

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 output) with on-board: **IDNAC** SLCs (signaling line circuit) for addressable appliance control, an **IDNet 2 Module** for addressable device control; 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:

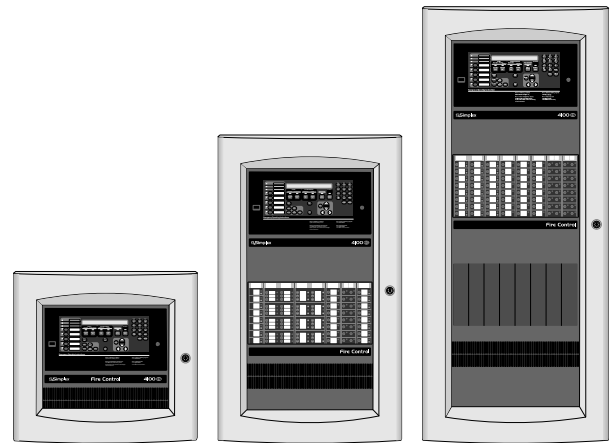
- 250 point addressable device IDNet 2 SLC that supports TrueAlarm analog sensors and IDNet communications monitoring and control devices with an **electrically isolated output channel** allowing use with either shielded or unshielded, twisted or untwisted single pair wiring; **and providing dual short circuit isolating output loops**
- MINIPLEX Transponder and remote LCD and LED annunciator support via RUI+ (remote unit interface) communications port **with electrically isolated output** for use with either shielded or unshielded, twisted or untwisted single pair wiring (refer to details on page 6)

Standard power supplies (EPS) provide enhanced power delivery IDNAC SLCs to addressable notification appliances:

- With IDNAC SLCs, 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, and the ability to use smaller gauge wiring – all providing installation and maintenance savings with high assurance that appliances that operate during normal system testing will also 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 2 communications SLCs, IDNet 2+2 Modules with quad short circuit isolating output loops; 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 12)

4100ES Listings reference:

- UL 864, Fire Detection and Control (UOJZ), and Smoke Control Service (UUKL)
- UL 2017, Process Management Equipment (QVAX)
- UL 1076, Proprietary Alarm Units-Burglar (APOU)
- UL 1730, Smoke Detector Monitor (UULH)
- UL 2572, Mass Notification Systems (PGWM); refer to data sheet S4100-0034 for audio equipment
- ULC 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 6 and 7 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. NYC Fire Dept COA #6151. 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.

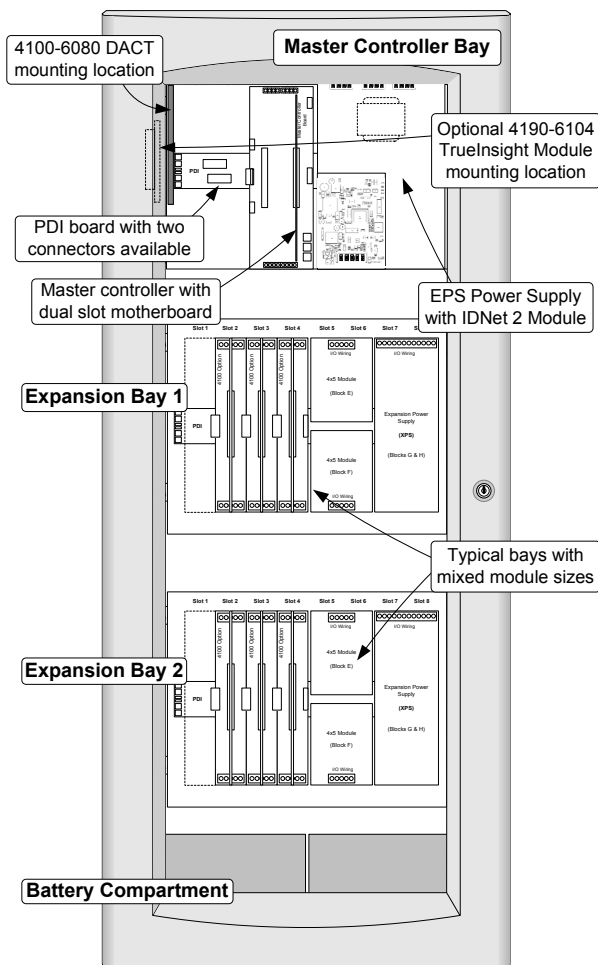
Modular design. A wide variety of functional modules are available to meet specific system requirements. Selections allow panels to be configured for either Stand-Alone or Networked fire control operation.

Module Bay Description

The Master Controller Bay (top) includes a standard multi-featured enhanced power supply (EPS) with IDNet 2 Module, 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.



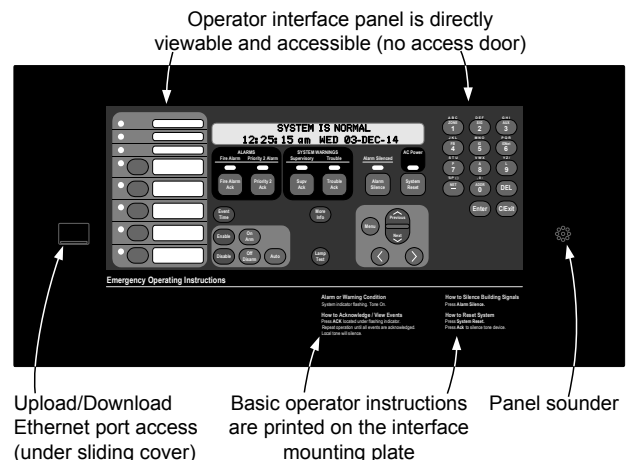
4100ES Module Placement Reference in 3-Bay Cabinet

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 categories A through F, requires 4100-7912 option for additional legacy card stabilizer brackets and 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/IP30 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

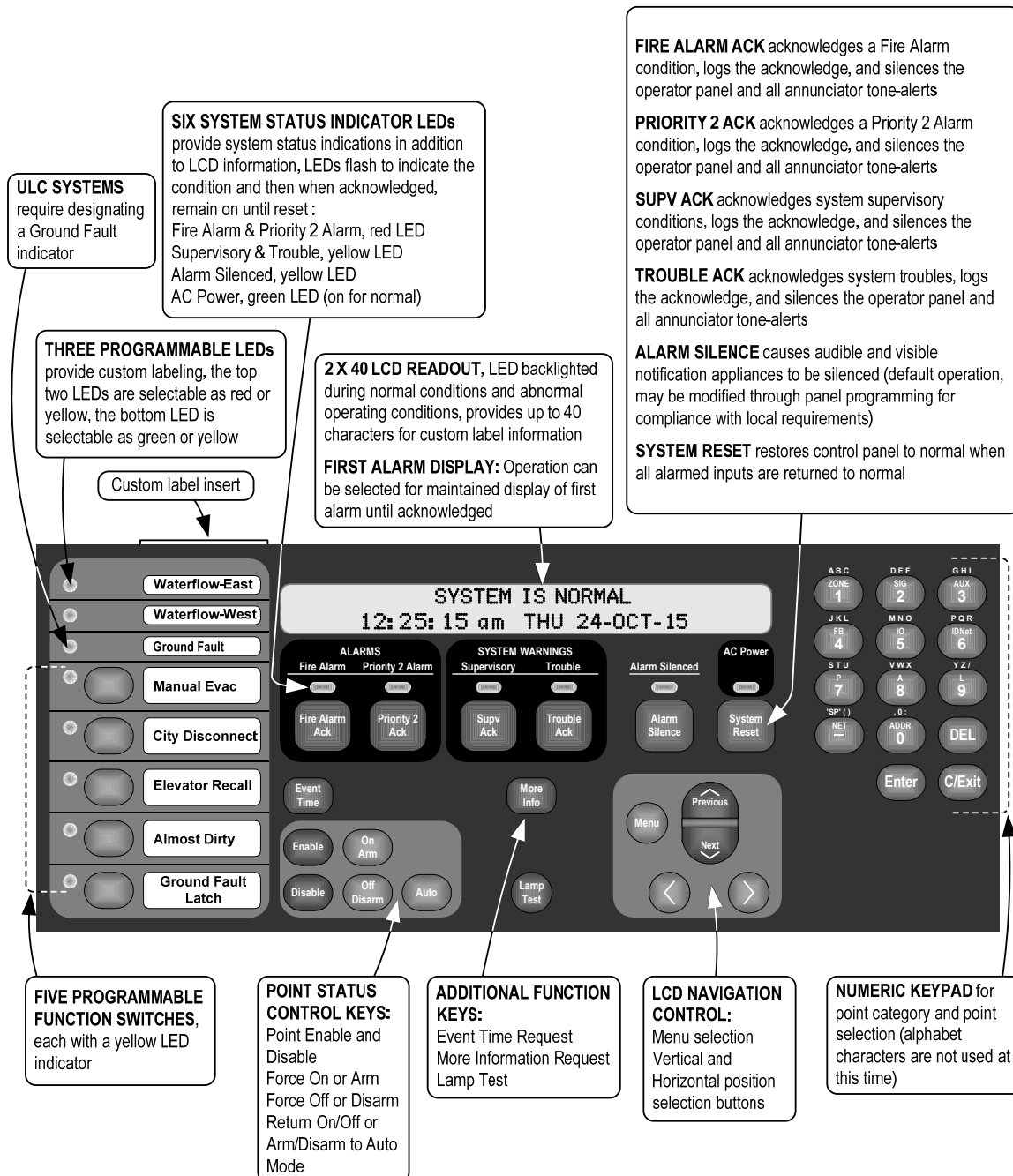
Operator Interface

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

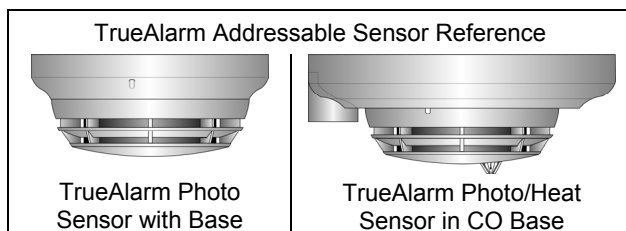
Overview. The 4100ES EPS power supply with IDNet 2 Module provides addressable initiating device and IDNAC addressable notification appliance Signaling Line Circuits (SLCs) that supervise wiring connections and the individual device/appliance communications status on their SLC. With these 2-wire SLCs, 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 an 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 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 S4098-0052 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 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 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 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 Addressable Channel Capacity. The CPU bay standard power supply (EPS) provides an IDNet 2 Module providing a signaling line circuit (SLC) that supports up to 250 addressable monitor and control points intermixed on the same pair of wires. IDNet 2 and IDNet 2+2 Module SLCs are isolated from other system reference voltages to reduce common mode noise interaction with adjacent system wiring. Additional 250 address IDNet 2 or IDNet 2+2 Modules are available.

IDNet 2 and IDNet 2+2 SLC Wiring Specifications

| | | |
|--|----------|--|
| Maximum Distance from Control Panel per Device Load | 1 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 2 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 | | Terminals for 18 to 12 AWG (0.82 mm ² to 3.31 mm ²) |

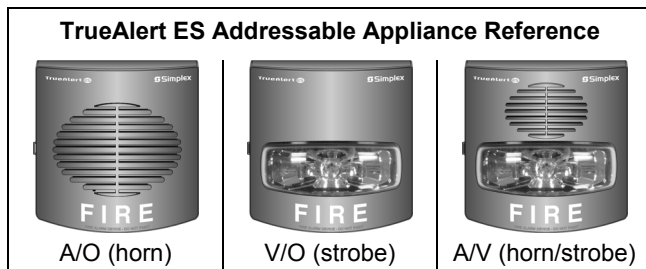
IDNet 2 and IDNet 2+2 Module Compatibility: IDNet communicating devices and TrueAlarm sensors including QuickConnect and QuickConnect2 sensors

* 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. The fire alarm control panel 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 panel.



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 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. 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 panel, each appliance within the selected VNAC group will briefly operate and then report its Self-Test status to the control panel, all within several seconds. Silent Self-Test can be selected to test only visible appliance if desired. The control panel 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. (Requires version 2.03.01 or higher software.)

Automatic Self-Test results are communicated to the control panel 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 panel service port. (See sample reports on page 11.)

Individual Self-Test is selected from the control panel 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

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 VDC, even during battery operation. With 29 VDC 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 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 18 to 12 AWG (0.82 mm ² to 3.31 mm ²) |
| Installation Instructions (see for more information) | 579-1015 |

Standard CPU Bay Module Details

- Mounts in Slot 2 of a two slot motherboard and provides one Class B or Class A, RUI+ isolated communications channel with earth fault detection
- RUI+ isolated communications controls up to 31 remote 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)
- Compatible RUI+ remote equipment includes: MINIPLEX transponders, 4603-9101 LCD Annunciators, and 4100 Series 24 I/O and LED/Switch modules
- RUI Expansion Module 4100-1291 is also compatible with the RUI+ remote equipment listed above; **and is required** for control of 4602 Series LED/Switch and I/O Annunciator modules, including 4602-9101 Status Command Units (SCU), and 4602-9102 Remote Command Units (RCU); (refer to data sheet S4602-0001)
- 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 (Enhanced Power Supply) with IDNet 2 Module Details: (see page 9 for specifications)

- Rating is 9 A output with “Special Application” appliances
- Outputs are power-limited, except for the battery charger
- Provides system power, battery charging, auxiliary power, earth detection, on-board electrically isolated IDNet 2 Module with 250 point SLC, three on-board 3 A IDNAC SLCs, and provisions for either an optional City Connect Module or an optional Alarm/Supv/Tbl Relay Module
- **IDNet 2 Module SLC Output** provides Class B or Class A communications for up to 250 addressable devices with dual short circuit isolating loop outputs (see details on page 4)
- **Note:** The “IDNet 2 Module” replaced the “IDNet 1+ Module” and the term “EPS with IDNet 2 Module” replaces the term “EPS+”

EPS with IDNet 2 Module Details (Continued):

- **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
- **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 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 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 with LCD display, operator interface and RUI+ isolated output communications interface; 9 A EPS (Enhanced Power Supply) with battery charger, electrically isolated 250 point IDNet 2 Module, three Class B IDNAC SLCs, one 2 A output configurable for Auxiliary Power or Simple NAC operation and expansion slot for City Circuit or Alarm/Supv/Tbl Relay option | Without IDNet devices: Supervisory = 425 mA Alarm = 735 mA Note: Master Controller current does not subtract from 9 A output rating | |
| 4100-9312 | English | 120 VAC, 50/60 Hz Canadian | | | ULC |
| 4100-9313 | French | | | | |
| 4100-9511 | 220-240 VAC, 50/60 Hz Input | | UL | | |
| 4100-9331 | 120 VAC, 50/60 Hz input | | UL | | |
| 4100-9332 | 120 VAC, 50/60 Hz input, Canadian, English | | ULC | | |
| 4100-2300 | Expansion Bay Assembly; order for each required expansion bay | | | | |
| 4100-2303 | Slot Module Stabilizer Bracket, used when expansion bays have style modules | | | | |

(Continued on next page)

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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; Class B or Class X operation | 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 | Select one per EPS (Note: maximum one City Circuit module per panel) | 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/Supv/Tbl 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 (refer to data sheet S4100-0026 for details) | | 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 Power Supply, and Accessories (for additional non-addressable Power Supplies, refer to data sheet S4100-0031)

| Model | Voltage/Listing | Description | Size | Supv. | Alarm | |
|-----------|---|--|---------------------------|------------------|--|----------|
| 4100-5311 | 120 VAC | Expansion EPS with IDNet 2 Module ; 9 A Expansion Power Supply (EPS) with battery charger, electrically isolated 250 point IDNet 2 Module, three Class B IDNAC SLCs, one 2 A output configurable for Auxiliary Power or Simple NAC operation, and expansion slot for City Circuit or Alarm/Supv/Tbl Relay option; 120 VAC model has selectable low battery cutout | 4 Blocks Right Side | 225 mA | 490 mA add IDNet device currents separately | |
| 4100-5313 | 220-240 VAC | | | | | UL & ULC |
| 4100-5325 | 120 VAC | Enhanced Power Supply (EPS) ; 9 A EPS, functionally identical to the Expansion EPS except without the IDNet 2 Module | 4 Blocks Right Side | 125 mA | 220 mA | |
| 4100-5327 | 220-240 VAC | | | | | UL & ULC |
| 4100-5101 | 120 VAC | Expansion Power Supply (XPS) ; 9 A output, 3 built-in Class A/B conventional (non-addressable) 3 A NACs that can also be selected as 2 A auxiliary power output, 2 A separate auxiliary power output; without battery charger; Canadian model has low battery cutout | 2 Blocks | 50 mA | 50 mA | |
| 4100-5103 | 120 VAC, Canadian | | | | | UL |
| 4100-5102 | 220-240 VAC | | | | | ULC |
| 4100-5115 | NAC Expansion Module, 3 NACs, Class A/B, mounts on XPS only | | N.A. | 25 mA | 25 mA | |
| 4100-6103 | 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; 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 | 8.3 mA | 18.5 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); order one for each close-nipped cabinet | | | | | |
| 4100-0638 | 4100 Slot Module Additional 24 VDC Harness; need when 4100 Slot module requirements exceed 2 A from EPS | | | | | |

System Option for Seismic Compliance

| Model | Description |
|-----------|---|
| 4100-7912 | System option for Seismic compliance, provides additional stabilizer brackets required for legacy style cards |

Module Selection is continued on next page

Module Selection Information (Continued)

Addressable Interface Modules (Note: Total of *initiating* SLCs per CPU, including VESDA Interface, is 30)

| Model | Description | | Supv. | Alarm |
|------------|---|-------------|--------|--------|
| 4100-3109* | IDNet 2 Module, 250 point capacity; electrically isolated output with two short circuit isolating Class B or Class A output loops, 1 block; standard on EPS with IDNet 2 Module; alarm currents for 50 and above devices includes 20 device LEDs in alarm | no devices | 50 mA | 60 mA |
| | | 50 devices | 90 mA | 150 mA |
| | | 125 devices | 150 mA | 225 mA |
| | | 250 devices | 250 mA | 350 mA |
| 4100-3110* | IDNet 2+2 Module, 250 point capacity; electrically isolated output with four short circuit isolating Class B or Class A output loops, 1 block; mounts in expansion bay or available master controller bay module locations only, not applicable for EPS mounting; alarm currents for 50 and above devices includes 20 device LEDs in alarm | no devices | 50 mA | 60 mA |
| | | 50 devices | 90 mA | 150 mA |
| | | 125 devices | 150 mA | 225 mA |
| | | 250 devices | 250 mA | 350 mA |
| 4100-3111* | IDNet Short Circuit Isolating Loop Output Module; mount up to two on a 4100-3109 module; for use with 4100-3109 modules in expansion bays or available master controller bay module locations only; not applicable for mounting on a 4100-3109 mounted on an EPS; this option is for aftermarket field installation only | | | |
| 4100-3112 | Four Loop IDNet Master Controller; for the Master Controller Assemblies listed on page 6, this option moves the standard IDNet 2 Module from the Master Controller EPS to an available block space in the master controller bay and adds 2, 4100-3111 IDNet Loop Output Modules; requires selection of Factory Built Option 4100-7905; current requirements remain the same | | | |

*Note: Loading per IDNet device (no LEDs on) = 0.8 mA supervisory and 1 mA alarm.

Each IDNet 2 and IDNet 2+2 Short Circuit Isolating Loop Output can be individually controlled for system diagnostics and can be assigned a public point for Fire Alarm Network annunciation.

Relay Modules; Nonpower-limited (for mounting in expansion bay only, refer to location reference on page 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.

End User Programming Software (requires 4100-8802)

| Model | Description |
|-----------|-------------------------------|
| 4100-8802 | Programming Software (select) |

End User Programming Software Selection (select maximum of one each from below)

| Model | Description |
|-----------|--|
| 4100-0292 | Custom Labels Editing; allows editing of 40 Character Custom Labels for non-system user points |
| 4100-0296 | Access Level/Passcode Editing; allows user to re-assign Access Levels and Passcodes for each display function; Acknowledge, Alarm Silence, System Reset, Point Enable/Disable, WALKTEST Enable/Disable, Clear History Logs, Change Time & Date, etc. |
| 4100-0295 | Port Vectoring Setup and Control; Allows vectoring of events to PC Annunciator, Printers, LCD Annunciators, etc. |
| 4100-0298 | WALKTEST Configuration Setup and Control; Allows user to create or edit WALKTEST groups used to test system initiating devices and signals by a single person, these groups allow an inspector to conduct a one-person WALKTEST in a specific area of a building (or different buildings), and limit the activation of the building signals to only the intended area; up to 8 WALKTEST groups are supported |

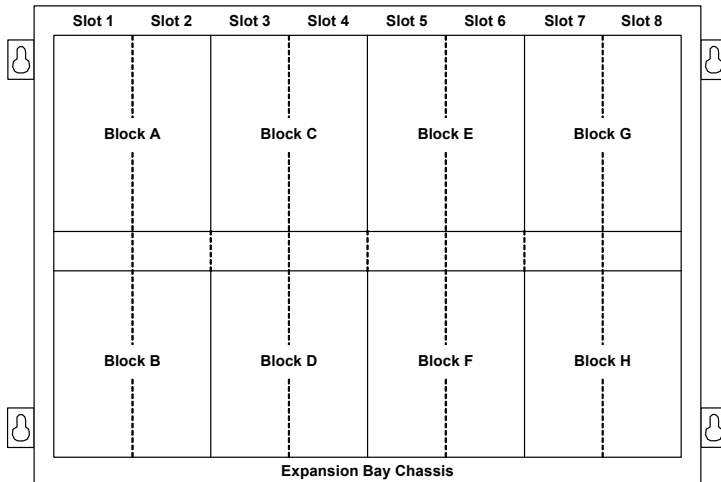
Miscellaneous Accessories

| Model | Description |
|-----------|---|
| 4100-1279 | Single blank 2" display cover; 4100-2302 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 |
| 4100-9856 | 4100ES Canadian French Appliqué Kit; Simplex, 4100ES, Contrôle Incendie |
| 4100-9868 | Special Purpose Appliqué Kit: Simplex, Elevator Recall Control and Supervisory Control Unit, 4100ES |
| 4100-9869 | Special Purpose Appliqué Kit: Simplex, Sprinkler Waterflow and Supervisory Station, 4100ES |
| 4100-6029 | Smoke Management Application Guide; required for UUKL listing |
| 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 ²), 2-1/2" L x 1-3/8" W x 1" H (64 mm x 35 mm x 25 mm) |

General Specifications

| | | | |
|--|--|--|---|
| Input Power | Enhanced Power Supplies (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 |
| | | Battery Input Rating | 12 A maximum @ 24 VDC (during battery operation) |
| Expansion Power Supplies (XPS) | 120 VAC Models | 4 A maximum @ 102 to 132 VAC, 60 Hz | |
| | 220-240 VAC Models | 2 A maximum @ 204 to 264 VAC, 50/60 Hz; separate taps for 220/230/240 VAC | |
| Power Supply Output Ratings for EPS | Total Power Supply Output Rating | 9 A output for "Special Application" appliances Note: The 9 A output rating of the EPS was determined such that optional module currents, and external device and appliance currents can be directly added together, not to exceed 9 A total. | |
| | 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 18 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, 24 VDC nominal (19.5 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 Ratings for EPS (sealed lead-acid batteries) | 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 | |
| Power Supply Output Ratings for XPS (nominal 28 VDC on AC; 24 VDC on battery backup) | Total Power Supply Output Rating | Including module currents and auxiliary power outputs; NAC outputs are rated 9 A output for "Special Application" non-addressable appliances; 4 A output for "Regulated 24 DC" power (see details below); 6 A output with each NAC selected as auxiliary power output | |
| | Auxiliary Power Tap | 2 A maximum | Rated 19.1 to 31.1 VDC |
| | NACs Programmed for Auxiliary Power | 2 A maximum per NAC; 5 A maximum total | |
| Special Application Appliances | Simplex horns, strobes, and combination horn/strobes and speaker/strobes (contact your Simplex product representative for compatible appliances) | | |
| Regulated 24 DC Appliances | Power for other UL listed appliances; use associated external synchronization modules where required | | |
| 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 | | | |
| Description | Document | Description | Document |
| ES Installation Instructions | 574-848 | IDNet 2 and 2+2 Module Installation Instructions | 579-1169 |
| ES Operating Instructions | 579-197 | EPS Installation Instructions | 579-1015 |
| DCAI Module Installation Instructions | 579-1029 | | |

Expansion Bay Module Loading Reference

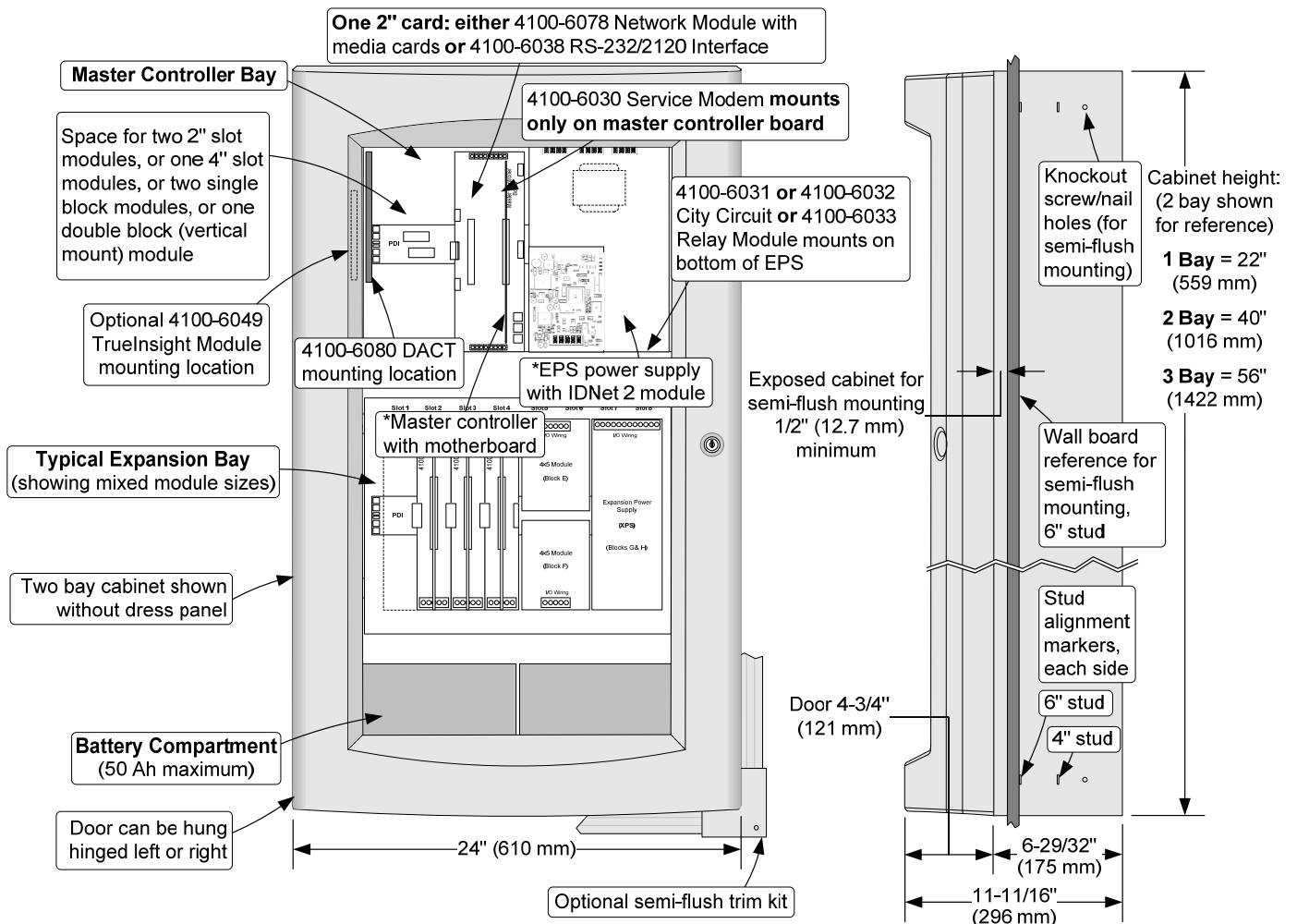


Size Definitions:

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

TrueAlert ES Appliance Self-Test Last Test Results Report Example

| Point ID | Custom Label | Date | Visual | Audible |
|----------|--------------------------------------|-----------|---------|---------|
| T1-1-1 | VO FIRST FLOOR (up to 40 characters) | 03-DEC-14 | NO OUT | N/A |
| T1-2-5 | AV FIRST FLOOR EAST WING | 03-DEC-14 | NO OUT | NORMAL |
| T7-3-55 | AO SECOND FLOOR EAST WING | 03-DEC-14 | N/A | NO OUT |
| T8-2-45 | AV SECOND FLOOR ROOM 29 | 03-DEC-14 | NOT TST | N/A |
| T8-2-60 | AV SECOND FLOOR ROOM 22 | 03-DEC-14 | NORMAL | NORMAL |
| T1-2-4 | AO FIRST FLOOR ROOM 17 | 03-DEC-14 | N/A | UNSUPP |

TRUEALERT_ES SELF-TEST REPORT COMPLETED
Press RETURN for next Screen OR CTRL-X to abort

Results Description:

NORMAL = works correctly

NO OUT = No Output, no light or sound was detected

NOT TST = no result; either the appliance did not return a result before the test ended or the test was conducted as silent (strokes only) and audible appliance was not activated

N/A = not applicable (no strobe on audible only, etc.)

UNSUPP = appliance not compatible with Self-Test (TrueAlert addressable appliance not TrueAlert ES addressable appliance)

Note: Additional TrueAlert ES Self-Test information is detailed in ES Operating Instructions 579-197 shipped with the panel.

TrueAlert ES Appliance Self-Test All Test Results Report Example

| Point ID | Custom Label | Date | Visual | Audible |
|----------|-------------------------------|-----------|---------|---------|
| T1-1-1 | VO FIRST FLOOR | 03-DEC-14 | NO OUT | N/A |
| T1-2-5 | AV FIRST FLOOR EAST WING | 03-DEC-14 | NO OUT | NORMAL |
| T1-2-6 | AV FIRST FLOOR NORTH ENTRANCE | 30-OCT-14 | NO OUT | NORMAL |
| T7-3-55 | AO SECOND FLOOR EAST WING | 03-DEC-14 | N/A | NO OUT |
| T8-2-45 | AV SECOND FLOOR ROOM 29 | 03-DEC-14 | NOT TST | N/A |
| T1-1-11 | AV FIRST FLOOR SOUTH ENTRANCE | 30-OCT-14 | NORMAL | NORMAL |
| T8-2-60 | AV SECOND FLOOR ROOM 22 | 03-DEC-14 | NORMAL | NORMAL |
| T1-2-4 | AO FIRST FLOOR ROOM 17 | 03-DEC-14 | N/A | UNSUPP |
| T1-2-7 | AO FIRST FLOOR ROOM 12 | 30-OCT-14 | N/A | UNSUPP |
| T8-3-43 | AV SECOND FLOOR ROOM 25 | 30-OCT-14 | UNSUPP | UNSUPP |

TRUEALERT_ES SELF-TEST REPORT COMPLETED
Press RETURN for next Screen OR CTRL-X to abort

TrueAlert ES Appliance Self-Test Individual Appliance Report Example

| | |
|------------------------------|------------------------|
| CUSTOM LABEL | |
| 4-1-2 | AV |
| POINT ADDRESS: 4-1-2 | Type: AV |
| CARD: 4 CHANNEL: 1 DEVICE: 2 | |
| EXTENDED POWER SUPPLY | |
| UNIT NUMBER: 2 | RUI NUMBER: LOCAL |
| PRIMARY STATUS | NORMAL |
| AUDIBLE GROUP CONFIG: | 0 0 0 |
| VISUAL GROUP CONFIG: | 0 0 0 |
| STYLE: | INDOOR |
| OPERATION: | GENERAL EVAC |
| CANDELA RATING | 15 CD |
| COLOR LENS | YES |
| TONE TYPE | BROADBAND |
| CODING TYPE | TEMPORAL |
| VOLUME | HIGH |
| LAST TEST TIME: | MON 02-JUN-14 01:00 AM |
| LAST VISUAL TEST: | NORMAL |
| LAST AUDIBLE TEST: | NORMAL |
| LAST TEST VOLUME: | NORMAL |
| DEVICE TEST TROUBLE: | NORMAL |

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 | Remote Battery Charger | S4081-0002 |
| Building Network Interface (BNIC) | S4100-0061 | SafeLINC Internet Interface | S4100-0062 |
| InfoAlarm Command Center | S4100-0101 | 4100ES Panels for Conventional Notification | S4100-0031 |
| Graphic I/O Modules | S4100-0005 | TrueAlarm Sensors | S4098-0019 |
| TrueInsight Remote Service | S4100-0063 | Remote IDNet Isolator | S4090-0005 |
| Agent Release Applications | S4100-0040 | TrueAlarm IDNet Isolator Base | S4098-0025 |
| TrueAlert ES Audible Only Appliances | S49AO-0001 | TrueAlert ES Weatherproof Appliances, UL Listed | S49WP-0001 |
| TrueAlert ES Visible Only Appliances | S49VO-0001 | TrueAlert ES Weatherproof Appliances, ULC Listed | S49WP-0002 |
| TrueAlert Appliance/IDNAC SLC Isolator | S4905-0001 | TrueAlert ES Emergency Communications Appliances with Color Lenses | S49LENS-0001 |
| TrueAlert ES Audible/Visible Appliances | S49AV-0001 | | |

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