



EST4 User Guide

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Important information

Regulatory information

This product has been designed to meet the requirements of NFPA 72 *National Fire Alarm Signaling Code*, UL 864 *Standard for Control Units and Accessories for Fire Alarm Systems*, and CAN/ULC-S527 *Standard for Control Units for Fire Alarm Systems*.

Limitation of liability

To the maximum extent permitted by applicable law, in no event will United Technologies Corporation be liable for any lost profits or business opportunities, loss of use, business interruption, loss of data, or any other indirect, special, incidental, or consequential damages under any theory of liability, whether based in contract, tort, negligence, product liability, or otherwise. Because some jurisdictions do not allow the exclusion or limitation of liability for consequential or incidental damages the preceding limitation may not apply to you. In any event the total liability of United Technologies Corporation shall not exceed the purchase price of the product. The foregoing limitation will apply to the maximum extent permitted by applicable law, regardless of whether United Technologies Corporation has been advised of the possibility of such damages and regardless of whether any remedy fails of its essential purpose.

Installation in accordance with this manual, applicable codes, and the instructions of the authority having jurisdiction is mandatory.

While every precaution has been taken during the preparation of this manual to ensure the accuracy of its contents, United Technologies Corporation assumes no responsibility for errors or omissions.

Advisory messages

Advisory messages alert you to conditions or practices that can cause unwanted results. The advisory messages used in this document are shown and described below.

WARNING: Warning messages advise you of hazards that could result in injury or loss of life. They tell you which actions to take or to avoid in order to prevent the injury or loss of life.

Caution: Caution messages advise you of possible equipment damage. They tell you which actions to take or to avoid in order to prevent the damage.

Note: Note messages advise you of the possible loss of time or effort. They describe how to avoid the loss. Notes are also used to point out important information that you should read.

EST4 FCC compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

3-MODCOM(P) FCC compliance

Cautions

- To ensure proper operation, this dialer must be installed according to the enclosed installation instructions. To verify that the dialer is operating properly and can successfully report an alarm, it must be tested immediately after installation, and periodically thereafter, according to the enclosed test instructions.
- In order for the dialer to be able to seize the phone line to report an alarm or other event when other customer equipment (telephone, answering system, computer modem, etc.) connected to the same line is in use, the dialer *must* be connected to a properly installed RJ-31X jack. The RJ-31X jack must be connected in series with, and ahead of, all other equipment attached to the same phone line. Series installation of an RJ-31X jack is depicted in the wiring diagram. If you have any questions concerning these instructions, you should consult your telephone company or a qualified installer.

Testing

When programming emergency numbers or making test calls to emergency numbers, remain on the line and briefly explain to the dispatcher the reason for the call. Perform programming and testing activities in the off-peak hours, such as early morning or late evenings.

Compliance

- **For equipment approved before July 23, 2001:** This dialer complies with Part 68 of the FCC rules. A label attached to the dialer contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.
- **For equipment approved after July 23, 2001:** This dialer complies with Part 68 of the FCC rules and the requirements adopted by the Administrative Council for Terminal Attachments (ACTA). A label attached to the dialer contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this information must be provided to the telephone company.
- The plug and jack used to connect the dialer to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by ACTA. The dialer must be connected to a compliant RJ-31X or RJ-38X jack using a compliant cord. If a modular telephone cord is supplied with the dialer, it is designed to meet these requirements. See installation instructions for details.
- A ringer equivalence number is used to determine how many devices you can connect to a telephone line. If the total REN value for all devices connected on a telephone line exceeds that allowed by the telephone company, the devices may not ring on an incoming call. In most (but not all) areas the total REN value should not exceed 5.0. To be certain of the total REN value allowed on a telephone line, contact the local telephone company.

For products approved after July 23, 2001, the REN is part of the product identifier in the format US:AAAEQ##TXXXX. The digits ## represent the REN without a decimal point. Example: 03 is an REN of 0.3. For earlier products the REN is listed separately.

- If the dialer is harming the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice isn't practical, the telephone company will notify you as soon as possible. You will also be advised of your right to file a complaint with the FCC, if you believe it is necessary.
- The telephone company may make changes to its facilities, equipment, operations, or procedures that could affect the operation of the dialer. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.
- If you are experiencing problems with the dialer, contact the manufacturer for repair or warranty information. If the dialer is harming the telephone network, the telephone company may request that you disconnect the dialer until the problem is resolved.
- The dialer contains no user serviceable parts. In case of defects, return the dialer for repair.

- You may *not* connect the dialer to a public coin phone or a party line service provided by the telephone company.

3-MODCOM(P) Industry Canada information

Note: The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational, and safety requirements. Industry Canada does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user disconnect the equipment.

Caution: Users should not attempt to make connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Note: The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirements that the sum of the Load Numbers of all the devices does not exceed 100.

Intended audience

The intent of this document is to provide the EST4 life safety system owner with control unit operating instructions. You may assume that your site-specific software has been installed and that the final overall system testing has been completed prior to you using this guide. The extent of your use with control unit buttons, indicators, and command features is dependent upon your fire privilege level access.

Life safety system limitations

The purpose of an automatic fire alarm system is to provide early detection and warning of a developing fire. There are a number of uncontrollable factors that can prevent or severely limit the ability of an automatic fire alarm system to provide adequate protection. As such, an automatic fire alarm system cannot guarantee against loss of life or loss of property.

Two main causes of system failures are improper installation and poor maintenance. The best way to minimize these types of system failures is to have only trained fire alarm system professionals design, install, test, and maintain your fire alarm system in accordance with national and local fire codes.

Fire alarm systems will not operate without electrical power. As fires frequently cause power interruption, we suggest that you discuss ways to safeguard the electrical system with your local fire protection specialist.

In the event your EST4 control unit needs servicing, please contact your system service provider as soon as possible. Refer to "Service provider information" on page 44 for their name and contact information.

Chapter 1

Introduction

Summary

This chapter provides information about your EST4 control unit to give you a basic understanding of its operation.

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System overview

The EST4 life safety system can operate as a stand-alone control unit or as part of an EST4 life safety network.

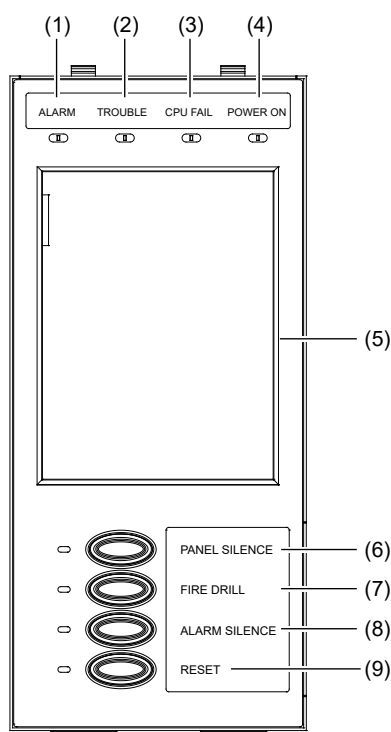
The EST4 user interface includes indicators and operator controls that allow you to respond quickly in emergency situations. The user interface gives you the ability to view message details and system reports, and to enable and disable devices and groups. With the correct fire privilege PIN, you can activate and restore sensitivity settings, test system devices, and perform other tasks.

EST4 LCD user interface

An EST4 system uses LCD display modules to provide the user interface for the fire alarm control unit.

- The 4-LCD and 4-3LCD modules are main LCD display modules that include operator command controls, LED indicators, and an LCD screen.
- The 4-LCDAUDTEL Audio and Firefighter Telephone Control LCD Display Module includes an operator LCD screen.

Figure 1: LCD user interface (4-LCD shown)



Command controls and indicators

The 4-LCD and 4-3LCD user interface command controls and indicators are shown in Figure 1 above. See Table 1 on page 3 for a description of each control and indicator.

Table 1: User interface command controls and indicators descriptions

No.	Control/Indicator	Description
1	Alarm LED	The LED serves as a common alarm event indicator.
2	Trouble LED	The LED serves as a common trouble event indicator.
3	CPU Fail LED	The LED indicates that the CPU has detected a processor failure. Processor failures must be reset manually using the Reset button. A steady LED indicates that the CPU Fail pseudo point is active. An off LED indicates that CPU communications has been restored.
4	Power On LED	The LED indicates the power status for the control unit. The indicator is set by the selected market. Power Always On: A steady LED indicates that either primary power or standby power are present. An off LED indicates that both primary power and standby power are missing. Power Follows AC: A steady LED indicates that primary power is present and off when primary power is missing. An off LED indicates that standby power is present or is missing. Power Only If Available AC and Battery: A steady LED indicates that both primary power and standby power are present. An off LED indicates that either primary power or standby power are missing.
5	LCD screen	The LCD screen display provides information relevant to the current condition of the control unit, as well as operator controls. See "LCD screen indications" on page 5 for details on the LCD screen.
6	Panel Silence button and LED (button one default label and setting)	This configurable button is programmed by default as Panel Silence. The button can be configured as: Panel Silence: For local systems, pressing the Panel Silence button turns the operator alert signal off and acknowledges all events have been reviewed. For proprietary systems, the Panel Silence button is not operational. The operator alert signal only silences after each event has been individually acknowledged in the order displayed. The Panel Silence LED turns on as white while the button is pressed. When the button is released, the LED is on steady as yellow, indicating the control unit is in an off-normal condition and the control unit has been placed in Panel Silence mode, and turns off when the system returns to normal. Drill: Pressing the Fire Drill button activates the system drill response. Pressing the button a second time cancels the drill response. The LED turns on as white while the button is pressed. When the button is released, the LED is on steady as yellow, indicating that the command function is active, and turns off when the function ends. Alternate Alarm Sensitivity: Smoke detectors can operate using two levels of sensitivity: primary and alternate. Pressing the Alternate Sensitivity button switches Signature detectors to their alternate operating settings. Pressing the button a second time switches them back to primary sensitivity levels. The LED turns on as white while the button is pressed. When the button is released, the LED is on steady as yellow, indicating that the command function is active, and turns off when the function ends. Acknowledge: Pressing the Acknowledge button acknowledges events. For proprietary systems, pressing the Acknowledge button acknowledges an event and turns the operator alert signal off when each event has been individually acknowledged in the order displayed. The LED turns on as white while the button is pressed. When the button is released, the LED is on steady as yellow, indicating that the command function is active, and turns off when the system returns to normal.

No.	Control/Indicator	Description
7	Fire Drill button and LED (button two default label and setting)	Lamp Test: Pressing the Lamp Test button temporarily turns on all visual indicators on the local control unit and the LCD screen cycles through colors to reveal any dead pixels. The LED turns on as white while the button is pressed. When the button is released, the LED is on steady as yellow, indicating that the command function is active, and turns off when the function ends. Note: If the local control unit is part of a command center, the lamp test is also executed on all nodes within the command center. System Function 1, System Function 2, System Function 3, or System Function 4: Pressing the System Function button activates the response programmed for function. The LED turns on as white while the button is pressed. When the button is released, the LED is on steady as yellow, indicating that the command function is active, and turns off when the function ends. None: No action assigned. This configurable button is programmed by default as Drill (Fire Drill). The button can be configured in the 4-CU as: Drill: Pressing the Fire Drill button activates the system drill response. Pressing the button a second time cancels the drill response. The LED turns on as white while the button is pressed. When the button is released, the LED is on steady as yellow, indicating that the command function is active, and turns off when the function ends. Panel Silence: For local systems, pressing the Panel Silence button turns the operator alert signal off and acknowledges all events have been reviewed. For proprietary systems, the Panel Silence button is not operational. The operator alert signal only silences after all events have been acknowledged. The Panel Silence LED turns on as white while the button is pressed. When the button is released, the LED is on steady as yellow, indicating the control unit is in an off-normal condition and the control unit has been placed in Panel Silence mode, and turns off when the system returns to normal. Note: The operator alert signal can be configured to resound at a regular interval to remind the operator that the control unit has been silenced. Alternate Alarm Sensitivity: Smoke detectors can operate using two levels of sensitivity: primary and alternate. Pressing the Alternate Sensitivity button switches Signature detectors to their alternate operating settings. Pressing the button a second time switches them back to primary sensitivity levels. The LED turns on as white while the button is pressed. When the button is released, the LED is on steady as yellow, indicating that the command function is active, and turns off when the function ends. Acknowledge: Pressing the Acknowledge button acknowledges events. For proprietary systems, pressing the Acknowledge button acknowledges an event and turns the operator alert signal off when all events have been acknowledged in the order displayed. The LED turns on as white while the button is pressed. When the button is released, the LED is on steady as yellow, indicating that the command function is active, and turns off when the system returns to normal. Lamp Test: Pressing the Lamp Test button temporarily turns on all visual indicators on the local control unit and the LCD screen cycles through colors to reveal any dead pixels. The LED turns on as white while the button is pressed. When the button is released, the LED is on steady as yellow, indicating that the command function is active, and turns off when the function ends.

No.	Control/Indicator	Description
		Note: If the local control unit is part of a command center, the lamp test is also executed on all nodes within the command center. System Function 1, System Function 2, System Function 3, or System Function 4: Pressing the System Function button activates the response programmed for function. The LED turns on as white while the button is pressed. When the button is released, the LED is on steady as yellow, indicating that the command function is active, and turns off when the function ends. None: No action assigned.
8	Alarm Silence button and LED (button three)	Pressing the Alarm Silence button turns off the EVAC and ALERT channels, and all active audible and visible NACs if configured. Pushing the button a second time turns the notification appliance circuits back on. This button may be used to cancel the drill signal. The Alarm silence LED turns on as white while the button is pressed. When the button is released, the LED is on steady as yellow, indicating that the active notification appliance circuits have been silenced, and turns off when the system returns to normal. Note: Project configuration settings affect the operation of the Alarm Silence function.
9	Reset button and LED (button four)	Pressing the Reset button activates the system's reset sequence to restore the system to normal. The Reset LED turns on as white while the button is pressed. When the button is released, the LED flashes as green quickly during the smoke power-down phase, flashes slowly during the power-up phase, is on steady during the restoral phase, and turns off when the system has reset. Notes • The Reset button is disabled as long as the alarm silence inhibit timer is running. • The Reset button does not affect disabled points or manually overridden functions.

LCD screen indications

The LCD screen on the user interface provides information relevant to the current functional condition of the control unit. There are two screen modes: system normal and system off-normal (Figure 2 on page 6).

System normal screen: System normal means that the control unit is in the normal (standby) state. In this state, the LCD screen is clear of any event messages. Only the time, date, system normal graphic, and Action buttons are displayed.

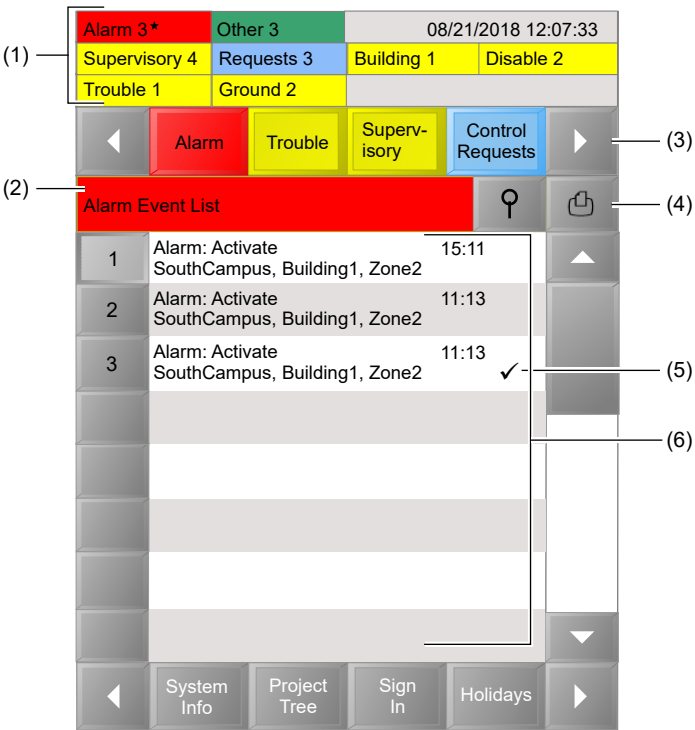
System off-normal: System off-normal means the control unit has changed to the alarm, trouble, supervisory, monitor, disabled, or test state. In this state, the screen displays event messages that provide details about what is happening in the system. The LCD screen displays the eight most recent highest priority events at one time.

Figure 2: System normal and off-normal screens



System normal screen

- (1) Date
- (2) Time
- (3) Default system normal graphic
- (4) Action bar



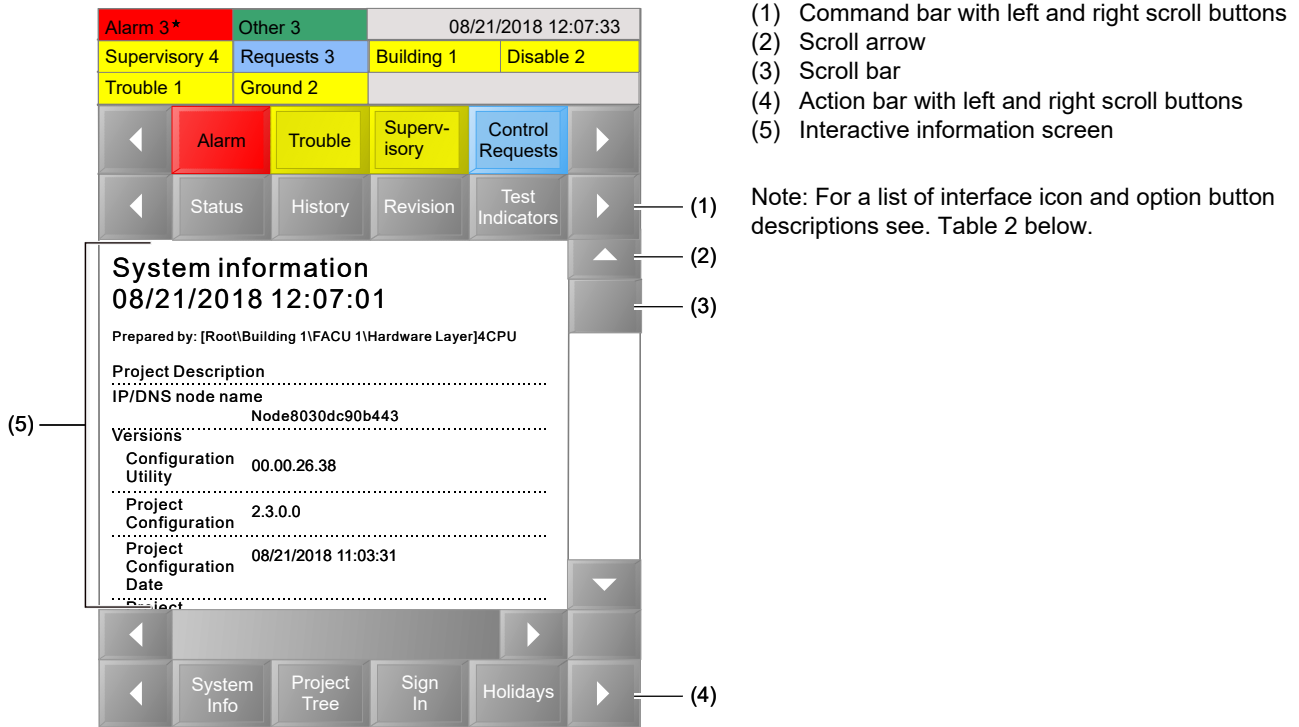
System off-normal screen

- (1) Event indicators and event counters. A star designates that there are unacknowledged or new events since the control unit was last silenced.
- (2) Name of displayed event list
- (3) List bar
- (4) Option buttons for selected action or event list
- (5) Acknowledged event indicated by a check mark (proprietary systems)
- (6) Information list

LCD screen operator controls

The LCD screen provides list buttons, action buttons, and command buttons that let you operate the control unit, configure time and date settings, and view system information and event activity.

Figure 3: LCD screen operator controls



LCD screen operator interface icons and option buttons

The user interface includes several conditional icons, some of which act as operator controls (option buttons). Table 2 below provides descriptions of the icons and option buttons that you may see.

Table 2: Operator interface icon and option button descriptions

Icon	Description	Icon	Description
★	Appears next to the event indicator counters. Designates there are unacknowledged or new events since the control unit was last silenced.	☺	Users administration button. Tap to show/hide user PIN.
⌨	Appears next to the signed in user ID.	📄	Users administration button. Tap to save user information.
🔄	Reports option button. Tap to refresh the report.	☑	Request control button. Tap to grant control.
←	Reports option button. Tap to go to previous page.	☒	Request control button. Tap to deny control.
→	- Reports option button. Tap to go to next page. - Keypad button. Tap to enter and go to next keypad screen.	📞	Fire phone connect button. Tap to connect a disconnected call.

Icon	Description	Icon	Description
	Printer option button. Tap to send report to a configured printer.		Fire phone disconnect button. Tap to disconnect a connected call.
	Details option button. Tap to access an event details report.		Future feature
	Appears next to acknowledged events for proprietary mode systems.		Future feature
	Keypad delete button. Tap to delete a character when using the screen keypads.		Future feature
	User administration button. Tap to delete a user.		Future feature
	Users administration button. Tap to modify user privileges.		

System operation

The basic function of the EST4 control unit is to monitor status changes in the life safety system and to activate outputs according to the site-specific software. Status change signals, also called events, are classified by type and mapped into event queues.

Event indicator queues

The event indicator queues that display on the LCD screen are determined by the 4-CPU properties configured during programming. Events in the queues can pass through to a configured printer, coder, or email service.

The event counters display the number of events in the event queue. A star designates that there are unacknowledged or new events since the control unit was last silenced.

The queues that appear on the List bar display in order of priority based on programming and market settings. The project market setting also determines which event types go into each event queue, and their priority.

Unique operator alert signal patterns are assigned to the event queues that alert you to off-normal system conditions for active event conditions. An alert signal may automatically sound a reminder signal, if configured.

Table 3: Event queues and properties

Event queue	Priority level [1]	Operator alert signal pattern [2]	Event type description
Call In	1	3 pulses every 16 seconds	Events that signal a telephone handset is plugged into a firefighter telephone jack
Control Request	2	2 pulses every 4 seconds	Events that signal a request to take control of the system
Alarm	3	3 pulses every 4 seconds	Events that signal fire alarms or other life-threatening emergencies
Emergency	4	3 pulses every 4 seconds	Events that signal mass notification announcements
Supervisory	5	2 pulses every 4 seconds	Events that signal off-normal conditions with sprinkler and extinguishing systems, and other equipment related to property safety

Event queue	Priority level [1]	Operator alert signal pattern [2]	Event type description
Building	6	2 pulses every 4 seconds	Events that signal controlled building equipment such as dampers, ventilation fans, or temperature controls are not operating correctly
Disable	7	1 pulse every 4 seconds	Events that signal system inputs or system outputs are disabled
Trouble	8	1 pulse every 4 seconds	Events that signal faults within the system
Ground	9	1 pulse every 4 seconds	Events that signal ground faults within the system
Other	10	1 pulse every 16 seconds	Events that signal the operation of ancillary equipment

[1] Priority levels shown are for US, Latin America, International, Middle East, and New Zealand markets.

[2] Operator alert signal patterns shown are for the US Market.

Event message lists

Event message lists allow you to view details of messages to help locate devices that are in an abnormal state. When the system signals a status change, the control unit posts the event message in the appropriate event message queue and generates a message list for the point that activated the event.

An event message consists of two lines of text, as shown in Figure 4 below. The first line displays the event type, current status, and time of the event. The second line displays the message text, which is either the address of the device that activated the event or, if programmed, a location description.

Figure 4: Event message

Alarm 3*	Other 3	08/21/2018 12:07:33	
Supervisory 4	Requests 3	Building 1	Disable 2
Trouble 1	Ground 2		
◀	Alarm	Trouble	Supervisory
		Control Requests	▶
Alarm Event List		🔍	📄
1	Alarm: Activate SouthCampus, Building1, Zone2	15:11	▲
2	Alarm: Activate SouthCampus, Building1, Zone2	11:13	
3	Alarm: Activate SouthCampus, Building1, Zone2	11:13	✓

Table 4: Event message behavior for Local and Proprietary modes

Scenario	Local mode	Proprietary mode
No new events have activated since the last time the control unit was silenced	The highest priority event queue displays.	If all events have been acknowledged, the highest priority event queue displays.
New events have activated since the last time the control unit was silenced	The first new, highest priority event displays.	The first unacknowledged event in the highest priority queue displays.
An active event is restored	The event counter star that indicates new events disappears.	The event counter star that indicates new events disappears and a check mark appears next to the event message.

User fire privilege levels

Certain user interface controls and functions are protected by a 7-digit PIN and have a fire privilege level that is determined by the market setting or administrator programming. The privilege levels are summarized Table 5 below.

User sign in times out after a preconfigured period set by the system administrator. The typical user timeout setting is 5 minutes.

Note: See your system administrator or project documentation for your PIN and fire privilege level.

Table 5: Fire privileges by level

Fire privilege level	Privileges
0 (default; no user sign in required)	• Reports • Write access function (1 hour or 8 hour access) • Print function • Reset command functions • Control request, grant, and deny • Panel Silence button [1][2] • Drill button [1][2] • Alternate Alarm Sensitivity button [1][2] • Acknowledge button [1][2] • Lamp Test button [1][2] • System Function button [1][2] • Alarm Silence button [1] • Reset button [1]
1	All level 0 privileges, plus: • Remote read function • Status holdup report (future feature)
2 (reserved for future features)	All level 0 and 1 privileges
3	All level 0, 1, and 2 privileges, plus: • Freeze history function • Toggle alternate sensitivity function • System time and date • Device (enable/disable) • Logic groups (enable/disable) • Switch (enable/disable) • Relay (activate/restore) • LED (activate/restore) • Audio amp (activate/restore) • Audio message (play/stop)

[1] May be programmed for a fire privilege level.

[2] System programming determines the function assigned to button one and button two on the 4-LCD user interface.

Using the touch screen

The EST4 LCD touch screen provides interactive operator controls.

- *Tap* an event message on the information screen to display message details.
- *Tap* buttons on the Action bar and Command bars to open screens where you can apply system operations and system functions. See Table 7 and Table 8 on page 13 for details.
- *Tap* scroll arrows to scroll through system buttons on bars and event messages on the information screen.
- *Drag* scroll bars to scroll through event messages on the information screen.

List bar

The List bar (Figure 3 on page 7) contains buttons for selecting which event messages you want to display on the screen. The List bar is only available when the system is off-normal screen.

Up to ten lists may be available based on your control unit configuration and market setting. Tap the left or right scroll button to view buttons that may be hidden.

Table 6: List bar button descriptions

List	Minimum fire privilege level	Description
Call In	0	Displays the Call In event list, which shows firefighter telephone call events stored in the list, in the order in which they were received. View an event's Details Report by tapping the event, and then the details button . Print the Details Report by tapping the print button .
Control Requests	0	Displays the Control Requests event list, which shows a list of control requests and whether granted or denied, in the order in which they were received. View an event's Details Report by tapping the event, and then the details button . Print the Details Report by tapping the print button .
Alarm	0	Displays the Alarm event list, which shows alarm events stored in the list, in the order in which they were received. View an event's Details Report by tapping the event, and then the details button . Print the Details Report by tapping the print button .
Emerg (Emergency)	0	Displays the Emergency event list, which shows emergency events stored in the list, in the order in which they were received. View an event's Details Report by tapping the event, and then the details button . Print the Details Report by tapping the print button .
Supervisory	0	Displays the Supervisory event list, which shows supervisory events stored in the list, in the order in which they were received. View an event's Details Report by tapping the event, and then the details button . Print the Details Report by tapping the print button .
Building	0	Displays the Building event list, which shows building events stored in the list in the order, in which they were received. View an event's Details Report by tapping the event, and then the details button . Print the Details Report by tapping the print button .

List	Minimum fire privilege level	Description
Disable	0	Displays the Disabled event list, which shows disabled events stored in the list, in the order in which they were received. View an event's Details Report by tapping the event, and then the details button ⓘ. Print the Details Report by tapping the print button 🖨.
Trouble	0	Displays the Trouble event list, which shows trouble events stored in the list in the order, in which they were received. View an event's Details Report by tapping the event, and then the details button ⓘ. Print the Details Report by tapping the P print button 🖨.
Ground Fault	0	Displays the Ground Fault event list, which shows ground fault events stored in the list, in the order in which they were received. View an event's Details Report by tapping the event, and then the details button ⓘ. Print the Details Report by tapping the print button 🖨.
Other	0	Displays the Other event list, which shows ancillary events stored in the list in the order in which they were received. View an event's Details Report by tapping the event, and then the details button ⓘ. Print the Details Report by tapping the print button 🖨.

Action bar

The Action bar (Figure 3 on page 7) contains buttons for selecting system commands. Tapping action buttons opens system information and interactive screens, and command buttons that are used to apply system operations. The Action bar is available whether the system is normal or off normal.

The LCD screen displays up to four action buttons at a time. Tap the left or right scroll button to view buttons that may be hidden.

Table 7: Action bar button descriptions

Action button	Minimum fire privilege level	Description
System Info	0	Displays the System information screen, and launches the Command bar that provides several system operation command buttons. When signed in as fire privilege level 1 to 3 additional command system operation buttons appear.
Project Tree	0	Displays the project tree. Use the vertical scroll bar to view hidden sections of the expanded tree. - Recent Site Locations: Shows up to 10 locations that the operator has viewed. - Top level: Expanding the top level of the project tree shows expandable nodes and branches that can hold hardware, operator, and communication devices. Tapping a device on the tree, displays its Device details report. For certain devices, the Command bar launches. The command buttons that appear are dependent on the fire privilege level of the user.
Sign In	0	Displays a keypad for entering your 7-digit PIN to access to user privileges. The first three digits of the PIN are your user ID followed by a 4-digit PIN.
Holidays	0	Displays the Holidays List screen.
Users	0	Displays the Users List screen.

Action button	Minimum fire privilege level	Description
Request control	0	Activates a request to take control of the system and displays the Requests event indicator/counter, sounds the operator alert signal, and displays the Control Request List button. Tapping the Control Requests list button allows you to grant or deny a request. See “Request Grant Deny logics” on page 55.
Alternate language (Example: Española or English)	0	Switches the names on LCD screen buttons, lists, indicators, and the text in primary event message to the 4-CU configured alternate language. Note: The alternate language button only appears when the feature is programmed by the system administrator.

Command bar

The Command bar (Figure 3 on page 7) appears when you tap certain action buttons or items on the LCD screen. For example, if you tap the System Info button, the Command bar appears containing several buttons that include allowing you to enable and disable devices and zones, activate and restore switch outputs, and view system reports.

The LCD screen displays up to four command buttons at a time. Tap the left or right scroll button to view buttons that may be hidden.

Table 8: Command bar button descriptions

Action button	Command button	Minimum fire privilege level	Description
System Info	System Info	0	System information report. Lists the control unit firmware version, SDU and hardware configurations, and licensing information.
	Status	0	Status (all) report. Lists active events and disabled points from the selected node.
	Status Disabled	0	Status (disabled) report. Lists all addressable points that are in the disabled state.
	Status Test	0	Status (test) report. Lists off-normal devices under test.
	History	0	History – All Dates report. Lists the last 20,000 events and operator commands processed by the selected node.
	History Alarm	0	History – All Dates, Alarm report. Lists the event name, time, date, and location text for all alarm events.
	History Trouble	0	History – All Dates, Trouble report. Lists the event name, time, date, and location text for all trouble events.
	History Supervisory	0	History – All Dates, Supervisory report. Lists the event name, time, date, and location text for all supervisory events.
	Maintenance (all)	0	Maintenance report. Lists the %Dirty value for all of the detectors on a signaling line circuit for the selected node. For CO detectors the report includes CO Life Left Months or CO DAY Running. The report includes each detector's model type, primary and alternate alarm sensitivity values, and, if programmed, a location description.
	Maintenance Dirty	0	Maintenance (dirty) report. Lists all addressable smoke detectors that have a %Dirty value 20% and greater. A smoke detector that is more than 20% dirty should be noted for possible cleaning or replacing.

Action button	Command button	Minimum fire privilege level	Description
	Maintenance Not Clean	0	Maintenance (not clean) report. Lists all addressable smoke detectors that have a %Dirty value of 80% and greater. Smoke detectors that are more than 80% dirty should be cleaned or replaced as soon as possible.
	Maintenance (device)	0	Maintenance report. Lists the %Dirty value for a selected detector on a signaling line circuit. The report includes the detector's model type, primary and alternate alarm sensitivity value, and, if programmed, a location description.
	Revision	0	Revision report. Creates a report that lists the revision level of all the hardware and software components installed in a node selected in the project tree.
	1 Hour Access	0	Provides a validation code that unblocks the Remote Write command for one hour to permit database changes. The code must be entered in the 4-CU to allow database downloads from a programming computer to the 4-CPU in the EST4 control unit. When tapped, the operator alert sounds and the Other command button displays to show the "Remote write unlocked" local monitor event.
	8 Hour Access	0	Provides a validation code that unblocks the Remote Write command for eight hours to permit database changes. The code must be entered in the 4-CU to allow database downloads from a programming computer to the 4-CPU in the EST4 control unit. When tapped, the operator alert sounds and the Other command button displays to show the "Remote write unlocked" local monitor event.
	Cancel Access	0	Immediately restores the Remote Write command and prevents access to database changes.
	Reset	0	Resets the local control unit. When tapped, the Reset control button indicator flashes.
	Reset All	0	Resets all networked nodes. When tapped, the Reset control button indicator flashes.
	Test Indicators	0	Activates a test of all control unit LEDs and installed control-display module LEDs.
	Status Holdup	1	Future feature.
	Lock Incoming Network	1	Blocks web services for all 4-FWAL series nodes.
	Unlock Incoming Network	1	Unblocks web services for all 4-FWAL series nodes.
	Freeze History	3	Archives the most recent events (up to 10,000 events) so that they cannot be overwritten.
	Toggle Alternate Sensing	3	Switches detector alarm sensitivity levels from primary to alternate or from alternate to primary, whichever is currently active.
	Set Date Time	3	Opens a keypad that lets you set the system time and date.
Project Tree	Enable	3	Enables a device selected in the project tree.
	Disable	3	Disables a device selected on the project tree.
	Activate	3	Activates AND groups and command lists selected in the project tree.
	Restore	3	Restores AND groups the command lists.
	On	3	Activates input and output devices selected in the project tree.

Action button	Command button	Minimum fire privilege level	Description
	Off	3	Restores the input and output devices.
	On	3	Turns on a control-display LED selected in the project tree to steady.
	Fast Blink	3	Turns on a control-display LED selected in the project tree to fast blink.
	Slow Blink	3	Turns on a control-display LED selected in the project tree to slow blink.
	Off	3	Turns off the control-display LED.
	► ∞	3	Future feature.
	■	3	Future feature.
	► 1X	3	Future feature.
	► 3X	3	Future feature.

Chapter 2

Basic operating instructions

Summary

This chapter provides instructions for operating the basic features of your EST4 life safety system. Basic features are those that typically do not require a fire privilege PIN.

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Silencing the operator alert signal

The control unit sounds the operator alert signal when an event message is posted into one of the event message queues. Pressing the Panel Silence button silences the operator alert signal.

Notes

- Pressing the Panel Silence button may also silence the operator alert signal on remote annunciators, if the system is configured to do so.
- For proprietary systems, the Panel Silence button is not operational. The operator alert signal only silences after each event has been individually acknowledged (see “Acknowledging events” on page 19).
- The control unit panel silence function can be programmed for a fire privilege level. The default setting is no PIN required.

To silence the panel operator alert signal:

1. Press the Panel Silence operator control button.
2. If prompted, enter the fire privilege PIN using the interactive keypad.

Silencing alarm signals

WARNING: Death or serious injury. The protected premises may be occupied. Do not silence alarm signals or reset the control unit unless you are authorized to do so and only after all occupants have been evacuated.

Pressing the Alarm Silence operator control button silences all audible alarm signals and, if configured, all visual alarm signals. Pressing the button a second time turns back on the signals.

Pressing the Alarm Silence operator control button *does not* silence alarm signals when:

- A waterflow alarm switch is active and the system is configured to prevent silencing alarm signals when a waterflow alarm switch is active
- The system is configured to delay the silencing of alarm signals, in which case the Alarm Silence button may not be operational for up to five minutes following the first alarm event

Silenced outputs automatically re-sound when:

- The Alarm Silence button is pressed a second time
- Another alarm input activates
- Another alarm input in the same zone activates, unless the system is configured to prevent alarm signals from re-sounding

Note: The alarm silence function can be programmed for a fire privilege level PIN. The default setting is no PIN required.

To silence alarm signals:

1. Press the Alarm Silence operator control button.
2. If prompted, enter the fire privilege PIN using the interactive keypad.

Acknowledging events

When an event occurs, it is important that you acknowledge it and review the issue. The control unit handles the event by showing it on the LCD screen as an event message, sounding the operator alert signal, placing the event in the appropriate queue, and, when configured, flashing the Acknowledge LED.

If an operator control button has been programmed in the 4-CU as Acknowledge, pressing the Acknowledge button acknowledges events.

For proprietary systems, pressing the Acknowledge button acknowledges an event and turns the operator alert signal off after all events have been individually acknowledged in the order displayed.

Note: The acknowledge function can be programmed for a fire privilege PIN. The default setting is no PIN required.

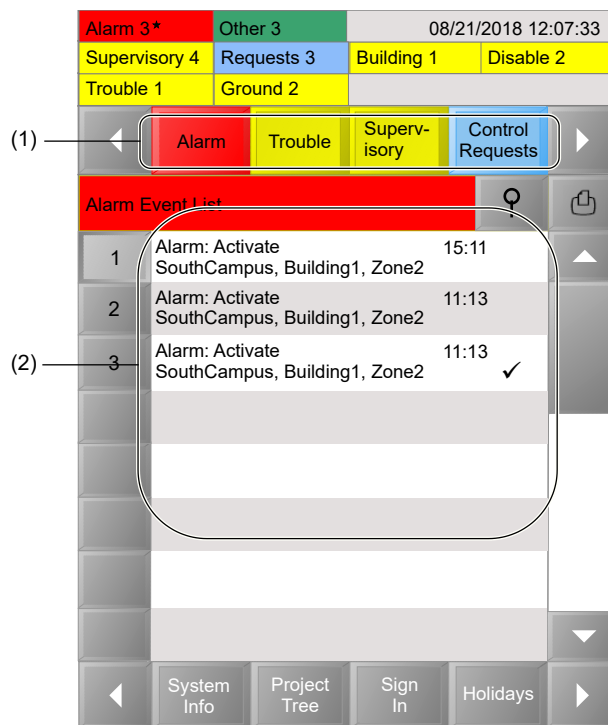
To acknowledge an event:

1. Press the Acknowledge operator control button.
2. If prompted, enter the fire privilege PIN using the interactive keypad.

Displaying event lists

Event lists allow you to view event messages in a specific queue. The message consists of two lines of text that include the event type, current status, time of the event, and message text.

Figure 5: Viewing event lists



(1) Event list buttons

(2) Events in the list queue

To display an event list:

- 1. Tap an event list button. For example, Alarm.
A list of queued events appears on the information screen.

Viewing event details

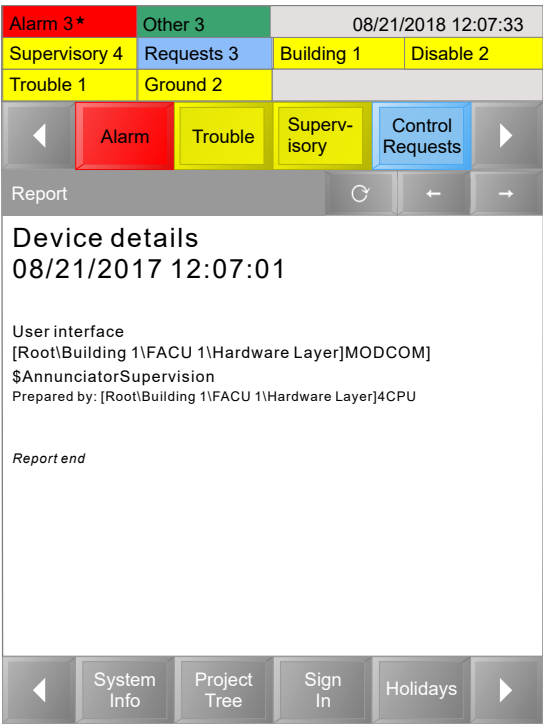
An event or device details report provides the type of event, address of the device that generated the event and, if programmed, the location (Figure 6 below).

Device details: If a device activation causes an event, the Details screen shows the active device’s logical address and the off-normal state.

Logic group details: If a group activation causes an event, the Details screen shows the state of the device, device address, and device message, which is usually the device location.

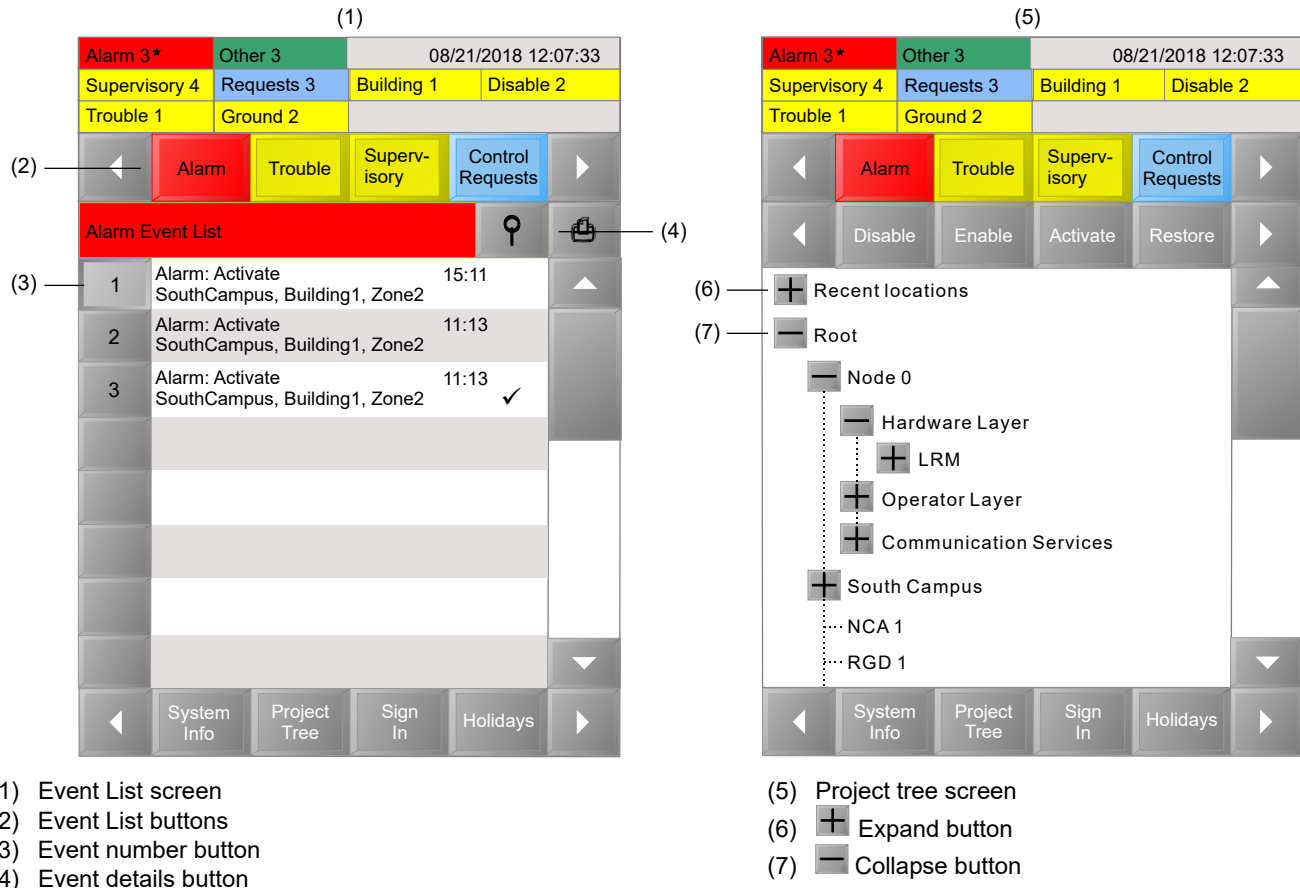
Instruction text details: If the system administrator has programmed detailed instructions for certain events to show, when specific devices go into alarm the system generates a related monitor event. If you select the monitor event, and then press the details button the instruction text is displayed.

Figure 6: Event details report



Event details can be accessed from the event list or project tree.

Figure 7: Accessing event details

**To view device details from an event list:**

1. Tap an event List button. For example, Alarm.
2. In the list, tap the event number, and then tap the details button . The Device Details Report displays.

To view device details from the project tree:

1. On the Action bar, tap Project Tree.
2. Expand the project tree by tapping the expand button , and then locate the target device or pseudo point.
3. Tap on the device/pseudo point. The Device Details Report displays.

Changing the LCD screen to an alternate language

For control units programed for an alternate language, a language button displays on the Action bar. The button name shows the alternate language configured for the control unit. For example, Española or English.

When the alternate language button is tapped, the names on LCD screen buttons, lists, and indicators and the text in primary event messages switches to the alternate language.

Notes

- For the alternate language button to appear on the Action bar, the Alternate Language property must have been programmed.

- Custom event message text does not switch to the alternate language.
- The LCD screen defaults to the primary language at control unit startup.

To change the LCD screen to the alternate language:

1. Tap the alternate language button on the Actions bar (example: Española or English).

Viewing the alarm count

The EST4 control unit records how many times it has gone into alarm condition since the alarm history was cleared. View the Revision report to see the alarm count.

To view the alarm count:

1. On the Action bar, tap System Info.
2. On the Command bar, tap the Revision button. Alarm history count displays in the top of the Revision report.

You can tap the print button  to send the report to a local printer.

Checking system device statuses

The EST4 control unit provides the following status reports to help you find out if any points in the system are in an active or other off-normal state:

- Status report: Shows a list of all active events and disabled points from the selected node.
- Status Test report: Shows a list of off-normal devices under test.
- Status Disabled report: Shows a lists of addressable points that are disabled.

To view device status reports:

1. On the Action bar, tap System Info.
2. On the Command bar, tap the desired device status report button. The report displays on the screen.

You can tap the print button  to send the report to a local printer.

Performing a lamp test

A lamp test allows you to verify the operation of the LCD screen and LED indicators. The test temporarily turns on the operator alert signal, all LED indicators, and every pixel on the LCD screen.

You can activate a lamp test using an operator control button, when programmed as Lamp Test, or a control-display module button programmed to activate the lamp test.

Notes

- If the local control unit is part of a command center, the lamp test is also executed on all nodes within the command center.
- The lamp test function can be programmed for a fire privilege PIN. The default setting is no PIN required.

To activate a lamp test:

1. Press the Lamp Test operator control button, if available
— or —
Press a control-display button programmed to activate the lamp test.
2. If prompted, enter the fire privilege PIN using the interactive keypad.

Activating an alarm signals drill

The EST4 drill feature lets you activate alarm signals manually without putting the control unit into alarm. When you activate a drill, all audible alarm signals turn on and, if configured, all visual alarm signals, but other automatic fire alarm responses are not activated. The alarm signals remain active until the drill is canceled.

You can activate a drill using an operator control button, when programmed as Fire Drill, or a control-display module button programmed to activate the drill.

Note: The drill function can be programmed for a fire privilege PIN. The default setting is no PIN required.

To activate a drill:

1. Press the Fire Drill operator control button if available
— or —
Press a control-display button programmed to activate the drill.
2. If prompted, enter the fire privilege PIN using the interactive keypad.

Note: To cancel the drill, press the button a second time.

Resetting the life safety system

WARNING: Death or serious injury. The protected premises may be occupied. Do not reset the fire alarm system until the proper authorities have determined that the threat of fire is no longer present.

Resetting the life safety system restores the system to its normal state, provided all latched inputs have been restored before the end of the reset cycle.

Notes

- The Reset button may be inoperable for up to three minutes following the first alarm event.
- The Reset button does not affect disabled points or manually overridden functions.
- The reset function can be programmed for a fire privilege PIN. The default setting is no PIN required.

To reset the life safety system:

1. Press the Reset operator control button.
2. If prompted, enter the fire privilege PIN using the interactive keypad.

Finding detectors needing maintenance

The EST4 control unit provides maintenance reports to help you find out if any addressable smoke detectors need servicing. The %Dirty value shown in the report is an indication of a smoke detector's ability to compensate for environmental conditions. Smoke detectors with higher percentages are less able to compensate.

The following maintenance reports can be accessed from the control unit:

- **Maintenance (all):** Lists the %Dirty value for all of the smoke detectors on a signaling line circuit. The report also includes each smoke detector's model type, primary and alternate alarm sensitivity values, and, if programmed, a location description.
- **Maintenance (device):** Lists the %Dirty value for a single smoke detector. For CO detectors the report includes CO Life Left Months or CO DAY Running. The report also includes the smoke detector's model type, primary and alternate alarm sensitivity values, and, if programmed, a location description. To view this report you must select the device from the Project Tree.
- **Maintenance Not Clean:** Lists all addressable smoke detectors that have a %Dirty value of 80% and greater. Smoke detectors that are more than 80% dirty should be cleaned or replaced as soon as possible.
- **Maintenance Dirty:** Lists all addressable smoke detectors that have a %Dirty value of 20% and greater. A smoke detector that is more than 20% dirty should be noted for possible cleaning or replacing.

To find detectors that may need servicing:

1. On the Action bar, tap System Info.
2. On the Command bar, tap the desired maintenance report button. The report displays on the screen.

Tap the print button  to send the report to a local printer.

To view a maintenance report for a specific detector:

1. On the Action bar, tap Project Tree.
2. Expand the project tree by tapping the expand button , and then locate the target detector. For example, FLR1W PCOS2.
3. Tap the detector. The Device Details screen appears.
4. On the Command bar, tap the Maintenance button.

Viewing history reports

The EST4 control unit provides history reports that list the most recent events or operator instructions processed by the control unit for the previous month to current or since its history was cleared. The report includes the event or system command name, address, time and date of occurrence, and the source that initiated the event or command.

The history reports are listed below.

- **History: All Dates report:** Lists the last 20,000 events and operator commands processed by selected node
- **History Alarm: All Dates, Alarm report:** Lists the event name, time, date, and location text for all alarm events
- **History Trouble: All Dates, Trouble report:** Lists the event name, time, date, and location text for all trouble events.
- **History Supervisory: All Dates, Supervisory report:** Lists the event name, time, date, and location text for all supervisory events.

To view history reports:

1. On the Action bar, tap System Info.
2. On the Command bar, tap the desired history report button. The report displays on the screen.

Tap the print button  to send the report to a local printer.

Finding firmware and system information

The EST4 control unit provides revision and system information reports where you can find unit database, firmware, and project versions, device firmware numbers, MAC addresses, and other system information.

Revision report

The Revision report provides system database information and installed hardware information. The hardware that shows on the list is dependent on the devices installed in the control unit cabinet.

By viewing a Revision report, you can find information for the following:

- Alarm history count: Shows the total number of times that the control unit has gone into alarm since the alarm history was cleared.
- Market: Shows the 4-CU market setting.
- Configuration version: Shows the 4-CU project version number.
- Configuration time stamp: Shows the date and time that the 4-CU project was created or modified.
- Configuration schema: Shows the 4-CU firmware-to-software interface version.
- Configuration messaging: Shows the 4-CU internal messaging protocol version.
- Firmware: Shows the 4-CU firmware version.
- Local rail module (LRM) shows:
 - LRM type
 - Firmware version and date
 - Bootloader version and date
 - 4-CU database version and date
- Control-display module (CDM) Annunciator shows:
 - CDM type
 - Firmware version and date
- CPU shows:
 - CPU type
 - Firmware version and date
 - Bootloader version and date.

To view the Revision report:

1. On the Action bar, tap System Info.
2. On the Command bar, tap the Revision button. The Revision report displays on the screen.

Tap the print button  to send the report to a local printer.

System information report

The System Info report provides a project description that includes the control unit (node) MAC address required for communication between the 4-CU and control unit, and project versioning numbers. Component licensing and copyright information is also included in the report.

By viewing the System Info report, you can find information for the following:

Project Description

- IP/DNS node name: Shows the MAC address of the installed CPU.

Versions

- Configuration Utility: Shows the 4-CU software version.
- Project Configuration: Shows the 4-CU project version number.
- Project Configuration Date: Shows the date and time that the database was downloaded.
- Project Configuration ID: Shows the database serial number created when the database was converted.
- Configuration schema: Shows the 4-CU software-to-firmware interface version.
- Message Schema: Shows the 4-CU internal messaging protocol version.
- Firmware: Shows the 4-CU firmware version.
- Archive Enabled: Shows whether the project is configured to automatically archive project files.

Licensing

- Licensing and copyright information for various components used in the 4-CU software and firmware.

To view the System Information report:

1. On the Action bar, tap System Info. The System Information report displays on the screen.

Tap the print button  to send the report to a local printer.

Obtaining an access code for a system programmer

A system programmer downloads firmware and project databases to the control unit from a computer running the system configuration utility. By default, the control unit is blocked from allowing unauthorized database changes. The programmer may request that you obtain a control unit access code to gain access for a system download.

Note: The access code should only be used by a system programmer or service provider. Changes to the life safety system must be tested and may require local authority approval.

To obtain an access code:

1. On the Action bar, tap System Info.
2. On the Command bar, tap 1 Hour Access or 8 Hour Access. A 6-digit access code displays.

To cancel access:

1. On the Action bar, tap System Info.
2. On the Command bar, tap Cancel Access.

Requesting, granting, or denying control

The request, grant, deny (RGD) function is a programming method working in association with notification control areas and command centers to handle demands for control of audio communications in the life safety system. Request to control a system and permission to grant or deny the request can be made from the 4-LCD user interface or from programmed control-display module button.

Using the 4-LCD user interface to request, grant, or deny control

To request control:

1. On the Action bar, tap Request Control. The Control Request list button appears and the operator alert signal sounds.
2. Tap the Control Request list button.
The Control Request List screen shows the request for control locations and the control status. You can tap the details button ⓘ to see the control status, which displays on the Device Details report.

To grant control:

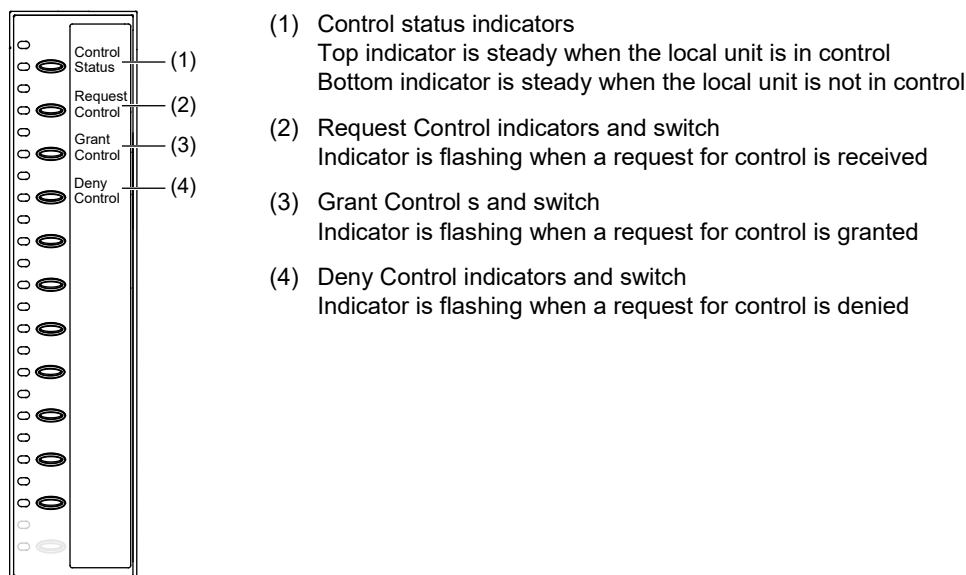
1. Tap the Control Request list button.
2. On the Control Request List screen, tap the desired control request number, and then tap the grant button ☒.
Note: The grant button is functional only on the node that has control.
The control status shows on the screen. You can tap the details button ⓘ to see the control status, which displays on the Device Details report.

To deny control:

1. Tap the Control Request list button.
2. On the Control Request List screen, tap the desired request number, and then tap the deny button ☐.
The control status shows on the screen. You can tap the details button ⓘ to see the control status, which displays on the Device Details report.

Using a control-display module to request, grant, or deny control

Note: Your system may be configured and labeled differently than shown in the example provided in Figure 8 on page 28.

Figure 8: Example of the request, grant, deny function using a control-display module**To request control:**

1. From the control-display module, press the switch labeled to request control. For example, “Request Control” in Figure 8, item 2.

To grant control:

1. When the control display module’s request for control indicator (Figure 8, item 2) is flashing, press the switch labeled to grant control. For example, “Grant Control” in Figure 8, item 3.

To deny control:

1. When the control-display module’s request control indicator (Figure 8, item 2) is flashing, press the switch labeled to deny control. For example, “Deny Control” in Figure 8, item 4.

Making voice and emergency announcements

For an EST4 control unit that includes a 4-MIC microphone or 4-FT firefighter telephone, emergency voice and alarm communications are supported.

4-MIC microphone

The 4-MIC microphone provides paging capability local to the node, within an notification control area (NCA), or over an entire network. The 4-MIC assembly incorporates push-to-talk (PTT) LED that illuminates when the PTT button is pressed, and a volume LED that illuminates if the voice level is too loud.

Notes

- All paging functions require a 4-24L series control-display module.
- Your system may be configured differently than described below.

To make a live voice announcement:

1. For a control unit programmed as a command center, request for control of the EST4 system may be required.

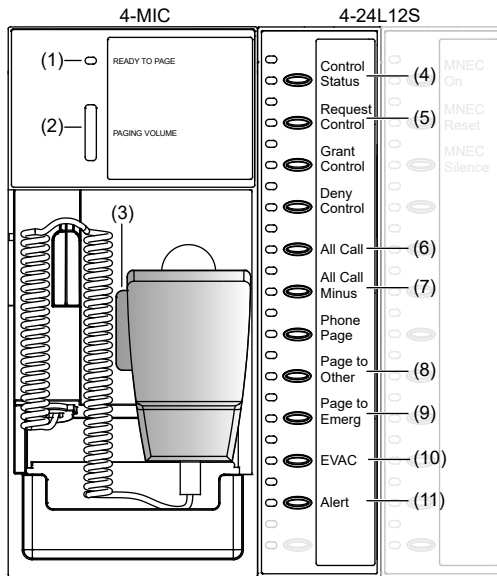
- Using the operator touch screen:

On the Action bar tap Request Control, and then tap the Control Request list button. The information screen will show the control status. When ready, proceed to step 2.

- Using a 4-24L series control-display module (see Figure 9 below):

If the top Control Status LED (item 4) is steady, proceed to step 2. If not, press Request Control (item 5); its LED flashes while requesting control. When the top Control Status LED is steady, proceed to step 2.

Figure 9: 4-MIC voice announcements using control-display module switches and indicators



2. Remove the microphone from its hook, and then press the areas to receive the page.

All Call (item 6): Broadcasts to all areas whether or not they are sounding a signal.

All Call Minus (item 7): Broadcasts to areas not currently sounding the evacuation signal or the alert signal.

Page to Other (item 8): Broadcasts live voice messages to areas such as stairwells and elevators.

Page to Emerg (item 9): Broadcasts live voice messages to areas defined for mass notification announcements.

EVAC (item 10): Broadcasts to areas currently sounding the evacuation signal.

Alert (item 11): Broadcasts to areas configured to areas currently sounding the alert signal.

3. Press and hold the microphone push-to-talk switch (PTT) (item 3). The Ready to Page LED (item 1) flashes during a preannouncement tone. When the LED is on steady, begin the announcement. Adjust your voice level so that the red LED on the Paging Volume meter (item 2) *does not* illuminate.
4. Release the PTT switch when the announcement is finished and return the microphone to its hook.

4-MIC live mass notification signaling (MNS)

In MNS signaling mode, the page signal is redirected to the Emergency channel. Any audio amplifier connected to either the Page or Emergency audio channels will receive the page.

Notes

- All paging functions require a 4-24L series control-display module.
- Your system may be configured differently than described below.

To make a live mass notification announcement:

1. For a control unit programmed as a command center, request for control of the EST4 system may be required.

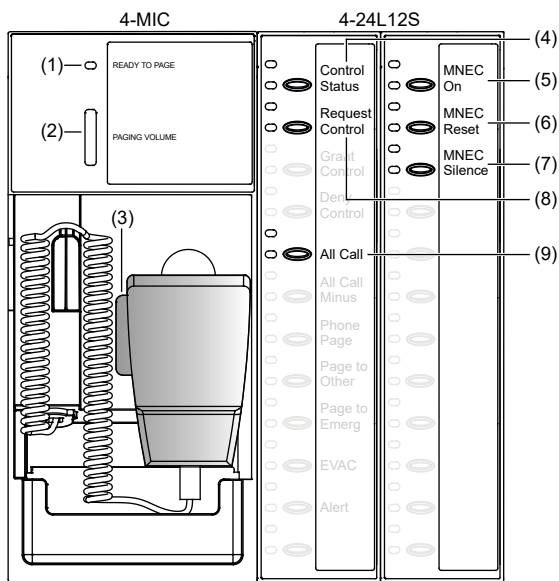
- Using the operator touch screen:

On the Action bar tap Request Control, and then tap the Control Request list button. The information screen will show the control status. When ready, proceed to step 2.

- Using a 4-24L series control-display module (see Figure 10 below):

If the top Control Status LED (item 4) is steady, proceed to step 2. If not, press Request Control (item 8); its LED flashes while requesting control. When the top Control Status LED is steady, proceed to step 2.

Figure 10: 4-MIC live MNS signaling using control-display module switches and indicators



2. Press the MNEC On button (item 5) on the control-display module, to activate the function.
3. Remove the microphone from its hook, and then press the All Call button (item 9) on the control-display module.
4. Press and hold the microphone push-to-talk switch (PTT) (item 3). The Ready to Page LED (item 1) flashes during a preannouncement tone. When the LED is on steady, begin the announcement. Adjust your voice level so that the red LED on the Paging Volume meter (item 2) *does not* illuminate.
5. Release the PTT switch when the announcement is finished and return the microphone to its hook.

To silence mass notification signals:

1. Press MNEC Silence (figure item 7 above). The bottom LED indicates silence is active.

Note: This action only silences mass notification signals. To silence fire alarm signals, see “Silencing the operator alert signal” on page 18.

To reset the system when mass notification operation is active:

1. Press MNEC Reset (figure item 6 above) on the control-display module. The bottom LED indicates the reset is active.

Note: This action only resets the system when mass notification operation is active. To reset the system for fire events, see “Resetting the life safety system” on page 23.

4-FT firefighter telephone live voice announcements

For an EST4 system that includes a firefighter telephone, the telephone paging feature permits individuals with access to a remote firefighter telephone to make announcements over the emergency voice/alarm communications system.

Notes

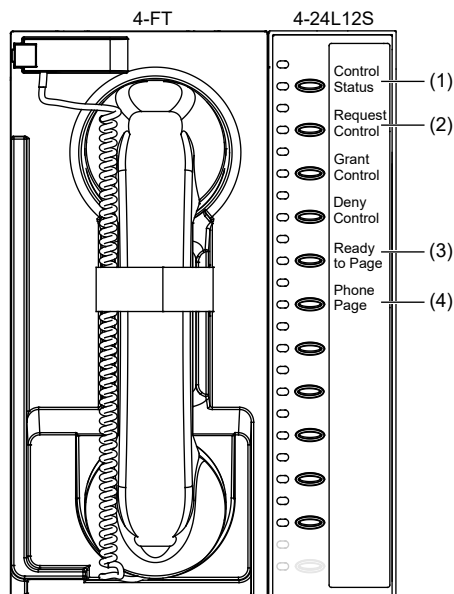
- All 4-FT live voice announcement functions require a 4-24L series control-display module.
- Your system may be configured differently than described below.

To make a live voice announcement:

1. For a control unit programmed as a command center, request for control of the EST4 system may be required. Use a 4-24L series control-display module to request control. See Figure 11 below.

If the top Control Status LED (item 1) is steady, proceed to step 2. If not, press Request Control (item 2); its LED flashes while requesting control. When the top Control Status LED is steady, proceed to step 2.

Figure 11: 4-FT live voice announcements using control-display module switches and indicators



2. Remove the telephone handset from its hook.
3. The Ready to Page LED (item 3) on the control-display module flashes during a preannouncement tone. When the LED is on steady, begin your announcement.
4. When finished, place the telephone handset on its hook.

4-FT firefighter telephone two-way communication

The 4-FT firefighter telephone provides capability for two-way communications between the fire command station and firefighter telephone stations / jack telephones installed at strategic locations throughout the protected building.

Answering incoming calls

An incoming call is initiated when a 4-FT firefighter telephone is taken off-hook or plugged into a telephone jack, generating a visual and audible incoming call signal at the fire command station. The caller hears a tone until the handset is connected to the system. The fire command station operator manually connects the incoming phone call to the phone riser to complete the call. The firefighter telephone can also be used as a page source.

The incoming call sounds the control unit operator alert signal and displays the Call-in List button on the LCD screen that, when tapped, displays a Call-in list of all incoming calls in the order in which they were received. Call-in icons also appear that serve as operator controls for connecting and disconnecting calls.

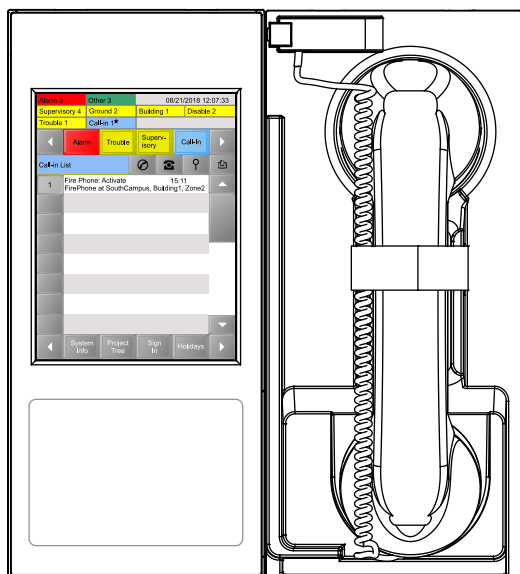
To answer a call:

1. For a control unit programmed as a command center, request for control of the EST4 system may be required. Use a 4-24L series control-display module to request control. See Figure 11 on page 31.

If the top Control Status LED (item 1) is steady, proceed to step 2. If not, press Request Control (item 2); its LED flashes while requesting control. When the top Control Status LED is steady, proceed to step 2.

2. From the operator touch screen, on the List bar, tap Call-in.
3. In the Call-in List, locate the desired call, and then tap the call-in event number.

Figure 12: Answering firefighter telephone calls using the operator touch screen



4. Tap the connect button  to connect the call to the master (local) telephone handset. The event's status changes to Connected.
5. Remove the telephone from its hook and communicate with the caller.
6. To add another call-in location to the conversation, in the Call-in list tap the location's event number, and then tap Connect again.

Up to five phone circuits can be connected, in addition to the master telephone.

Disconnecting calls

When the caller is ready to hang up or remove a phone from its jack, disconnect the call.

To disconnect a call:

1. On the Call in List, locate the call to be disconnected, and then tap the call-in event's number.
2. Tap the disconnect button  to disconnect the call. The event status changes to Disconnected.

When the *remote telephone handset* is hung up or removed from the phone jack, the call will be removed from the Call-in list.

3. Place the *master telephone handset* on its hook. The Call-in event indicator and Call-in list no longer appear on the LCD screen.

Chapter 3

Advanced operating instructions

Summary

This chapter provides instructions for operating the advanced features of your EST4 life safety system. Advanced features alter system operation and require the fire privilege 1 access or greater.

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- Changing remote read access 36
- Freezing the events history 36
- Changing the smoke detector alarm sensitivity threshold 36
- Setting the system date and time 37
- Disabling and enabling devices 37
- Disabling and enabling local rail modules 38
- Disabling and enabling logic groups 39
- Disabling and enabling time controls 39
- Changing output states 40
- Control-Display modules 40
 - Disabling and enabling control-display modules 41
 - Disabling and enabling control-display module elements 41

Changing web service access

You can block and unblock web services for all firewall nodes using a user interface command button.

Note: Only users with fire privilege 1 and higher can access this function.

To allow remote read access:

1. Sign in with fire privilege 1 or higher, and then tap System Info on the Action bar.
2. On the Command bar, tap Unlock Incoming Network. This unblocks web services for all firewall nodes.

To disallow remote read access:

1. Sign in with fire privilege 1 or higher, and then tap System Info on the Action bar.
2. On the Command bar, tap Lock Incoming Network. This blocks web services for all firewall nodes.

Freezing the events history

When the Freeze History command is activated, the system archives the most recent events (up to 10,000) so that they cannot be overwritten.

Note: Only users with fire privilege 3 can access this function.

To freeze event history:

1. Sign in with fire privilege 3, and then tap System Info on the Action bar.
2. On the Command bar, tap Freeze History.

Changing the smoke detector alarm sensitivity threshold

Intelligent addressable smoke detectors are configured with two alarm sensitivity thresholds: primary and alternate. The alarm sensitivity setting determines how easily automatic fire detectors can sense a fire alarm condition.

A time control is commonly used to automatically switch alarm sensitivity thresholds. However, you can manually switch alarm sensitivity thresholds by using a command button.

Note: Only users with fire privilege 3 can access this function.

Primary alarm sensitivity threshold: Typically, the primary alarm sensitivity threshold is set to a lower threshold. This threshold is commonly used for a daytime operation to reduce the occurrence of nuisance alarms when a facility is occupied, or when environmental conditions may create prealarm conditions.

Alternate alarm sensitivity threshold: The alternate alarm sensitivity threshold sets the *secondary threshold* at which the smoke detector activates an alarm event. Typically, the alternate threshold is set to a higher sensitivity threshold. This threshold is commonly used for a nighttime or weekend operation, when the facility is unoccupied.

To activate the alternate alarm sensitivity settings:

1. Sign in with fire privilege 3, and then tap System Info on the Action bar.
2. On the Command bar, tap Toggle Alternate Sensing.

To restore the primary alarm sensitivity settings:

1. Sign in with fire privilege 3, and then tap System Info on the Action bar.
2. On the Command bar, tap Toggle Alternate Sensing.

Setting the system date and time

The control unit incorporates a system clock to time stamp events and to activate time controls. The time is presented in 24-hour format. The date format is determined by the 4-CU project property setting. The default format is presented in month-day-year.

Note: Only users with fire privilege 3 can access this function.

To set the system date and time:

1. Sign in with fire privilege 3, and then tap System Info on the Action bar.
2. On the Command bar, tap Set Date Time.
3. Use the interface keypad to enter date and time.

The default format is YYYYMMDDhhmmss. Where,

YYYY = 4-digit year

MM = 2-digit month

DD = 2-digit day

hh = 2-digit hour

mm = 2-digit minutes

ss = 2-digit seconds

Note: The time is entered in 24-hour format, for example:

000000 = midnight

010000 = 1:00 a.m.

120000 = noon

130000 = 1:00 p.m.

235900 = 11:59 p.m.

The date and time, displayed at the top of the user interface screen, immediately changes.

Disabling and enabling devices

Disabling a device isolates it from the system. While the device is disabled, the EST4 control unit logs the status change signals, but is prevented from processing the signals until the device is enabled. For example, the control unit does not activate an alarm event when you activate a disabled detector, but it will after the detector is enabled.

The control unit keeps track of how many times you disable a device without enabling it. You must enable a device the same number of times you disable it in order to return the device to its original condition. The Status Disabled report provides a counter that shows the number of times the device was manually disabled.

Notes

- Disabling the device address for a dialer or a dialer account deletes all event messages sent to that account before they are transmitted. However, the dialer still transmits the account's test-abnormal message and any message that was in the dialer queue before the account was disabled.

- Disabling all of the devices in a zone group automatically disables the zone group. Enabling any device in the zone group automatically enables the zone group.
- When you enable a device, all indicators and outputs activated by the device will reactivate.
- Only users with fire privilege 3 can access this function.

To disable a device:

1. Sign in with fire privilege 3, and then tap Project Tree on the Action bar.
2. Expand the project tree by tapping the expand button , and then locate the target device.
3. Tap the device, and then tap Disable on the Command bar.

To enable a device:

1. Sign in with fire privilege 3, and then tap Project Tree on the Action bar.
2. Expand the project tree by tapping the expand button , and then locate the target device.
3. Tap the device, and then tap Enable on the Command bar. You must enable the device the same number of times that you disabled it. If necessary, view the Status Disabled report to see the manual disable counter (Action Bar > System Info > Status Disabled).

Disabling and enabling local rail modules

Local rail modules can include chassis rail cards and modules installed on the backbox, and control-display modules installed on the inner door. Disabling a module isolates it from the system. While the module is disabled, the EST4 control unit logs the status change signals, but is prevented from processing the signals until the module is enabled.

Notes

- The control unit keeps track of how many times you disable a module without enabling it. You must enable a module the same number of times you disable it in order to return the module to its original condition. The Status Disabled report provides a counter that shows the number of times the device was manually disabled.
- Only users with fire privilege 3 can access this function.

To disable an LRM:

1. Sign in with fire privilege 3, and then tap Project Tree on the Action bar.
2. Expand the project tree by tapping the expand button , and then locate the target LRM.
3. Tap the module, and then tap Disable on the Command bar.

To enable an LRM:

1. Sign in with fire privilege 3, and then tap Project Tree on the Action bar.
2. Expand the project tree by tapping the expand button , and then locate the target LRM.
3. Tap the module, and then tap Enable on the Command bar. You must enable the device the same number of times that you disabled it. If necessary, view the Status Disabled report to see the manual disable counter (Action Bar > System Info > Status Disabled).

Disabling and enabling logic groups

A group is a *logic* device that is created during system programming. Your system configuration may include AND, Matrix, Service, Zone, or Instruction Text logic groups.

Logic groups are required in order to execute certain system functions, but have no physical relationship to the system. For example, smoke detectors can be assigned to the same Zone group even though they are not attached to the same wire run.

Disabling a logic group isolates it from the system. While the group is disabled, the control unit is prevented from processing status change signals from every device in the group until the device is enabled. For example in a Zone group, the control unit does not activate an alarm event when you activate a disabled detector, but it will after the detector is enabled.

Notes

- The control unit keeps track of how many times you disable a logic group without enabling it. You must enable a logic group the same number of times you disable it in order to return the group to its original condition. The Status Disabled report provides a counter that shows the number of times the device was manually disabled.
- If you disabled a Zone logic group by disabling all of the devices in the zone, enabling the zone enables all of the devices in the zone.
- Only users with fire privilege 3 can access this function.

To disable a logic group:

1. Sign in with fire privilege 3, and then tap Project Tree on the Action bar.
2. Expand the project tree by tapping the expand button , and then locate the target group.
3. Tap the group, and then tap Disable on the Command bar.

To enable a logic group:

1. Sign in with fire privilege 3, and then tap Project Tree on the Action bar.
2. Expand the project tree by tapping the expand button , and then locate the target group,
3. Tap the group, and then tap Enable on the Command bar. You must enable the device the same number of times that you disabled it. If necessary, view the Status Disabled report to see the manual disable counter (Action Bar > System Info > Status Disabled).

Disabling and enabling time controls

Time Controls are logic devices that are created during system programming. They are configured to set up automatic starting and stopping of system events based on time and date. The controls run in the background and do not require any operator action. In the event you need to disable a control, you can do so from the control unit.

Note: Only users with fire privilege 3 can access this function.

To disable a time control:

1. Sign in with fire privilege 3, and then tap Project Tree on the Action bar.
2. Expand the project tree by tapping the expand button , and then locate the target time control.
3. Tap the time control, and then tap Disable on the Command bar.

To enable a time control:

1. Sign in with fire privilege 3, and then tap Project Tree on the Action bar.
2. Expand the project tree by tapping the expand button , and then locate the target time control.
3. Tap the group, and then tap Enable on the Command bar.

Changing output states

Use the On and Off commands to change the output state of relays, NAC circuit outputs, and audio amplifiers.

Note: Only users with fire privilege 3 can access this function.

To activate a output state:

1. Sign in with fire privilege 3 or higher, and then tap Project Tree on the Action bar.
2. Expand the project tree by tapping the expand button , and then locate the target device.
3. Tap the device, and then tap On on the Command bar.

To restore a relay output state:

1. Sign in with fire privilege 3 or higher, and then tap Project Tree on the Action bar.
2. Expand the project tree by tapping the expand button , and then locate the target device.
3. Tap the device, and then tap Off on the Command bar.

Control-Display modules

Control-display modules provide additional operator interface capability.

Model [1]	Description
4-24L	24 indicators
4-24L12S	24 indicators and 12 switches
4-24L18S	24 indicators and 18 switches
4-24L24S	24 indicators and 24 switches

The buttons on a control-display module use one of three programmed operating modes:

- **Toggle:** The state of the button changes each time the button is pushed (i.e. off to on or on to off).
- **Interlocked:** Adjacent toggle buttons operate as a group. Pushing any button in the group turns the output of the other two buttons off and turns its own output on. An interlocked button in the on state can be turned off without activating a second button by pressing the On button a second time. The output of the on button remains on during control unit reset. It must be manually returned to auto when no longer required.
- **Momentary:** The button is on only while pressed by the operator.

Disabling and enabling control-display modules

Disabling a control-display module isolates it from the system. While disabled, changes to the module's state are not processed. Enabling a control-display module re-establishes it as part of the system. When enabled, any changes in state that occurred while the module was disabled are not processed.

Note: Only users with fire privilege 3 can access this function.

To disable a control-display module:

1. Sign in with fire privilege 3 or higher, and then tap Project Tree on the Action bar.
2. Expand the project tree by tapping the expand button , and then locate the target control-display module.
3. Tap the control-display module, and then tap Disable on the Command bar.

To enable a control-display module:

1. Sign in with fire privilege 3 or higher, and then tap Project Tree on the Action bar.
2. Expand the project tree by tapping the expand button , and then locate the target control-display module.
3. Tap the control-display module, and then tap Enable on the Command bar.

Disabling and enabling control-display module elements

Disabling and enabling control-display module switches

Note: Only users with fire privilege 3 can access this function.

To disable a control-display module switch:

1. Sign in with fire privilege 3 or higher, and then tap Project Tree on the Action bar.
2. Expand the project tree by tapping the expand button , and then locate the target switch.
3. Tap the switch, and then tap Disable on the Command bar.

To enable a control-display module switch:

1. Sign in with fire privilege 3 or higher, and then tap Project Tree on the Action bar.
2. Expand the project tree by tapping the expand button , and then locate the target switch.
3. Tap the switch, and then tap Enable on the Command bar.

Disabling and enabling control-display module LEDs

Note: Only users with fire privilege 3 can access this function.

To disable a control-display module LED:

1. Sign in with fire privilege 3 or higher, and then tap Project Tree on the Action bar.
2. Expand the project tree by tapping the expand button , and then locate the target LED indicator.
3. Tap the LED indicator, and then tap Off on the Command bar.

To enable a control-display module LED:

1. Sign in with fire privilege 3 or higher, and then tap Project Tree on the Action bar.
2. Expand the project tree by tapping the expand button , and then locate the target LED indicator.
3. Tap the LED indicator, and then tap On on the Command bar.

Setting a control-display LED module mode

Note: Only users with fire privilege 3 can access this function.

To set a control-display module LED mode:

1. Sign in with fire privilege 3 or higher, and then tap Project Tree on the Action bar.
2. Expand the project tree by tapping the expand button , and then locate the target LED indicator.
3. Tap the LED indicator, and then tap one of the following: Steady, Fast Blink, Slow Blink, Off.

Chapter 4

Preventive maintenance and testing

Summary

This chapter provides instructions for maintaining and testing your EST4 life safety system.

Content

Introduction 44
Service provider information 44
Visual inspection schedule 45
 Routine maintenance schedule 46
Troubleshooting 46

Introduction

Periodic visual inspections and maintenance testing must be performed on your EST4 life safety system to ensure that it is operating correctly and as required by the local authority having jurisdiction (AHJ). Maintenance testing is performed by your service provider or a qualified technician with a complete understanding of the system hardware and functions.

Visual inspection and maintenance schedules are provided in this section, as well as a form to document your service provider's contact information.

Service provider information

Fill in the contact information of your service provider on the form below. If more than one service provider is assigned, use the additional form.

EST4 Service Provider	
Name	
Address	
City	
State	
Country	
Postal code	
Telephone	
E-mail	
Fax	

EST4 Service Provider	
Name	
Address	
City	
State	
Country	
Postal code	
Telephone	
E-mail	
Fax	

Visual inspection schedule

Perform visual inspections in accordance with Table 9 below or more often if required by the local AHJ.

Table 9: Visual inspection schedule

Component	Frequency	Recommended procedure
Radiant energy fire detectors	Monthly	Inspect the equipment for any visible signs of damage or other changes that may adversely affect performance. Clean if necessary.
Supervisory signal devices	Monthly	Verify that the module's green LED flashes. Ensure there are no changes that may adversely affect equipment performance.
Waterflow devices	Monthly	Verify that the module's green LED flashes. Ensure there are no changes that may adversely affect equipment performance.
Batteries	Semiannually	Inspect batteries for corrosion or leakage. Verify that the battery connections are tight and secure. Clean the connections, if required. Replace batteries every 5 years, or sooner if conditions warrant.
Control unit trouble signals	Semiannually	Ensure there are no changes that may adversely affect equipment performance.
Emergency voice/alarm communication equipment	Semiannually	Inspect the equipment for any visible signs of damage or other changes that may adversely affect performance.
Remote annunciators	Semiannually	Inspect the equipment for any visible signs of damage or other changes that may adversely affect performance.
Duct detectors	Semiannually	Inspect the equipment for any visible signs of damage or other changes that may adversely affect performance.
Electromechanical releasing devices	Semiannually	Ensure there are no changes that may adversely affect equipment performance.
Fire extinguishing systems or suppression systems	Semiannually	Ensure there are no changes that may adversely affect equipment performance.
Fire alarm boxes	Semiannually	Inspect the equipment for any visible signs of damage or other changes that may adversely affect performance.
Heat detectors	Semiannually	Inspect the equipment for any visible signs of damage or other changes that may adversely affect performance. Clean if necessary.
Smoke detectors	Semiannually	Inspect the equipment for any visible signs of damage or other changes that may adversely affect performance. Clean if necessary.
Interface equipment	Semiannually	Inspect the equipment for any visible signs of damage or other changes that may adversely affect performance.
Alarm notification appliances	Semiannually	Verify that the module's green LED flashes. Ensure there are no changes that may adversely affect equipment performance.
Supervising station life safety system transmitters	Semiannually	Ensure there are no changes that may adversely affect equipment performance.
Control unit	Annually	Inspect the equipment for any visible signs of damage or other changes that may adversely affect performance.
Fiber optic cable connections	Annually	Inspect the cables for any visible signs of damage, loose connections, or other changes that may adversely affect performance.

Routine maintenance schedule

Routine maintenance and testing should be scheduled for your EST4 life safety system in accordance with Table 10 below or more often if required by the local AHJ.

Note: Only your system service provider or a qualified technician with a complete understanding of the system hardware and functions should perform system maintenance and tests.

Table 10: Routine maintenance schedule

Component	Initial and Reacceptance	Other
Control equipment [1]	Y	Quarterly/Annually
Batteries [2]	Y	Annually
Control unit trouble signals	Y	Annually
Fiber optic cable connections	Y	Annually
Emergency voice/alarm communication equipment	Y	Annually
Remote annunciators	Y	Annually
Smoke detectors	Y	Annually
Heat detectors	Y	Annually
Fire alarm boxes	Y	Annually
Supervisory signal devices (except valve tamper switches)	Y	Quarterly
Waterflow devices	Y	Semiannually
Valve tamper switches	Y	Semiannually
Fire extinguishing systems or suppression systems	Y	Annually
Interface equipment	Y	Annually
Audible notification appliances	Y	Annually
Textual audible notification appliances (speakers)	Y	Annually
Visible notification appliances	Y	Annually
Off-premises transmission equipment	Y	Quarterly
Supervising station fire alarm system transmitters	Y	Annually

[1] Test control equipment quarterly when it is not connected to a supervising station.

[2] Replace batteries every five years, or sooner if conditions warrant.

Troubleshooting

Problems with your EST4 life safety system can generally be classified in two categories: application programming problems and hardware (including firmware) problems. Only your system service provider or a qualified technician with a complete understanding of system hardware and functions should perform servicing and repairs. Refer to “Service provider information” on page 44 for their contact information.

Before contacting your service provider, make note of the following:

- Messages shown on the LCD screen
- Construction in the area that may have caused the problem
- Adverse weather that may have caused the problem
- Damage to any equipment

Appendix A

System addressing

Summary

This appendix provides a list of logical addresses for system modules and devices.

Content

Address format 48
Module addresses 48
LRM device addresses 51
Control-display device addresses 51

Address format

EST4 addresses are in NNNCCCDDDD format, where:

- NNN is the node number. The node number is assigned when the installer downloads the CU database into the control unit.
- CCC is the local rail module slot address. The node number and LRM slot address make up the LRM's logical address.
- DDDD is the device's point address. The node number, LRM logical address, and LRM device point address make up the device or circuit's logical address.

Module addresses

Modules have a physical address and a logical address. The physical address identifies the card's location in the panel. The logical address identifies the card in the CPU database.

For a control unit with one node, see Figure 13 and Table 11 on page 49.

For a control unit with multiple nodes, see Figure 14 and Table 12 on page 50

Figure 13: Logical addressing for control unit with one node (4-CAB21DL inner door/4-CAB21B backbox shown)

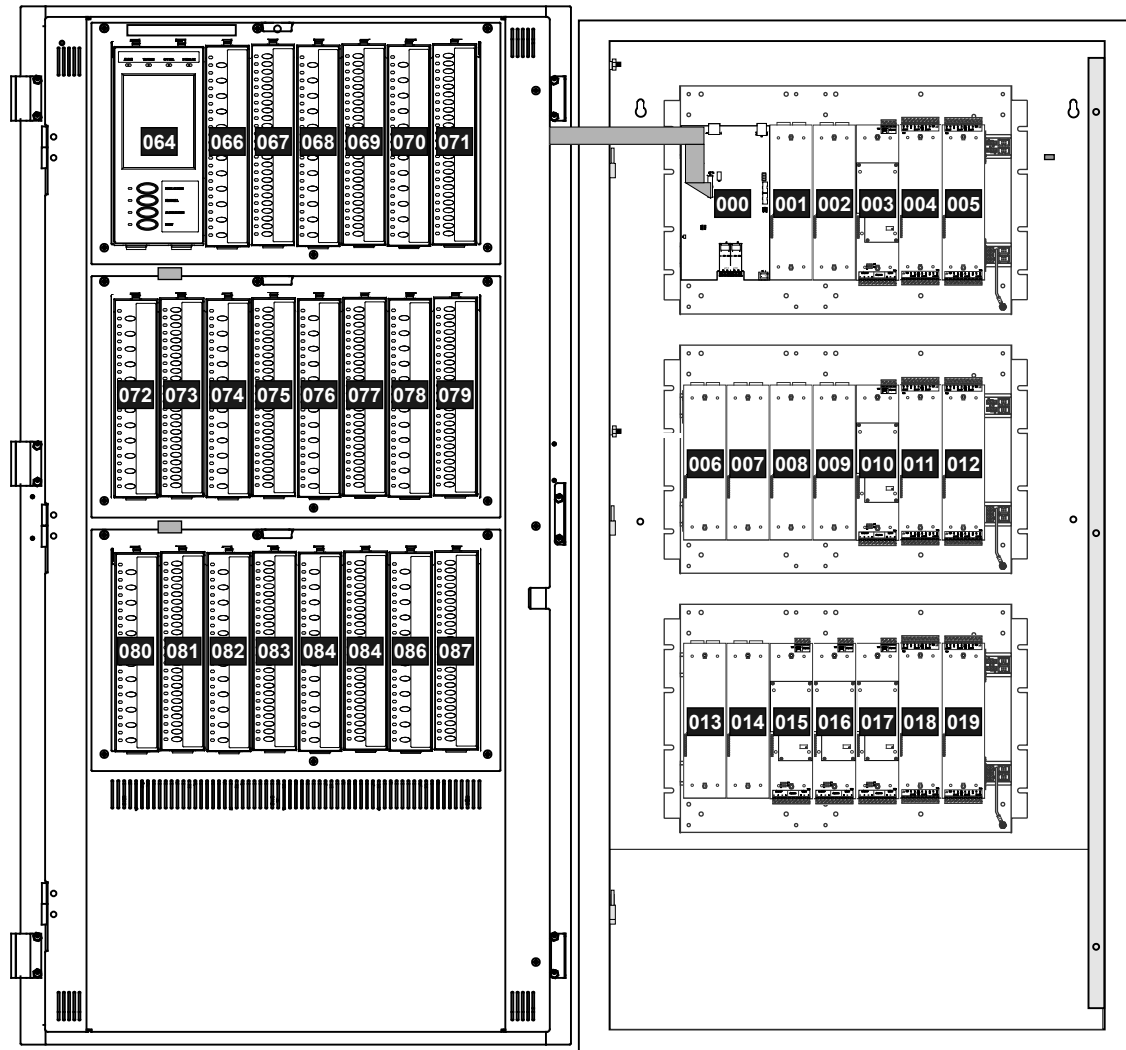
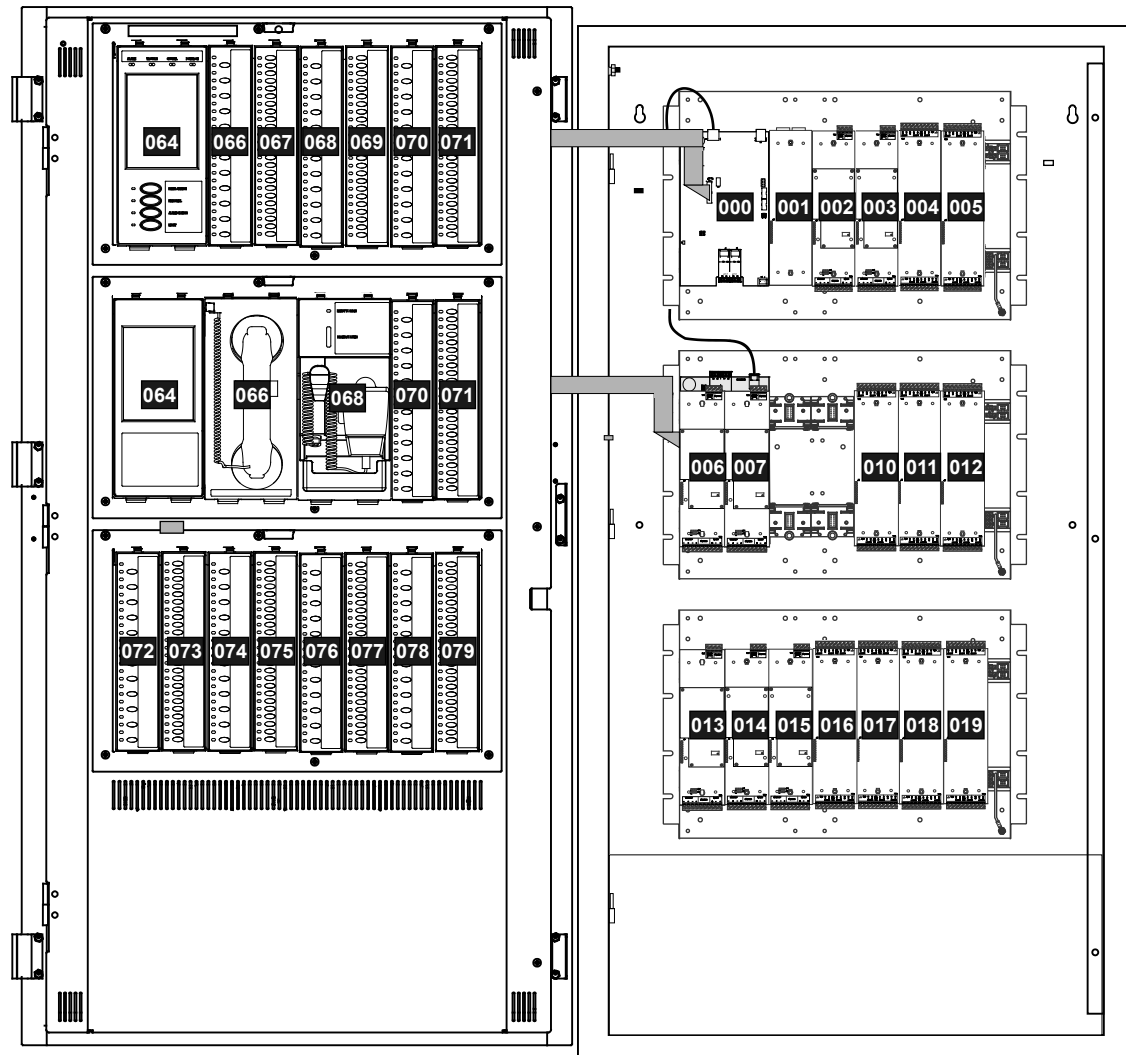


Table 11: Logical addressing for a control unit with one node

Card	Logical address
Operator layer modules on the inner door frame assembly	
4-LCD	NNN064(065)
Control-display modules	NNN066 to NNN087
Hardware LRMs on the 3-CHAS7 chassis	
4-CPU	NNN000
Local rail modules	NNN001 to NNN019

Figure 14: Logical addressing for control unit with multiple nodes (4-CAB21DL inner door/4-CAB21B backbox shown)**Table 12: Logical addressing for a control unit with multiple nodes**

Card	Logical address
Operator layer modules on the inner door frame assembly	
4-LCD	NNN064(065)
Control-display modules	NNN066 to NNN071
4-LCDANN	NNN064(065) [1]
4-FT	NNN066(067) [2][4]
4-MIC	NNN068(069) [3]
Control-display modules	NNN070 to NNN079
Hardware LRMs on the 3-CHAS7 chassis	
4-CPU	NNN000
Local rail modules	NNN001 to NNN007 [4]
Local rail modules	NNN010 to NNN019

[1] Logical addressing restarts with NNN064 when the 4-LCDx is connected to the CPU node module.

[2] The logical address for a 4-FT firefighter telephone is always NNN066.

[3] The logical address for a 4-MIC paging microphone is always NNN068.

[4] Local rail modules cannot be installed on the 3-CHAS rail behind a 4-FT firefighter telephone.

LRM device addresses

Table 13 below lists the device addresses for points for LRMs installed on the chassis rail.

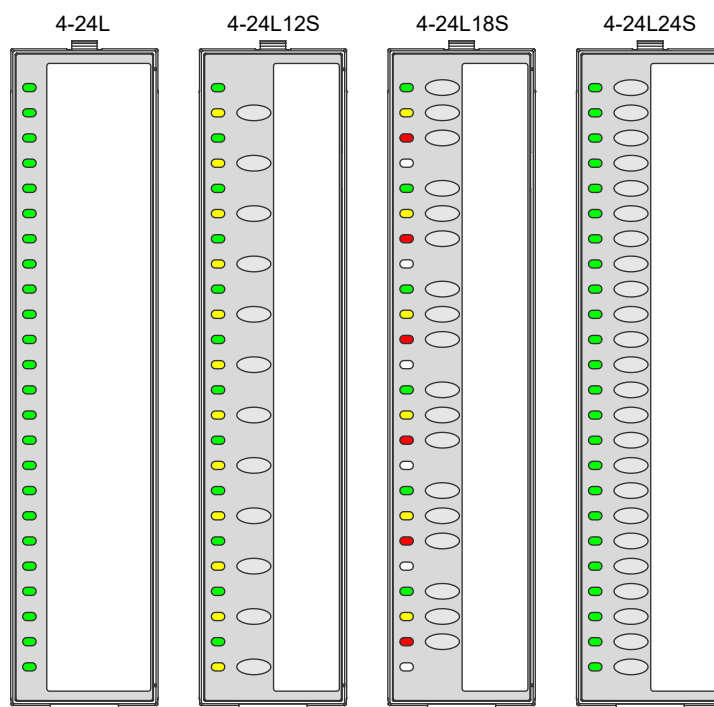
Table 13: LRM device point addresses

Card	Device or circuit	Address
3-IDC8/4	IDC/NAC 1	NNNCCC0001
	IDC/NAC 2	NNNCCC0002
	IDC 3	NNNCCC0003
	IDC 4	NNNCCC0004
	IDC/NAC 5	NNNCCC0005
	IDC/NAC 6	NNNCCC0006
	IDC 7	NNNCCC0007
	IDC 8	NNNCCC0008
3-SSDC1	Detectors Modules	NNNCCC0001 to NNNCCC0125 NNNCCC0126 to NNNCCC0250
3-SDDC1 Loop 1	Detectors	NNNCCC0001 to NNNCCC0125
	Modules	NNNCCC0126 to NNNCCC0250
	Detectors	NNNCCC0251 to NNNCCC0375
	Modules	NNNCCC0376 to NNNCCC0500
3-ZA20(A/B)	Amplifier output	NNNCCC0000
	24V DC output	NNNCCC0001
3-ZA40(A/B)	Amplifier output	NNNCCC0000
	24V DC output	NNNCCC0001
3-ZA95	Amplifier output	NNNCCC0000
	24V DC output	NNNCCC0001

Control-display device addresses

The tables in this section list switch and indicator addresses that the system assigns to operator layer control-display modules.

- EST4 system control-display modules LED and switch numbering see Table 14 on page 52
- EST3 migrated system control-display modules LED and switch numbering see Table 15 on page 53

Figure 15: EST4 operator layer control-display modules**Table 14: EST4 operator layer control-display addresses**

Module type	Switch group	Switch address	Indicator address
4-24L	N/A	N/A	0129 to 0152
4-24L12S	1	0002	0129 to 0130
	2	0004	0131 to 0132
	3	0006	0133 to 0134
	4	0008	0135 to 0136
	5	0010	0137 to 0138
	6	0012	0139 to 0140
	7	0014	0141 to 0142
	8	0016	0143 to 0144
	9	0018	0145 to 0146
	10	0020	0147 to 0148
	11	0022	0149 to 0150
	12	0024	0151 to 0152
4-24L18S	1	0001	0129
	2	0002	0130
	3	0003	0131
	–	–	0132
	4	0005	0133
	5	0006	0134
	6	0007	0135
	–	–	0136

Module type	Switch group	Switch address	Indicator address
	7	0009	0137
	8	0010	0138
	9	0011	0139
	—	—	0140
	10	0013	0141
	11	0014	0142
	12	0015	0143
			0144
	13	0017	0145
	14	0018	0146
	15	0019	0147
	—	—	0148
	16	0021	0149
	17	0022	0150
	18	0023	0151
	—	—	0152
4-24L24S	1 to 24	0001 to 0024	0129 to 0152

Figure 16: EST3 control-display LED and switch numbering

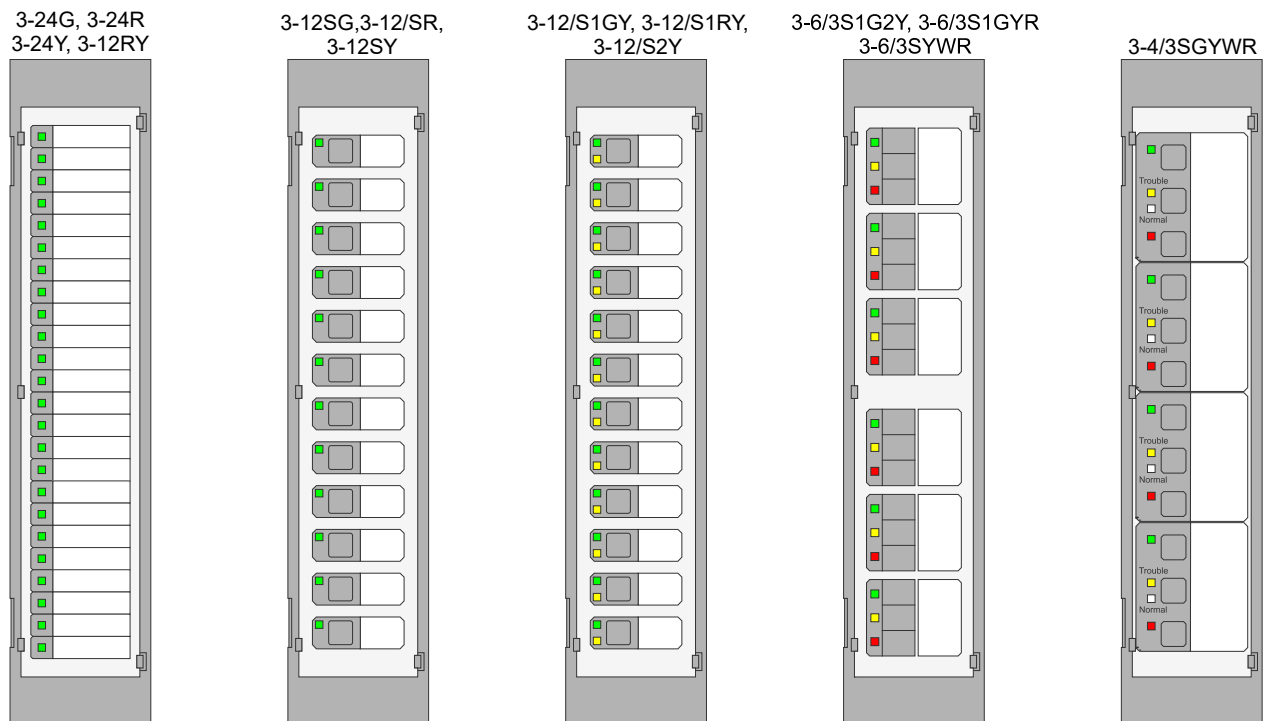


Table 15: EST3 operator layer control-display addresses

Module type	Switch group	Switch address	Indicator address
3-24G, 3-24R, 3-24Y, 3-12RY	N/A	N/A	0129 to 0152

Module type	Switch group	Switch address	Indicator address
3-12SG, 3-12SR, 3-12SY	1	0001	0129
	2	0002	0130
	3	0003	0131
	4	0004	0132
	5	0005	0133
	6	0006	0134
	7	0007	0135
	8	0008	0136
	9	0009	0137
	10	0010	0138
	11	0011	0139
	12	0012	0140
3-12/S1GY, 3-12/S1RY, 3-12/S2Y	1	0001	0129 0130
	2	0002	0131 0132
	3	0003	0133 0134
	4	0004	0135 0136
	5	0005	0137 0138
	6	0006	0139 0140
	7	0007	0141 0142
	8	0008	0143 0144
	9	0009	0145 0146
	10	0010	0147 0148
	11	0011	0149 0150
	12	0012	0151 0152
3-6/3S1G2Y, 3-6/3S1GYR, 3-6/3SGYWR	1	0001 0002 0003	0129 0130 0131
	2	0004 0005 0006	0132 0133 0134
	3	0007 0008 0009	0135 0136 0137
	4	0010 0011 0012	0138 0139 0140

Module type	Switch group	Switch address	Indicator address
3-4/3SGYWR	5	0013	0141
		0014	0142
		0015	0143
	6	0016	0144
		0017	0145
		0018	0146
	1	0001	0129
		0002	0130 0131
		0003	0132
	2	0004	0133
		0005	0134 0135
		0006	0136
	3	0007	0137
		0008	0138 0139
		0009	0140
	4	0010	0141
		0011	0142 0143
		0012	0144

Glossary

Term	Definition
active	Points that are in an alarm state.
activate	To turn on or energize. Pertains to outputs (including logical outputs).
AHJ	Authority Having Jurisdiction
alarm	The state of a fire alarm initiating device that has detected a smoke or fire condition.
card	See module.
Central Control Station	Terminology used to identify a command center that may or may not reside in a notification control area, but it can control audio over its own or multiple NCAs.
CMS	Central Monitoring Station
Command Center	Command centers are used to control audio within a Notification Control Area (NCA). The command center resides in a notification control area and it is the control unit used to request, grant, or deny control of the audio operation of an NCA, whether the one in which it resides or another NCA when the command center is a central control station.
CU	Configuration Utility. 4-CU software lets programmers configure and program an EST4 control unit.
database	User-defined, permanently stored, system parameters containing system definitions, device types, responses, messages, etc.
device	Circuits, buttons, or LEDs that exist on the chassis rail or UI frame assembly and all addressable devices connected by field wiring.
disable	Prevents an input, output, or system feature from functioning.
enable	Permits an input, output, or system feature to function.
EVAC	Emergency Voice/Alarm Communications
group	A collection of Signature devices that is treated as a single entity for programming purposes.
input	A signal generated by a field device and sent to the control unit for evaluation and responses as determined by the system database. Inputs to the system are detectors, modules, and switches.
label	A unique identifier for a device.
loop	The wiring that connects devices to the fire alarm control unit.
module	Modules (cards) installed on the backbox chassis rail and control-display modules installed on the inner door UI frame assembly.
NCA	See Notification Control Area.
normal state	The system is in a quiet state. The LCD screen shows no event messages.
node	A control unit used to monitor system inputs for status changes and activate system outputs.

notification control areas	Grouped nodes installed throughout the premises that provide a structure for the distributed audio system and are used to define the audio subsystem's coverage area. A basic NCA has one or more command centers for controlling the operations of the members of the NCA. In some installations multiple NCAs can be managed by one or more central control stations.
off-normal state	The system enters the fire alarm, trouble, disabled, or test state. The LCD screen shows event messages and system LEDs indicate off-normal statuses.
output	A signal generated by the system, based upon responses defined in the system database, and sent to external field devices. Outputs are LEDs, and modules.
point	See device.
pseudo point	An input or output point that is not a physical device. For example, ground fault and communication fault notifications.
Request Grant Deny	A programming logic device that works in association with NCAs and command centers to arbitrate demands for control of audio communications in the life safety system.
reset	An active condition or command used to force an output to its OFF condition. An output's OFF state may be in the restored condition (normal) or reset condition.
restore	A condition of an input, where the input is not active. It also refers to the condition of an output where the output is not in its set or reset condition and does not have a priority value associated with it.
RGD	See Request Grant Deny.
riser	An electrical path that contains power or a signal that is used by multiple outputs, zones, or circuits.
signaling line circuit	The wiring that connects devices to the fire alarm control unit.
time control	An input activated by the time of day or day of the month.

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