Simplex

*UL, ULC, CSFM Listed; FM Approved**

Datasheet

4010ES Fire Control Units

4010ES Addressable Fire Detection and Control Basic Control Unit Modules and Accessories

Features

Compatible with Simplex ES Net and 4120 fire alarm networks

Basic system features:

- Models available with Color ES Touch Screen Display or Monochrome 2 line x 40 character display.
- Capacity for up to 1000 addressable IDNet points, or up to 1000 addressable MX Loop points and up to 127 VESDA SLI points, with up to 2000 points of annunciation and up to 20 internal and external card addresses
- CPU assembly includes dedicated Compact Flash memory for on-site system information storage and convenient Ethernet service port access
- 8 A power supply with up to 2 A of auxiliary power and battery charger capacity for up to 110 Ah batteries (UL) or up to 50 Ah batteries (ULC); 33 Ah max in one bay control cabinet, 50 Ah max with 4100-0650 battery shelf in two bay control cabinet
- 4 onboard Class A or B, 3 A NACs and one programmable auxiliary relay output rated for 2 A @ 32 VDC
- Remote annunciator module support through Remote Unit Interface (RUI) communications port, either Class B or Class A operation
- A 32 RGY LED Control Unit mount annunciation with 32 color programmable RGY LEDs

Optional Main System Supply 2 and door mounted modules, and other options include:

- City Connect Module, with or without disconnect switches
- Alarm Relay module
- Battery brackets for seismic area protection

Optional block space modules include:

- Fire Alarm Network Interface Card (NIC) for ES Net or 4120
- Peer to-Peer network communications, supports either Class B or Class X operation
- Ethernet connectivity options include ES Net Network Interface Card, Building Network Interface Card (BNIC), SafeLINC Internet Interface, and BACpac Ethernet Portal
- Dual RS-232 Module, for printer or third party interface
- VESDA Air Aspiration High Level Interface
- Serial DACT
- Four point Auxiliary Relay Module
- Modem or TCP/IP Physical Bridge Network Modules, Class B or Class X
- Additional IDNet and MX Loop addressable channels
- 8-Point Zone/Relay Module
- 4-Point Auxiliary Relay Module with or without feedback

Compatible with Simplex remotely located:

- IP communicator compatibility
- 4606-9102 Remote LCD Annunciator and 4100-9400 Series ES Touch Screen Displays
- 4190 Series Fiber Modems and Physical Bridges
- 4081 Series, 110 Ah Battery Chargers
- 4100-7400 Series Graphic Annunciators
- 4009 IDNet NAC Extenders (4009A)
- 4003EC Small Voice Control Units
- 4098-9757 QuickConnect2 and legacy 4098-9710 QuickConnect TrueAlarm smoke sensors

Figure 1: 1-Bay Cabinet with 2 x 40 Monochrome LCD Display

Figure 2: 1-Bay Cabinet with with 2 x 40 Monochrome LCD Display and LED Annunciation

Figure 3: 2-Bay Cabinet with 2 x 40 Monochrome LCD Display

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)
- UL 2017 - Emergency Alarm System Control Units, CO detection (FSZI); Process Equipment Management (QVAX)
- ULC-S527 - Control Units, System, Fire Alarm (UOJZ7); Control Unit Accessories, System, Fire Alarm (UOXX7); Control Units, Releasing Device Service (SYZV7)
- ULC-S559 - Central Station Fire Alarm System Units (DAYR7)
- ULC/ORD-C1076 - Proprietary Burglar Alarm System Units (APOU7)
- ULC/ORD-C100 - Smoke Control System Equipment, (UUKL7)

Introduction

4010ES series fire detection and control units

4010ES series fire detection and control units provide leading 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.

* 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 7165-2269:0541 for allowable values and/or conditions concerning material presented in this document. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

Modular design

A variety of functional modules are available to meet specific system requirements. Selections allow control units to be configured 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 are provided for locally cutting conduit entrance holes exactly where required
- The hinged user interface control unit easily opens for internal access
- NACs are mounted directly on power supply assemblies providing minimized wiring loss, compact size, and readily accessible terminations
- Modules are power-limited except as noted, such as relay modules
- Doors include tempered glass inserts; boxes and doors are available in platinum or red
- Box and door or retainer assemblies are included with basic control unit assemblies
- Cabinet assembly is rated NEMA 1 and IP 30
- Cabinet assembly design has been 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 *Battery Brackets for Seismic Activity Applications S2081-0019*

Control unit hardware

Master Controller and Main System Supply 2

Mounted in the upper section of the 4010ES cabinet. See the loading reference diagrams in Cabinet one and two bay loading reference.

4010ES Block Space Option Cards

4010ES Block Space Option Cards mount to the left of the 4010ES Main System Supply 2. In two 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 Main System Supply 2. These options are mutually exclusive.

The battery compartment

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 a 4100-0650 battery shelf.

Figure 13 identifies mounting locations for optional 4010ES modules.

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 allows grouping of 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

Compatible peripheral devices

The 4010ES is compatible with an extensive list of remote peripheral devices including printers and both conventional and addressable devices including TrueAlarm analog sensors.

Addressable device control

The 4010ES provides standard addressable device communications for IDNet compatible devices. Using a two wire communications circuit, you can interface individual devices such as manual fire alarm stations, TrueAlarm sensors, conventional IDC zones, and sprinkler waterflow switches to the addressable controller to communicate their identity and status.

Addressability facilitates the display of the location and condition of the connected device on the operator interface LCD and on remote system annunciators. With addressable devices, you can individually control and monitor control circuits such as fans or dampers.

Addressable operation

Each addressable device on the communication channel is continuously interrogated for status condition such as: normal, off-normal, alarm, supervisory, or trouble. Both Class B and Class A pathway operation are available. Sophisticated poll and response communication techniques ensure supervision integrity and allow for T-tapping of the circuit for Class B operation. Devices with LEDs pulse the LED to indicate receipt of a communications poll. Use the control unit to turn the LED on steady.

IDNet addressable channel capacity

The Main System Supply 2 provides an electrically isolated IDNet2 signaling line circuit (SLC) that supports up to 250 addressable monitor and control points intermixed on the same pair of wires. Additional 250 address IDNet 2+2 Modules with **four** short circuit isolating output loops are available. IDNet2 and IDNet 2+2 Module SLCs are isolated from other system reference voltages to reduce common mode noise interaction with adjacent system wiring.

Table 1: IDNet 2 and IDNet 2+2 SLC wiring specifications

Specification		Rating
Maximum distance from control unit for each device load	0 to 125	4000 ft (1219 m); 50 ohms
	126 to 250	2500 ft (762 m); 35 ohms
Total wire length allowed with T-taps for Class B wiring		Up to 12,500 ft (3.8 km); 0.60 µF
Maximum capacitance between IDNet channels		1 µF
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)
Installation instructions		579-989
Compatibility includes: IDNet communicating devices and TrueAlarm sensors including QuickConnect and QuickConnect2 sensors. For more information, refer to data sheet *S4090-0011* . **Note:** Some applications may require shielded wiring. Review your system with your local Simplex product supplier.		

TrueAlarm system operation

Addressable 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.

Programmable sensitivity

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 evaluate whether the sensitivity should be revised, the peak value is stored in memory and can be easily read and compared to the alarm threshold directly in percent.

CO sensor bases

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. You can enable or disable the CO sensor. It can be used in LED or Switch mode and custom control. You can make it public for communication across a fire alarm network. Refer to data sheet *TrueAlarm CO Sensor Bases for Smoke, Heat, and Photo/Heat Sensors using IDNet Communications S4098-0052* for details.

TrueAlarm heat sensors

You can 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. Readings are selectable as either Fahrenheit or Celsius.

TrueSense early fire detection

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 A4098-9754 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 when end of life is reached.

Modular TrueAlarm sensors

Modular TrueAlarm sensors use the same base and different sensor types (smoke or heat sensor) and can be easily interchanged to meet specific location requirements. This allows intentional sensor substitution during building construction when conditions are temporarily dusty, instead of covering smoke sensors, causing them to be disabled. Heat sensors may be installed without reprogramming the control unit. The control unit will indicate an incorrect sensor type, but the heat sensor will operate at a default sensitivity to provide heat detection for building protection at that location.

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 accessed 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

Basic control unit description

4010ES control units include:

- The Main System Supply 2 provides the power source and the input/output connections for the basic 4010ES control unit listed below
- An operator interface, master controller with Compact Flash, IDNet or MX Loop addressable device SLC(s) with short circuit isolating loops configurable for Class B or Class A operation.
- 8 A power supply with up to 2 A of auxiliary power, 110 Ah (UL)/50 Ah (ULC) battery charger (33 Ah maximum in one-bay cabinet, 50 Ah maximum with 4100-0650 battery shelf in two-bay control cabinet); four Class A or Class B NACs rated @ 3 A each for Special Application Appliances, selectable for synchronized strobe, or SmartSync horn/strobe operation over two wires; and 2 A for Regulated 24 DC operation; one programmable auxiliary relay rated for 2 A @ 32 VDC.
- One RUI Class B or Class A communications port for remote annunciation devices, cabinet and door.
- Support for up to 20 internal and external card addresses. Other standard options may be provided depending on model. See Basic control unit model selection, one bay control units and Basic control unit model selection, two bay control units for additional details on specific models.

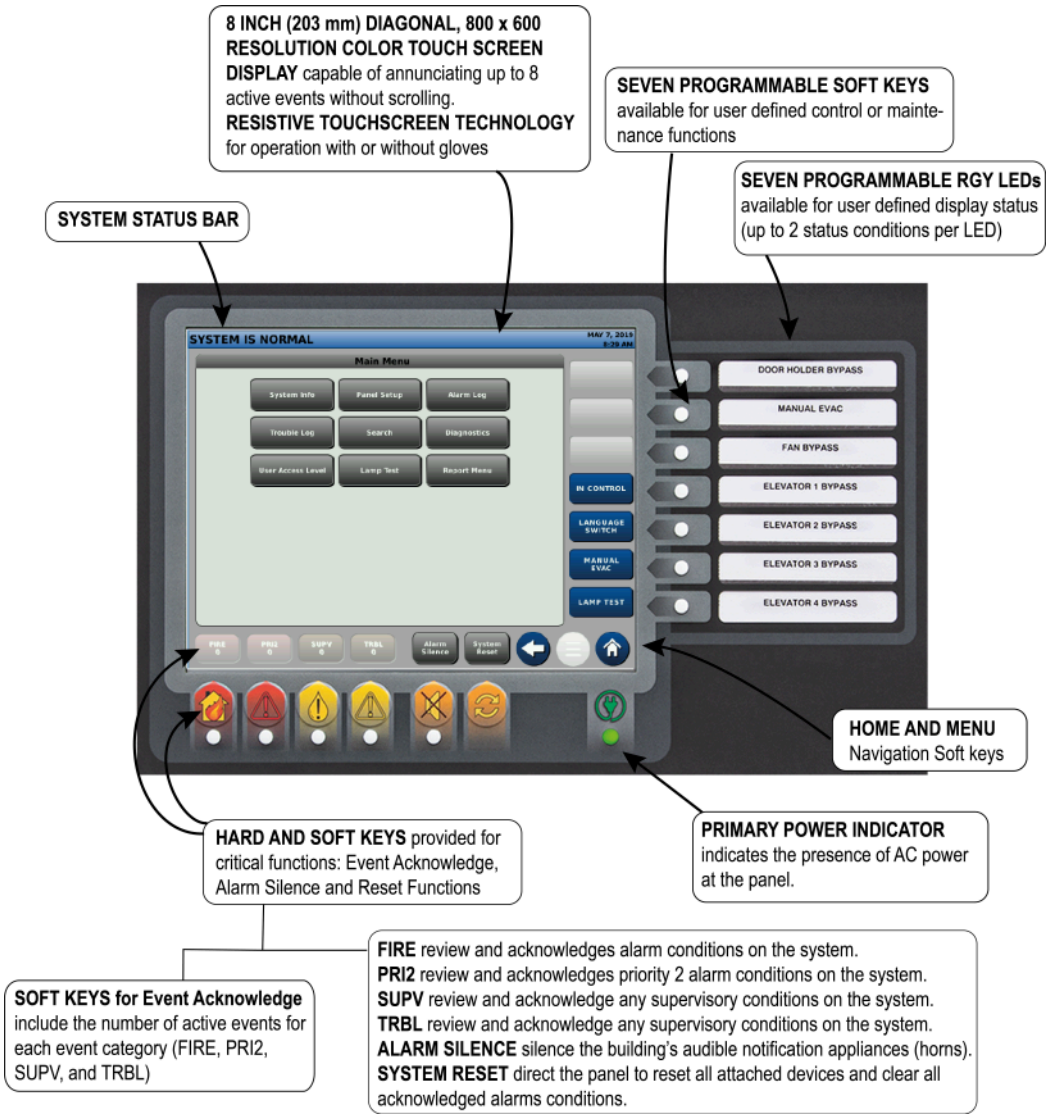
8-Point Zone/Relay module details

- **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, two-wire devices. Zone relay modules may be powered 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 Chart 579-832* for additional details.
- **IDC EOL resistor values are selectable as**: 3.3 kOhms, 2 kOhms, 2.2 kOhms, 3.4 kOhms, 3.9 kOhms, 4.7 kOhms, 5.1 kOhms, 5.6 kOhms, 6.34/6.8 kOhms, and 3.6 kOhms + 1.1 kOhms. For more details refer to *Zone/Relay Module Installation Instructions 579-1236* .

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 4: 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. The Backlight is dim in quiescent state, and 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 display content.

Example display screens

Figure 5: First and most recent alarm display

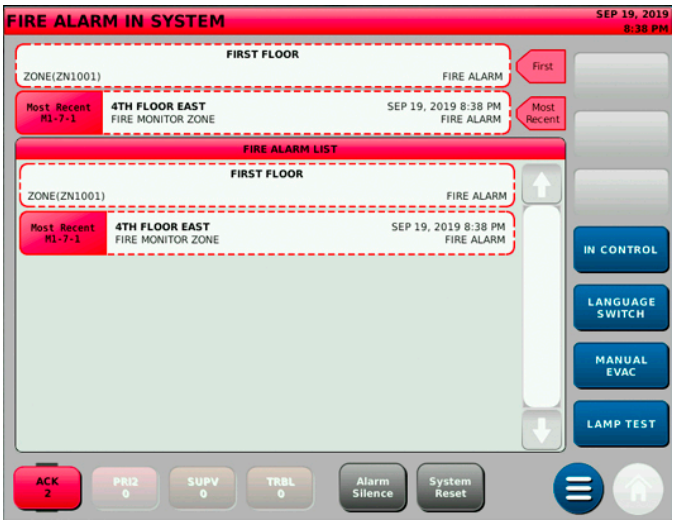


Figure 6: Main Menu

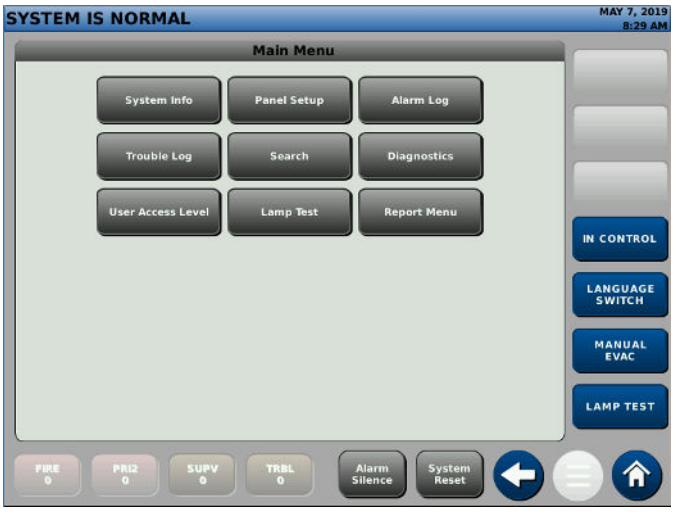


Figure 7: First eight active Trouble events list

Figure 8: Direct point callup

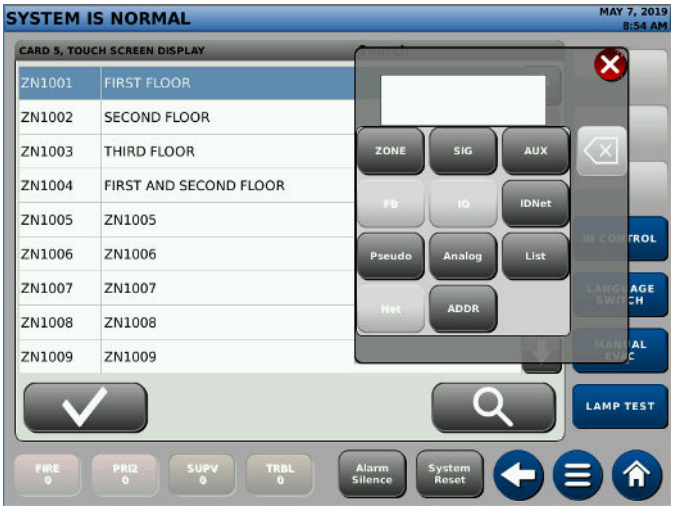


Figure 9: Alarm history log

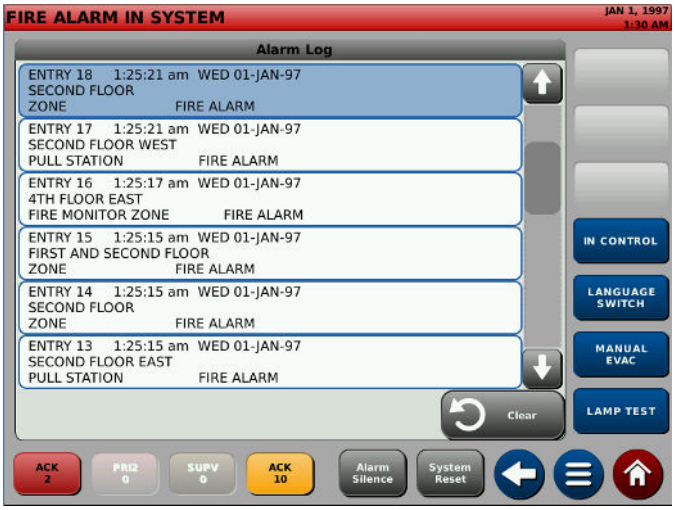
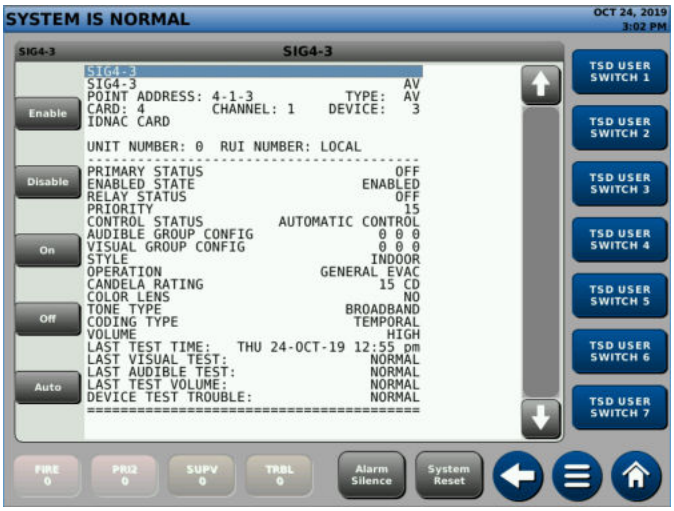


Figure 10: Detailed point status screen for TrueAlert ES appliance



Specifications

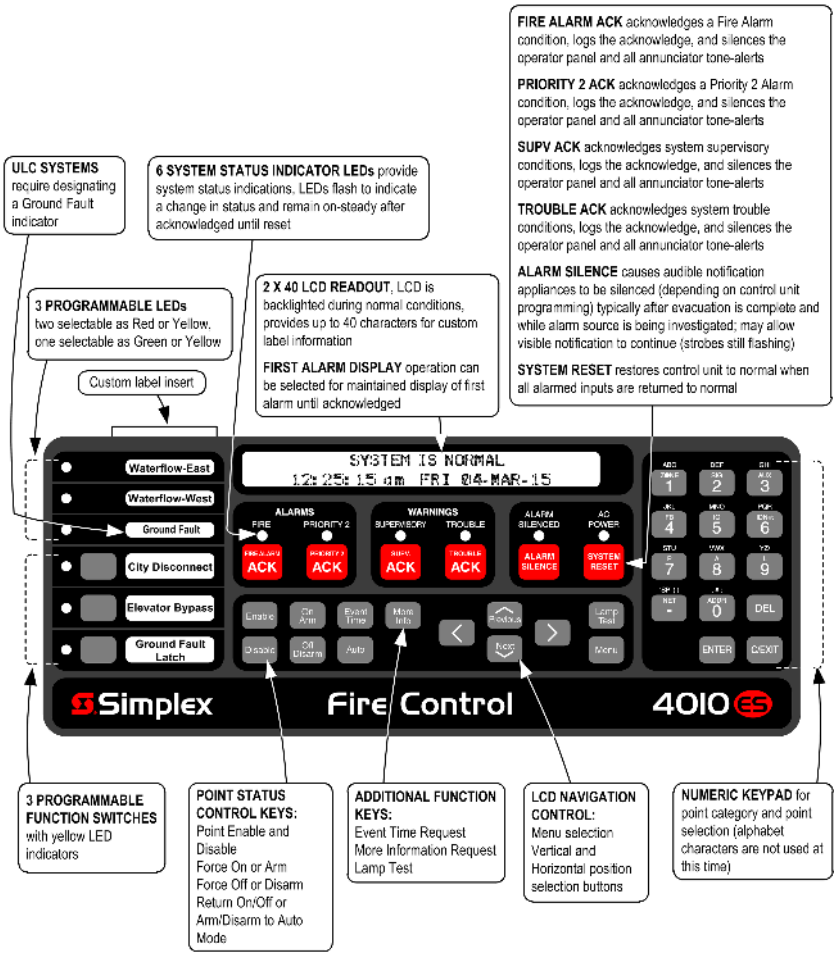
Table 2: General ES touch screen display specifications

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 2x40 LCD Features

- Provides convenient and extensive operator information using a logical, menu-driven display
- Multiple automatic and manual diagnostics for maintenance reduction
- Convenient PC programmer label editing
- Password access control
- Alarm and Trouble History Logs for up to 2000 total events are available for viewing from the LCD, or capable of being printed to a connected printer, or downloaded to a service computer

Figure 11: Operator interface



Basic control unit model selection, one bay control units

Supervisory and Alarm current specifications are for determining battery standby requirements. Current specifications include an active RUI channel. Models with an IDNet channel include 20 IDNet device LEDs activated in alarm. Models with MX communications include module base current. Actual IDNet or MX channel device current is not included, see Addressable device load specifications for battery standby for details. For models with 48 LED Annunciation, alarm also includes 24 LEDs activated.

Table 3: Basic control unit model selection, one bay control units

Model	Control unit color	Language and voltage	Listing	Features	Supv. current	Alarm current	Available option blocks
4010-9401	Red	English 120 VAC	UL, FM	Basic Control Unit with 2x40 LCD Operator Interface and one two-loop Isolated IDNet2 Communications Channel, Class A or Class B operation, with support for up to 250 addressable IDNet points	316 mA	430 mA	Three 4 in. x 5 in. blocks
4010-9402	Platinum	English 120 VAC	UL, FM				
4010-9501	Red	English 220 VAC to 240 VAC	UL, FM				
4010-9502 4010-9502BA	Platinum	English 220 VAC to 240 VAC	UL, FM				
4010-9404	Platinum	English 120 VAC	UL, ULC, FM	Same features as above with 48 LED annunciation	336 mA	495 mA	
4010-9505	Red	English 220 VAC to 240 VAC	UL	Basic Control Unit with 2x40 LCD Operator Interface and (1) ESMX Loop Channel Class A or B with support for up to 250 addressable MX Loop points	364 mA	432 mA	Three 4 in. x 5 in. block

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

Basic control unit model selection, two 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. Models with MX communications include unloaded module current only. Actual IDNet or MX channel device current is not included, see Addressable device load specifications for battery standby for details.

Table 4: Basic control unit model selection, two bay control units

Model	Control unit color	Language and voltage	Listings	Features	Available option blocks	Supv. current	Alarm current
4010-9421	Red	English 120 VAC	UL, FM	Basic Control Unit with **2x40 LCD Operator Interface**, one two-loop isolated IDNet2 Communications Channel and one four-loop Isolated IDNet 2+2 Communications Channel Module, Class A or Class B operation, with support for up to 500 addressable IDNet points	Ten 4 in. x 5 in. blocks	391 mA	545 mA
4010-9422	Platinum	English 120 VAC	UL, FM				
4010-9423	Red	English 120 VAC	UL, ULC, FM	Same features as above with 48 LED annunciation; alarm current includes 24 annunciator LEDs activated		411 mA	610 mA
4010-9428	Platinum	English 120 VAC	UL, ULC, FM				
4010-9435	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** and one two-loop Isolated IDNet2 Communications Channel, one four-loop Isolated IDNet 2+2 Communications Channel Module, Class A or Class B operation, with support for up to 500 addressable IDNet points		486 mA	661 mA
4010-9521	Red	English 220 VAC to 240 VAC	UL, FM	Basic Control Unit with **2x40 LCD Operator Interface**, one two-loop isolated IDNet2 Communications Channel and one four-loop Isolated IDNet 2+2 Communications Channel Module, Class A or Class B operation, with support for up to 500 addressable IDNet points		391 mA	545 mA
4010-9522	Platinum	English 220 VAC to 240 VAC	UL, FM				

Addressable device load specifications for battery standby

Table 5: Addressable device load specifications for battery standby

Addressable channel	Device load	Supervisory current	Alarm current
IDNet2 and IDNet 2+2 Channel Device Currents. 20 device LEDs in alarm are included with control unit and module currents See Table 6 for current draw for each IDNet device.	With 50 devices add	40 mA	50 mA
	With 125 devices add	100 mA	125 mA
	With 250 devices add	200 mA	250 mA
ESMX Loop Card	With 250 devices add	1.135 A	1.135 A
25V Regulator for MX Loop	4 A output alarm, 2.5 A standby add	4.68 A	3.0 A
	3.5 A output alarm, 2.0 A standby add	4.2 A	2.4 A
	3.0 A output alarm, 1.5 A standby add	3.6 A	1.8 A
	2.5 A output alarm, 1.0 A standby add	2.87 A	1.2 A
	2.0 A output alarm, 0.5 A standby add	2.4 A	630 mA

Table 6: 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 two-bay cabinets. One-bay cabinets are limited to three option block spaces total. See Figure 13 for option module availability. Supervisory and Alarm current specifications consider no load on addressable channels except as noted. See Addressable device load specifications for battery standby for battery standby.

Table 7: Single block option modules

Model	Features	Supervisory current	Alarm current	Option block usage
4010-9912	Serial DACT **Note:** Must mount in Block D under Main System Supply 2	30 mA	40 mA	One block (must mount in top bay, block D)
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. One 4010-6305 harness, see below, is required for each 4010-9935 module powered from the 4010-9916.	3 A maximum with 2.5 A load	4.9 A maximum with 4 A load	One block (one maximum)
4010-9918	Dual RS-232 Module	60 mA		One block (three maximum)
4010-9915	BACpac Ethernet Portal Module; requires 4010-9918 RS-232 Module, no address required	123 mA		
4010-9901	VESDA HLI	60 mA		One block (one maximum)
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 8 Class B IDCs using 3.3K end-of-line-resistors with 4 in. alarm and 4 in. standby. Standby current shown is for all 8 IDCs in standby. Refer to *Zone/Relay Module Installation Instructions 579-1236* for additional information.	83 mA	295 mA	One block (11 maximum)
4010-9936	4 DPDT Auxiliary Relays with feedback, contacts rated for 2A Resistive/0.5A Inductive @ 30 VDC or 0.5A Resistive/0.5A Inductive @ 120VAC. See 579-1306 installation instructions for additional information	18 mA	65 mA	One block (11 maximum)

Table 7: Single block option modules

Model	Features		Supervisory current	Alarm current	Option block usage
4100-6305	5 25V regulator harness for 8-point zone/relay module. One required for each 8-point zone/relay module, powered by the 4100-9916 25V regulator module. You can power a maximum of five 8-point zone/relay modules from the 4100-9916 for each bay.		N/A		
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 Table 5 for individual device currents.	No device	50 mA	60 mA	One block (three max)
		50 devices	90 mA	150 mA	
		125 devices	150 mA	225 mA	
		250 devices	250 mA	350 mA	

Table 8: Dual vertical block (flat) modules**

Model	Features	Option block Usage	Supervisory current	Alarm
4010-9928	**For one bay control units only.** Dual Vertical Block Card Mounting Kit, allows selecting two, dual Vertical Block (flat) modules from the list below; mounts at right angle to chassis, note block usage details	Two Vertical Blocks (one max, mounts in top bay, block space A ans B only)	N/A	N/A
4010-9923	SafeLINC Internet Interface	2 Vertical Blocks (1 max)	115 mA	115 mA

* UL, ULC, and CSFM Listed.

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

Table 9: Additional option modules with special option block usage

Model	Features	Option block usage	Supervisory current	Alarm
4010-6311	ESMX Loop Card supports up to 250 points	One 4 in. x 5 in. block	118 mA (no devices)	118 mA (no devices)
4010-6312	ESMX Optional Loop Mezzanine Card	N/A	4 mA (no devices)	4 mA (no devices)

Additional control unit feature selection (block space is not used)

Table 10: Additional control unit features

Model	Features	Supervisory current	Alarm current	Mounting requirements
4010-9909	City Connect Module w/ disconnect switches	20 mA	36 mA	Mounts on Main System Supply (one max)
4010-9910	City Connect Module	20 mA	36 mA	Mounts on Main System Supply (one max)
4010-9911	Alarm Relay Module	15 mA	37 mA	Mounts on Main System Supply (one max)
4100-5128	Battery Distribution Terminal Block, mounts to side of box, required when battery connection leaves the 4010ES box. Also used in the 4100ES fire alarm control unit.			

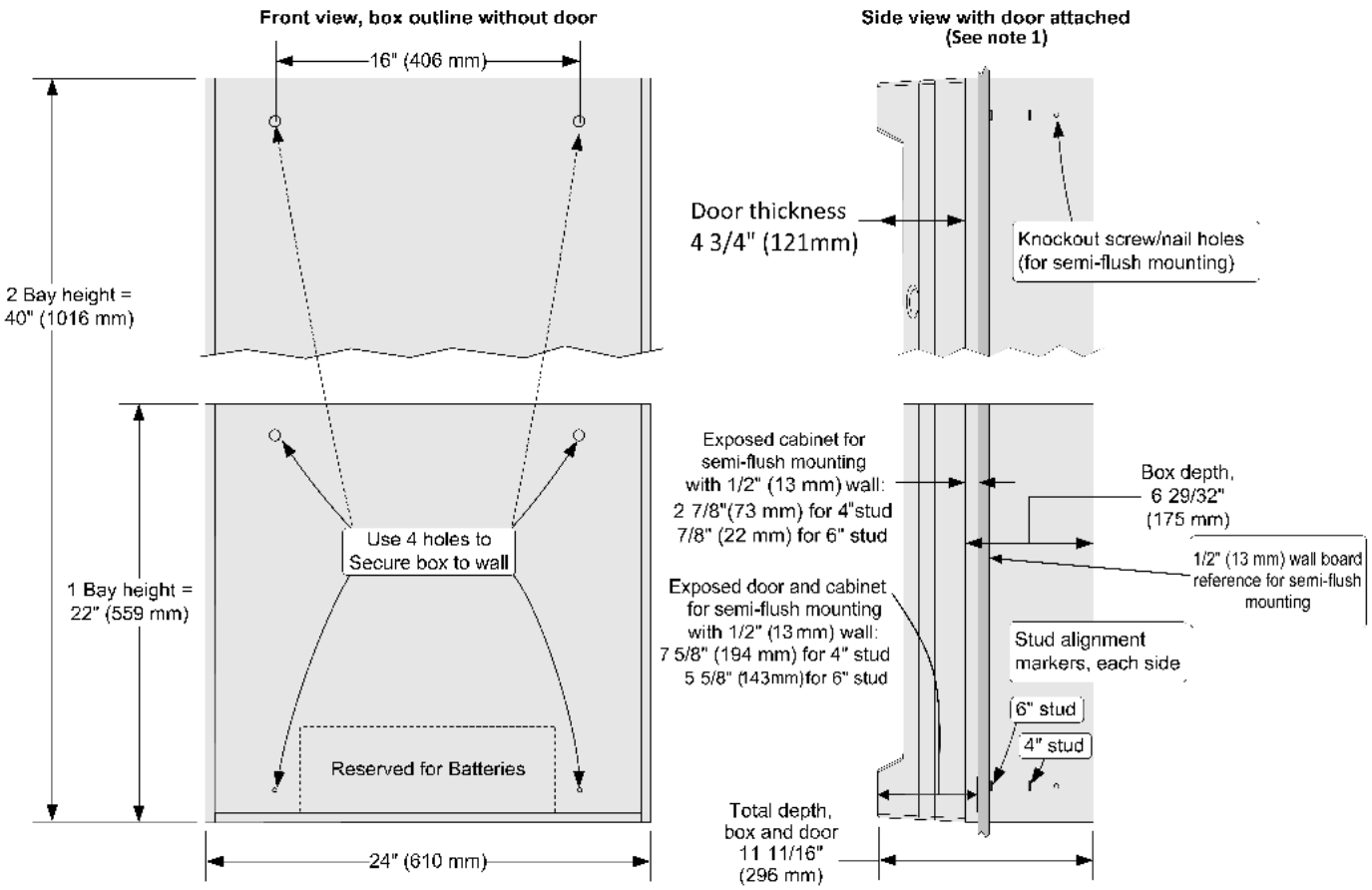
Network interface and Network Media Card product selection

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

- Refer to datasheet *S4100-0076* for additional information on compatible ES Net fire alarm products.
- Refer to datasheet *S4100-0056* for additional information on compatible 4120 network fire alarm products.
- Refer to datasheet *S4100-0061* for additional information on the BNIC.

Cabinet dimension reference

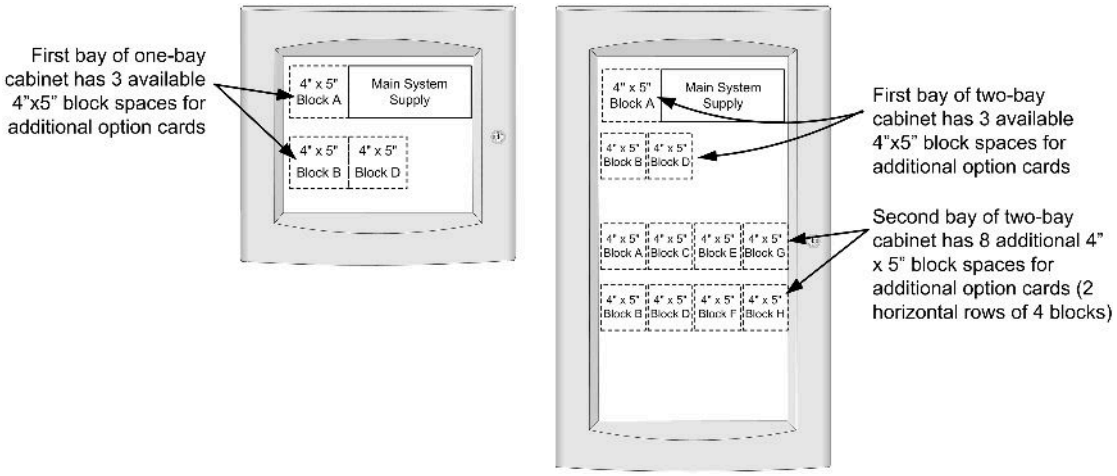
Figure 12: Cabinet dimension reference



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 13: Loading reference



Note: Some spaces may be used by basic control unit features.

Miscellaneous accessories

Table 11: 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
4100-0650	Battery Shelf, required for 50 Ah batteries in two bay cabinets only

Table 12: Factory Programming Tools

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

General specifications

Table 13: General specifications

Specification	Rating		
AC input current	120 VAC Models	4 A maximum, 120 VAC @ 60 Hz nominal	
	Battery	9 A maximum @ 24 VDC (during battery operation)	
Power supply output ratings (nominal 28 VDC on AC, 24 VDC on battery backup)	Total power supply output rating	Including module currents and auxiliary power outputs; 8 A total for Special Application appliances; 4 A total for Regulated 24 DC power (see below for details)	Output switches to battery backup during mains AC failure or brownout conditions
	Auxiliary power tap	2 A maximum, rated 19.1 VDC to 31.1 VDC	
Special Application appliances, maximum of 70 appliances for each NAC	Simplex 4901, 4903, 4904, and 4906 Series horns, strobes, and combination horn or strobes and speaker or strobes. Contact your Simplex product representative for compatible appliances.		
Regulated 24 DC appliances	Power for other UL listed appliances; use associated external synchronization modules where required		
Battery charger rating (sealed lead acid batteries)	Battery capacity range	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	*579-989*	
	Operating instructions	*579-969*	

4010ES card address allocation

The 4010ES has a maximum internal and external card address limit of 20 card addresses. See Table 14 below to calculate 4010ES card address allocation.

Table 14 is a list of 4010ES equipment and the quantity of card addresses they consume.

1. For the applicable control unit, write in the card address consumption value in the card address allocation column. Select one control unit only.
2. For the option cards to be installed on the 4010ES, write in the Card address consumption value in the card address allocation column.
3. Total the card address allocation column. The total must not exceed 20.

Table 14: Card address allocation

Model	Description		Card address consumption	Card address allocation
Control Units - select one				
4010-9401 4010-9402 4010-9501 4010-9502 4010-9502BA 4010-9505	2x40 Display, (1) IDNet2 Communications Channel; or (1) ESMX Channel, 1-Bay Box		2	
4010-9404	2x40 Display, one IDNet2 Communications Channel, 48 Pluggable LED Module, one bay Box		3	
4010-9423 4010-9428	2x40 Display, one IDNet2 and one IDNet2+2 Communications Channel, 48 Pluggable LED Module, two bay Box		4	
4010-9421 4010-9422 4010-9521 4010-9522	2x40 Display, one IDNet2 Communications Channel and one IDNet 2+2 Communications Channel, 2-Bay Box		3	
4010-9526BA	InfoAlarm Display, (1) IDNet2 Communications Channel, 2-Bay Box		3	
4010-9435	ES Color Touch Screen Display, one IDNet2 Communications Channel and one IDNet 2+2 Communications Channel, 2 Bay Box		4	
Control Unit Option Cards - select as required				
4010-9901	Flat VESDA HLI Card		1	
4010-9922	Flat 4120 Network Interface Card		1	
4010-6310	Flat ES Net Network Interface Card		1	
4010-9912	Serial DACT		1	
4010-9923	SafeLINC Internet Interface Card		1	
4010-9914	Building Network Interface Card		1	
4010-6311	ESMX Loop Card		1	
4010-6312	ESMX Optional Mezzanine Card		0	
4010-9918	Dual RS-232 Module		1	
4010-9935	8 point zone/relay 4x5” flat module		1	
4010-9929	IDNet 2+2 Communications Module		1	
4010-9936	4-Point Auxiliary Relay Module with feedback		1	
Remote Annunciation - select as required				
4100-9404	Remote ES Touch Screen Display	Red Cabinet	1	
4100-9405		Platinum Cabinet		
4606-9102	4010ES RUI LCD Annunciator, English		1	
4606-9102BA	4010ES RUI LCD Annunciator, English		1	
4606-9102CF	4010ES RUI LCD Annunciator, French		1	
4602-1478	2 slot non-configurable wall mount assembly, platinum		1	
4602-1483	2 slot non-configurable flush mount, platinum		1	
4602-1479	2 slot alterable wall mount assembly,platinum		1	
4602-1484	2 slot alterable flush mount assembly, platinum		1	
4602-1480	4 slot alterable wall mount assembly, platinum		1	
4602-1485	4 slot alterable flush mount assembly, platinum		1	
4100-7401	24 Point I/O Graphic Module (requires mounting cabinet)		1	
4100-7402	64/64 LED switch controller for custom annunciator		1	
4100-7403	32 Point LED Driver Module for custom annunciator Control Units		1	
4100-7404	32 Point Switch Input Module for custom annunciator Control Units		1	
	Total card addresses - not to exceed 20		**TOTAL**	
Note: (BA) means available with or without BA suffix; products with suffix BA are assembled in the USA				

Additional 4010ES and network product reference

Table 15: Additional 4010ES and network product reference

Subject	Data sheet
Serial DACT (SDACT) for 4100ES, 4010ES, 4007ES	*S2080-0009*
Seismic Battery Brackets Reference	*S2081-0019*
4003EC Voice Control Unit	*S4003-0002*
4009 IDNet NAC Extender	*S4009-0002*
4010ES FACUs with Conventional Notification	*S4010-0004*
4010ES Extinguishing Release Applications	*S4010-0005*
4010ES Extinguishing Release Applications (INTL)	*S4010-0007*
4010ES FACUs with Addressable Notification	*S4010-0011*
4010ES FACUs 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*
4606-9102 Remote LCD Annunciator	*S4606-0002*
4602 Remote Annunciators	S4602-0003