Simplex®

UL, ULC CSFM Listed,
*FM, NYC Fire Dept Approved**

4010ES Fire Control Units

Addressable Fire Detection and Control
Basic Control Unit Modules and Accessories

Features

Basic system includes:

- 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, and provides up to 20 internal and external card addresses
- Color-coded operator interface with membrane keypad includes 2 x 40 Super-twist LCD display, 3 programmable control keys and 6 programmable LEDs
- CPU assembly includes dedicated compact flash memory for on-site system information storage and convenient Ethernet service port access

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

- Dual 3 A on-board ***IDNAC*** SLCs (signaling line circuit) provide ***enhanced power delivery*** to ***addressable*** notification appliances
- With an IDNAC SLC, a ***constant*** 29 VDC source voltage is maintained during alarm, even during battery operation, allowing strobes to operate at higher voltage with lower current and ensuring 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 2 to 3 times farther than with conventional notification, support for more appliances per IDNAC SLC, ability to use smaller gauge wiring, all providing installation and maintenance savings with high assurance that appliances that operate during normal system testing will operate during worst case alarm conditions
- IDNAC SLCs are compatible with both 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
- Addressable initiating device control is provided by on-board ***IDNet 2 dual loop SLCs*** that provide two electrically isolated channels that support TrueAlarm analog sensors and IDNet communications monitoring and control devices with an ***electrically isolated output channel*** allowing use with either shielded or unshielded, twisted or untwisted single pair wiring; ***and providing dual short circuit isolating output loops***
- Battery charger for up to 110 Ah batteries (UL) or up to 50 Ah batteries (ULC). 33 Ah max in control unit cabinet for 1 bay Systems, 50Ah for 2 bay systems.
- 2 A programmable function auxiliary output
- Remote annunciator module support via RUI (Remote Unit Interface) communications port, supports either Class B or Class A operation
- 48 LED panel mount annunciation provides 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



1-Bay Cabinet



1-Bay Cabinet with LED Annunciation



2-Bay Cabinet

4010ES Control Unit Type Reference

Optional ESS mounted modules include:

- City Connect (with or without disconnect switches)
- Alarm Relay Module
- TrueInsight Remote Gateway
- Battery brackets for seismic area protection (see page 2)

Optional block space modules include:

- Fire Alarm Physical Bridge and Network Interface Cards for Peer-to-Peer fire alarm network communications, supports either Class B or Class X operation
- Ethernet connectivity options include Building Network Interface Module (BNIC), SafeLINC Internet Interface, and BACpac Ethernet Portal
- Dual Class A IDNAC Isolator (DCAI)
- Dual RS-232 Module
- VESDA Air Aspiration High Level Interface
- Serial DACT
- 8 Zone IDC Modules Class A or B
- 4 Point Auxiliary Relay Module
- Additional IDNET addressable channels

Compatible with Simplex® remotely located:

- 4098-9757 QuickConnect2 and legacy 4098-9710 QuickConnect TrueAlarm smoke sensors
- 4003EC Small Voice Units
- 4081 Series, 110 Ah Battery Chargers
- 4100-7400 Series Graphic Annunciators
- 4190 Series PC Annunciator
- 4190 Series Fiber Modems and Physical Bridges
- 4606-9102 Remote LCD Annunciator, 4100-9400 Series Remote InfoAlarm Command Centers, and 4602 Series Status Command Units (SCU) and Remote Command Units (RCU) Annunciators
- IP communicator compatibility

* See page 6 for additional listing information. 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 Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

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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 provide leading edge installation, operator, and service features for customer applications in the mid-range addressable fire alarm systems market. An on-board 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 to meet NFPA 72 (*National Fire Alarm and Signaling Code*) requirements.

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 panel easily opens for internal access
- 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

Mechanical Description *(Continued)*

- Box and door/retainer assemblies are included with basic control unit assemblies
- Cabinet assemblies are 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

The Master Controller and Enhanced System Supply (ESS) are mounted in the upper section of the 4010ES cabinet (refer to one and two bay loading reference diagrams on page 10).

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 TrueInsight Remote Gateway mounts on the back side of the 4010ES User Interface Panel.

Network Media modules mount directly to the 4010ES Network Interface Card.

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 50Ah for 2 bay systems. 50Ah 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” 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

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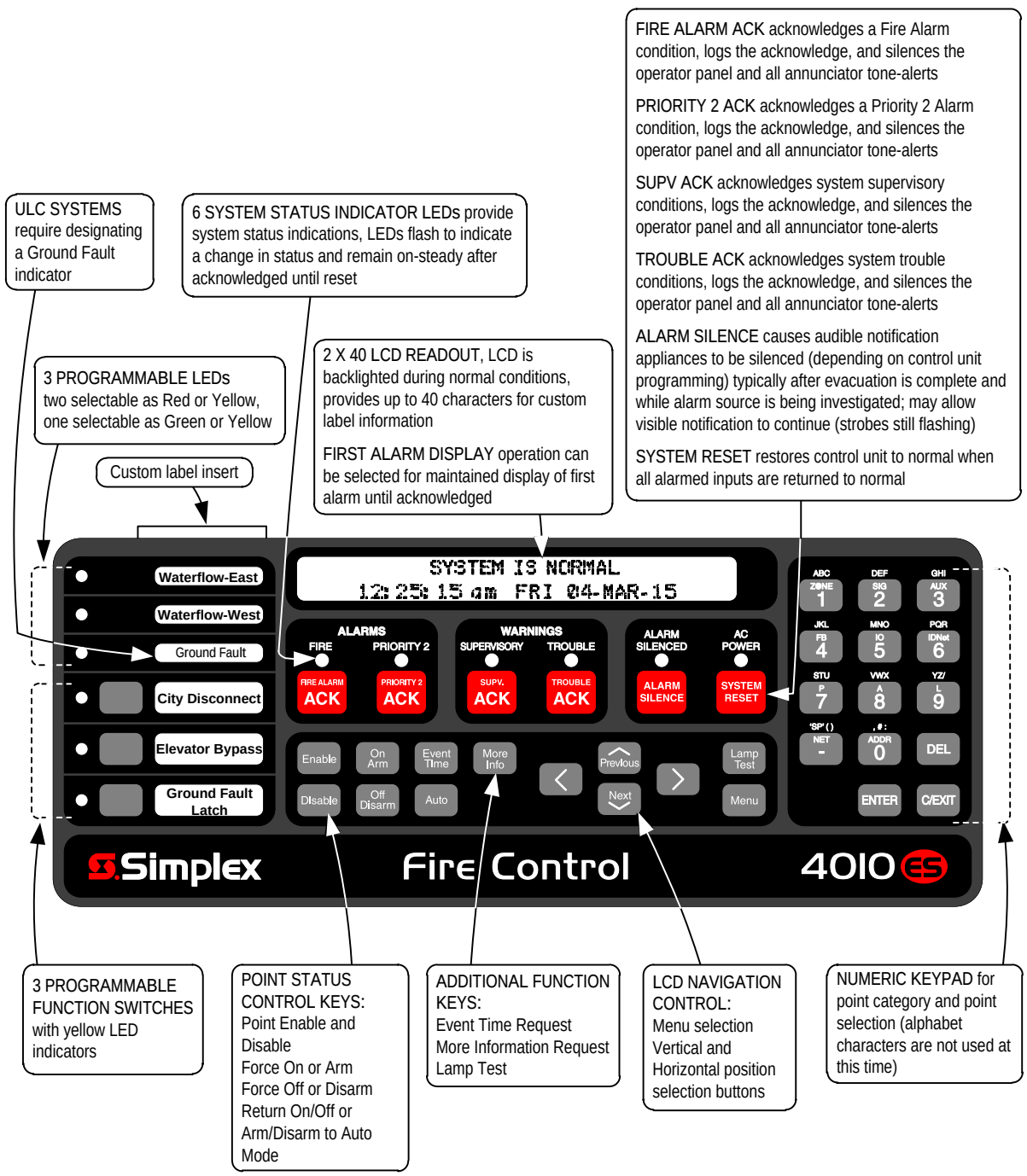
Operator Interface Features

- Convenient and 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 following illustration identifies the primary functions of the operator interface.



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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.

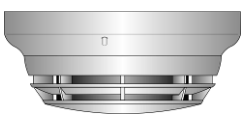
IDNet 2 Addressable Device Operation

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 be turned on steady 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.

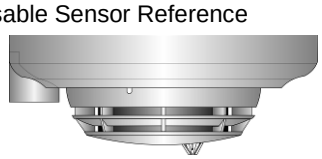
TrueAlarm Addressable Sensor Operation

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.

TrueAlarm Addressable Sensor Reference



TrueAlarm Photo Sensor with Base



TrueAlarm Photo/Heat Sensor in CO Base

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 (or downloaded as a report) and compared 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 can be enabled/disabled, and can be used in LED/Switch modes and custom control. (refer to data sheet S4098-0052 for details)

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 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 end of life.

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.

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 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.

IDNet 2 and IDNet 2+2 SLC Wiring Specifications

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
Loading per device		0.8 mA supv., 1 mA alarm; 2 mA per activated device LED
Wire Type and Connections		Shielded or unshielded, twisted or untwisted wire*
Connections		Terminal blocks for 18 to 12 AWG
Compatibility includes: IDNet communicating devices and TrueAlarm sensors *including* QuickConnect and QuickConnect2 sensors; see data sheet S4090-0011 for additional reference		

* Some applications may require shielded wiring. Review your system with your local Simplex product supplier.

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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 allow each horn and strobe to be individually controlled 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.

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.

TrueAlert ES Addressable Appliance Reference



A/O (horn)



V/O (strobe)



A/V (horn/strobe)

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

Panel Control Convenience. Applicable operation settings for each appliance can be programmed *without having to replace appliances or remove them from the wall or ceiling*. An appliance's VNAC notification zone can be easily changed through programming without having to add additional circuits, conduit, and wiring. Audible and visible appliances for non-Fire Emergency Communications notification can be programmed 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 can be significantly reduced. When Class B wiring is used, 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, and using the ***TrueAlert ES Appliance Self-Test feature provides detailed performance verification per appliance.***

TrueAlert ES Appliance Self-Test Operation

On-Board Test Sensors. TrueAlert ES appliances are equipped with on-board sensors to detect strobe and/or horn output allowing efficient and unobtrusive Self-Testing. When **Automatic Self-Test** is initiated from the control unit, 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 can be selected 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, Automatic Self-Test can be scheduled** 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 printed reports can be generated from the control unit service port.

Individual Self-Test is selected 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 Enhanced System Supply 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 2 to 3 times farther than available with conventional notification, or support more appliances per 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: 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)

Recommended Wire Type	UTP, unshielded twisted pair
Maximum wire length allowed with "T-Taps" for Class B wiring, per SLC	10,000 ft (3048 m)
Maximum wire length per SLC to any appliance	4000 ft (1219 m)
Appliance Supervisory Current	1 unit load = 0.8 mA per appliance
Wiring Connections	Terminals for 20 to 12 AWG (0.52 mm^2 to 3.31 mm^2)

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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 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 Building Network Interface Module (BNIC) and SafeLINC Internet Interface
- 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 with ESS include:

- An Operator Interface, Master Controller with 2 GB Compact Flash, IDNet2 addressable device SLC(s) with short circuit isolating loops configurable for Class B or Class A operation, and 6 A Enhanced System Supply (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 model selection below for additional details on specific models)
- Cabinet and door

6 A Enhanced System Supply 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)
- Low Battery Voltage Cutout is selectable when required (required for ULC listing applications)
- 2 A Auxiliary Output (AUX/SNAC) can be selected either as s resettable auxiliary power of 2 A @ 24 VDC, or selected to be a simple NAC (SNAC) for non synchronous 24 VDC reverse polarity NAC operation

Basic Control Unit Model Selection – 1 Bay Control Unit

Model*	Color	Language & Voltage	Listings	Features	Supv. Current (see notes below)	Alarm Current (see notes below)	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	3 4"x5" blocks
4010-9602(BA)	Platinum						
4010-9603	Red	English 120 VAC	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:** (BA) indicates model is available either with or without the -BA suffix. 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; refer to page 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.

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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. Actual IDNet current is not included, refer to page 6 for details.

Model*	Color	Language & Voltage	Listings	Features	Available Option Blocks	Supv. Current	Alarm Current
4010-9621(BA)	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	10 4"x5" blocks	386 mA	640 mA
4010-9622(BA)	Platinum						
4010-9609	Red		UL, ULC, CSFM, FM	Same features as above with 48 LED annunciation; alarm current includes 24 annunciator LEDs activated		406 mA	705 mA
4010-9610	Platinum						
4010-9608	Platinum	French 120 VAC					
4010-9623(BA)	Red	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		468mA	706mA
4010-9624(BA)	Platinum	English 120 VAC	UL, CSFM, FM				

*** Note:** (BA) indicates model is available either with or without the BA suffix. 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; refer to page 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.

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Addressable Device Load Specifications for Battery Standby

Addressable Channel Loading Reference	Device Load	Supervisory Current	Alarm Current
IDNet 2 and IDNet 2+2 Communications Channel Output	for every 50 Devices	40 mA	1 mA per device in alarm; 2 mA per activated device LED
IDNAC Communications Channel Output	for every 50 Appliances	40 mA	calculate per selected appliances

Block Space Option Card Selection

Note: Refer to diagrams on page 10 for Option Module availability. Supervisory and Alarm current specifications are for determining battery standby requirements.

Single Block Option Modules, Select Three (3) Maximum if No Dual Block Module is Selected; Select One (1) Maximum if a Dual Block Module or the Module Bracket is Selected

Model	Features		Supervisory Current	Alarm Current	Option Block Usage
4010-9912	Serial DACT, includes 2, 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 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 or two Class B SLC outputs; provides short circuit isolation between each Class A or B output circuit; requires up to two IDNAC addresses; the total current remains controlled by the Class B input source SLC at 3 A maximum; select up to 2 per IDNAC SLC		8.3 mA	18.5 mA	1 block, (4 maximum, 2 per IDNAC channel), 1 can be mounted on the ESS
4010-9915	BACpac Ethernet Portal Module; requires 4010-9918 RS-232 Module (no address required)		123 mA	123 mA	1 block (3 maximum)
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	60 mA	1 block (3 maximum)
		50 devices	90 mA	150 mA	
		125 devices	150 mA	225 mA	
		250 devices	250 mA	350 mA	

Dual Vertical Block (Flat) Modules, Select One, or Two with 4010-9928 Bracket Kit (except for Media Cards)

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 from the list below	2 vertical blocks (must mount in blocks A & B)	NA	NA
4010-9922	Modular Network Interface Card (requires two media modules, see below)	2 vertical blocks (1 maximum)	30 mA	30 mA
4010-9818	Network Media Card Wired	N/A (mounts to 4010-9922)	55 mA	55 mA
4010-9819	Network Media Card Fiber Optic		25 mA	25 mA
4010-9914	Building Network Interface Card	2 vertical blocks (1 maximum)	236 mA	236 mA
4010-9923*	SafeLINC Internet Interface	2 vertical blocks (1 maximum)	115 mA	115 mA
4010-9924*	Modem Physical Bridge Class B	2 vertical blocks (4 maximum)	193 mA	193 mA
4010-9925*	Modem Physical Bridge Class X		246 mA	246 mA
4010-9926**	TCP/IP Physical Bridge Class B	3 blocks, "L" shape, requires 2 vertical block spaces plus the adjacent lower right hand block (2 maximum)	196 mA	196 mA
4010-9927**	TCP/IP Physical Bridge Class X		236 mA	236 mA

*UL, ULC, and CSFM listed.
** FM Approved only.

Continued on next page

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Additional Block Space Option Card Selections *(Continued)*

Dual Vertical Block (Slot) Modules, Select One if no Dual Vertical (Flat) Modules are Selected

Model	Features	Option Block Usage	Supervisory Current	Alarm Current
4010-9920	8 Zone Initiating Device Circuit - Class B	2 Vertical Blocks (mother/daughter card), 1 maximum, must mount in blocks A and B	75 mA	195 mA
4010-9921	8 Zone Initiating Device Circuit - Class A			

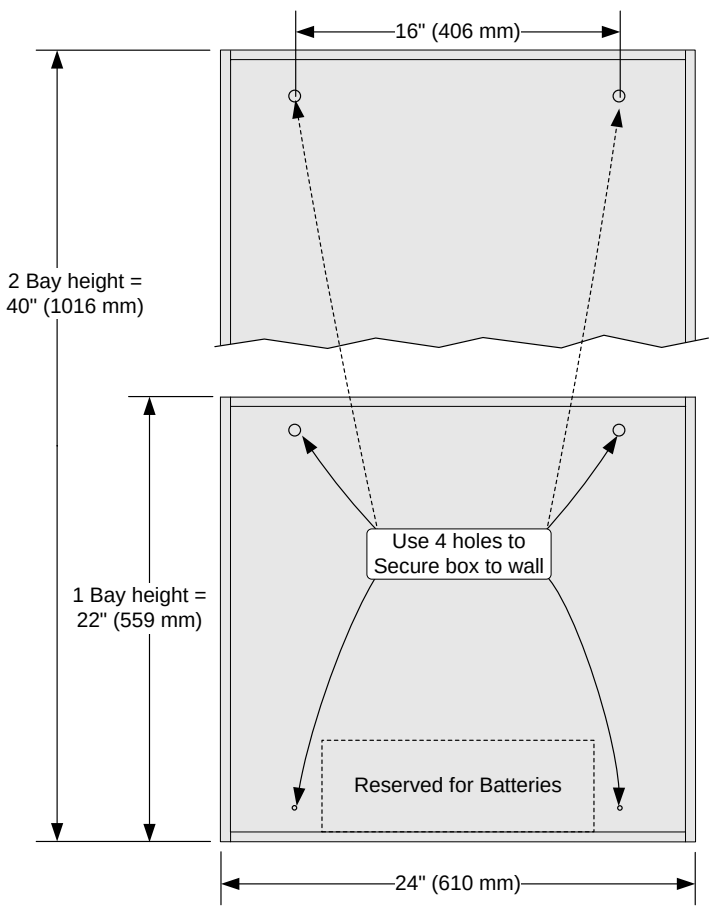
Additional Control Unit Feature Selections (block space is not used)

Model	Features	Supervisory Current	Alarm Current	Mounting Requirements
4010-9909	City Connect Module w/ disconnect switches	20 mA	36 mA	Select one maximum, mounts on ESS
4010-9910	City Connect Module	20 mA	36 mA	
4010-9911	Alarm Relay Module	15 mA	37 mA	
4190-6105*	TrueInsight Remote Gateway	62 ma	62 ma	Mounts on the back of the 4010ES user interface panel
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)			

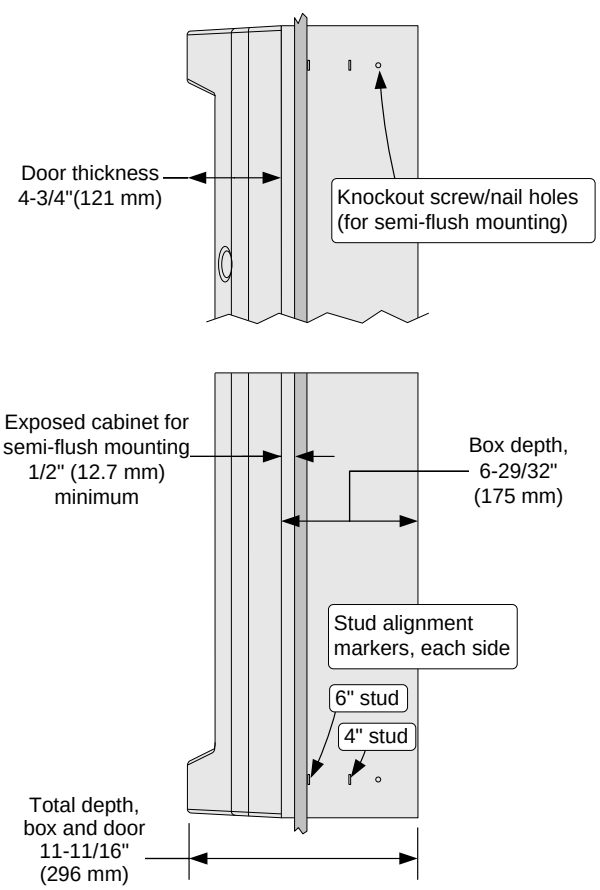
* Refer to data sheet S4100-0063 and contact your local Simplex product representative for more details.

Cabinet Dimension Reference

Front view, box outline without door



Side view with door attached

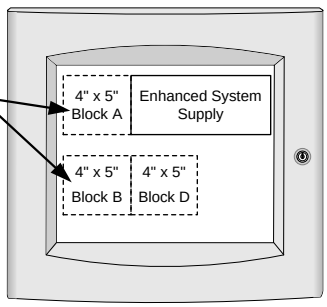


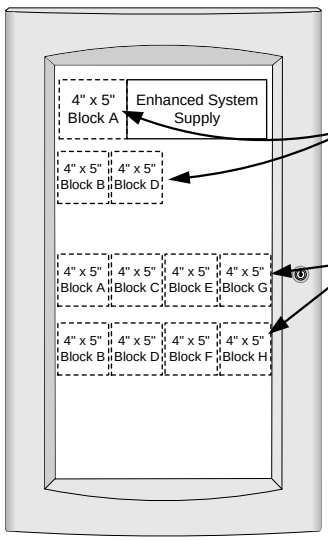
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Cabinet One and Two Bay Loading Reference

First bay of one-bay cabinet has 3 available 4”x5” block spaces for additional option cards

Note: Some spaces may be used by basic control unit features, see pages 5 and 6 for available space





First bay of two-bay cabinet has 3 available 4”x5” block spaces for additional option cards

Second bay of two-bay cabinet has 8 additional 4” x 5” block spaces for additional option cards (2 horizontal rows of 4 blocks)

Note: Some spaces may be used by basic control unit features, see pages 5 and 6 for available space

Miscellaneous Accessories

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

End User 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)

Factory Programming Options

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

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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.

INSTRUCTIONS: 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: Only select 1 control unit)
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	Notes
Control Units (Select One)				
4010-9601	2x40 display, (1) IDNet 2 communications channel, single bay box	2		
4010-9602(BA)		2		
4010-9603	2x40 display, (1) IDNet 2 communications channel; 48 pluggable LED module, single bay box	3		
4010-9604		3		
4010-9606		3		
4010-9621(BA)	2x40 display, (1) IDNet 2 and (1) IDNet 2+2 communications channel, two bay box	3		
4010-9622(BA)	2x40 display, (1) IDNet 2 and (1) IDNet 2+2 communications channel, two bay box	3		
4010-9609	2x40 display, (1) IDNet 2 and (1) IDNet 2+2 communications channel, 48 pluggable LED module, two bay box	4		
4010-9610		4		
4010-9608		4		
4010-9623(BA)	InfoAlarm display, (1) IDNet 2 and (1) IDNet 2+2 communications channel, two bay box	4		
4010-9624(BA)		4		
Control Unit Option Cards (Select As Required)				
4010-9901	Flat VESDA HLI Card	1		
4010-9922	Flat Network Card	1		
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		
4010-9918	Dual RS-232 Module	1		
4010-9920	8 Zone Initiating Device Circuit - Class B	1		
4010-9921	8 Zone Initiating Device Circuit - Class A	1		
4010-9929	IDNet 2+2 Communications Module	1		
4190-6105	TrueInsight Remote Gateway	1		
Remote Annunciation (Select As Required)				
4100-9401	Red Cabinet, English	2		
4100-9403	Platinum Cabinet, English	2		
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		
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	1		
4602-7101	Graphic I/O RCU/SCU Assembly for custom annunciator	1		
4602-7001	RCU for cabinet mount	1		
4602-6001	SCU for cabinet mount	1		
4100-7401	24 Point I/O Graphic Module for custom annunciator	1		
4100-7402	64/64 LED Switch Controller for custom annunciator	1		
4100-7403	32 Point LED Driver Module for custom annunciator	1		
4100-7404	32 Point Switch Input Module for custom annunciator	1		
	Total Card Addresses (Not to Exceed 20)	**TOTAL**		

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General Specifications

Input Current	AC	4 A maximum, 120 VAC @ 60 Hz nominal	
	Battery	9 A maximum @ 24 VDC (during battery operation)	
ESS Power Supply Output Ratings	Power Supply Output Rating	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.	Output switches to battery backup during mains AC failure or brownout conditions
	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 (4) 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 2081-0012 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° to 120°F (0° 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

Subject	Data Sheet	Subject	Data Sheet
4010ES Agent Release Applications and Accessories	S4010-0005	Network Communications	S4100-0056
Agent Release Accessories	S2080-0010	Multi-Signal Fiber Optics	S4100-0049
Building Network Interface	S4100-0061	4602 Series SCU/RCU	S4602-0001
SafeLINC Internet Interface	S4100-0062	4009 IDNet NAC Extender	S4009-0002
Interface to VESDA Air Aspiration Detection Systems	S4100-0026	Addressable Device Compatibility, IDNet Communication Sensors and Devices	S4090-0011
Serial DACT (SDACT)	S2080-0009	4009 IDNAC Repeater	S4009-0004
Fire Alarm Network Overview	S4100-0055	4003EC Voice Control Unit	S4003-0002
TrueInsight Remote Service	S4100-0063	120 VAC Desktop Remote Printer	S4190-0011
4606-9102 Remote LCD Annunciator	S4606-0002	110 Ah Batteries and Cabinets	S2081-0012
Graphic I/O Modules	S4100-0005	Remote 110 Ah Battery Chargers and Cabinets	S4081-0002
Remote InfoAlarm Command Center	S4010-0008	BACpac Ethernet Portal Module	S4100-0051
PC Annunciator	S4190-0013	Network Physical Bridge	S4100-0057
TCP/IP Physical Bridge	S4100-0029		

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