

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.

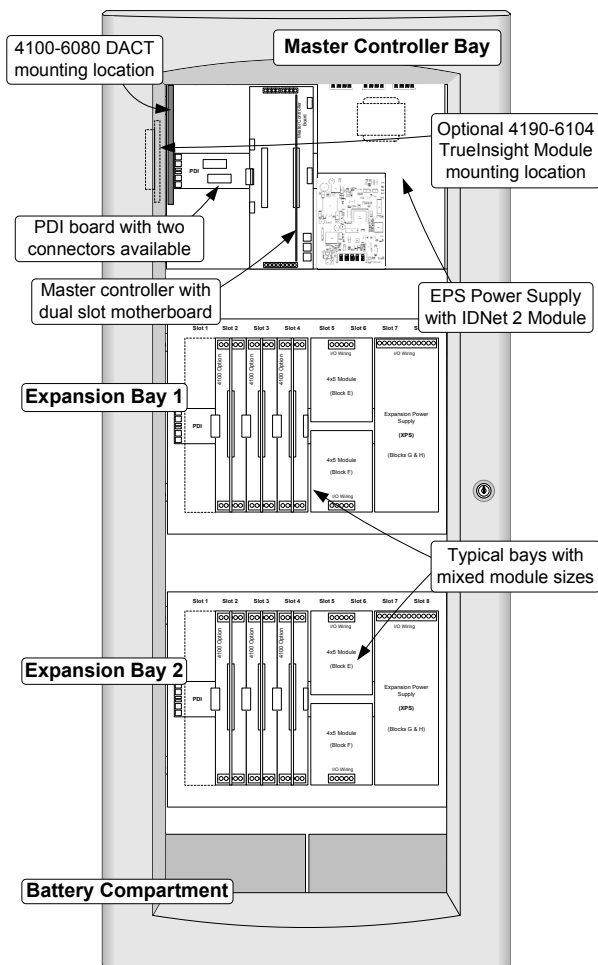
Modular design. A wide variety of functional modules are available to meet specific system requirements. Selections allow panels to be configured for either Stand-Alone or Networked fire control operation.

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.



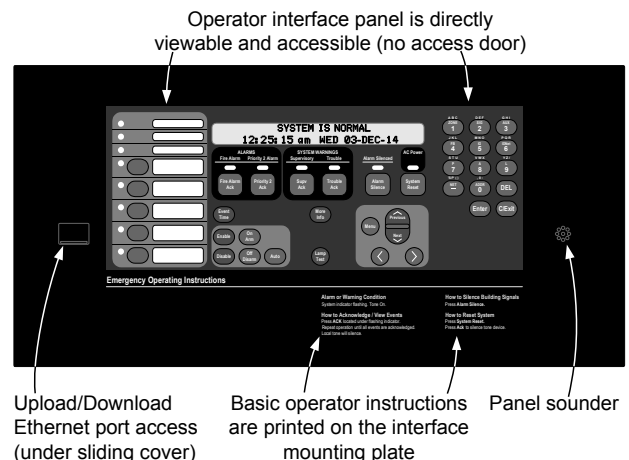
4100ES Module Placement Reference in 3-Bay Cabinet

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

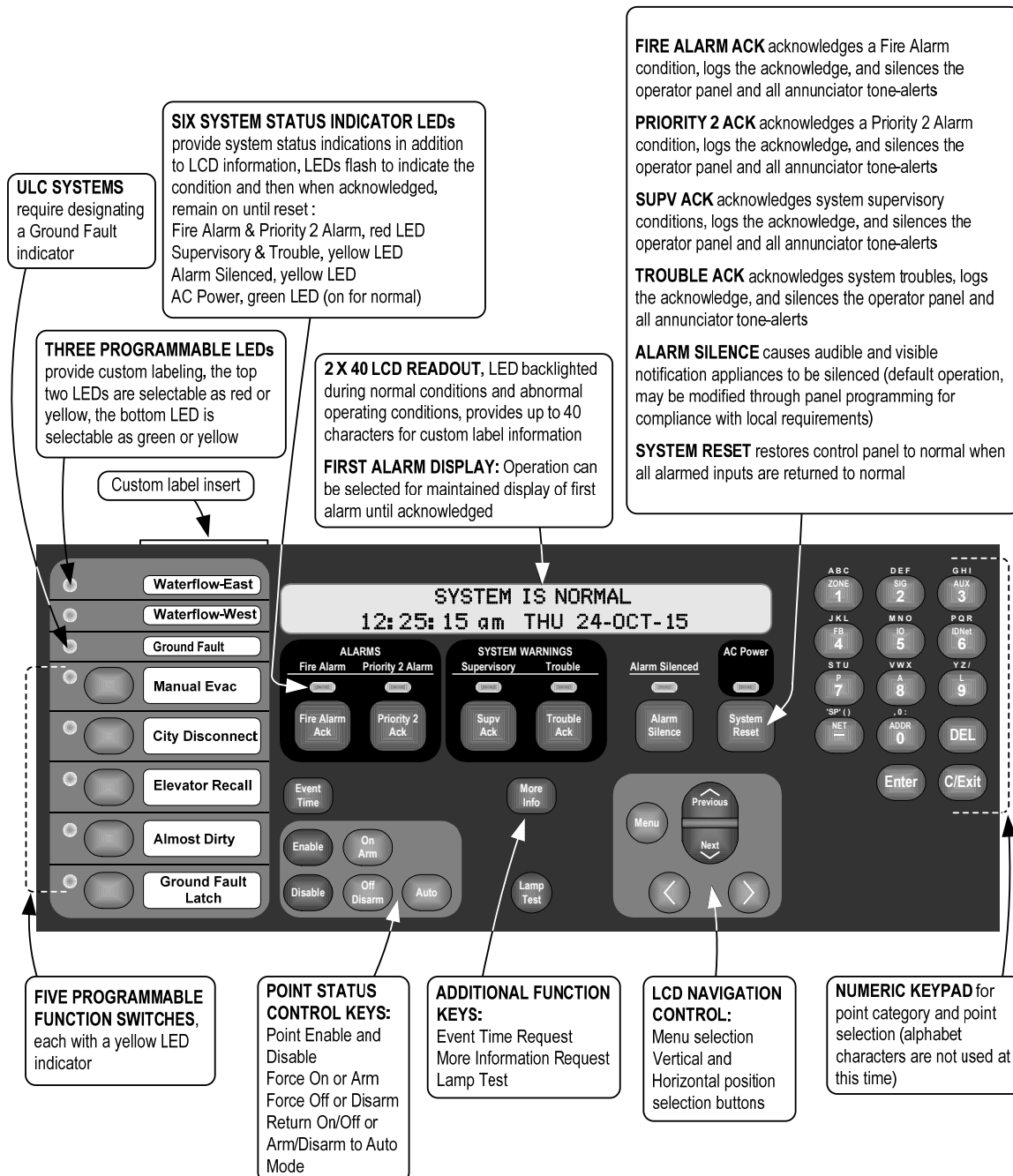
Operator Interface

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

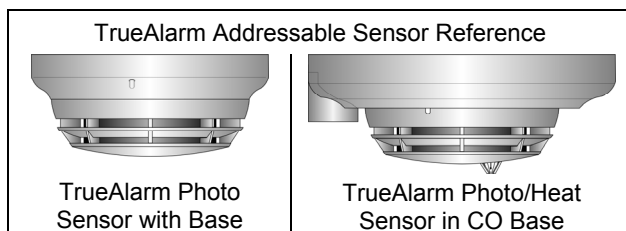
Overview. The 4100ES EPS power supply with IDNet 2 Module provides addressable initiating device and IDNAC addressable notification appliance Signaling Line Circuits (SLCs) that supervise wiring connections and the individual device/appliance communications status on their SLC. With these 2-wire SLCs, 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 μ F
Maximum Capacitance Between IDNet 2 Channels		1 μ F
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)

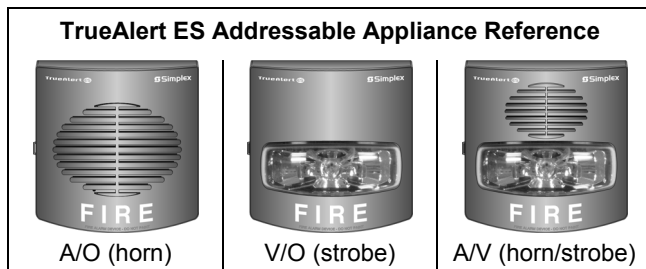
IDNet 2 and IDNet 2+2 Module Compatibility: IDNet communicating devices and TrueAlarm sensors including QuickConnect and QuickConnect2 sensors

* 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

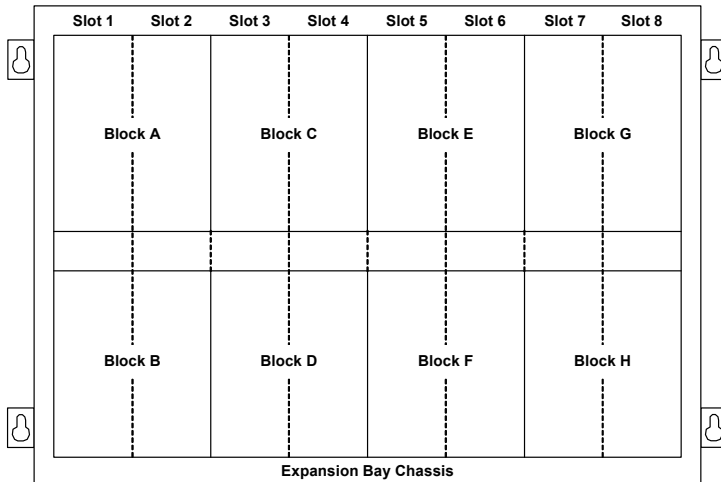
Miscellaneous Accessories

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

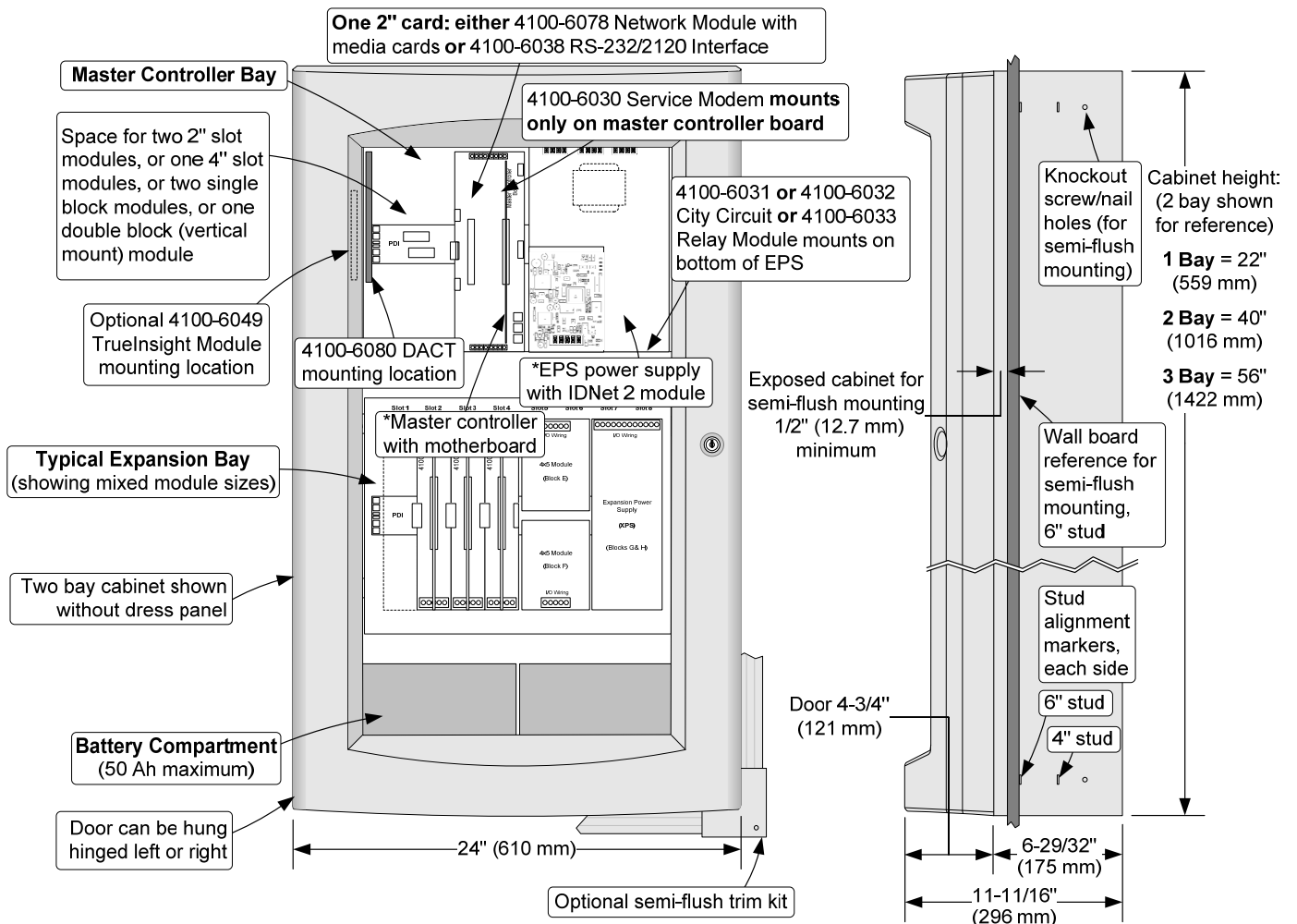


Size Definitions:

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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