or KDU/KDU-L backlit display will light. This is followed by a system trouble and “BATTERY FAULT” indication, since the batteries are not yet connected. If other fault conditions exist, they will also display. Pressing the “ACKNOWLEDGE” switch silences the sounder.
3. Connect the system batteries to the Control Panel. The “BATTERY FAULT” condition should clear.

## 3.3 Software Programming

The 7200 Series System must be configured using the Field Configuration Program. Users can perform project-specific programming via the FCP-7200 program. Copies of the system configuration/operation should be given to all parties involved.

### 3.3.1 Passwords

The following field-programmable passwords are factory set: Level 1 Password 110000 allows terminal viewing of programmed commands. Level 2 Password 220000 allows activation of Walk Test, Drill, and modification of time and date. Level 3 Password 330000 allows system programming, and Level 4 Password 440000 allows system initialization and configuration.

## 3.4 System Test

The FireVac®7200 System must be properly configured before performing any tests.

- Prior to starting the test, notify all building occupants that the fire alarm system is to be tested.
- Upon completion of testing, again notify the occupants.
- A complete system test of all system devices and functions should be performed on a regular basis per NFPA 72, Inspection, Testing and Maintenance, and/or the local codes/local authority having jurisdiction.
- FCI recommends that this test be witnessed by the building owner/operator and the local authority having jurisdiction/fire services.

## 3.5 Dual Mode Walk Test Procedure

### 3.5.1 General

The Walk Test program operates in these two (2) modes:

- Audible Mode - The user in the field can test with sounding of the notification appliances.
- Silent Mode - The user in the field can test without sounding the notification appliances.

### 3.5.2 Walk Test activation (KDU/KDU-L)

1. Press the MENU switch.
2. Enter the Level 2 (or higher) password on the numeric keypad.
3. Press the NEXT EVENT switch to “Enter” the password (Notice the word “Enter” appears above this switch on the display).
4. Press the RESET/LAMP TEST switch to select the “Walk” option (notice the word “Walk” appears above this switch).
5. Press the RESET/LAMP TEST switch again for an audible (Walk A) Walk Test or press the SILENCE key for a silent (Walk S) Walk Test. Observe the KDU/KDU-L display to ensure the correct indication of “Walk Test,” “Audible,” or “Silent.” The system also enters into a trouble condition.
6. Press the ACKNOWLEDGE switch on the KDU/KDU-L to silence the audible sounder.
7. Select the zone/signaling line circuits to be walk tested by moving the appropriate circuit disconnect switches to the “DISCONNECT” position.
8. Refer to the device testing procedure.

### 3.5.3 Device Testing

**A. Alarm Test**

All initiating devices connected to the disconnected zones/signaling line circuits may be tested by placing them (smoke detectors, manual stations, etc.) into alarm individually.

- If the Silent mode is selected, only the printer (if connected) will record the event (Alarm, Zone/Circuit Number/Device Address, Time, Date). In this mode, the notification appliance circuits do NOT activate.
- If the Audible mode is selected, the printer (if connected) will record the event and the notification appliance circuits will pulse four (4) times whenever an initiating device is actuated.

**B. Supervisory/Tamper Test**

All supervisory/tamper devices (OS&Y valve, post indicator valve, etc.) connected to the disconnected zones/signaling line circuits may be tested by actuating them individually.

- If the Silent mode is selected, only the printer (if connected) will record the event (Supervisory, Zone/Circuit Number/Device Address, Time, Date). In this mode, the notification appliance circuits will NOT activate.
- If the Audible mode is selected, the printer (if connected) will record the event and the notification appliance circuits will pulse three (3) times whenever a supervisory device is actuated.

**C. Supervision Test**

The supervision of the devices connected to the disconnected zones/signaling line circuits wiring may be tested by removing devices from the circuits, one at a time.

- If the Silent mode is selected, only the printer (if connected) will record the event (Trouble, Zone/ Circuit Number/Device Address, Time, Date). In this mode, the notification appliance circuits will NOT activate.
- If the Audible mode is selected, the printer (if connected) will record the event and the notification appliance circuits will pulse two (2) times whenever a device is removed from the initiating circuit.

### 3.5.4 System Restoration

- Verify that all actuated devices have been restored to their normal positions.
- To exit the Walk Test program, replace all operated circuit disconnect switches to their “NORMAL” positions and repeat the activation steps for SCU or KDU-L/KDU Dual Mode Walk Test activation, or reset the system.

### 3.6 Fire Drill Procedure

#### 3.6.1 General

The Fire Drill Program is available in two modes:

- The Drill mode energizes all notification appliances via the system power supply.
- The Drill Test mode energizes all notification appliances directly from the standby batteries.

#### 3.6.2 Fire Drill Activation (KDU)

1. Press the MENU switch.

2. Type in the Level 2 password on the numeric keypad (220000 is the factory default).

3. Enter the Level 2 password by pressing the NEXT EVENT switch (notice the word “Enter” appears above this switch on the alpha-numeric display).

4. Press the RESET/LAMP TEST switch on the KDU-L/KDU to select the Fire Drill option (notice the word “Drill” appears above this switch.

5. Press the ACKNOWLEDGE switch for the Fire Drill (Drill) or press the PREVIOUS EVENT switch for fire drill with standby battery (Drilltst) test. The system will now enter a fire drill and activate any outputs that have been put into the walk test/drill output group. The KDU-l/KDU will display the message “Fire Drill ” if fire drill was selected, or “Batt Test” if the fire drill with battery test was selected.

6. Repeat the above steps taken to toggle the drill test off, or reset the system.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