AUTOCALL

*UL, ULC Listed**

4010ES Fire Control Units

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

Features

Figure 1: 1-Bay 4010ES Fire Control Panel

Basic system includes:

- Capacity for up to 1000 addressable IDNet points, up to 127 VESDA Air Aspiration Systems interface points and up to 254 addressable notification appliances with up to 2000 points of Annunciation; and 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 communications port, Class A or B 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

Optional ESS mounted modules, 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 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 (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
- Additional IDNet addressable channels
- 8-point zone/relay module, each point can be 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 Autocall remotely located

- A4081 Series, 110 Ah Battery Chargers
- A190 Series PC Annunciator
- A190 Series Fiber Modems and Physical Bridges
- IP communicator compatibility

Introduction

Leading edge installation, operator, and service features

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.

* Additional listings may be applicable, contact your local product supplier for the latest status.

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

- 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
- 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 *AC2081-0019*

Control Unit Hardware

- The Master Controller and Enhanced System Supply (ESS) are mounted in the upper section of the 4010ES cabinet (refer to Cabinet One and Two Bay Loading Reference)
- 4010ES Block Space Option Cards mount to the left of the 4010ES ESS. In 2-bay cabinets block space option cards also mount below the 4010ES ESS.

Other 4010ES Options:

- The 4010ES City Connect module or the optional Alarm Relay module mount directly to the ESS. These options are mutually exclusive.
- The 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 A100-0650 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 (typical with future phased expansion); with future equipment and devices grouped into a single trouble, operators can more clearly identify events from the commissioned and occupied areas
- Module level ground fault searching assists installation and service by locating and isolating modules with grounded wiring
- Recurring Trouble Filtering allows the control unit to recognize, process, and log recurring intermittent troubles (such as external wiring ground faults), but only sends a single outbound system trouble to avoid nuisance communications
- WALKTEST silent or audible system test performs an automatic self-resetting test cycle

IDNet Addressable Device Control

The 4010ES with 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.

Table 1: TrueAlarm Addressable Sensor Reference

Figure 2: TrueAlarm Photo Sensor with Base

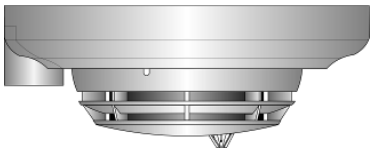

Figure 3: TrueAlarm Photo/ Heat Sensor in CO Base

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 *AC4098-0052* 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 A4098-9754 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 *AC4098-0024* .

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

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 2 SLCs support up to 250 addressable monitor and control points 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.

Table 2: 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
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

Note: Compatibility includes: IDNet communicating devices and TrueAlarm sensors including QuickConnect and QuickConnect2 sensors.

Note: * Some applications may require shielded wiring. Review your system with your local Autocall product supplier.

IDNAC SLC Control of TrueAlert and TrueAlert ES Addressable Notification

Addressable notification appliance communications

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.

Table 3: TrueAlert ES Addressable Appliance Reference

Figure 4: A/O horn **Figure 5: V/O strobe** **Figure 6: A/V horn/strobe**

Virtual NACs

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

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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.

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
- 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, IDNet 2 addressable device SLC(s) configurable with short circuit isolating loop outputs 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 for up to 254 addressable notification appliances; Class A operation is available using the A010-9930 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 A100-0650 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

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

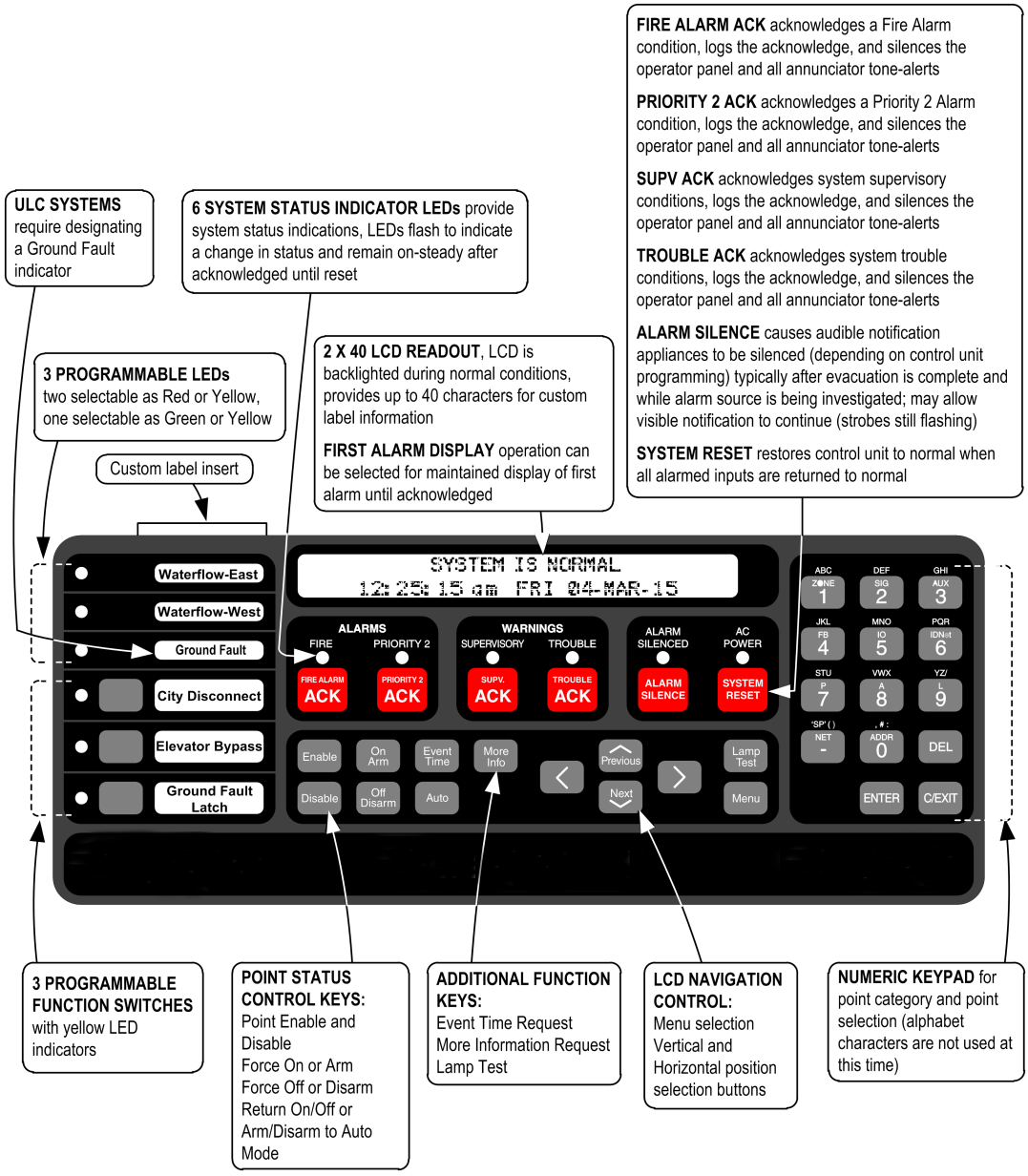


Figure 7: Operator Interface Features

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.

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.

Basic Control Unit Model Selection – 1 Bay Control Unit

Table 4: 1 Bay Control Unit Model Selection

Model*	Color	Language & Voltage	Listings	Features	Supv. Current	Alarm Current	Available Option Blocks
A010-9601	Red	English 120 VAC	UL	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 IDNet points; and two, 3 A, Class B, IDNAC SLCs with support for up to 254 addressable notification appliances	256 mA	390 mA	3 4"x5" blocks
A010-9602	Platinum						

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

Current Notes:

- Basic control unit current does not subtract from the 6 A output rating.
- Supervisory and alarm current specifications are for determining battery standby requirements.
- Current specifications include an active RUI channel.
- IDNet channel device current is not included, refer to Block Space Option Card Selection for details.
- IDNAC channel notification appliance current is not included, calculate separately per connected devices.

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.

Table 5: 2 Bay Control Units Model Selection

SKU	Color	Language & Voltage	Listings	Features	Supv. Current	Alarm Current	Available Option Blocks
A010-9621 A010-9621BA	Red	English, 120 VAC	UL	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	386 mA	640 mA	10 4"x5" blocks
A010-9622 A010-9622BA	Platinum						
A010-9721	Red	English, 220-240 VAC	UL		256 mA	390 mA	
A010-9722	Platinum						
A010-9623 A010-9623BA	Red	English, 120 VAC	UL	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, and two, 3 A, Class B, IDNAC SLCs with support for up to 254 addressable notification appliances	468 mA	706 mA	
A010-9624 A010-9624BA	Platinum						
A010-9711	Red	English, 220-240 VAC	UL				
A010-9712	Platinum						

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

Current Notes:

- Basic control unit current does not subtract from the 6 A output rating.
- Supervisory and alarm current specifications are for determining battery standby requirements.
- Current specifications include an active RUI channel.
- IDNet channel device current is not included, refer to Block Space Option Card Selection for details.
- IDNAC channel notification appliance current is not included. Control unit current assumes 20 LEDs activated in alarm on each

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

Refer to Cabinet One and Two Bay Loading Reference for option module availability. Supervisory and Alarm current specifications are for determining battery standby requirements.

Table 6: Single Block Option Modules

SKU	Features		Supervisory Current	Alarm Current	Option Block Usage
A010-9912	Serial DACT, includes 2 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)
A010-9908	4 Point Aux Relay Module		15 mA	60 mA	1 block (3 maximum)
A010-9918	Dual RS-232 Module		60 mA	60 mA	1 block (3 maximum)
A010-9929	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	

Note: For 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.

Table 7: Dual Vertical Block (Flat) Modules

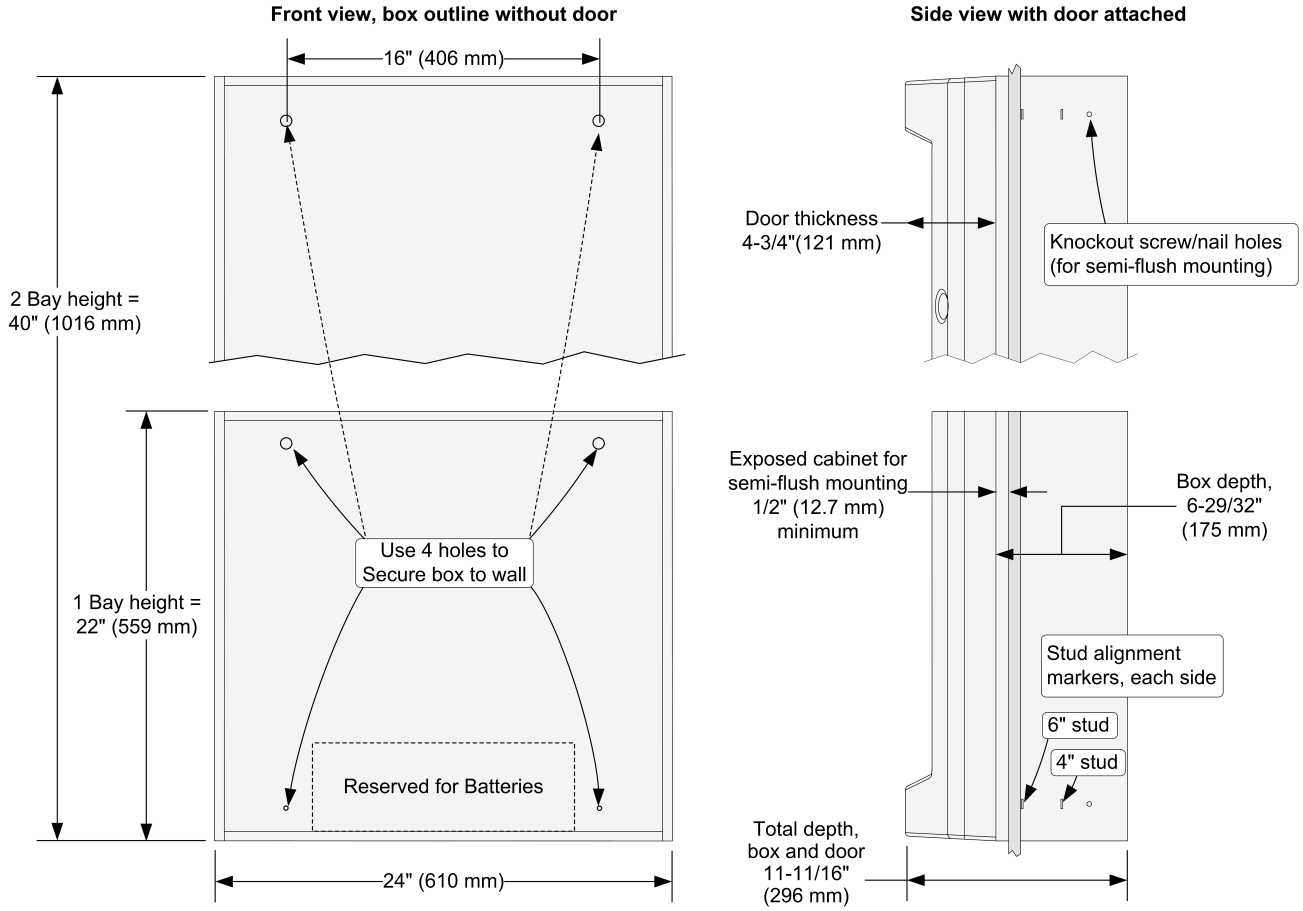
SKU	Features	Option Block Usage	Supervisory Current	Alarm Current
A010-9928	**For 1-Bay Units Only:** Dual Vertical Block Card Mounting Kit, allows selecting two, dual Vertical Block (flat) modules from the list below	2 vertical blocks (must mount in blocks A & B)	NA	NA
A010-9922	Modular Network Interface Card (requires two media modules, see below)	2 vertical blocks (1 maximum)	30 mA	30 mA
A010-9818	Network Media Card Wired	N/A (mounts to A010-9922)	55 mA	55 mA
A010-9819	Network Media Card Fiber Optic		25 mA	25 mA

Note:
For dual vertical block (flat) modules, select one, or two with A010-9928bracket kit (except for media cards).

Table 8: MX Loop Card Dual Vertical Block (Slot) Module

SKU	Features	Option Block Usage	Supervisory Current	Alarm Current
A010-9917	MX Loop Card supports up to 250 points	2 Vertical Blocks (not compatible with A010-9928)	100 mA (no devices)	100 mA (no devices)

Cabinet Dimension Reference



Cabinet One and Two Bay Loading Reference

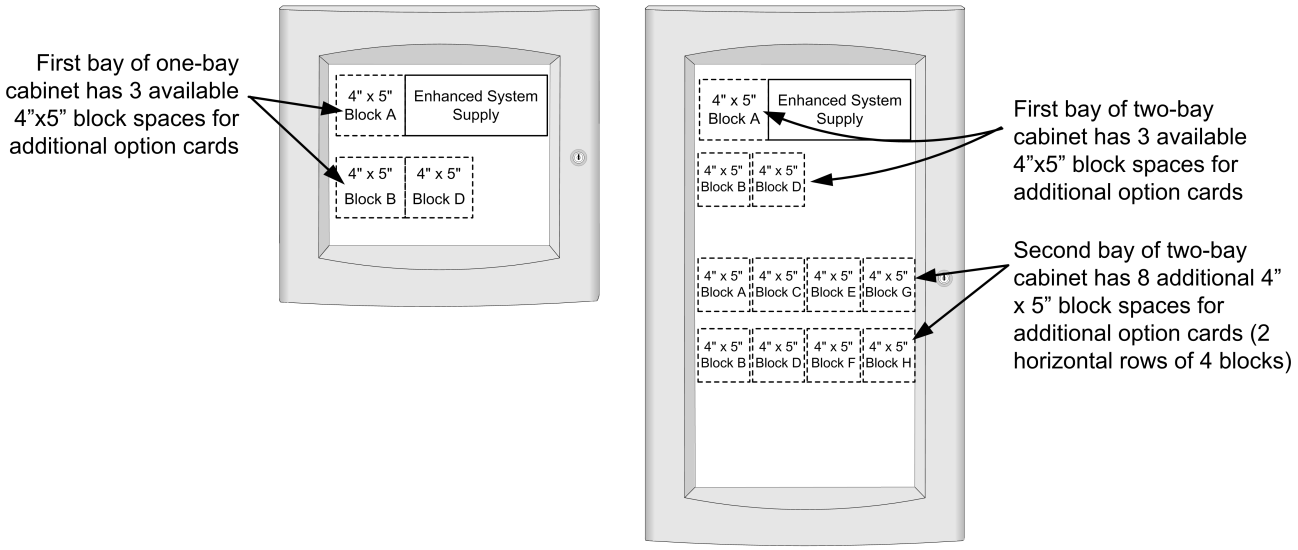


Figure 8: Cabinet One and Two Bay Loading Reference

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

Additional Control Unit Option Selection

Table 9: Additional Control Unit Option Selection when block space is not used

SKU	Features	Supervisory Current	Alarm Current	Mounting Requirements
A010-9909	City Connect Module w/ disconnect switches	20 mA	36 mA	Select one maximum, mounts on ESS
A010-9911	Alarm Relay Module	15 mA	37 mA	Select one maximum, mounts on main system supply
A100-5128	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)			

Miscellaneous Accessories

Table 10: End User and Factory Programming Tools

SKU	Description
A100-8802	End User Programming Unit Software
4010-8810	Factory Programming (select)

Table 11: LED Kits (LEDs are pluggable, use to change color for local application requirements)

SKU	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

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).

SKU	Description		Card Address Consumption	Card Address Allocation	Notes
Control Units (Select One)					
A010-9722	2x40 Display, (1) IDNet 2 Communications Channel and (1) IDNet 2+2 Communications Channel, Two-Bay Box		3		
Control Unit Option Cards (Select As Required)					
A010-9922	Flat Network Card		1		
A010-9908	4 Point Flat Aux Relay Module		1		
A010-9912	Serial DACT		1		
A010-9918	Dual RS-232 Module		1		
A010-9929	IDNet 2+2 Communications Module		1		
Remote Annunciation (Select As Required)					
A100-9401	Red Cabinet, English	Remote InfoAlarm Command Center	2		
A100-9403	Platinum Cabinet, English		2		
A100-9441	Red Cabinet, with blank inserts for key labels		2		
A100-9443	Platinum Cabinet, with blank inserts for key labels		2		
A4606-9102	4010ES RUI LCD Annunciator, English		1		
A602-9101	Status Command Unit (SCU) LED Annunciator		1		
A602-9102	Remote Command Unit (RCU) LED Annunciator w/control		1		
A602-9150	Graphic I/O RCU/SCU Assembly for custom annunciator		1		
A602-7101	Graphic I/O RCU/SCU Assembly for custom annunciator		1		
A602-7001	RCU for cabinet mount		1		
A602-6001	SCU for cabinet mount		1		
A100-7401	24 Point I/O Graphic Module for custom annunciator		1		
A100-7402	64/64 LED Switch Controller for custom annunciator		1		
A100-7403	32 Point LED Driver Module for custom annunciator		1		
A100-7404	32 Point Switch Input Module for custom annunciator		1		
	Total Card Addresses (Not to Exceed 20)		**TOTAL**		

General Specifications

Table 12: 4010ES General Specifications

Specification		Rating	
Input Current	120 VAC Models	4 A maximum, 120 VAC @ 60 Hz nominal	
	220-240 VAC Models	2 A maximum, 220/230/240 VAC @ 50 or 60 Hz	
	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		Autocall TrueAlert ES and TrueAlert addressable notification appliances; contact your Autocall product representative for compatible appliances	
Battery Charger Rating (sealed lead acid batteries)	Battery capacity range	Battery charging of 6.2 Ah up to 50 Ah and 110 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 AC2081-0012 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	579-1150AC	
	Operating Instructions	579-969AC	

Additional Compatible Equipment and Reference

Table 13: Additional Compatible Equipment and Reference

Subject	Data Sheet
4010ES Agent Release Applications and Accessories	*AC4010-0005*
Agent Release Accessories	*AC2080-0010*
SafeLINC Internet Interface	*AC4100-0062*
Interface to VESDA Air Aspiration Detection Systems	*AC4100-0026*
Serial DACT (SDACT)	*AC2080-0009*
A4606-9102 Remote LCD Annunciator	*AC4606-0002*
Graphic I/O Modules	*AC4100-0005*
PC Annunciator	*AC4190-0013*
TCP/IP Physical Bridge	*AC4100-0029*
Network Communications	*AC4100-0056*
Multi-Signal Fiber Optics	*AC4100-0049*
A602 Series SCU/RCU	*AC4602-0001*
PC Annunciator	*AC4190-0013*
4009 IDNAC Repeater	*AC4009-0004*
120 VAC Desktop Remote Printer	*AC4190-0011*
110 Ah Batteries and Cabinets	*AC2081-0012*
Remote 110 Ah Battery Chargers and Cabinets	*AC4081-0002*
BACpac Ethernet Portal Module	*AC4100-0051*
Network Physical Bridge	*AC4100-0057*