



by Honeywell



E3 Series™ Expandable Emergency Evacuation Installation/Operating Manual

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Fire Alarm System Limitations

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

This manual is designed for use by factory-trained installers and operators of the Gamewell-FCI, E3 Series™, Expandable Emergency Evacuation, 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 Gamewell-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 National Fire Protection Agency (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)
- NFPA 92A – Recommended Practice for Smoke Control Systems

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° F
(15° to 27° C) |
| • Absolute maximum operating temperature range: | 32° to 120° F
(0° to 49° C) |
| • Operating humidity: | Not to exceed 93%
Non-condensing at
90° F (32° 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 of 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.

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Control unit and associated equipment may be damaged by removing

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 lightening induced transients. Although no system is completely immune to lightening 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 lightening strikes. Consult with the Gamewell-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 the fire-rated walls or floors.

SURVIVABILITY

Per the National Fire Alarm Code, NFPA 72, all circuits necessary for the operation of the notification appliances shall be protected until they enter the evacuation signaling zone that they serve. Any of the following methods shall be considered acceptable as meeting these requirements:

- 1) A 2-hour rated cable or cable system
- 2) A 2-hour rated enclosure
- 3) Performance alternatives approved by Authority Having Jurisdiction

MAINTENANCE

To keep your fire alarm system in excellent working order, ongoing maintenance is required per the manufacturer's recommendations and UL and NFPA Standards, and applicable state and local codes. At a minimum, the requirements of Chapter 7 of NFPA, the National Fire Alarm Code, shall be followed. A preventative 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 shall be repaired or replaced immediately.

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.

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 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.

The Manufacturer recommends that smoke and/or heat detectors be located throughout a protected premise following the recommendations of the current edition of the National Fire Protection Association Standard 72 -2002-1999 (NFPA 72 -2002-1999). The Manufacturer recommends it must also follow 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). 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, or chimneys 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.
- 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 photo-electronic 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, crippling its ability to report a fire.

Audible warning devices such as bells may not alert people if these devices are located on the other side of closed or partly open doors or are located on another floor of a building. Any warning device may fail to alert people with a disability or those who have recently consumed drugs, alcohol, or medication. Please note that:

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 or comprehend the meaning of the signal. It is the property owner's responsibility to conduct fire drills and other training exercise 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 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 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 premise 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 fire alarm malfunction is inadequate maintenance. To keep the entire 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 NFPA 72 -2002-1999 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 monthly or as required by National and/or local fire codes and should be performed by authorized professional fire alarm installers only. Adequate written records of all inspections should be kept.

While installing a fire alarm system may make the owner eligible for a lower insurance rate, a fire alarm system is not a substitute for insurance. Property owners should continue to act prudently in protecting the premises and the people in the premises and should properly insure life and property and buy sufficient amounts of liability insurance to meet their needs.

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Installation Precautions

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

WARNING - Several different sources of power can be connected to the fire alarm control panel.

Disconnect all sources of power before servicing. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized. Do not attempt to install, service, or operate this unit until 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.

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.

This system meets UL requirements for operation at 0-49° C/32-120° F and at a relative humidity (non condensing) of 85% at 30°C (86°F) per NFPA, and 93% ± 2% at 32°C ± 2°C (89.6°F ± 1.1°F) per UL 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 lightening induced transients. Although no system is completely immune from lightening transients and interference, proper grounding will reduce susceptibility. Overhead or outside aerial wiring is not recommended, due to an increased susceptibility to nearby lightening 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.

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.

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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 the user's expense. If these instructions are not clear, or if additional information or clarification is needed, please consult your local authorized Gamewell-FCI distributor. Because of design changes and product improvements, the information in this manual is subject to change without notice. Gamewell-FCI reserves the right to change hardware and/or software design, which may subsequently affect the contents of this manual. Gamewell-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 Gamewell-FCI.

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1.0 System Overview

1.1 Description

The Gamewell-FCI E3 Series™ Expandable Emergency Evacuation System is a multiprocessor-based analog/addressable fire alarm control panel, designed for commercial, industrial and institutional fire alarm applications. The E3 Series™ is Listed by Underwriter's Laboratories under Standard UL 864, 9th Edition. It is suitable for the following signaling services:

- Automatic Fire Detector Alarm
- Manual Fire Alarm
- Waterflow Alarm
- Supervisory
- Automatic Smoke Alarm, non-coded and master coded operation

When configured and installed under the supervision of a Gamewell-FCI factory trained and certified distributor, the E3 Series™ complies with the requirements of the following National Fire Protection Association (NFPA) Standards:

- NFPA 13 Installation of Sprinkler Systems
- NFPA 72 National Fire Alarm Code:
 - Central Station Fire Alarm Systems
 - Local Fire Alarm Systems
 - Auxiliary Fire Alarm Systems
 - Remote Station Fire Alarm Systems
 - Proprietary Fire Alarm Systems

1.2 Features

1.2.1 Standard Features

- Two (2), Class A, Style 6, 7* or Class B, Style 4 Signaling Line Circuits
- Two (2), Class A, Style Z or Class B, Style Y Notification Appliance Circuits, 2.0 amp each
- Alarm, Trouble and Supervisory dry contacts
- Accommodates 159 Gamewell-FCI Approved, UL Listed compatible analog sensors per signaling line circuit.
- Accommodates 159 Gamewell-FCI Approved, UL Listed compatible addressable monitor/control devices per signaling line circuit.
- 80-character alphanumeric LCD display (40 characters user-defined)
- 4100 event history buffer (non-volatile)
- Power-limited
- Resettable/non-resettable 1.0 amp @ 24 VDC power output each
- Alarm verification
- Walk test
- Multi-level alarm processing
- Positive Alarm Sequence (PAS) operation
- NAC coding
- Trouble reminder
- Integral RS-232 port

*Style 7 operation requires System Sensor M500X Isolator Modules.

1.2.2 Optional Features

- Remotable DACT-E3 Digital Alarm Communicator Transmitter
- RPT-E3 ARCNET Repeater
- Remotable ANU-48 Remote LED Driver
- Remotable ASM-16 Addressable Switch Sub-assembly
- Remotable NGA Network Graphic Display
- LCD-7100 Remote LCD Display

1.3 System Components

1.3.1 Control and Indicator Sub-Assembly (LCD-E3)

The LCD-E3 provides an LCD display for system status, and the following Switches and LED indicators:

- Alarm Acknowledge
- Trouble Acknowledge
- Signal Silence
- System Reset/Lamp test
- Programming buttons
 - Menu/Back
 - Back Space/Edit
 - OK
- 12 button keypad

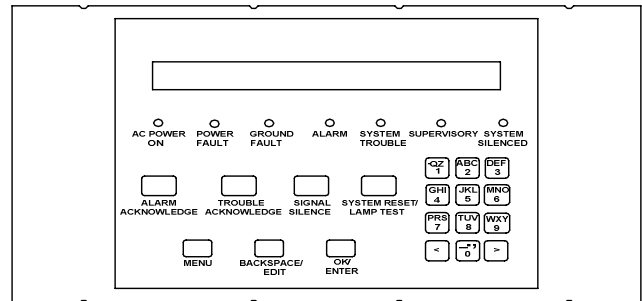


Figure 1.3.1 Switch Control Panel

LED Indicators

- | | |
|---------------------------|----------------------------|
| • AC Power On (green) | • Power Fault (yellow) |
| • Alarm (red) | • Ground Fault (yellow) |
| • Supervisory (yellow) | • System Silenced (yellow) |
| • System Trouble (yellow) | |

The ILI-MB-E3 can support up to six (6), LCD-E3 sub-assemblies, any or all of which may be remotely located via the local RS-485 serial interface.

1.3.2 Intelligent Loop Interface - Main Board (ILI-MB-E3)

The ILI-MB-E3 is the main operating sub-assembly for the E3 control. It provides two (2), signaling line circuits and terminals for the connection of all sub-assemblies. This unit can support an LCD-E3, DACT-E3 and up to a total of sixteen (16), ASM-16 and/or ANU-48 sub-assemblies. It occupies one node on the Broadband network. Alarm signals lock-in. Supervisory and Trouble signals do not lock-in.

Municipal Connection - The ILI-MB-E3 provides output for a local energy City Master Box which is non power-limited.

Audible Sounder - An Alarm/Trouble/Supervisory sounder is located on the ILI-MB-E3.

1.3.3 Power Supply - 9 Amperes (PM-9)

The PM-9 is a 9 ampere regulated power supply with a battery charger that provides operating power to the panel. The battery charger can maintain batteries up to 55 A/H. (Batteries not furnished).

1.4 Optional Modules

The following optional sub-assemblies and features are available:

1.4.1 Addressable Switch Sub-Assembly (ASM-16)

The ASM-16 is a configurable switch input sub-assembly with 16 switches and 48 status LEDs and may be remotely located via the RS-485 serial interface. Each switch address is fully software programmable to serve as:

- A System Control Switch; Reset, Silence, Alarm and Trouble Acknowledge, etc.
- A Voice Evacuation Speaker Circuit control switch
- A Fire Fighter Communication Circuit control switch
- An Auxiliary Control Circuit switch
- A status indicating LED, red, green, and yellow
- A status indicating LED, labeled to indicate "Command Center in Control"

1.4.2 Digital Alarm Communicator Transmitter (DACT-E3)

The DACT-E3 provides an integral, remotable Digital Alarm Communicator Transmitter (DACT), fully programmable from the keypad, which is compatible with Digital Alarm Communicator Receivers (DACRs) that can receive the following formats:

- SIA DC8
- SIA DCS20
- Ademco Contact ID
- 3+1 1400 Hz
- 3+1 2300 Hz
- 4+2 1400 Hz
- 4+2 2300 Hz

The DACT-E3 can be remotely located via the local RS-485 serial interface.

1.4.3 Repeater (RPT-E3)

The RPT-E3 sub-assembly provides remote interface between the ILI-MB-E3 and the Broadband Network. It can also be used with the NGA. The unit can be used with unshielded, twisted-pair wire or fiber-optic cable as the Model (RPT-E3-FO). The Model (RPT-E3-UTP) is used with twisted-pair only.

1.4.4 Intelligent Loop Interface – Expansion Board (ILI-S-E3)

The ILI-S-E3 sub-assembly provides additional two (2), signaling line circuits only. It is physically identical to the ILI-MB-E3 except components are omitted. It occupies one node on the Broadband network.

1.4.5 Remote LED Driver (ANU-48)

The ANU-48 LED Driver provides output for up to forty-eight (48), remote LEDs. The ILI-MB-E3 will support up to a total of sixteen (16), ANU-48 and/or ASM-16 units. The ANU-48 can be remotely located via the RS-485 serial interface.

1.4.6 LCD Network Graphic Annunciator (NGA)

The NGA mounts in the E3 Series enclosure or it may be remotely located. It provides an LCD display of system events, together with system status indicating LEDs and touch-screen switches for Alarm Acknowledge, Trouble Acknowledge, Signal Silence and System Reset. The NGA occupies one node on the Broadband network. The background display can be programmed to state, "Command Center in Control" if desired.

1.4.7 Remote LCD Display (LCD-7100)

The LCD-7100 Remote LCD Display provides an 80-character display and function keys for “Alarm Acknowledge,” “Trouble Acknowledge,” “Signal Silence,” “System Reset/Lamp Test” and “System Drill Test”. It features a key switch that renders the key pad inoperative until activated.

The E3 Series™ System can support up to five (5), LCD-7100 displays.

The 80-character display shows all pertinent information except for menus.

1.4.8 Intelligent Network Interface – Voice Gateway (INI-VG)

The INI-VG Voice Gateway provides a network interface for the E3 Series™, Expandable Emergency Evacuation System. The INI-VGC-FO or INI-VGC-UTP is used in conjunction with the Voice Evacuation Command Center (INCC-C). The INI-VGX-FO or INI-VGX-UTP is used with the E3 Series™ Broadband, and the INI-VGE-FO or INI-VGE-UTP is used with the E3 Series™ Classic System. The INI-VG series each occupy one node on the Broadband Network.

1.4.9 50 Watt Amplifier (AM-50)

The AM-50 amplifier may be installed in an INX cabinet whenever the E3 control is to be used in conjunction with the E3 Series™, Expandable Emergency Evacuation System. It is used to provide 50 watts of audio through two (2), integral Class A/B speaker circuits. Up to four (4), AM-50s can be controlled by an INI-VGX Voice Gateway.

1.5 Specifications

1.5.1 Power Supply (PM-9)

AC Input	3.5 amps max. @ 120 VAC, 60 Hz Non power-limited
Supervisory current (DC)	0.027 amp
Alarm current (DC)	0.050 amp

1.5.2 Signaling Line Circuits (ILI-MB-E3)

- Two (2), Class "A," Style 6, 7,* or Class "B" Style 4 circuits.
 - 24 VDC nominal
 - Power-limited
 - Supervised
 - 40 ohm max. line impedance
 - 0.5 µf max. capacitance
 - Capacity of 159 analog sensors and 159 addressable devices per circuit
- *Style 7 operation requires System Sensor M500X Isolator Modules.
See Compatibility Addendum P/N 9000-0427, Tables 1, 1-A, and 1-B for a list of UL Listed, compatible sensors/modules.

1.5.3 Notification Appliance Circuits (ILI-MB-E3)

- Two (2), Class "A," Style Z, or Class "B" Style Y circuits.
 - Power-limited
 - Supervised
 - Non-coded
 - Maximum alarm load - 2.0 amp per circuit
- See Compatibility Addendum P/N 9000-0427, Table 2-H for a list of UL Listed, compatible notification appliances.

1.5.4 Alarm Dry Contacts (ILI-MB-E3)

- Form "C"
- Rated 2 amp @ 30 VDC (resistive)

1.5.5 Trouble Dry Contacts (ILI-MB-E3)

- Form "C"
- Rated 2 amp @ 30 VDC (resistive)

1.5.6 Supervisory Dry Contacts (ILI-MB-E3)

- Form "C"
- Rated 2 amp @ 30 VDC (resistive)

1.5.7 Earth Ground Connection (ILI-MB-E3)



NOTICE: Terminal TB3-3 must be connected to an earth ground connection per Article 760 of the National Electric Code. Failure to make proper earth ground connection to a metallic cold water pipe or driven ground rod to this terminal will result in the loss of lightening protection, reduce the tolerance of the system to transients, and will adversely affect the operation of the system. Panel neutral or conduit ground is not acceptable, minimum wire size is 14 AWG.

1.5.8 24 VDC Power, System (ILI-MB-E3)

- Unregulated FWR
- Resettable and non-resettable, 1.0 amp max. each circuit, 2.0 amp max. combined
- Unsupervised
- Power-limited

1.5.9 RS-232 Port

The RS-232 port consists of the Terminal Block TB6 which provides a standard serial port for the connection to a Listed output device for supplementary type service. Typical examples of such devices include any UL Listed EDP device (remote printer or video terminal), any UL Listed Signaling Device (such as the Keltron VS4095/5 printer), or any UL Listed Signal System Unit.

Ratings: 15 VDC (max.)
.05 amp (max.) current
115.2 Kbaud
8 bits, 1 stop bit, no parity.

1.5.10 Battery Connection (PM-9) Supervised

- 24 VDC nominal
- Max. battery size 55 AH
- 0.75A max. battery charge current
- Non power-limited

1.5.11 City Master Box Output

Voltage	24 VDC (Nominal) FWR
Supervisory current	.024 amp
Alarm current (max)	.510 amp
Box trip coil resistance	14.5 ohms
Max. line resistance	35 ohms
Supervised against opens	
Non Power-limited	

1.5.12 Remote Signaling Output (Polarity Reversal)

Voltage:	24 VDC (nominal) FWR
Line Resistance:	2 ohms (max)
Supervised	
Non Power-limited	

2.0 Installation

2.1 General

The E3 Series™ is a modular system and is shipped unassembled. The backbox, doors, and sub-assemblies are individually packaged and can be easily assembled.

2.2 Location

All components of the E3 Series™ System should be located per the following requirements:

- Installations are to be indoors only, in dry locations, protected from rain, water, and rapid changes in temperature that could cause condensation. Equipment must be securely mounted on rigid, permanent walls.
- Operating temperature shall not exceed the range of 32° to 120° F (0 to 49° C).
- Operating humidity not to exceed 93% non-condensing at 90° F (32° C).
- There should be adequate space around the installation to allow easy access for operation and servicing.
- All sub-assemblies and components are to be located in conformance to local and national codes.
- All installation field wiring shall be in conformance to local and national codes.

2.3 Unpacking

Remove all sub-assemblies and accessories from their shipping cartons to access the enclosure. Remove and inspect the enclosure for shipping damage. Inspect all electronic sub-assemblies for damage without removing them from their anti-static protective bags. If any pieces are found damaged, notify the shipping carrier immediately. Report missing components to Gamewell-FCI Customer Service.

2.4 Mounting Sub-assemblies

- 1) The ILI-MB-E3 consists of a main operating board with pluggable terminal strips. Install this sub-assembly immediately unless any optional units are to be used in the system. Refer to the Installation Instructions P/N 9000-0579.
Before installing the ILI-MB-E3 into the system backbox, refer to the Installation Instructions shipped with each sub-assembly for the proper procedures:
- 2) Install the door after the sub-assemblies are in place. Note that the door can only be installed (or removed) when it is opened at least 90° from the backbox.

2.5 Cabinets

The E3 control may be assembled in various cabinets to suit the installation. Typical arrangements are shown. There are four cabinet options:

- Cabinet A (remotable)
- Cabinets A1 and A2
- Cabinet B
- Cabinet C
- Cabinet D

E3 Inner Door Bonding Strap

Note: Electrical continuity for grounding of the inner door of the cabinets is ensured by a bonding wire.

2.5.1 Cabinet A1, Installation Instructions

The E3 Series™, Cabinet A1, assembly typically includes the following:

- Backbox
- Outer Door
- Inner Door:
 - NGA unit
- Hardware Kit

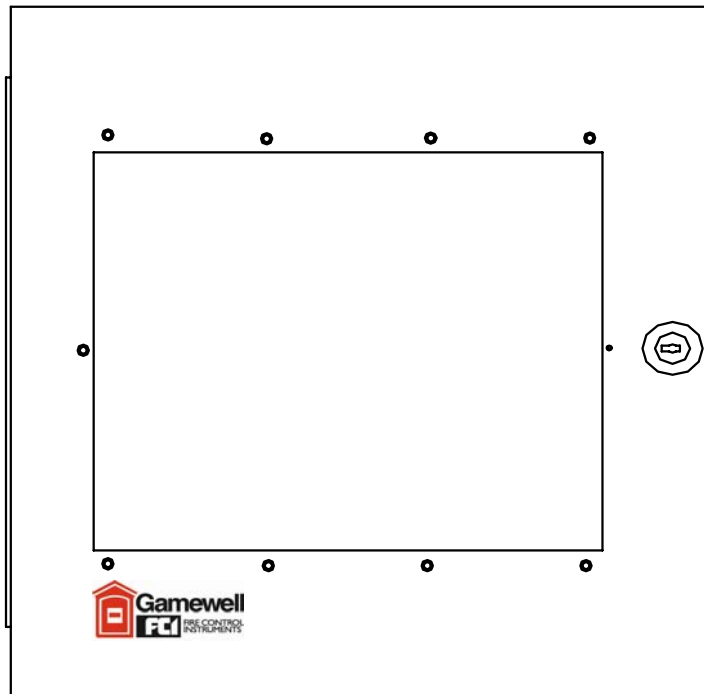


Figure 2.5.1 Cabinet A1, (Standard View)

2.5.1.1 Cabinet A1, Backbox Installation

- 1) Prepare the mounting site by pre-drilling four (4), #10 screws using the dimensions shown in the figure below. Use four (4), #10 screws.

Note: If the fasteners are anchored to wallboard, use #10 wall anchors. Mountings to concrete walls should be backed by plywood to insulate the equipment from possible condensation.

- 2) To mount the backbox, secure with two (2), #10 screws in the two-hole mounting pattern as shown in Locations 1 and 2 of the figure below.
- 3) Set the backbox over the top, two-hole mounting pattern, and hang the backbox over the two screw heads.
- 4) Insert and secure two (2), #10 screws in the two-hole mounting pattern as shown in Locations 3 and 4 of the figure below.

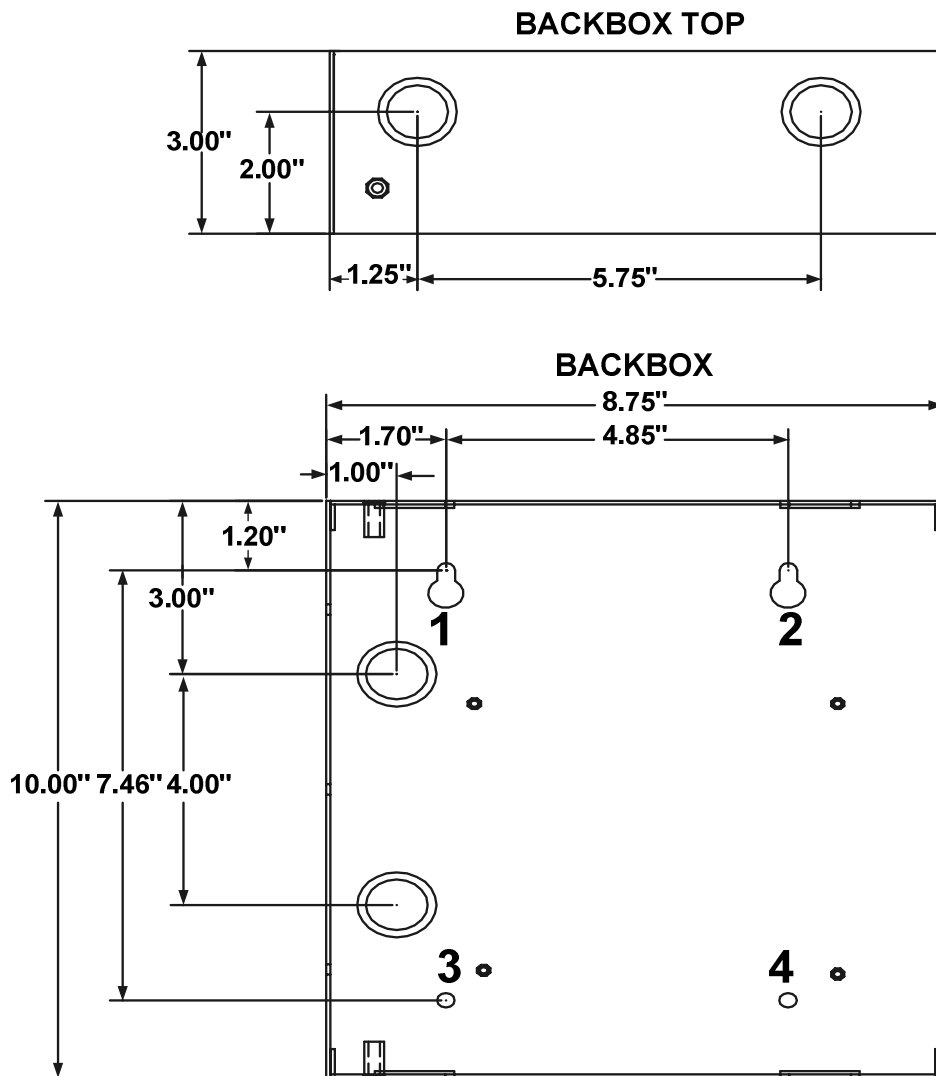


Figure 2.5.1.1 Cabinet A1, Backbox Installation

2.5.1.2 Cabinet A1, Outer Door Installation

- 1) Mount the outer door on the backbox.
- 2) Secure with three (3), #6-32 nuts in the three-hole mounting pattern on the left side of the backbox as shown in Locations 1, 2, and 3 of the figure below.

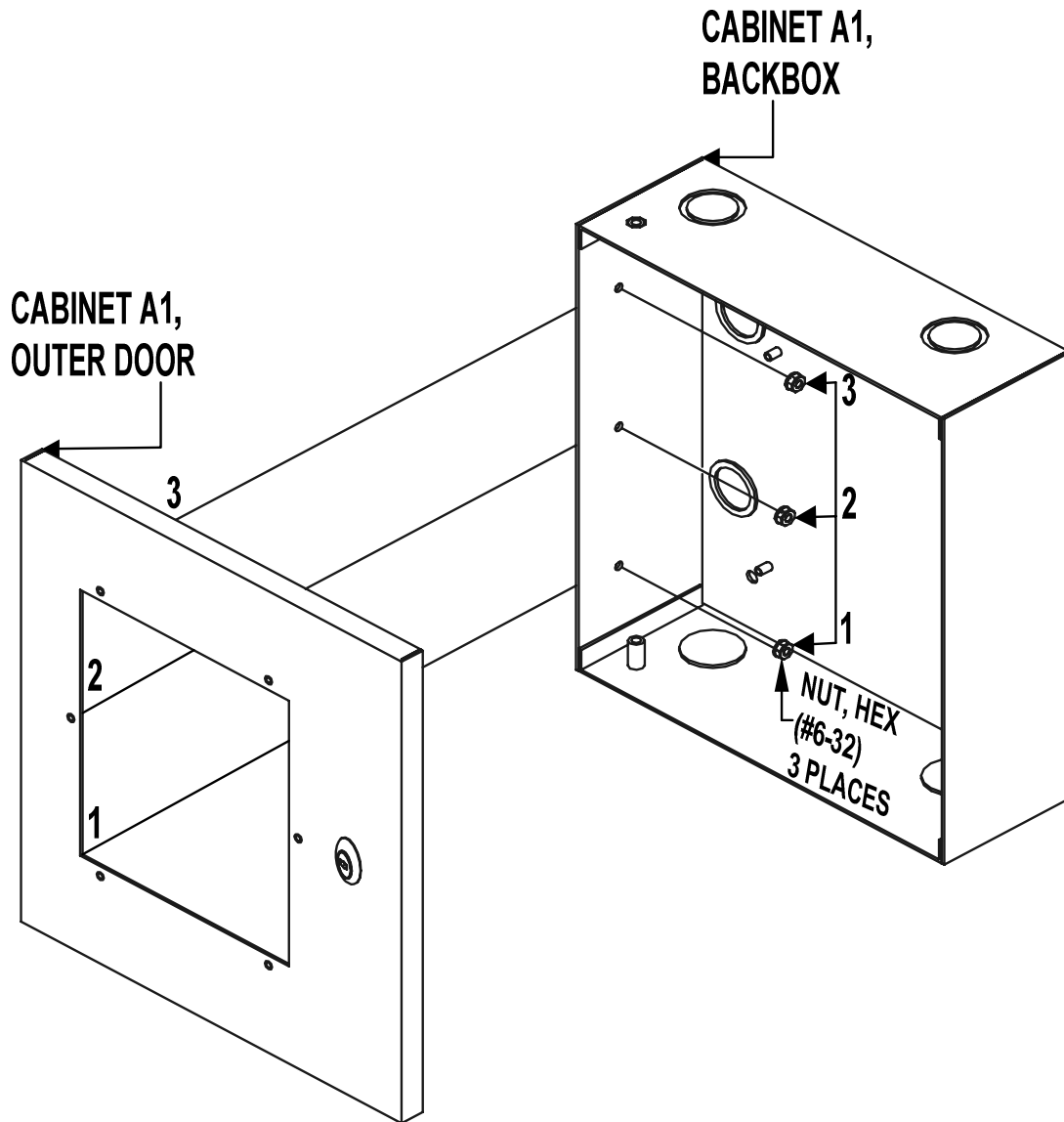


Figure 2.5.1.2 Cabinet A1, Outer Door Installation

2.5.1.3 Cabinet A1, Inner Door to the Backbox Installation

- 1) Place the nylon spacer (#10) over the backbox bottom hinge pin as shown in Location 1 of the figure below.
- 2) Mount the inner door to the backbox by sliding the inner door, top hinge pin hole onto the backbox top hinge pin as shown in Location 2.
- 3) Align the inner door bottom hinge pin hole with the backbox bottom hinge pin.
- 4) Slide the door over the inner door bottom hinge pin hole on top of the nylon spacer, and secure using the #8 x .5" screw as shown in Location 2 of the figure below.
- 5) After the inner door is secured in place, attach the one end of the bonding wire to the top hinge pin using the #8 x .5" screw as shown in Location 3 of the figure below.

Note: For information on the installation of the opposite end of the bonding wire, see Section 2.5.1.4, Step 2, Location 2 of Figure 2.5.1.4.

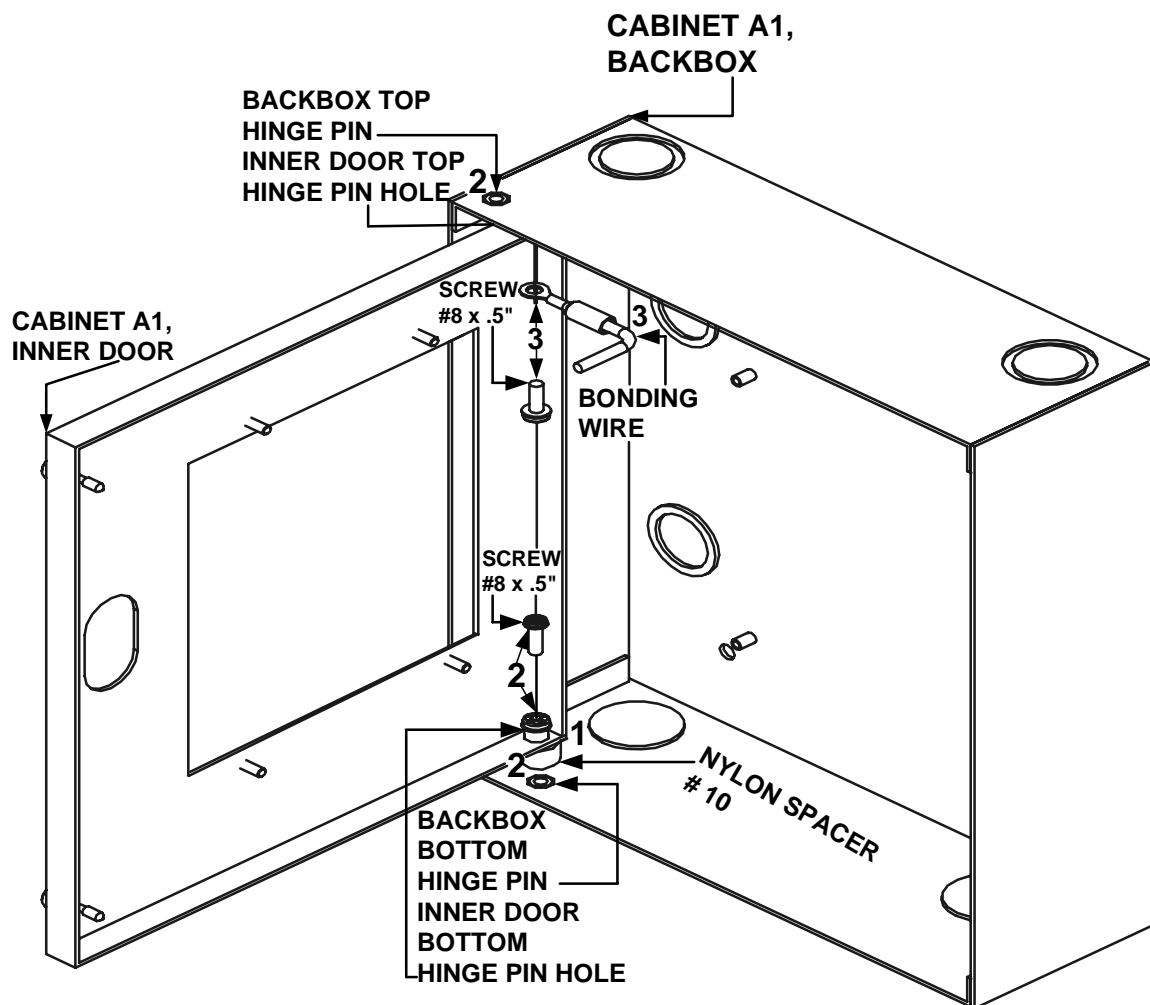


Figure 2.5.1.3 Cabinet A1, Inner Door to the Backbox Installation

2.5.1.4 Cabinet A1, Inner Door Installation

- 1) Mount the NGA on the inner door and secure with four (4), #6-32 nuts in the four-hole mounting pattern as shown in Location 1 of the figure below.
- 2) Secure the opposite end of the bonding wire to the welded #6 stud on the inner side of the inner door using the #6 nut as shown in Location 2 of the figure below.
- 3) After the panel is wired, use the thumbscrews to secure the inner door to the backbox as shown in Location 3 of the figure below.

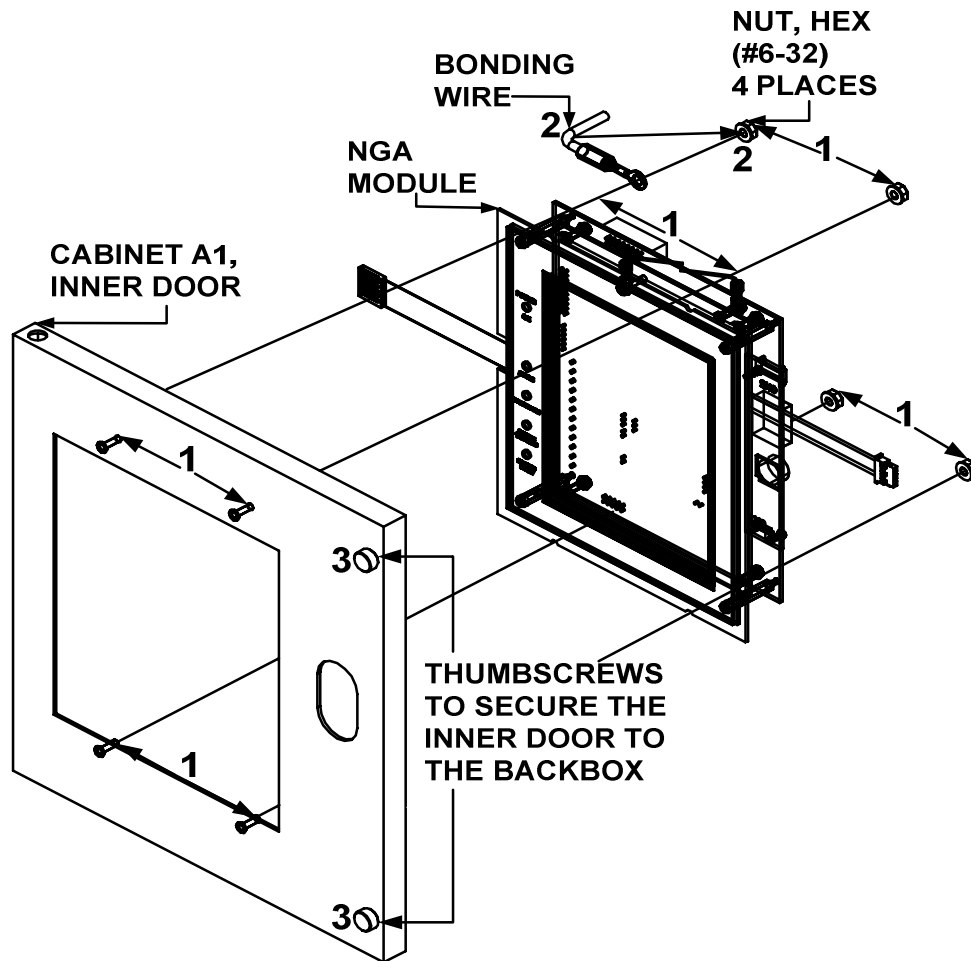


Figure 2.5.1.4 Cabinet A1, Inner Door Installation

2.5.2 Cabinet A2, Installation Instructions

The E3 Series™, Cabinet A1, assembly typically includes the following:

- Backbox
- Outer Door
- Inner Door:
 - LCD-E3 Keypad
- Hardware Kit

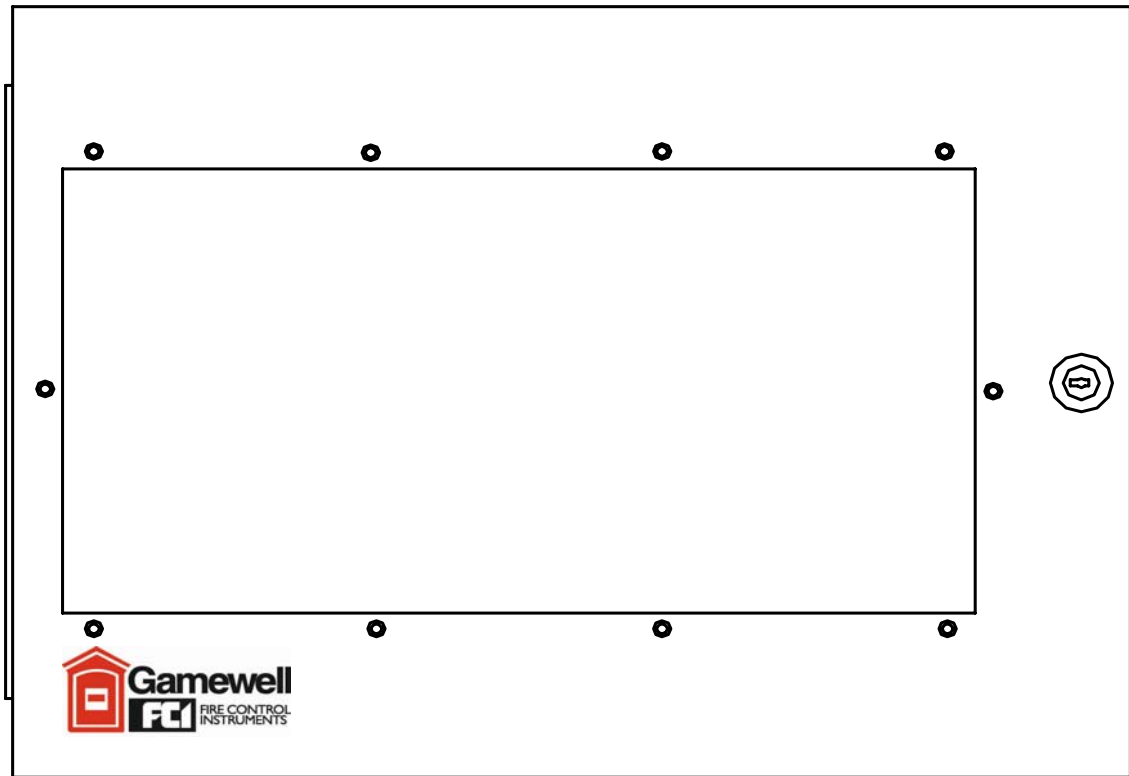


Figure 2.5.2 Cabinet A2, (Standard View)

2.5.2.1 Cabinet A2, Backbox Installation

- 1) Prepare the mounting site by pre-drilling four (4), #10 screws using the dimensions shown in the figure below. Use four (4), #10 screws.
- 2) Note: If the fasteners are anchored to wallboard, use #10 wall anchors. Mountings to concrete walls should be backed by plywood to insulate the equipment from possible condensation.
- 3) To mount the backbox, secure with two (2), #10 screws in the two-hole mounting pattern as shown in Locations 1 and 2 of the figure below.
- 4) Set the backbox over the top, two-hole mounting pattern, and hang the backbox over the two screw heads.
- 5) Insert and secure two (2), #10 screws in the two-hole mounting pattern as shown in Locations 3 and 4 of the figure below.

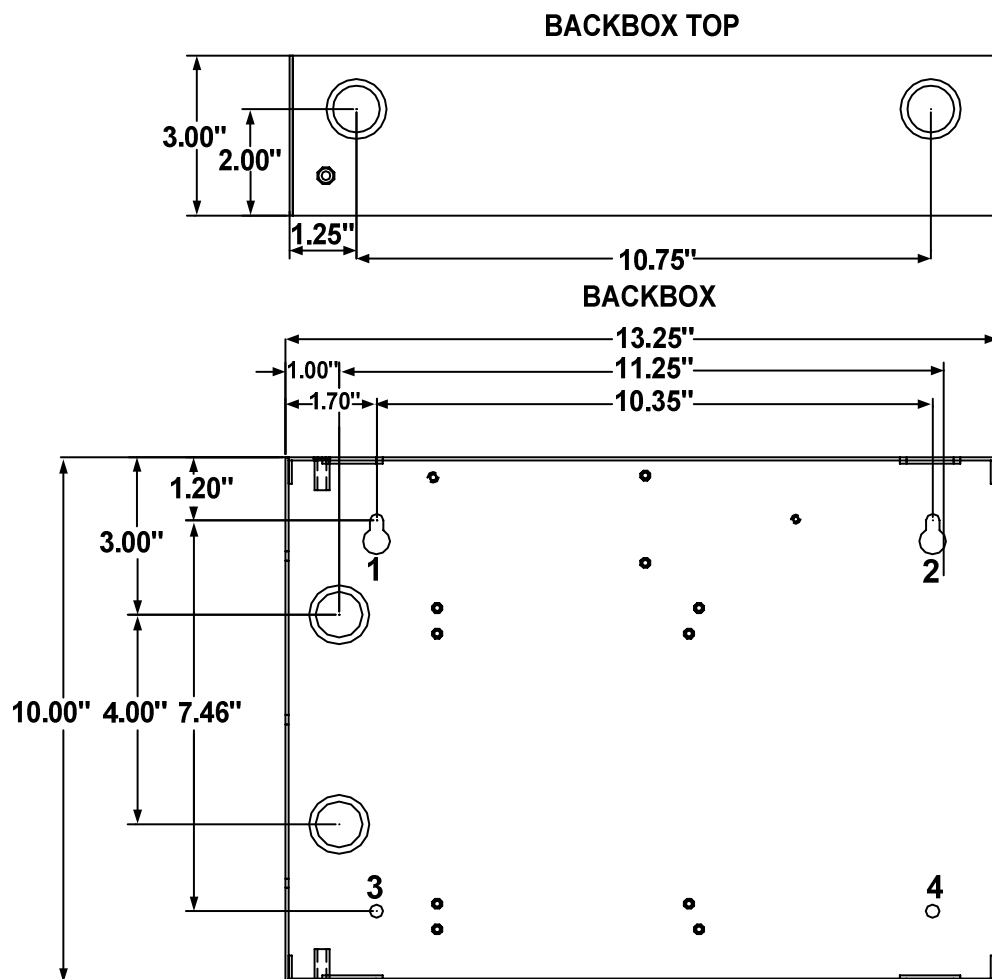


Figure 2.5.2.1 Cabinet A2, Backbox Installation

2.5.2.2 Cabinet A2, Outer Door Installation

- 1) Mount the outer door on the backbox.
- 2) Secure with three (3), #6-32 nuts in the three-hole mounting pattern on the left side of the backbox as shown in Locations 1, 2, and 3 of the figure below.

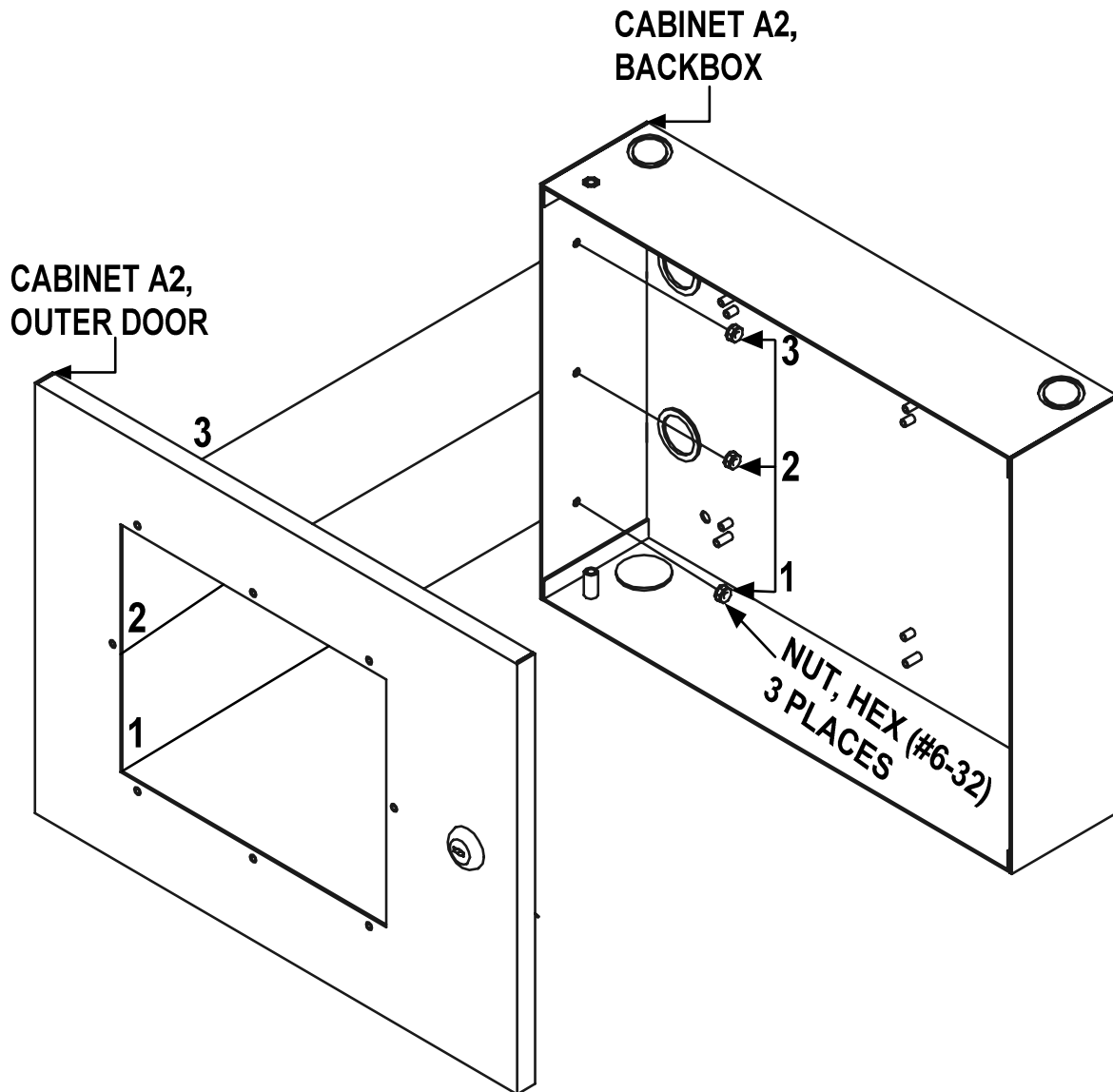


Figure 2.5.2.2 Cabinet A2, Outer Door Installation

2.5.2.3 Cabinet A2, Inner Door to the Backbox Installation

- 1) Place the nylon spacer (#10) over the backbox bottom hinge pin as shown in Location 1 of the figure below.
- 2) Mount the inner door to the backbox by sliding the inner door, top hinge pin hole onto the backbox top hinge pin as shown in Location 2.
- 3) Align the inner door bottom hinge pin hole with the backbox bottom hinge pin.
- 4) Slide the door over the inner door bottom hinge pin hole on top of the nylon spacer, and secure using the #8 x .5" screw as shown in Location 2 of the figure below.
- 5) After the inner door is secured in place, attach the one end of the bonding wire to the top hinge pin using the #8 x .5" screw as shown in Location 3 of the figure below.

Note: For information on the installation of the opposite end of the bonding wire, see Section 2.5.2.4, Step 2, Location 2 of Figure 2.5.2.4.

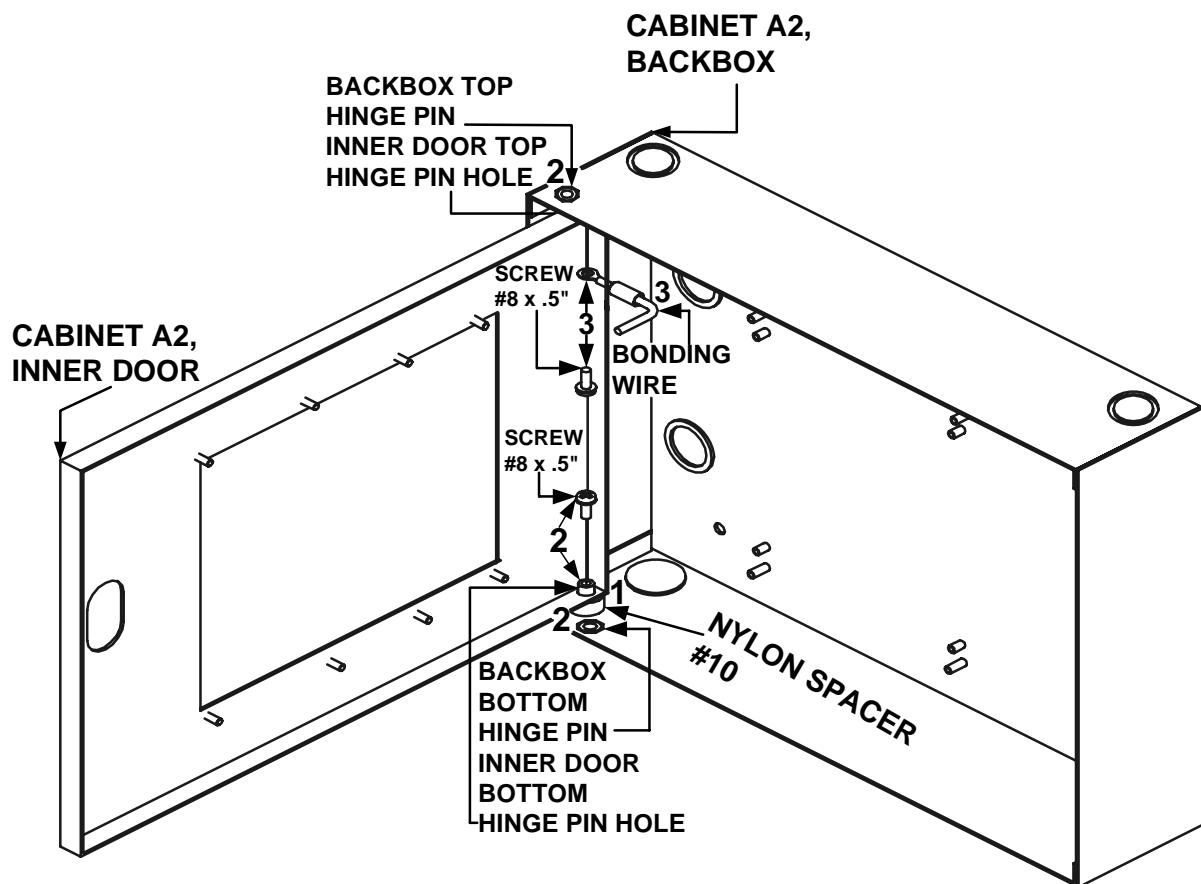


Figure 2.5.2.3 Cabinet A2, Inner Door to the Backbox Installation

2.5.2.4 Cabinet A2, Inner Door Installation

- 1) Mount the NGA on the inner door and secure with four (4), #6-32 nuts in the four-hole mounting pattern as shown in Location 1 of the figure below.
- 2) Secure the opposite end of the bonding wire to the welded #6 stud on the inner side of the inner door using the #6 nut as shown in Location 2 of the figure below.
- 3) After the panel is wired, use the thumbscrews to secure the inner door to the backbox as shown in Location 3 of the figure below.

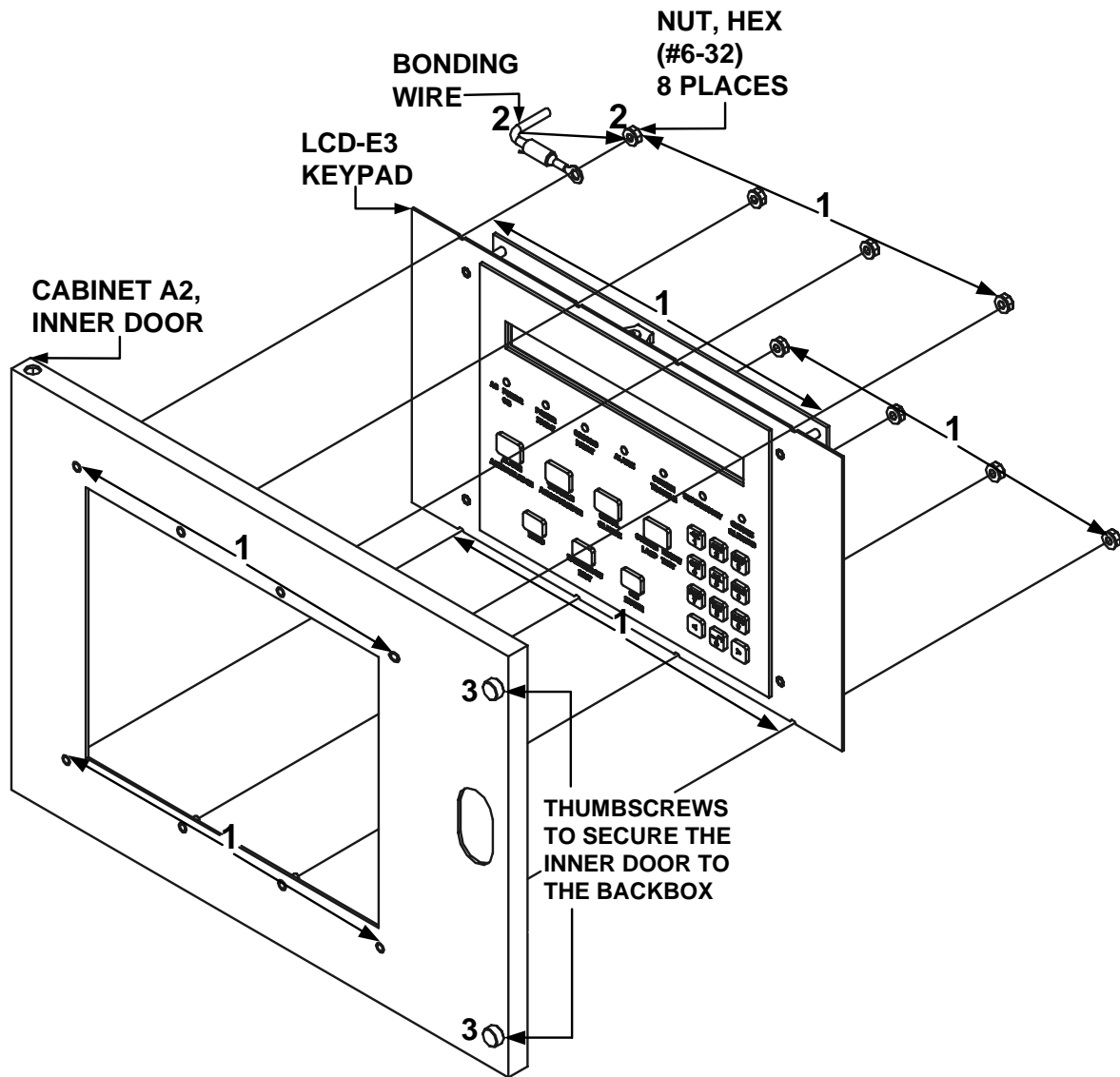


Figure 2.5.2.4 Cabinet A2, Inner Door Installation

2.5.3 Cabinet A, 2-Bay Installation Instructions

The E3 Series™, Cabinet A, 2-Bay assembly typically includes the following:

- Backbox
- Outer Door
- Inner Door, 2-Bay:
 - One (1), LCD-E3 unit
 - One (1), ASM-16 unit
 - One (1), Blank Plate Optional
- Hardware Kit

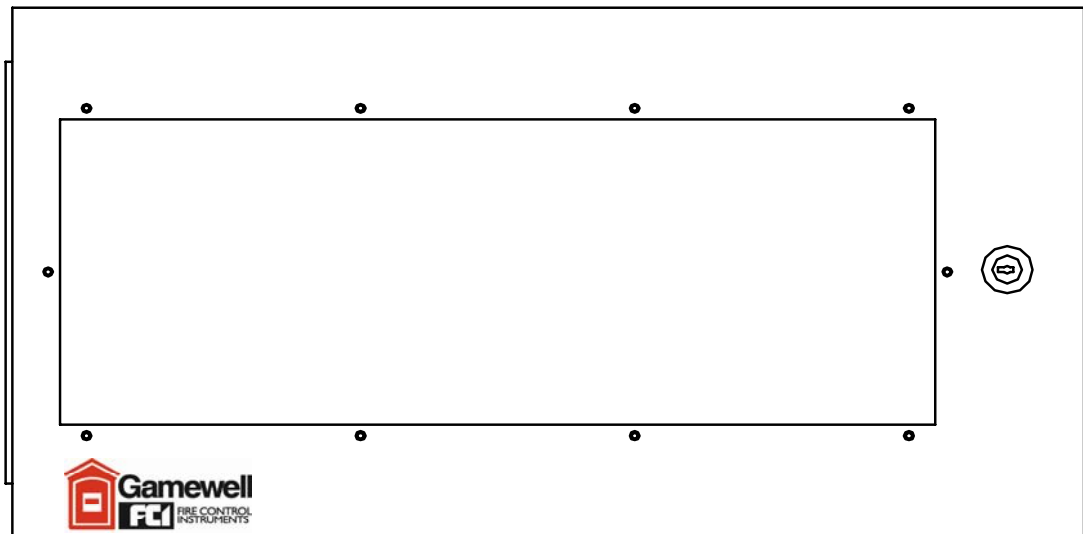


Figure 2.5.3 Cabinet A, 2-Bay Standard View

2.5.3.1 Cabinet A, 2-Bay and 3-Bay Backbox Installation

- 1) Prepare the mounting site by pre-drilling four (4), #10 screws using the dimensions shown in the figure below. Use four (4), #10 screws.
Note: If the fasteners are anchored to wallboard, use #10 wall anchors. Mountings to concrete walls should be backed by plywood to insulate the equipment from possible condensation.
- 2) To mount the backbox, secure with two (2), #10 screws in the two-hole mounting pattern as shown in Locations 1 and 2 of the figure below.
- 3) Set the backbox over the top, two-hole mounting pattern, and hang the backbox over the two screw heads.
- 4) Insert and secure two (2), #10 screws in the two-hole mounting pattern as shown in Locations 3 and 4 of the figure below.

Note: Add knockouts to the left and right side of the rear panel of the backbox. Do not add knockouts in the center or top of the backbox. To add larger knockouts, increase the size of the existing knockouts.

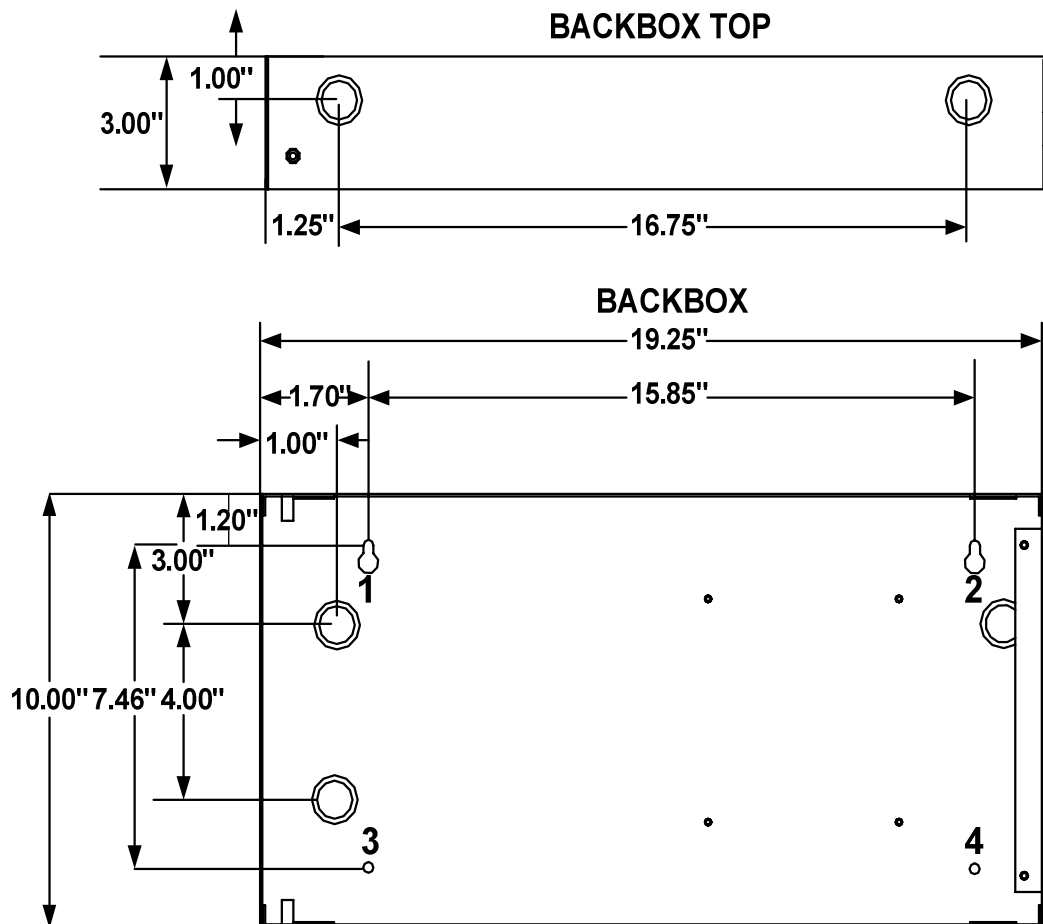


Figure 2.5.3.1 Cabinet A, 2-Bay and 3-Bay Backbox Installation

2.5.3.2 Cabinet A, 2-Bay and 3-Bay Outer Door Installation

- 1) Mount the 2-bay or 3-bay outer door on the backbox.
- 2) Secure with three (3), #6-32 nuts in the three-hole mounting pattern on the left side of the backbox as shown in Locations 1, 2, and 3 of the figure below.

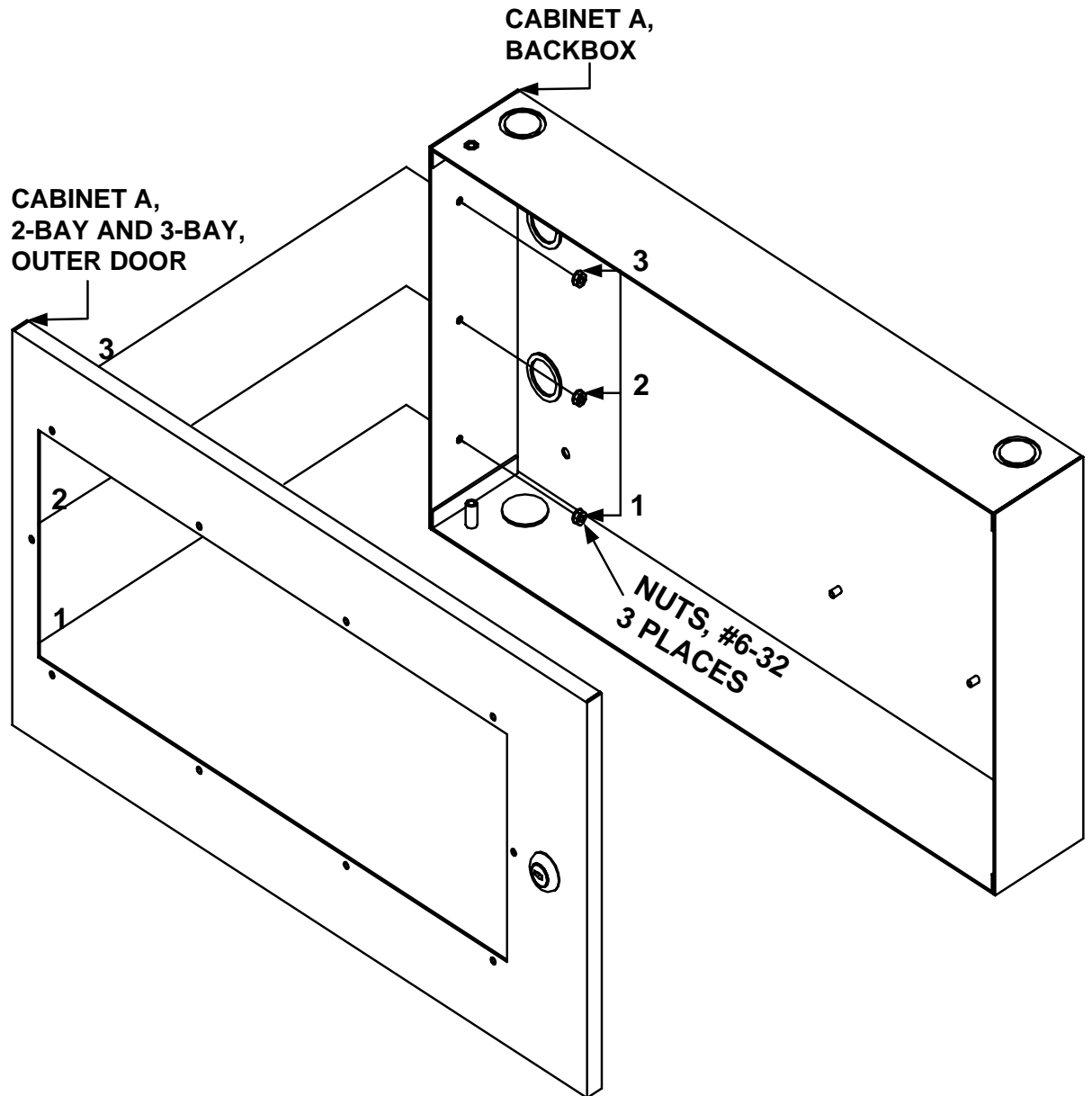


Figure 2.5.3.2 Cabinet A, 2-Bay and 3-Bay Outer Door Installation

2.5.3.3 Cabinet A, 2-Bay Inner Door to the Backbox Installation

- 1) Place the nylon spacer (#10) over the backbox bottom hinge pin as shown in Location 1 of the figure below.
- 2) Mount the inner door to the backbox by sliding the inner door top hinge pin hole onto the backbox top hinge pin as shown in Location 2 of the figure below.
- 3) Align the inner door bottom hinge pin hole with the backbox bottom hinge pin.
- 4) Slide the inner door over the inner door bottom hinge pin hole on top of the nylon spacer, and secure using the #8 x .5" screw as shown in Location 2 of the figure below.
- 5) After the inner door is secured in place, attach the one end of the bonding wire to the top hinge pin using the #8 x .5" screw as shown in Location 3 of the figure below.

Note: For information on the installation of the opposite end of the bonding wire, see Section 2.5.3.4, Step 3 and Location 3 of Figure 2.5.3.4.

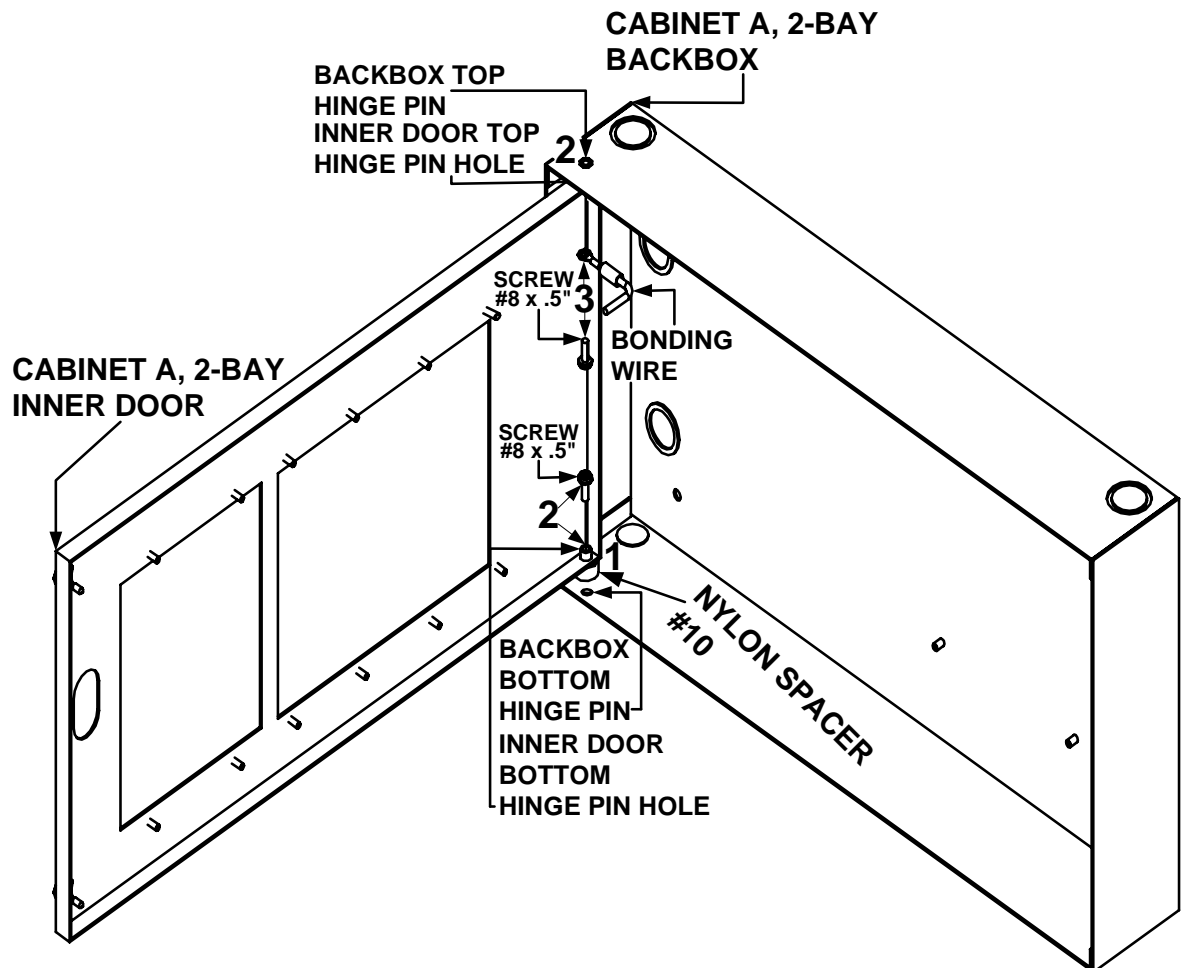


Figure 2.5.3.3 Cabinet A, 2-Bay Inner Door to the Backbox Intallation

2.5.3.4 Cabinet A, 2-Bay, Inner Door Installation

- 1) Mount the LCD-E3 keypad on the inner door and secure with eight (8), #6-32 nuts in the eight-hole mounting pattern as shown in Location 1 of the figure below.
- 2) Mount the ASM-16 on the inner door and secure with four (4), #6-32 nuts in the four-hole mounting pattern as shown in Location 2 of the figure below.
- 3) Secure the opposite end of the bonding wire to the welded #6 stud on the inner side of the inner door using the #6 nut as shown in Location 3 of the figure below.
- 4) After the panel is wired, use the thumbscrews to secure the inner door to the backbox as shown in Location 4 of the figure below.

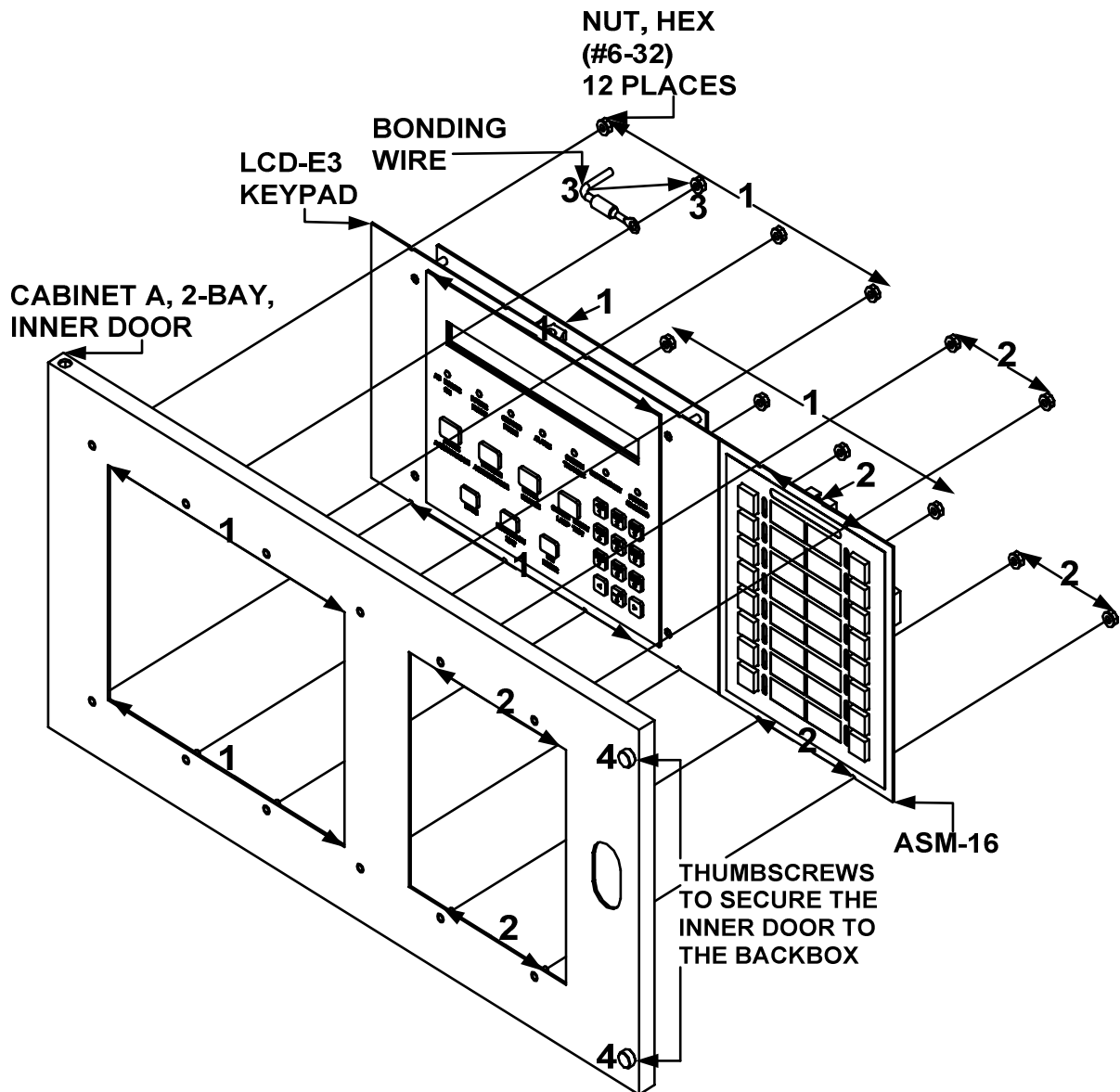


Figure 2.5.3.4 Cabinet A, 2-Bay Inner Door Installation

2.5.4 Cabinet A, 3-Bay Installation Instructions

The E3 Series™, Cabinet A, 3-Bay assembly typically includes the following:

- Backbox
- Outer Door
- Inner Door, 3-Bay:
 - NGA unit or Blank Plate
 - Maximum of two (2), ASM-16s
 - Blank Plates Optional
- Hardware Kit

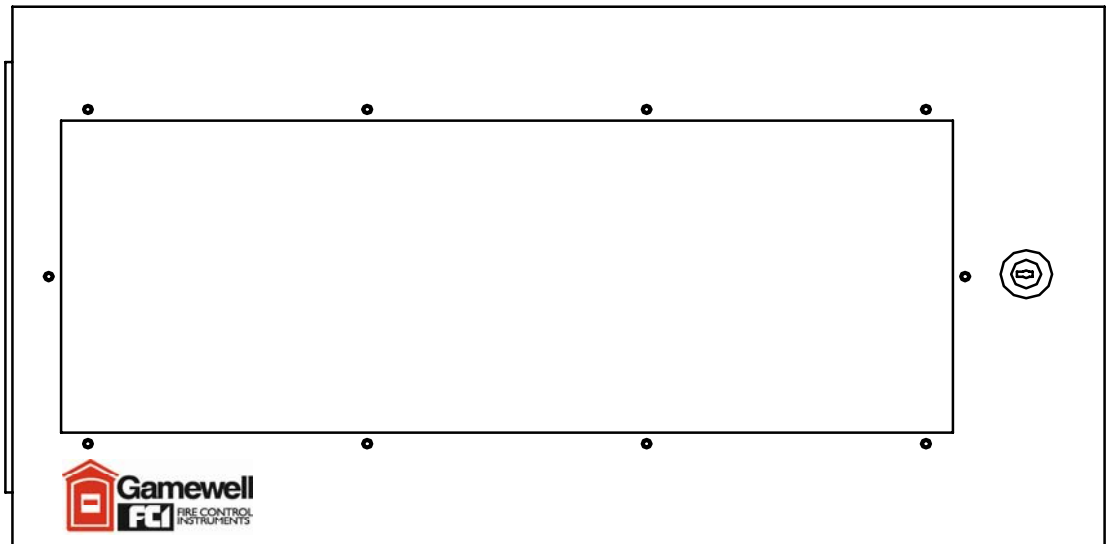


Figure 2.5.4 Cabinet A, 3-Bay (Standard View)

2.5.4.1 Cabinet A, 3-Bay, Inner Door to the Backbox Installation

- 1) Place the nylon spacer (#10) over the backbox bottom hinge pin as shown in Location 1 of the figure below.
- 2) Mount the inner door to the backbox by sliding the inner door, top hinge pin hole onto the backbox top hinge pin as shown in Location 2.
- 3) Align the inner door bottom hinge pin hole with the backbox bottom hinge pin.
- 4) Slide the door over the inner door bottom hinge pin hole on top of the nylon spacer, and secure using the #8 x .5" screw as shown in Location 2 of the figure below.
- 5) After the inner door is secured in place, attach the one end of the bonding wire to the top hinge pin using the #8 x .5" screw as shown in Location 3 of the figure below.

Note: For information on the installation of the opposite end of the bonding wire, see Section 2.5.4.2, Step 3 and Location 4 of Figure 2.5.4.2.

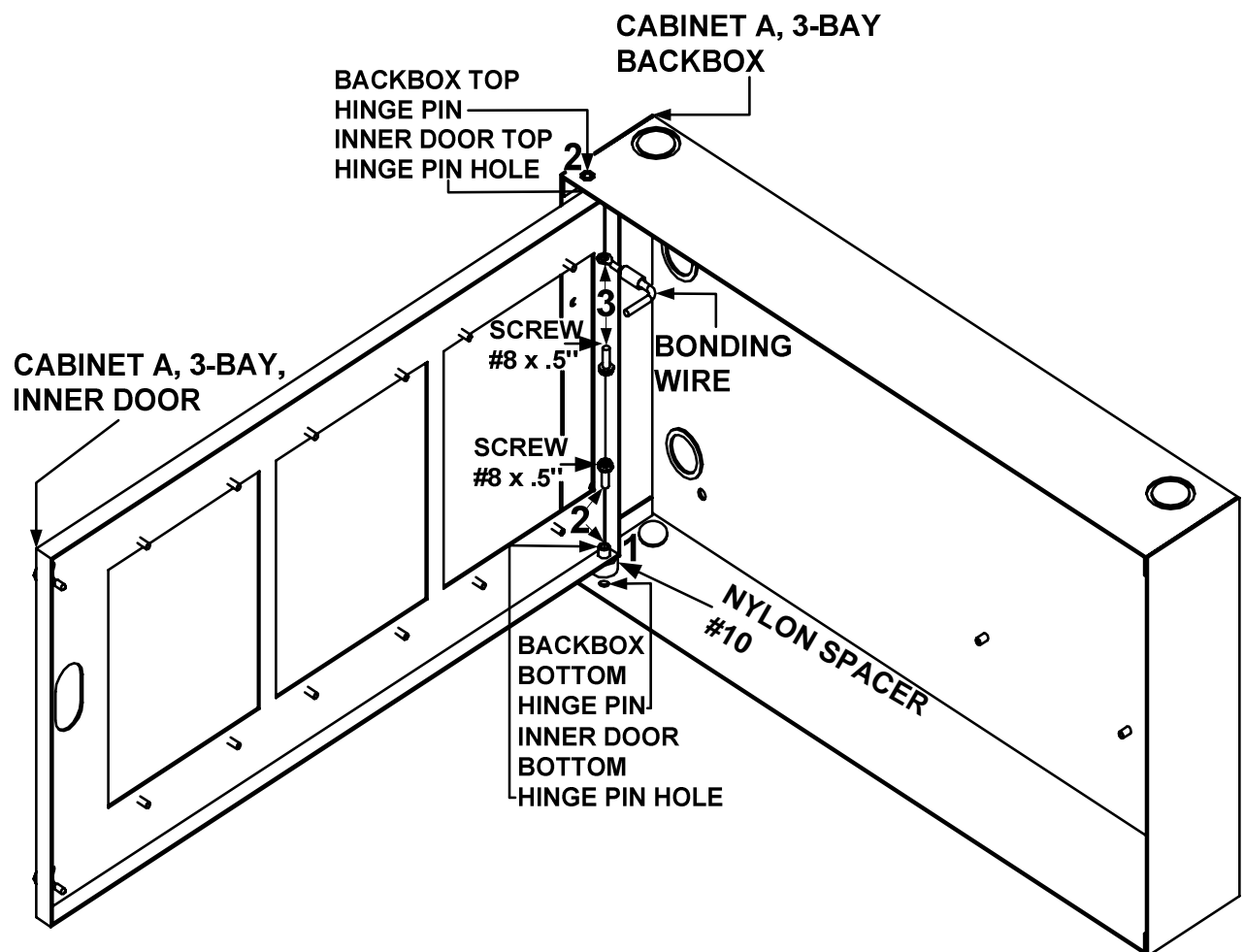


Figure 2.5.4.1 Cabinet A, 3-Bay Backbox Sub-Assembly Installation

2.5.4.2 Cabinet A, 3-Bay, Inner Door Installation

- 1) Mount the two (2), ASM-16 sub-assemblies on the inner door and secure with eight (8), #6-32 nuts in each of the two (2), four-hole mounting patterns as shown in Locations 1 and 3 of the figure below.
- 2) Mount the NGA sub-assembly on the inner door and secure with four (4), #6-32 nuts in the four-hole mounting pattern as shown in Location 2 of the figure below.
- 3) Secure the opposite end of the bonding wire to the welded #6 stud on the inner side of the inner door using the #6 nut as shown in Location 4 of the figure below.
- 4) After the panel is wired, use the thumbscrews to secure the inner door to the backbox as shown in Location 5 of the figure below.

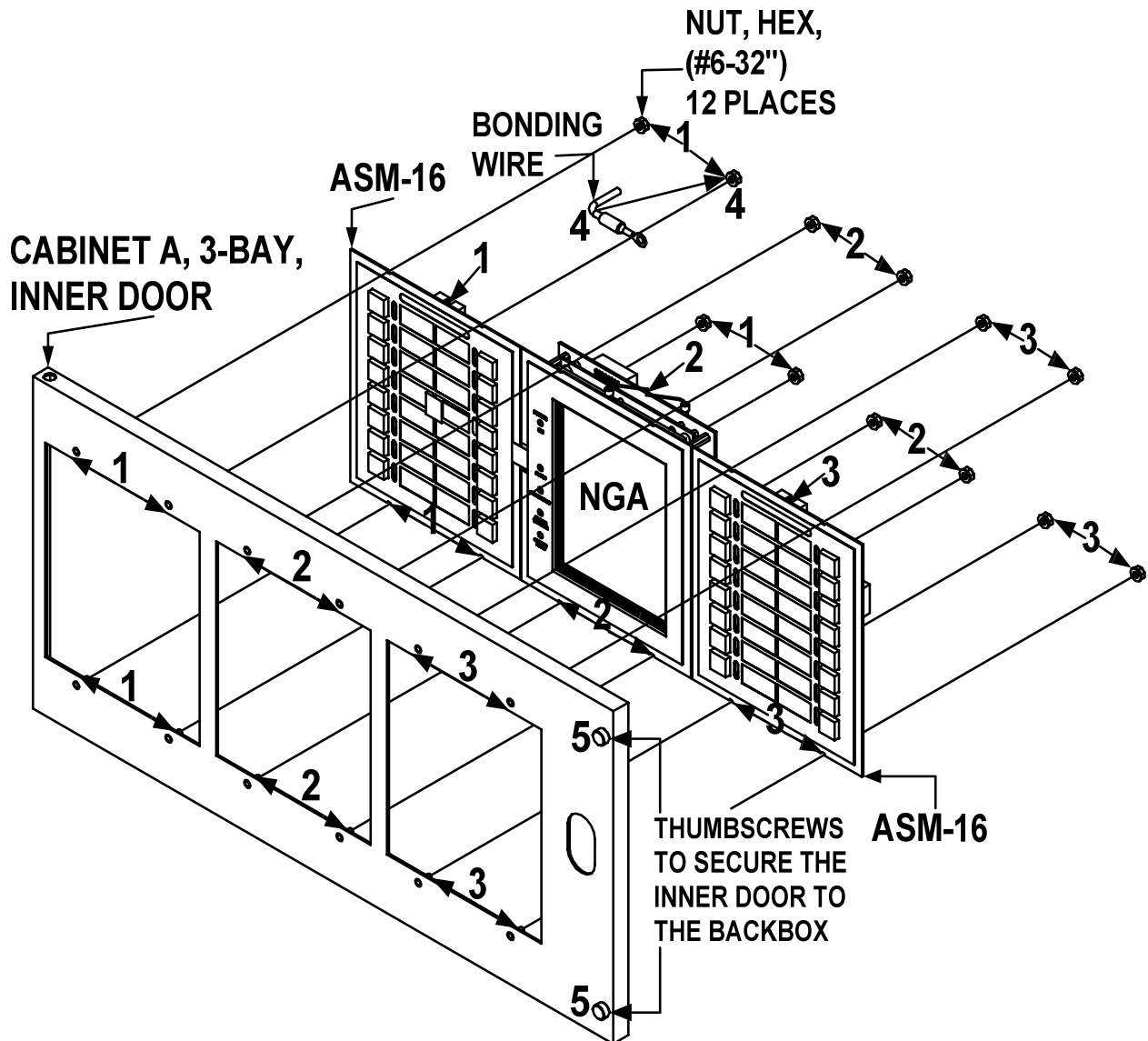


Figure 2.5.4.2 Cabinet A, 3-Bay Inner Door Installation

2.5.5 Cabinet B Installation Instructions

The Cabinet B assembly typically houses the following:

- Backbox:
 - DACT-E3 ILI-S-E3 (Optional)
 - RPT-E3 PM-9
 - ILI-MB-E3 Batteries
- Outer Door
- Inner Door, 2-Bay:
 - LCD-E3 ASM-16 or blank plate
- Hardware Kit

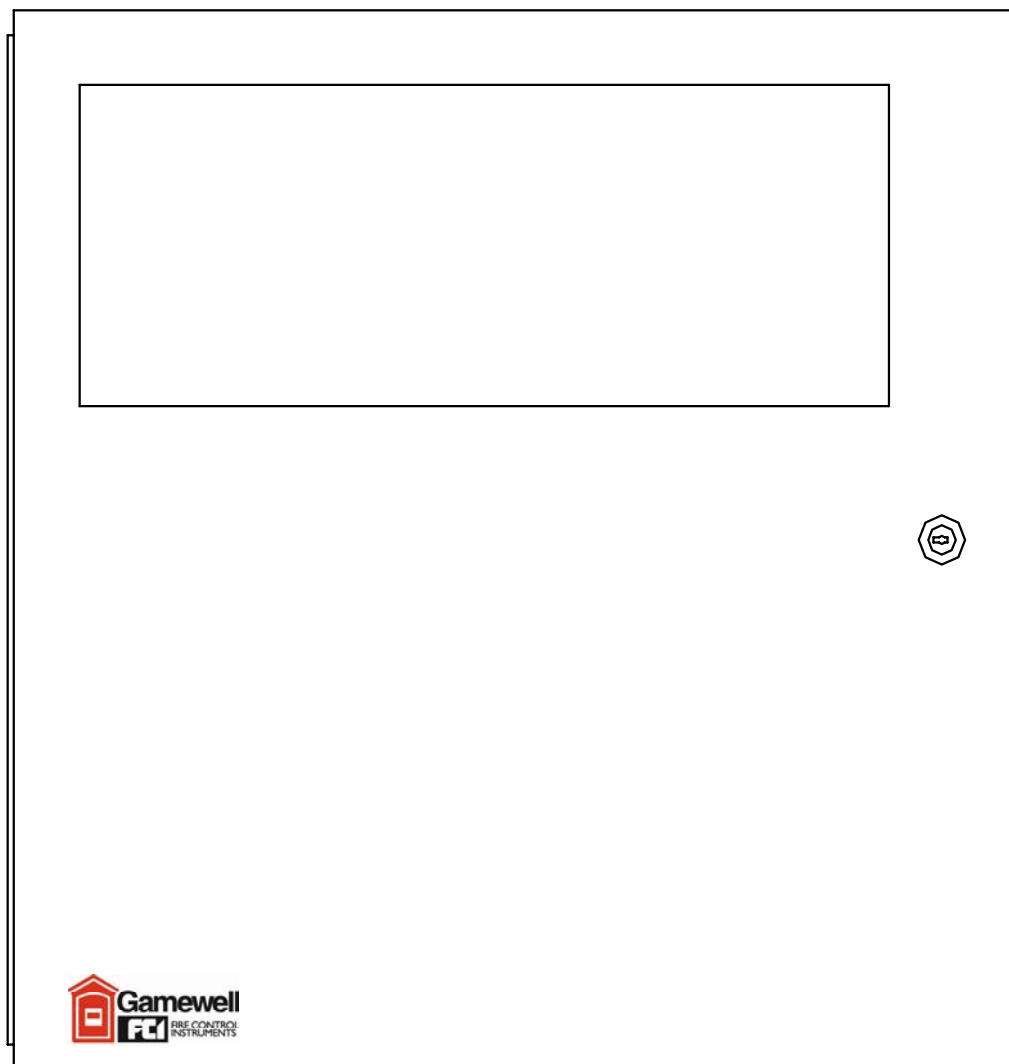


Figure 2.5.5 Cabinet B, Standard View

2.5.5.1 Cabinet B, Backbox Installation

- 1) Prepare the mounting site by pre-drilling four (4), #10 screws, using the dimensions shown in figure below. Use four (4), #10 screws.
Note: If the fasteners are anchored to wallboard, use #10 wall anchors. Mountings to concrete walls should be backed by plywood to insulate the equipment from possible condensation.
- 2) Secure with two (2), #10 screws in the two-hole mounting pattern as shown in Locations 1 and 2 of the figure below.
- 3) Set the backbox over the top, two-hole mounting pattern, and hang the backbox over the two screw heads.
- 4) Insert and secure two (2), #10 screws in the two-hole mounting pattern as shown in Locations 3 and 4 of the figure below.

Note: Add knockouts to the left and right side of the rear panel of the backbox. Do not add knockouts in the center or top of the backbox, above the ILI-MB-E3, behind or below the batteries. To add larger knockouts, increase the size of the existing knockouts.

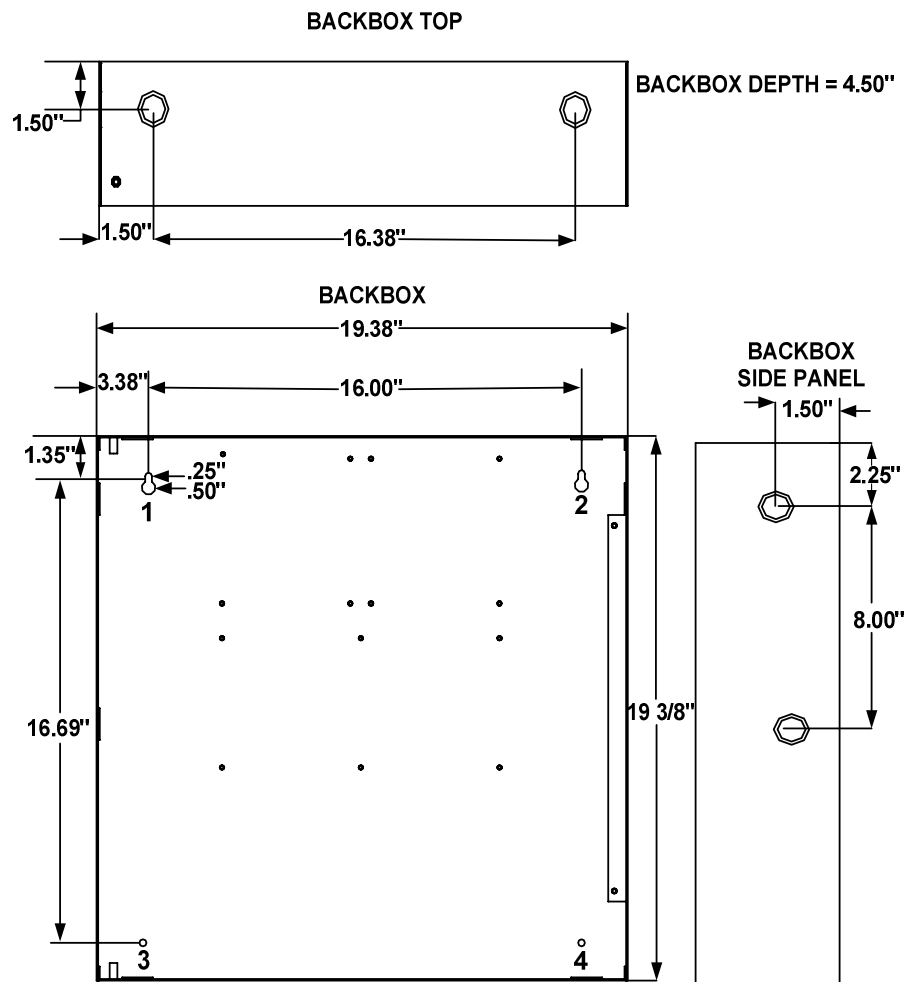


Figure 2.5.5.1 Cabinet B, Backbox Installation

2.5.5.2 Cabinet B, Outer Door Installation

- 1) Mount the outer door on the backbox.
- 2) Secure with four (4), #6 nuts in the four-hole mounting pattern on the left side of the backbox as shown in Locations 1, 2, 3, and 4 of the figure below.

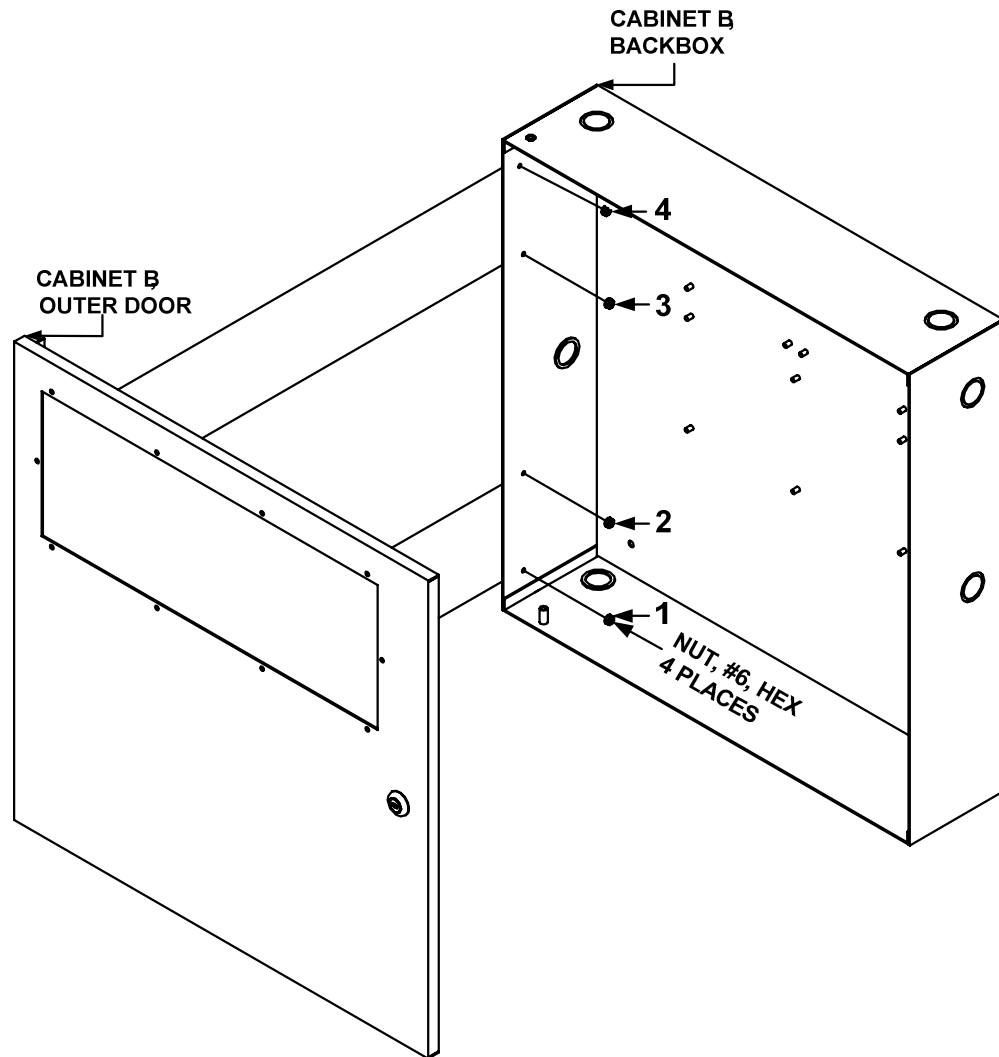


Figure 2.5.5.2 Cabinet B, Outer Door Installation

2.5.5.3 Cabinet B, Backbox Sub-Assembly Installation (Typical)

- 1) Mount the ILI-MB-E3 over the standoffs in the backbox and secure with eight, (8), standoffs, (3/16" hex, #4-40 x 1.0") in the eight-hole mounting pattern as shown in Location 1 of Figure 2.5.3.3-B. (Note: PCB orientation).
- 2) Mount the DACT-E3 and the RPT-E3 on top of the ILI-MB-E3 and secure with eight (8), screws (#4-40 x 3/8") into the eight (8), standoffs as shown in Location 2 of Figure 2.5.3.3-B. (Note: PCB orientation).
- 3) Set the PM-9 over the standoffs in the backbox and secure with six (6), screws (#4-40 x 3/8") in the six-hole mounting pattern as shown in Location 3 of Figure 2.5.3.3-B. (Note: PCB orientation).
- 4) Place the batteries in the backbox.
The cabinet will accommodate two (2) batteries up to a maximum of 18 amp/hours capacity.

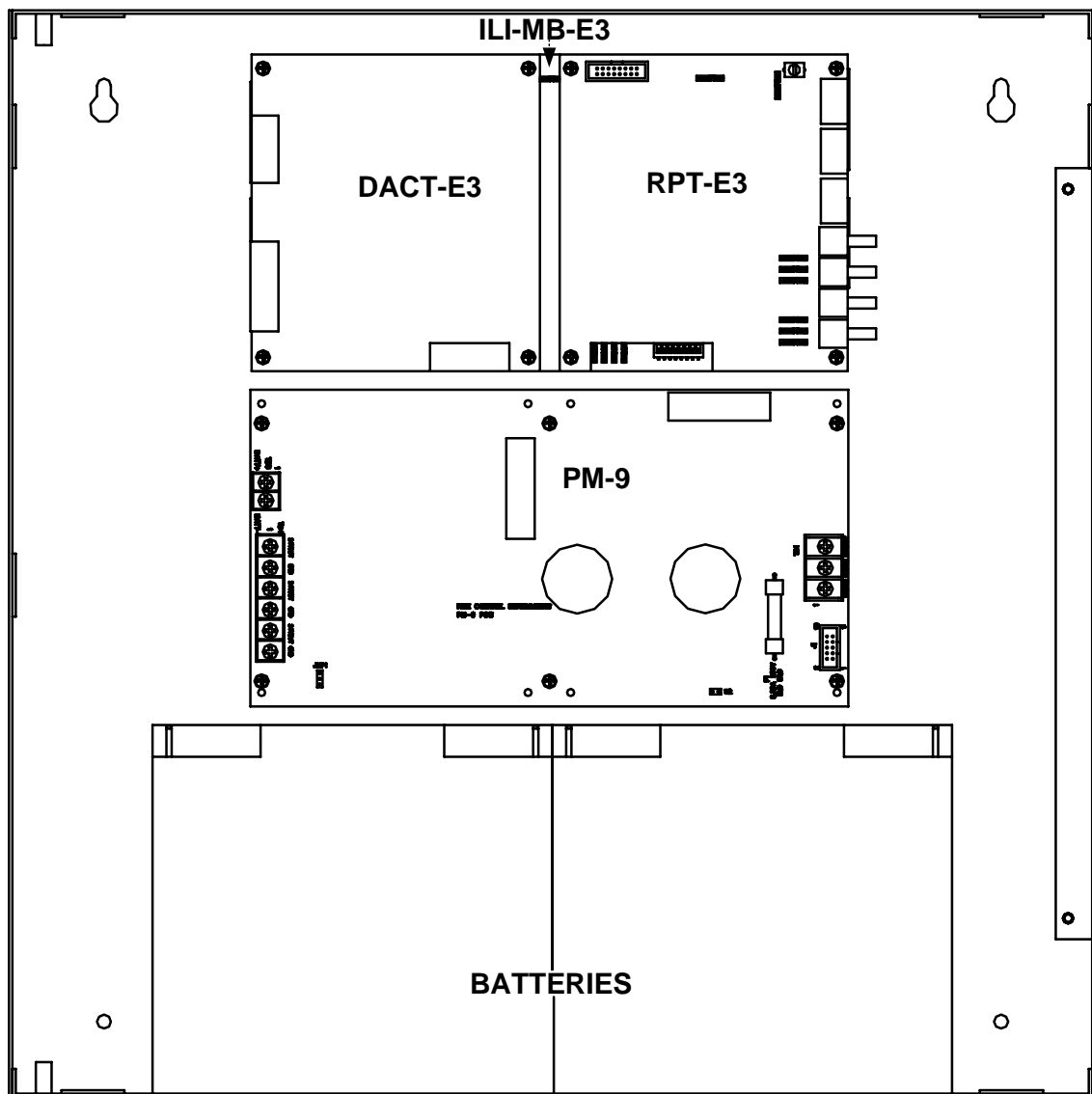


Figure 2.5.5.3-A Cabinet B, Backbox Sub-Assembly (Standard View)

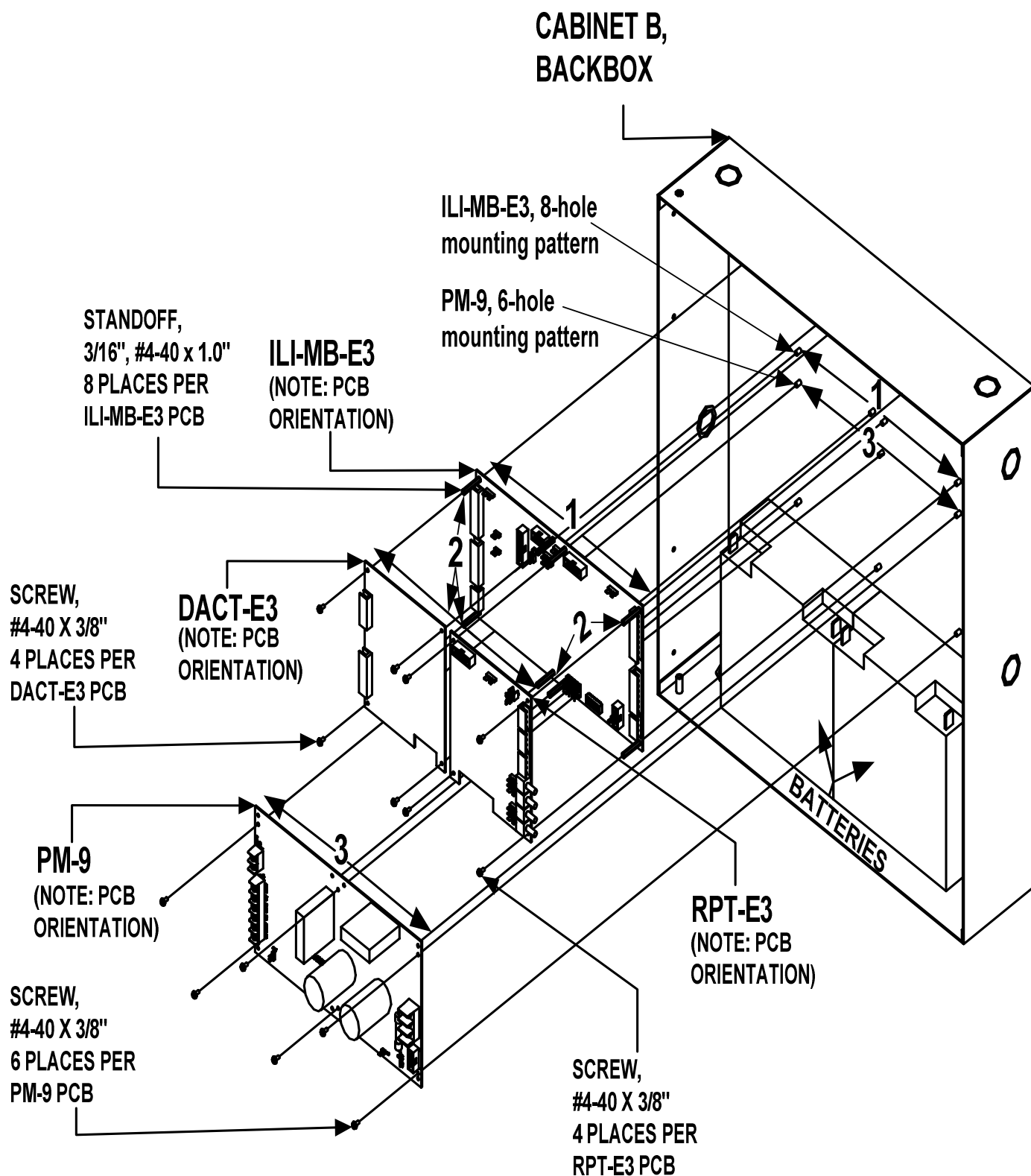


Figure 2.5.5.3-B Cabinet B, Backbox Sub-Assembly (Exploded View)

2.5.5.4 Cabinet B, Inner Door to the Backbox Installation

- 1) Place the nylon spacer (5/8" x .314ID x .312) over the backbox bottom hinge pin as shown in Location 1 of the figure below.
- 2) Mount the inner door to the backbox by sliding the inner door top hinge pin hole onto the backbox top hinge pin as shown in Location 2.
- 3) Align the inner door bottom hinge pin hole with the backbox bottom hinge pin.
- 4) Slide the inner door over the inner door bottom hinge pin hole on top of the nylon spacer, and secure using the #8 x .5" screw as shown in Location 2 of the figure below.
- 5) After the inner door is secured in place, attach one end of the bonding wire to the top hinge pin using the #8 x .5" screw as shown in Location 3 of the figure below.

Note: For information on the installation of the opposite end of the bonding wire, see Section 2.5.5.5, Step 3 and Location 3 of Figure 2.5.5.5.

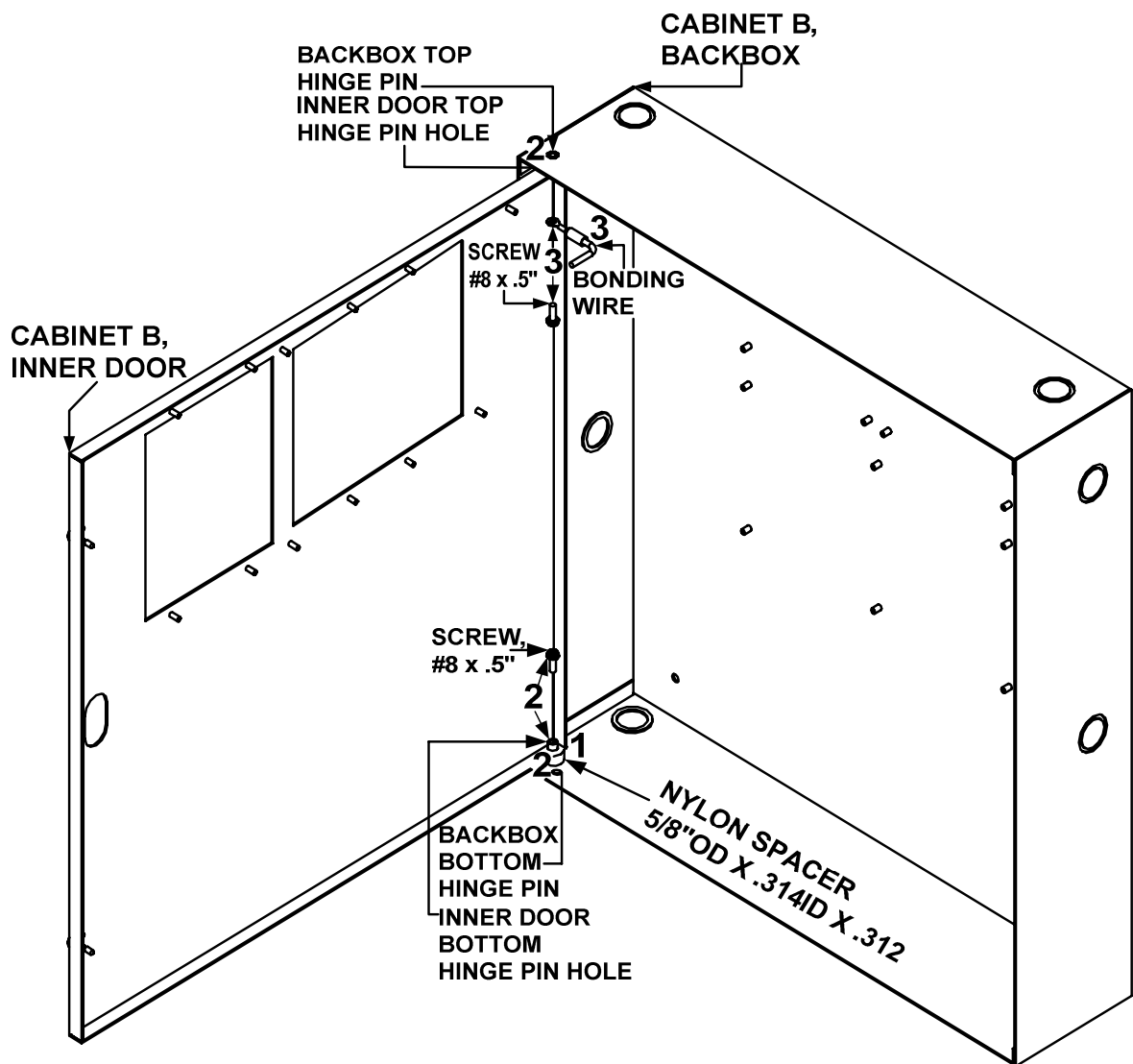


Figure 2.5.5.4 Cabinet B, Inner Door to the Backbox Installation

2.5.5.5 Cabinet B, Inner Door Installation

- 1) Mount the LCD-E3 keypad on the inner door and secure with eight (8), #6-32 nuts in the eight-hole mounting pattern as shown in Location 1 of the figure below.
- 2) Mount the ASM-16 on the inner door and secure with four (4), #6-32 nuts in the four-hole mounting pattern as shown in Location 2 of the figure below.
- 3) Secure the opposite end of the bonding wire to the welded #6 stud on the inner side of the inner door using the #6 nut as shown in Location 3 of the figure below.
- 4) After the panel is wired, use the thumbscrews to secure the inner door to the backbox as shown in Location 4 of the figure below.

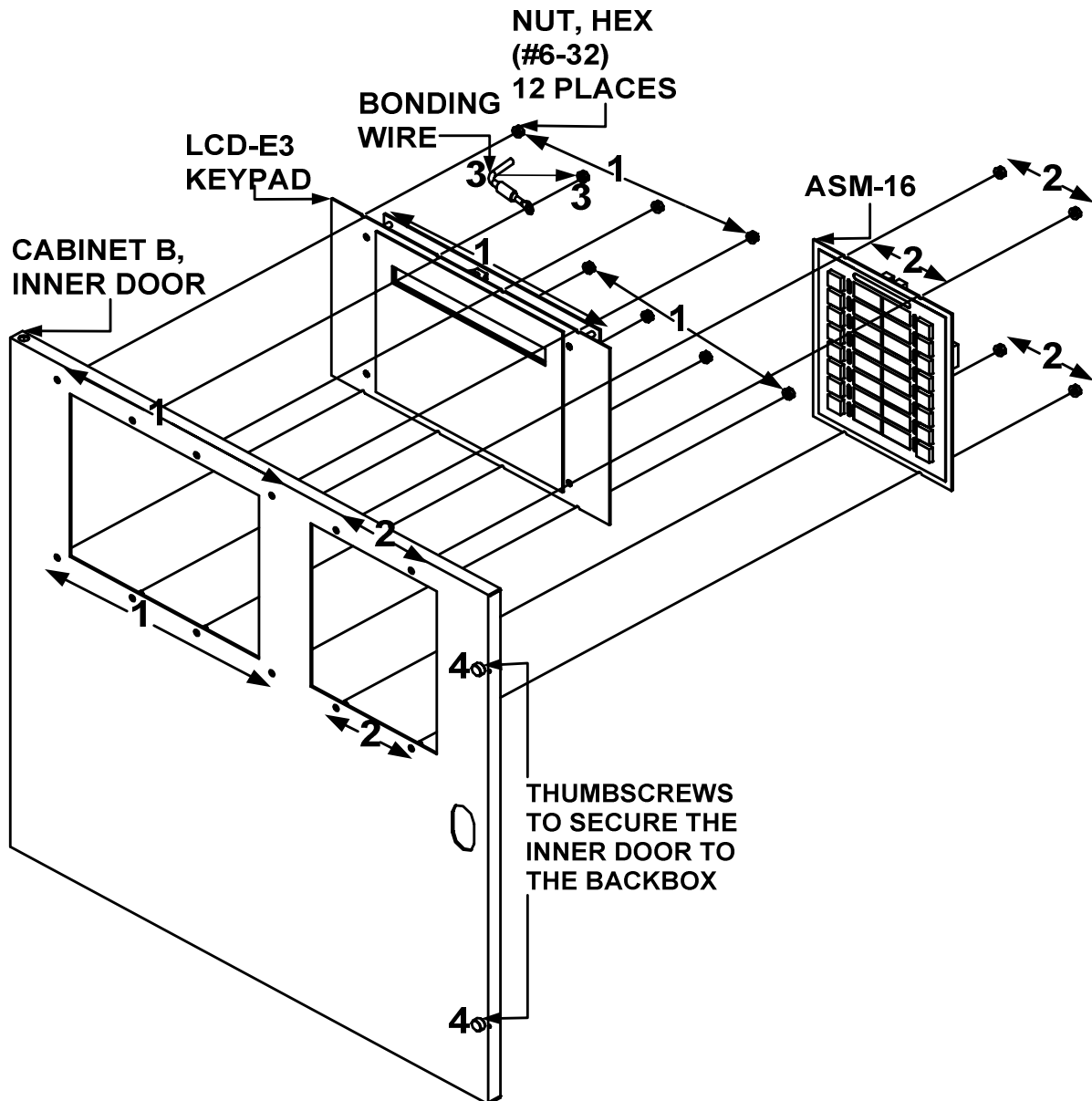


Figure 2.5.5.5 Cabinet B, Inner Door Installation

2.5.6 Cabinet C, INX-E3 Installation Instructions

The Cabinet C Assembly typically houses the following:

- Backbox:
- INX-E3 Outer Door
- INX-E3 Plate:
 - DACT-E3 PM-9
 - RPT-E3 Up to a max. of four (4), AM-50s (Optional)
 - ILI-MB-E3 Telephone Assembly
 - ILI-S-E3 Microphone Assembly
 - (Optional)
 - INI-VG Two Batteries
- INCC-E3 Outer Door
- INCC-E3 Plate
- INCC-E3 7-Bay Inner Door (Optional):
 - Up to a maximum of four (4), ASM-16s LCD/Keypad
- INCC-E3 8-Bay Inner Door:
 - Up to a maximum of five (5), ASM-16s NGA
- Hardware Kit

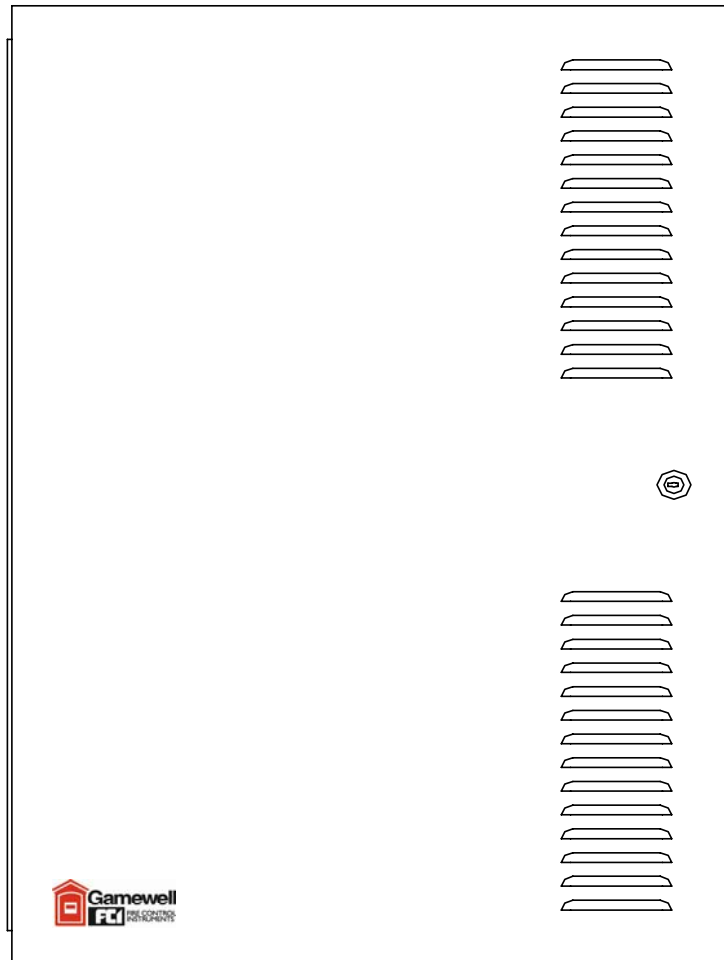


Figure 2.5.6 Cabinet C, Standard View

2.5.6.1 Cabinet C, Backbox Installation

- 1) Prepare the mounting site by pre-drilling four (4), #10 screws, using the dimensions shown in the figure below. Use four (4), #10 screws.
Note: If the fasteners are anchored to a wallboard, use #10 wall anchors. Mountings to concrete walls should be backed by plywood to insulate the equipment from possible condensation.
- 2) Secure with two (2), #10 screws in the two-hole mounting pattern as shown in Locations 1 and 2 of Figure 2.5.4.1.
- 3) Set the backbox over the top, two-hole mounting pattern, and hang the backbox over the two screw heads.
- 4) Insert and secure two (2), #10 screws in the two-hole mounting pattern as shown in Locations 3 and 4 of the figure below.

Note: Add knockouts to the left and right side of the rear panel of the backbox. Do not add knockouts in the center or top of the backbox, above the ILI-MB-E3, behind or below the batteries. To add larger knockouts, increase the size of the existing knockouts.

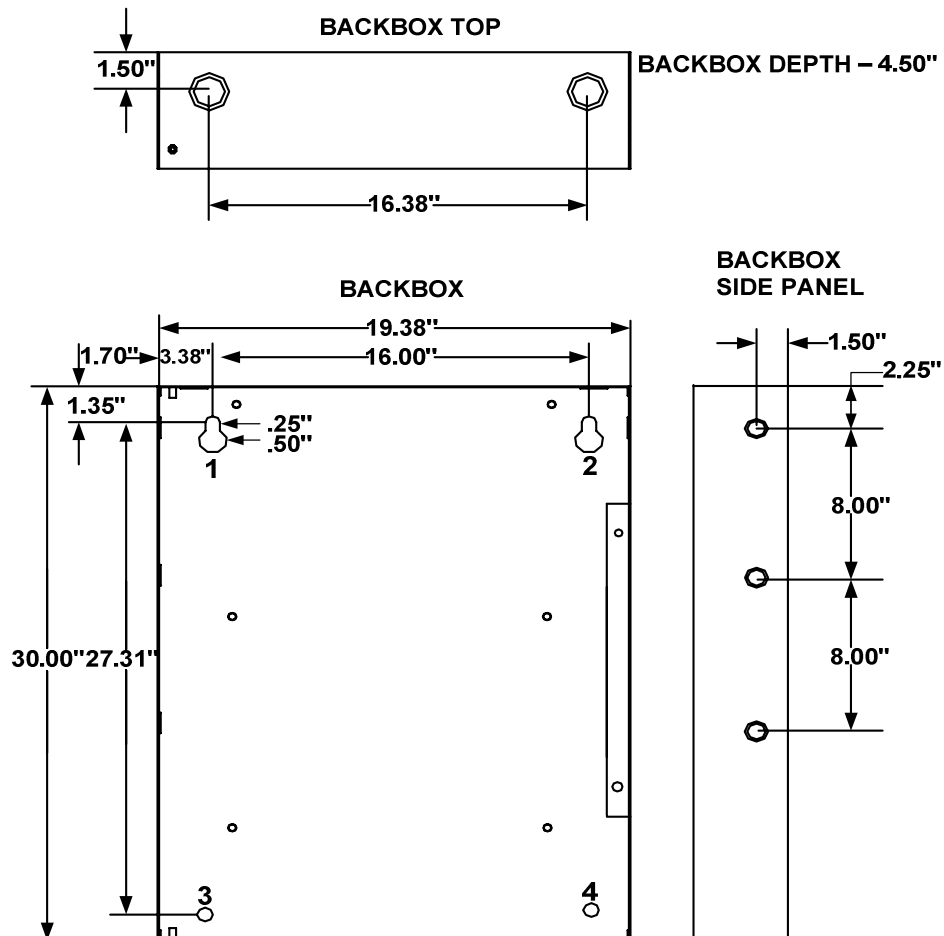


Figure 2.5.6.1 Cabinet C, Backbox Installation

2.5.6.2 Cabinet C, INX-E3, Outer Door Installation

Mount the INX-E3 outer door to the backbox, by securing four (4), #6-32 nuts in the four-hole mounting pattern on the left side of the backbox. See Locations 1, 2, 3, and 4 of the figure below.

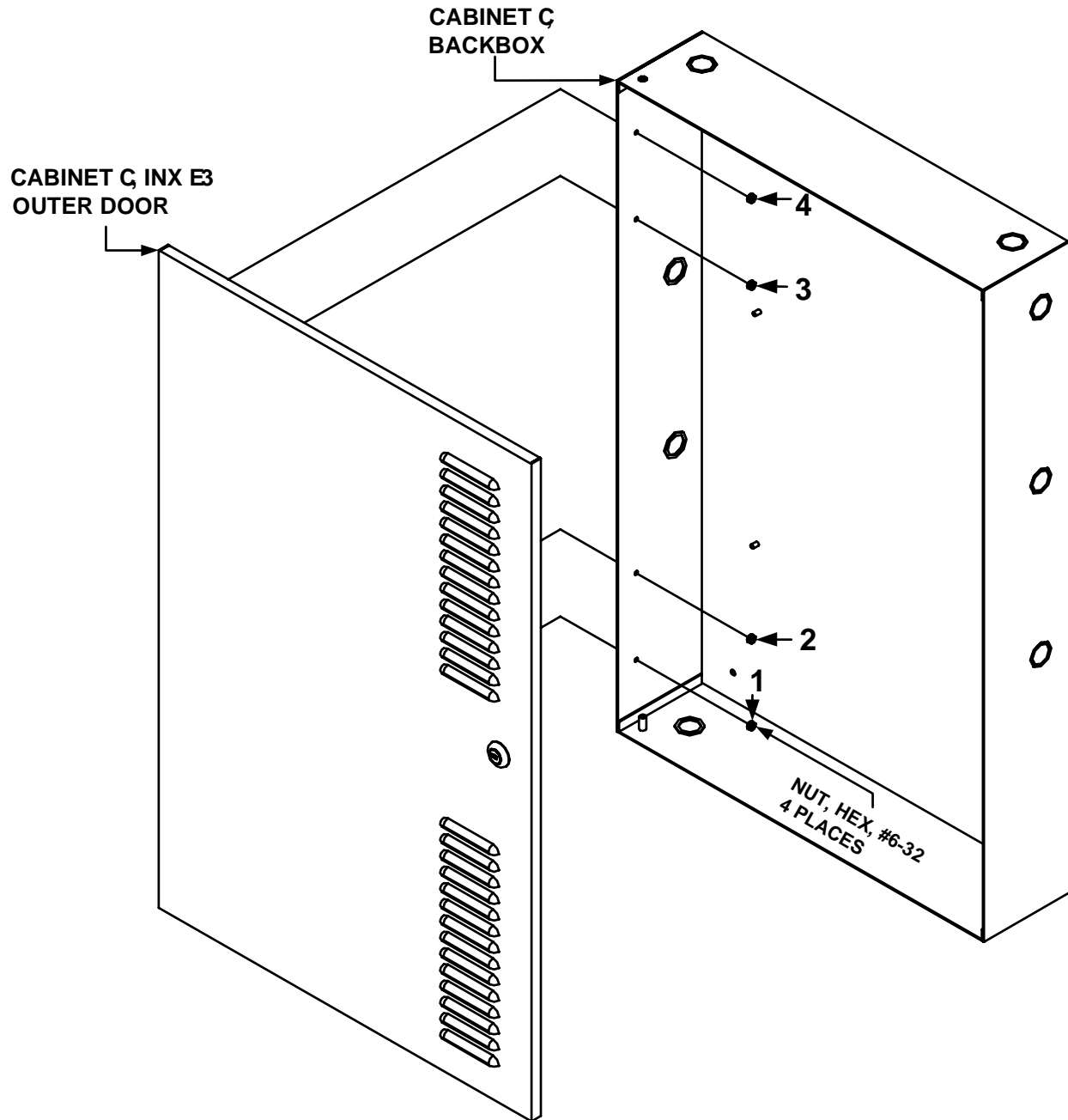


Figure 2.5.6.2 Cabinet C, INX-E3 Outer Door Installation

2.5.6.3 Cabinet C, INX-E3, Sub-Assembly Plate Installation

- 1) Mount the ILI-MB-E3 over the standoffs on the INX-E3 plate and secure with eight (8), standoffs, (3/16" hex, #4-40 x 1") in the eight-hole mounting pattern as shown in Location 1 of Figure 2.5.6.3-B.
- 2) Mount the DACT-E3 and the RPT-E3 on top of the ILI-MB-E3 and secure with eight (8), screws (#4-40 x 1/4") into the eight (8), standoffs as shown in Location 2 of Figure 2.5.6.3-B.
- 3) Mount the PM-9 over the standoffs on the INX-E3 plate and secure with six (6), standoffs (1/4" hex, #4-40 x 2 1/4") in the six-hole mounting pattern as shown in Location 3 of Figure 2.5.6.3-B.
- 4) Mount the INI-VG/PM-9 mounting plate on top of the PM-9 and secure with six (6), screws (#4-40 x 1/4") into the six (6), standoffs as shown in Location 4 of Figure 2.5.6.3-B.
- 5) Mount the INI-VG on the INI-VG mounting plate and secure with six (6), screws (#4-40 x 1/4") as shown in Location 5 of Figure 2.5.6.3-B.
- 6) Mount two (2), AM-50 sub-assemblies on the INX-E3 plate and secure with eight (8), standoffs (3/16" #4-40 x 1 1/4") in the two (2), four-hole mounting patterns as shown in Location 6.
- 7) Mount two (2), AM-50 units on top of the two (2), AM-50 units, and secure eight (8), screws (#4-40 x 1/4") into the eight (8), standoffs as shown in Location 7 of Figure 2.5.6.3-B.

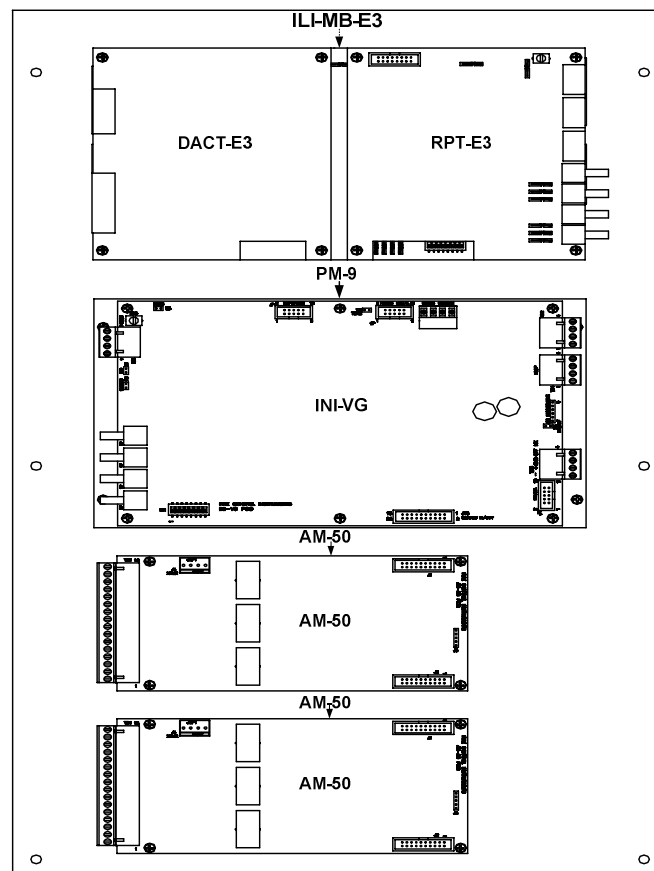


Figure 2.5.6.3-A Cabinet C, INX-E3, Sub-Assembly Plate (Standard View)

ILI-MB-E3

STANDOFF, 3/16" HEX #4-40 x 1" 8 PLACES

PM-9

STANDOFF, 1/4" HEX #4-40 x 2 1/4" 6 PLACES

AM-50 4 PLACES MAX.

STANDOFF, 3/16" HEX #4-40 x 1 1/4" 8 PLACES MAX.

DACT-E3

RPT-E3

INI-VG/PM-9 MOUNTING PLATE

INI-VG

SCREW, #4-40 x 1/4" 8 PLACES

SCREW, #4-40 x 1/4" 12 PLACES

SCREW, #4-40 x 1/4" 8 PLACES

1

2

3

4

5

6

7

9000-0574 Rev. C

2.5.6.4 Cabinet C, INX-E3, Sub-Assembly Plate to the Backbox Installation

Mount the INX-E3 sub-assembly plate to the studs in the backbox and secure with six (6), #10-32 nuts as shown in Locations 1 thru 6 of the figure below.

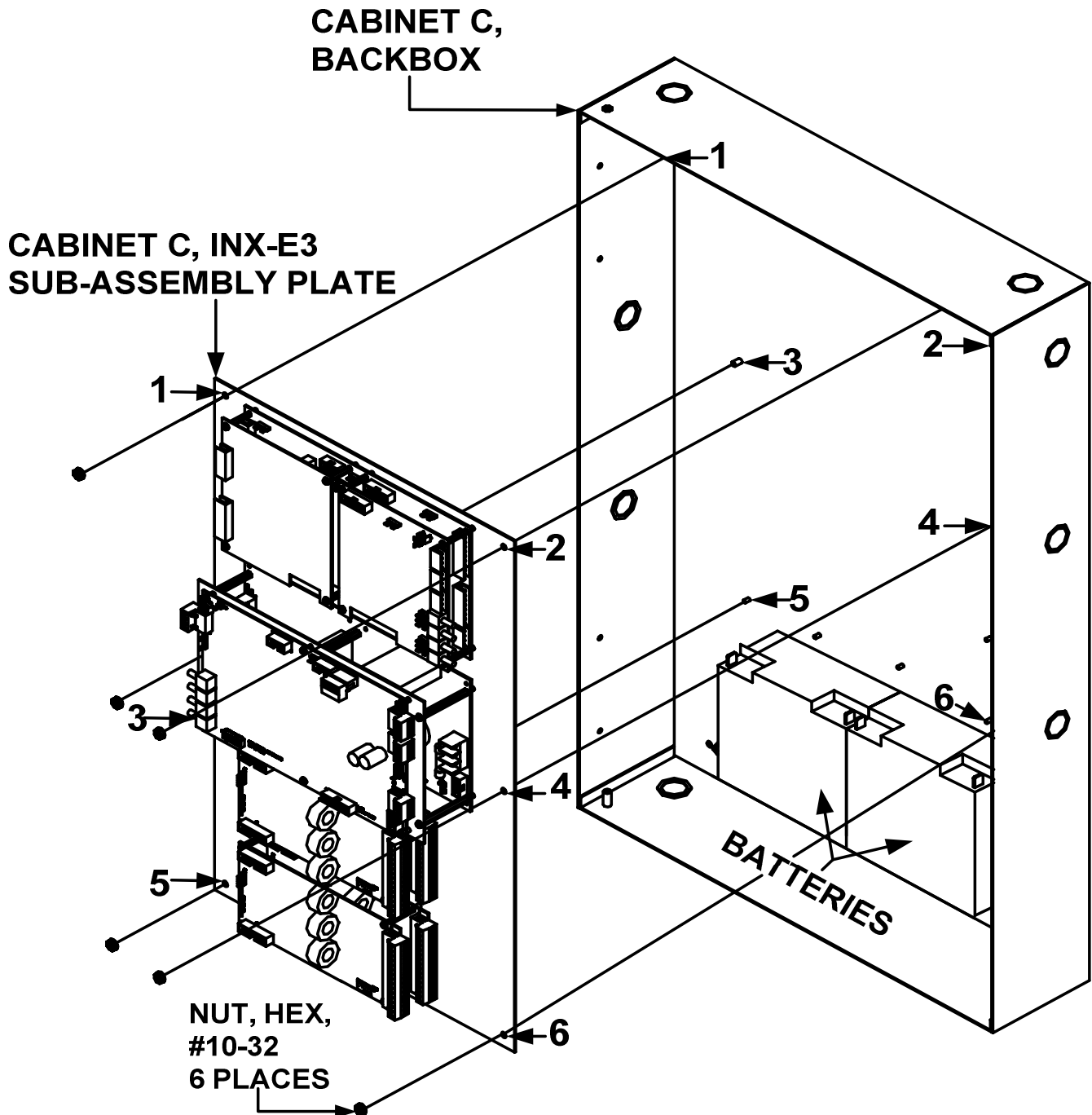


Figure 2.5.6.4 Cabinet C, INX-E3 Sub-Assembly Plate to the Backbox Installation

2.5.7 Cabinet C, INCC-E3 Installation Instructions

The Cabinet C, INCC-E3 Assembly typically houses the following:

- Backbox
- INX-E3 Plate
- INCC-E3 Outer Door
- INCC-E3 Plate:
 - DACT-E3
 - RPT-E3
 - ILI-MB-E3
 - INI-VG
 - PM-9
 - Optional Sub-Assemblies
 - Telephone Assembly
 - Microphone Assembly
 - Two Batteries
- INCC-E3 7-Bay Inner Door (Optional):
 - Up to a maximum of four (4), ASM-16s LCD Keypad
- INCC-E3 8-Bay Inner Door:
 - Up to a maximum of five (5), ASM-16s NGA
- Hardware Kit

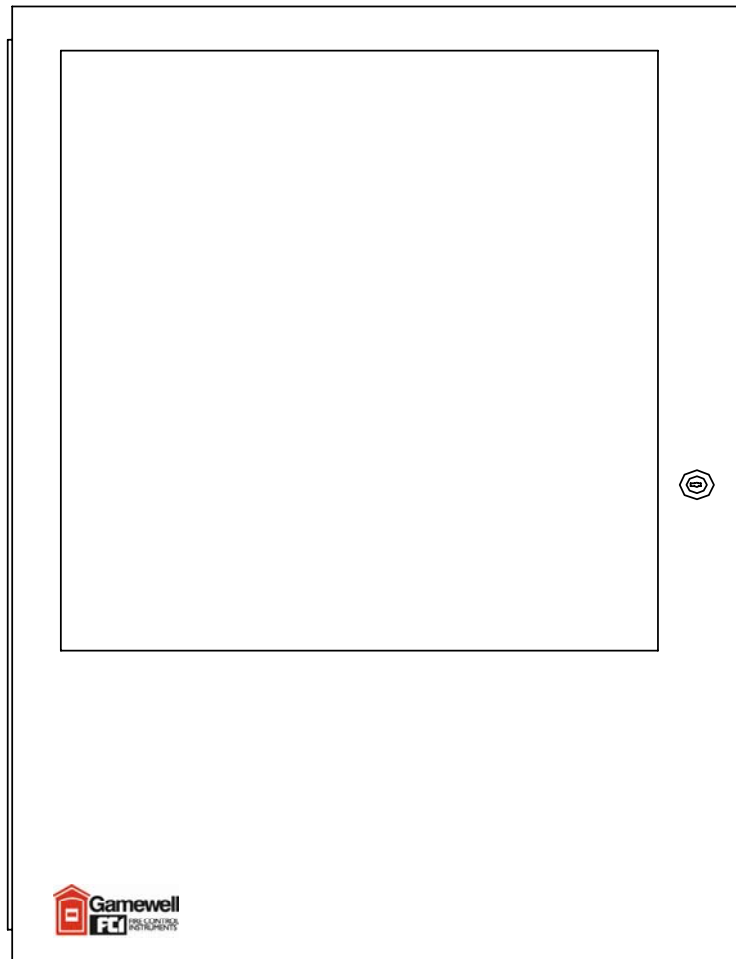


Figure 2.5.7 Cabinet C, INCC-E3 Standard View

2.5.7.1 Cabinet C, INCC-E3, Outer Door Installation

Mount the INCC-E3 outer door on the backbox, by securing four (4), #6-32 nuts in the four-hole mounting pattern on the left side of the backbox. See Locations 1 thru 4 of the figure below.

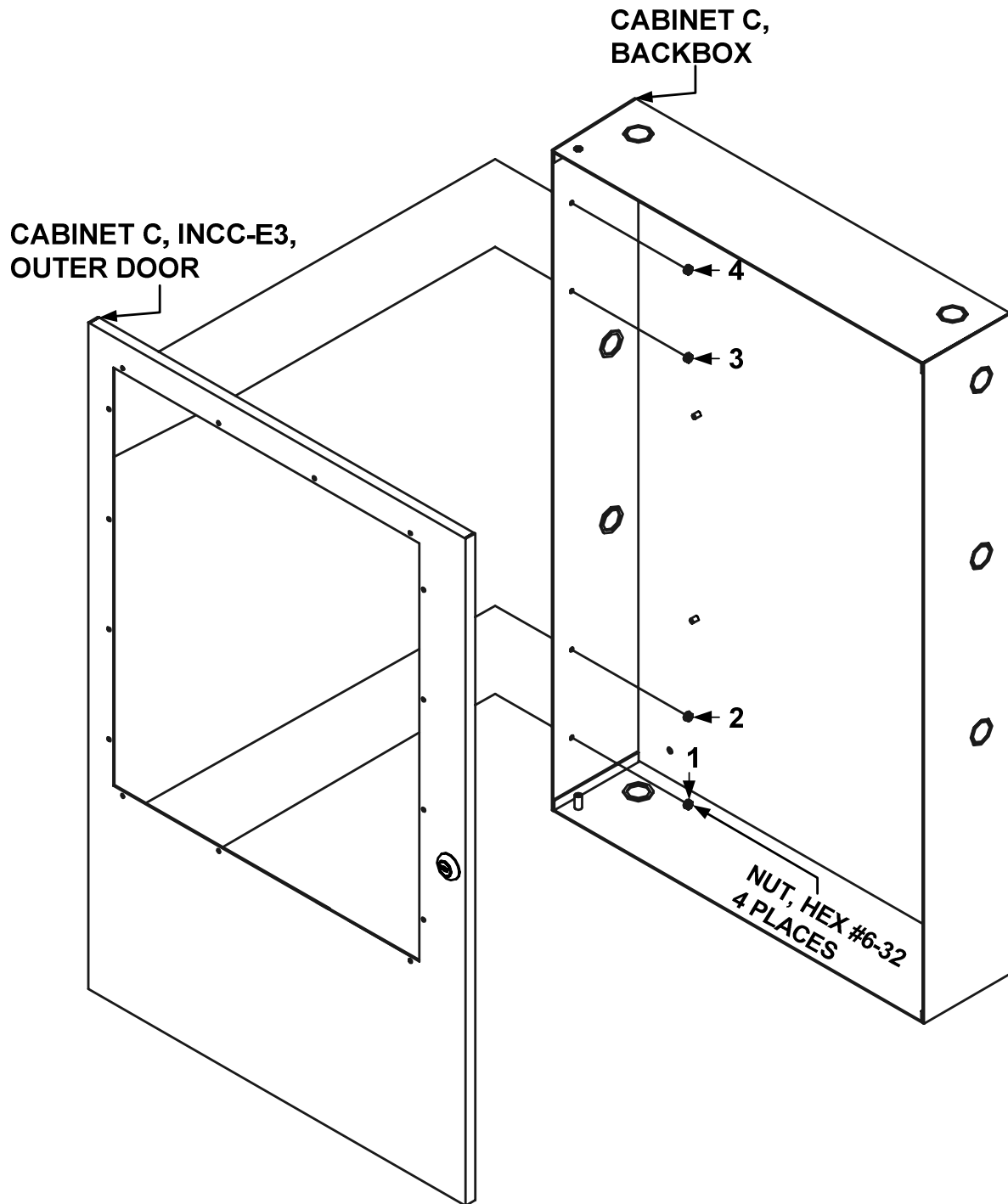


Figure 2.5.7.1 Cabinet C, INCC-E3 Outer Door Installation

2.5.7.2 Cabinet C, INCC-E3, Sub-Assembly Plate Installation

- 1) Mount the ILI-MB-E3 over the standoffs on the INCC-E3 plate and secure by inserting eight (8), standoffs, (3/16" hex, #4-40 x 1") in the eight-hole mounting pattern as shown in Location 1 of Figure 2.5.7.2-B.
- 2) Mount the DACT-E3 and the RPT-E3 on top of the ILI-MB-E3 and secure with eight (8), screws (#4-40 x 1/4") into the eight (8), standoffs as shown in Location 2 of Figure 2.5.7.2-B.
- 3) Mount the PM-9 over the standoffs on the INCC-E3 plate and secure with six (6), screws (#4-40 x .1/4") in the six-hole mounting pattern as shown in Location 3 of Figure 2.5.7.2-B.
- 4) Mount the INI-VG over the standoffs on the INCC-E3 plate and secure with six (6), screws (#4-40 x .1/4") in the six-hole mounting pattern as shown in Location 4 of Figure 2.5.7.2-B.

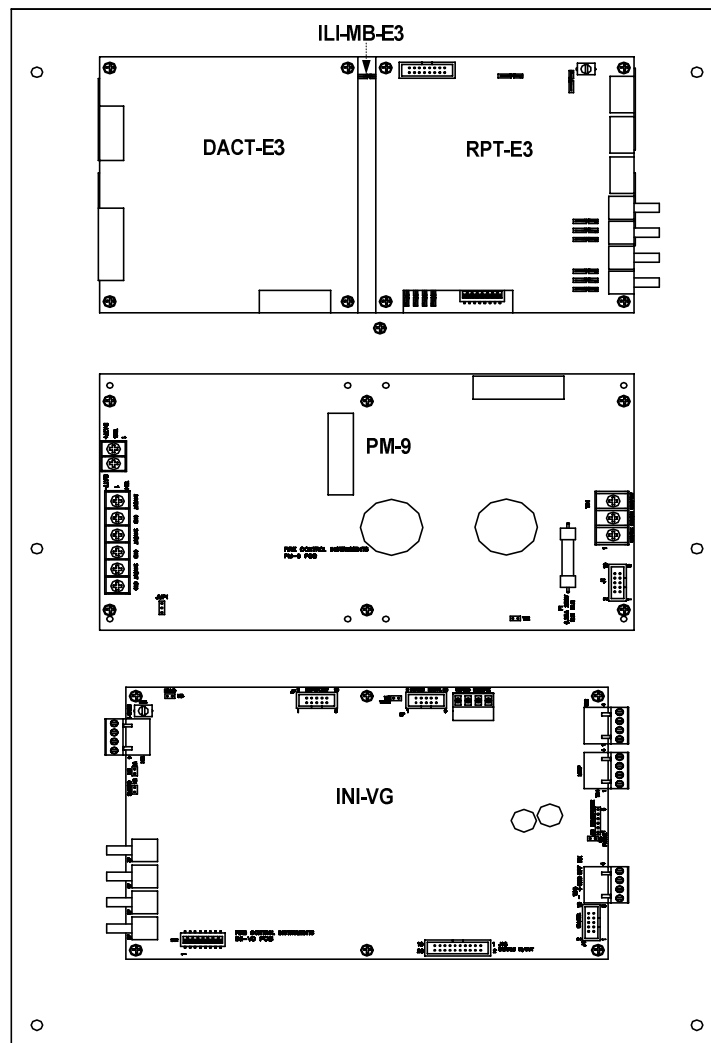


Figure 2.5.7.2-A Cabinet C INCC-E3 Sub-Assembly Plate (Standard View)

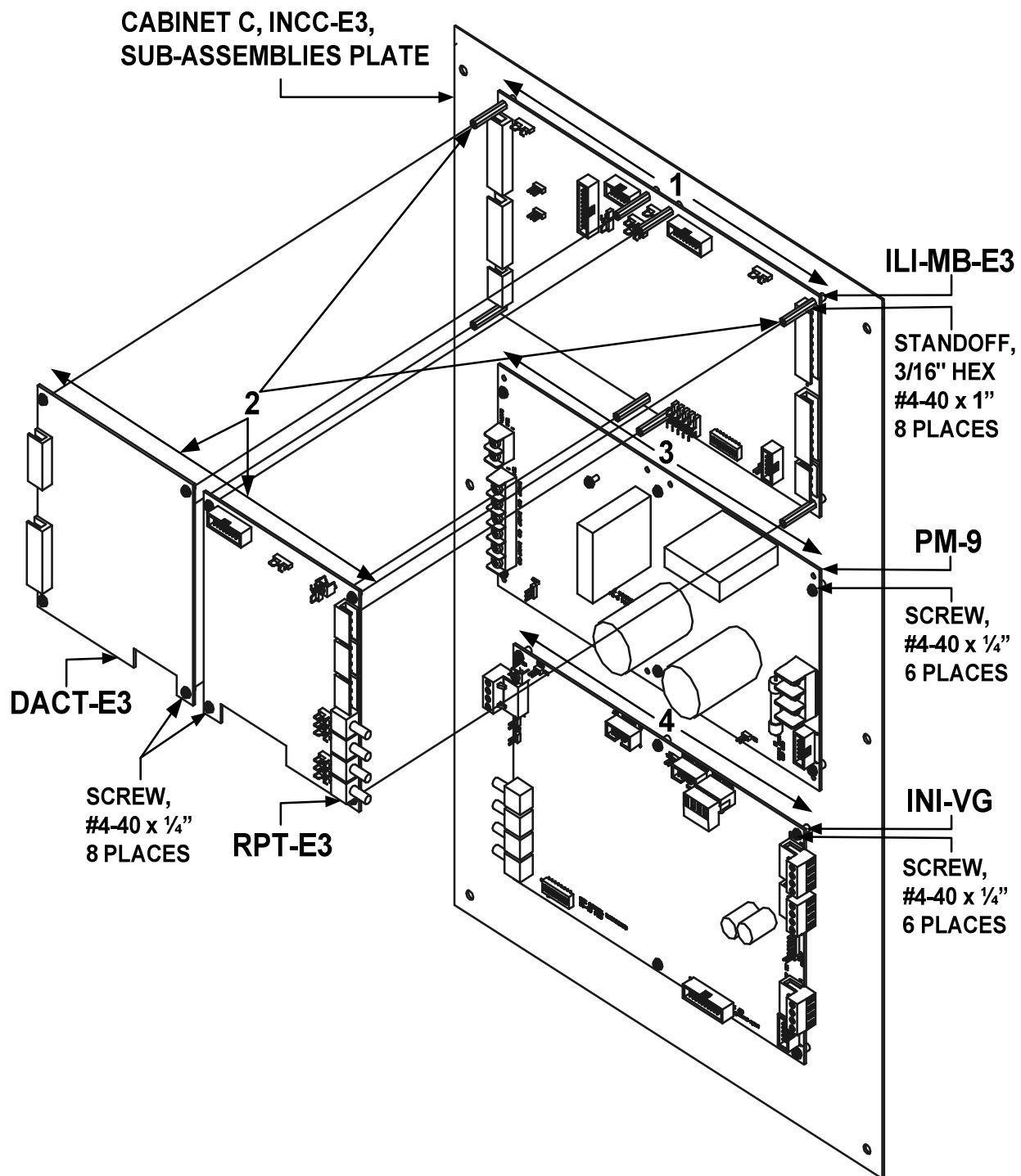


Figure 2.5.7.2-B Cabinet C, INCC-E3 Sub-Assembly Plate Installation

2.5.7.3 Cabinet C, INCC-E3, Sub-Assembly Plate to the Backbox Installation

Mount the Cabinet C, INCC-E3 sub-assembly plate on the studs in the backbox and secure with six (6), #10-32 nuts as shown in Locations 1 thru 6 of the figure below.

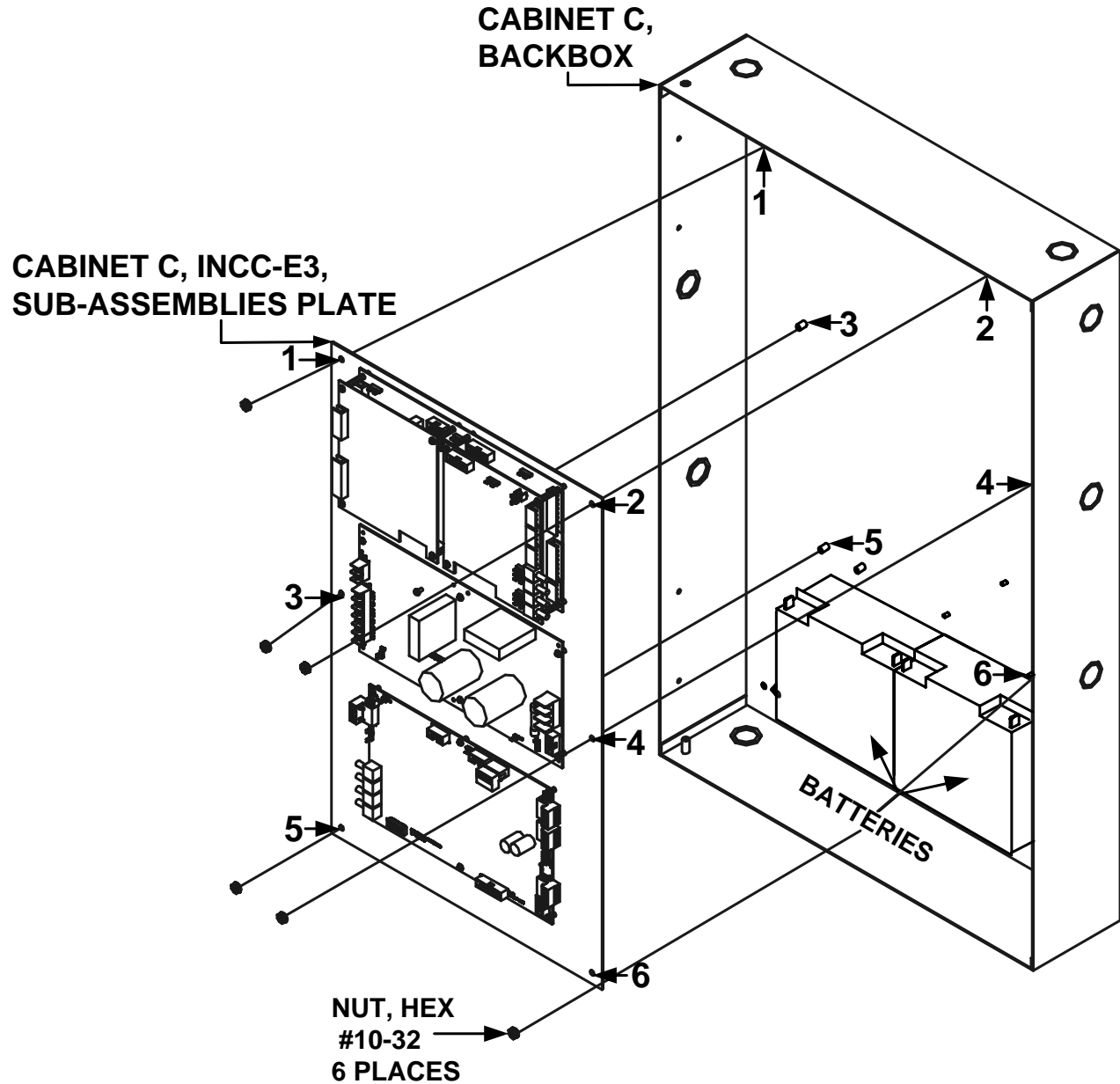


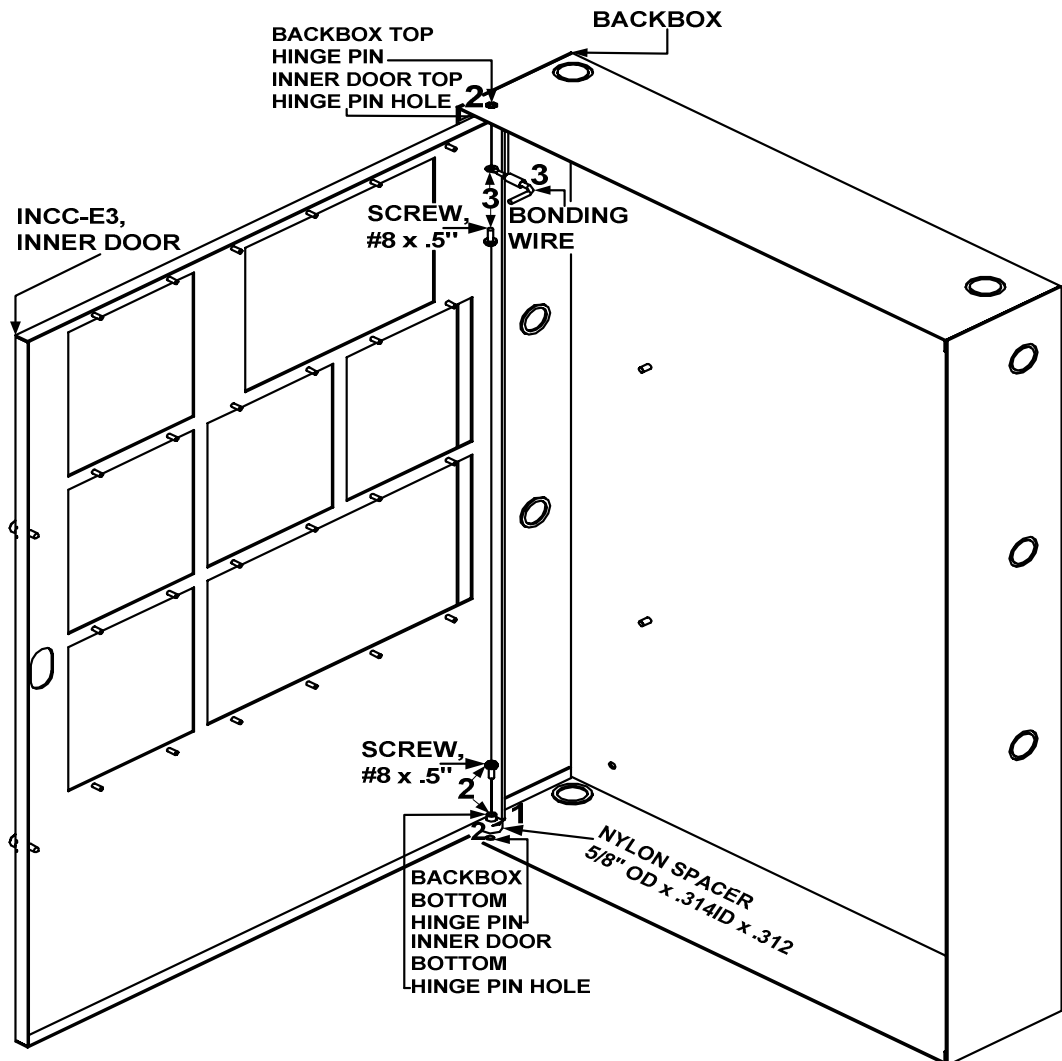
Figure 2.5.7.3 Cabinet C, INCC-E3 Sub-Assembly Plate to the Backbox Installation

2.5.7.4 Cabinet C, INCC-E3, 7-Bay Inner Door to the Backbox Installation

- 1) Place the nylon spacer (5/8" x .314ID x .312) over the backbox bottom hinge pin as shown in Location 1 of the figure below.
- 2) Mount the INCC-E3, 7-bay inner door to the backbox by sliding the inner door top hinge pin hole onto the backbox top hinge pin as shown in Location 2 of the figure below.
- 3) Align the inner door bottom hinge pin hole with the backbox bottom hinge pin.
- 4) Slide the inner door over the inner door bottom hinge pin hole on top of the nylon spacer, and secure using the #8 x 5" screw as shown in Location 2 of the figure below.
- 5) After the inner door is secured in place, attach one end of the bonding wire to the top hinge pin using the #8 x .5" screw as shown in Location 3 of the figure below.

Note 1: The 7-bay or 8-bay inner door is optional.

Note 2: For information on the installation of the opposite end of the bonding wire, see Section 2.5.7.5, Step 5 and Location 5 of Figure 2.5.7.5.



2.5.7.4 Cabinet C, INCC-E3, 7-Bay Inner Door to the Backbox Installation

2.5.7.5 Cabinet C, INCC-E3, 7-Bay Inner Door Installation

- 1) Mount the first, top row of the ASM-16 and LCD-E3 keypad sub-assemblies to the INCC-E3, 7-bay inner door and secure with six (6), #6-32 nuts as shown in Location 1 of the figure below.
- 2) Interlock the first, bottom row of the ASM-16 and LCD-E3 keypad with the second, top row of the ASM-16 sub-assemblies, and mount the units to the INCC-E3, 7-bay inner door by securing six (6), #6-32 nuts as shown in Location 2 of the figure below.
- 3) Interlock the second, bottom row of the ASM-16 sub-assemblies with the third, top row of the telephone and microphone box, and mount the units to the INCC-E3, 7-bay inner door by securing six (6), #6-32 nuts as shown in Location 3 of the figure below.
- 4) Mount the third, bottom row of the telephone and microphone box to the INCC-E3, 7-bay inner door by securing six (6), #6-32 nuts as shown in Location 4 of the figure below.
- 5) Secure the opposite end of the bonding wire to the welded #6 stud on the inner side of the inner door using the #6 nut as shown in Location 5 of the figure below.
- 6) After the panel is wired, use the thumbscrews to secure the inner door to the backbox as shown in Location 6 of the figure below.

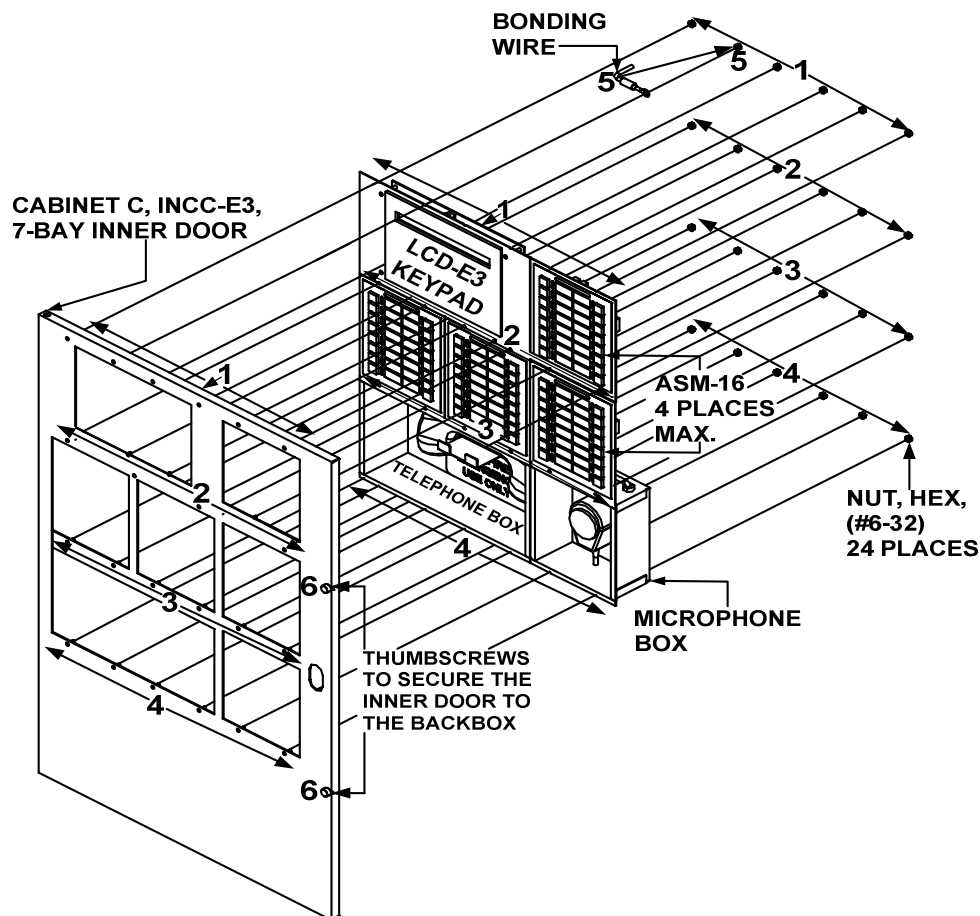


Figure 2.5.7.5 Cabinet C, INCC-E3, 7-Bay Inner Door Installation

2.5.7.6 Cabinet C, INCC-E3, 8-Bay Inner Door to the Backbox Installation

- 1) Place the nylon spacer ($5/8"$ x $.314$ ID x $.312$) over the backbox bottom hinge pin as shown in Location 1 of the figure below.
- 2) Mount the INCC-E3, 8-bay inner door to the backbox, by sliding the inner door top hinge pin hole onto the backbox top hinge pin as shown in Location 2 of the figure below.
- 3) Align the inner door bottom hinge pin hole with the backbox bottom hinge pin.
- 4) Slide the inner door over the inner door bottom hinge pin hole on top of the nylon spacer, and secure using the #8 x .5" screw as shown in Location 2 of the figure below.
- 5) After the inner door is secured in place, attach one end of the bonding wire to the top hinge pin using the #8 x .5" screw as shown in Location 3 of the figure below.

Note: For information on the installation of the opposite end of the bonding wire, see Section 2.5.7.7, Step 5 and Location 5 of Figure 2.5.7.7.

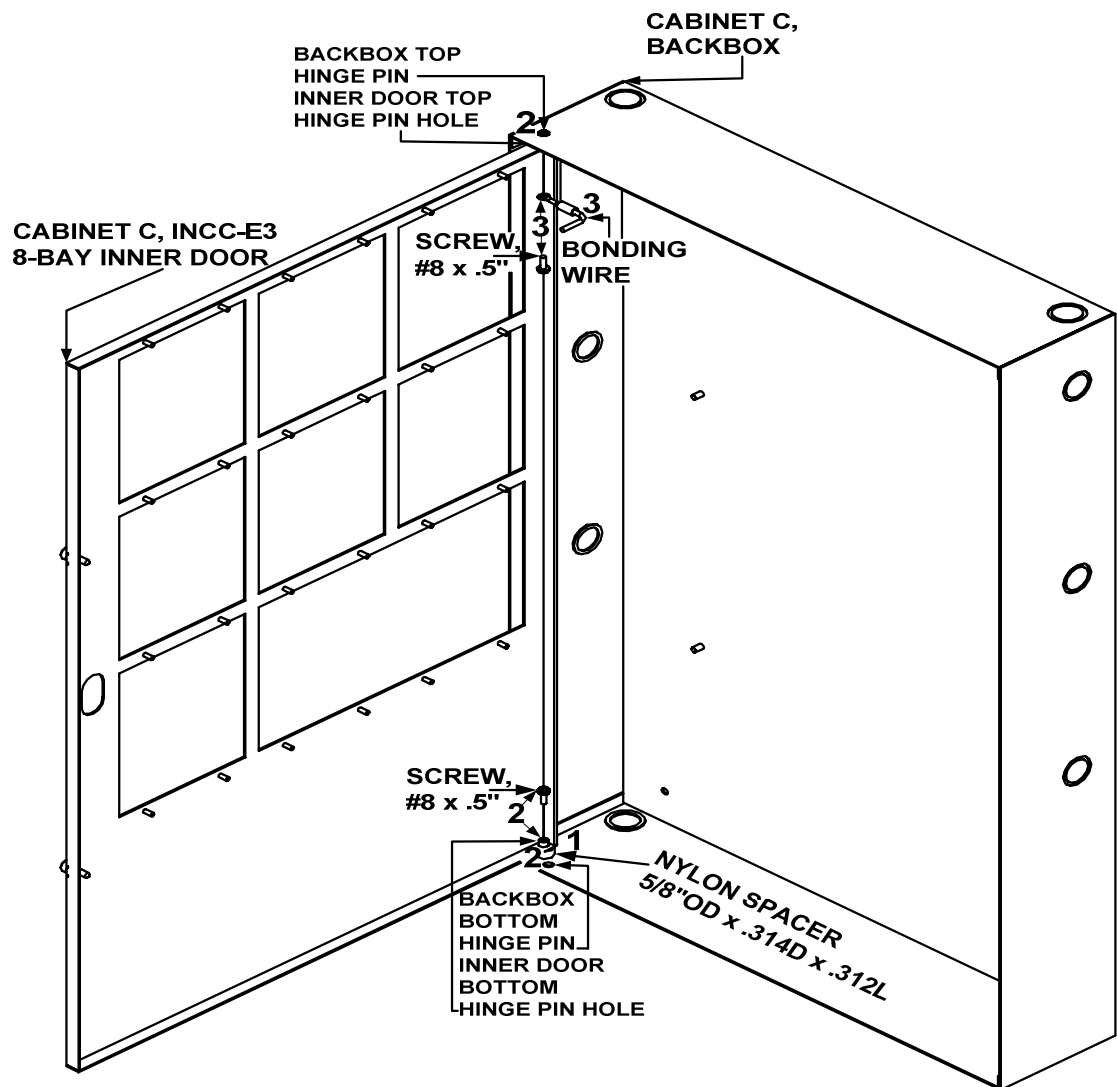


Figure 2.5.7.6 Cabinet C, INCC-E3 8-Bay Inner Door to the Backbox Installation

2.5.7.7 Cabinet C, INCC-E3, 8-Bay Inner Door Installation

- 1) Mount the first, top row of the ASM-16 and NGA sub-assemblies to the INCC-E3, 8-bay inner door and secure with six (6), #6-32 nuts as shown in Location 1 of the figure below.
- 2) Interlock the first, bottom row of the ASM-16 and NGA with the second, top row of the ASM-16 sub-assemblies, and mount the units to the INCC-E3, 8-bay inner door by securing six (6), #6-32 nuts as shown in Location 2 of the figure below.
- 3) Interlock the third, bottom row of the ASM-16 sub-assemblies with the fourth, top row of the telephone and microphone box, and mount the units to the INCC-E3, 8-bay inner door by securing six (6), #6-32 nuts as shown in Location 3 of the figure below.
- 4) Mount the fourth, bottom row of the telephone and microphone box to the INCC-E3, 8-bay inner door by securing six (6), #6-32 nuts as shown in Location 4 of the figure below.
- 5) Secure the opposite end of the bonding wire to the welded #6 stud on the inner side of the inner door using the #6 nut as shown in Location 5 of the figure below.
- 6) After the panel is wired, use the thumbscrews to secure the inner door to the backbox as shown in Location 6 of the figure below.

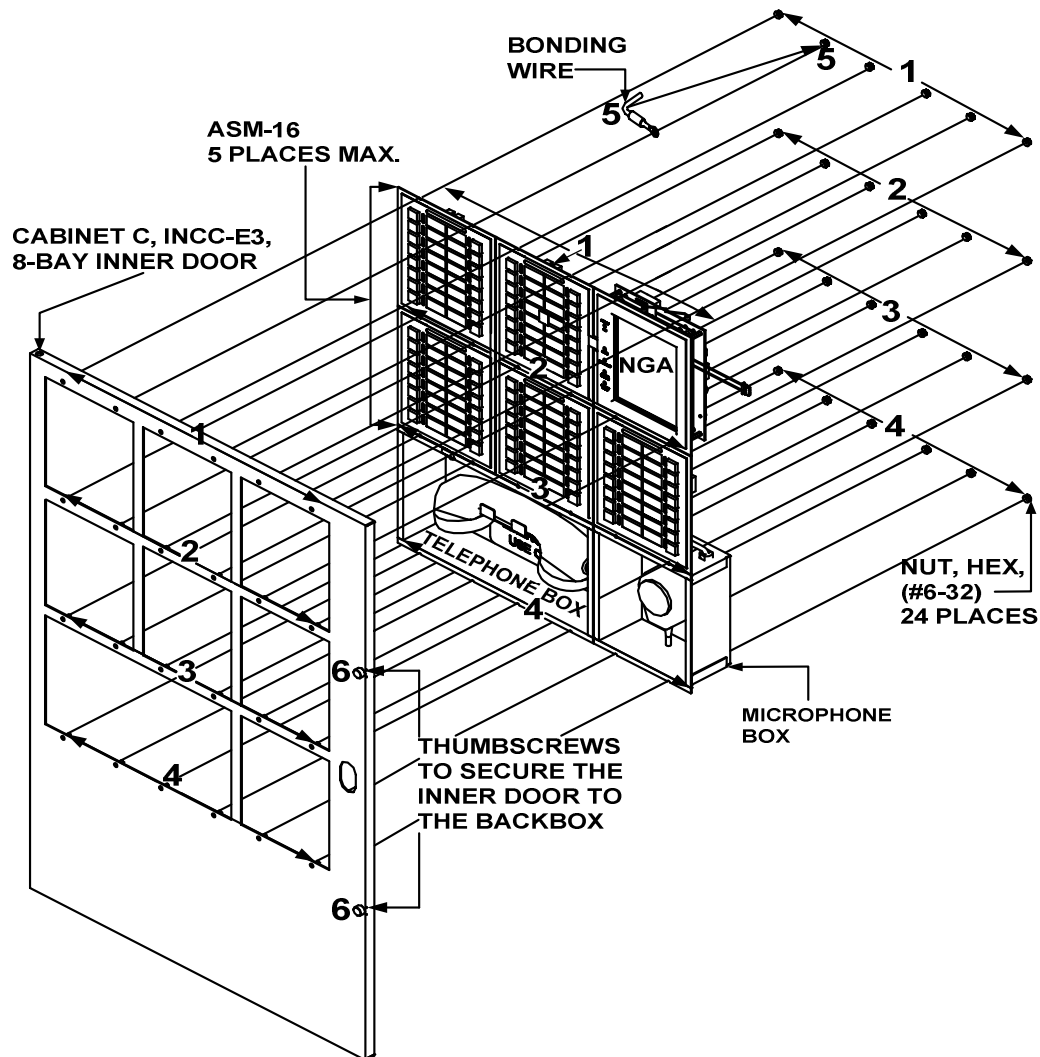


Figure 2.5.7.7 Cabinet C, INCC-E3, 8-Bay Inner Door Installation

2.5.8 Cabinet D Installation Instructions

The Cabinet D assembly typically houses the following:

- Backbox:
 - DACT-E3 ILI-S-E3 (Optional)
 - RPT-E3 PM-9
 - ILI-MB-E3 Two Batteries
- Outer Door
- Inner Door 1:
 - Up to eleven ASM-16s Telephone Assembly
 - LCD-E3 Microphone Assembly
 - Blank plate(s)
- Inner Door 2 (Optional):
 - Up to sixteen ASM-16s NGA
 - Blank plate(s)
- Hardware Kit

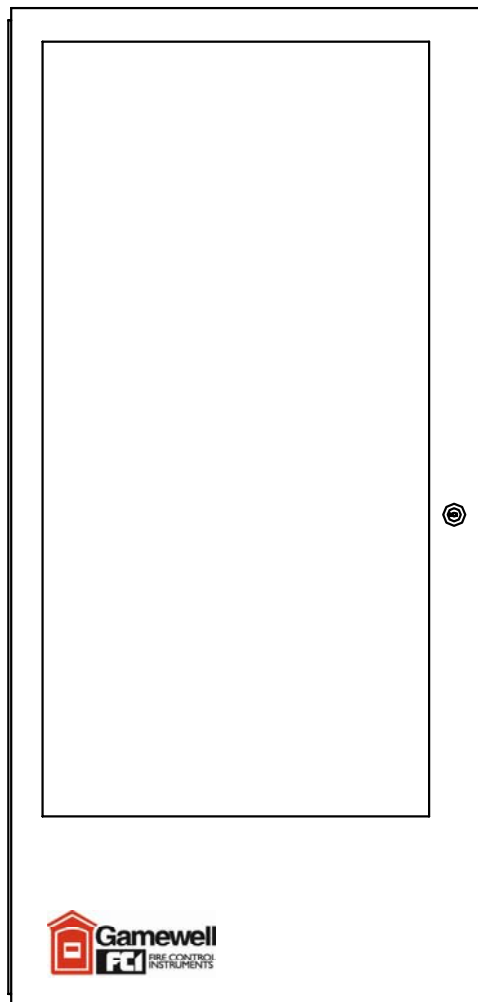


Figure 2.5.8 Cabinet D, Standard View

2.5.8.1 Cabinet D, Backbox Installation

- 1) Prepare the mounting site by pre-drilling four (4), #10 screws mounted to the studs, using the dimensions shown in the figure below. Use four (4), #10 screws.

Note: If the fasteners are anchored to a wallboard, use #10 wall anchors. Mountings to concrete walls should be backed by plywood to insulate the equipment from possible condensation.

- 2) Secure with two (2), #10 screws in the two-hole mounting pattern as shown in Locations 1 and 2 of the figure below.
- 3) Set the backbox over the top, two-hole mounting pattern, and hang the backbox on the two screw heads.
- 4) Insert and secure two (2), #10 screws in the two-hole mounting pattern as shown in Locations 3 and 4 of the figure below.

Note: Add knockouts to the left and right side of the rear panel of the backbox. Do not add knockouts in the center or top of the backbox, above the ILI-MB-E3, behind or below the batteries. To add larger knockouts, increase the size of the existing knockouts.

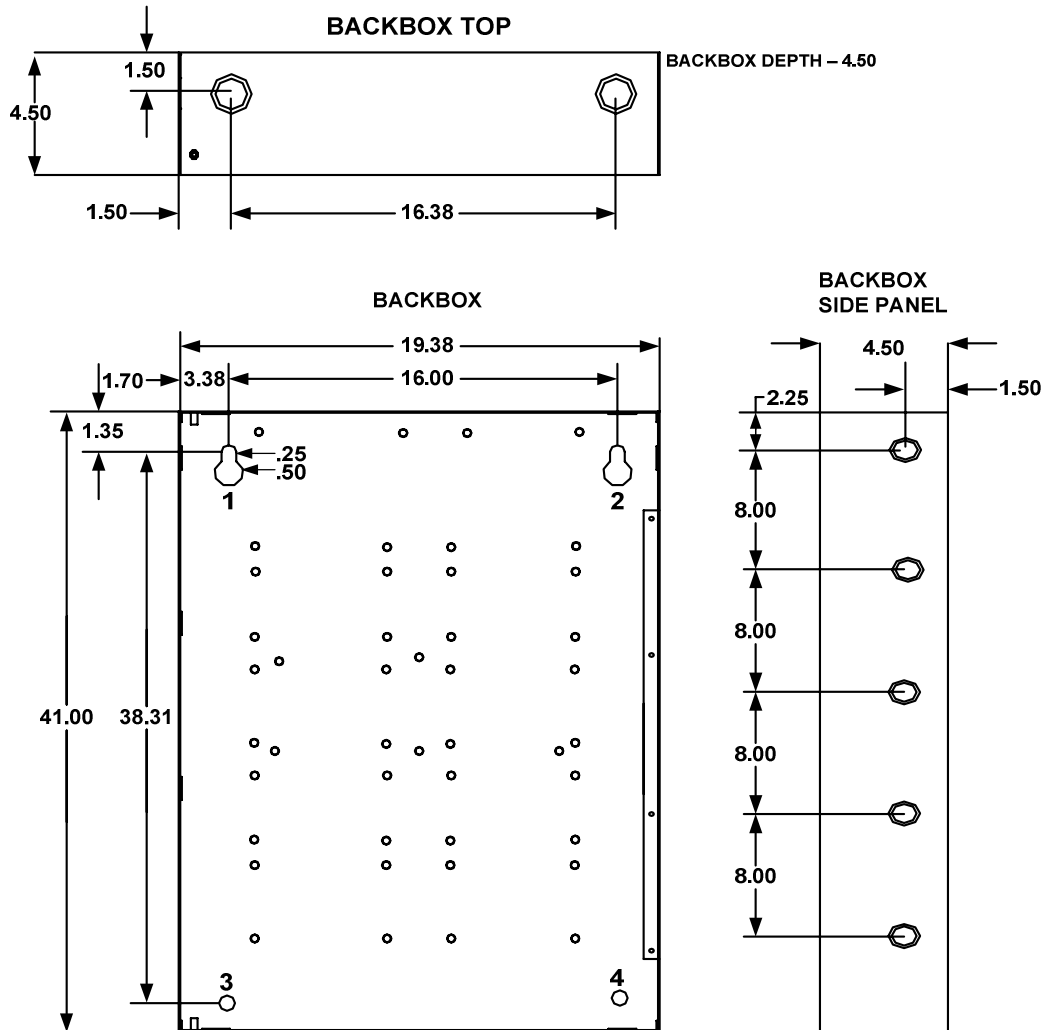


Figure 2.5.8.1 Cabinet D, Backbox Installation

2.5.8.2 Cabinet D, Outer Door Installation

- 1) Mount the door over the studs on the backbox.
- 2) Secure with four (4), #6-32 nuts in the four-hole mounting pattern on the left side of the backbox. See Locations 1 thru 6 of the figure below.

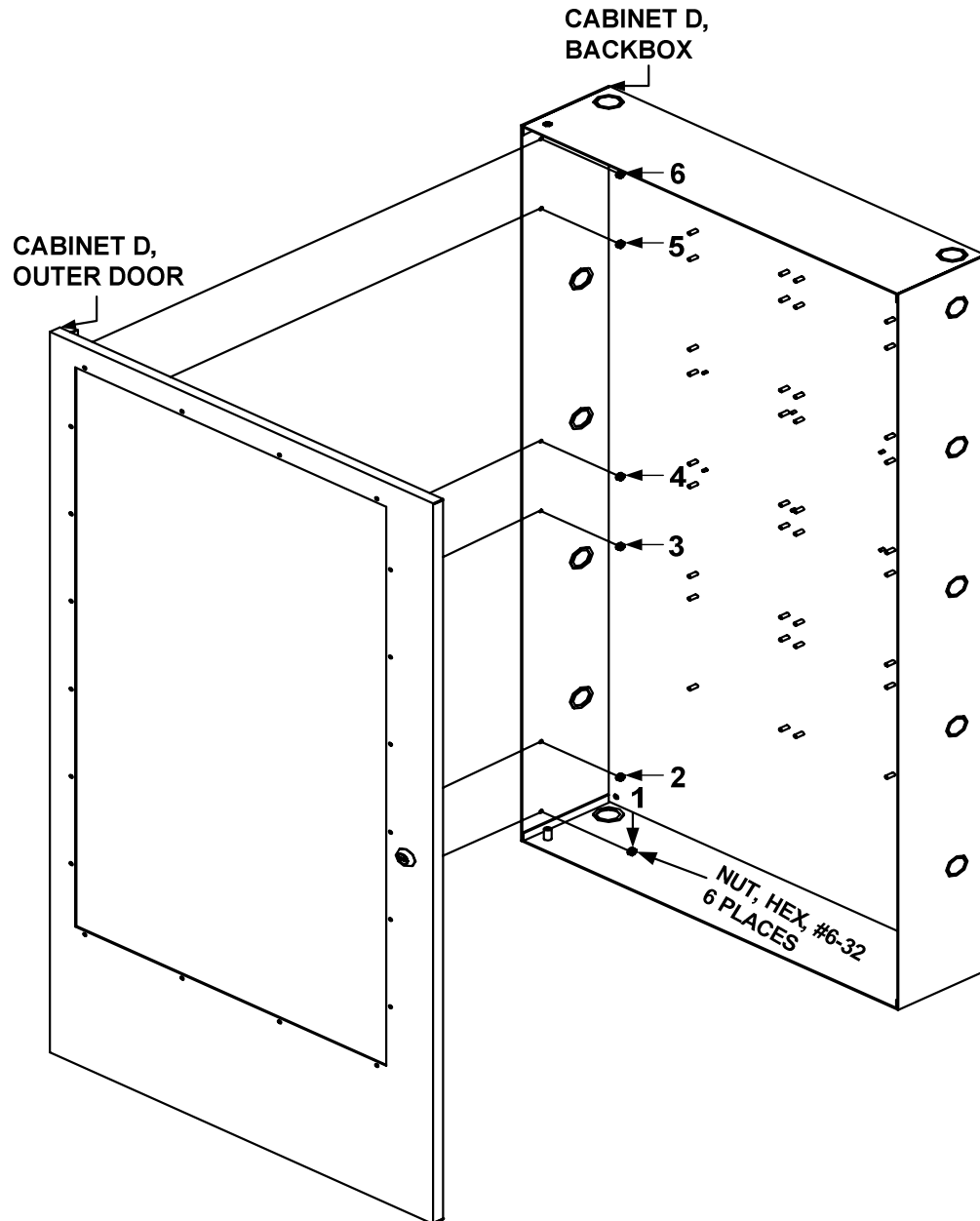


Figure 2.5.8.2 Cabinet D, Outer Door Installation

2.5.8.3 Cabinet D, Sub-Assembly to the Backbox Installation

- 1) Mount the ILI-MB-E3 on the backbox and secure with eight (8), standoffs, (#4-40 x 1.0") in the eight-hole mounting pattern as shown in Location 1 of Figure 2.5.8.3.
- 2) Mount the DACT-E3 and the RPT-E3 on top of the ILI-MB-E3 and secure with eight, (8), screws (#4-40 x 1/4") into the eight (8), standoffs in the two (2), four-hole mounting patterns as shown in Location 2 of Figure 2.5.8.3.
- 3) Mount the PM-9 over the standoffs on the backbox and secure with eight (8), screws (#4-40 x 1/4") in the eight-hole mounting pattern as shown in Location 3 of Figure 2.5.8.3.
- 4) Mount the INI-VG on the backbox and secure with six (6), standoffs, (#4-40 x 5/8") in the six-hole mounting pattern as shown in Location 4 of Figure 2.5.8.3.
- 5) Mount up to a maximum of two (2), interchangeable sub-assemblies and secure with eight (8), screws (#4-40 x 1/4") in the two (2), eight-hole mounting patterns as shown in Location 5 and 6 of Figure 2.5.8.3.
- 6) Place the batteries in the backbox.
The cabinet will accommodate two (2), batteries up to a maximum of 18 amp/hours capacity.

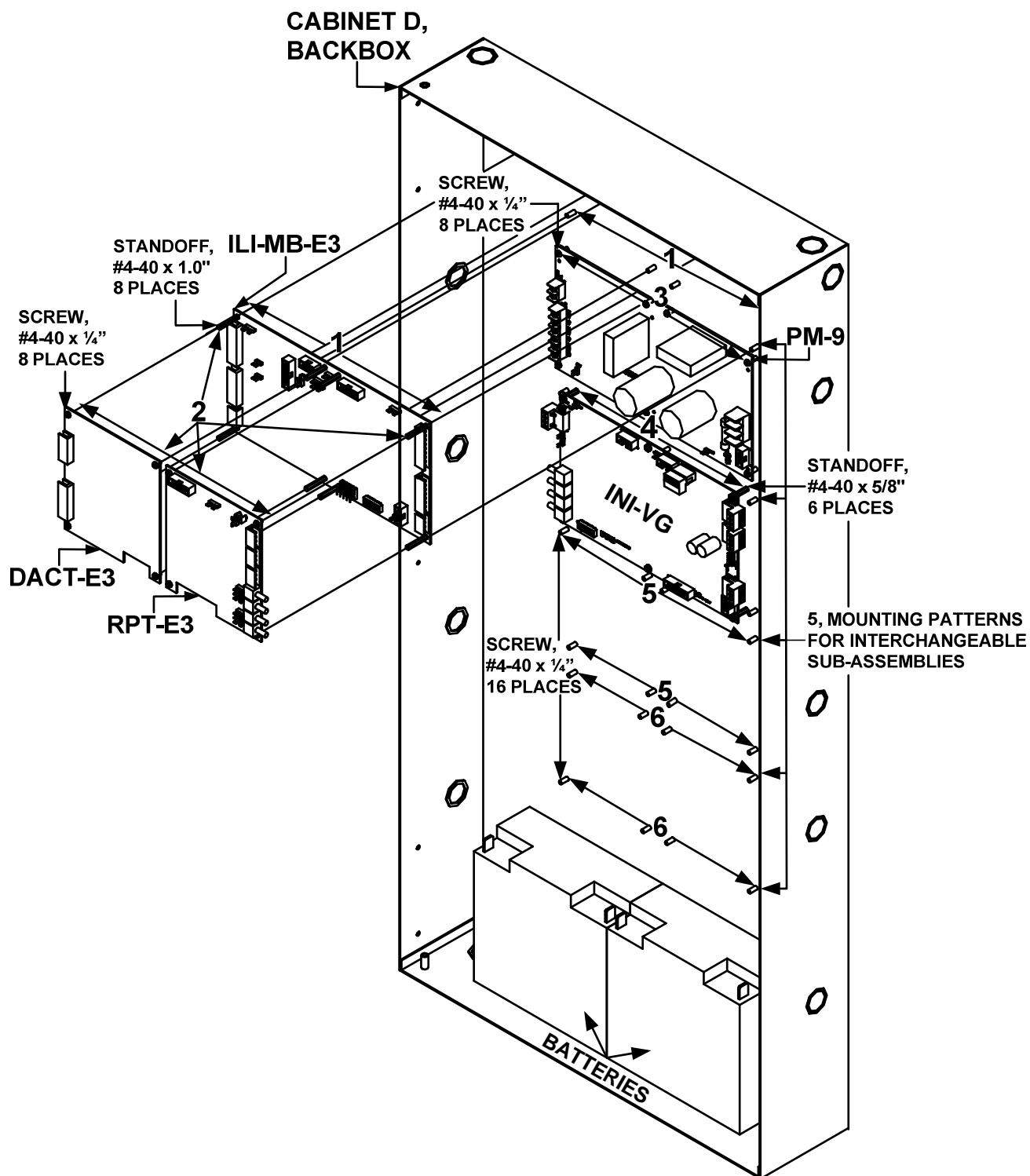


Figure 2.5.8.3 Cabinet D, Sub-Assembly to the Backbox Installation

2.5.8.4 Cabinet D, 13-Bay Inner Door to the Backbox Installation

- 1) Place the nylon spacer (.625 x .312) over the backbox bottom hinge pin as shown in Location 1 of the figure below.
- 2) Mount the 13-bay inner door to the backbox by sliding the inner door top hinge pin hole onto the backbox top hinge pin on as shown in Location 2 of the figure below.
- 3) Align the inner door bottom hinge pin hole with the backbox bottom hinge pin.
- 4) Slide the inner door over the inner door bottom hinge pin hole on top of the nylon spacer, and secure using the #8 x .5" screw as shown in Location 2 of the figure below.

Note: The 13-bay or 14-bay inner door is optional.

- 5) After the inner door is secured in place, attach one end of the bonding wire to the top hinge pin using the #8 x .5" screw as shown in Location 3 of the figure below.

Note: For information on the installation of the opposite end of the bonding wire, see Section 2.5.8.5, Step 7 and Location 7 of Figure 2.5.8.5.

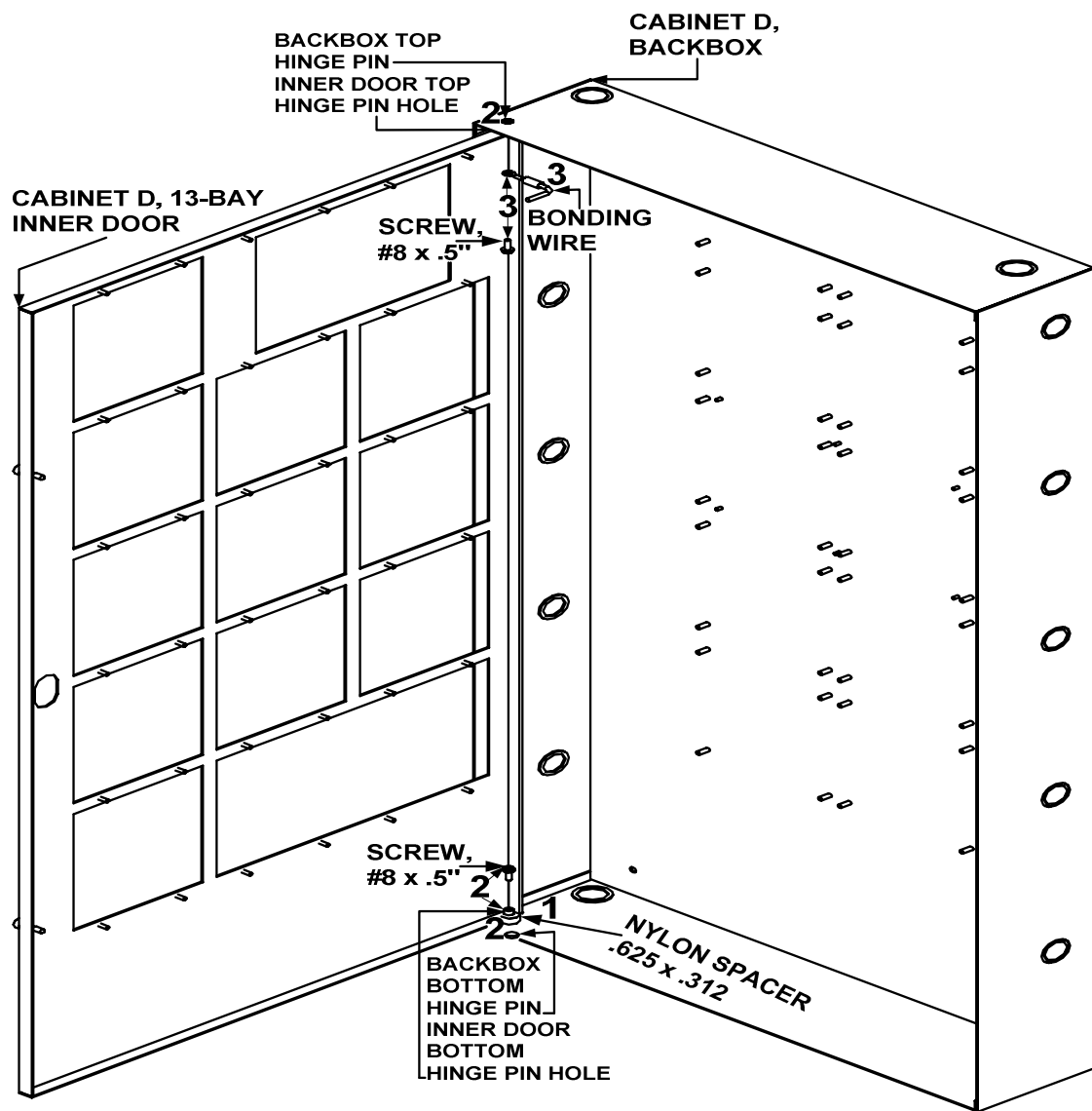


Figure 2.5.8.4 Cabinet D, 13-Bay Inner Door to the Backbox Installation

2.5.8.5 Cabinet D, 13-Bay Inner Door Installation

- 1) Mount the first, top row of the LCD-E3/ASM-16s sub-assemblies to the 13-bay inner door and secure with six (6), #6-32 nuts as shown in Location 1 of the figure below.
- 2) Interlock the first, bottom row of the LCD-E3/ASM-16s with the second, top row of the ASM-16 sub-assemblies and mount the units to the 13-bay inner door by securing six (6), #6-32 nuts as shown in Location 2 of the figure below.
- 3) Interlock the second, bottom row of the second set of ASM-16 sub-assemblies with the third, top row of the third set of ASM-16 sub-assemblies, and mount the units to the 13-bay inner door by securing six (6), #6-32 nuts as shown in Location 3 of the figure below.
- 4) Interlock the third, bottom row of the third set of ASM-16 sub-assemblies with the fourth, top row of the fourth set of ASM-16 sub-assemblies, and mount the units to the 13-bay inner door by securing six (6), #6-32 nuts as shown in Location 4 of the figure below.
- 5) Interlock the fourth, bottom row of the fourth set of ASM-16 sub-assemblies with the fifth, top row of the telephone and microphone box and mount the units to the 13-bay inner door by securing six (6), #6-32 nuts as shown in Location 5 of the figure below.
- 6) Mount the fifth, bottom row of the telephone and microphone box to the 13-bay inner door by securing six (6), #6-32 nuts as shown in Location 6 of the figure below.
- 7) Secure the opposite end of the bonding wire to the welded #6 stud on the inner side of the inner door using the #6 nut as shown in Location 7 of the figure below.
- 8) After the panel is wired, use the thumbscrews to secure the inner door to the backbox as shown in Location 8 of the figure below.

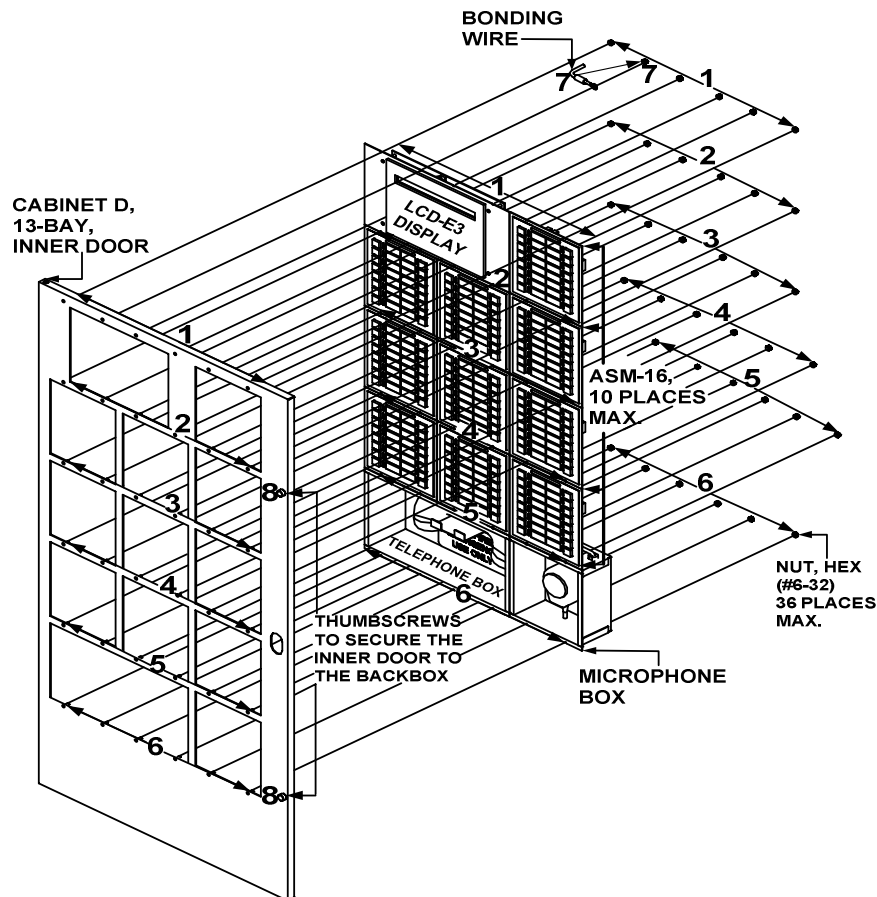


Figure 2.5.8.5 Cabinet D, 13-Bay Inner Door Installation

2.5.8.6 Cabinet D, 14-Bay Inner Door to the Backbox Installation

- 1) Place the nylon spacer (.625 x .312) over the backbox bottom hinge pin as shown in Location 1 of the figure below.
- 2) Mount the 14-bay inner door to the backbox, by sliding the inner door top hinge pin hole onto the backbox top hinge pin as shown in Location 2 of the figure below.
- 3) Align the inner door bottom hinge pin hole with the backbox bottom hinge pin.
- 4) Slide the inner door over the inner door bottom hinge in hole on top of the nylon spacer, and secure using the #8 x .5" screw as shown in Location 2 of the figure below.
- 5) After the inner door is secured in place, attach one end of the bonding wire to the top hinge pin using the #8 x .5" screw as shown in Location 3 of the figure below.

Note 1: The 13-bay or 14-bay inner door is optional.

Note 2: For information on the installation of the opposite end of the bonding wire, see Section 2.5.8.7, Step 7 and Location 7 of Figure 2.5.8.7.

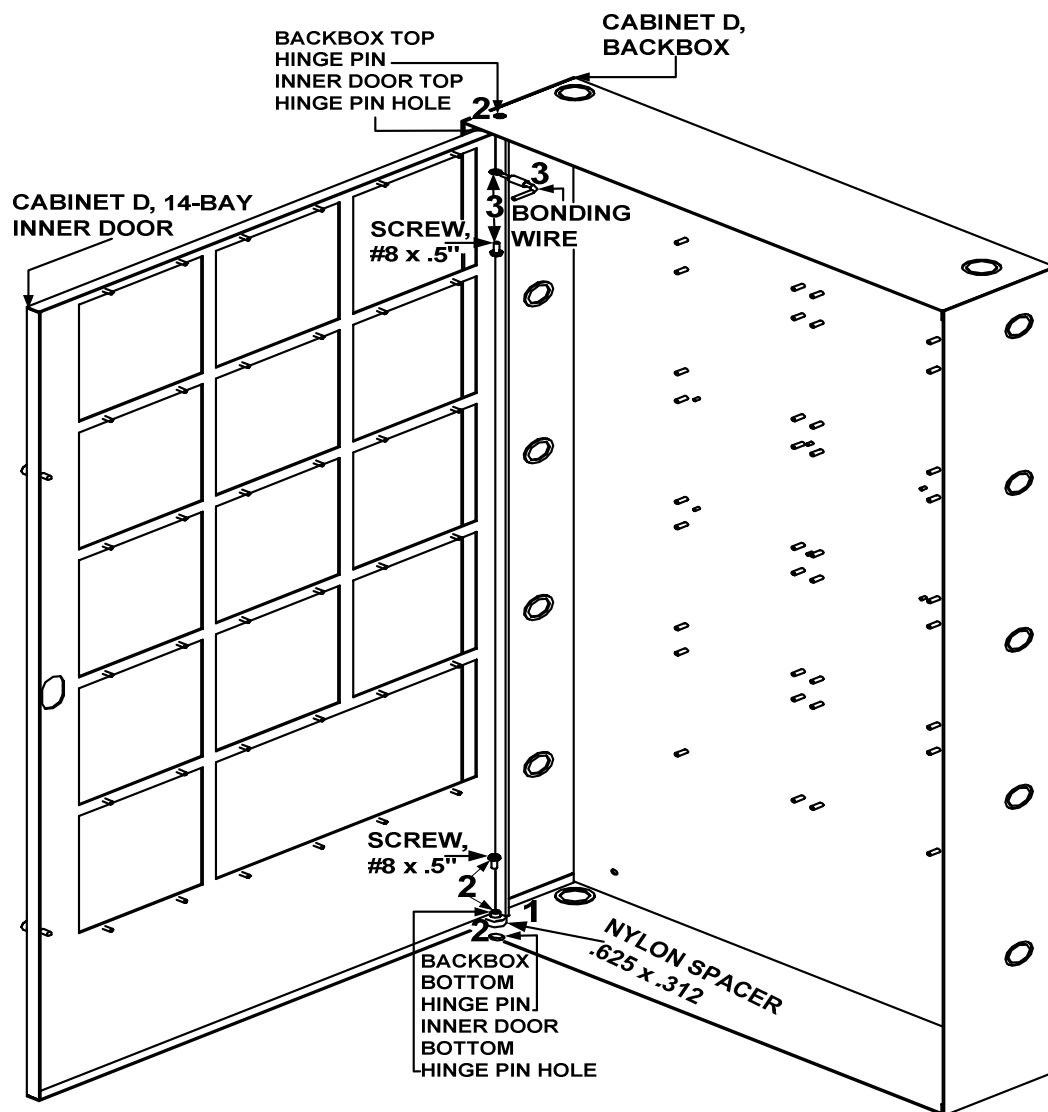


Figure 2.5.8.6 Cabinet D, 14-Bay Inner Door to the Backbox Installation

2.5.8.7 Cabinet D, 14-Bay Inner Door Installation

- 1) Mount the first, top row of the NGA/ASM-16s sub-assemblies to the 14-bay inner door and secure with six (6), #6-32 nuts as shown in Location 1 of the figure below.
- 2) Interlock the first, bottom row of the NGA/ASM-16s with the second, top row of the second set of ASM-16 sub-assemblies and mount the units to the 14-bay inner door by securing six (6), #6-32 nuts as shown in Location 2 of the figure below.
- 3) Interlock the second, bottom row of the second set of ASM-16 sub-assemblies with the third, top row of the third set of ASM-16 sub-assemblies, and mount the units to the 14-bay inner door by securing six (6), #6-32 nuts as shown in Location 3 of the figure below.
- 4) Interlock the third, bottom row of the third set of ASM-16 sub-assemblies with the fourth, top row of the fourth set of ASM-16 sub-assemblies, and mount the units to the 14-bay inner door by securing six (6), #6-32 nuts as shown in Location 4 of the figure below.
- 5) Interlock the fourth, bottom row of the fourth set of ASM-16 sub-assemblies with the fifth, top row of the telephone and microphone box and mount the units to the 14-bay inner door by securing six (6), #6-32 nuts as shown in Location 5 of the figure below.
- 6) Mount the fifth, bottom row of the telephone and microphone box to the 14-bay inner door by securing six (6), #6-32 nuts as shown in Location 6 of the figure below.
- 7) Secure the opposite end of the bonding wire to the welded #6 stud on the inner side of the inner door using the #6 nut as shown in Location 7 of the figure below.
- 8) After the panel is wired, use the thumbscrews to secure the inner door to the backbox as shown in Location 8 of the figure below.

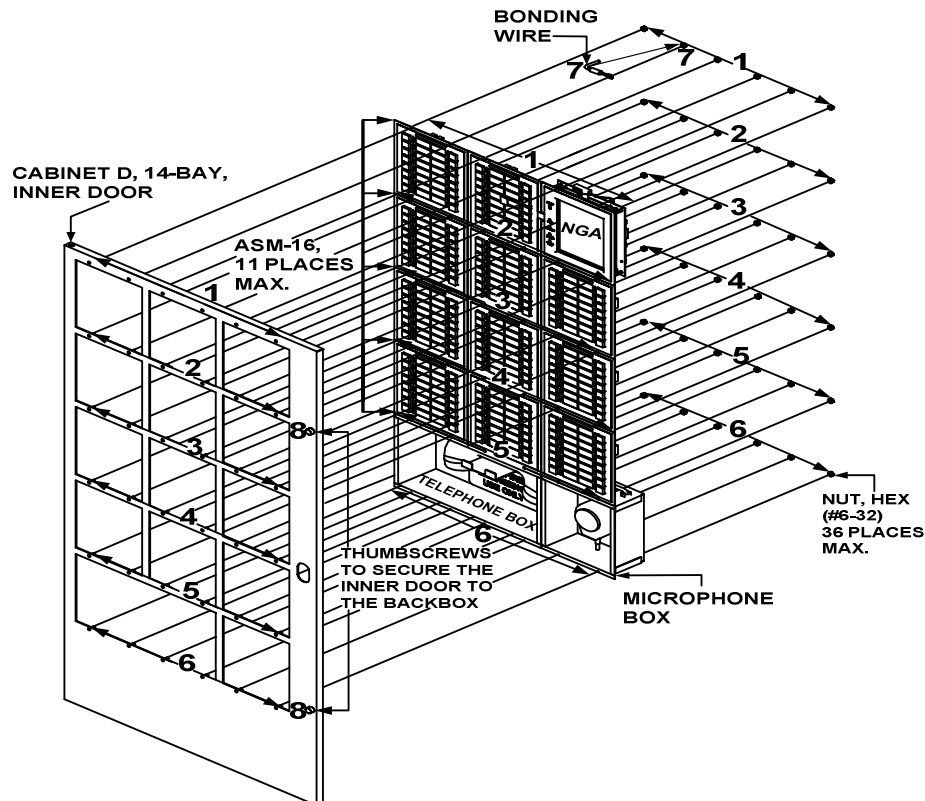


Figure 2.5.8.7 Cabinet D, 14-Bay Inner Door Installation

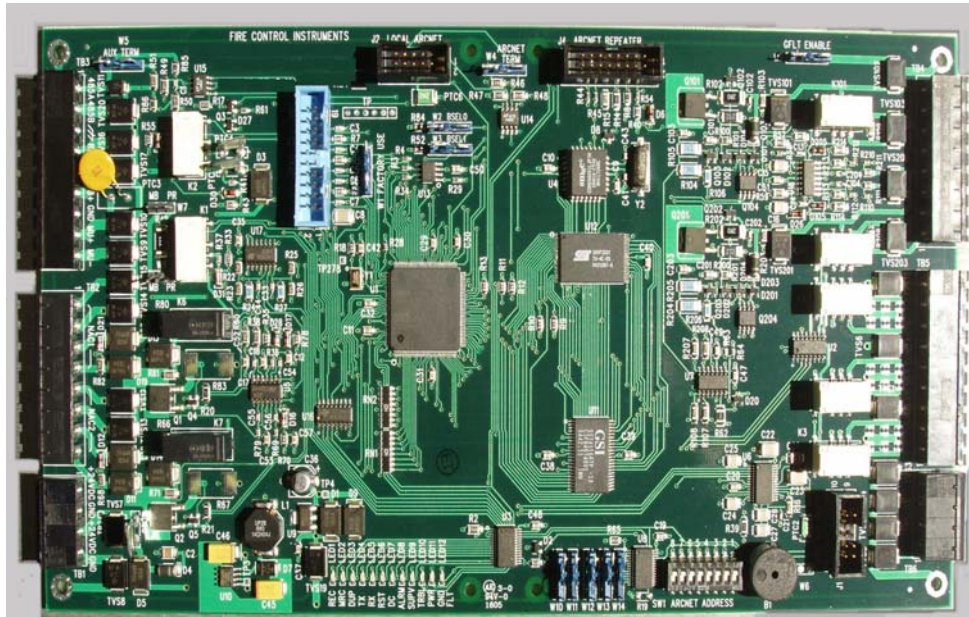


Figure 3-1.A Intelligent Loop Interface (ILI-MB-E3) Sub-Assembly

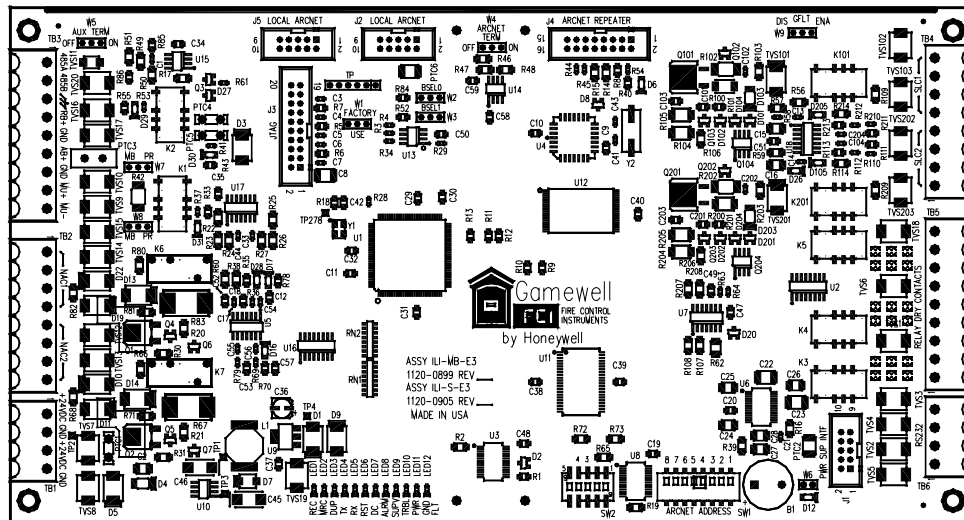


Figure 3-1.B Intelligent Loop Interface (ILI-MB-E3) Sub-Assembly

3.0 System Connections

3.1 Intelligent Loop Interface-Main Board Sub-Assembly (ILI-MB-E3)

Field wiring connections for the ILI-MB-E3 are shown in Table 3-1. All wiring is Power-limited except the local energy City Box which is non power-limited.

Table 3-1 ILI-MB-E3 Field Wiring Connections		
Designation	Description	Comments
TB1-1, TB1-3	+24 V IN	+24 VDC Input from PM-9 TB4-1
TB1-2, TB1-4	GND	Common negative from PM-9 TB4-2
TB2-1	NAC1 B+	Notification Appliance Circuit 1
TB2-2	NAC1 B -	Notification Appliance Circuit 1
TB2-3	NAC 1 A+	Notification Appliance Circuit 1
TB2-4	NAC 1 A-	Notification Appliance Circuit 1
TB2-5	NAC2 B+	Notification Appliance Circuit 2
TB2-6	NAC2 B-	Notification Appliance Circuit 2
TB2-7	NAC 2 A+	Notification Appliance Circuit 2
TB2-8	NAC 2 A-	Notification Appliance Circuit 2
TB3-1	AUX RS485 A	Output to LCD-E3, ASM-16, ANU-48, LCD-7100, DACT-E3
TB3-2	AUX RS485 B	Output to LCD-E3, ASM-16, ANU-48, LCD-7100, DACT-E3
TB3-3	Earth Ground	Connect to water pipe ground
TB3-4	Resettable B+	Auxiliary resettable 24 VDC power
TB3-5	GND	Common negative
TB3-6	Non-resettable B+	Auxiliary non-resettable 24 VDC power
TB3-7	GND	Common negative
TB3-8	Municipal Ckt +	Output to Local Energy City Box or Remote Station – Non Power-limited
TB3-9	Municipal Ckt -	Output to Local Energy City Box or Remote Station – Non Power-limited
TB4-1	SLC 2 A-	SLC 2 Style 6 Return
TB4-2	SLC 2 A+	SLC 2 Style 6 Return
TB4-3	SLC 2 B-	SLC 2 Style 4 Out
TB4-4	SLC 2 B+	SLC 2 Style 4 Out
TB4-5	SLC 1 A-	SLC 1 Style 6 Return
TB4-6	SLC 1 A+	SLC 1 Style 6 Return
TB4-7	SLC 1 B-	SLC 1 Style 4 Out
TB4-8	SLC 1 B+	SLC 1 Style 4 Out
TB5-1	Alarm DC NC	Alarm relay contact, N/C
TB5-2	Alarm DC NO	Alarm relay contact, N/O
TB5-3	Alarm DC Common	Alarm relay contact, Common
TB5-4	Supv DC NC	Supervisory relay contact, N/C
TB5-5	Supv DC NO	Supervisory relay contact, N/O
TB5-6	Supv DC Common	Supervisory relay contact, Common
TB5-7	Trbl DC NC	Trouble relay contact, N/C
TB5-8	Trbl DC NO	Trouble relay contact, N/O
TB5-9	Trbl DC Common	Trouble relay contact, Common
TB6-1	RS232 GND	To red lead on download cable P/N 75267
TB6-2	RS232 Rxd	To black lead on download cable P/N 75267
TB6-3	RS232 Supervision	
TB6-4	RS232 Txd	To green lead on download cable P/N 75267

3.1 Intelligent Loop Interface-Main Board Sub-Assembly (ILI-MB-E3) (Continued)

Table 3-1 ILI-MB-E3 Field Wiring Connections (Continued)		
Designation	Description	Comments
W1, W2, W3	Jumper	Factory use only.
W4	Jumper	OUT = Normal Operation. IN = If the ILI-MB-E3 is located at the end of the ARCNET bus.
W7, W8	Jumper	"MB" = For Master Box PR = For Polarity Reversal
*W9	Jumper	OUT = Normal Operation. IN = If the ILI-MB-E3 is supervising PM-9 for Ground Fault.
W10	Jumper	OUT = Normal Operation. IN = To Disconnect SLC #1.
W11	Jumper	OUT = Normal Operation. IN = To Disconnect SLC #2.
W12	Jumper	OUT = Normal Operation. IN = To Disconnect NAC #1 and NAC #2.
W13	Jumper	OUT = Normal Operation. IN = To Disconnect Audible Sounder.
W14	Jumper	IN = Changes baud rate to 115,200. OUT = Baud rate configured at commissioning.
J2, J5	Connector	Connects to J2 and J5 of the next ILI-MB-E3.
J4	Connector	Connects to INI-VG J7 or J10 of the RPT-E3.
*Note 1: Must be IN if this sub-assembly is monitoring the PM-9. Jumper is OUT for other subsequent sub-assemblies.		
*Note 2: Must be IN for first ILI-S-E3 or INI-VG. When W9 is installed, remove JMP1 in PM-9.		

3.1.1 Auxiliary Power Output, Resettable/Non-resettable

- TB3-4 Resettable, 24 VDC, max. 2.0 amp
Special application: Suitable for use with projected beam smoke detector Model BEAM 1224.
- TB3-5 Non-resettable, 24 VDC, max. 2.0 amp
Special application: Suitable for use with the FM Series door holders.
NOTE: Total output is 2.5 amp max. combined.
- TB3-6 Common negative

3.1.2 Relay Connections

- **System Alarm Contacts**
 - TB5-2 Normally Open
 - TB5-3 Common
 - TB5-1 Normally Closed
 - Rated 2 amp @ 30 VDC (resistive)
 - Transfers upon any system alarm except supervisory.
- **Supervisory Contacts**
 - TB5-5 Normally Open
 - TB5-6 Common
 - TB5-4 Normally Closed
 - Rated 2 amp @ 30 VDC (resistive)
 - Transfers upon any supervisory signal.
- **System Trouble Contacts**
 - TB5-8 Normally Open
 - TB5-9 Common
 - TB5-7 Normally Closed
 - Rated 2 amp @ 30 VDC (resistive)
 - Transfers on any system trouble, supervisory and/or alarm.

3.1.3 Signaling Line Circuits

The ILI-MB-E3 provides two (2), 24 VDC Class A, Style 6, 7 or Class B, Style 4 signaling line circuits. See Figure 3-2 for wiring information. Style 7 wiring requires the use of an M500X Isolator Module on both sides of a device.

Wiring Instructions

SLC 1 Style 4	TB4-8 (+), TB4-7 (-)
SLC 2 Style 4	TB4-4 (+), TB4-3 (-)
SLC 1 Style 6	TB4-8 out, TB4-6 return
	TB4-7 out, TB4-5 return
SLC-2 Style 6	TB4-4 out, TB4-4-2 return
	TB4-3 out, TB4-1 return

(Polarity markings indicate the polarity that should be maintained throughout the circuit. Polarity connected to the circuit must be observed on all devices).

Circuit Ratings

24 VDC (nominal) FWR

Current:	0.048 amp max. (supervisory)
	0.136 amp max. (alarm)
	0.400 amp max. (short circuit)
	40 ohms max. line impedance
	0.5 µf max. line capacitance

Ground fault test impedance: 20 kOhms

18 AWG minimum, straight lay or twisted-pair unshielded

Power-limited Supervised

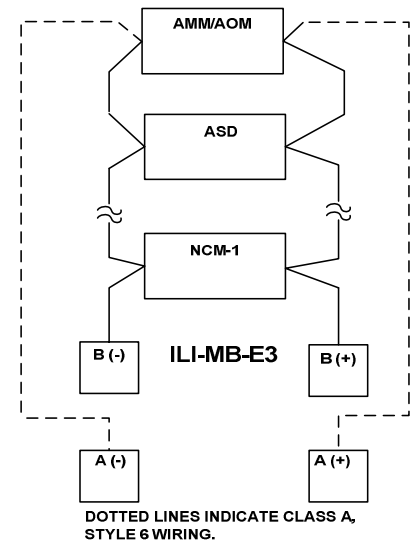


Figure 3-2 Signaling Line Circuits

3.1.4 Notification Appliance Circuits

The ILI-MB-E3 provides two (2), 24 VDC Class A, Style Z or Class B, Style Y notification appliance circuits. See Figure 3-3 for wiring information. See Compatibility Addendum, P/N: 9000-0427, Table 2H for a list of approved compatible devices.

Wiring Instructions

NAC 1 – Style Y	TB2-1 (+), TB2-2 (-)
NAC 2 – Style Y	TB2-5 (+), TB2-6 (-)
NAC 1 – Style Z	TB2-1 out, TB2-3 return
	TB2-2 out, TB2-4 return
NAC 2 – Style Z	TB2-5 out, TB2-7 return
	TB2-6 out, TB2-8 return

(Polarity markings indicate the polarity of the circuit in alarm condition).

Use UL Listed End of Line Resistor EOL-N (33K), P/N 4700-0484 for Class B, Style Y wiring.

Circuit Ratings

24 VDC (Nom.) FWR

Max. alarm load: - 2.0 amps./circuit

Ground fault test impedance: 20 kOhms

Supervised - Power-limited

18 AWG minimum

MDL-FC Series Synchronization Modules must be connected.

Special application: See Compatibility Addendum, P/N 9000-0427 for a list of Gamewell-FCI approved, UL Listed notification appliances.

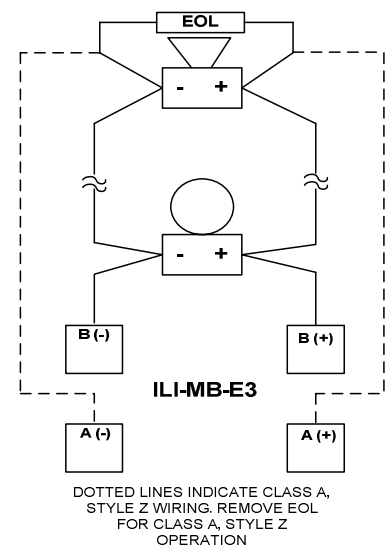











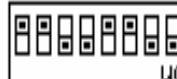






















































Figure 3-3 Notification Appliance Circuits

3.1.5 INI-7100 Addresses

The INI-7100 addresses are shown in Table 3-2.

Table 3-2 INI-7100 Addresses			
 =1	 =17	 =33	 =49
 =2	 =18	 =34	 =50
 =3	 =19	 =35	 =51
 =4	 =20	 =36	 =52
 =5	 =21	 =37	 =53
 =6	 =22	 =38	 =54
 =7	 =23	 =39	 =55
 =8	 =24	 =40	 =56
 =9	 =25	 =41	 =57
 =10	 =26	 =42	 =58
 =11	 =27	 =43	 =59
 =12	 =28	 =44	 =60
 =13	 =29	 =45	 =61
 =14	 =30	 =46	 =62
 =15	 =31	 =47	 =63
 =16	 =32	 =48	 =64

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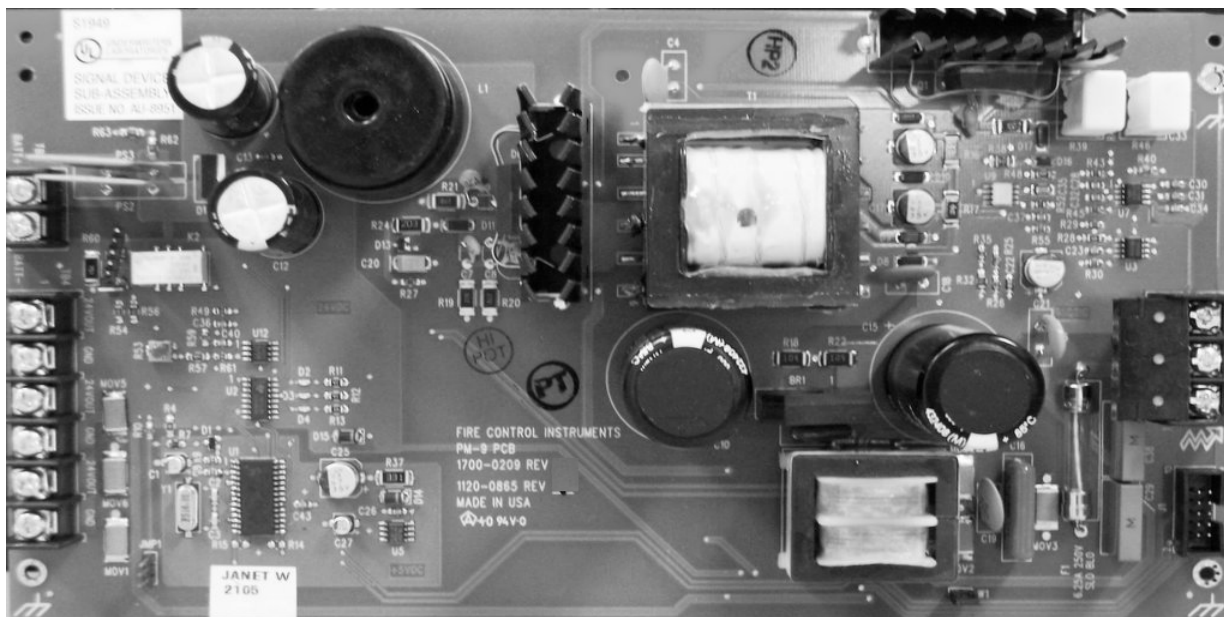


Figure 3-4 PM-9 Power Supply

3.2 Power Supply (PM-9)

Table 3-3 below shows the connections to the PM-9 Power Supply.

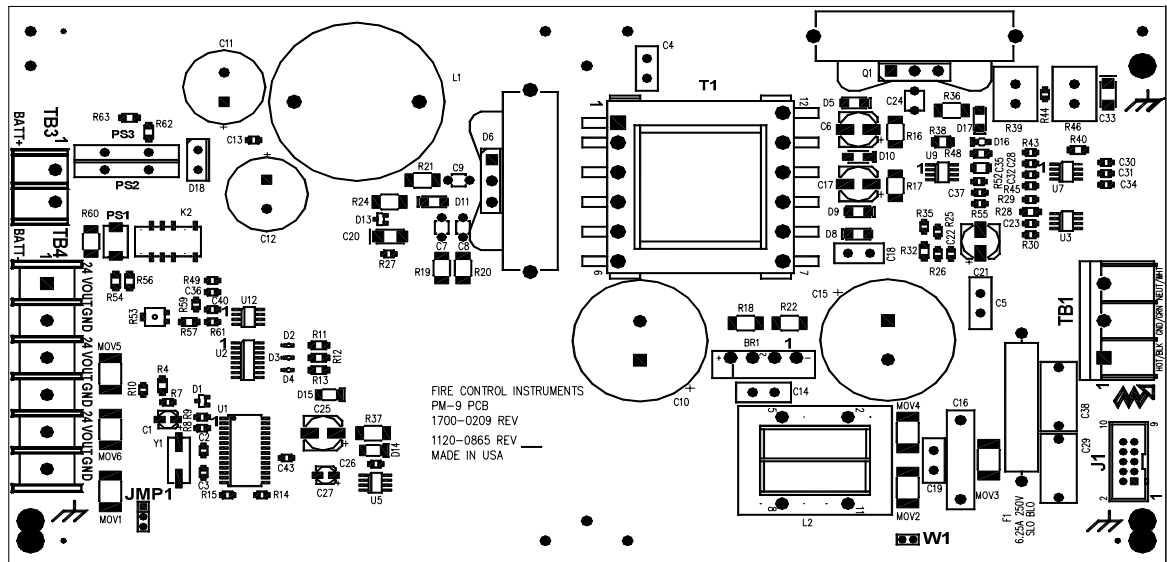


Figure 3-5 PM-9 Power Supply Sub-Assembly

Table 3-3 PM-9 Terminals, Jumpers & LEDs	
TB1-1 AC2	Connect to hot, 120 VAC, 60 Hz - non power-limited
TB1-2 EGND	Connect to ground and isolated earth ground - non power-limited
TB1-3 AC1	Connect to neutral
TB3-1 BATT+	Battery positive input - non power-limited
TB3-2 BATT -	Battery negative input - non power-limited
TB4-1 24OUT	+ 24 VDC FWR Output to ILI-MB-E3
TB4-2 GND	Common (-) Output to ILI-MB-E3
TB4-3 24OUT	+ 24 VDC FWR Output to other sub-assembly (RPT-E3 etc.)
TB4-4 GND	Common (-) Output to other sub-assembly (RPT-E3 etc.)
TB4-5 24OUT	+ 24 VDC FWR Output to other sub-assembly (RPT-E3 etc.)
TB4-6 GND	Common (-) Output to other sub-assembly (RPT-E3 etc.)
W1	Factory use
*JMP1	IN For GND Fault Detection
J1	10-Pin Ribbon Cable Connect to ILI-MB-E3 J1 or INI-VG J4
LED 2 Green	Lights to indicate AC power
LED 3 Yellow	Lights to indicate no or low battery fault
LED 4 Yellow	Lights to indicate ground fault
NOTE: AC "Brown Out" condition indicated by: LED 2 (grn) OFF LED 3 (yel) LIT LED 4 (yel) LIT	

*Note Must be OUT if this sub-assembly is monitoring the ILI-MB-E3.

3.2.1 PM-9 AC Power Connection

Connection of the 120 VAC, 60 Hz power source must be made in compliance with the National Electrical Code, NFPA 70, Article 760, the applicable NFPA Standards, and according to the requirements of the Authority Having Jurisdiction.

Such requirements include:

- Connections must be made to a dedicated branch circuit
- Connections must be mechanically protected
- All means of disconnecting the circuit must be clearly marked:
"FIRE ALARM CIRCUIT CONTROL"
- Connections must be accessible only to authorized personnel

See Figure 3-6 for the AC wiring and ground connections.

See Table 3-3 for AC input and battery connections.

3.2.2 Battery Connections (PM-9)

- Two (2), twelve volt batteries are connected in series to the PM-9.
- TB3-1 is positive. See Table 3-3.
- TB3-2 is negative. See Table 3-3.
- 14 AWG wire minimum.
- Observe polarity

See Table 3-12 for Battery Calculations

IMPORTANT: Always apply AC power first, then connect the batteries.

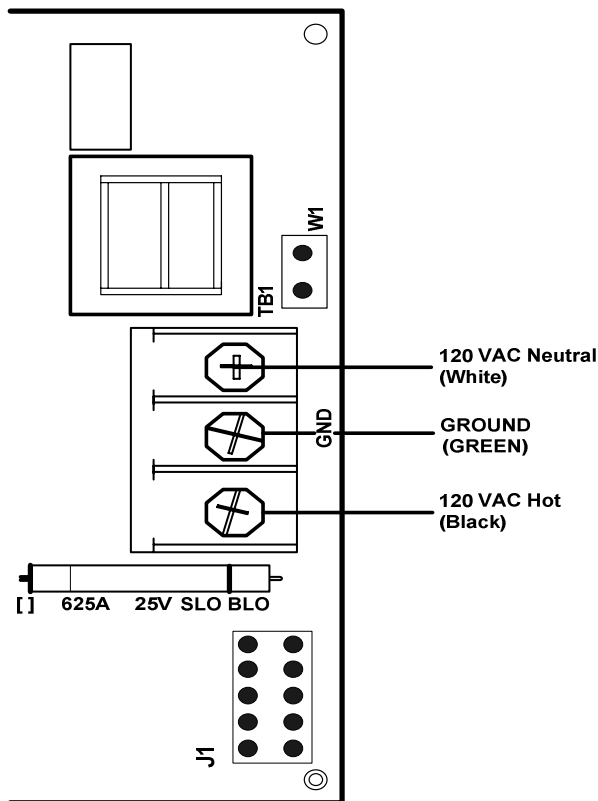


Figure 3-6 AC Wiring Connections - PM-9

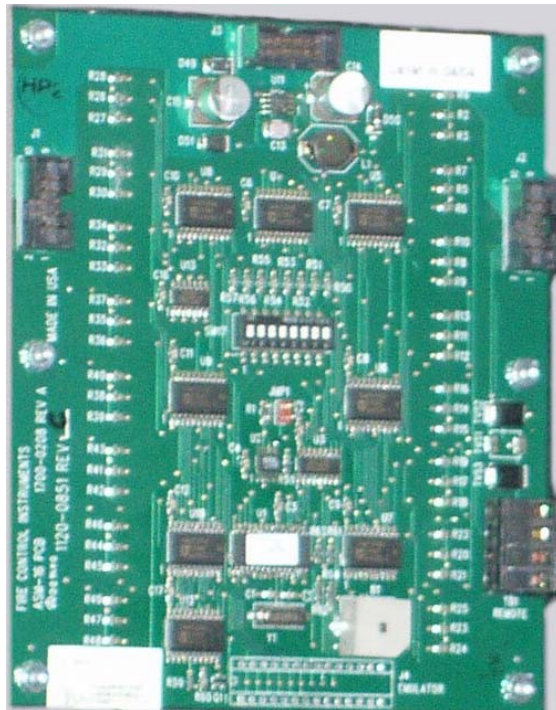
3.2.3 Specifications

Input voltage: 120 VAC, 60 Hz
Input current: 3.5 amp
Output voltage: 24 VDC FWR
Output current: 9 amperes
Supervised
Non power-limited

3.3 Addressable Switch Sub-Assembly (ASM-16) (Optional)

The remotable Addressable Switch Sub-Assembly (ASM-16) may be programmed to perform auxiliary switching functions. Connections are made to the ILI-MB-E3 from the ILI-MB-E3 TB3-1 and TB3-2 to the ASM-16 connector J2. The address of the ASM-16 in the system is set via a DIP Switch. Up to sixteen (16), ASM-16 sub-assemblies can be installed. The first address must be set to Number 32.

See the ASM-16 Installation Instructions, P/N 9000-0550 for connections and addressing instructions.



3.3.1 ASM-16 Wiring Connections

For the ASM-16, ANU-48, INI-VG Series, ILI-MB-E3, LCD-E3 or remote enclosure installations, use the wiring connections in Table 3-4, and refer to Notes A-F in Figure 3-8 for the ribbon cable and hardwire locations.

Table 3-4 ASM-16 or ANU-48 Wiring Connections		
ASM-16 or ANU-48 to ASM-16 or ANU-48 Wiring		
Designation	Description	Designation
From ASM-16 or ANU-48	Ribbon Cable	To ASM-16 or ANU-48
J1	Ribbon Cable	J1, J2 or J3
J2	Ribbon Cable	J1, J2 or J3
J3	Ribbon Cable	J1, J2 or J3
Note: See Note A in Figure 3-8 for the ribbon cable connection.		
ASM-16 or ANU-48 to ASM-16 or ANU-48 Wiring		
From ASM-16 or ANU-48		To ASM-16 or ANU-48
TB1-1 COMM A	Single Discrete Wire	TB1-1 COMM A
TB1-2 COMM B	Single Discrete Wire	TB1-2 COMM B
TB1-3 +24	Single Discrete Wire	TB1-3 +24
TB1-4 GND	Single Discrete Wire	TB1-4 GND
Note: See Note B in Figure 3-8 for the hardwire connection.		
INI-VGC, INI-VGX or INI-VGE Wiring		
From INI-VGC, INI-VGX or INI-VGE		To ASM-16 or ANU-48
J3 RS-485 Local	Ribbon Cable	J1, J2 or J3
Note: See Note C in Figure 3-8 for the ribbon cable connection.		
From INI-VGC, INI-VGX or INI-VGE		To ASM-16 or ANU-48
TB6 RS-485 Remote		ASM-16 or ANU-48 TB-1
TB6-1 +24	Single Discrete Wire	TB1-3 +24
TB6-2 COMM B	Single Discrete Wire	TB1-2 COMM B
TB6-3 COMM A	Single Discrete Wire	TB1-1 COMM A
TB6-4 GND	Single Discrete Wire	TB1-4 GND
Note: See Note D in Figure 3-8 for the hardwire connection.		
ILI-MB-E3 Wiring		
From ILI-MB-E3		To ASM-16 or ANU-48
TB3-1 COMM A	Single Discrete Wire	TB1-1 COMM A
TB3-2 COMM B	Single Discrete Wire	TB1-2 COMM B
TB1-3 +24	Single Discrete Wire	TB1-3 +24
TB1-4 GND	Single Discrete Wire	TB1-4 GND
Note: See Note E in Figure 3-8 for the hardwire connection.		
LCD-E3 Wiring		
From LCD-E3		To ASM-16 or ANU-48
J1	Ribbon Cable	J1, J2, or J3
Note: See Note F in Figure 3-8 for the ribbon cable connection.		

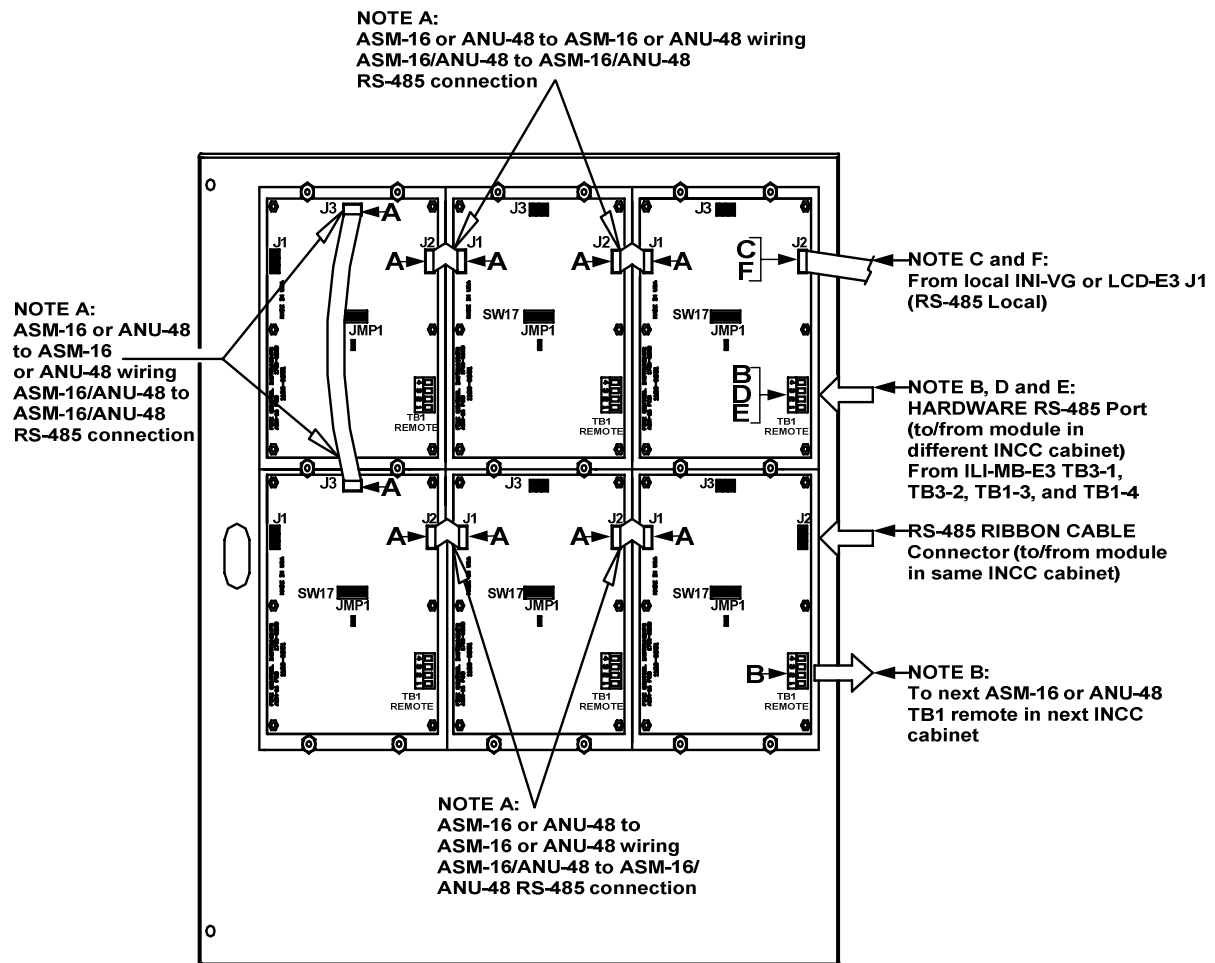


Figure 3-8 ASM-16 or ANU-48 Wiring Connections

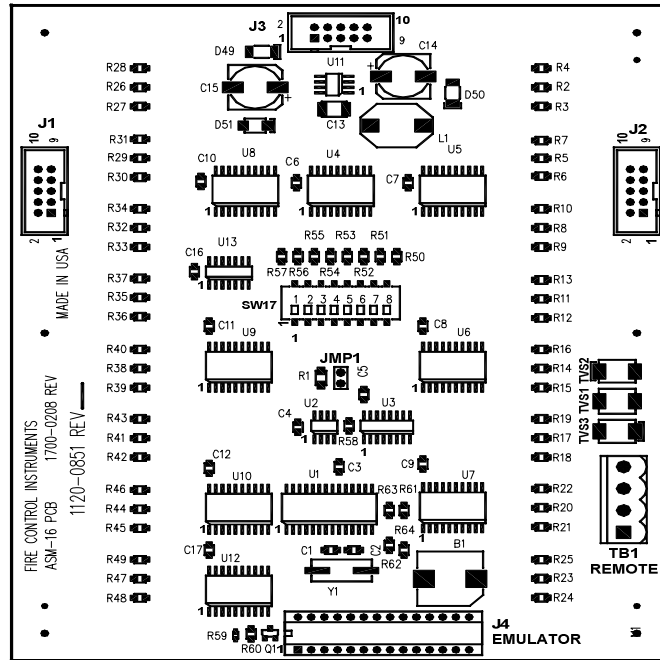


Figure 3-9 Addressable Switch Module (ASM-16) Sub-Assembly

3.3.2 Specifications

Operating voltage: 24 VDC (from PM-9 power supply)
Operating current: 0.011 amp (with no LEDs lit)
Supervised
Power-limited

3.4 Digital Alarm Communicator Transmitter (DACT-E3) (Optional)

The DACT-E3 digital communicator features numerous formats for communication to a central station. It provides the following functions:

- Line seizure - takes control of the phone lines, disconnecting any premises phones using the same lines
- Off/On-Hook - perform on and off-hook status to phone lines
- Listen for dial tone - 440 Hz tone typical in most networks
- Dialing the Central Station phone number - programmable
- Discern proper Central Station "ACK" and "Kiss-off" tone
- Transmit data to the Central Station
- Verify that data has been accepted by the Central Station
- Hang-up and release phone lines
- Communicate in a variety of formats
- Remotable via the RS-485 serial interface

3.4.1 Central Station Reporting

UL Listed receivers compatible with the E3 Series™ are listed in Table 3-5 below:

Table 3-5 UL Listed Receivers Compatible with the E3 Series™		
Manufacturer	Receiver Model	Formats
Silent Knight	Model 9000†	SIA-8 SIA-20 SK4/2 3/1 14 3/1 23
Silent Knight	Model 9800/9500	SIA-8 SIA-20 SK4/2 3/1 14 3/1 23 Contact ID
Ademco	Model 685	3/1 14 3/1 23
Sur-Guard (Ver. 1.64 or higher)	SG-MLR2-DG	SIA-8 SIA-20 SK4/2 3/1 14 3/1 23 Contact ID
Osborne Hoffman	Quickalert	SIA-8 SIA-20

If you are using the Model 9000 and the message "HELP" appears on the printer after attempting to download, the 9000 software must be upgraded.

The Model 9000 must have the Model 9307 software package, Revision 900501 or later, to print the PROGRAMMING PASS and PROGRAMMING FAIL messages.

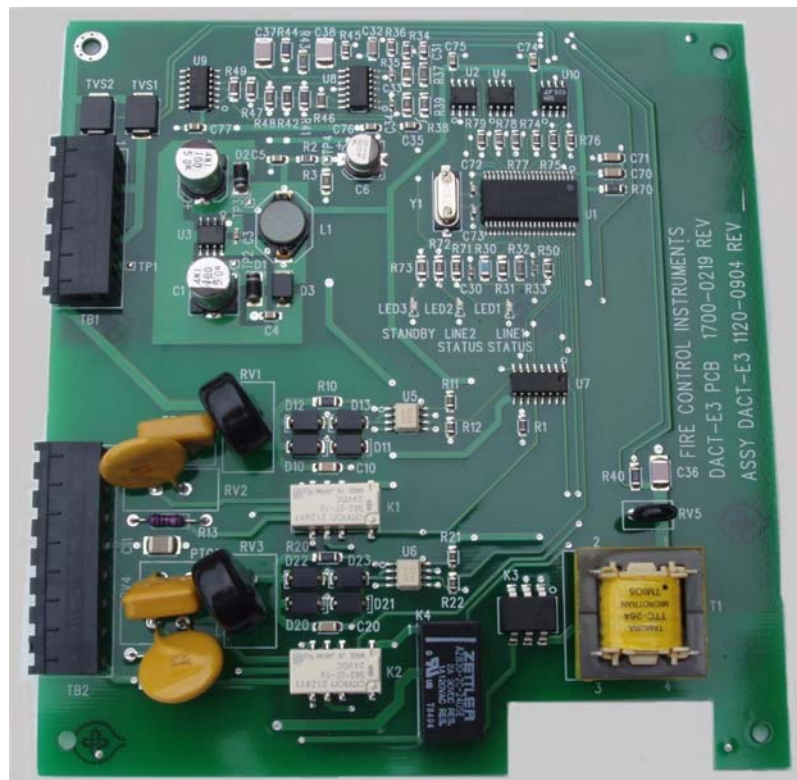


Figure 3-10.A DACT-E3

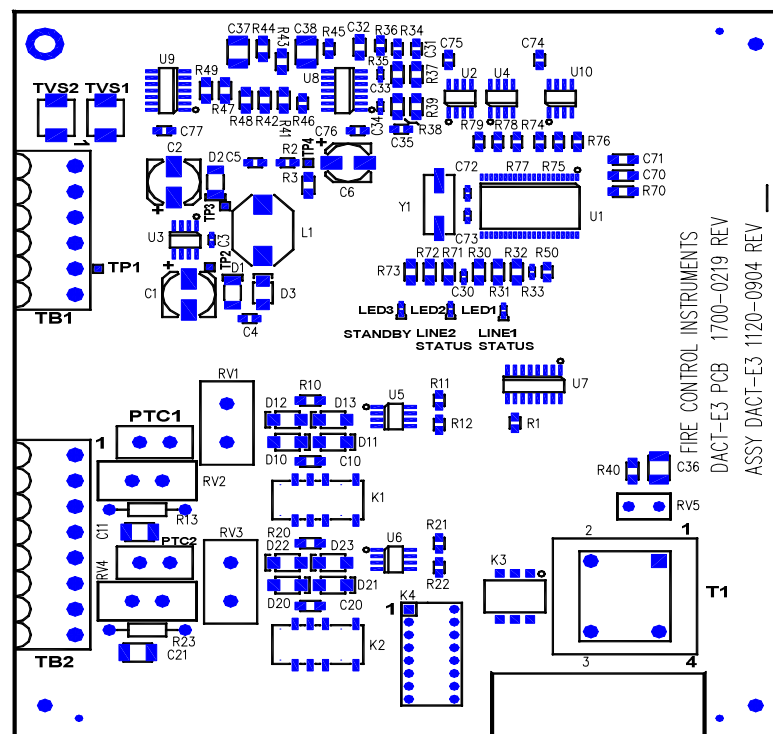


Figure 3-10.B DACT-E3 Sub-Assembly

3.4.2 DACT-E3 Event Reporting Codes

The DACT-E3 event reporting codes are shown in Table 3-6 below:

Table 3-6 DACT-E3 Event Reporting Codes*				
Event	SIA	Contact ID	4/2	3/1
Fire Alarm (Smoke or Manual Station) FA	FA GGT	1 110 00 GGT	0T	0
Trouble (Smoke or Manual Station)	FT GG0	1 373 00 GG0	80	8
Trouble Restored (Smoke or Manual Station)	FJ GG0	3 373 00 GG0	70	7
Supervisory / Tamper	SS GGT	1 203 00 GGT	6T	6
Supervisory Restored	SR GGT	3 203 00 GGT	7T	7
Supervisory/Tamper/Waterflow Trouble	ST GGT	1 203 00 GGT	8T	8
Supv/Tamper/Waterflow Trouble Restored	SJ GGT	3 203 00 GGT	7T	7
PAS	QA GGT	1 101 00 GGT	0T	0
PAS Restored	QH GGT	3 101 00 GGT	2T	2
Trouble (Non-Loop Device, AOM)	FT 0	1 373 00 000	8T	8
Trouble Restored (Non-Loop Device, AOM)	FJ 0	3 373 00 000	7T	7
Fire Alarm Restored	QA GGT	1 101 00 GGT	2T	2
AC Fall	AT 0	1 301 00 000	8T	8
AC Fall Restored	AR 0	3 301 00 000	7T	7
Phone Line 1 Fault*	LT 1	1 351 00 000	81	8
Phone Line 1 Fault Restored*	LR 1	3 351 00 000	71	7
Phone Line 2 Fault*	LT 2	1 352 00 000	82	8
Phone Line 2 Fault Restored*	LR 2	3 352 00 000	72	7
Automatic Test (NORMAL)	RP 0	1 602 00 000	90	9
Automatic Test (With Exception)	RP991	1 602 00 991	91	9
For Contact ID and SIA Formats *Default codes as shipped from the factory. GG = group number assigned to the device, 00-99 (For networked systems, GG – Node number) T = Type of device or event causing event to be reported IF T =: 0= Non-loop event 1= Any event or device type not listed below 2= Manual Station 3= Supervisory Device (Non-latching) 4= Supervisory Device (Latching) 5= Waterflow (Non-silenceable) 6= Smoke Alarm 7= Non-Reporting Device 8= Multilevel Device The DACT-E3, when using Contact ID or SIA Format, sends the event type string indicating alarm/supervisory/or trouble, to the monitoring center followed by the GROUP number (GG) to which the device has been assigned (not the device address). The final digit (represented by “T” in the chart, provides information on the type of device which generated the event.				

3.4.3 Telephone Requirements

- DC Ringer Equivalence Number (REN) = 0.5B
- AC Ringer Equivalence Number = 1.3
- Complies with FCC Part 8

The REN is used to determine the quantity of devices that may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5).

To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

See Table 3-7 for the DACT-E3 wiring connections.

Table 3-7 DACT-E3 Wiring Connections		
Designation	Description	Comments
TB1-1	COM A in	COM A from ILI-MB-E3
TB1-2	COM B in	COM B from ILI-MB-E3
TB1-3	COM A out	COM A out to other devices
TB1-4	COM B out	COM B out to other devices
TB1-5	+24 V in	+ 24 VDC from PM-9 TB4-3 or TB4-5
TB1-6	-24 V in	-24 VDC from PM-9 TB4-4 or TB4-6
TB2-1	T1 Tip	Line 1 Tip In from street Non power-limited
TB2-2	T1 Ring	Line 1 Ring In from street Non power-limited
TB2-3	P1 Tip	Line 1 Tip Out to phone Non power-limited
TB2-4	P1 Ring	Line 1 Ring Out to phone Non power-limited
TB2-5	T2 Tip	Line 2 Tip In from street Non power-limited
TB2-6	T2 Ring	Line 2 Ring In from street Non power-limited
TB2-7	P2 Tip	Line 2 Tip Out to phone Non power-limited
TB2-8	P2 Ring	Line 2 Ring Out to phone Non power-limited

3.4.4 Specifications

Operating voltage: 24 VDC (from PM-9 power supply)
Operating current: 0.018 amp
Alarm current: 0.018 amp
Supervised
Non Power-limited

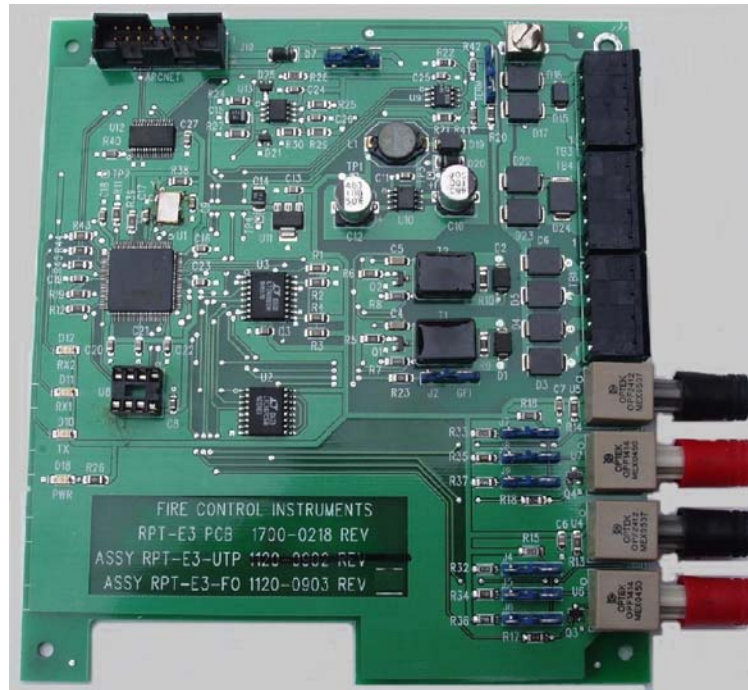


Figure 3-11.A Repeater RPT-E3

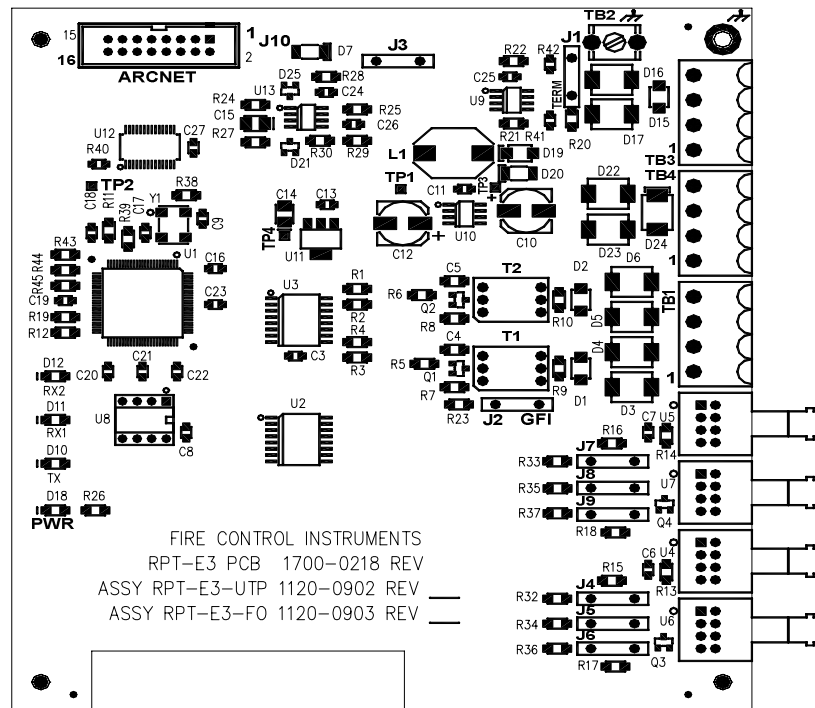


Figure 3-11.B Repeater RPT-E3 Sub-Assembly

3.5 Repeater Sub-Assembly (RPT-E3) (Optional)

The Repeater, RPT-E3 provides the interface between the ILI-MB-E3 and the Broadband Network. It can also be used with the NGA. The RPT-E3 is available in two versions:

- RPT-E3-FO
- RPT-E3-UTP

3.5.1 RPT-E3-FO

The RPT-E3-FO communicates to the network by means of fiber-optic cable or copper, unshielded, twisted-pair wire.

3.5.2 RPT-E3-UTP

The RPT-E3-UTP connects to the network by means of unshielded, twisted-pair copper wire. It is similar to the RPT-E3-FO with the exception that connectors U4, U5, U6 and U7 are omitted.

Table 3-8 Repeater-E3 Wiring Connections		
Designation	Description	Comments
TB1-1	ARCNET PORT 1A	Broadband Network
TB1-2	ARCNET PORT 1B	Broadband Network
TB1-3	ARCNET PORT 2A	Broadband Network
TB1-4	ARCNET PORT 2B	Broadband Network
TB2	Earth Ground	
TB3-1	Com A In	Local Differential ARCNET
TB3-2	Com B In	Local Differential ARCNET
TB3-3	Com A Out	Local Differential ARCNET
TB3-4	Com B Out	Local Differential ARCNET
TB4-1	+ 24V In	
TB4-2	Common – In	
TB4-3	+ 24 V Out	
TB4-4	Common – Out	
J10	ARCNET	Connector to ILI-MB-E3, NGA, or ILI-S-E3
U5*	Fiber Port 2 In	
U7*	Fiber Port 2 Out	
U4*	Fiber Port 1 In	
U6*	Fiber Port 1 Out	
J1 through J9		For use during commissioning only. Not for use in the field.

NOTE: If J10 is used, do not use TB3 or TB4.

*U4, U5, U6 and U7 are omitted on the RPT-E3-UTP.

3.5.3 Specifications

Operating voltage: 24 VDC FWR (from PM-9 power supply)
Operating current: 0.013 amp
Operating temperature: 32° to 120°F (0° to 49°C)
Relative humidity: 0 to 93%, non-condensing at 90°F (32°C)
Supervised
Power-limited

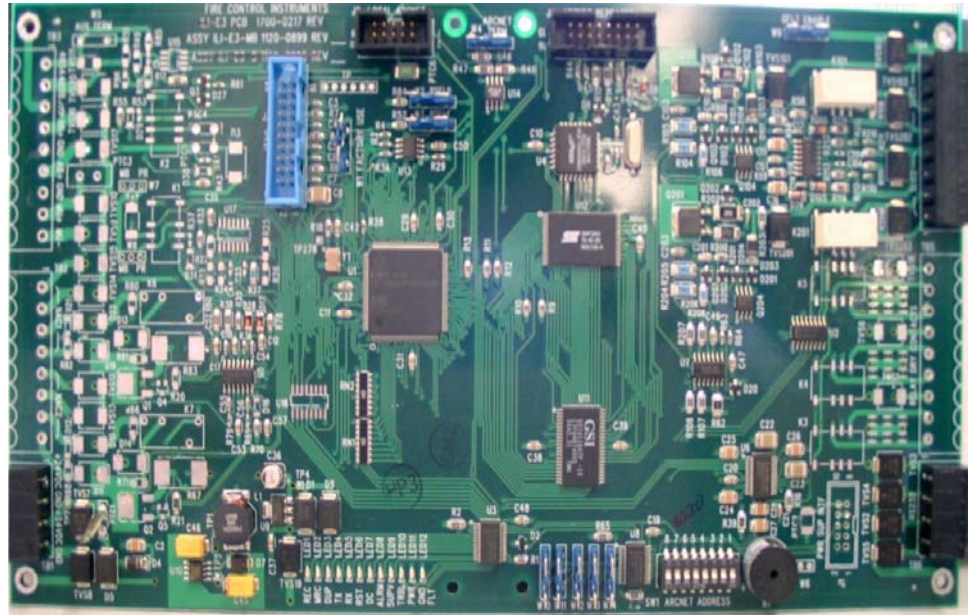


Figure 3-12.A ILI-S-E3 Signaling Line Circuit Sub-Assembly

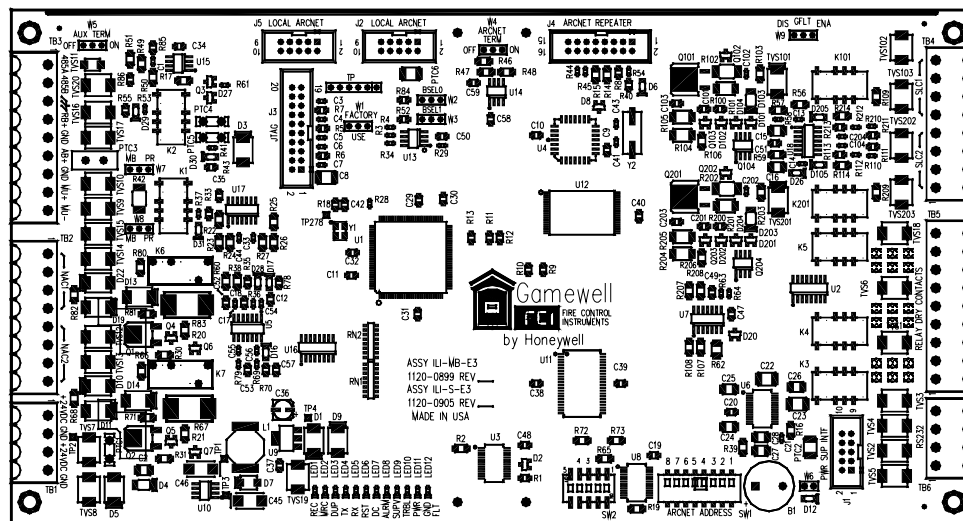


Figure 3-12.B ILI-S-E3 Signaling Line Circuit Sub-Assembly

3.6 Intelligent Loop Interface – Expansion Board (ILI-S-E3) (Optional)

The ILI-S-E3 provides the E3 Series™ control panel with two (2) additional signaling line circuits. The layout is similar to the ILI-MB-E3 with the exception that a number of components are omitted.

3.6.1 ILI-S-E3 Wiring Connections

See Table 3-9 for the ILI-S-E3 wiring connections.

Table 3-9 ILI-S-E3 Field Wiring Connections		
Designation	Description	Comments
TB1-1, TB1-3	+24 V IN	+24 VDC Input
TB1-2, TB1-4	GND	Common negative from PM-9 TB4-2
TB1-1		Not used
TB1-2		Not used
TB4-1	SLC 2 A-	SLC 2 Style 6 Return
TB4-2	SLC 2 A+	SLC 2 Style 6 Return
TB4-3	SLC 2 B-	SLC 2 Style 4 Out
TB4-4	SLC 2 B+	SLC 2 Style 4 Out
TB4-5	SLC 1 A-	SLC 1 Style 6 Return
TB4-6	SLC 1 A+	SLC 1 Style 6 Return
TB4-7	SLC 1 B-	SLC 1 Style 4 Out
TB4-8	SLC 1 B+	SLC 1 Style 4 Out
TB6-1	RS-232 GND	
TB6-2	RS-232 RxD	
TB6-3	Supervision	
TB6-4	RS-232 TxD	
W1, W2	Jumper	Factory use only.
W4	Jumper	OUT = Normal Operation. IN = If the ILI-S-E3 is located at the end of the ARCNET bus.
W7, W8	Jumper	"MB" = For Master Box. PR = For Polarity Reversal
*W9	Jumper	OUT = Normal Operation. IN = If the ILI-S-E3 is supervising the PM-9 for Ground Fault.
W10	Jumper	OUT = Normal Operation. IN = To Disconnect SLC #1.
W11	Jumper	OUT = Normal Operation. IN = To Disconnect SLC #2.
W13	Jumper	OUT = Normal Operation. IN = To Disconnect the Audible Sounder.
W14	Jumper	IN = Changes baud rate to 115,200. OUT = Baud rate configured at commissioning.
J2, J5	Connector	Connects to J2 and J5 of the next ILI-S-E3.
J4	Connector	Connects to J7 of INI-VG or J10 of RPT-FO/UTP
*Note 1: Must be IN if this sub-assembly is monitoring the PM-9. Jumper is OUT for other subsequent sub-assemblies.		
*Note 2: Must be IN for first ILI-S-E3 or INI-VG. When W9 is installed, remove JMP1 in PM-9.		

3.6.2 Specifications

Operating voltage:	24 VDC (from PM-9 power supply)
Operating current:	0.081 amp.
Alarm current:	0.150 amp.
Operating temperature:	32° to 120° F (0° to 49° C)
Relative humidity:	0 to 93% non-condensing at 90° F (32° C)
Supervised	
Power-limited	

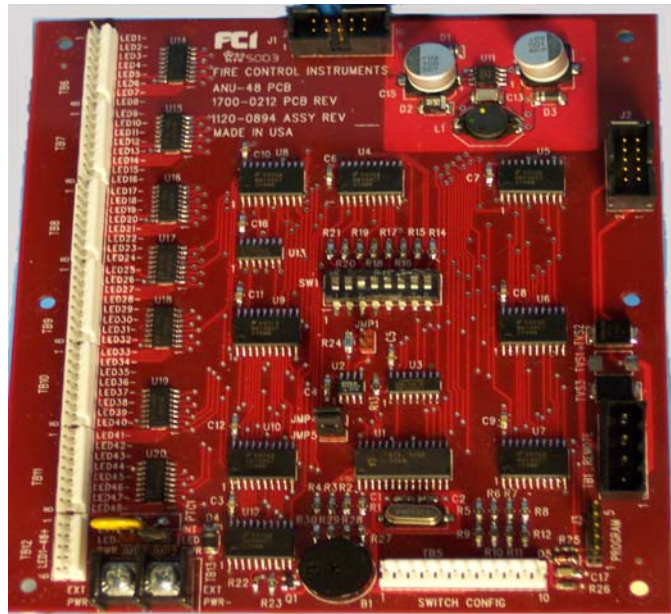


Figure 3-13.A Remote LED Driver Module (ANU-48)

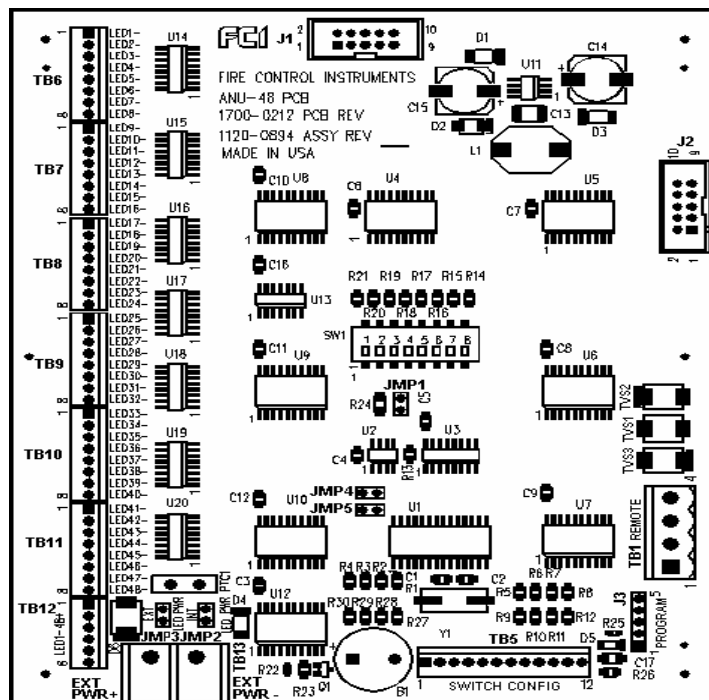


Figure 3-13.B Remote LED Driver Module (ANU-48)

3.7 Remote LED Driver Sub-Assembly (ANU-48) (Optional)

The ANU-48 is remotable and provides output to a remote annunciator which may be located up to 3,000 feet from the panel. Up to fifteen (15), additional annunciators can be connected. See the chart below for the resistance limitations for the connecting circuit. Note that if more than four (4), ANU-48 sub-assemblies are installed, an external regulated and power-limited power supply Listed for use with fire protective signaling units is required.

Quantity of the ANU-48 assemblies	1	2	3	4
Maximum resistance of the 24 VDC power circuit (ohms) to the most distant ANU-48.	40	20	14	10

3.7.1 ANU-48 Wiring Connections

See Table 3-10 for the ANU-48 wiring connections.

Note: For ASM-16 or ANU-48 wiring details, see Section 3.3.1 ASM-16 or ANU-48 Wiring Connections (Table 3-4 and Figure 3-8).

Table 3-10 ANU-48 Wiring Connections		
Designation	Description	Comments
TB1-1 to -4	Remote	RS-485 Output
TB5-1	SW1	*SPST - maintained or momentary
TB5-2	SW2	*SPST - maintained or momentary
TB5-3	SW3	*SPST - maintained or momentary
TB5-4	SW4	*SPST - maintained or momentary
TB5-5	SW5	*SPST - maintained or momentary
TB5-6	SW6	*SPST - maintained or momentary
TB5-7	SW7	*SPST - maintained or momentary
TB5-8	SW8	*SPST - maintained or momentary
TB5-9		Common for SW1, SW2
TB5-10		Common for SW3, SW4
TB5-11		Common for SW5, SW6
TB5-12		Common for SW7, SW8
TB6-1 to -8	LEDs 1 to 8	Negative outputs to remote LEDs
TB7-1 to -8	LEDs 9 to 17	Negative outputs to remote LEDs
TB8-1 to -8	LEDs 18 to 26	Negative outputs to remote LEDs
TB9-1 to -8	LEDs 27 to 33	Negative outputs to remote LEDs
TB10-1 to -8	LEDs 34 to 42	Negative outputs to remote LEDs
TB11-1 to -8	LEDs 43 to 48	Negative outputs to remote LEDs
TB12-1 to -8	LED1-48+	Positive common output for remote LEDs
TB13-1	EXT PWR +	+ From external power supply (max. 24 VDC)
TB13-2	EXT PWR -	- From external power supply
J1		RS-485 input connection to ANU-48
J2		RS-485 connection to next ANU-48
J3	Program	Factory use
JMP1		Factory use
JMP2		IN when using internal power
JMP3		IN when using external power
JMP4		Factory use
JMP5		Factory use
* 5 V @ 0.5 ma. Max		

3.7.2 ANU-48 DIP Switch Addresses

The address of the ANU-48 in the system is set via the DIP Switch. See the ANU-48 Installation Instructions, P/N 9000-0564 for addressing instructions.

3.7.3 Specifications

Operating voltage: 24 VDC FWR (from PM-9 power supply)

Operating current: 0.011 amp*

Supervised

Power-limited

*Add .003 amp for any LED to be lit for any condition when powered internally. When powered externally, each output driver circuit provides a maximum of .050 amp with a maximum of 2.4 amps per ANU-48 sub-assembly (48 circuits). Each load must have a minimum resistance of 544 Ohms when the external power is supplied from a PM-9. When powered internally, each LED must have a current limiting resistor in series to limit the current to .003 amps max per LED. (Example: 8.87K 1% or 9.1K 5%).

3.8 Panel Display LCD-E3

The LCD-E3 provides an 80-character display of system events together with indicating LEDs and control switches. It may be remotely located via a local RS-485 serial interface. The ILI-MB-E3 will support up to six (6), LCD-E3 displays. See Table 3-11 for the field wiring connections.



Figure 3-14.A LCD-E3 Sub-Assembly

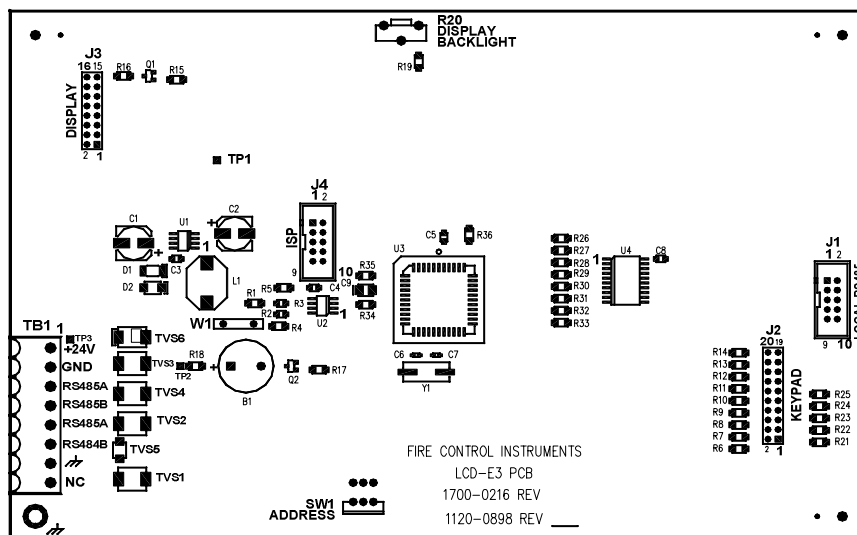


Figure 3-14.B LCD-E3 Sub-Assembly

Table 3-11 LCD-E3 Field Wiring Connections		
Designation	Description	Comments
TB1-1	+24	+24V in from ILI-MB-E3 TB3-6 non-resettable B+
TB1-2	GND	ILI-MB-E3 TB3-7
TB1-3	RS-485A	RS-485A output from ILI-MB-E3
TB1-4	RS-485B	RS-485B output from ILI-MB-E3
TB1-5	RS-485A	RS-485A input from ILI-MB-E3
TB1-6	RS-485B	RS-485B input from ILI-MB-E3
TB1-7	GND	Connect to earth ground
TB1-8		Not used
J1	Local RS-485	Alternate RS-485 connection
J2	Keypad	To keypad
J3	Display	To display
J4		Factory use

3.8.1 Address

Addresses 1 to 6 are set via SW1.

3.8.2 Specifications

Operating voltage: 24 VDC FWR (from PM-9 power supply)
 Operating current: 0.024 amp
 Alarm current 0.028 amp
 Supervised
 Power-limited



Figure 3-15 LCD-7100 Remote Display

3.9 Remote Display Sub-Assembly (LCD-7100) (Optional)

The E3 Series™ System can accommodate up to five (5), Remote Display sub-assemblies via the RS-485 serial interface. The LCD-7100 Serial Remote Annunciator provides an 80-character display and function keys for “Alarm Acknowledge”, “Trouble Acknowledge,” “Signal Silence,” “System Reset/Lamp Test” and “System Drill Test.”

The 80-character display shows all pertinent information except for menus. Keypad functions are enabled only when the keylock is turned to the “Unlocked” position, with the exception of the “Trouble Acknowledge” switch which silences the local audible trouble sounder.

Operating LEDs provided are:

- “Alarm”
- “Supervisory”
- “System Trouble”
- “Power Fault”
- “System Silenced”
- “NAC #1 Silenced” and “NAC #2 Silenced”

3.9.1 Address

Addresses from 1 to 5 are set via the address switch SW1.

3.9.2 Specifications

Operating voltage: 24 VDC FWR (from PM-9 power supply)
 Operating current: 0.012 amp
 Alarm current: 0.023 amp
 Supervised
 Power-limited

3.9.3 Mounting

The LCD-7100 is flush or surface mounted on a standard four-gang electrical box.

3.10 Standby Battery Calculations

Calculations are made by use of Table 3-12 below.

Table 3-12 Battery Standby Chart						
Qty	Module	Description	Supv. Current	Alarm Current	Total Supv. Current	Total Alarm Current
	ILI-MB-E3	Intelligent Loop Interface, Main Board	0.081 A	0.150 A		
	ILI-S-E3	Intelligent Loop Interface, Expansion Board, two additional SLCs	0.081 A	0.150 A		
	LCD-E3	LCD display/Switch Control	0.024 A	0.028 A		
	RPT-E3	ARCNet Repeater	0.013 A	0.013 A		
	DACT-E3	Digital Communicator	0.018 A	0.018 A		
	ASM-16	Auxiliary Switch Sub-Assembly	0.011 A†	0.011 A†		
	ANU-48	Remote LED Driver	0.011 A‡	0.011 A‡		
	PM-9	Power Supply	0.050 A	0.050A		
	LCD-7100	Remote Display Module	0.012 A	0.023 A		
	NGA	LCD Annunciator	0.200 Aα	0.200 Aα		
		Smoke and heat sensors				
		Notification Appliances				
		Auxiliary Power Devices				
		Miscellaneous devices				
TOTALS						
A	Total Supervisory Current					
B	Enter number of standby hours required**					
C	Multiply Line A times hours in Line B—enter					
D	Total alarm current from above					
E	Enter alarm sounding period in hours.					
F	Multiply Line D times Line E —enter					
G	Total of Lines C & F—enter					
H	Multiply Line G by 1.2 --- enter (Total ampere/hours required***)					
NOTE:						
* With all LEDs and optional buzzer energized.						
** 24 hrs for NFPA 72 protected premises or Central Station signaling, 60 hrs for Auxiliary or Remote Supervising Station Fire Alarm Systems.						
*** Use the next size battery with a capacity greater than required. (Use only Gamewell-FCI Model B-1. 9R, B-6R, B-7R, B-17R, B-31R, or B-55R batteries). NOTE: Maximum standby current for 60 hours when using 55 A/H batteries is .560 A.						
α Normal operating current. During power failure, current drops to 0.045 amp since back light is extinguished.						
† Add .003 amp for any LED to be lit for any condition when powered internally.						
‡ Add .003 amp for any LED to be lit for any condition when powered internally. When powered externally, a max. output current of .050/point is available for a maximum total output of 2.4 amps/ANU-48.						

3.11 Analog Sensors

The E3 Series™, signaling line circuits accommodate only Gamewell-FCI approved, UL Listed, Factory Mutual Approved analog sensors and bases. Each signaling line circuit can accommodate 159 sensor address points, using Address numbers 01 to 159. See Gamewell-FCI Publication, P/N 9000-0427 for a list of approved sensors and bases.

3.11.1 Address Switches

Addresses are set via the rotary switches on each sensor or module. Setting the address is accomplished by turning each of the two (2) rotary switches until they point to the numbers indicating the proper address (e.g., SW1 @ #2 and SW2 @ #5 would indicate Address 25).

3.11.2 Drift Compensation

The E3 Series™ contains a program that performs continuous testing of analog sensors, including sensitivity tests. This program will compensate all analog sensors for age and environmental conditions. Should a problem occur in a sensor, a “Failed Test”, “Dirty” or “Very Dirty” indication for the specific device will appear on the system display and be recorded in the Event Log and the Serial Port.

3.12 Addressable Modules

The E3 Series™ accommodates only Gamewell-FCI approved, UL Listed, Factory Mutual Approved addressable modules. Each SLC can accommodate 159 addressable module points, using Addresses 01 through 159. See Gamewell-FCI Publication, P/N 9000-0427 for a list of approved modules. The modules that occupy this address range consist of Monitor (input) modules and Control (output) modules.

3.12.1 Monitor Modules

Dry contact devices and two wire smoke detectors can be monitored by these modules, which act as the interface between the manual station, waterflow switch, etc. and the control panel. See Gamewell-FCI Publication, P/N 9000-0427 for a list of approved modules.

3.12.2 Control Modules

Notification appliances, relays and circuits using compatible voltages (through an internal dry contact) can be controlled by these modules. See Gamewell-FCI Publication, P/N 9000-0427 for a list of approved modules.

3.13 Address Switches

These addresses are set via the rotary switches on each module. Setting the address is accomplished by turning each of the two (2), rotary switches until they point to the numbers indicating the proper address (e.g., SW1 @ #5 and SW2 @ #7 would indicate Address 57).

4.0 Programming/Operation Instructions

4.1 LED Indicators (LCD-E3)

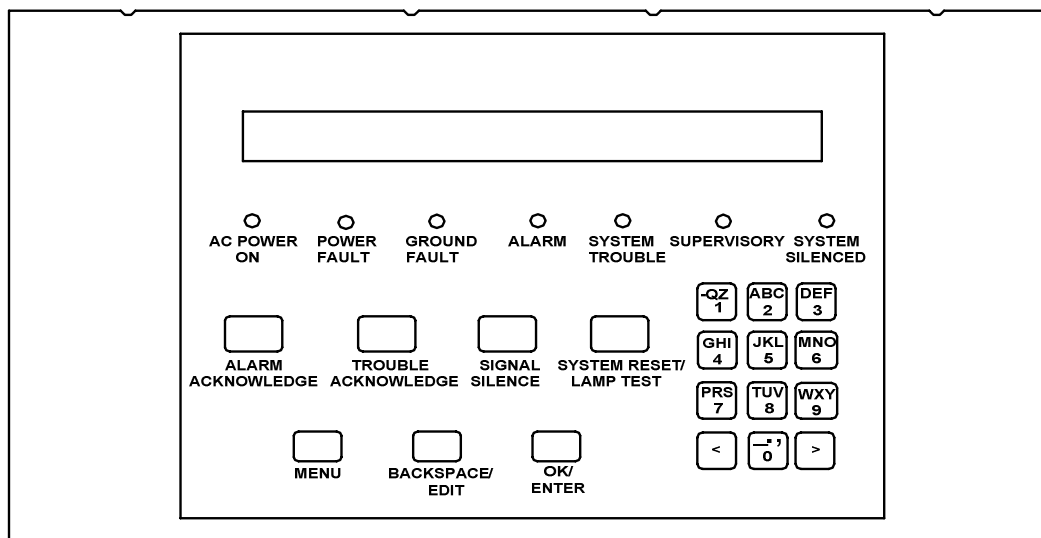


Table 4-1 LED Indicators

Designation	Description	Comments
AC Power On	(green)	Lights to indicate the presence of 120 VAC input.
Alarm	(red)	Lights when system is in alarm, flashes until alarm is acknowledged.
Supervisory	(yellow)	Lights when supervisory condition exists, flashes until trouble acknowledge is performed.
System Trouble	(yellow)	Lights to indicate trouble condition, flashes until trouble is acknowledged.
Power Fault	(yellow)	Lights during a LOW or NO Battery condition.
Ground Fault	(yellow)	Lights to indicate a ground on a field conductor.
System Silenced	(yellow)	Lights when a System Silence has been performed.

4.2 Switches (LCD-E3)

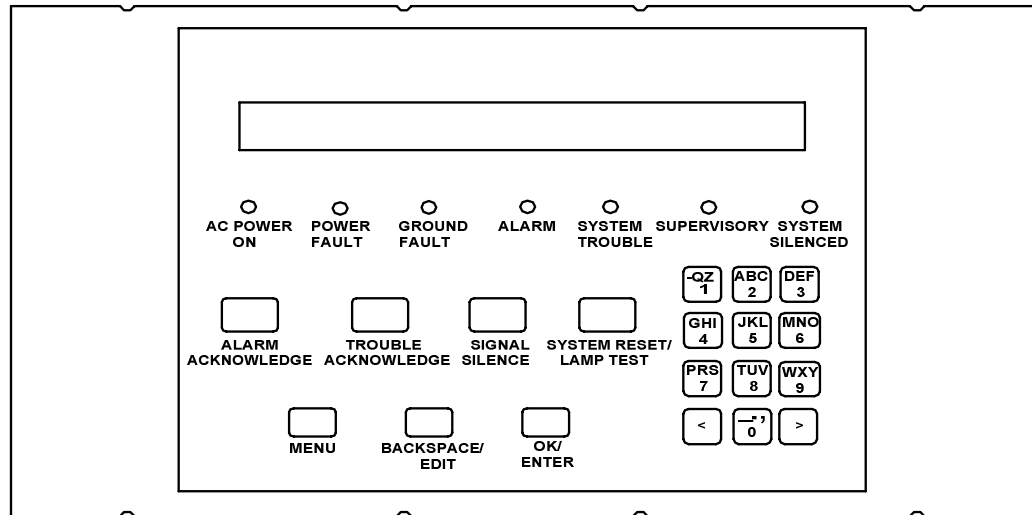


Table 4-2 Switches

Designation	Comments
Alarm Acknowledge	Silences the panel audible sounder. This must be pressed once for each Alarm condition present in the system.
Trouble Acknowledge	Silences the panel audible sounder. This must be pressed once for each Trouble or Supervisory condition present in the system.
Signal Silence	Press once and any outputs programmed as silenceable will be deactivated. (All applicable silence LEDs will light). A second activation will re-activate the previously silenced outputs. This switch only functions if an Alarm or Supervisory condition exists in the system.
Lamp Test/Reset	Press momentarily and all LEDs (including all elements in the display) will light momentarily. Press and hold to reset the system.
Menu/Back	Used to access certain system functions, e.g. Walk Test. The display will prompt the operator as to which function applies. "Menu" is pressed to initially put the E3 Series™ into menu mode. The "Back" function will step the operator out of the menu mode one element at a time.
BKSP/Edit	Used in menu operations. The display will prompt the operator as to which function applies.
OK	Accepts any changes made in the menu field.
Numeric Keys	These 12 keys allow the user to choose a specific point address by using the numbers for point sensitivity reading, disabling an address, etc.

5.0 Programming

UL 864 Programming Requirements

NOTICE to users, installers, authorities having jurisdiction, and other involved parties:
This product incorporates field programmable software. In order for the product to comply with the requirements in the Standard for Control Units and Accessories for Fire Alarm Systems, UL 864 9th Edition, certain programming features or options must be limited to specific values or not used at all as indicated below.

System programming is performed via portable computer and the Gamewell-FCI CamWorks™ Configuration. The following menu options are available via the optional LCD-E3 display/keypad module.

5.1 MAIN LCD-E3 Menu Selections

CONFIG.

Pressing CONFIG on the main menu automatically opens the Autoconfig menu, where automatic configuration of the system is accomplished. There are two modes:

- 1) "Clear and Reconfigure" – Can be used to initialize a completely new sub-assembly prior to FCP configuration.
- 2) "Update SLCs only" This feature provides the ability to preload the system with a full configuration, then use Autoconfigure to activate only those circuit devices that are physically present. The process can be repeated as new SLC sections are connected or temporarily removed.

5.2 WALK / DRILL Menu Selection

Drill ON/OFF

Is a simple ON or OFF selection. ON will activate the NACs, while OFF will deactivate them.

Audible Test

Is a simple ON or OFF selection for an audible walk test. The NACs will sound twice for a trouble, 3 times for a supervisory signal and 4 times for an alarm.

5.3 I/O Menu Selection

Output ON/OFF

Forces the toggling on or off of a specified output. These outputs can include NAC 1, NAC 2, Muni. Ckt. (if present) and any Addressable Control Point.

Enable/Disable

Allows the user to take any addressable device on either SLC and disconnect it through software. While disabled, a point will report a trouble until it is enabled, but will not cause or respond to an alarm.

5.4 CLOCK Menu Selection

Time

Is set in 24 hour notation. It is set with hours, then minutes "HHMM".

Date

Is set as month, date and year "MMDDYY".

5.5 MISC Menu Selection

This selection opens a "MISC OPTS" menu that allows the user to change the RS232 port Baud rate, or perform a hard reset of the ILI-MB-E3. Baud rate options are provided to allow connection to a variety of printers. The available Baud rates are: 115200, 19200, 9600, 4800, 2400, or 1200. This change is temporary. (Doesn't change the configuration)

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5.6 LOG Menu Selection

Display Log	Opens the System Display to all events in the buffer memory.
Print Log	Sends the entire buffer memory to the RS-232 port.
Clear Log	(Hard reset) will eliminate all events stored in the buffer memory.
Sensitivity Report	Will send sensor sensitivity information to the RS-232 port.

5.7 INFO Menu Selection

This selection displays the Firmware Version and time/date of the last configuration change in the E3 Series™. It shows a code for the type of the most recent configuration update.

The codes are as follows:

1. CamWorks™ Configuration Upload
2. Auto configuration (Options 1 or 2 on the Autoconfig Menu)
3. Network node map change.
4. Manual update via the "CS" terminal command.

6.0 Power Up Procedure

6.1 General

- 1) **IMPORTANT-** Prior to the application of power to the system, all circuits must be clear of shorts, grounds and stray voltages. Failure to do so could cause irreversible damage to the equipment.
- 2) Ensure that all cables and optional modules (if any) are installed and secured per the Installation Instructions. DO NOT install any field wiring at this time. Connect the End of Line devices to the notification appliance and municipal (if installed) circuits.
- 3) Power the panel with AC first. The system will initialize and indicate a "Battery Missing" condition.
- 4) Connect the batteries, taking care to observe polarity.
- 5) The system should be in normal condition. You may proceed with the installation of field wiring. Check all wiring prior to connection to the control panel. Do not use this panel as a circuit tester.

6.2 To Set the System Time

- 1) Press the MENU/Back button on the keypad and enter the Level 1 password, XXXXXX.
- 2) Press the OK button and the Main Menu will be displayed.
- 3) Press the Number 4 and the Clock Menu will be displayed.
- 4) The following numbers indicate the number that opens the time or date setup:
 - Number 1 opens the Time setup.
 - Number 2 opens the Date setup.The data is entered by using the keypad and the OK button when each section is completed. The OK button acts as an Enter Key.
- 5) Press the Reset/Lamp test button and ensure that the time and date remain correct.

6.3 Automatic Configuration

- 1) Press the Menu/Back button on the keypad and enter the Level 4 password, YYYYYY.
- 2) Press the OK button and the Main Menu will be displayed.
- 3) Press the Number 1 and the Configuration Menu will be displayed.
- 4) Since this is the first time the system is configured, press the Number 1 to initiate the Clear, then Configure process. This will place all of the system settings to the factory default and then read all of the devices correctly connected to the two SLCs. After this process is complete, the system may be given an initial test to assure all of the devices have been installed into the system memory.

7.0 Test and Maintenance

7.1 Test

The system must be tested periodically in accordance with the requirements of NFPA 72, National Fire Alarm Code, and/or applicable state and local codes.

7.2 Maintenance

We recommend the replacement of the system standby batteries after three years of service unless otherwise indicated by the battery manufacturer. There are no user-serviceable components in this equipment. Sub-assemblies should be returned to the factory for servicing.

8.0 Power-Limited – Non Power-Limited Wiring

UL Standard 864, (Control Units for Fire Protective Signaling Systems), requires that a minimum of 1/4 inch separation be maintained between power-limited circuits and non power-limited circuits. The control unit is designed so the required separation between these circuits (power-limited vs. non power-limited) is maintained at the field wiring terminals.

In order to fully comply with the intent of these requirements, however, the minimum 1/4 inch separation must also be maintained between the field wiring conductors of power-limited circuits and non power-limited circuits. This may be accomplished by routing the field wiring as shown in Figure 8.0.

Unless otherwise indicated on the unit, all field-wiring circuits are power-limited except:

- AC power circuit
- Standby battery circuit
- Telephone line connections

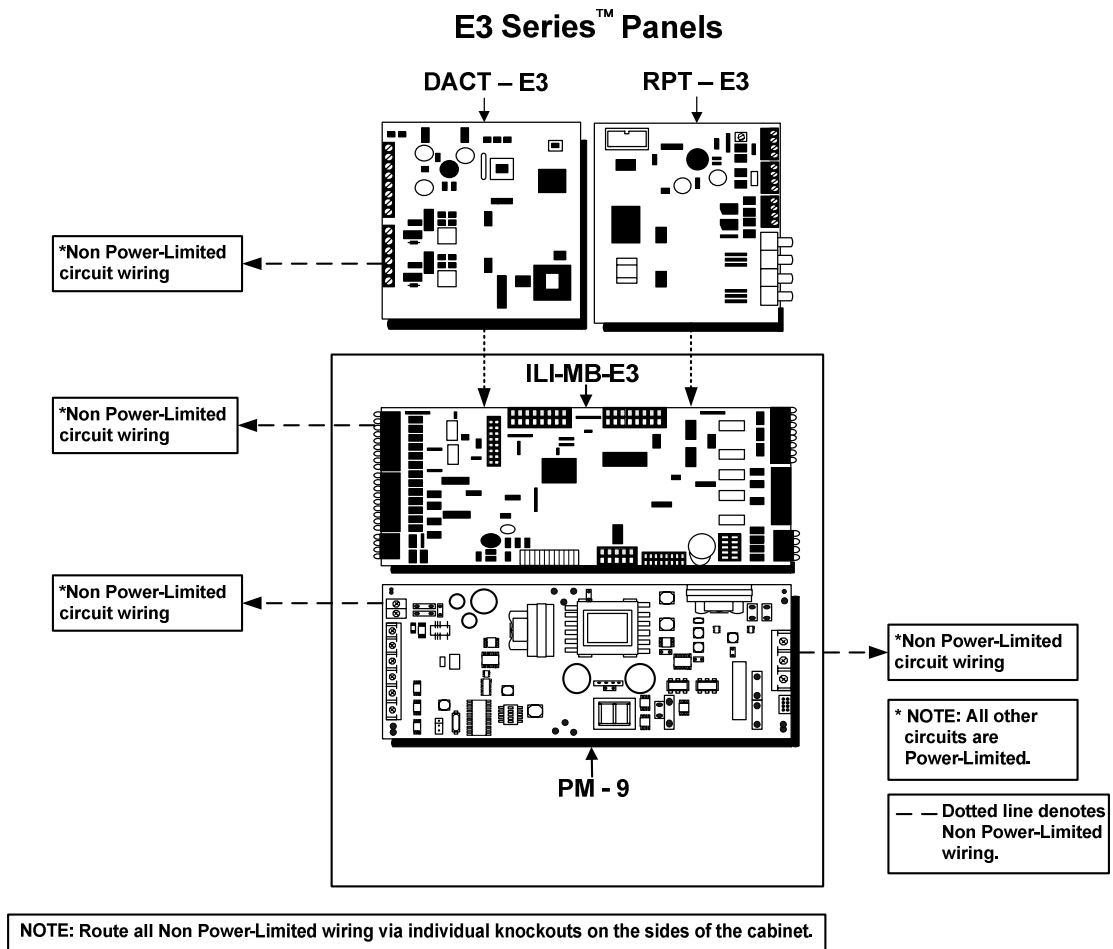


Figure 8.0 Power-Limited – Non Power-Limited Wiring

Limited Warranty

Honeywell International Inc. warrants products manufactured by it to be free from defects in materials and workmanship for eighteen (18) months from the date of manufacture, under normal use and service. Products are date stamped at time of manufacture. The sole and exclusive obligation of **Honeywell International Inc.** is to repair or replace, at its option, free of charge for parts and labor, any part that is defective in materials or workmanship under normal use and service. All returns for credit are subject to inspection and testing at the factory before actual determination is made to allow credit. **Honeywell International Inc.** does not warrant products not manufactured by it, but assigns to the purchaser any warranty extended by the manufacturer of such products. This warranty is void if the product is altered or repaired by anyone other than **Honeywell International Inc.** or as expressly authorized by **Honeywell International Inc.** in writing, or is serviced by anyone other than **Honeywell International Inc.** or its authorized distributors. This warranty is also void if there is a failure to maintain the products and systems in which they operate in a proper and workable manner. In case of defect, secure a Return Material Authorization form from our Return Authorization Department.

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This warranty replaces all previous warranties and is the only warranty made by **Honeywell International Inc.** No increase or alteration, written or verbal, of the obligation of this warranty is authorized.

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by Honeywell

Gamewell-FCI
12 Clintonville Road
Northford, CT 06472-1610 USA
203-484-7161
fax: 203-484-7118

www.gamewell-fci.com

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