Simplex

*UL, ULC Listed; FM Approved**

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 includes:

- Capacity for up to 998 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
- Color-coded operator interface with 2 x 40 Super-twist LCD display and programmable control keys and LEDs
- 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 single bay control cabinet, 50 Ah max with 4100-0650 battery shelf in two bay control cabinet)
- 4 on-board Class A or B, 3 A NACs and one programmable auxiliary relay output rated for 2 A @ 32 VDC
- Remote annunciator module support via RUI (Remote Unit Interface) communications port, either Class B or Class A operation
- 48 LED Control Unit mount annunciation provides 40 Red and 8 Yellow pluggable LEDs (select models), optional LED kits are available for custom LED configurations
- Available with InfoAlarm Command Center expanded content user interface (two bay cabinet required)

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

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

Optional block space modules include:

- Fire Alarm Network Interface Card 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, PC annunciator or third party interface)
- VESDA Air Aspiration High Level Interface
- Serial DACT
- 8 Zone IDC Modules Class A or B
- 4 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, each point is selectable as an IDC input or relay output. Class A IDCs require 2 points (one out and one return). Relays rated for 2 A @ 30 VDC (resistive) and configurable as either normally open or normally closed.

Compatible with Simplex remotely located:

- IP communicator compatibility
- 4606-9102 Remote LCD Annunciator and 4100-9400Series Remote InfoAlarm Command Centers, and 4602 Series Status Command Units (SCU) and Remote Command Units (RCU) Annunciators
- 4190 Series Fiber Modems and Physical Bridges
- 4190 Series PC Annunciator
- 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



Figure 2: 1-Bay Cabinet with LED Annunciation



Figure 3: 2-Bay Cabinet

*At the time of publication only UL and ULC listings are applicable to ES Net network products. 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.

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 (UOJZC); Control Unit Accessories, System, Fire Alarm (UOXXC); Control Units, Releasing Device Service (SYZVC); Smoke Control System Equipment (UUKLC)
- ULC-S559 - Central Station Fire Alarm System Units (DAYRC)
- CSA 6.19 - Gas Alarms and Accessories (CZHFC)
- ULC/ORD-C1076 - Proprietary Burglar Alarm System Units (APOUC)
- ULC/ORD-C100 - Smoke Control System Equipment, UUKLC

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 allow control units to be configured for either Stand-Alone or Networked fire control operation.

InfoAlarm Command Center options provide convenient expanded display content (detailed on data sheet *S4010-0009*).

Mechanical Description

- 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/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 *S2081-0019*

Control Unit Hardware

Master Controller and Main System Supply

Mounted in the upper section of the 4010ES cabinet. (refer to 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. 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 Main System Supply. These options are mutually exclusive.

The Battery Compartment

The battery compartment located in the bottom of the 4010ES cabinet accepts two batteries without interfering with expansion module space.

The illustrations to identify 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, PC Annunciators 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, individual devices such as manual fire alarm stations, TrueAlarm sensors, conventional IDC zones, and sprinkler waterflow switches can be interfaced to the addressable controller to communicate their identity and status.

Addressability allows the location and condition of the connected device to be displayed on the operator interface LCD and on remote system annunciators. Additionally, control circuits (fans, dampers, etc.) may be individually controlled and monitored with addressable devices.

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 and can be turned on steady from the control unit.

IDNet Addressable Channel Capacity

The Main System Supply provides an electrically isolated IDNet+ signaling line circuit (SLC) that supports up to 248 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. IDNet+ 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 per device load	0 to 125	4000 ft (1219 m); 50 ohms
	126-250	2500 feet (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*
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. See data sheet *S4090-0011* for additional reference.		
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 can be selected 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. The CO sensor can be enabled/disabled, used in LED/Switch modes and custom control, and can be made public for communication across a fire alarm Network. Refer to data sheet *S4098-0052* for details.

TrueAlarm heat sensors

TrueAlarm heat sensors can be selected 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 can be selected 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 *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 2GB 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 via software downloads to the on-board 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
- Ethernet connectivity options include ES Net Network Interface Card , Building Network Interface Card (BNIC) and SafeLINC Internet Interface
- RUI (Remote Unit Interface) communications port supports either Class B or Class A operation for remote annunciation equipment

Main System Supply

The main system supply provides the power source and the input/output connections for the basic 4010ES control unit. The main features are listed in the basic control unit description.

Basic Control Unit Description

4010ES Control Units include:

- An operator interface, master controller with 2GB 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 max in 1 bay cabinet, 50 Ah max with 4100-0650 battery shelf in two bay control cabinet); 4 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; 1 programmable auxiliary relay rated for 2 A @ 32 VDC.
- 1 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 below for additional details on specific models).

8-Point Zone/Relay Module Details

- **Select as IDC or Relay**; configure up to 8, Class B IDCs, or up to

4, Class A IDCs; or up to 8, 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 document 579-832 for additional details).
- **IDC EOL resistor values are selectable as**: 3.3 kΩ, 2 kΩ, 2.2 kΩ, 3.4 kΩ, 3.9 kΩ, 4.7 kΩ, 5.1 kΩ, 5.6 kΩ, 6.34/6.8 kΩ, and 3.6 kΩ + 1.1 kΩ; see instructions for more details.

Operator Interface Features

- Convenient an extensive operator information is provided 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 (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

Convenient Status Information.

With the locking door closed, the glass window allows 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 the illustration below.

LED indicators describe the general category of activity being displayed with the LCD providing 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. The figure below identifies the primary functions of the operator interface.

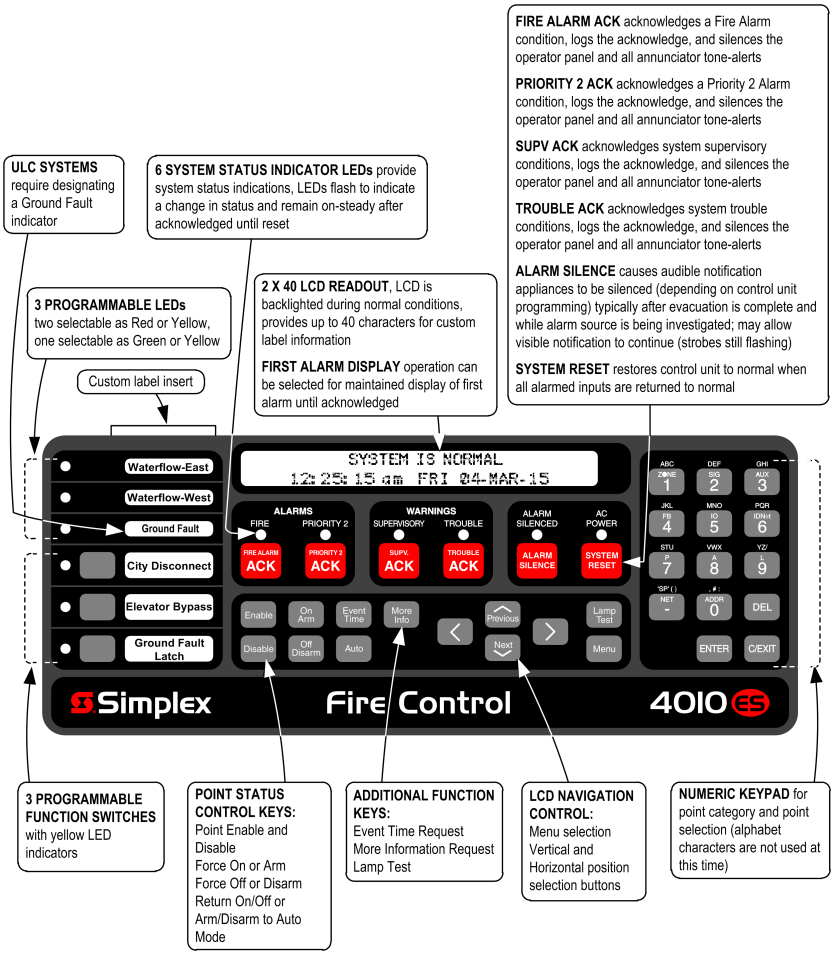


Figure 4: Operator interface

Basic Control Unit Model Selection - 1 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, refer to Addressable Device Load Specifications for Battery Standby for details. For models with 48 LED Annunciation, alarm also includes 24 LEDs activated.

Model	Control Unit Color	Language & Voltage	Listing	Features	Supv. Current	Alarm Current	Available Option Blocks
4010-9401 4010-9401BA	Red	English 120 VAC	UL, FM	Basic Control Unit with 2x40 LCD Operator Interface and (1) Two-loop Isolated IDNet+ Communications Channel, Class A or Class B operation, with support for up to 248 addressable IDNet points	316 mA	430 mA	3 4"x5" blocks
4010-9402 4010-9402BA	Platinum	English 120 VAC	UL, FM	Basic Control Unit with 2x40 LCD Operator Interface and (1) Two-loop Isolated IDNet+ Communications Channel, Class A or Class B operation, with support for up to 248 addressable IDNet points			
4010-9501 4010-9501BA	Red	English 220 - 240 VAC	UL, FM	Basic Control Unit with 2x40 LCD Operator Interface and (1) Two-loop Isolated IDNet+ Communications Channel, Class A or Class B operation, with support for up to 248 addressable IDNet points			
4010-9502 4010-9502BA	Platinum	English 220 - 240 VAC	UL, FM	Basic Control Unit with 2x40 LCD Operator Interface and (1) Two-loop Isolated IDNet+ Communications Channel, Class A or Class B operation, with support for up to 248 addressable IDNet points			
4010-9403	Red	English 120 VAC	UL, ULC, FM	Same features as above with 48 LED annunciation	336 mA	495 mA	
4010-9404	Platinum	English 120 VAC	UL, ULC, FM	Same features as above with 48 LED annunciation			
4010-9503BA	Red	English 220 - 240 VAC	UL	Basic Control Unit with 2x40 LCD Operator Interface and (1) MX Loop Channel Class A or B with support for up to 250 addressable MX Loop points	346 mA	415 mA	1 4"x5" block
Note: Model numbers ending in BA are assembled in the USA.							

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 per channel. Models with MX communications include unloaded module current only. Actual IDNet or MX channel device current is not included, refer to Addressable Device Load Specifications for Battery Standby for details.

Model	Control Unit Color	Language & Voltage	Listings	Features	Available Option Blocks	Supv. Current	Alarm Current
4010-9421 4010-9421BA	Red	English 120 VAC	UL, FM	Basic Control Unit with 2x40 Operator Interface, (1) Two-loop isolated IDNet+ Communications Channel and (1) Four-loop Isolated IDNet 2+2 Communications Channel Module, Class A or Class B operation, with support for up to 498 addressable IDNet points	10 4"x5" blocks	391 mA	545 mA
4010-9422 4010-9422BA	Platinum	English 120 VAC	UL, FM	Basic Control Unit with 2x40 Operator Interface, (1) Two-loop isolated IDNet+ Communications Channel and (1) Four-loop Isolated IDNet 2+2 Communications Channel Module, Class A or Class B operation, with support for up to 498 addressable IDNet points			
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	Same features as above with 48 LED annunciation; alarm current includes 24 annunciator LEDs activated			
4010-9425 4010-9425BA	Red	English 120 VAC	UL, FM	Same as 4010-9412(BA) and4010-9421/4010-9421BA except with InfoAlarm Operator Interface		398 mA	496 mA
4010-9426 4010-9426BA	Platinum	English 120 VAC	UL, FM	Same as 4010-9412(BA) and4010-9421/4010-9421BA except with InfoAlarm Operator Interface			
4010-9521 4010-9521BA	Red	English 220 - 240 VAC	UL, FM	Basic Control Unit with 2x40 Operator Interface, (1) Two-loop isolated IDNet+ Communications Channel and (1) Four-loop Isolated IDNet 2+2 Communications Channel Module, Class A or Class B operation, with support for up to 498 addressable IDNet points		391 mA	545 mA
4010-9522	Platinum	English 220 - 240 VAC	UL, FM	Basic Control Unit with 2x40 Operator Interface, (1) Two-loop isolated IDNet+ Communications Channel and (1) Four-loop Isolated IDNet 2+2 Communications Channel Module, Class A or Class B operation, with support for up to 498 addressable IDNet points			
4010-9526BA	Platinum	English 220 - 240 VAC	UL, FM	Basic Control Unit with InfoAlarm Operator Interface, with (1) Two-loop isolated IDNet+ Communications Channel for up to 248 addressable IDNet Points	11 4"x5" blocks	509 mA	366 mA
4010-9523BA	Red	English 220 - 240 VAC	UL	Basic Control Unit with 2x40 Operator Interface and (2) MX Loop Channels Class A or B with support for up to 500 addressable MX Loop points	7 4"x5" blocks	446 mA	515 mA
4010-9527BA	Red	English 220 - 240 VAC	UL	Basic Control Unit with InfoAlarm Operator Interface and (1) MX Loop Channel Class A or B with support for up to 250 addressable MX Loop points	9 4"x5" blocks	428 mA	481 mA

* Products with suffix "BA" are assembled in the USA.

Addressable Device Load Specifications for Battery Standby

Addressable Channel	Device Load	Supervisory Current	Alarm Current
IDNet+ and IDNet 2+2 Channel Device Currents (20 device LEDs in alarm are included with control unit and module currents) Supervisory = 0.8 mA per device Alarm = 1 mA per device	With 250 Devices Add	200 mA	250 mA
	With 125 Devices Add	100 mA	125 mA
	With 50 Devices Add	40 mA	50 mA
MX 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

Block Space Option Card Selection

Maximum block option module quantities may require 2 bay cabinets, 1 bay cabinets are limited to 3 option block spaces total. Refer to diagrams 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 device load battery standby).

Table 2: 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		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 (11 maximum)
4010-9916	Voltage Regulator Module, 22.8 to 26.4 VDC (25 VDC nominal); isolated and resettable output; includes earth detection circuit and trouble relay for status monitoring. One 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	1 Block (1 maximum)
4010-9918	Dual RS-232 Module		60 mA		1 Block (3 maximum)
4010-9915	BACpac Ethernet Portal Module; requires 4010-9918 RS-232 Module (no address required)		123 mA		
4010-9901	VESDA HLI		60 mA		1 Block (1 maximum)
4010-9935	8 point zone/relay 4x5" flat module. 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 579-1236 Zone/Relay Module Installation Instructions for additional information.		1 block	83 mA	1 Block (11 maximum)
4100-6305	5 25V regulator harness for 8 point zone/relay module. One required for each 8 point zone/relay module to be powered by the 25V regulator module. A maximum of (5) 8 point zone/relay modules may be powered from the per 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 page 6 for individual device currents	No device	50 mA	60 mA	1 Block (3 maximum)
		50 devices	90 mA	150 mA	
		125 devices	150 mA	225 mA	
		250 devices	250 mA	350 mA	

Table 3: Dual Vertical Block (Flat) Modules**

Model	Features	Option Block Usage	Supervisory Current	Alarm
4010-9928	**For 1-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)	2 Vertical Blocks (1 max, mounts in top bay, block space A & B only)	NA	NA
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 4: Additional Option Modules with Special Option Block Usage

Model	Features	Option Block Usage	Supervisory Current	Alarm
4010-9917	MX Loop Card supports up to 250 points	2 Vertical Blocks (not compatible with 4010-9928)	100 mA (no devices)	100 mA (no devices)

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 Building Network Interface Card.

Additional Control Unit Feature Selection (block space is not used)

Table 5: 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 (1 max)
4010-9910	City Connect Module			
4010-9911	Alarm Relay Module	15 mA	37 mA	
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)			

Cabinet Dimension Reference

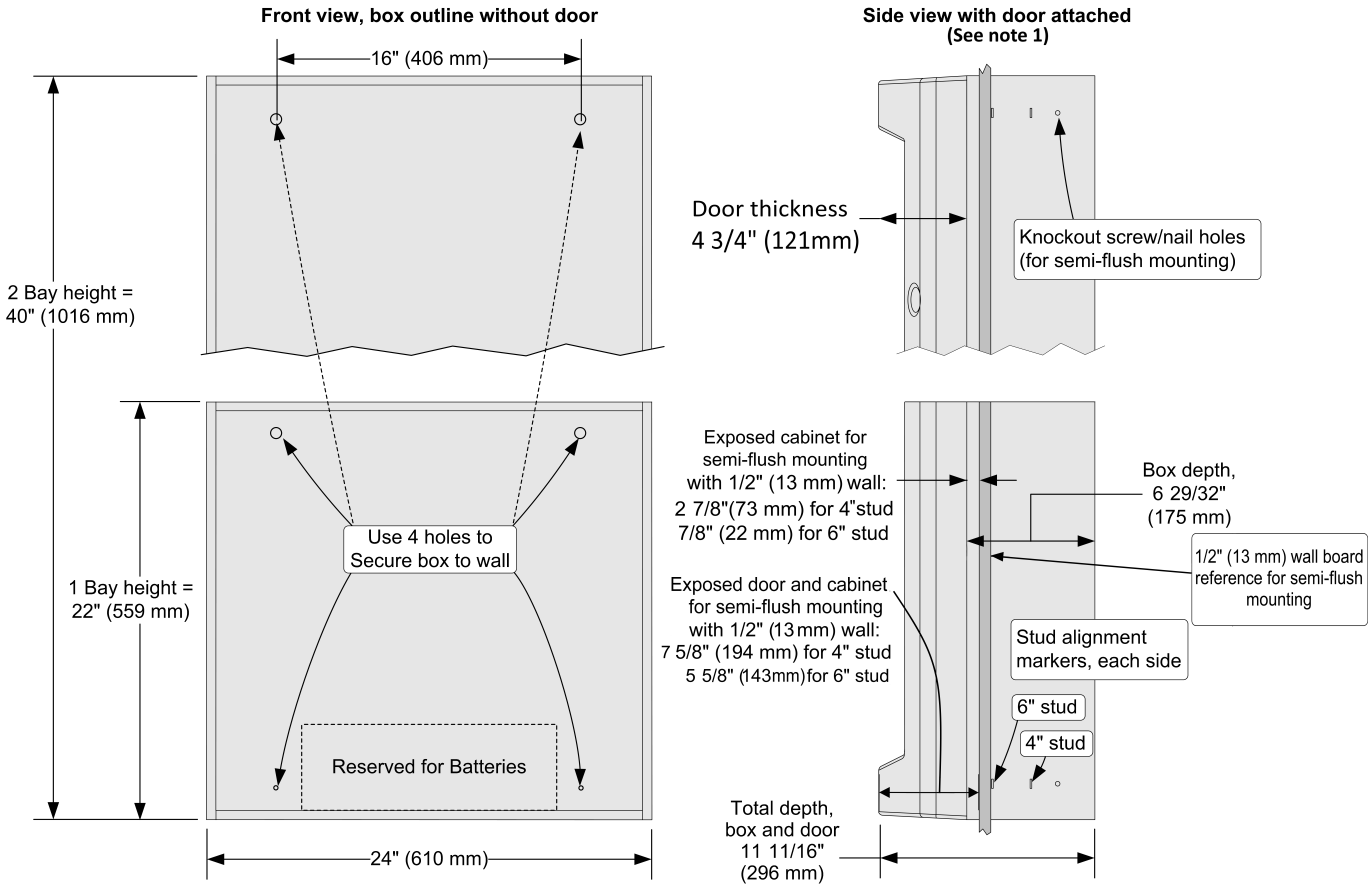


Figure 5: Cabinet Dimension Reference

Note:

1. Side View dimensions are shown with minimal cabinet and door protrusion from the exterior wall. For 6 inch 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 inches (76 mm) for both 4 inch and 6 inch stud construction.

Cabinet One and Two Bay Loading Reference

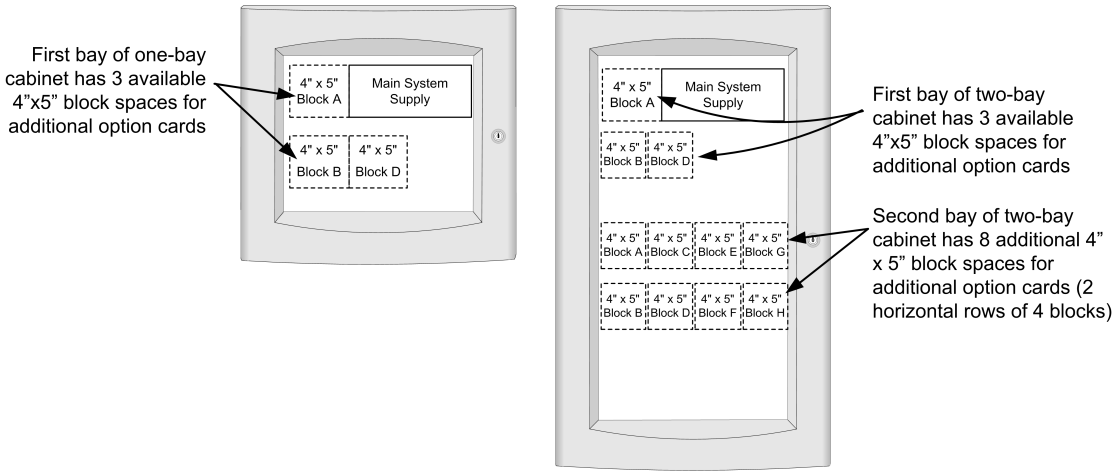


Figure 6: Loading Reference

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

Miscellaneous Accessories

Table 6: 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 (2 Bay cabinets only)

Table 7: End User and Factory Programming Tools

Model	Description
4100-8802	End User Programming Unit Software
4100-0292	Custom Label Editing (USB Dongle)
4100-0295	Port Vectoring Setup and Control (USB Dongle)
4100-0296	Access Level/Passcode Editing (USB Dongle)
4100-0298	WalkTest Configuration Setup and Control (USB Dongle)
4010-0831	Custom Labels and Programming (requires 4010-8810)
4010-8810	Factory Programming (select)

General Specifications

Table 8: General Specifications

Specification	Rating		
AC Input Current	120 VAC Models	4 A maximum, 120 VAC @ 60 Hz nominal	
	Battery	9 A maximum @ 24VDC (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 to 31.1 VDC	
Special Application Appliances, maximum of 70 appliances per NAC	Simplex 4901, 4903, 4904, and 4906 Series horns, strobes, and combination horn/strobes and speaker/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	
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. Use the table below to calculate 4010ES card address allocation.

Below 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.

   Note: Select 1 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 (total must not exceed 20).

Model	Description		Card Address Consumption	Card Address Allocation
Control Units (Select One)				
4010-9401 4010-4901BA 4010-9402 4010-9402BA 4010-9501 4010-9501BA 4010-9502 4010-9502BA 4010-9503BA	2x40 Display, (1) IDNet+ Communications Channel; or (1) MX Channel, 1-Bay Box		2	
4010-9403 4010-9404 4010-9405	2x40 Display, (1) IDNet+ Communications Channel, 48 Pluggable LED Module, 1-Bay Box		3	
4010-9423 4010-9428	2x40 Display, (1) IDNet+ and (1) IDNet2+2 Communications Channel, 48 Pluggable LED Module, 2-Bay Box		4	
4010-9421 4010-9421BA 4010-9422 4010-9422BA 4010-9521 4010-9521BA 4010-9522 4010-9523BA	2x40 Display, (1) IDNet+ Communications Channels and (1) IDNet 2+2 Communications Channel; or 2 MX Communications Channels, 2-Bay Box		3	
4010-9425 4010-9425BA 4010-9426 4010-9426BA	InfoAlarm Display, (1) IDNet+ and (1) IDNet 2+2 Communications Channel, 2-Bay Box		4	
4010-9526BA 4010-9527BA	InfoAlarm Display, (1) IDNet+ Communications Channel; or 1 MX Communications Channel, 2-Bay Box		3	
*Note: (BA) means available with or without BA suffix; products with suffix "BA" are assembled in the USA				
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			
4010-9908	4 Point Flat Aux Relay Module		1	
4010-9912	Serial DACT		1	
4010-9923	SafeLINC Internet Interface Card		1	
4010-9914	Building Network Interface Card		1	
4010-9917	MX Loop Card		1	
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	
Remote Annunciation (Select As Required)				
4100-9401	Remote InfoAlarm Command Center	Red Cabinet, English	2	
4100-9403		Platinum Cabinet, English	2	
4100-9421		Red Cabinet, French	2	
4100-9423		Platinum Cabinet, French	2	

Model	Description		Card Address Consumption	Card Address Allocation
4100-9441		Red Cabinet, with blank inserts for key labels	2	
4100-9443		Platinum Cabinet, with blank inserts for key labels	2	
4606-9102	4010ES RUI LCD Annunciator, English		1	
4606-9102BA	4010ES RUI LCD Annunciator, English		1	
4606-9102CF	4010ES RUI LCD Annunciator, French		1	
4602-9101	Status Command Unit (SCU) LED Annunciator		1	
4602-9102	Remote Command Unit (RCU) LED Annunciator w/control		1	
4602-9150	Graphic I/O RCU/SCU Assembly for custom annunciator Control Units		1	
4602-7101	Graphic I/O RCU/SCU Assembly for custom annunciator Control Units		1	
4602-7001	RCU for cabinet mount		1	
4602-6001	SCU for cabinet mount		1	
4100-7401	24 Point I/O Graphic Module (requires mounting cabinet)		1	
4100-7402	64/64 LED Switch Controller for custom annunciator Control Units		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**	

Additional 4010ES and Network Product Reference

Table 9: 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*
4009 IDNAC Repeater	*S4009-0004*
4010ES Panels with Conventional Notification	*4010-0004*
4010ES Extinguishing Release Applications	*S4010-0005*
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	*S4010-0011*
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*
NDU with SPS Power Supplies for 4120 Network	*S4100-0036*
InfoAlarm Command Center with SPS Power Supplies	*S4100-0045*
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*
TrueInsight Remote Gateway	*S4100-0063*
ES Net Network Products and Specifications	*S4100-0076*
NDU with SPS Power Supplies for ES Net	*S4100-0077*
InfoAlarm Command Center with EPS Power Supplies	*S4100-0101*
NDU with EPS Power Supplies for 4120 Network	*S4100-0102*
NDU with EPS Power Supplies for ES Net	*S4100-0104*
120 VAC Remote Printer	*S4190-0011*
PC Annunciator	*S4190-0013*
TrueSite Workstation	*S4190-0016*
TrueSite Incident Commander	*S4190-0020*
SCU/RCU Annunciators	*S4602-0001*
4606-9102 Remote LCD Annunciator	*S4606-0002*

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