

#### Features

##### Master Controller (top) bay standard equipment:

- 32-Bit Master Controller with color-coded operator interface and raised switches for high confidence feedback
- Dual configuration program CPU, convenient service port access, and capacity for up to 2500 addressable points
- CPU assembly includes 2 GB dedicated compact flash memory for on-site system programming and information storage
- An Enhanced Power Supply (EPS+) and battery charger (9 A total) with on-board *IDNAC* SLCs (signaling line circuit) for addressable appliance control, *IDNet 1+* isolated addressable device control channel, and programmable function auxiliary output
- Also available with InfoAlarm Command Center expanded content user interface (see data sheet S4100-0045)

##### Standard addressable device interfaces include:

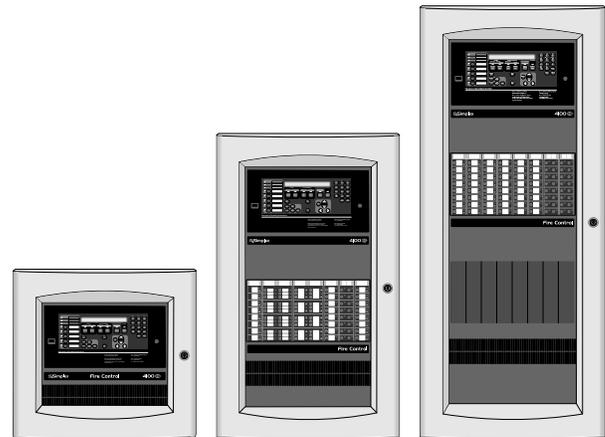
- IDNet 1+ 250 point addressable device SLC supports TrueAlarm analog sensors and IDNet communications monitoring and control devices, and *operates with isolated output* for use with either shielded or unshielded, twisted or untwisted single pair wiring
- MINIPLEX Transponder and remote LCD and LED annunciator support via RUI+ (remote unit interface) communications port *with isolated output* for use with either shielded or unshielded, twisted or untwisted single pair wiring

##### Standard EPS+ power supplies provide enhanced power delivery IDNAC SLCs to addressable notification appliances:

- With IDNAC SLCs, a *constant* 29 VRMS source voltage is maintained, even during battery standby, 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 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

##### Optional modules and connections include:

- Fire Alarm Network Interfaces, city connections, and up to five (5) RS-232 ports for printers and terminals
- Building Network Interface Module (BNIC) for Ethernet connectivity options (see data sheet S4100-0061)
- Side mounted DACT assembly requiring minimal panel space; DACT is compatible with IP Communicators
- Emergency communications systems (ECS) equipment; 8 channel digital audio or 2 channel analog audio



4100ES Cabinets are Available with One, Two or Three Bays

##### Option Modules (Continued)

- Additional IDNet 1+ addressable device communications modules and IDNet+ quad output isolator modules; additional power supplies, alarm relays, and auxiliary relays
- LED/switch modules and panel mount printers; VESDA Air Aspiration Systems interface, ASHRAE BACnet Interface, TCP/IP Bridges
- Battery brackets for seismic area protection (see page 2)
- 4100ES compatible legacy interface modules, including control of conventional (non-addressable) NACS (see data sheet reference list on page 8)

##### 4100ES Listings reference:

- UL Std. 864, Fire Detection and Control (UOJZ), and Smoke Control Service (UUKL)
- UL Std. 2017, Process Management Equipment (QVAX)
- UL Std. 1076, Proprietary Alarm Units-Burglar (APOU)
- UL Std. 1730, Smoke Detector Monitor (UULH)
- ULC Std. S527 Control Units for Fire Alarm Systems

#### Software Feature Summary

##### CPU provides dual configuration programs:

- Two programs allow for optimal system protection and commissioning efficiency with one active program and one reserve; downtime is reduced because the system stays running during download

##### PC based programmer features:

- Convenient front panel accessed Ethernet port for quick and easy *download* of site-specific programming
- Modifications can be *uploaded* as well as downloaded for greater service flexibility; *AND*, firmware enhancements are made via software downloads to the on-board flash memory

\* See pages 7 and 8 for product that is UL or ULC listed and additional listing information. This product has been listed by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7165-0026:0251 for allowable values and/or conditions concerning material presented in this document. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

## Introduction

**4100ES Series Fire Detection and Control Panels** provide extensive installation, operator, and service features with point and module capacities suitable for a wide range of system applications. 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.

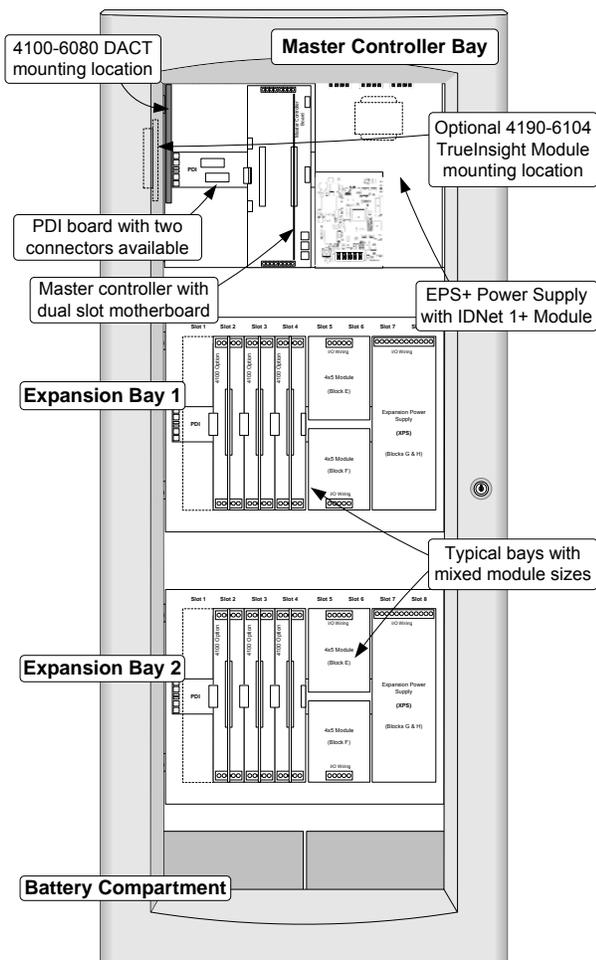
**Modular design.** A wide variety of functional modules are available to meet specific system requirements. Selections allow panels to be configured for either Stand-Alone or Networked fire control operation.

## Module Bay Description

**The Master Controller Bay** (top) includes a standard multi-featured enhanced power supply (EPS+), the master controller board, two vertical expansion blocks, and operator interface equipment.

**The Expansion Bays** include a Power Distribution Interface (PDI) for connection of single or multiple block modules, and/or slot style (motherboard/daughter card) modules.

**The Battery Compartment** (bottom) accepts two batteries, up to 50 Ah, to be mounted within the cabinet without interfering with module space.



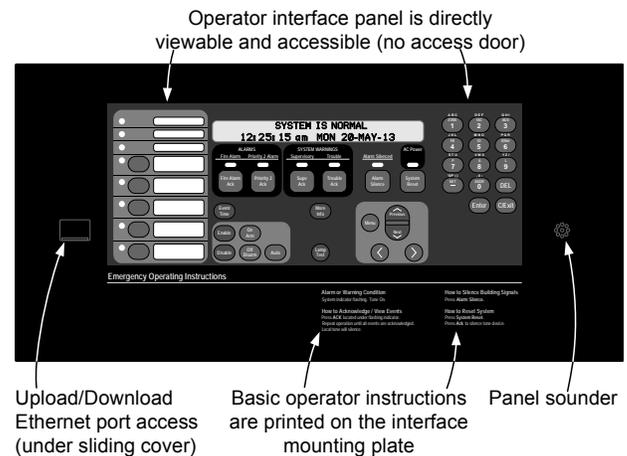
4100ES Module Placement Reference in 3-Bay Cabinet

## Mechanical Description

- Boxes can be close-nipped; each 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
- Cabinet assembly design has been seismic tested and is certified to IBC and CBC standards as well as to ASCE 7-05 category D, requires battery brackets as detailed on data sheet S2081-0019
- The latching front panel assembly easily lifts off for internal access
- Modules are power-limited (except as noted, such as relay modules)
- The NEMA 1 box is ordered separately and available for early installation
- Doors are available with tempered glass inserts or solid; boxes and doors are available in platinum or red
- Boxes and door/retainer assemblies are ordered separately per system requirements; refer to data sheet S4100-0037

## Operator Interface Detail Reference

The following illustration identifies the primary functions of the operator interface.



## Software Feature Summary

- **“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 panel 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
- Support for TrueAlarm individual analog sensing and IDNAC addressable notification with front panel information and selection access

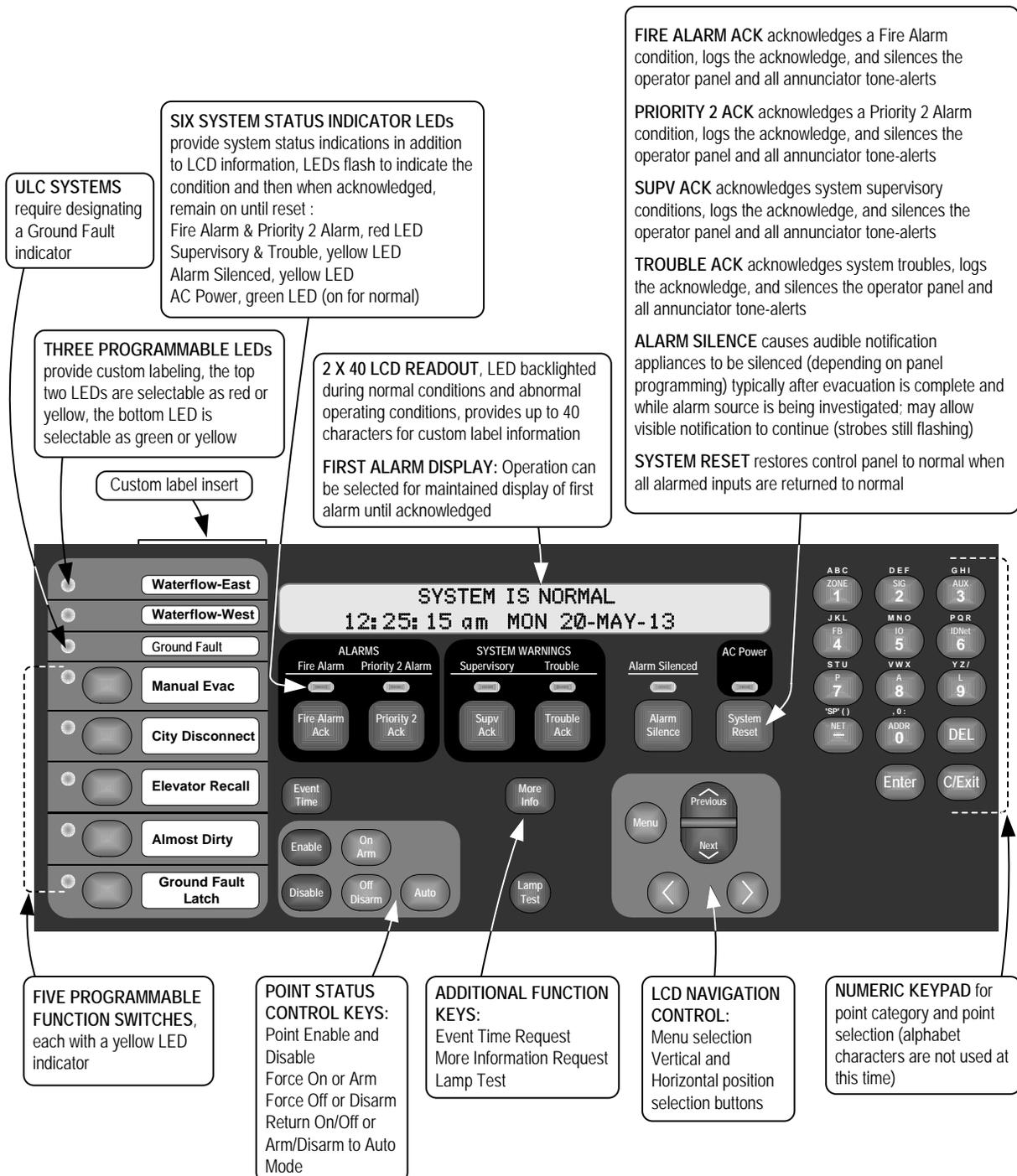
## Operator Interface

**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.

## Operator Interface Features

- Convenient and extensive operator information is provided using a logical, menu-driven display
- Multiple automatic and manual diagnostics for maintenance reduction
- Alarm and Trouble History Logs (up to 1250 entries for each, 2500 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 PC programmer label editing
- Password access control



## IDNet Addressable Device and IDNAC Addressable Notification Appliance Control

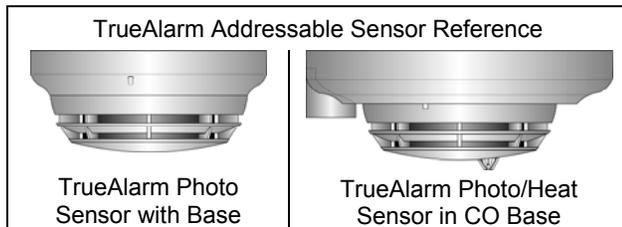
**Overview.** The 4100ES with EPS+ power supplies provides IDNet 1+ addressable initiating device and IDNAC addressable notification appliance Signaling Line Circuits (SLCs) that supervise wiring connections and the individual device/appliance communications status on their SLC. With these 2-wire SLCs, initiation, monitoring, and control devices such as manual fire alarm stations, TrueAlarm sensors, control relays, and sprinkler waterflow switches; and notification appliances such as strobes and horns can communicate their identity and status and receive fire alarm system control. Additional interface modules include circuit isolators, conventional IDC zone adapters, and interface to other system circuits such as fans, dampers, and elevator controls.

### IDNet Addressable Device Operation

**Each addressable device** on the IDNet 1+ 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 panel. With addressable devices, the location and status of the connected device is monitored and logged, and displayed on the operator interface LCD and on remote system annunciators 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.



**Programmable sensitivity** of each sensor can be selected at the control panel 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, used in LED/Switch modes and custom control, and can be made public for communication across a fire alarm Network. (refer to data sheet S4098-0041 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 be selected as either Fahrenheit or Celsius.

**TrueSense Early Fire Detection.** Multi-sensor 4098-9754 provides photoelectric and heat sensor data using a single 4100ES IDNet address. The panel 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 panel 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 5 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 panel. The control panel 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 Addressable Device Wiring Reference

**IDNet 1+ Addressable Channel Capacity.** The CPU bay system power supply (EPS+) provides an IDNet 1+ signaling line circuit (SLC) that supports up to 250 addressable monitor and control points intermixed on the same pair of wires. Additional 250 address IDNet 1+ circuit modules are available.

#### IDNet 1+ SLC Wiring Specifications

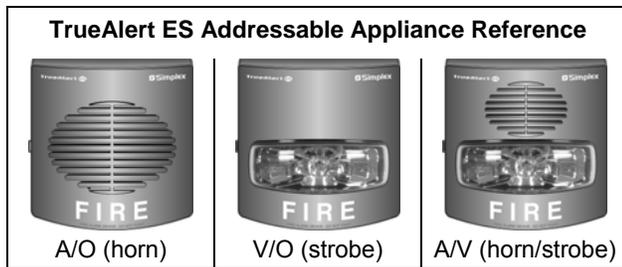
Maximum Distance from Control Panel per Device Load	0 to 125	4000 ft (1219 m); 50 ohms
	126-250	2500 feet (762 m); 35 ohms
Total Wire Length Allowed With "T" Taps for Class B Wiring	Up to 12,500 ft (3.8 km); 0.60 µF	
Maximum Capacitance Between IDNet+ Channels	1 µF	
Wire Type and Connections	Shielded or unshielded, twisted or untwisted wire*	
Connections	Terminal blocks for 18 to 12 AWG	
Installation Instructions (see for more information)	579-1014	

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

## IDNAC SLC Control of TrueAlert and TrueAlert ES Addressable Notification

**Addressable notification appliance communications** include operation of TrueAlert and TrueAlert ES Visible only (V/O, strobe), Audible only (A/O, horn), Audible/Visible (A/V, horn/strobe), and strobes of Speaker/Visible (S/V) notification appliances. (S/V appliances require separate speaker wiring.) IDNAC SLC addressable communications 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 panel. 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 panel.

**Individual Appliance Status and Settings.** Each addressable notification appliance is polled by the control panel to verify its ability to communicate. The fire alarm control panel monitors each addressable notification appliances for its status, condition, type of appliance, and configured appliance settings. A fault in any individual appliance automatically reports a trouble condition to the control panel.



**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 panel. 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.

**Tracking Appliance Details.** The 4100ES with IDNAC SLCs provides intelligent addressable communications that allow detailed information associated with each addressable notification appliance to be reported to the fire alarm control panel for diagnostics and troubleshooting. Detailed information available includes; the appliance location, status, condition, type of appliance, and configured appliance settings.

**New Installation, Retrofit, and Life-Cycle Cost Benefits.** With each addressable appliance capable of being controlled separately on the same two-wire 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.

**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 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.

## IDNAC SLC Hardware Reference

**EPS+ and EPS Power Supplies** provide three, 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 VRMS, even during battery operation. With 29 VRMS minimum output at the panel, 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, all resulting in installation and maintenance savings with high assurance appliances that operate during normal system testing will operate during worst case alarm conditions.

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

## IDNAC SLC Appliance Wiring Reference

Recommended wire type	UTP, unshielded twisted pair
IDNAC SLC Capacity	Up to 63 addresses and up to 75 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)
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)
Maximum wiring resistance between appliances	26 $\Omega$
Wiring connections	Terminal blocks for 18 to 12 AWG
Installation Instructions (see for more information)	579-1015

## CPU Bay Module Details

### Master Controller and Motherboard:

- Mounts in Slot 2 of a two slot motherboard and provides one Style 4 or Style 7, RUI+, isolated communications channel with earth fault detection
- RUI+ isolated communications controls up to 31 devices per master controller at up to 2500 ft (762 m) for single run, or 10,000 ft (3048 m) total if wiring is Class B and T-tapped; if more distance is required, up to four total RUI channels are supported; add up to three 4100-1291 RUI expansion modules (4100-1291 provides unisolated RUI communications)
- RUI remote equipment includes: MINIPLEX transponders, 4603-9101 LCD Annunciators, 4602-9101 Status Command Units (SCU), 4602-9102 Remote Command Units (RCU), 4602 Series LED Annunciator Panels, 4100 Series 24 I/O and LED/Switch modules
- Open slot space on the left of the CPU motherboard is available for either another dual slot motherboard, or for one or two block modules (refer to diagram on page 2)
- Slot 1 of the motherboard is primarily for the 4100-6078 Network Interface Board with media modules

### EPS+ Power Supply: (see page 9 for more detail)

- Rating is 9 A total with “Special Application” appliances
- Outputs are power-limited, except for the battery charger
- Provides system power, battery charging, auxiliary power, auxiliary relay, earth detection, on-board IDNet 1+ communications channel for 250 points, three on-board 3 A IDNAC SLCs, and provisions for either an optional City Connect Module or an optional Alarm Relay Module
- **IDNet 1+ SLC Output** provides Class B or Class A communications for up to 250 addressable devices (as described on page 4)
- **DCAI (Dual Class A IDNAC Isolator)** module creates two Class A outputs from one IDNAC SLC Class B Input; up to two can be connected to one IDNAC SLC, with up to 6 total per EPS; total Class A output loop current is limited to the 3 A rating of the IDNAC SLC

### EPS+ Power Supply (Continued):

- **Battery Charger** is dual rate, temperature compensated, and charges up to 50 Ah sealed lead-acid batteries mounted in the battery compartment (33 Ah for single bay cabinets); also is UL listed for charging up to 115 Ah batteries mounted in an external cabinet (see data sheet S2081-0012 for details)
- **Battery and Charger Monitoring** includes battery charger status and low or depleted battery conditions; status information provided to the master controller includes analog values for: battery voltage, charger voltage and current, actual system voltage and current, and individual IDNAC SLC currents
- **Low Battery Cutout** is selectable for each EPS+ (and EPS) power supply, Canadian models are shipped selected, other models are shipped unselected

### 2 A Programmable Output:

- Select for conventional non-synchronous NAC operation to provide supervised reverse polarity for sounder base power, Suppression Release Peripheral (SRP) power, or other coded NAC operation requirements
- Select for Auxiliary (AUX) operation for sounder base power, 4-wire detector power, or door holder; supervised AUX operation does not require an end-of-line relay to provide Power-Limited operation

### EPS+ Power Supply Mounted Optional Modules (select one):

- **City Connect Module** (4100-6031, with disconnect switches, or 4100-6032, without disconnect switches) can be selected for conventional dual circuit city connections
- **Alarm Relay Module** (4100-6033) provides three Form C relays that are used for Alarm, Trouble, and Supervisory, rated 2 A resistive @ 32 VDC

## Master Controller Selection Information

### Master Controller and Expansion Bay Selection

Model	Model Type and Listing		Description	Current	
4100-9311	120 VAC, 50/60 Hz Input		4100ES Master Controller Assembly <b>with LCD and operator interface</b> , 9 A EPS+ Enhanced Power Supply/battery charger with 250 point IDNet 1+ interface, 3 Class B IDNAC SLCs, RUI+ isolated output communications interface, and one output configurable for Auxiliary or simple NAC operation	Without IDNet devices: Supervisory = 217 mA Alarm = 480 mA	
4100-9312	English	120 VAC, 50/60 Hz Canadian			ULC
4100-9313	French				
4100-9511	220-240 VAC, 50/60 Hz Input		4100ES Master Controller Assembly, <b>No Display, No Operator Interface</b> , 9 A EPS+ Enhanced Power Supply/battery charger with 250 point IDNet 1+ interface, 3 Class B IDNAC SLCs, RUI+ isolated output communications interface, and one output configurable for Auxiliary or simple NAC operation	With 200 IDNet devices and 20 device LEDs in alarm: Supervisory = 417 mA Alarm = 770 mA	
4100-9331	120 VAC, 50/60 Hz input		4100ES Master Controller Assembly, <b>No Display, No Operator Interface</b> , 9 A EPS+ Enhanced Power Supply/battery charger with 250 point IDNet 1+ interface, 3 Class B IDNAC SLCs, RUI+ isolated output communications interface, and one output configurable for Auxiliary or simple NAC operation	ULC	
4100-9332	120 VAC, 50/60 Hz input, Canadian, English				
4100-2300	Expansion Bay Assembly; <b>order for each required expansion bay</b>				
4100-2303	Slot Module Stabilizer Bracket, used when expansion bays have style modules				

(Continued on next page)

## Module Selection Information

### Communication Modules

Model	Description	Size	Supv.	Alarm	
4100-6078	For Master Controller; mounts in Slot 3	Modular Network Interface; each requires two media modules (below)	1 Slot	46 mA	46 mA
4100-6061	For Redundant Master Controller		1 Slot	46 mA	46 mA
4100-6056	Wired Media Module	Select two media cards as required; mounts on 4100-6078 or 4100-6061	N.A.	55 mA	55 mA
4100-6057	Fiber Optic Media Module		N.A.	25 mA	25 mA
4100-6047	Building Network Interface Card (BNIC), refer to data sheet S4100-0061 for details	2 Blocks	291 mA	291 mA	
4100-6055	Network Access Dial-in Service Modem, mounts to 4100-6078 or 4100-6061 Network Interface Card, requires telephone line connection	N.A.	60 mA	60 mA	
4100-1291	Remote Unit Interface Module (RUI, unisolated); up to 3 maximum per control panel	1 Slot	85 mA	85 mA	
4100-6031	<b>Select one per EPS+ or EPS</b>	City Circuit, with disconnect switches	N.A.	20 mA	36 mA
4100-6032		City Circuit, w/o disconnect switches	N.A.	20 mA	36 mA
4100-6033		Alarm Relay, 3 Form C relays, 2 A @ 32 VDC	N.A.	15 mA	37 mA
4100-6046	Dual Port RS-232 standard interface (single block)	3 maximum RS-232 modules per panel	1 Block	60 mA	60 mA
4100-6038	Dual Port RS-232 with 2120 interface (slot module)		1 Slot	132 mA	132 mA
4100-6079	SafeLINC Internet Interface (refer to data sheet S4100-0062 for details)	2 Blocks	145 mA	145 mA	
4190-6104	TrueInsight Remote Monitoring Module (refer to data sheet S4100-0063 for details)	Side Mt.	62 mA	73 mA	
4100-6101	Physical Bridge, Class B, includes 1 modem module and 2 wired modules	1 Slot	210 mA	210 mA	
4100-6102	Physical Bridge, Class X, includes 2 modem and 2 wired modules	2 Slots	300 mA	300 mA	
4100-6048	VESDA Aspiration System Interface	1 Slot	132 mA	132 mA	
4100-6080	DACT, Point or Event Reporting; 1 shipped unless 4100-7908 is selected; 2 max. per system; includes 2, 2080-9047 cables, 14 ft (4.3 m) long, RJ45 plug and spade lugs	Side Mt.	30 mA	40 mA	

### Additional Enhanced Power Supplies, Expansion and Remote Power Supplies, and Accessories

Model	Voltage/Listing	Description	Size	Supv.	Alarm
4100-5311	120 VAC	<b>Additional Enhanced Power Supply (EPS+);</b> 9 A Enhanced Power Supply/battery charger with 250 point IDNet 1+ interface, 3 Class B IDNAC SLCs, RUI+ isolated output communications interface, and auxiliary relay; 120 VAC model has selectable low battery cutout	4 Blocks Right Side	217 mA	480 mA with 200 IDNet devices and 20 device LEDs in alarm
4100-5313	220-240 VAC				
4100-5325	120 VAC	<b>Enhanced Power Supply (EPS);</b> 9 A Enhanced Power Supply/battery charger with 3 Class B IDNAC SLCs, RUI+ isolated output communications interface, and auxiliary relay; 120 VAC model has selectable low battery cutout	4 Blocks Right Side	125 mA	220 mA
4100-5327	220-240 VAC				
4100-6103		<b>Dual Class A IDNAC Isolator (DCAI),</b> 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; connect up to two DCAI modules per IDNAC SLC input up to a maximum of 6 DCAI modules per EPS; each isolated output SLC used requires one IDNAC address; the total current remains controlled by the Class B input source SLC at 3 A maximum	1 Block	6.5 mA	6.5 mA
4100-5152	12 VDC Power Option, 2 A maximum		1 Block	1.5 A maximum	
4100-0156	8 VDC Converter, required for multiple Physical Bridge Modules, 3 A maximum		1 Block	included w/loads	
4100-0636	Box Interconnection Harness Kit (non-audio); <b>order one for each close-nipped cabinet</b>				
4100-0638	4100 Slot Module Additional 24 VDC Harness; <b>need when 4100 Slot module requirements exceed 2 A from EPS</b>				

Module Selection is continued on next page

### Additional 4100ES Data Sheet and Related Product Reference

Subject	Data Sheet	Subject	Data Sheet
Introducing the 4100ES	S4100-0060	Fire Alarm Network Overview	S4100-0055
4100ES Enclosures	S4100-0037	Network Communications	S4100-0056
4100ES Audio and Firefighter Phone Modules	S4100-0034	Network Display Unit (NDU)	S4100-0102
LED/Switch Modules & Printer	S4100-0032	Addressable Device Compatibility	S4090-0011
Remote Annunciators	S4100-0038	4009 IDNAC Repeater	S4009-0004
MINIPLEX Transponders	S4100-0103	IDNet+ Module w/Quad Isolator	S4100-0046
Building Network Interface (BNIC)	S4100-0061	Remote Battery Charger	S4081-0002
InfoAlarm Command Center	S4100-0101	TFX Interface Module	S4100-0042
Graphic I/O Modules	S4100-0005	SafeLINC Internet Interface	S4100-0062
TrueInsight Remote Service	S4100-0063	4100ES Panels for Conventional Notification	S4100-0031
Agent Release Applications	S4100-0040	TrueAlarm Sensors	S4098-0019
TrueAlert ES Audible Only Appliances	S49AO-0001	TrueAlert ES Audible/Visible Appliances	S49AV-0001
TrueAlert ES Visible Only Appliances	S49VO-0001	TrueAlert ES Weatherproof Appliances, UL Listed	S49WP-0001
TrueAlert Appliance/IDNAC SLC Isolator	S4905-0001	TrueAlert ES Weatherproof Appliances, ULC Listed	S49WP-0002

## Module Selection Information (Continued)

### Addressable Interface Modules (refer to location reference on pages 9 and 10)

Model	Description	Supv.	Alarm	
4100-3108	IDNet 1+ Module, 250 point capacity with isolated output, 1 block	With 250 IDNet devices, and 20 device LEDs in alarm	292 mA	510 mA
		Module without devices	92 mA	115 mA
		Loading per IDNet device (no LEDs on)	0.8 mA	1 mA
4100-3107	Quad IDNet Isolator Module; converts a single connected SLC into four isolated outputs selectable as Class A or Class B, provides advanced diagnostics for use with retrofit wiring; dual horizontal block module; (see data sheet S4100-0046 for additional details) <b>NOTE:</b> This module is compatible with IDNet Remote Isolators	75 mA	115 mA	

### Relay Modules; Nonpower-limited (for mounting in expansion bay only, refer to location reference on pages 9 and 10)

Model	Description	Resistive Ratings	Inductive Ratings	Size	Supv.	Alarm
4100-3202	4 DPDT w/feedback	10 A @ 250 VAC	10 A @ 250 VAC	2 Slots	15 mA	175 mA
4100-3204	4 DPDT w/feedback	2 A @ 30 VDC/VAC	1/2 A @ 30 VDC/120 VAC	1 Block	15 mA	60 mA
4100-3206	8 SPDT	3 A @ 30 VDC/120 VAC	1-1/2 A @ 30 VDC/120 VAC	1 Block	15 mA	190 mA

#### Current Calculation Notes:

- To determine total supervisory current, add currents of modules in panel to base system value **and** all external loads powered by panel power supplies.
- To determine total alarm current, add currents of modules in panel to base system alarm current **and** add all panel SLC and NAC loads **and** all external loads powered from panel power supplies.

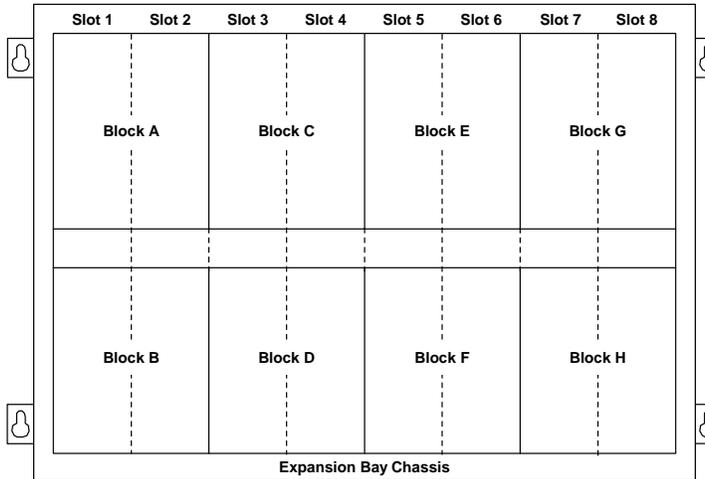
### Miscellaneous Accessories

Model	Description
4100-1279	Single blank 2" display cover; <b>4100-2302</b> provides a single plate for a full bay
4100-9835	Termination and Address Label Kit (for module marking); provides additional labels for field installed modules
4100-6029	Smoke Management Application Guide; <b>required for UUKL listing</b>
4100-6034	Tamper Switch, one per cabinet assembly if required; monitors solid door for panels with solid door; monitors the internal retainer panel for panels with glass door (not the glass door); has a built-in addressable IDNet IAM
2081-9031	Series resistor for WSO, IDCs (N.O. water flow and tamper on same circuit, wires after water flow and before tamper) 470 Ω, 1 W, encapsulated, two 18 AWG leads (0.82 mm <sup>2</sup> ), 2-1/2" L x 1-3/8" W x 1" H (64 mm x 35 mm x 25 mm)

## General Specifications

<b>Input Power</b>	Enhanced Power Supplies, EPS/EPS+	120 VAC Models	4.6 A maximum @ 102 to 132 VAC, 50/60 Hz
		220-240 VAC Models	2.3 A maximum @ 204 to 264 VAC, 50/60 Hz; separate taps for 220/230/240 VAC
<b>Power Supply Output Ratings for EPS/EPS+</b>	Total Power Supply Output Rating	<b>Including module currents and auxiliary power outputs;</b> 9 A total for "Special Application" appliances	
	IDNAC SLC Ratings	3 A, regulated 29 VRMS, 63 addresses, 75 unit loads	
	Auxiliary Power Tap	2 A maximum, 24 VDC nominal (19.5 to 31.1 VDC)	
<b>Compatible Special Application Appliances</b>		Simplex TrueAlert ES and TrueAlert addressable notification appliances; contact your Simplex product representative for compatible appliances	
<b>Battery Charger Ratings for EPS/EPS+ (sealed lead-acid batteries)</b>	Battery capacity range	UL listed for battery charging of 6.2 Ah up to 115 Ah (batteries larger than 50 Ah require a remote battery cabinet); ULC listed for charging up to 50 Ah batteries	
	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	
<b>Environmental</b>	Operating Temperature	32° to 120°F (0° to 49° C)	
	Operating Humidity	Up to 93% RH, non-condensing @ 90° F (32° C) maximum	
<b>Additional Technical Reference</b>	<b>Description</b>	<b>Document</b>	
	ES Installation Instructions	574-848	
	ES Operating Instructions	579-197	
	IDNet 1+ Module Installation Instructions	579-1014	
	EPS/EPS+ Installation Instructions	579-1015	
	DCAI Module Installation Instructions	579-1029	

## Expansion Bay Module Loading Reference

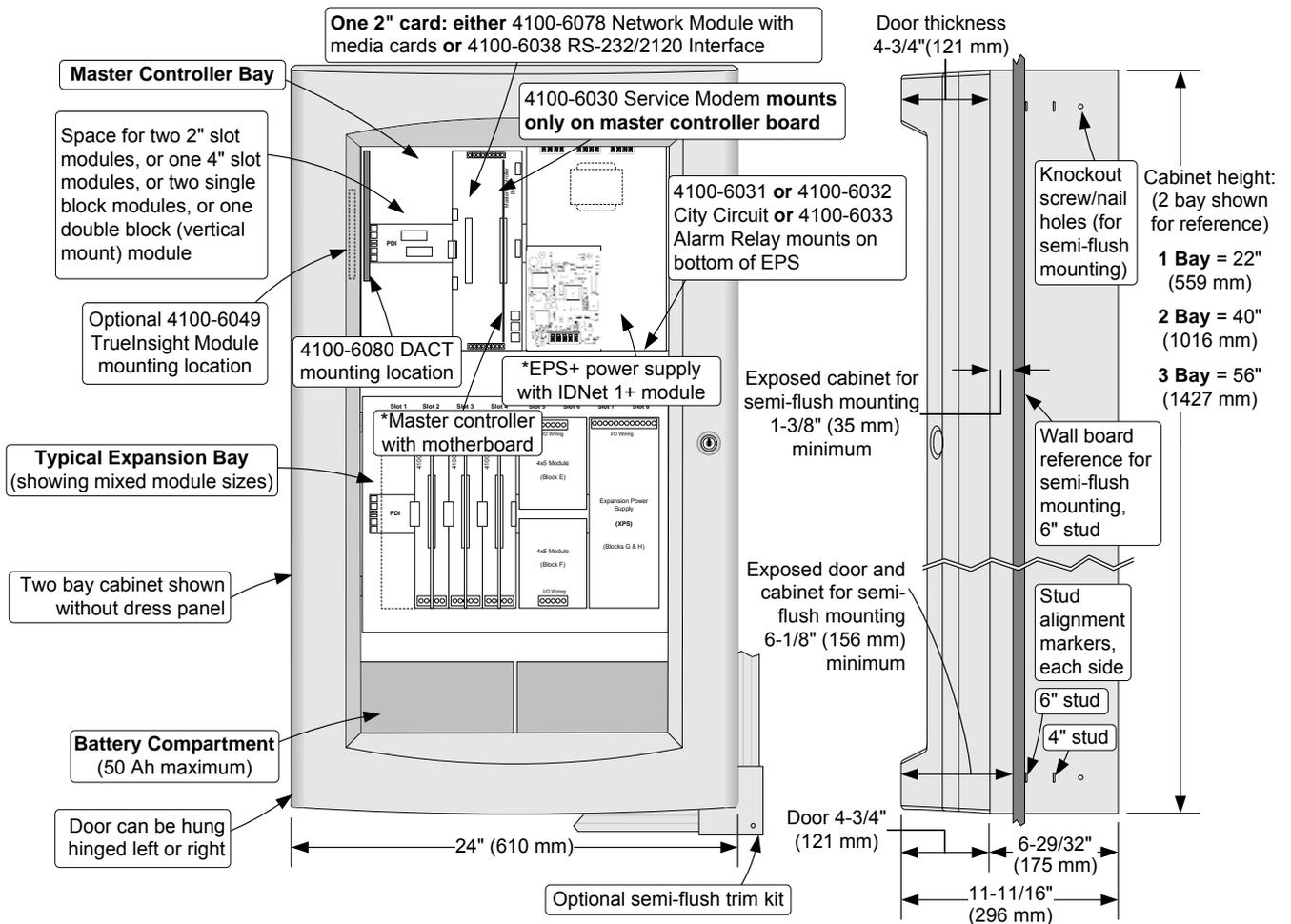


### Size Definitions:

1 **Block** = 4" W x 5.65" H (102 mm x 144 mm); (often called x 5 modules)

1 **Slot** = 2" W x 11.3" H (51 mm x 287 mm), typically a motherboard with daughter card

## Mounting and CPU Bay Module Reference (\* indicates supplied modules)



**NOTE:** A system ground must be provided for Earth Detection and transient protection devices. This connection shall be made to an approved, dedicated Earth connection per NFPA 70, Article 250, and NFPA 780.

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