EST™
Life Safety & Communications

# EST3 Base Platform

## With Signature Series Fire Alarm


## Overview

EST3 is a modular control platform uniquely designed to meet the needs of applications ranging from standalone single panel fire alarm systems to multi-panel networks with unified fire alarm, security, access control and Mass Notification functions. Each function uses many of the same components, simplifying system layouts.

Virtually all EST3 operating features are software-controlled. A powerful System Definition Utility program helps define system operations in a fraction of the time required by previous methods. This gives EST3 great site flexibility and ensures operational changes and upgrades will be possible years after the initial installation.

EST3 is uniquely designed to meet the life safety needs of any size facility. The function of each panel can be customized by using an extensive selection of plug and play local rail modules.

With support for 64 nodes of up to 2,500 devices each, this network's multi-priority peer-to-peer token ring protocol delivers a fast alarm response time across any size network. Add to that the ability to network panels with fiber or copper connections with an overall length of 160000 ft - that's 30 miles - and you've got virtually unlimited networking options.

The EST3 is modularly listed under the following standards: UL 864 categories: UOJZ, UOXX, UUKL and SYZV, UL 294 category ALVY, UL 609 category AOTX, UL 636 category ANET, UL 1076 category APOU, UL 365 category APAW, UL 1610 category AMCX, UL 1635 category AMCX, UL2572 Mass Notification.
Also listed to ULC-S527, ULC-S303, and ULC/ORD-C1076.

## Standard Features

- Listed for Mass Notification/Emergency Communication, Fire, Security, Access Control, and Emergency Voice Alarm
- 168-character LCD
- Exceptional alarm response times
- Network supports copper, multi-mode fiber, single-mode fiber, or a combination of all three
- Total network wiring over 160,000 feet
- Eight channels of multiplexed digital audio on a single pair of wires or fiber filiment
- Zoned, distributed and banked audio amplifier options
- Local, Proprietary, and Central Station system operations
- In retrofit applications, existing wiring may be used if code compliant
- Supports Edwards Signature Series detectors and modules
- Designed in accordance with ISO-9000 quality standards
- UL864 Ninth Edition Listed
- UL2572 Listed for Mass Notification
- Optional earthquake hardening: OSHPD seismic pre-approval for component Importance Factor 1.5

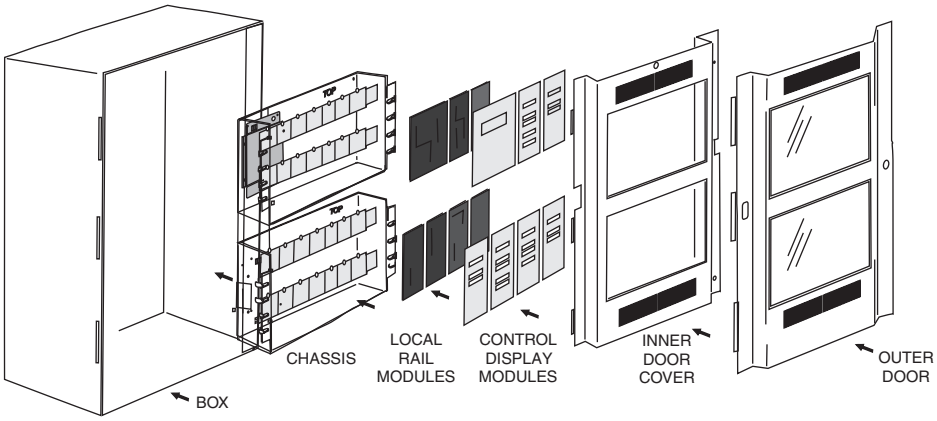


DATA SHEET 85010-0145
Not to be used for installation purposes. Issue 2

# Outstanding Features

EST3 system components are arranged in layers, starting with the backbox and finishing with inner and outer doors. Cabinets are available with room for up to 20 modules and system batteries up to 65 AH. A single 24-volt battery can act as the secondary power supply for all four internal power supplies. Once the backbox is installed, up to four power supplies can be installed in the chassis assembly. The power supplies use a unique paralleling arrangement that ensures the optimum use of each supply. Each supply has the capacity to deliver up to 7 amps at 24 Vdc (28 amps total).

The function of each life safety network panel is determined by the Local Rail Modules (LRMs) plugged into the panel's chassis. An extensive variety of modules are available, including central processing units, input/output circuit modules, communication modules, security/access control modules, and audio amplifier modules.




The top layer of the LRMs is referred to as the user interface layer. This layer is made up of the Main Display Interface module and a system of generic control/display modules. Any control/display module can mount on any LRM. This maximizes flexibility of design for custom systems. The inner and outer doors finish and secure the enclosure.

A single panel can support up to 2,500 addressable points, provide 28 amps @ 24 Vdc, provide access control for up to 124 doors, and still have room for future expansion. If a single panel is not large enough or you need to distribute functionality throughout the project, then you can network up to 64 panels together!

## Networking/Communications

The EST3 Life Safety Network uses a multi-priority peer-to-peer token ring protocol. The protocol gives EST3 the exceptionally fast alarm response time of less than three seconds across the network, virtually independent of the total number of nodes. The EST3 token ring network configuration also affords long distances between panels. The distance between any three panels on #18 AWG (1.0 $mm^2$) is 5,000 ft (1,523m) for both network control and digital audio signals. Supporting a maximum of 64 panels on a network, the total network length can be in excess of 160000 ft (48768m). Network and audio communication are via RS-485 serial ports. Each two-wire circuit supports Class A (Style 7) or Class B (Style 4) wiring configurations. Fiber optic media is also available.

As an indication of the high level of system integration, off-premise communications is handled by the Modcom modem communicator module. This module provides the Digital Alarm Communicator Transmitter (DACT) function, sending system status signals for up to 255 accounts to up to 80 different central monitoring stations and/or commercial paging carriers. The Modcom also acts as a V.32bis 14.4K-baud modem for uploading and downloading of system access control data remotely via the telephone network.

## Digital Audio

EST3 digitized audio can deliver up to eight audio messages *simultaneously* over a single pair of wires! This is plenty of capacity for both live and pre-recorded messages. EST3 easlly supports the needs of mass notification messaging, and fire alarm messaging by providing the ability to bring not only pre-recorded messages but also live voice messaging supporting not only evacuation announcments but the messaging needed to support the risks that may require shelter-in-place and relocation messaging.

All audio messages and live pages originate at the Audio Source Unit (ASU) that can store up to 100 minutes pre-recorded audio messages as .wav files. These messages can be automatically directed to various areas in a facility under program control. On the receiving end, zoned amplifiers installed in remote fire alarm cabinets receive and decode the digital messages. The messages are then amplified and sent out to the speakers.

The availability of eight different channels opens a number of new *simultaneous* notification possibilities:

1) Live voice page for MNEC or fire-related instructions;
2) Emergency floor evacuation/notification message;
3) Alert message on floors above and below the emergency;
4) Stairwell evacuation reinforcement message;
5) Elevator cab information messages;
6) Lobby message instructing occupants to exit the building;
7) Concourse instructions to occupants not to enter the lobby;
8) Other instructions to areas not directly affected by the emergency.

Any combination of the eight audio channels can be automatically directed to any or all areas of the building, with total manual override as required. Eight channel capability assures that one message is never interrupted in order to process another, a common fault with two-channel systems. This eliminates any chance of confusing the occupants with conflicting messages.

Survivability is also an integral part of EST3's digitized audio system. Default audio messages are continuously transmitted to all network amplifiers by the ASU. These messages provide audio supervision for the digital audio chain, and act as a default signal if the network data circuit fails or should message control information fail to reach the ASU. If the audio data circuit fails, each amplifier generates a 1KHz temporal (3-3-3) tone that is transmitted during an alarm. In the event of an amplifier failure, a backup audio amplifier is automatically substituted for the failed amplifier in the cabinet, restoring audio capability. In the unlikely event of multiple amplifier failures, the backup amp replaces the amplifier actively processing the highest priority message in the cabinet. When messages are no longer directed to a failed amplifier such as when a high priority page message ends, the backup amp is dynamically reassigned to the next highest priority failed amplifier actively processing messages

The Firefighters Telephone Control unit (FTCU) provides two-way communications between remotely located phones and the fire command center. The alphanumeric display makes operation intuitive, and a single switch permits the phone signals to be used to issue pages in the facility.

Digitized audio increases notification messaging flexibility, reduces wiring and installation costs, provides enhanced supervision and survivability, and is easy to use.

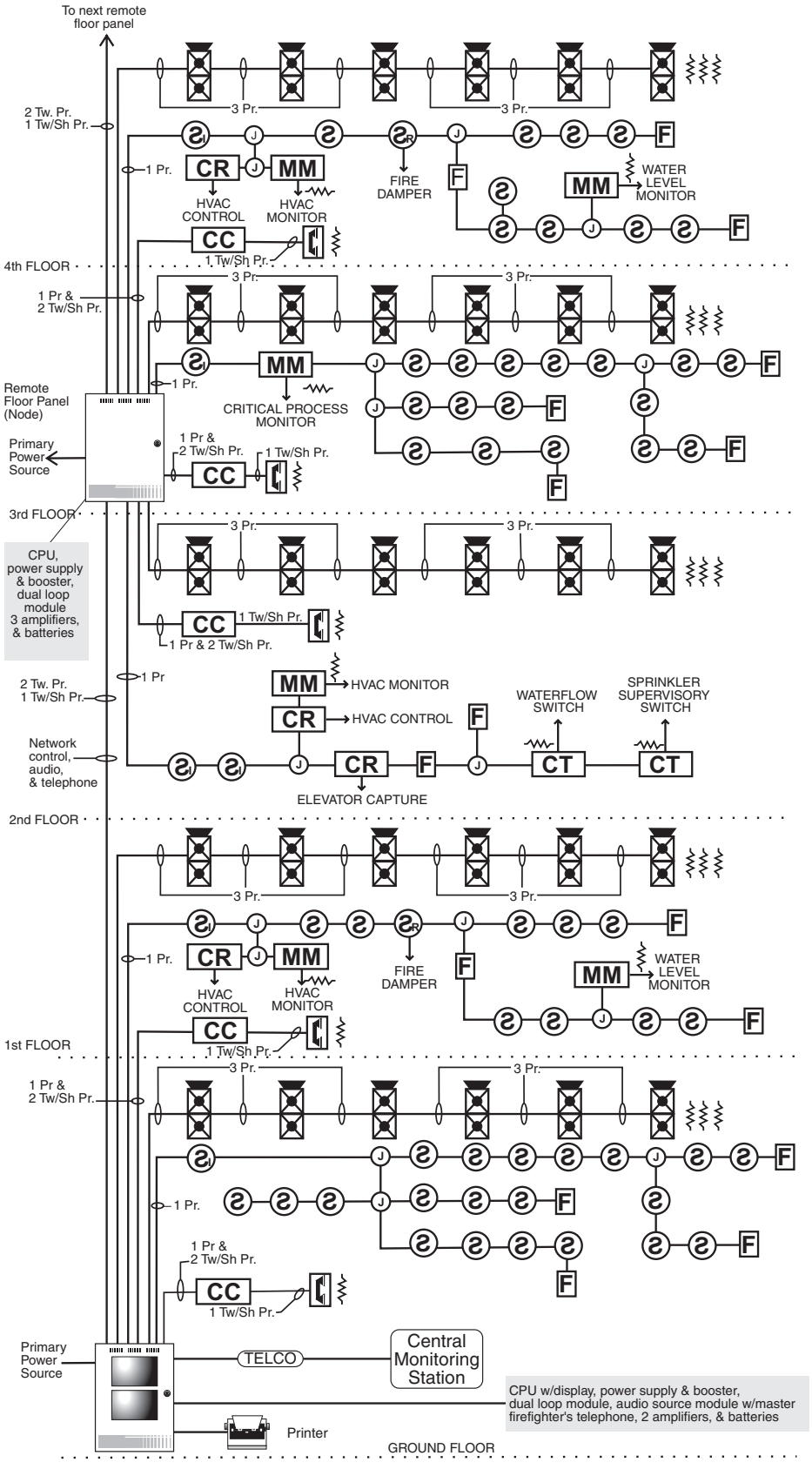
## Enhanced Reliability & Survivability

The EST3 uses distributed technology, designed to survive expected and unexpected events including earthquakes. Simple-to-install kits provide internal hardening that meets ;requirements defined by *Uniform Building Code* (UBC 1997); *International Building Code* (IBC 2006); and, *Acceptance Criteria for Seismic Qualification by Shake-Table Testing of Nonstructural Components and Systems* (AC-156). Seismic component importance factor of 1.5 can be met by adding appropriate anchorage for local conditions. There is no need for special installation methods for EST3 field devices including signals and detection devises. By following standard mounting methods, along with any local requirements, seismic Importance Factor 1.5 may be gained in order to further enhance system survivability.

On the initiating side, intelligent Signature Series detectors can make alarm decisions on their own, and do not involve other system components in this important decision-making process. Sensor-based technology must communicate data to a remotely located common panel where alarm decisions are made. Failure of this centralized processor can cripple sensor-based systems. With EST3, a panel CPU failure does not disable a panel's ability to provide protection. In the event of a CPU failure, the intelligent device controllers can still receive alarms and distribute the alarm information to all other modules in the panel. Modules in the panel are capable of responding with a programmed standalone alarm response.

When a network is wired in a Class B configuration, a single break or short on the wiring isolates the system into two groups of panels. Each group continues to function as a peer-to-peer network, working with their combined databases. When wired using a Class A configuration, a single break or short on the network wiring causes the system to isolate the fault, and network communication continues uninterrupted – without any loss of

## Typical Wiring



EDWARDS
A UTC Fire & Security Company

**Detection & alarm since 1872**

**U.S.**
**T 888-378-2329**
**F 866-503-3996**

**Canada**
**Chubb-Edwards**
**T 519 376 2430**
**F 519 376 7258**

**Southeast Asia**
**T : +65 6391 9300**
**F : +65 6391 9306**

**India**
**T : +91 80 4344 2000**
**F : +91 80 4344 2050**

**Australia**
**T +61 3 9239 1200**
**F +61 3 9239 1299**

**Europe**
**T +32 2 725 11 20**
**F +32 2 721 86 13**

**Latin America**
**T 305 593 4301**
**F 305 593 4300**

**utcfireandsecurity.com**



function. Should multiple wiring faults occur, the network re-configures into many sub-networks and continues to respond to alarm events from every panel that can transmit and receive network messages. Survivability is maximized as responses originating and executed by a single panel are always carried out because a copy of the system database is stored in the panel's memory.

Scheduled maintenance improves system availability, and EST3 is designed to make system maintenance easy. System components are designed to assist in routine and time-consuming service functions.

- EST3 service groups are defined by location, not by system wiring. There is no need to disable an entire floor to test a single device.
- According to their UL listings, Signature Series detectors do not require routine sensitivity testing – a real timesaver.
- Comprehensive internal and external monitoring quickly identifies most problems to a component level, including ground faults that can be identified down to the module.
- Parts are easy to replace. Modules plug in and use automatic addressing and plug-in field wiring. No DIP switches are used.
- Firmware in system modules and Signature devices is easily upgraded as new advances in detection and control technology are made available.
- Advanced system diagnostics are provided in the EST3 System Definition Utility.

## User Friendly

A comprehensive survey of users resulted in system features and controls that are easy to use.

The main display interface shows the operator the first and most recent system events – without ever touching a single control! All system events are sent to one of four message queues. Alarm messages are never intermixed with trouble or supervisory signals, eliminating confusion. For more information the *Details* switch provides additional information about the highlighted device. The operator can easily review supervisory, trouble, and monitor messages by simply selecting the appropriate message queue. After a few minutes of inactivity, the system automatically returns to displaying the first and most recent events.

Optional manual control switches and display modules can be arranged on the system operator layer to suit the application. These modules can be used to provide additional HVAC controls, manual selection of audio circuits, or other required manual control functions.

The digital audio system uses only five basic controls to direct all paging messages.

- ALL CALL directs page messages to all zones in the facility.
- Page to EVACUATION automatically directs page messages to the fire area.
- Page to ALERT automatically directs page messages to the areas receiving the alert message.
- All Call Minus automatically directs page messages to the areas NOT receiving the evacuation or alert messages.
- Page by Phone selects the firefighters' telephone system as the source for paging.

The Firefighters' Telephone Control Unit (FTCU) uses an alphanumeric display to indicate the source of incoming calls. Operators simply scroll through the list and hit the "Connect" button when the desired call is highlighted. There is no need to look through rows of lamps and switches to determine the source of calls. Up to five remote locations can be in simultaneous two-way communications with the FTCU.

## System Configuration

The powerful EST3 System Definition Utility (SDU) helps define flexible system operations in a fraction of the time required by other systems. Based on an object-oriented system of rules, virtually all EST3 operating features are software-controlled. This gives the designer great flexibility in integrating mass notification, fire, security, and access control functions into a single seamless design.

A report generator provides a complete library of system reports that are invaluable for troubleshooting, including a printout of Signature device connections as the devices are actually wired.

Use of software-based components permits the SDU to add new features to the system. Even the Signature Series devices are capable of upgrading firmware as new detection algorithms become available.

EST™
Life Safety & Communications

# EST3X Life Safety Control System

## Description

EST3X represents the latest generation of life safety control panels for mid to large sized applications. With large multi-message displays and innovative controls, intuitive interfaces, and bold colored cabinets — these systems capture the imagination, and catch the eye. But behind the LCD display is where they really shine.

New microprocessors and chipsets take full advantage of the latest advances in computing technology, leading to smarter, faster, higher-capacity processing and more efficient designs. EST3X's patented Voltage Boost™ technology, for example, delivers consistent voltage – even at low battery power – resulting in lighter cable requirements and/or longer runs. That saves time and money.

High performance processing also leads to powerful networking features and versatile digital audio functionality. The wide range of EST3X configurations include standalone operation, networking with up to eight nodes, or integration with an EST3 network comprising as many as 64 nodes — complete with EST3-Sixty mass notification capabilities and display of security events.

EST3X sets a new standard in front-panel life safety control interfaces. Its exclusive SpeedTouch™ rotary control offers nimble forward and back scrolling through events and options, while a mere tap of the control selects items with an unprecedented fluidity of motion. Its extra-large backlit display reveals up to eight concurrent messages, and switch/LED strips provide ample space for meaningful custom labels. And for end users, large tactile control buttons instill confidence and promote quick response when time is of the essence.

## Standard Features

- Up to six intelligent analog loops hosting as many as 1,500 Signature Series devices per panel
- Optional integrated eight-channel digital audio
- 10 amp power supply with universal 94 to 264 Vac input voltage
- Patented Voltage Boost™ technology delivers consistent voltage — even at low battery power
- Four built-in 3-amp notification/auxiliary circuits
- Large 24-line by 40-character backlit LCD
- Simplified operation with the SpeedTouch™ rotary control
- 65 amp hour battery charger
- Eight- or 64-node network nodes using copper and/or fiber
- Supports up to 30 R-Series remote annunciators
- Removable terminals on all low voltage wiring
- Space for up to three additional option cards such as extra SLC loops, amplifiers, or dialer/modem
- Optional Ethernet interface
- 1,100 event history log

# Application

Application flexibility is where EST3X's leading edge computing power is put to best use. This generation of control panels is equally at home as the center of a simple single-building standalone system as it is when part of a sophisticated life safety network serving thousands of points across multiple buildings. Optional voice evacuation bridges the gap left by other mid-range systems, and makes these panels a cost-effective solution for most applications.

### Strong Networking

Networking is among EST3X's strong suits. Highly efficient RS485 connectivity, plus fiber-optic communications deliver faster response times and more sophisticated diagnostic capabilities, while cost-effective remote annunciation solutions keep basic monitoring and control always within reach.

A simple EST3X network can comprise up to eight nodes – enough to serve the needs of most campuses and larger buildings. Its ability to join an EST3 network with as many as 64 nodes extends EST3X's reach into mass notification applications, security reporting, as well as making it an ideal candidate for retrofits.

### High Capacity Audio

An optional paging microphone provides local, as well as remote, audio functions.

EST3X features a full eight channels of integrated digital audio with up to two minutes of on-board programmable message storage. An optional high quality paging microphone gives live access to local, as well as remote, audio functions. Auxiliary inputs are available for mass notification operations, and ZA Series amplifiers may be mounted directly on the EST3X rail assembly.

### Seamless System Integration

EST3X borrows much from it's larger sibling, the venerable EST3 Life Safety Platform. And for good reason: by integrating with the EST3 networking and computing environment, an EST3X control panel can serve as a cost-effective remote node for extinguishing, smoke control, or even mass notification functions — all within the same compliance framework.

Retrofits and expansions benefit enormously from this arrangement, but programming and equipment management for new installations is equally efficient as a result of these shared resources. EST3X will accommodate up to three EST3 modules on its own rail assembly, giving it access to such proven EST3 successes as zoned amplifiers, conventional device circuits, modem communicators, and RS-485 functions. Meanwhile, installers familiar with EST3 configuration will find that the two systems share many of the same programming and diagnostic conventions.

### Local and Remote Annunciation

Up to 30 R-Series annunciators may be configured for each node on the EST3X network.

Up to 30 R-Series LCD, LED annunciators and driver interface cards may be configured for each node on the EST3X network. No additional nodes are required for annunciation purposes. In addition, EST3X supports EST3 network annunciators, while GCI and GCIX driver interface cards provide cost-effective graphic annunciation solutions. And all annunciator inputs and outputs are easily programmable through the rules and labels function of EST3X's Software Definition Utility.

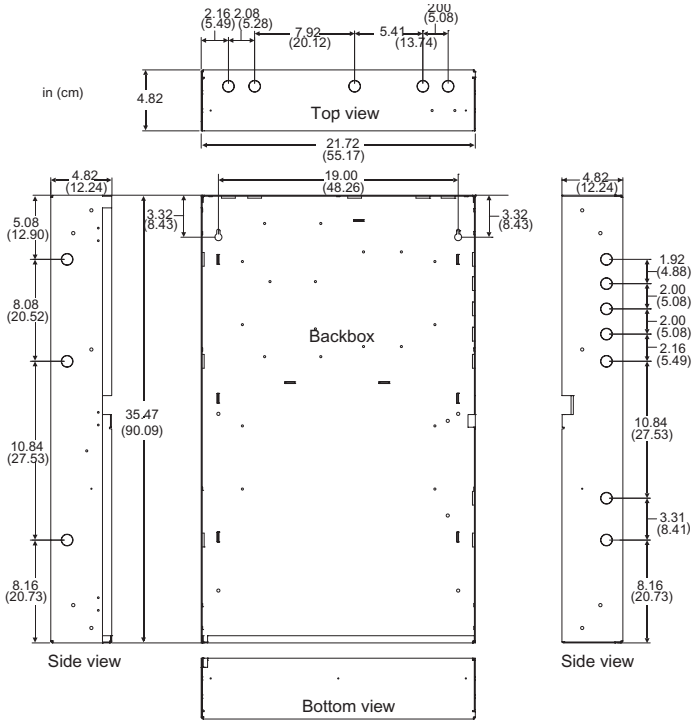
### Power to Count On

Edwards' patented Voltage Boost™ technology delivers a consistent 22.5 Vdc – even at low battery power. This means lighter gauge cable can be used for equivalent distances compared with conventional power supplies, or longer wire runs on the same gauge cable. Either way, this breakthrough technology saves time and equipment costs, making EST3X not only a high-performance solution — but a cost-effective one as well.

EST3X's four on-board Notification Appliance Circuits are fully synchronized to UL 1971 standards — without the need for external modules or other electronics. It's ample 10-amp power supply is finely tuned to get the most out of Edwards' widely-acclaimed low profile Genesis notification appliances.

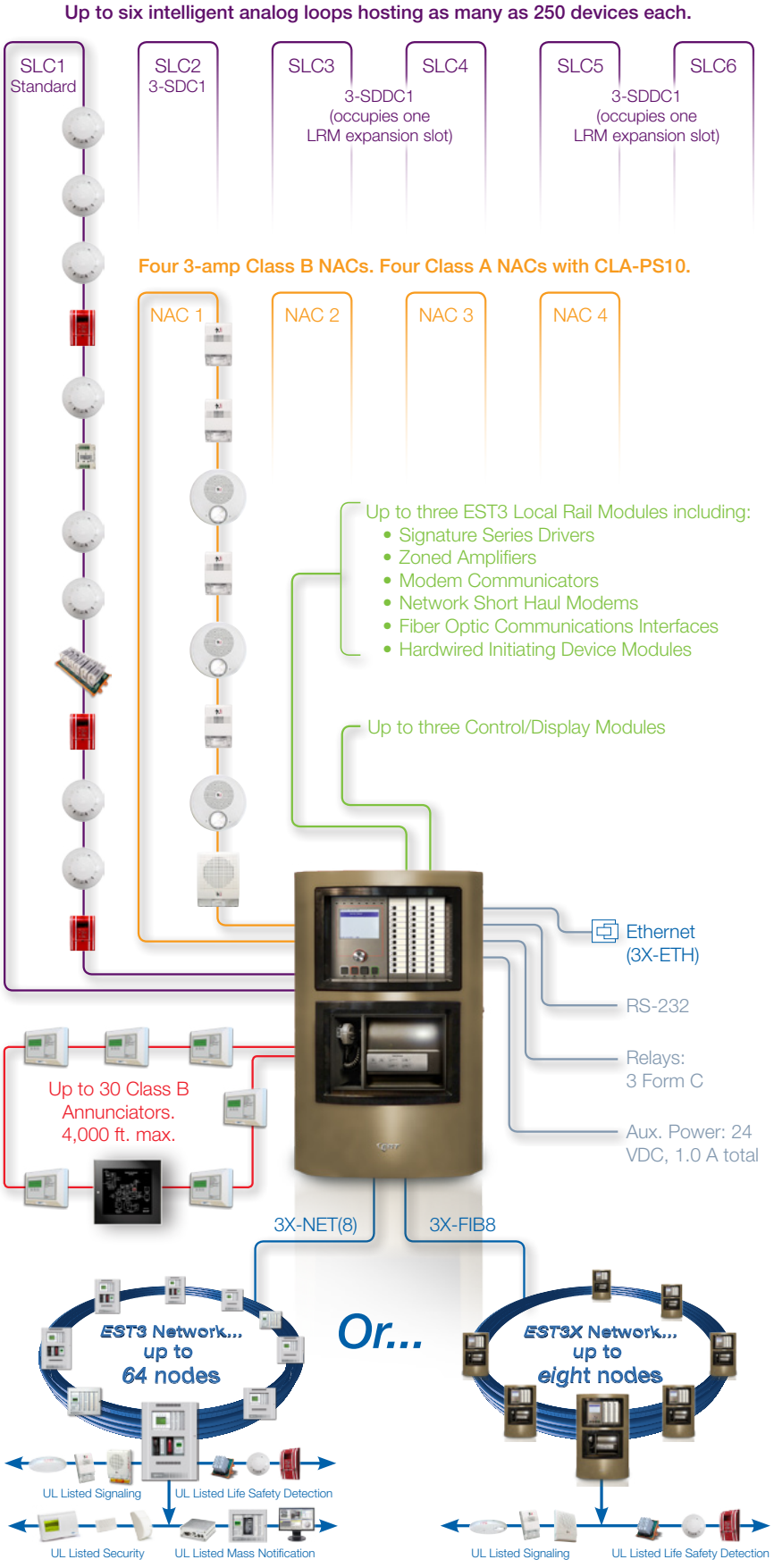
# Dimensions

The backbox is designed for semiflush or surface mounting. Conduit and nail knockouts, keyhole style mounting holes, and wide wiring troughs facilitate efficiency during installation.



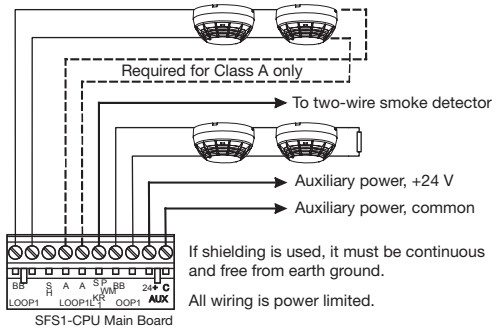

**Note:** Add 0.25 in (0.64 cm). to height and width dimensions to allow for knockouts when framing in the backbox for semiflush mounting.

# System Layout

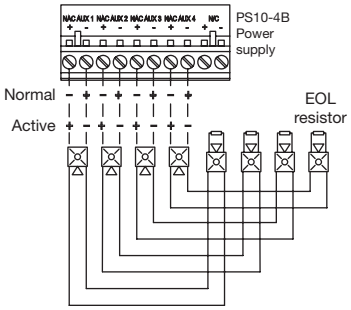



# Wiring

## ■ Signature (initiating) Data Circuit




## ■ Notification Appliance Circuits



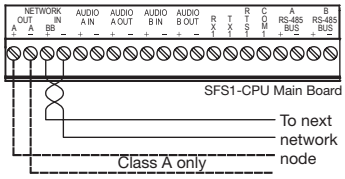

Wiring is supervised and power limited.

TB2 terminal marking indicates signal polarity when the circuit is not active. Polarity reverses when the circuit is active.

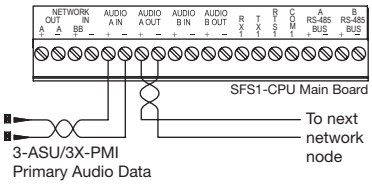
For proper circuit supervision, break the wire run at each notification appliance and install the EOL resistor at the end of the circuit.

Do not loop wires around notification appliance terminals.

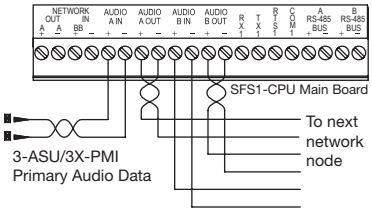
## ■ Network data circuit




## ■ Network data circuit, Class B audio

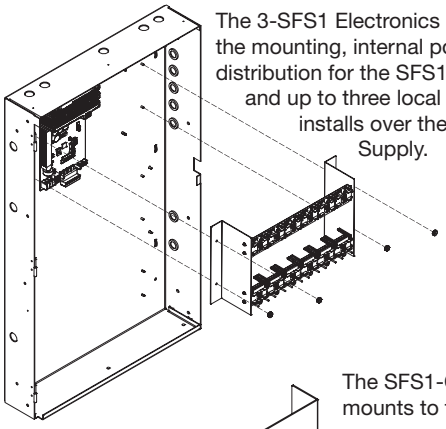



## ■ Network data circuit, Class A audio



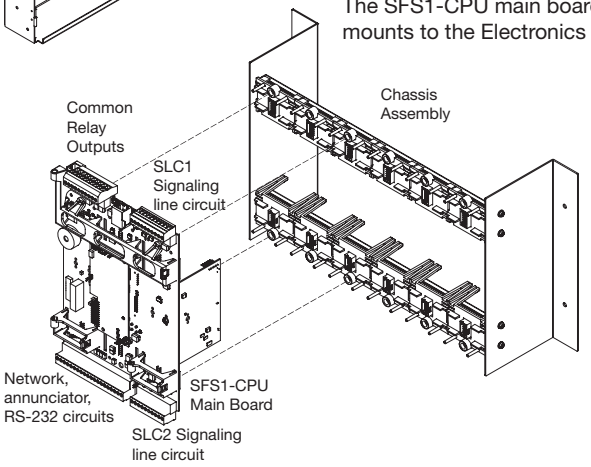
## Main Component Assembly

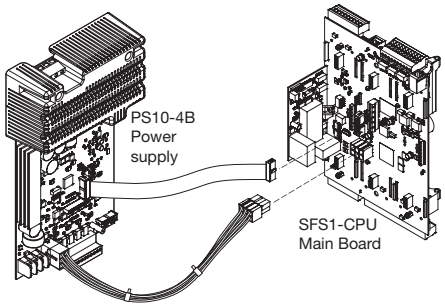
EST3X systems are designed for quick assembly and easy access in the field. Components are modular and require no special tools to service or replace.



The 3-SFS1 Electronics Chassis provides the mounting, internal power, and data distribution for the SFS1-CPU main board and up to three local rail modules. It installs over the PS10-4B Power Supply.

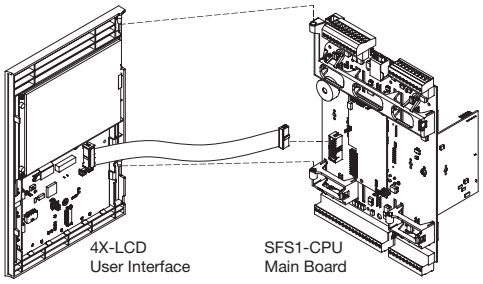
The SFS1-CPU main board mounts to the Electronics Chassis.



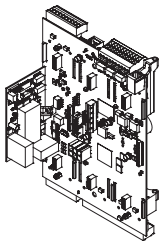




Two cables connect the PS10-4B Power Supply to the back of the SFS1-CPU main board.

The 4X-LCD assembly mounts to hinge pins on the CPU and connects with a single ribbon cable.




## SFS1-CPU Main Board



The SFS1-CPU main board processes all information from modules installed within the cabinet as well as data received from other panels over the network data riser. When a network card is installed, the CPU employs a command set to determine its type.

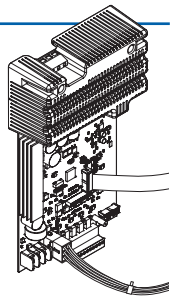
### SFS1-CPU Specifications

| | |
|---|---|
| Voltage | 24 VDC |
| Current | |
| Standby | 115 mA at 24 VDC |
| Alarm | 115 mA at 24 VDC |
| Relay outputs | |
| Quantity | 3 (alarm, supervisory, and trouble) |
| UL type | Common |
| Contact arrangement | Form C |
| Rating | 30 VDC at 1 A |
| AUX power outputs | |
| Quantity | 2 |
| Voltage | 24 VDC, resettable or continuous |
| Current | 1.0 A each circuit, 1.0 A total |
| Data network (RS-485) | |
| Nodes | 2 to 64 (requires optional network card) |
| Performance class | Class A or Class B |
| Wire type | Twisted pair, 6 twists per foot, min. |
| Circuit length | 5,000 ft. (1,524 m) between any three panels |
| Circuit resistance | 90 Ω, max. |
| Circuit capacitance | 0.3 µF, max. |
| Serial Port (RS-232) | |
| Circuit length | 20 ft. (6 m) max. |
| Circuit resistance | 13 Ω, max. |
| Circuit capacitance | 0.7 µF, max. |
| Annunciator port (RS-485) | |
| Performance class | Class B and Redundant Class B |
| Baud rate | 9600 and 38400 |
| Wire type | Twisted pair, 6 twists per foot, min. |
| Circuit length | 4,000 ft. (1,219 m) |
| Circuit resistance | 90 Ω, max. |
| Circuit capacitance | 0.3 µF, max. |
| Signaling line circuit | |
| Quantity | 2 (second SLC requires optional 3-SDC1 card) |
| Performance class | Class A or Class B |
| Circuit capacity | 125 detectors, 125 single address modules |
| Circuit resistance | 100 Ω, max. |
| Circuit capacitance | 0.5 µF, max. |
| Wire size | 18 to 12 AWG (1.0 to 4.0 mm²) |
| Ground fault impedance | 10 kΩ |
| Operating environment | |
| Temperature | 32 to 120°F (0 to 49°C) |
| Relative humidity | 0 to 93% noncondensing |

Notes

- For battery calculations, standby and alarm currents include all listed primary power supplies.
- The common trouble relay operation does not include AC trouble delay functionality and cannot be used for reporting troubles off premises per UL 864 9th edition.

# PS10-4B Power Supply Card



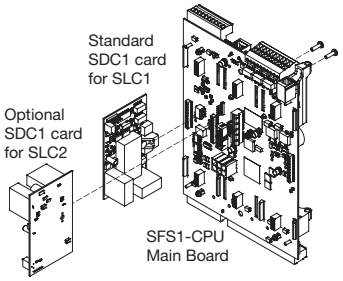
The PS10-4B Power Supply Card provides the required power and related supervision functions for the control panel, as well as filtered, regulated power to the rail chassis modules. It also provides 24 VDC for operating ancillary equipment.

### PS10-4B Specifications

| | |
|---|---|
| Mains voltage | 94 to 264 VAC, 50/60 Hz |
| AC Input Current | |
| Standby | 1.5 amps |
| Alarm | 3.0 amps |
| Brownout level | 93 VRMS |
| Battery charging capacity | 65 Ah max. |
| Total Power Supply Ratings | Voltage 24vdc<br>Current 10 amps (UL), 9.0amps (ULC) |
| Notification appliance/Auxiliary power circuits | |
| UL rating | |
| Quantity | 4 |
| Circuit configuration | Class B[1] |
| Output voltage | Special: 24 Vdc<br>Regulated: 24 Vdc |
| Output current | Special: 3 amps<br>Regulated: 1.5 amps |
| EOLR | 15 kΩ (UL: P/N EOL-15, ULD P.N EOL-P1) |
| Wiring | |
| Mains input[2] | Supervised, non power-limited |
| Battery input | Supervised, non power-limited |
| NAC outputs | Supervised, power-limited |
| Wire size | 18 to 12 AWG (1.0 to 4.0 mm²) |
| Ground fault impedance | 10 kΩ |
| Operating environment | |
| Temperature | 32 to 120 °F (0 to 49 °C) |
| Relative humidity | 0 to 93% noncondensing |

[1]Class A when a CLA-PS10 Class A adapter card is installed.
[2] Connect the mains supply using a dedicated branch.

# 3-SDC1 Signature Data Circuit Card




Each 3-SDC1 Signature Data Circuit Card provides one Class A or Class B signaling line circuit (SLC1) that supports up to 125 Signature Series detectors and 125 Signature Series module addresses. These modules also provide connection for powering conventional two-wire smoke detector circuits on Signature Series modules.

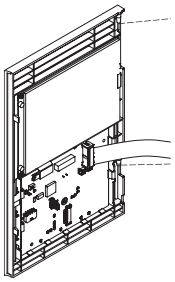
EST3X comes standard with one 3-SDC1 card installed as SLC1. An optional second 3-SDC1 card may be installed to provide SLC2, thus doubling system signaling line capacity.

### 3-SDC1 Specifications

| | |
|---|---|
| Voltage | 24 VDC |
| Operating Current | |
| Standby | 3-SSDC1 144 mA; 3-SDDC1 264 mA |
| Alarm | 3-SSDC1 204 mA; 3-SDDC1 336 mA |
| Smoke power | 19.95 VDC max.[1] |
| Circuit | |
| Configuration | Class B, Style 4, DCLB; Class A, Style 6, DCLA |
| Capacity | 125 Signature Series detectors and 125 Signature Series modules per SLC |
| Resistance | 100 Ω with 250 devices |
| Capacitance | 0.5 µF max. |
| Wire size | 12 AWG (1.5 mm²) max. |
| Termination | Removable plug-in terminal strips on the SFS1-CPU main board and Signature module |
| Operating environment | |
| Temperature | 32 to 120 °F (0 to 49 °C) |
| Relative humidity | 0 to 93% noncondensing |

[1]For special applications, refer to EST3 ULI/ULD Compatibility Lists (P/N 3100427)

# 4X-LCD User Interface

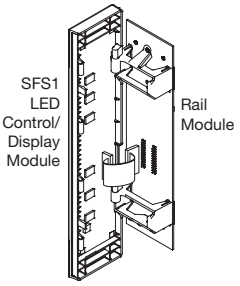


Included in the EST3X basic package, the 4X-LCD provides the user interface for the EST3X system. It connects to the SFS1-CPU main board with a ribbon cable, and attaches to the CPU via hinges. Only one display module is required to provide a point of control for the entire network. Additional displays can be added to any EST3X panel in the network to provide additional points of control.

### 4X-LCD Specifications

| | |
|---|---|
| Operating current | |
| Standby | 38 mA |
| Alarm | 50 mA |
| LCD display | Backlit liquid crystal display 240 x 320 pixels<br>24 lines of 40 characters |
| Operating environment | |
| Temperature | 32 to 120 °F (0 to 49 °C) |
| Relative humidity | 0 to 93% noncondensing |

# SFS1 LED Control/ Display Module

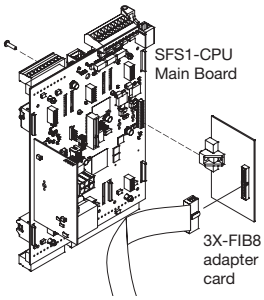



The SFS1 LED Control/Display Module provides additional operator interface capability for the SFS1 system. It can be mounted on any of the three right-most local rail modules on the 3-SFS1 electronics chassis. Inserts are provided for labeling switches and LEDs.

### SFS1 Specifications

| | |
|---|---|
| Voltage | 24 VDC |
| Operating current | |
| Standby | 2.0 mA plus 1.5 mA for each active LED |
| Alarm | 2.0 mA plus 1.5 mA for each active LED |
| Operating environment | |
| Temperature | 32 to 120 °F (0 to 49 °C) |
| Relative humidity | 0 to 93% noncondensing |

## 3X-FIB8 fiber optic network module




The 3X-FIB8 fiber optic network module gives an EST3X panel the ability to network up to eight panels. Both Class A and Class B connections are supported. The module consists of the adapter card and electronics card.

The 3-FIBMB2 supports the following fiber optic transceivers:

| Model | Description |
|---|---|
| SMXLO and SMXLO | Standard output single mode fiber optic transceiver |
| SMXHI and SMXHI2 | High output single mode fiber optic transceiver |
| MMXVR | Standard output multimode fiber optic transceiver |

The 3X-FIB8 provides terminals for connecting a 24 VDC backup power source to maintain data transmissions in the event the panel is powered down.

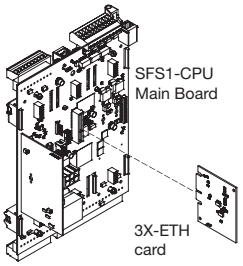
**Note:** All networked panels must have the 3X-FIB8 network card installed.

### 3X-FIB8 Specifications

| | |
|---|---|
| Voltage | 19.2 to 27.6 VDC (24 VDC nominal) |
| Fiber optics network and audio | |
| Budget | |
| SMXLO | 15 dBm between two interfaces |
| SMXHI2 | 25 dBm max. and 8 dBm min. 10 dBm between two interfaces |
| MMXVR | 50/125, 62.5/125, or 100/140 for MMXVR |
| Cable type | |
| Connectors | 50/125, 62.5/125, or 100/140 for |
| SMXLO, SMXHI2 | Type Duplex SC |
| MMXVR | Type ST |
| Network data circuit | |
| Circuit configuration | Class B (style 4) or Class A (style 7) |
| Data rate | 19.2 K, 38.4 kbps |
| Isolation | Isolated from previous panel CPU when using copper. Total isolation when using fiber optics. |
| Digitized audio data circuit | |
| Circuit configuration | Class B (style 4) or Class A (style 7) |
| Data rate | 327 kbps |
| Isolation | Isolated from previous panel CPU when using copper. Total isolation when using fiber optics. |
| Copper wired network data circuit segment | |
| Circuit | |
| Length | 5,000 ft. (1,524 m) max. between any three panels |
| Resistance | 90 Ω max. |
| Capacitance | 0.3 µF max.[1] |
| Wire type | Twisted Pair, 18 AWG (0.75 mm²) min. |
| Operating environment | |
| Temperature | 32 to 120 °F (0 to 49 °C) |
| Relative humidity | 0 to 93% noncondensing |

[1]Include shield capacitance, if shielding is used.

## 3X-ETH1 Ethernet Adapter Card



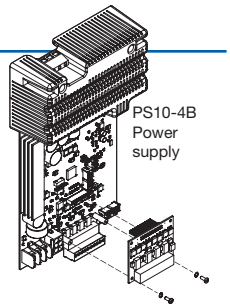

The 3X-ETH1 adapter card provides a standard 10/100 Base-T Ethernet network connection for panel programming, diagnostics, and status monitoring. Four LEDs on the adapter card indicate card and network status.

### 3X-ETH1 Specifications

| | |
|---|---|
| Ethernet | 10/100 Base-T |
| Voltage | 24 VDC |
| Operating current | |
| Standby | 44 mA at 24 VDC (54 mA when connected to an active Ethernet connection) |
| Alarm | 44 mA at 24 VDC |
| Connection mode | Auto negotiation |
| Copper wired network data circuit segment | |
| Circuit | |
| Length | 5,000 ft. (1,524 m) max. between any three panels |
| Resistance | 90 Ω max. |
| Capacitance | 0.3 µF max.[1] |
| Wire type | Twisted Pair, 18 AWG (0.75 mm²) min. |
| Copper wired audio data circuit | |
| Circuit | |
| Length | 5,000 ft. (1,524 m) max. between any 3 panels |
| Resistance | 90 Ω max. |
| Capacitance | 0.09 µF, max[1] |
| Wire type | Twisted pair, 18 AWG (0.75 sq²) min. |
| Wire runs | |
| Distance | 200 ft. (60 m) max.[1] |
| Type | Cat 5 |
| Connector | RJ-45 |
| Operating environment | |
| Temperature | 32 to 120 °F (0 to 49 °C) |
| Relative humidity | 0 to 93% noncondensing |

[1]Panel to communication equipment

## CLA-PS10 Class A Adapter Card

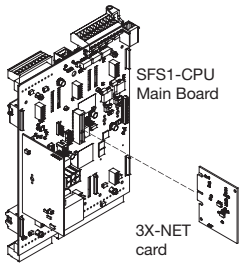



The CLA-PS10 Class A Adapter Card is an optional card used to convert the four Class B notification appliance/auxiliary power circuits on the power supply card to Class A.

### CLA-PS10 Specifications

| | |
|---|---|
| Voltage | 24 VDC |
| Current | Standby TBD; Alarm TBD |
| Notification appliance/Auxiliary power circuits | |
| UL rating | Special application or Regulated |
| Quantity | 4 |
| Performance class | Class A |
| Output current | Special 3.0 A; Regulated: 1.5 A each circuit |
| EOLR | 15 kΩ (UL: P/N EOL-15, ULD P.N EOL-P1) |
| Wiring | Supervised, power-limited |
| Wire size | 18 to 12 AWG (1.0 to 4.0 mm² |
| Operating environment | |
| Temperature | 32 to 120 °F (0 to 49 °C) |
| Relative humidity | 0 to 93% noncondensing |

# 3X-NET Network Adapter Card




The 3X-NET network adapter card gives an SFS1-CPU main board the ability to network up to 64 nodes on an EST3 network. The card supports Class B and Class A wiring.

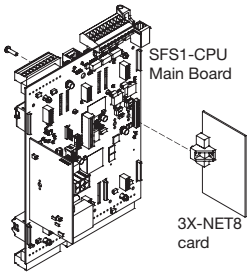
The 3X-NET adapter card provides two independent RS 485 circuits: one for network data communications and one for digital audio communications.

### 3X-NET Specifications

| | |
|---|---|
| Voltage | 24 VDC |
| Operating Current | |
| Standby | 98 mA at 24 VDC |
| Alarm | 98 mA at 24 VDC |
| Circuit configuration | |
| Network data | Class A, Style 6 & Class B, Style 4 |
| Network audio | Class A, Style 6 & Class B, Style 4 |
| Isolation | |
| Network data | Network A port not isolated; Network B port isolated |
| Network audio | Audio A IN and Audio B IN isolated<br>Audio A OUT and Audio B OUT not isolated |
| Wire size | Twisted pair[1] 18 AWG (0.75 mm) min. |
| Circuit length | 5,000 ft. (1,524 m) between any three panels |
| Circuit resistance | 90 Ω max. |
| Circuit capacitance | Data: 0.3 µF max.; Audio 0.09 µF max. |
| Operating environment | |
| Temperature | 32 to 120 °F (0 to 49 °C) |
| Relative humidity | 0 to 93% noncondensing |

[1]Six twists per foot minimum

# 3X-NET8 network card




The 3X-NET8 RS-485 network card gives an SFS1-CPU main board the ability to network through dedicated copper wire up to eight EST3X control panels. The card supports Class B and Class A wiring.

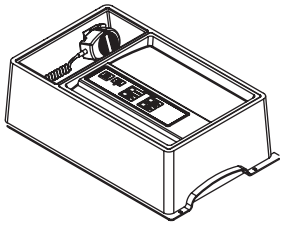
**Note:** All networked panels must have a 3X-NET8 network card installed.

### 3X-NET8 Specifications

| | |
|---|---|
| Voltage | 24 VDC |
| Operating Current | |
| Standby | 98 mA at 24 VDC |
| Alarm | 98 mA at 24 VDC |
| Circuit configuration | |
| Network data | Class A, Style 6 & Class B, Style 4 |
| Isolation | |
| Network data | Network A port not isolated, Network B port isolated |
| Wire size | Twisted pair[1] 18 AWG (0.75 mm) min. |
| Circuit length | 5,000 ft. (1,524 m) between any three panels |
| Circuit resistance | 90 Ω max. |
| Circuit capacitance | 0.3 µF max. |
| Operating environment | |
| Temperature | 32 to 120 °F (0 to 49 °C) |
| Relative humidity | 0 to 93% noncondensing |

[1] Six twists per foot min.

# 3X-PMI Paging Microphone Interface

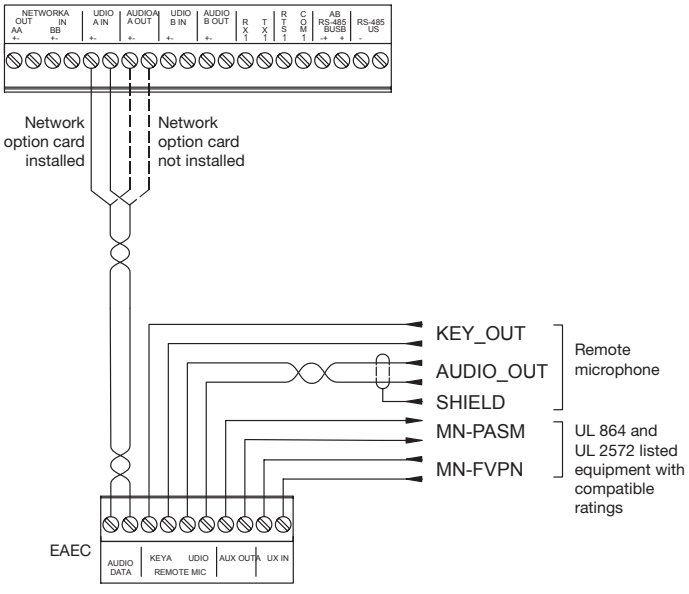


The 3X-PMI Paging Microphone Interface provides controls for emergency voice/alarm communications. It consists of an audio mounting bracket, EAEC Emergency Audio Evacuation Controller card, audio enclosure, and paging microphone.

### 3X-PMI Paging Microphone Interface Specifications

| | |
|---|---|
| Voltage | |
| Current | 24 VDC |
| Standby | 15.5 mA |
| Alarm | 16.6 mA |
| Ground fault impedance | 10 kΩ |
| Wire size | 12 to 18 AWG (1.0 to 4.0 mm²) |
| Audio channels | 8 simultaneous |
| Audio inputs | |
| Local microphone | Isolated and supervised |
| Remote microphone | Isolated and supervised |
| Remote audio | Isolated and supervised |
| EAEC communication | See the EAEC Emergency Audio Evacuation Control Installation Sheet (P/N 3101789) |
| Messages | |
| Storage | 2 min. total |
| Length | 39 sec. max. |
| Controls and indicators | |
| Common | |
| Paging Volume | Indicates relative signal strength during active page |
| Ready To Page | Flashes during preannouncement tone, steady when ready to page |
| Paging Microphone | |
| All Call | Activates/deactivates page to all areas |
| All Call Minus | Activates/deactivates page to areas not receiving EVAC or Alert message |
| Page To Evac | Activates/deactivates page to areas currently receiving the EVAC message |
| Page To Alert | Activates/deactivates page to areas currently receiving the Alert message |
| Operating environment | |
| Temperature | 32 to 120°F (0 to 49°C) |
| Relative humidity | 0 to 93% noncondensing |

SFS1-CPU



EDWARDS
A UTC Fire & Security Company

**Detection & alarm since 1872**

**U.S.**
**T 888 378 2329**
**F 866 503 3996**

**Canada**
**Chubb Edwards**
**T 519 376 2430**
**F 519 376 7258**

**Southeast Asia**
**T : +65 6391 9300**
**F : +65 6391 9306**

**India**
**T : +91 80 4344 2000**
**F : +91 80 4344 2050**

**Australia**
**T +61 3 9239 1200**
**F +61 3 9239 1299**

**Europe**
**T +32 2 725 11 20**
**F +32 2 721 86 13**

**Latin America**
**T 305 593 4301**
**F 305 593 4300**

**utcfireandsecurity.com**



# Ordering Information

| Intelligent Analog Control Panels | | | |
|---|---|---|---|
| **Model** | **Door Color** | **Language** | **Description** |
| 3X-SFS1B | Bronze | English | FACP, complete system with user interface, CPU, one loop with second loop expansion, three option card slots, four Class B NAC, universal 110/220v 10 amp power supply. Order 3-SDC1 for second loop. |
| 3X-SFS1R | Red | | |
| 3X-SFS1Bi | Bronze | Selectable | |
| 3X-SFS1Ri | Red | | |

| Network communication option cards | |
|---|---|
| 3X-NET8 | RS485, eight node max. Class B wiring. Use on 3-SFS systems only. |
| 3X-FIB8 | Fiber, 8 node max. Uses MMXVR, SMXHI2, SMXLO. Use on 3-SFS systems only. |
| 3X-NET | RS485, Class B wiring. For connection to EST3 systems. |
| 3-FIBMB2 | Fiber Optic Communications Interface (requires one or more transceivers). |

| Communication Options | |
|---|---|
| 3X-ETH1 | Ethernet Adapter, 10/100. Provides Ethernet connection from system to 3-SDU for programming and diagnostics remotely. Uses standard Ethernet cable (not supplied). |

| Front Panel LED/Switch display modules | |
|---|---|
| 4X-12/S1GY | LED Display/Control Module - 12 Switches, 1 Green, 1 YELLOW LED per switch. |
| 4X-12/S1RY | LED Display/Control Module - 12 Switches, 1 RED, 1 YELLOW LED per switch. |
| 4X-12SR | LED Display/Control Module - 12 Switches with 12 RED LEDs. |
| 4X-24R | LED Display Module - 24 RED. |
| 4X-6/3S1G2Y | LED/Switch Module - six groups of three Switches with one LED each. |
| 4X-6/3S1GYR | LED/Switch Module - six groups of three Switches with one LED each. |
| 4X-4/3SGYWR | LED/Switch Module, four groups of three switches and four LEDs. LED colors: Green, Red, Yellow and White. |

| Option Cards and Interfaces | |
|---|---|
| 3X-PMI | Paging Microphone Interface |
| 3-SSDC1 | Single Signature Driver Controller, c/w one 3-SDC1 |
| 3-SDDC1 | Dual Signature Driver Controller, c/w two 3-SDC1s |
| 3-ZA20A | 20 Watt Zoned Amplifier w/Class A/B Audio & Class A/B 24 VDC outputs |
| 3-ZA20B | 20 Watt Zoned Amplifier w/Class B Audio & Class B 24 VDC outputs |
| 3-ZA40A | 40 Watt Zoned Amplifier w/Class A/B Audio & Class A/B 24 VDC outputs |
| 3-ZA40B | 40 Watt Zoned Amplifier w/Class B Audio & Class B 24 VDC outputs |
| 3-MODCOM | Modem/Dialer (DACT) |
| 3-MODCOMP | Modem/Dialer (DACT) w/TAP Pager Protocol |
| 3-AADC1 | Addressable Analog Module |
| 3-IDC8/4 | Initiating Device Circuit Module |
| 3-OPS | Off Premises Signaling module |
| CDR-3 | PSNI Coder Module |

| Accessories | |
|---|---|
| CLA-PS10 | Class A Adapter, PS10 NAC's |
| PS10-4B | Power Supply, Replacement |
| SFS1-ELEC | Base Electronics, replacement |
| 4X-LCD | Main user interface assembly, monochrome. Eight line 1/4 VGA LCD, four controls plus rotary knob. English language. |
| 4X-LCD-LC | Main user interface assembly, monochrome. Eight Line 1/4 VGA LCD, four controls plus Rotary knob. Insertable language, shipped with English inserts. Order alternate languages separately. |
| 4X-CAB6D | Replacement door, gray |
| 4X-CAB6DR | Replacement door, red |
| 4X-CAB6B | Backbox, black |
| TRIM6 | Flush trim ring |

# Related Data Sheets

85010-0129 -- Signature Driver Controller Modules
85010-0057 -- EST3 Zoned Audio Amplifiers
85010-0107 -- EST3 Modem Communicator
85010-0131 -- Fiber Optic Communications Interface
85010-0113 -- Network Short Haul Modem
85005-0128 -- R-Series Remote Annunciators

# EST3 Remote Annunciators

## 3-ANNCPU3, 3-LCDANN, 3-6ANN, 3-10ANN, 3-EVxxx, 3-4ANN

EN54-2:1997+A1 and
EN54-4:1997+A1:2002+A2
pending

## Overview

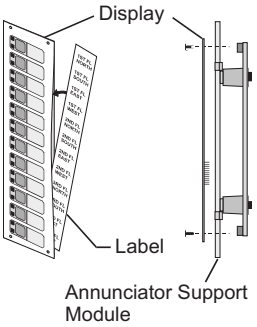
EST3 supports a full range of annunciator options for Mass Notification/Emergency Communication (MNEC), Life Safety and other purposes. Annunciator cabinets are constructed from 16 gauge cold rolled steel. The gray textured enamel finish of the annunciators complements any decor. Both surface and semi-flush mounting cabinet configurations maximize mounting flexibility and esthetic appeal. Cabinet arrangements allow both LED and LCD annunciation to easily combine in a single enclosure. Slide in labeling for LEDs and switches provides designation flexibility for labeling in local languages. For graphic annunciation EST3 offers LED driver boards perfectly suited to operate in most graphic annunciators.

EST3 annunciators are perfect for MNEC applications. They can be used in Central Control Stations (CCS), Autonomous Control Units (ACU), Local Operating Console (LOC) and combination units. In these applications, annunciators are configured to operate as Local Operation Consoles, or even Central Command Stations, from which MNEC is initiated and controlled.

## Standard Features

- Standard 3-LCD (168 characters) and large-format 3-LCDXL1 (960 character) display options
- LCD uses queues to sort events
- Variety of wallbox configurations
- Programmable LED flash rates
- Slide-in labels
  Makes customization for regional language easy
- Full line of driver boards for graphic annunciators

## Application




Use EST3 remote annunciators when a compact system status display is needed. Annunciator configurations include: LCD only display, LED only displays or combination LED and LCD display in a single enclosure.

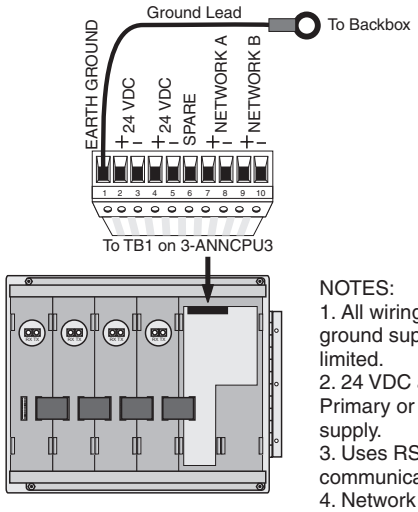
The LCD display uses either the 3-LCD or 3-LCDXL1 Liquid crystal display module. The 3-LCD has a 128 x 64 graphical display typically used to display eight lines of 21 characters on its LCD display while the 3-LCDXL1 has a larger 240 x 320 pixel backlit display that supports 24 lines of 40 characters. Both LDC displays provide the room needed to convey emergency information in a useful format.

The 3-LCD always displays the last highest priority event even when the user is viewing other message queues. To give the greatest message flexibility EST3 event messages can route to specific annunciators. Routing can be initiated at a specific time/shift change. Messages need only display in areas having to respond to an event.

For LED display, the full line of EST3 Control/Display Modules support event display. Control/Display modules install over any annunciator support module maximizing annunciator design flexibility. A Lamptest feature can program to any spare control switch. If an LCD display is installed in the annunciator, simply operate the Alarm Silence and Trouble Silence switches simultaneously to lamptest all LEDs.

# Typical Wiring

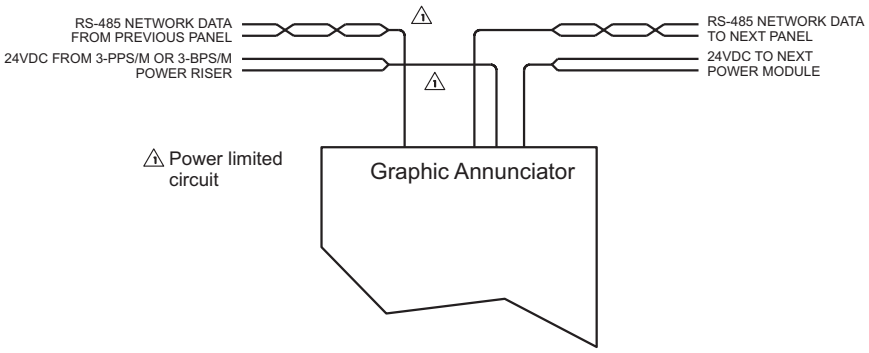
### Rear view 3-ANNCPU3 Field Wiring
### 3-6ANN Shown




NOTES:
1. All wiring except earth ground supervised and power limited.
2. 24 VDC available from Primary or Booster Power supply.
3. Uses RS-485 Network communication format
4. Network wiring Twisted Pair

### Power Riser
Calculate wire size for a maximum 3.4 Vdc total line loss from the 24 Vdc nominal voltage.

### Graphic Annunciator Field Wiring




### Wire Specifications
### Network Data Communications - RS485 Format

| | |
|---|---|
| Minimum Twisted Pair | 18 AWG (0.75 mm²). |
| Maximum Circuit Resistance | 90 Ohms |
| Maximum Circuit Capacitance | 0.3 µF |
| Maximum Distance between any 3 panels | 5,000 ft. (1,524 m). |

### Capacitance, entire network
Maximum Accumulative Capacitance

| Wire Size | 38.4K Baud | 19.2K Baud |
|---|---|---|
| 18 AWG | 1.4 µF | 2.8 µF |
| 16 AWG | 1.8 µF | 3.6 µF |
| 14 AWG | 2.1 µF | 4.2 µF |

*Distance limits are determined using the maximum allowable circuit resistance and capacitance, and manufacturer's cable specifications.*

# Specifications

| Catalog Number | 3-ANNCPU3 | 3-ANNSM | 3-LCD | 3-LCDXL1 |
|---|---|---|---|---|
| Agency Listings | UL, ULC, FM, CE, LPCB EN54* pending. | | | |
| Mounting Space | Two Spaces | One Space | Mounts over 3-ANNCPU | Mounts over 3-ANNCPU plus two spaces. |
| Communication Format | RS-485 | N/A | N/A | N/A |
| Current @ 24 Vdc<br>Standby<br>Alarm | <br>144 mA<br>144 mA | <br>10mA<br>10mA | <br>40mA<br>42mA | <br>48mA<br>50mA |
| Wiring Termination | Plug in terminal strip | N/A | | |
| Wiring Size | Twisted Pair 18-14 AWG (0.75-1.5 mm²) | | | |
| Max. Wire Distance | 5000 ft (1524m) between any 3 panels | | | |
| Relative Humidity | 93% non condensing at 90° F (32° C) | | | |
| Temperature Rating | 0-49° C (32 - 120° F) | | | |
| Wiring Styles | Class A or Class B | | | |

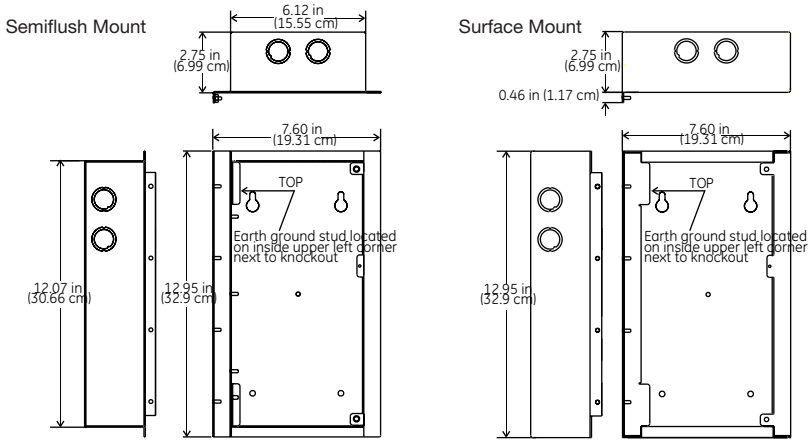
*Note: For a complete list of EST3 annunciator display and control modules please refer to Edwards literature sheet part number 85010-0055.*
** EN54-2:1997+A1 and EN54-4:1997+A1:2002+A2 pending*

# Engineering Specification

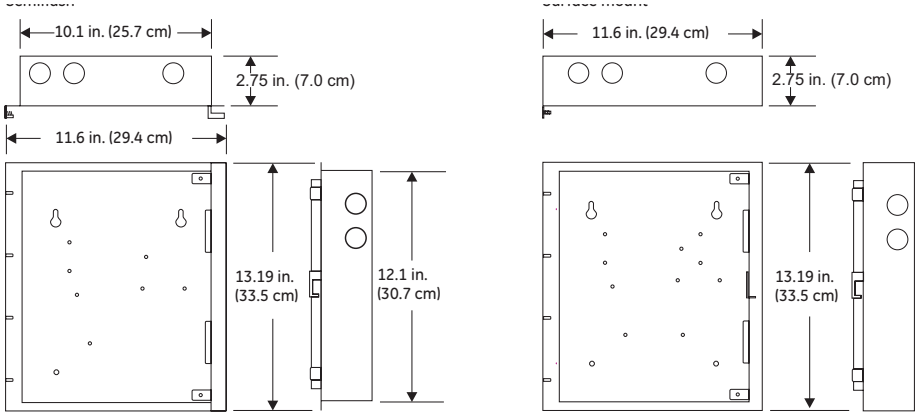
The Life Safety system shall incorporate annunciation of Alarm, Supervisory, Trouble and Monitor operations. Annunciation must be through the use of both LED display strips complete with a means to custom label each LED as to its function. Where applicable control switches must be provided. Switches with LEDs must provide positive feed back to the operator of remote equipment status. An LCD display with basic common control LEDs and switches shall be provided. The Common Control Switches and LEDs provided as minimum will be: Reset switch and LED, Alarm Silence switch and LED, Panel Silence switch and LED, Drill switch and LED. It must be possible to add additional common controls as required though the use of modular display / control units. The LCD interface must provide the ability to display custom event messages of a minimum of 40 characters. The LCD must provide the emergency user, hands free viewing of the first and last highest priority event. The last highest priority event must always display and update automatically. System events must automatically be placed in queues. It shall be possible to view specific event types separately. Having to scroll through a mixed list of events types is not acceptable. The total number of active events by type must be displayed. It must be possible to customize the designations of all user interface LEDs and switches for local language requirements. It must be possible to route system event messages to specific annunciator locations.

# Dimensions

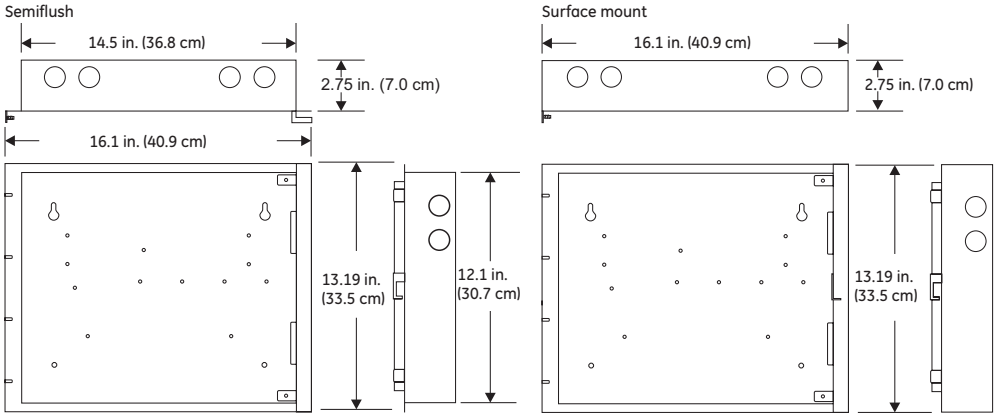
## RCLM/B(-S)



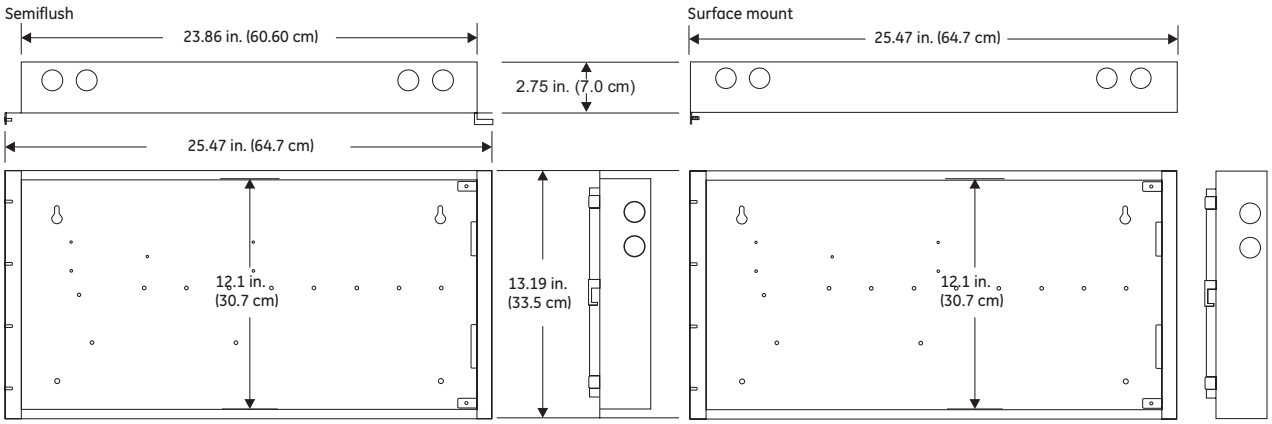

## 4ANN/B(-S)




## 6ANN/B(-S)




## 10ANN/B(-S)



# Ordering Information

| Catalog Number | Description | Ship Wt. lb (kg) |
|---|---|---|
| **Command Module Annunciators (Come with CPU, LCD display and doors. Order wallbox separately.)** | | |
| 3-LCDANN | Remote LCD Command Module Annunciator. | 3.8 (1.7) |
| 3-LCDANN-E | Remote LCD Command Module Annunciator. For EN54* market only, CE. | 3.8 (1.7) |
| *Base Annunciators (Come with two 3-ANNSM annunciator support modules, a CPU, and doors. Order Display/Control modules, additional support modules & wallbox separately.)* | | |
| 3-4ANN | Four Position Base Annunciator. | |
| 3-4ANN-E | Four Position Base Annunciator. For EN54* market only, CE. | |
| 3-6ANN | Six Position Base Annunciator. | 6.28 (2.85) |
| 3-6ANN-E | Six Position Base Annunciator. For EN54* market only, CE. | 6.28 (2.85) |
| 3-10ANN | 10 Position Base Annunciator. | 10.5 (4.8) |
| 3-10ANN-E | 10 Position Base Annunciator. For EN54* market only, CE. | 10.5 (4.8) |
| **EN54-2:1997+A1 and EN54-4:1997+A1:2002+A2 pending* | | |
| **CPU, Support Module, & LCD Displays** | | |
| 3-ANNCPU3 | Annunciator CPU | 1 (.45) |
| 3-CPUDR | CPU doors with filler plates. Order separately, one required per CPU where no LCD display is installed. | 0.25 (.11) |
| 3-ANNSM | Annunciator Support Module | .45 (.2) |
| 3-LCD | Liquid Crystal Display Module, eight lines. | .8 (.36) |
| 3-LCDXL1 | Liquid Crystal Display Module, 40 lines mounts in 3-4ANN, 3-6ANN or 3-10ANN anunciators. *Note one 3-LCDXL1KBL, (ordered separately) is required for each 3-LCDXL1 mounting into 3-6ANN or 3-10ANN annunicator boxes.* | |
| 3-LCDXL1KBL | Cable for 3-LCDXL1 (Use to connect from 3-ANNCPU3 to the first annuciator support model. Not required with 3-4ANN and 3-LCDXL1 applications.) | |
| **Control/Display Modules** | | |
| 3-CPUDR | Two blank filler plates suitable for any annunciator blank space. | .5 (.22) |
| 3-24R | 24 Red LED Display Module | .35 (.12) |
| 3-24Y | 24 Yellow LED Display Module | .35 (.12) |
| 3-24G | 24 Green LED Display Module | .35 (.12) |
| 3-12SR | 12 switches with 12 Red LED Display/Control Module | .35 (.12) |
| 3-12SY | 12 switches with 12 Yellow LED Display/Control Module | .35 (.12) |
| 3-12SG | 12 switches with 12 Green LED Display/Control Module | .35 (.12) |
| 3-12RY | 12 Red LED and 12 Yellow LED Display Module | .35 (.12) |
| 3-12/S1GY | 12 switches with one Green and one Yellow LED per switch | .35 (.12) |
| 3-12/S1RY | 12 switches with one Red and one Yellow LED per switch | .35 (.12) |
| 3-12/S2Y | 12 switches with two Yellow LEDs per switch | .35 (.12) |
| 3-6/3S1G2Y | Six groups of three switches. Each switch with one LED: Green, Yellow, Yellow. | .35 (.12) |
| 3-6/3S1GYR | Six groups of three switches. Each switch with one LED: Green, Yellow, Red. | .35 (.12) |
| 3-REMICA | Remote microphone for use in 3-ANN series annunciator cabinets | 15 (6.8) |
| 3-FP | Filler Plate, order separately one required per 3-ANNSM when no LED or LED/Switch module installed on operator layer. | 0.1 (0.05) |
| **Driver Modules, Power Supplies** | | |
| 3-EVDVR | LED/SWITCH Driver Module, For Edwards Graphics | .35 (.12) |
| 3-EVDVRA | LED/SWITCH Driver Module Assembly for Third-party Graphics | .35 (.12) |
| 3-EVPWR | Power Supply for Edwards Graphics | .5 (.22) |
| 3-EVPWRA | Power Supply Assembly c/w 19 inch rail mounting chassis assembly space for one 3-ANNCPU3 for Third-party Graphics | 2.5 (1.2) |
| 3-EVDVRX | Plastic mounting extrusion 19 inch mounting - Space for up to three 3-EVDVRA modules. | .35 (.12) |
| **Enclosures** | | |
| RLCM/B | Remote Command module flush mount LCD wallbox | 2.5 (1.2) |
| RLCM/B-S | Remote Command module surface mount LCD wallbox | 2.5 (1.2) |
| 3-RLCM/D | Inner & outer doors for RLCM/B(-S) | 2.0 (0.9) |
| 4ANN/B | Four Position LED/LCD flush mount wallbox. | 6.0 (2.7) |
| 4ANN/B-S | Four position LED/LCD surface mount wallbox. | 6.0 (2.7) |
| 6ANN/B | Six position LED/LCD flush mount wallbox | 7.0 (3.2) |
| 6ANN/B-S | Six position LED/LCD surface mount wallbox | 7.0 (3.2) |
| 10ANN/B | Ten position LED/LCD flush mount wallbox | 9.0 (4.1) |
| 10ANN/B-S | Ten position LED/LCD surface mount wallbox | 9.0 (4.1) |

EDWARDS
A UTC Fire & Security Company

**Detection & alarm since 1872**

**U.S.**
**T 888-378-2329**
**F 866-503-3996**

**Canada**
**Chubb-Edwards**
**T 519 376 2430**
**F 519 376 7258**

**Southeast Asia**
**T : +65 6391 9300**
**F : +65 6391 9306**

**India**
**T : +91 80 4344 2000**
**F : +91 80 4344 2050**

**Australia**
**T +61 3 9239 1200**
**F +61 3 9239 1299**

**Europe**
**T +32 2 725 11 20**
**F +32 2 721 86 13**

**Latin America**
**T 305 593 4301**
**F 305 593 4300**

**utcfireandsecurity.com**

## Overview

GE Security fire alarm telephones are rugged communications devices for emergency use. Enclosed keylocked telephone stations comprise three separately ordered components: the handset assembly, the frontplate, and the wallbox. Depending on how the phones are wired, they are supervised for three or four state operation. Frontplates are available with either metal or break glass inserts.

MEA approved warden stations feature doors with magnetic latches and one-state handsets with armoured cords. Warden stations mount to 6832-1 wallboxes.

Portable handsets plug into one-gang receptacles. Handsets are available in black or red. The TCS-6 cabinet provides storage for up to six handsets.

## Application

Firefighters' telephones are typically installed in corridors, lobbies, mechanical rooms, stairways, or other stategic locations. When lifted from its cradle, or plugged into a suitable wall jack, the handset activates audible and visible signals at the control panel. There, the operator needs only to lift the handset off the cradle to respond to the current call. Other firefighters' telephones may be selected at the control panel to join the conversation.

**TCS-6 Handset Storage Cabinet (handsets not included)**

# Fire Alarm Telephones

## Standard Features


6830-NY-F4
6830-NY-S4
6830-NY-F
6830-NY-S

### Floor Warden Station

- Magnetic latch
- Red powdercoat finish
- 28-inch armored cord
- Supervised wiring
- Flush or surface mount models
- Concealed Hinges
- Four-state model available

6831-1
6831-3

### Frontplate – Break Glass

- Flush or surface mount models
- Red powdercoat finish
- Locking door, concealed hinges
- Break glass insert

6831-4
6831-2

### Frontplate – Non-Break Glass

- Flush or surface mount models
- Red powdercoat finish
- Locking door, concealed hinges
- Metal insert

6832-1

### Wallbox

- Red powdercoat finish
- Flush or surface mount
- For use with 6831 series front plates
- Flush or surface mount

6830-1,
6830-4
6830-5A
6830-6A
6830-5A4
6830-6A4

### Handset Assembly

- Red ABS plastic handset
- 60 inch (1500 mm) coiled cord set
- Supervised wiring
- For use with 6831 series front plates
- Four-state models available

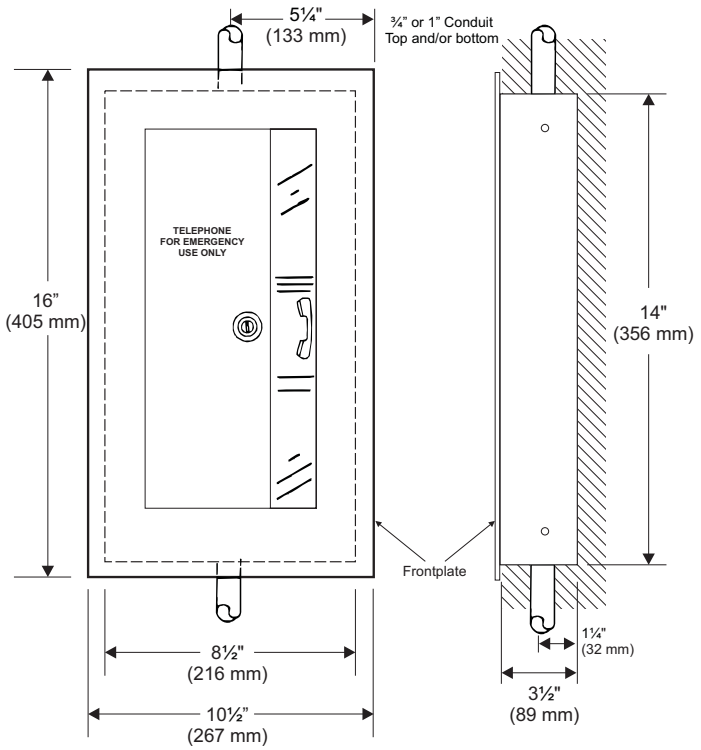
6833-1, 6833-4

6830-3
6700-0061

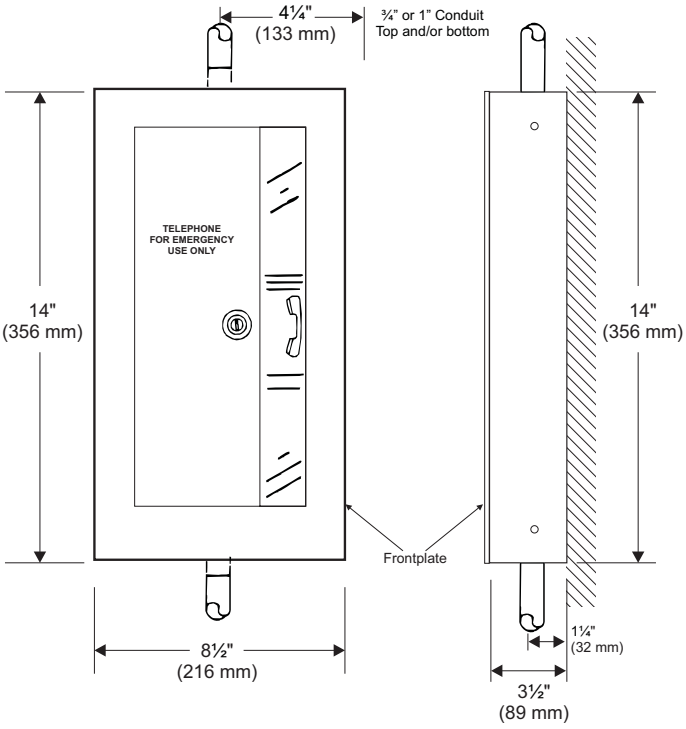
### Portable Handsets and Receptacle

- Black or red ABS plastic handset
- 60 inch (1500 mm) coiled cord set
- Supervised wiring
- Stainless-steel one-gang faceplate
- Flush or surface mount receptacle
- Four-state models available

## Mounting

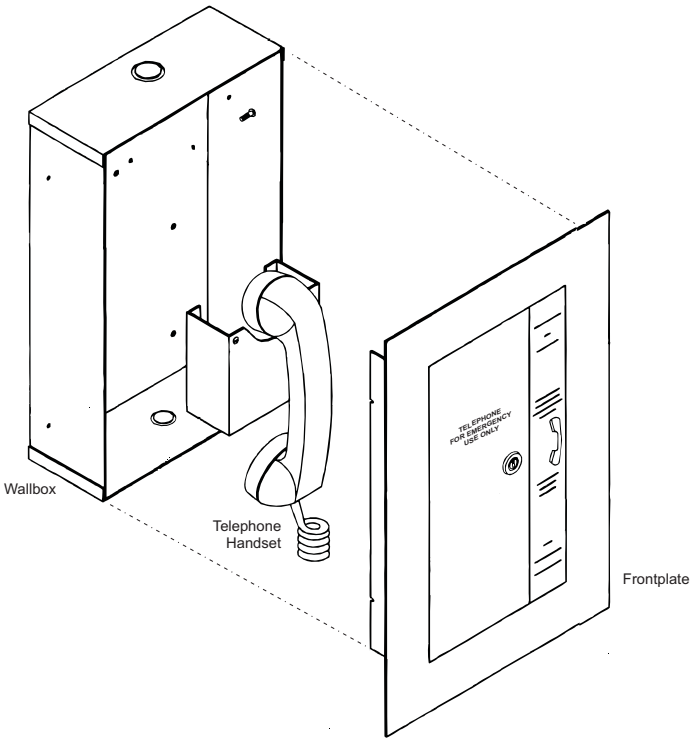


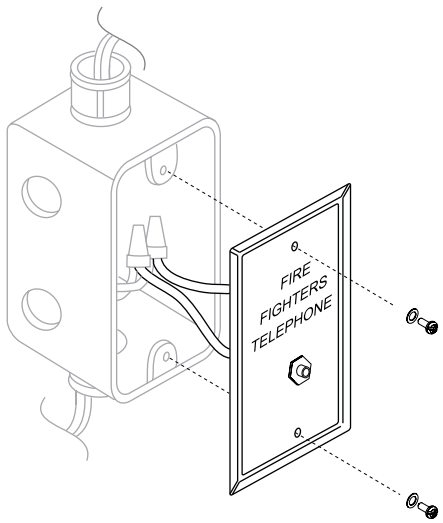

**Flush Mounting**




**Surface Mounting**

## Assembly



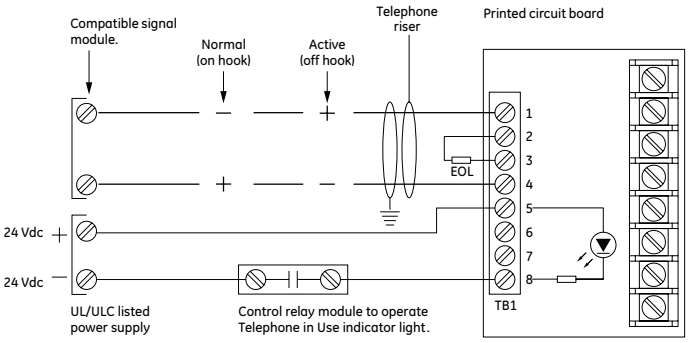




GE Security recommends that these fire alarm communication devices always be installed in accordance with the latest recognized editions of national and local fire alarm codes.

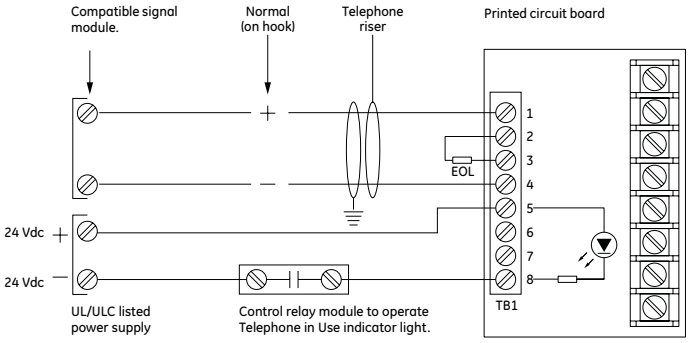
# Typical Wiring

## Telephone Riser Connections, Stations & Assemblies

Four-state operation




Three-state operation



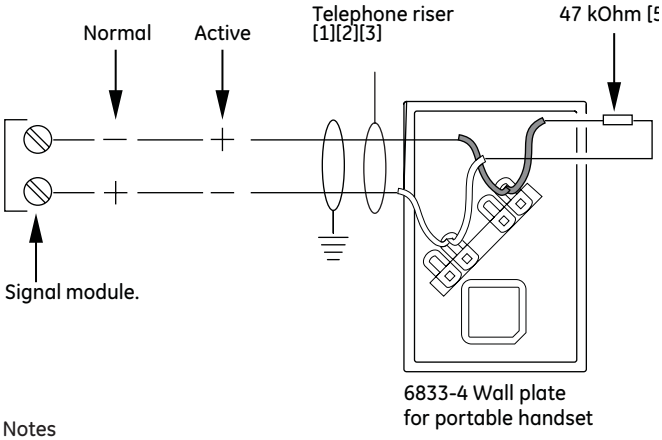

Notes

[1] Use jacketed, twisted, shielded pair
[2] 14 to 22 AWG (2.08 to 0.33 sq mm)
[3] Max. line impedance: 50 Ohms, 25 Ohms per line
[4] Connect the shields to chassis ground in the control panel
[5] *Telephone in Use* indicator light (NY versions only)

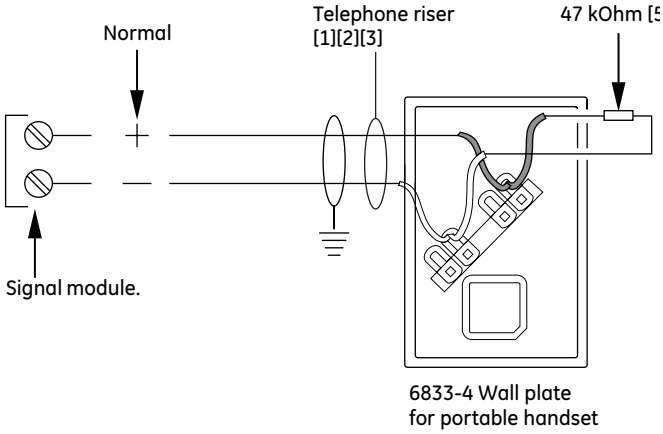
Three-state operation does not comply with UL 864 ninth edition.
Note that the riser polarities for differ between three-state and four-state operation.

## Telephone Riser Connections, Handsets

Four-state operation




Three-state operation




Notes

[1] Use jacketed, twisted, shielded pair
[2] 14 to 22 AWG (2.08 to 0.33 sq mm)
[3] Max. line impedance: 50 Ohms, 25 Ohms per line
[4] Connect the shields to chassis ground in the control panel
[5] Install a 47 k Ohm EOL resistor on the last unit only

Three-state operation does not comply with UL 864 ninth edition.
Note that the riser polarities for differ between three-state and four-state operation.

GE
Security

U.S.
T 888-378-2329
F 866-503-3996

Canada
T 519 376 2430
F 519 376 7258

Asia
T 852 2907 8108
F 852 2142 5063

Australia
T 61 3 9259 4700
F 61 3 9259 4799

Europe
T 32 2 725 11 20
F 32 2 721 86 13

Latin America
T 305 593 4301
F 305 593 4300

www.gesecurity.com/est



# Ordering Information

| Catalog Number | Description | Listings | Shipping Weight |
|---|---|---|---|
| **Warden Stations** | | | |
| 6830-NY-F4 | Four-state Remote Telephone Warden Station - Flush. Handset station for use with 6832-1 backbox. Hinged flush door with magnetic latch. Handset includes armored cord. | UL, MEA | 12 lb (5.4kg) |
| 6830-NY-S4 | Four-state Remote Telephone Warden Station - Surface. Handset station for use with 6832-1 backbox. Hinged surface door with magnetic latch. Handset includes armored cord. | UL, MEA | 12 lb (5.4kg) |
| 6830-NY-F | Remote Telephone Warden Station - Flush. Handset station for use with 6832-1 backbox. Hinged flush door with magnetic latch. Handset includes armored cord. | UL, MEA | 12 lb (5.4kg) |
| 6830-NY-S | Remote Telephone Warden Station - Surface. Handset station for use with 6832-1 backbox. Hinged surface door with magnetic latch. Handset includes armored cord. | UL, MEA | 12 lb (5.4kg) |
| **Fixed Telephone Handsets (order frontplates and wallboxes separately)** | | | |
| 6830-4 | Four-state Telephone Handset Assembly - Red, 60" (1500mm) Coiled Cord. | UL, MEA | 6 lb (2.7kg) |
| 6830-5A-4 | Four-state Telephone Handset Assembly - Red, 60" (1500mm) Coiled Cord, Push-to-talk button. | UL, MEA | 6 lb (2.7kg) |
| 6830-6A-4 | Four-state Telephone Handset Assembly - Red, 60" (1500mm) Armored Cord, Push-to-talk button. | UL, MEA | 7 lb (3.1kg) |
| 6830-1 | Telephone Handset Assembly - Red c/w 60" (1500mm) Coiled Cord. | UL, MEA, CSFM | 6 lb (2.7kg) |
| 6830-5A | Three-state Telephone Handset Assembly - Red, 60" (1500mm) Coiled Cord, Push-to-talk button. | UL, MEA | 6 lb (2.7kg) |
| 6830-6A | Three-state Telephone Handset Assembly - Red, 60" (1500mm) Armored Cord, Push-to-talk button. | UL, MEA | 7 lb (3.1kg) |
| **Portable Telephone Handsets** | | | |
| 6833-4 | Four-state Portable Telephone Handset Receptacle 1-gang Stainless-steel Faceplate for use with 6830-3 or 6700-0061. | UL, MEA, CSFM | .22 lb (0.1kg) |
| 6833-1 | Portable Telephone Handset Receptacle 1-gang Stainless-steel Faceplate for use with 6830-3 or 6700-0061. | UL, MEA, CSFM | .22 lb (0.1kg) |
| 6830-3 | Portable Telephone Handset - Black c/w 60" (1500mm) Coiled Cord. | UL, MEA, CSFM | 1.1 lb (0.5kg) |
| 6700-0061 | Portable Telephone Handset - Red c/w 60" (1500mm) Coiled Cord. | UL, MEA | 1.1 lb (0.5kg) |
| **Frontplates** | | | |
| 6831-1 | Frontplate - Flush Mount, Red Finish, Break Glass Type c/w 2 keys. 16" (405 mm) H x 10-1/2" (267 mm) W. | See Note 1 | 1.32 lb (0.6kg) |
| 6831-2 | Frontplate - Flush Mount, Red Finish, Non-Break Glass Type c/w 2 keys. 16" (405 mm ) H x 10-1/2" (267 mm) W. | | 1.32 lb (0.6kg) |
| 6831-3 | Frontplate - Surface Mount Red Finish, Break Glass Type c/w 2 keys. 14" (356 mm) H x 8-1/2" (216 mm) W. | | 1.1 lb (0.5kg) |
| 6831-4 | Frontplate - Surface Mounting Red Finish, Non-Break Glass Type c/w 2 keys. 14" (356 mm) H x 8-1/2" (216 mm) W. | | 1.1 lb (0.5kg) |
| PP46137-0067 | Replacement Break Glass Insert - for use in 6831-1 and 6831-3. | | 1.1 lb (0.5kg) |
| **Wallboxes** | | | |
| 6832-1 | Wallbox - Flush or Surface mount, Red finish. 14" (356mm) H x 8-1/2" (216mm) W x 3½" (89mm) D. | See Note 1 | 1.54 lb (0.7kg) |
| TCS-6 | Portable handset storage cabinet. Surface mount c/w keylock. Red finish with white lettering: "Emergency Telephone Handsets". 15½" (394 mm ) H x 24-1/8" (613 mm) W x 4"(102) D. | N/A | 12 lb (5.4kg) |

*Note 1: Agency listings for these components are included under the handset assemblies or warden stations they are installed with.*

imagination at work