

Features

Compatible with Simplex ES Net and 4120 fire alarm networks.

Basic system includes the following:

- Models are available with Color ES Touch Screen Display or Monochrome 2 line x 40 character display
- Capacity for up to 1000 addressable IDNet points, and up to 127 VESDA Air Aspiration Systems interface points, with up to 2000 points of annunciation
- A color-coded operator interface with a membrane keypad that includes a 2 x 40 super-twist LCD display, three programmable control keys and six programmable LEDs
- The CPU assembly includes dedicated compact flash memory for onsite system information storage

Includes an Enhanced System Supply (ESS) that provides power and battery charging (6 A output):

- Dual 3 A onboard IDNAC signaling line circuits (SLCs) with enhanced power delivery to addressable notification appliances
- An IDNAC SLC maintains a constant 29 VDC source voltage during alarm, even during battery operation. It enables strobes to operate at higher voltage with lower current and ensures a consistent current draw and voltage drop margin under both primary power and secondary battery standby.
- Efficiencies include lower strobe currents, wiring distances up to two to three times farther than with conventional notification, support for more appliances for each IDNAC SLC, ability to use smaller gauge wiring, all with installation and maintenance savings with high assurance that appliances that operate during normal system testing operate during worst case alarm conditions
- IDNAC SLCs are compatible with TrueAlert ES and TrueAlert addressable notification appliances, and remote 4009 IDNAC repeaters, to extend power and wiring distance even farther and extends supervisory capacity by up to 139 additional unit loads or 3 A.
- Onboard IDNet 2, dual loop SLCs with addressable initiating device control, through two electrically isolated channels for TrueAlarm analog sensors and IDNet communications monitoring and control devices, with an electrically isolated output channel. You can use this with either shielded or unshielded, twisted or untwisted single pair wiring, and it provides dual short circuit isolating output loops.
- Battery charger for up to 110 Ah batteries (UL) or up to 50 Ah batteries (ULC). A maximum of 33 Ah in control unit cabinet for 1 bay systems, and 50 Ah for 2 bay systems.
- 2 A programmable function auxiliary output
- Remote annunciator module support through Remote Unit Interface (RUI) communications port, for either Class B or Class A operation
- 48 LED panel mount annunciation with 40 Red and 8 Yellow pluggable LEDs (select models, meets ULC requirements), . Optional LED kits are available to change individual LED color to Green or Blue to meet specific site requirements.

Optional ESS mounted modules include the following:

- City Connect Module
- Alarm Relay Module
- Battery brackets for seismic area protection



Figure 1: 1-Bay Cabinet with 2x40 LCD monochrome display



Figure 2: 1-Bay cabinet with 2x40 LCD monochrome display and LED annunciation



Figure 3: 2-Bay cabinet with 2x40 LCD monochrome display

Optional block space modules include the following:

- Fire Alarm Physical Bridge and Network Interface Cards (NIC) for ES Net or 4120 Peer-to-Peer fire alarm network communications, supports either Class B or Class X operation
- Ethernet connectivity options include ES Net NIC, Building Network Interface Card (BNIC) and BACpac Ethernet Portal
- Dual Class A IDNAC Isolator (DCAI)
- Dual RS-232 Module, for printer or third-party interface
- VESDA Air Aspiration High Level Interface
- Serial DACT
- 8-Point Zone or Relay Module
- 4-Point Auxiliary Relay Module with Feedback
- Additional IDNET addressable channels
- Connected Services Gateway

Compatible with the following Simplex remotely located products:

- 4098-9757 QuickConnect2 and legacy 4098-9710 QuickConnect TrueAlarm smoke sensors

* This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7165-0026:0369 for allowable values and/or conditions concerning material presented in this document. NYC Fire Dept COA #6193. Additional listings may be applicable; contact your local supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

- 4003EC Small Voice Units
- 4081 Series, 110 Ah Battery Chargers
- 4009 IDNet NAC Extenders and IDNAC Repeaters
- 4100-7400 Series Graphic Annunciators
- 4190 Series Fiber Modems and Physical Bridges
- 4606-9102 Remote LCD Annunciator, 4100-9400 Series Remote ES Touch Screen Displays, 4100-9400 Series Remote InfoAlarm Command Centers, and 4602 Series Status Command Units (SCU) and Remote Command Units (RCU) Annunciators

4010ES agency listings

- UL 864 - Control Units, System (UOJZ); Control Unit Accessories, System, Fire Alarm (UOXX); Control Units, Releasing Device Service (SYZV); Smoke Control System Equipment (UUKL)
- UL 1076 - Proprietary Alarm Units (APOU)
- UL 1730 - Smoke Detector Monitors and Accessories (UULH)

Introduction

4010ES Series fire detection and control units

4010ES Series fire detection and control units provide leading edge installation, operator, and service features for customer applications in the mid-range addressable fire alarm systems market. An onboard Ethernet port provides fast external system communications to expedite installation and service activity. Dedicated compact flash memory archiving provides secure, on-site system information storage, of electronic job configuration files.

Modular design

A variety of functional modules are available to meet specific system requirements. Selections facilitate the configuration of control units for either Stand-Alone or Networked fire control operation.

Mechanical description

- The mounting box provides convenient stud markers for drywall thickness and nail-hole knockouts for quicker mounting.
- Smooth box surfaces provide locally cutting conduit entrance holes exactly where required.
- The hinged User Interface panel easily opens for internal access.
- Modules are power-limited, except as noted.
- Doors include tempered glass inserts, and boxes and doors are available in platinum or red.
- Basic control unit assemblies include box and door or retainer assemblies.
- Cabinet assemblies are rated NEMA 1 and IP 30.
- Cabinet assembly design is seismic tested and is certified to IBC and CBC standards as well as to ASCE 7 categories A through F, requires battery brackets as detailed on data sheet **52081-0019**.

Control unit hardware

The Master Controller and ESS are mounted in the upper section of the 4010ES cabinet. See 1-bay and 2-bay loading reference diagrams, [Cabinet one and two bay loading reference](#).

4010ES Block Space Option Cards mount to the left of the 4010ES ESS. In 2-bay cabinets, block space option cards also mount below the 4010ES ESS.

Other 4010ES options: The 4010ES City Connect module or the optional Alarm Relay module mount directly to the ESS. These options are mutually exclusive.

The battery compartment is located in the bottom of the 4010ES cabinet. The cabinet allows for up to 33 Ah battery capacity for 1-bay systems, and 50 Ah for 2-bay systems. 50 Ah batteries also require the use of 4100-0650 battery shelf.

Software feature summary

- TrueAlarm individual analog sensing with front panel information and selection access
- **Dirty** TrueAlarm sensor maintenance alerts, service and status reports including **Almost Dirty**
- TrueAlarm magnet test indication appears as distinct **Test Abnormal** message on display when in test mode
- TrueAlarm sensor peak value performance report
- **Install Mode** can be used to group multiple troubles for uninstalled modules and devices into a single trouble condition.
- Module level ground fault searching assists installation and service by locating and isolating modules with grounded wiring
- **Recurring Trouble Filtering** allows the control unit to recognize, process, and log recurring intermittent troubles, such as external wiring ground faults, but only sends a single outbound system trouble to avoid nuisance communications
- WALKTEST silent or audible system test performs an automatic self-resetting test cycle

IDNet addressable device control

Overview

The ESS provides an IDNet 2 addressable device SLC with two isolated loops that supervise wiring connections and the individual device communications status on the SLC. With 2-wire IDNet 2 SLCs, initiation, monitoring, and control devices such as manual fire alarm stations, TrueAlarm sensors, control relays, and sprinkler waterflow switches can communicate their identity and status and receive fire alarm system control. Additional addressable interface modules include circuit isolators, conventional IDC zone adapters, and interface to other system circuits such as fans, dampers, and elevator controls.

IDNet 2 Addressable Device operation

Each addressable device on the IDNet communication channel is continuously interrogated for status condition such as: normal, off-normal, alarm, supervisory, or trouble. Both Class B and Class A operation is available. Sophisticated poll and response communication techniques ensure supervision integrity and allow for T-tapping of the circuits for Class B operation. Devices with LEDs pulse the LED to indicate receipt of a communications poll and can steadily turn on from the control unit. With addressable devices, the location and status of the connected device is monitored, logged, and displayed on the operator interface LCD with each device having its own 40 character custom label for precise identification.

TrueAlarm Addressable Sensor operation

Addressable initiating device communications include operation of TrueAlarm smoke and temperature sensors. Smoke sensors transmit an output value based on their smoke chamber condition and the CPU maintains a current value, peak value, and an average value for each sensor. Status is determined by comparing the current sensor value to its average value. Tracking this average value as a continuously shifting reference point filters out environmental factors that cause shifts in sensitivity.

Table 1: TrueAlarm addressable sensor reference



Figure 4: TrueAlarm photo sensor with base



Figure 5: TrueAlarm photo / heat sensor in CO base

The programmable sensitivity of each sensor is selectable at the control unit for different levels of smoke obscuration, shown directly in percent, or for specific heat detection levels. To determine if the sensitivity should be revised, the peak value is stored in memory. You can easily read or download it as a report and compare it to the alarm threshold directly in percent.

CO sensor bases combine an electrolytic CO sensing module with a TrueAlarm analog sensor to provide a single multiple sensing assembly using one system address. The CO sensor is enabled or disabled, and works in LED/Switch modes and custom control. Refer to data sheet *TrueAlarm CO Sensor Bases for Smoke, Heat, and Photo/Heat Sensors using IDNet Communications (S4098-0052)* for details.

Select TrueAlarm heat sensors for fixed temperature detection, with or without rate-of-rise detection. Utility temperature sensing is also available, typically to provide freeze warnings or alert to HVAC system problems. Select readings as either Fahrenheit or Celsius.

TrueSense early fire detection

The Multi-sensor 4098-9754 provides photoelectric and heat sensor data using a single 4010ES IDNet address. The control unit evaluates smoke activity, heat activity, and their combination, to provide TrueSense early detection. For more details on this operation, refer to data sheet *TrueAlarm Multi-Sensor Model 4098-9754 Providing TrueSense Early Fire Detection (S4098-0024)*.

Diagnostics and default device type

Sensor Status

TrueAlarm operation allows the control unit to automatically indicate when a sensor is almost dirty, dirty, and excessively dirty. The NFPA 72 requirement for a test of the sensitivity range of the sensors is fulfilled by the ability of TrueAlarm operation to maintain the sensitivity level of each sensor. CO Sensors track their 10 year active life status providing indicators to assist with service planning. Indicators occur at: 1 year, 6 months, and end of life.

Modular TrueAlarm sensors

You can easily interchange Modular TrueAlarm sensors to meet specific location requirements as they use the same base and either smoke or heat sensor types. This allows intentional sensor substitution during building construction when conditions are temporarily dusty. Instead of covering smoke sensors, causing them to be disabled. You can install heat sensors without reprogramming the control unit. The control unit indicates an incorrect sensor type, but the heat sensor operates at a default sensitivity to provide heat detection for building protection at that location.

IDNet device wiring reference

IDNet addressable channel capacity

IDNet 2 SLCs support up to 250 addressable monitor and control devices intermixed on the same pair of wires. The ESS IDNet 2 provides two electrically isolated SLCs, and the IDNet 2+2 provides four isolated SLCs that are isolated from other system reference voltages to reduce common mode noise interaction with adjacent system wiring.

Table 2: IDNet 2 and IDNet 2+2 SLC wiring specifications

Specification	Rating
Maximum Distance from control unit for each device load	0 to 125 126 to 250
Total wire length allowed with T-taps for Class B wiring	Up to 12,500 ft (3.8 km); 0.60 μ F
Maximum capacitance between IDNet channels	1 μ F
Wire type and connections	Shielded or unshielded, twisted or untwisted wire. See note.
Connections	Terminals for 18 to 12 AWG (0.82 mm ² to 3.31 mm ²)

Table 2: IDNet 2 and IDNet 2+2 SLC wiring specifications

Specification	Rating
Installation instructions	579-989
Compatibility includes: IDNet communicating devices and TrueAlarm sensors including QuickConnect2 sensors. See data sheet <i>IDNet and MAPNET II Addressable Devices (S4090-0011)</i> for additional reference.	
Note: Some applications may require shielded wiring. Review your system with your local Simplex product supplier.	

IDNAC SLC control of TrueAlert and TrueAlert ES addressable notification

Addressable notification appliance communications include operation of TrueAlert and TrueAlert ES Visible only (V/O, strobe), Audible only (A/O, horn), Audible/Visible (A/V, horn/strobe), and strobes of Speaker/Visible (S/V) notification appliances. S/V appliances require separate speaker wiring. IDNAC SLC addressable communications allows individual control of each horn and strobe using a single two-wire circuit, confirms the wiring connections to the individual notification appliance's electronic circuit, and confirms communications between each appliance and the fire alarm control unit. Addressable communications increases supervision integrity versus conventional notification systems by providing supervision beyond the circuit wiring to each individual appliance and by constantly verifying the ability of each appliance to communicate with the control unit.

Table 3: TrueAlert ES addressable appliance reference



Figure 6: A/O (horn)



Figure 7: V/O (strobe)



Figure 8: A/V (horn/strobe)

Individual appliance status and settings

The fire alarm control unit monitors and records each addressable notification appliance status, type of appliance, and its configured appliance settings. A fault in any individual appliance automatically reports a trouble condition to the control unit.

Virtual NACs provide control convenience

For control convenience, IDNAC notification appliances can group into Virtual NACs (VNACs) for group control, grouping that can be made across SLCs, not defined by their wiring connection.

Panel control convenience

You can program applicable operation settings for each appliance without having to replace appliances or remove them from the wall or ceiling. Easily change an appliance's VNAC notification zone through programming without having to add additional circuits, conduit, and wiring. Audible and visible appliances for non-Fire Emergency Communications notification are programmable to operate separately on the same pair of wires as the fire alarm notification appliances. The result is lower installation, retrofit, and overall life-cycle cost of ownership compared with traditional conventional notification systems.

Installation, Retrofit, and life-cycle cost benefits

With each addressable appliance capable of being controlled separately on the same two-wire IDNAC SLC, installation time and expense for both retrofit and new construction is significantly reduced. When using Class B wiring, wiring can be T-tapped allowing more savings in distance, wire, conduit (size and utilization), and overall installation efficiency.

Location information, diagnostics and troubleshooting

Each addressable notification appliance has its own 40 character custom label to identify the location of the appliance and to aid in troubleshooting fault conditions. In conventional notification systems,

conventional appliances are not capable of communicating with the control unit. Fault reporting on a conventional system is limited to the circuit wiring and the entire area (zone) covered by appliances on the notification appliance circuit (NAC) making it much more difficult and costly to locate and correct the source of a problem. Using the TrueAlert magnet test allows each appliance to individually identify its candela setting and address and to briefly operate if desired. Using the TrueAlert ES Appliance Self-Test feature provides detailed performance verification for each appliance.

TrueAlert ES appliance self-test operation

Onboard test sensors: TrueAlert ES appliances are equipped with onboard sensors to detect strobe or horn output allowing efficient and unobtrusive Self-Testing. When the control unit initiates automatic Self-Test, each appliance within the selected VNAC group will briefly operate and then report its Self-Test status to the control unit, all within several seconds. Silent Self-Test is selectable to test only visible appliance if desired. The control unit is in a trouble condition during testing and in the event of an alarm, self-test is automatically terminated.

Additionally, you can schedule Automatic Self-Test to occur at a convenient time on a regular basis.

Automatic Self-Test results are communicated to the control unit with a time and date stamp and are stored in memory. Results are viewable at the front panel display and you can generate printed reports from the control unit service port.

Select Individual Self-Test from the control unit when individual appliances need to be observed to operate. Each appliance in the selected VNAC group will turn on its LED until individually activated by applying a magnet. After performing the individual test, the appliance LED turns off to indicate completion. Results are recorded the same as during the automatic test.

IDNAC SLC hardware reference

The ESS provides two, 3 A IDNAC SLCs for control and power to TrueAlert ES and TrueAlert addressable notification appliances. Both power supplies incorporate an efficient switching design that provides a regulated output of 29 VDC, even during battery operation. With 29 VDC minimum output at the control unit, addressable notification SLCs can support wiring distances two to three times farther than available with conventional notification, or support more appliances for each SLC, or work with smaller gauge wiring, or combinations of these benefits. The result is installation and maintenance savings with high assurance that appliances that operate during normal system testing will operate during worst case alarm conditions.

IDNAC SLC Appliance wiring reference

IDNAC SLC capacity

The IDNAC SLC has capacity for up to 127 addresses and up to 139 unit loads. Appliances are typically one unit load. Devices such as Isolators may require more than one load. Refer to individual device data sheet for specific information.

Table 4: IDNAC SLC Appliance wiring reference

Wiring reference	Description
Recommended wire type	UTP, unshielded twisted pair
Maximum wire length allowed with T-Taps for Class B wiring, for each SLC	10,000 ft (3048 m)
Maximum wire length for each SLC to any appliance	4000 ft (1219 m)
Appliance supervisory current	1 unit load = 0.8 mA for each appliance
Wiring connections	Terminals for 20 AWG to 12 AWG

Master controller (CPU)

- The 4010ES Master Controller includes dedicated compact flash Mass Storage memory for on-site system information storage and convenient Ethernet service port access.
- Convenient front panel access Ethernet port for quick and easy download of site-specific programming and firmware enhancements. Firmware enhancements are made through software downloads to the onboard flash memory.
- Every downloaded job is automatically stored to Compact flash without overwriting earlier versions providing a means for recovering previous configurations.
- Downtime is reduced because the system stays running during download.
- Modifications can be uploaded as well as downloaded for greater service flexibility.
- Mass Storage allows job specific files to be stored in the control unit such as test and inspection reports, record drawings, specifications, and more.
- RUI (Remote Unit Interface) communications port supports either Class B or Class A operation for remote annunciation equipment.

Color ES touch screen display

The Color ES Touch Screen Display interface offers intuitive operation similar to a tablet or smart phone. With a larger area format versus an individual text line display, more information is available at a glance, and minimal key presses are needed to access detailed information.

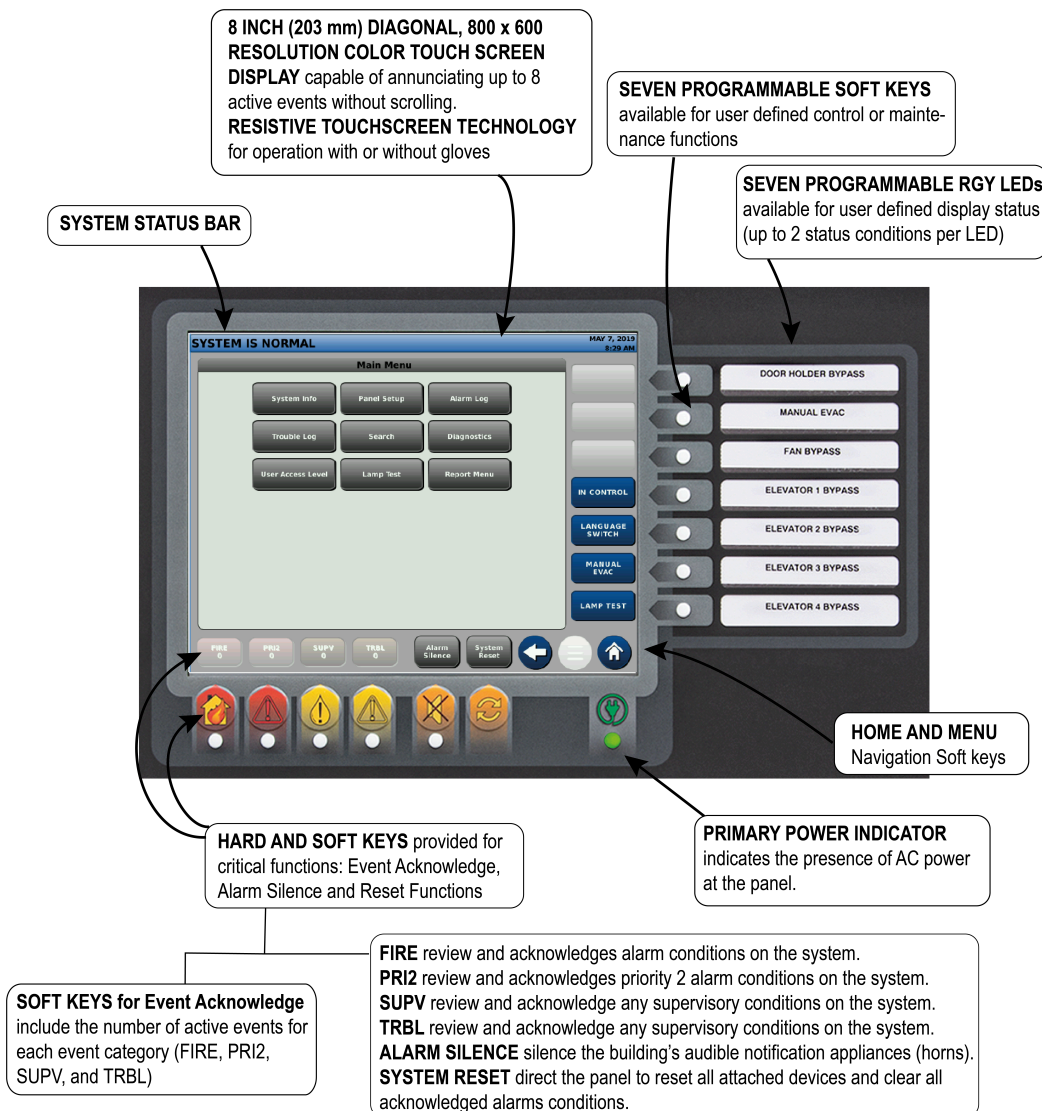


Figure 9: ES Touch screen display operator interface

Features

ES Touch Screen Displays provide customized operating experience

- Event activity display choices include: First 8 Events; or First 7 Events with emphasis on Most Recent; or First 6 Events with emphasis on First and Most Recent, individually selectable for each event type.
- System reports are easily viewable. You can read logs with minimal scrolling.
- Up to two languages are available for each system, easily selected by programmable key press
- You can vector by point or zone, information sent to remote ES Touch Screen Displays.
- Both Hard and Soft keys available for the following critical functions: Event Acknowledge, Alarm Silence, and Reset Functions
- Resistive touchscreen technology allows for operation with or without gloves.
- Seven programmable RGY LEDs available for user-defined display status. Up to two status conditions for each LED.
- Seven programmable Soft keys available for user-defined control or maintenance functions
- PRI2 Soft key label can be changed to CO to annunciate Carbon Monoxide detection status
- You can program the ES Touch Screen Display to report individual points or groups of points as a single zone.
- You can display a custom watermark background file of a company logo or other desired display content.
- Seismically compliant under the State of California Statewide Office of Housing and Development (OSHPD) Special Seismic Certification (SSC) program guidelines. Refer to *Simplex Seismic Application Guide (579-1213)* and *Battery Brackets for Seismic Activity Applications (S2081-0019)* for details.

Display properties

- 8 inch (203 mm) diagonal, 800 x 600 resolution color touch screen display capable of annunciating up to 8 active events without scrolling
- Bright white LED backlighting provides efficient and long lasting illumination; backlight is dim in quiescent state, automatically switches to full power on touch or on event activity in system.

Description

ES Touch Screen Displays for 4010ES fire alarm systems provide a large display with extended information content, dual language support including UTF-8 character languages, and an intuitive control key interface with the following features:

- Each 4010ES control panel supports up to 8 ES Touch Screen Displays, one main and seven remote. It can enable one ES Touch Screen Display to take-control and to designate access levels for interfaces not in-control; you can assign programmable LEDs to in-control status indications.
- Menu-driven format conveniently prompts operators for the next action required
- Direct point callup displays individual points alphabetically and then homes in on the logical choice as more point information is entered
- Event categories are color coded for quick visual representation; Red for Alarm and Priority 2 Events; Yellow for Supervisory and Trouble events
- Date formats are either MM/DD/YY or DD/MM/YY
- Time formats are either 24 hour or 12 hour with AM/PM
- System Normal screen supports a color background (watermark) for company name, company logo, or other desired display content.

Example display screens

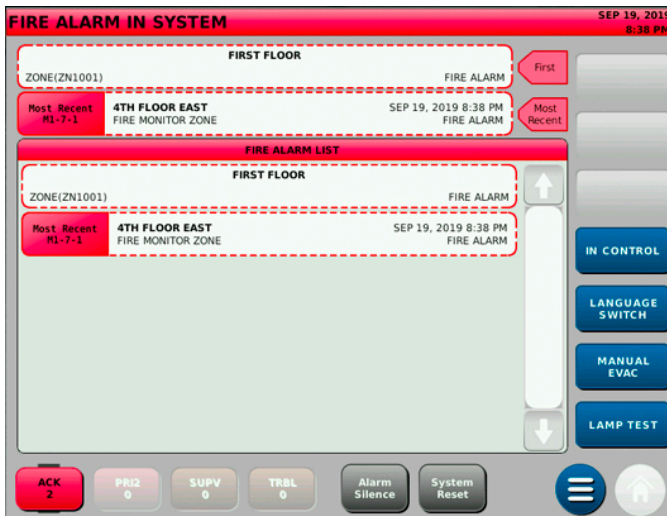


Figure 10: First and most recent alarm display



Figure 11: Main Menu



Figure 12: First eight active Trouble events list



Figure 13: Direct point callup

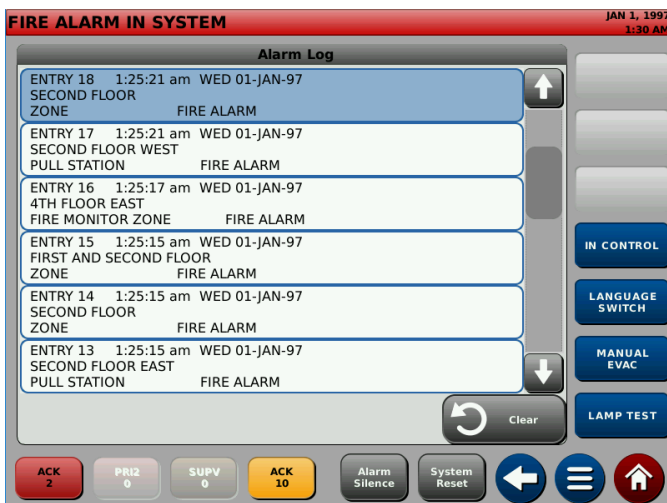


Figure 14: Alarm history log

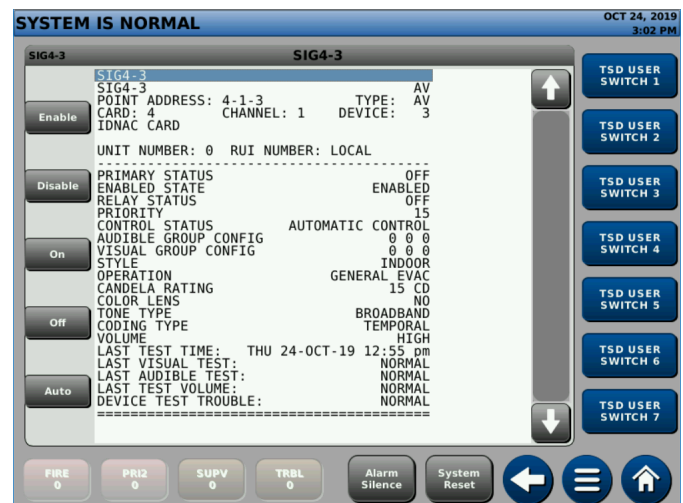


Figure 15: Detailed point status screen for TrueAlert ES appliance

Specifications

Table 5: General ES touch screen display specifications

Specification	Rating
Resolution	800 x 600 pixels (RGB)
Size / Type	8 inch (203 mm) Diagonal / Color Touch Screen
Touch Screen Technology	Resistive
Event Display	Up to 8 Events without scrolling
Normal Screen Custom Watermark File Format	680 x 484 pixels. BMP, JPG, TIFF, GIF or PNG file format
Environmental	Operating Temperature: 32°F to 120°F (0°C to 49°C)
	Operating Humidity: Up to 93% RH, non-condensing at a maximum of 90°F (32°C).

Operator interface with monochrome 2 x 40 LCD features

Operator interface features

- A logical, menu-driven display provides convenient and extensive operator information
- Multiple automatic and manual diagnostics for maintenance reduction
- Convenient PC programmer label editing
- Password access control
- View Alarm and Trouble History Logs of up to 2000 total events on the LCD, print them from a connected printer, or download them to a service computer

Convenient status information

With the locking door closed, the glass window enables viewing of the display, status LEDs, and available operator switches. Features include a two-line by 40-character, wide viewing angle, super-twist, LCD with status LEDs and switches as shown in Figure 16.

LED indicators describe the general category of activity being displayed and the LCD provides more detail. For the authorized user, unlocking the door provides access to the control switches and allows further inquiry by scrolling the display for additional detail.

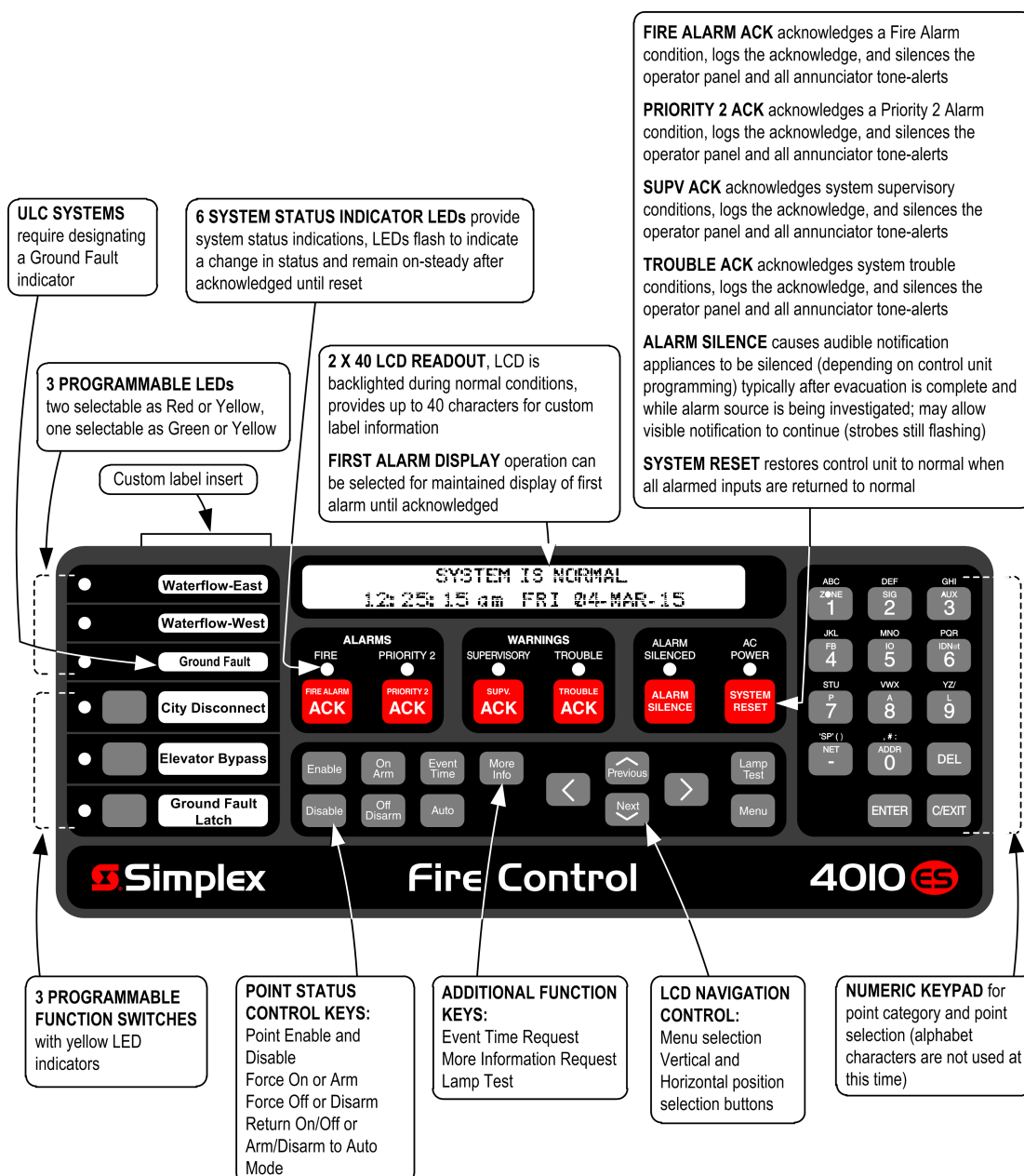


Figure 16: Primary functions of the operator interface

Basic control unit description

4010ES control units with ESS include:

- An Operator Interface, Master Controller with Compact Flash, IDNet2 addressable device SLCs with short circuit isolating loops configurable for Class B or Class A operation, and 6 A ESS
- RUI Class B or Class A communications port for remote annunciation devices
- Support for up to 20 internal and external card addresses
- Other standard features may be provided depending on model. See [Basic control unit model selection - 1 bay control units](#) and [Basic control unit model selection - 2 bay control units](#) for additional details on specific models.
- Cabinet and door

6 A ESS details:

- Two, 3 A Class B IDNAC SLCs Class A operation is available using the 4010-9930 Dual Class A IDNAC Isolator (DCAI) module
- Up to 2 A of auxiliary power
- 110 Ah (UL)/50 Ah (ULC) battery charger, 33 Ah max in 1 bay cabinet, 50 Ah max with 4100-0650 battery shelf in two bay control cabinet
- Selectable low battery cutout operation, required for ULC listing
- 2 A Auxiliary Output (AUX/SNAC) is selectable either as resettable auxiliary power of 2 A at 24 VDC, or selected to be a simple NAC (SNAC) for non synchronous 24 VDC reverse polarity NAC operation

8-Point Zone / Relay module details:

- Select as IDC or Relay. Configure up to eight Class B IDCs, or up to four Class A IDCs; or up to eight Relay outputs rated 2 A resistive @ 30 VDC, N.O. or N.C.; or combinations of IDCs and Relays; each zone is separately configurable as an IDC or Relay output
- IDC Support. Each IDC supports up to 30, 2-wire devices. You can power zone relay modules directly from the control unit power supply or through the optional 25 VDC regulator module where required for 2-wire detector compatibility. Refer to 2-wire Detector Compatibility document **579-832** for additional details.
- IDC EOL resistor values are selectable as: 3.3 kOhm, 2 kOhm, 2.2 kOhm, 3.4 kOhm, 3.9 kOhm, 4.7 kOhm, 5.1 kOhm, 5.6 kOhm, 6.34/6.8 kOhm, and 3.6 kOhm + 1.1 kOhm. For more details refer to ***Zone / Relay Module Installation Instructions 579-1236***.

Basic control unit model selection - 1 bay control units

Table 6: Basic control unit model selection – 1 Bay control unit

Model, see note.	Color	Language and voltage	Listings	Features	Supv. Current	Alarm Current	Available Option Blocks
4010-9601	Red	English 120 VAC	UL, CSFM, FM	Basic 1-bay control unit with 2x40 LCD Operator Interface, 6 A ESS/battery charger, (1) Two-loop Isolated IDNet 2 Communications Channel, Class A or Class B, with support for up to 250 addressable devices, and two, 3 A IDNAC SLCs	336 mA	540 mA	Three 4 in. x 5 in. blocks
4010-9602 4010-9602BA	Platinum						
4010-9603	Red		UL, ULC, CSFM, FM	Same features as above with 48 LED annunciation. Alarm current includes 24 annunciator LEDs activated.	356 mA	605 mA	
4010-9604	Platinum						
4010-9606	Platinum	French 120 VAC					

Note: Model numbers ending in -BA are assembled in the USA.

Current notes:

1. Basic control unit current does not subtract from the 6 A output rating.
2. Supervisory and alarm current specifications are for determining battery standby requirements.
3. Current specifications include an active RUI channel.
4. IDNet channel device current is not included. See Table 8 for details. Control unit current assumes 20 LEDs activated in alarm on each IDNet channel.
5. IDNAC channel notification appliance current is not included.

Basic control unit model selection - 2 bay control units

Note: Supervisory and Alarm current specifications are for determining battery standby requirements. Current specifications include an active RUI channel. Models with IDNet channels include 20 IDNet device LEDs activated in alarm for each channel. Actual IDNet current is not included.

Table 7: Basic control unit model selection - 2 Bay control units

Model, see note.	Color	Language and voltage	Listings	Features	Available Option Blocks	Supv. Current	Alarm Current
4010-9621 4010-9621BA	Red	English 120 VAC	UL, CSFM, FM	Basic control unit with 2x40 LCD Operator Interface , 6 A ESS/battery charger, (1) Two-loop Isolated IDNet 2 Communications Channel and (1) Four-loop Isolated IDNet 2+2 Communications Module, Class A or Class B, with support for up to 500 addressable IDNet points; and two, 3 A, Class B, IDNAC SLCs with support for up to 254 addressable notification appliances	Ten 4 in. x 5 in. blocks	411 mA	655 mA
4010-9622 4010-9622BA	Platinum						
4010-9609 4010-9610 4010-9608	Red Platinum Platinum		UL, ULC, CSFM, FM	Same features as above with 48 LED annunciation. Alarm current includes 24 annunciator LEDs activated.		431 mA	720 mA
4010-9623 4010-9623BA	Red						
4010-9624 4010-9624BA	Platinum	English 120 VAC	UL, CSFM, FM	Basic control unit with InfoAlarm Operator Interface , 6 A ESS/battery charger, (1) Two-loop Isolated IDNet 2 Communications Channel and (1) Four-loop Isolated IDNet 2+2 Communications Module, Class A or Class B, with support for up to 500 addressable IDNet points; and two, 3 A, Class B, IDNAC SLCs with support for up to 254 addressable notification appliances	Ten 4 in. x 5 in. blocks	493 mA	721 mA
4010-9633	Red	120 VAC (multiple languages available, contact your local Simplex product supplier for details)	UL/ULC, CSFM	Basic control unit with ES Touch Screen Operator Interface , 6 A ESS/battery charger, (1) Two-loop Isolated IDNet 2 Communications Channel and (1) Four-loop Isolated IDNet 2+2 Communications Module, Class A or Class B, with support for up to 500 addressable IDNet points; and two, 3 A, Class B, IDNAC SLCs with support for up to 254 addressable notification appliances		506 mA	771 mA

Note: Model numbers ending in -BA are assembled in the USA.

Current notes:

1. Basic control unit current does not subtract from the 6 A output rating.
2. Supervisory and alarm current specifications are for determining battery standby requirements.
3. Current specifications include an active RUI channel.
4. IDNet channel device current is not included. See Table 8 for details. Control unit current assumes 20 LEDs activated in alarm on each IDNet channel.
5. IDNAC channel notification appliance current is not included.

Addressable device load specifications for battery standby

Table 8: Addressable device load specifications for battery standby

Addressable channel loading reference	Load	Standby current	Alarm current, LEDs off	Alarm current, LEDs on
IDNet 2 and IDNet 2+2 communications channel output	for every 50 devices	40 mA	50 mA	90 mA
IDNAC communications channel output	for every 50 appliances		Calculate for selected appliances	

Table 9: Current draw for each IDNet device

Condition	Current
Standby	0.8 mA
Alarm, with LED off	1.0 mA
Alarm, with LED on	3.0 mA
Note: A maximum of 20 devices with LED on is supported for each channel. Additional device LEDs do not turn on.	

Block space option card selection

Note: Maximum block option module quantities may require 2-bay cabinets, 1-bay cabinets are limited to 3 option block spaces total. See Figure 18 for option module space availability. Supervisory and alarm current specifications for determining battery standby requirements consider no load on addressable channels except as noted, see Table 8

Table 10: Single block option modules

Model	Features	Supervisory current	Alarm current	Option block usage
4010-2504	Connected Services Gateway with IP communicator	125 mA	125 mA	1 block
4010-9912	Serial DACT, includes two, 2080-9047 cables, 14 ft (4.3 m) long, RJ45 plug and spade lugs	30 mA	40 mA	1 block, must mount in top bay, block D
4010-9908	4 Point Aux Relay Module	15 mA	60 mA	1 block, 3 maximum
4010-9916	Voltage Regulator Module, 22.8 VDC to 26.4 VDC (25 VDC nominal), isolated and resettable output. Includes earth detection circuit and trouble relay for status monitoring.	3 A maximum with 2.5 A load	4.9 A maximum with 4 A load	1 block, 1 maximum
4010-9918	Dual RS-232 Module	60 mA	60 mA	1 block, 3 maximum
4010-9930	Dual Class A IDNAC Isolator (DCAI). Converts a single Class B IDNAC SLC input to two Class A SLC outputs; provides short circuit isolation between each Class A output circuit; connect up to two DCAI Modules for each IDNAC SLC input up to a maximum of 6 DCAI Modules for each IDNAC SLC; each isolated output SLC used required one IDNAC address; the total current remains controlled by the Class B input source SLC at 3 A maximum; each isolated loop supports up to 30 device addresses. Note: You can install up to 30 additional device addresses between each 4905-9929 TrueAlert Addressable Isolator+ Module. Do not exceed the maximum address and unit loading specifications for the IDNAC channel.	8.3 mA	18.5 mA	1 block, 4 maximum, 2 for each IDNAC channel, you can mount 1 on the ESS.
4010-9915	BACpac Ethernet Portal Module; requires 4010-9918 RS-232 Module, no address required		123 mA	1 block, 3 maximum

Table 10: Single block option modules

Model	Features	Supervisory current	Alarm current	Option block usage
4010-9901	VESDA HLI	60 mA	60 mA	1 block, 1 maximum
4010-9929	IDNet 2+2 Module, 250 point capacity; electrically isolated output with four short circuit isolating Class B or Class A output loops; alarm currents for 50 and above devices includes 20 device LEDs in alarm; see above for individual device currents	No device	50 mA	1 block, 3 maximum
		50 devices	90 mA	
		125 devices	150 mA	
		250 devices	250 mA	
4010-9935	8 point zone/relay 4 in. x 5 in. flat module. Supports eight Class B or four Class A IDCs. Mounts in any open block in a master controller or expansion bay. Alarm current shown is for eight Class B IDCs using 3.3K end-of-line-resistors with 4 IDCs in alarm and four IDCs in standby. Standby current shown is for all eight IDCs in standby. Detector current is added separately. Refer to <i>Zone/Relay Module Installation Instructions (579-1236)</i> for more information.	83 mA	295 mA	1 block, 11 maximum
4010-9936	4 DPDT Auxiliary Relays with Feedback, contacts rated for 2A Resistive/0.5A Inductive at 30 VDC or 0.5A Resistive/0.5A Inductive at 120VAC. Refer to <i>4100ES and 4010ES Relay Modules Installation Instructions (579-1306)</i> for additional information.	18 mA	65 mA	1 Block, 11 maximum.
4010-6305	25V regulator harness for 8 point zone/relay module. Requires one for each 8 point zone/relay module to be powered by the 4010-9916 25V regulator module. The 4010-9916 25V regulator module powers a maximum quantity of five 8 point zone/relay modules.	N/A		

Table 11: Dual vertical block (flat) modules**

Model	Features	Option block usage	Supervisory current	Alarm current
4010-9928	For 1-bay control units only: Dual Vertical Block Card Mounting Kit, allows selecting two, dual Vertical Block (flat) modules**; mounts at right angle to chassis (note block usage details)	2 Vertical Blocks; 1 max, mounts in top bay, block space A & B only	N/A	
4010-9923	SafeLINC Internet Interface	2 Vertical Blocks (1 max)	145 mA	

Note: * UL, ULC, and CSFM listed.

Note: **For details on other dual vertical block network options refer to data sheets *S4100-0029*, *S4100-0056*, *S4100-0057*, *S4100-0076*, and *S4100-0061*

Network interface and network media card product selection

4010ES fire alarm control units are compatible with Simplex ES Net network or 4120 network fire alarm products.

- Refer to datasheet *ES Net Network Applications, Communications, Options, and Specifications (S4100-0076)* for additional information on compatible ES Net fire alarm products.
- Refer to datasheet *4120 Network Applications, Communications, Options and Specifications (S4100-0056)* for additional information on compatible 4120 network fire alarm products.
- Refer to datasheet *Building Network Interface Card (BNIC) Models 4100-6047 and 4010-9914 (S4100-0061)* for additional information on the Building Network Interface Card.

• Refer to datasheet *Connected Services Gateway - Central Station Communication and SafeLINC Cloud Services (S2080-0091)* for additional information on the Connected Services Gateway.

Additional control unit option selection

Table 12: Additional control unit option selection when block space is not used

Model	Features	Supervisory current	Alarm current	Mounting requirements
4010-9909	City Connect Module with disconnect switches	20 mA	36 mA	Select one maximum, mounts on ESS, 1 maximum.
4010-9910	City Connect Module	20 mA	36 mA	Select one maximum, mounts on ESS. 1 maximum.
4010-9911	Alarm Relay Module	15 mA	37 mA	Select one maximum, mounts on ESS. 1 maximum.
4100-5128	Battery Distribution Terminal Block, mounts to the side of the box, it is required when the battery connection leaves the 4010ES box. It is also used in the 4100ES fire alarm control unit.			

Note: * Refer to data sheet S4100-0063 and contact your local Simplex product representative for more details.

Cabinet dimension reference

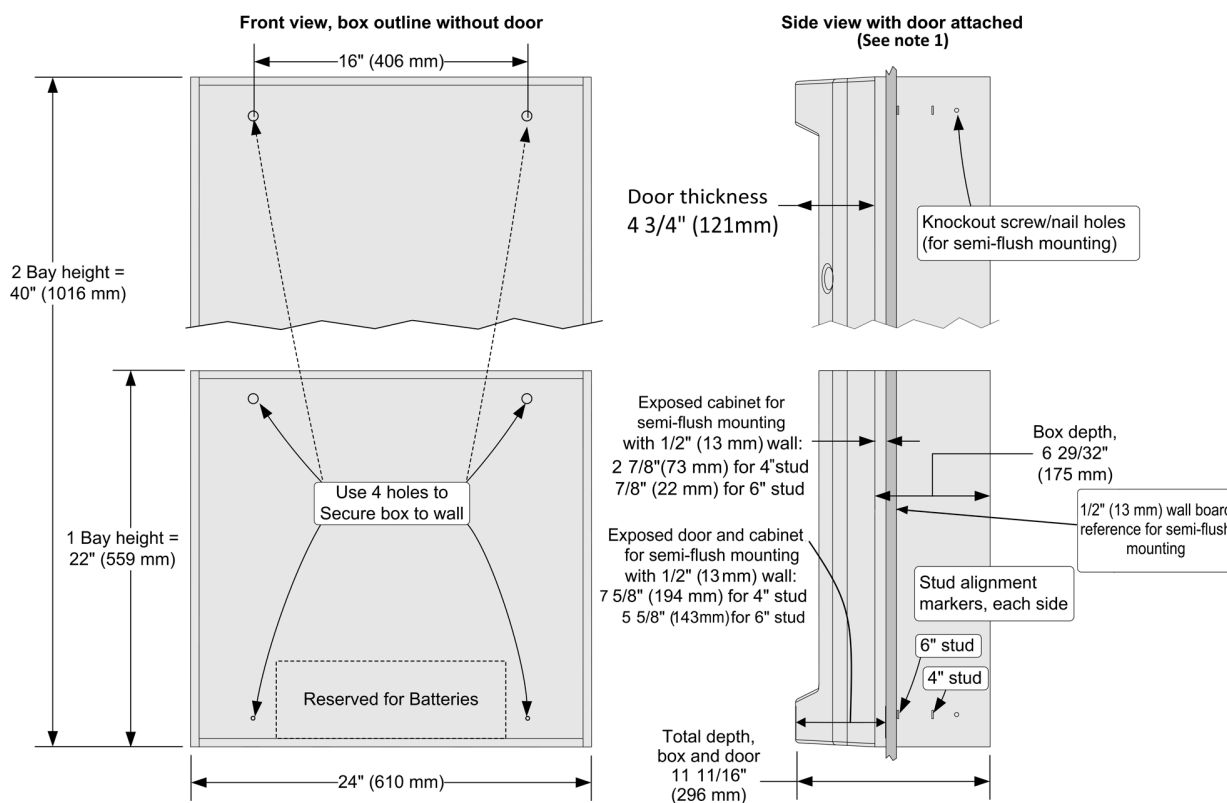


Figure 17: Cabinet dimensions

Note: Side view dimensions are shown with minimal cabinet and door protrusion from the exterior wall. For 6 in. stud construction with minimum protrusion shown, the door will open 90 degrees. To allow the door to open 180 degrees, the exposed cabinet dimension from the exterior wall must be a minimum of 3 in. (76 mm) for both 4 in. and 6 in. stud construction.

Cabinet one and two bay loading reference

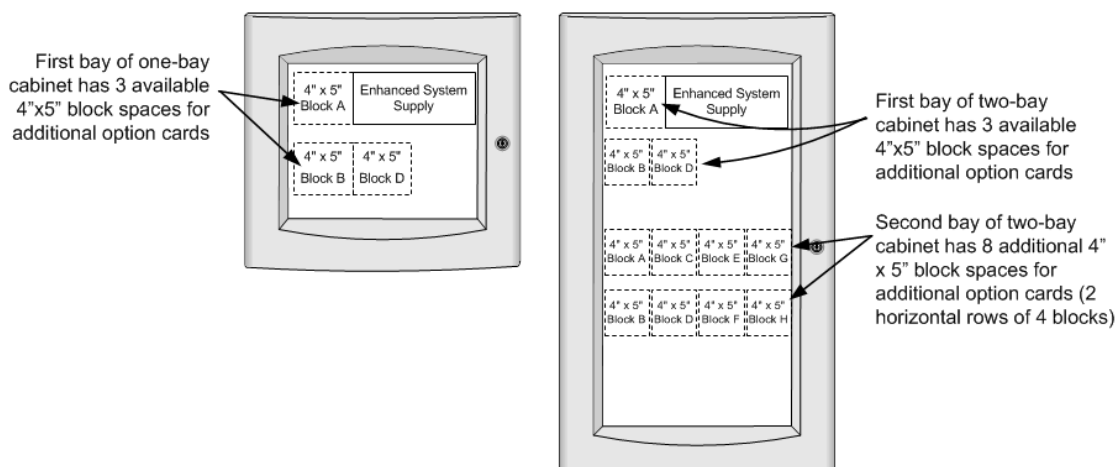


Figure 18: Cabinet one and two bay loading reference

Miscellaneous accessories

Table 13: LED kits, LEDs are pluggable, use to change color for local application requirements

Model	Description
4100-9843	8 yellow LED kit
4100-9844	8 green LED kit
4100-9845	8 red LED kit
4100-9855	8 blue LED kit
4010-9831	French Applique Kit for ES Touch Screen Display Panels. Order separately as required for Canadian French panels
4100-0650	Battery shelf, required for 50 Ah batteries, in two bay cabinets only

Table 14: Factory programming options

Model	Description
4010-8810	Factory Programming (select)
4010-0831	Custom Labels and Programming (requires 4010-8810)

4010ES card address allocation

The 4010ES has a maximum Internal and External Card Address Limit of 20 Card Addresses. See [4010ES card address allocation](#) to calculate 4010ES card address allocation.

Table 15 has a list of 4010ES equipment and the quantity of card addresses they consume:

- For the applicable control unit, write in the Card Address Consumption value in the Card Address Allocation column.

Note: Only select one control unit.

- For the option cards to be installed on the 4010ES, write in the Card Address Consumption value in the Card Address Allocation column.
- Total the Card Address Allocation column, total must not exceed 20.

Table 15: 4010ES Card Address allocation

Model	Description	Card Address consumption	Card Address allocation	Notes
Control units (select one)				
4010-9601	2x40 display, (1) IDNet 2 communications channel, single bay box	2		
4010-9602				
4010-9604	2x40 display, (1) IDNet 2 communications channel, 48 pluggable LED module, single bay box	3		
4010-9621	2 x 40 display, one IDNet 2 and one IDNet 2+2 communications channel, two bay box			3
4010-9621BA				
4010-9622	2 x 40 display, one IDNet 2 and one IDNet 2+2 communications channel, two bay box			
4010-9622BA				
4010-9623	InfoAlarm display, one IDNet 2 and one IDNet 2+2 communications channel, two bay box	4		
4010-9623BA				
4010-9624				
4010-9624BA				
4010-9633	ES Color Touch Screen Display, (1) IDNet 2 Communications Channel and (1) IDNet 2+2 Communications Channel, 2 Bay Box	4		
Control unit option cards, select as required				
4010-2504	Connected Services Gateway with IP communicator	1		
4010-9901	Flat VESDA HLI Card	1		
4010-6310	Flat ES Net Network Interface Card			
4010-9908	4 Point Flat Aux Relay Module			
4010-9912	Serial DACT			
4010-9914	Building Network Interface Card			
4010-9918	Dual RS-232 Module			
4010-9929	IDNet 2+2 Communications Module			
4010-9935	8 point zone/relay 4 in. x 5 in. flat module			
4010-9936	4-Point Auxiliary Relay Module with Feedback			
Remote annunciation, select as required				

Table 15: 4010ES Card Address allocation

Model	Description	Card Address consumption	Card Address allocation	Notes
4100-9404	Remote ES Touch Screen Display, Red	1		
4100-9405	Remote ES Touch Screen Display, Platinum			
4602-1457	4010ES RUI LCD Annunciator, English	1		
4602-1452	Status Command Unit (SCU) LED Annunciator			
4602-9102	Remote Command Unit (RCU) LED Annunciator with control			
4602-9150	Graphic I/O RCU/SCU Assembly for custom annunciator			
4602-7101	Graphic I/O RCU/SCU Assembly for custom annunciator			
4602-7001	RCU for cabinet mount			
4602-6001	SCU for cabinet mount			
4100-7401	24 Point I/O Graphic Module for custom annunciator			
4602-1451	64/64 LED Switch Controller for custom annunciator			
4100-7403	32 Point LED Driver Module for custom annunciator			
4100-7404	32 Point Switch Input Module for custom annunciator			
	Total Card Addresses, not to exceed 20	TOTAL		

General specifications

Table 16: 4010ES general specifications

Specification	Rating
AC Input Current	120 VAC Models 4 A maximum, 120 VAC @ 60 Hz nominal
ESS Power Supply Output Ratings	6 A output for Special Application appliances
	Note: The 6 A output rating of the ESS was determined such that optional module currents, and external device and appliance currents can be directly added together, not to exceed 6 A total.
	IDNAC SLC Ratings 3 A, regulated 29 VDC during Alarm, 127 addresses, 139 unit loads; DC-DC converter circuit is >92% efficient over operating range
	IDNAC SLC Wiring Output terminals are rated for 20 to 12 AWG with duplicate output terminals rated for two wires each, allowing up to four Class B branch circuit T-taps to be made in the cabinet; additional T-taps may be made in external wiring junction cabinets or boxes
	Auxiliary Power Tap 2 A maximum, rated 19.1 to 31.1 VDC
Compatible Special Application Appliances	
Simplex TrueAlert ES and TrueAlert addressable notification appliances; contact your Simplex product representative for compatible appliances	
Battery Charger Rating (sealed lead acid batteries)	Battery capacity range UL listed for battery charging of 6.2 Ah up to 110 Ah; ULC listed for charging up to 50 Ah batteries; For 1 bay cabinets, battery capacity above 33 Ah requires a separate cabinet. For 2 bay cabinets, battery capacity above 50 Ah requires a separate cabinet. See data sheet S2081-0012 for further details.
	Charger characteristics and performance Temperature compensated, dual rate, recharges depleted batteries within 48 hours per UL Standard 864; to 70% capacity in 12 hours per ULC Standard S527
Battery Current	9 A maximum @ 24 VDC during battery operation
Environmental	Operating Temperature 32°F to 120°F (0°C to 49°C)
	Operating Humidity Up to 93% RH, non-condensing @ 90°F (32°C) maximum
Additional Technical Reference	Installation Instructions 579-1150
	Operating Instructions 579-969

Additional compatible equipment and reference

Table 17: Additional compatible equipment and reference

Subject	Data sheet
Serial DACT (SDACT) for 4100ES, 4010ES, 4007ES	S2080-0009
Connected Services Gateway - Central Station Communication and SafeLINC Cloud Services	S2080-0091
Seismic Battery Brackets Reference	S2081-0019
4003EC Voice Control Unit	S4003-0002
4009 IDNet NAC Extender	S4009-0002
4009 IDNAC Repeater	S4009-0004
4010ES Panels with Conventional Notification	S4010-0004
4010ES Extinguishing Release Applications	S4010-0005
4010ES Panels with Conventional Notification (INTL)	S4010-0006
4010ES Extinguishing Release Applications (INTL)	S4010-0007
InfoAlarm Command Center for the 4010ES Panels	S4010-0008
InfoAlarm Command Center for the 4010ES Panels (INTL)	S4010-0009
4010ES Panels with Addressable Notification (INTL)	S4010-0012
External 110 Ah Battery Charger for 4100ES, 4010ES	S4081-0002
Graphic I/O Modules for 4100ES, 4010ES, 4007ES	S4100-0005
Interface to VESDA Air Aspiration Detection Systems	S4100-0026
Multiple Signal Fiber Optic Modems for 4120 Networks	S4100-0049
BACpac Ethernet Module	S4100-0051
4120 Network Products and Specifications	S4100-0056
Building Network Interface Card (BNIC)	S4100-0061
SafeLINC Internet Interface	S4100-0062
ES Net Network Products and Specifications	S4100-0076
NDU with ES-PS Power Supplies for 4120 Network	S4100-1036
Remote ES Touch Screen Displays for 4100ES and 4010ES Panels	S4100-1070
NDU with ES-PS Power Supplies for ES Net	S4100-1077
TrueSite Workstation	S4190-0016
TrueSite Incident Commander	S4190-0020
24-Pin Dot Matrix Fire Alarm System Remote Printer	S4190-0027
SCU/RCU Annunciators	S4602-0001
4606-9102 Remote LCD Annunciator	S4606-0002