Simplex

*UL/ULC, CSFM Listed; FM Approved, OTCR/ NYC Acceptance**

Datasheet

4100ES Fire Control Units

4100ES Addressable Fire Detection and Control Basic Panel Modules and Accessories

Introduction

4100ES series Fire Detection and Control Panels provide extensive installation, operator, and service features. They have point and module capacities suitable for a wide range of system applications. You can use the onboard Ethernet port for 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.

Modular design

A wide variety of functional modules are available to meet specific system requirements. Operators can use selections to configure panels for either stand-alone or networked fire control operation. The InfoAlarm Command Center options include a convenient expanded display content, detailed on data sheet .

Features

4100ES cabinets are available with one, two, or three bays.

Figure 1: 4100ES two-bay cabinet with ES Touch Screen Display



Master Controller bay, top

- Models available with color ES Touch Screen Display as shown in Figure 1 , monochrome 2 line x 40 character display
- 32-bit Master Controller with color-coded operator interface including raised switches for high-confidence feedback
- Dual configuration program CPU, convenient service port access, and capacity for up to 3,000 addressable points
- CPU assembly includes 2 GB dedicated compact flash memory for on-site system programming and information storage
- ES Power Supply (ES-PS) and charger with onboard alarm relay, programmable auxiliary power output and provisions for one 4 in. x 10 in. or two 4 in. x 5 in. compatible option cards such as IDNet2 addressable device interface, conventional NAC or addressable IDNAC SLC modules. For additional details refer to *ES-PS and ES-XPS Installation Instructions (579-1288).*
- You can obtain upgrade kits for existing control panels.

Network compatibility

Compatible with Simplex ES Net or 4120 Fire Alarm Networks.

Standard addressable interfaces

- 250 point addressable IDNet 2 SLC channel with electrically isolated dual short circuit isolating loops that supports TrueAlarm analog sensors and IDNet communications monitoring and control devices
- Remote annunciator module support through RUI+ (remote unit interface) communications port.

Optional modules

- Building Network Interface Module (BNIC) for Ethernet connectivity options, refer to data sheet *S4100-0061*
- Electrically isolated output two-loop IDNet 2 and four-loop IDNet 2+2 modules with short circuit isolation output loops for use with either shielded or un-shielded, twisted or untwisted single pair wiring
- Fire Alarm Network Interfaces, DACTs, city connections, and up to five RS-232 ports for printers and terminals
- Compatible with Connected Services Gateway to support central station communication and enable SafeLINC Cloud Services, refer to datasheet *S2080-0091*
- MAPNET II addressable device modules and MAPNET II quad isolator modules
- IDNAC signalling line circuits (SLCs) for addressable appliance control
- Alarm relays, auxiliary relays, additional power supplies, IDC modules, NAC expansion modules
- Service modems, VESDA Air Aspiration Systems interface, ASHRAE BACnet Interface, TCP/IP Bridges
- LED/switch modules and panel mount printers
- Local mode operation - in case of CPU failure or communication loss, local mode provides default operation for its connected devices and appliances. All initiating devices can report alarm condition and activate all onboard notification appliance circuits, connected amplifiers can generate default tones, and local telephone communication continue to work in local mode operation.
- Emergency communications systems (ECS) equipment, 8 channel digital audio or 2 channel analog audio
- Optional Redundant CPU configuration with redundant CPU conversion kit. For additional details refer to *Redundant CPU Installation Instructions (A16382C9WB)*
- 8-point zone/relay module, each point is selectable as an IDC input or relay output. Class A IDCs require two points: One out and one return. Relays are rated for 2 A at 30 VDC resistive, and configurable as either normally open or normally closed.
- Compatible with Simplex remotely located 4009 IDNet NAC Extenders, up to 10 for each IDNet SLC.

Listings information*

- UL 864, Fire Detection and Control (UOJZ), Smoke Control Service (UUKL), Releasing Device Service (SYZV), Emergency Communication and Relocation Equipment (UOQY)
- UL 1076, Proprietary Alarm Units - Burglar (APOU)
- UL 2017, Process Management Equipment (QVAX), Emergency Alarm System Control Units (FSZI)
- UL 1730, Smoke Detector Monitor (UULH)
- UL 2572, Mass Notification Systems (PGWM)

* See module information sections 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 7165-0026:251(4100ES) for allowable values and/or conditions concerning material presented in this document. Accepted for use – City of New York Department of Buildings – MEA35-93E. At the time of publication only UL and ULC listings are applicable to ES Net network products. Additional listings may be applicable; contact your local Simplex product supplier for the latest status

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- CAN/ULC-S527 Control Units for Fire Alarm Systems (UOJZ7), Releasing Device Service (SYZV7)
- CAN/ULC-S559 Central Station Fire Alarm System Units (DAYR7)
- ULC/ORD-C1076 Proprietary Burglar Alarm Units and Systems (APOU7)
- ULC/ORD-C100 Smoke Control System Equipment (UUKL7)

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Software feature summary

CPU provides dual configuration programs

- Two programs ensure optimal system protection and commissioning efficiency with one active program and one reserve.
- The system reduces downtime by remaining operational during download.

Computer based programmer features

- You can access the Ethernet port from the front panel to download site-specific programming.
- You can upload or download modifications for greater service flexibility.
- The software downloads firmware enhancements to the onboard flash memory.

Operator interface features

- TrueAlarm individual analog sensing with front panel information and selection access.
- **Dirty** TrueAlarm sensor maintenance alerts, service and status reports including **almost dirty.**
- TrueAlarm magnet test indication displays as a distinct **test abnormal** message when in test mode.
- TrueAlarm sensor peak value performance report.
- Operators can use **Install Mode** to group 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** enables the panel to recognize, process, and log recurring intermittent troubles, such as external wiring ground faults, but sends only a single outbound system trouble to avoid nuisance communications.
- **WALKTEST** silent or audible system test performs an automatic self-resetting test cycle.

Module bay description

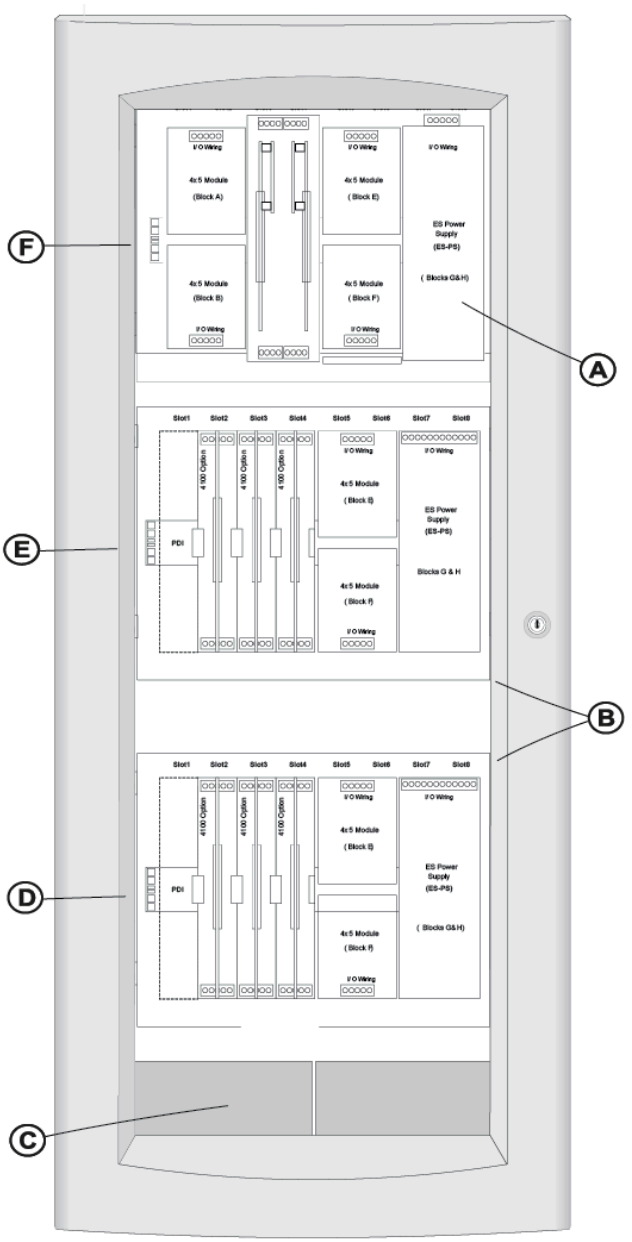
The master controller bay at the top includes a standard multi-featured ES power supply, the Master Controller board, expansion space for optional features, and operator interface equipment.

The expansion bays include a power distribution interface (PDI) for new 4 in. x 5 in. flat design option modules and also accommodate 4100-style modules.

The battery compartment at the bottom accepts two batteries, up to 50 Ah, that you can mount in the cabinet without interfering with module space.

Figure 2 identifies bay locations in a three bay cabinet.

Figure 2: 4100ES module bay references



Callout	Description
A	ES power supply
B	Typical bays with mixed module sizes
C	Battery compartment
D and E	Expansion bays
F	Master controller bay

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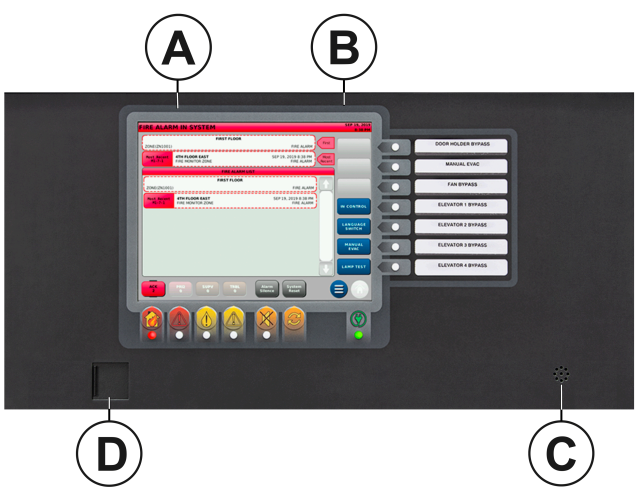
Mechanical description

- You can close-nipple boxes. Each box has stud markers for drywall thickness and nail-hole knockouts for quicker mounting.
- Box surfaces are smooth for locally cutting conduit entrance holes exactly where required.
- The latching dress panel (retainer) assembly lifts off for internal access.
- You can mount NACs directly on power supply assemblies for minimized wiring loss, compact size, and readily accessible terminations.
- Packaging supports traditional 4100-style motherboard with daughter cards.
- Modules are power-limited except as noted, such as relay modules.
- You can order the NEMA 1/IP30 box separately and have it available for early installation.
- Doors are available with tempered glass inserts or solid. Boxes and doors are available in platinum or red.
- Order boxes and door/retainer assemblies separately for each system requirements. Refer to data sheet *S4100-0037* for details.

Operator interface detail reference

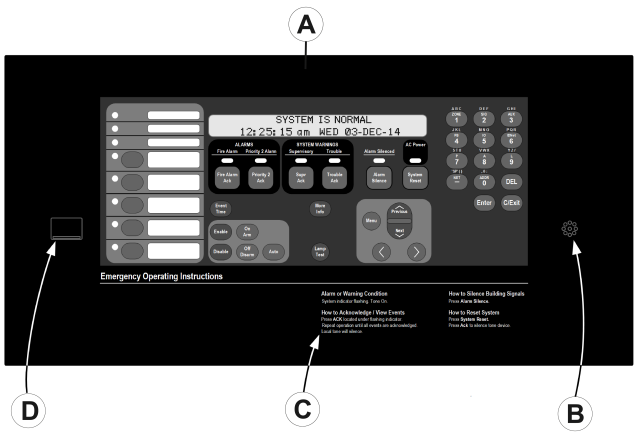
The 4100ES fire alarm control units (FACUs) have either an enhanced color ES Touch Screen Display or a basic monochrome 2 line by 40 character operator interface. This depends on the model selected. The following illustrations highlight the primary functions.

Figure 3: ES Touch Screen Display interface



Callout	Description
A	Touchscreen
B	Operator interface panel
C	Panel sounder
D	Ethernet port, under a sliding cover for Upload/Download use.

Figure 4: 2 x 40 Operator interface



Callout	Description
A	Operator interface panel
B	Panel sounder
C	Basic operator instructions, printed on interface mounting plate.
D	Ethernet port, under a sliding cover for upload/download use.

Compatible peripheral devices

The 4100ES is compatible with an extensive list of remote peripheral devices including printers, up to five maximum CRT/keyboards, and both conventional and addressable devices. These include TrueAlarm analog sensors and TrueAlert addressable appliances.

Master Controller bay module details

Master Controller and Motherboard

- The master controller mounts in slot two of a two-slot motherboard and includes one Class B or Class A, RUI+ communications channel configurable for isolated or un-isolated operation.
- Slot 1 of the motherboard is primarily for an optional network interface card, or secondarily for the 4100-6038 dual RS-232 board.
- RUI+ and RUI communications controls up to 31 remote devices for each master controller at up to 2,500 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 un-isolated RUI communications).
- Compatible RUI+ and 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, (4602 series annunciators require un-isolated communications).
- Each Master Controller supports up to four RUI channels. Which is a combination of built-in RUI+ and optional RUI modules
- An 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, see Figure 18.

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ES-PS Master Controller power supply

- Rating is up to 9.5 A total without a fan or up to 12.7 A total with a fan using Special Application appliances, or up to 5 A total with Regulated 24 DC appliance loads.
- Outputs are power-limited, except for battery charger and city circuits.
- Provides system power, battery charging, auxiliary power, auxiliary relay, earth detection, electrically isolated IDNet 2 communications channel for 250 points (4100-3117), three 3 A conventional NACs (4100-5450) or three 3 A IDNAC addressable SLCs (4100-5451), two block spaces for compatible optional modules and provisions for either an optional City Connect Module or an optional Alarm Relay Module (City Connect or Alarm Relay module requires one available block space).
- **IDNet 2 SLC Output** (4100-3109 and 4100-3117) provides an electrically isolated Class B or Class A communications channel with dual short circuit isolating loops for up to 250 addressable devices, as described in Addressable Device Control (requires one block space from ES-PS power supply or Master Controller bay).
- **Conventional NAC Module** (4100-5450) provides three outputs individually selectable as a Conventional NAC (Class B or Class A) or an Auxiliary Power output. When mounted on the ES-PS power supply, each NAC is rated at 3 A for Special Application appliances (9 A max for each card) or 2 A for Regulated 24 DC loads (4 A max for each card). NAC operation supports synchronized strobe or SmartSync horn/strobe operation over two wires. Auxiliary power outputs are rated for 3 A continuous duty. The total auxiliary power output for each power supply is limited to 5 A (requires one block space).
- **IDNAC Addressable Notification SLC Module** (4100-5451) provides three 3 A IDNAC addressable notification SLCs compatible with both TrueAlert ES and TrueAlert addressable notification appliances and remote 4009 IDNAC Repeaters used to extend power and wiring distances (requires two block spaces).
- **Dual Class A IDNAC Isolator (DCAI) Module** (4100-6103) 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 six total for each ES-PS power supply. The total Class A output loop current is limited to the 3 A rating of the IDNAC SLC and requires one block space.
- **Battery Charger** is dual rate, temperature compensated, and charges up to 50 Ah sealed lead-acid batteries mounted in the battery compartment, or 33 Ah for single bay cabinets. It is also UL and ULC listed for charging batteries up to 110 Ah mounted in an external cabinet. Refer to the 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, individual NAC currents, and individual IDNAC SLC currents.
- **Low Battery Cutout** is selectable for each ES-PS power supply.
- **2 A Programmable Output** is selectable for conventional SNAC or Auxiliary power operation.
  - SNAC operation supports 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.
  - You can use Auxiliary (AUX) power operation for sounder base power, four-wire detector power, or door holder. You can select the relay as N.O. or N.C and rated for 2 A at 32 VDC and 30 VAC, resistive. Supervised AUX operation does not require an end-of-line relay to provide power-limited operation.
- **Auxiliary Relay** is selectable as N.O. or N.C., rated 2 A at 32 VDC or 30 VAC (resistive), and is programmable as a trouble relay, either normally energized or normally de-energized, or as an auxiliary control.
- **Optional City Connect Module** (4100-6031, with disconnect switches, or 4100-6032, without disconnect switches) can be selected for conventional dual circuit city connections and requires one block space.
- **Optional Alarm Relay Module** (4100-6033) provides three Form C relays that are used for Alarm, Trouble, and Supervisory, rated 2 A resistive at 32 VDC and requires one block space.

IDNet SLC for addressable device communication.

Overview

The 4100ES provides standard addressable device communications for IDNet compatible devices and accepts optional modules for communications with MAPNET II compatible devices. Using a two-wire communications circuit, you can interface individual devices such as manual fire alarm stations, TrueAlarm sensors, conventional IDC zones, and sprinkler waterflow switches to the addressable controller to communicate their identity and status.

Use the addressability feature to display the location and condition of the connected device on the operator interface LCD and remote system annunciators. Additionally, control circuits such as fans or dampers can be individually controlled and monitored with addressable devices.

Addressable operation

Each addressable device on the communication channel is continuously interrogated for status condition such as: normal, off-normal, alarm, supervisory, or trouble. Both Class B and Class A operations are available. Sophisticated poll and response communication techniques ensure supervision integrity and allow for T-tapping of the circuit for Class B operation. Devices with LEDs pulse the LED to indicate receipt of a communications poll and you can turn them on steady from the panel.

IDNet channel capacity

The CPU bay ES-PS provides an IDNet 2 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, see Table 21.

Table 1: IDNet, MAPNET II, IDNet 2, and IDNet 2+2 SLC wiring common specifications

Specification		Description
Maximum distance from control panel for each device load	1 to 125	4,000 ft (1219 m), 50 Ω
	126 to 250	2,500 ft (762 m), 35 Ω
Connections		Terminals for 18 to 12 AWG (0.82 mm^2 to 3.31 mm^2)

Table 2: IDNet and MAPNET II specifications

Specification		Description
Wire type	New installation	Shielded twisted pair (STP)
	Retrofit only	Unshielded twisted pair (UTP)
Total wire length supported with **T** Taps for class B wiring		Up to 10,000 ft (3 km), 0.58 µF

Note: Consult your local Simplex product supplier for retrofit installations. Restrictions may apply.

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Table 3: IDNet 2 and IDNet 2+2 wiring specifications

Specification		Description
Wire type	New installation	Unshielded twisted pair (UTP)
	Retrofit only	Shielded or un-shielded, twisted or untwisted wire
Total wire length supported 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
IDNet 2 and IDNet 2+2 module compatibility: IDNet communicating devices and TrueAlarm sensors including QuickConnect and QuickConnect2 sensors		

Note: For retrofit installations consult with your local Simplex product supplier, restrictions may apply.

TrueAlarm system operation

Addressable 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. A comparison of the current sensor value to its average value determines status. 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 a percentage, or for specific heat detection levels. To evaluate whether the sensitivity has to be revised, the peak value is stored in memory and can be easily read and compared to the alarm threshold directly in a percentage.

CO sensor bases combine an electrolytic CO sensing module with a TrueAlarm analog sensor to provide a single or multiple sensing assembly using one system address. The CO sensor can be enabled or disabled, used in LED or 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.

You can use **TrueAlarm heat sensors** for fixed temperature detection, with or without rate-of-rise detection. Utility temperature sensing is also available, to provide freeze warnings or alert to HVAC system problems. you can select readings 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 enables 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 with indicators to assist with service planning. Indicators occur at one year, six months, and when end of life is reached.

Modular TrueAlarm sensors

TrueAlarm smoke or heat sensors use the same base and different sensor types. They can be interchanged to meet specific location requirements. You can substitute the intentional sensor during building construction when conditions are temporarily dusty. Instead of covering smoke sensors, which disables them, you can install heat sensors without reprogramming the control panel. The control panel can indicate an incorrect sensor type, but the heat sensor can operate at a default sensitivity to provide heat detection for building protection at that location.

IDNAC SLC for addressable notification appliance communications

IDNAC addressable notification appliance communications include operation of the following appliances:

- TrueAlert and TrueAlert ES Visible Only (V/O, strobe)
- Audible Only (A/O, horn)
- Audible/Visible (A/V, horn/strobe)
- Strobes of Speaker/Visible (S/V)

Note: S/V appliances require separate speaker wiring.

Operators can use the IDNAC SLC to control each horn and strobe individually through a single two-wire circuit. The IDNAC SLC confirms the wiring connections to the electronic circuit of each notification appliance, and then confirms communication between the FACU and each appliance. Addressable communication increases supervision integrity. It exceeds conventional notification systems. The system supervises both circuit wiring and individual appliances. Each appliance is monitored. The system continually verifies communication between each appliance and the control panel.

Individual appliance status and settings

The FACP monitors and records 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.

Figure 5: TrueAlert ES addressable appliance reference



A/O (horn) V/O (strobe) A/V (horn/strobe)

Virtual NACs control convenience

For control convenience, operators can group IDNAC notification appliances into virtual NACS (VNACs) for group control. You can make that grouping across SLCs, not defined by their wiring connection.

Panel control convenience

You can program applicable operation settings for each appliance 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.

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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** enabling 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 appliance location and to aid in troubleshooting fault conditions. In conventional notification systems, conventional appliances cannot communicate with the control panel. Fault reporting on a conventional system is limited to the circuit wiring and the entire area, or zone, covered by appliances on the notification appliance circuit (NAC). This makes it more difficult and costly to locate and correct the source of a problem. When you use the TrueAlert magnet test, each appliance can individually identify its candela setting and address and operate briefly if required. When you use the TrueAlert ES appliance Self-Test feature, it provides detailed performance verification for each appliance.

TrueAlert ES appliance self-test operation

Onboard test sensors

For efficient and unobtrusive self testing, TrueAlert ES appliances include onboard sensors to detect strobe or horn output. When automatic self-test is initiated from the control panel, each appliance in the selected VNAC group briefly operates and then reports its self-test status to the control panel in a few seconds. If required, you can select silent self-test to test only visible appliances. The control panel is in a trouble condition during testing and in the event of an alarm, Self-Test automatically terminates. Additionally, you can schedule Automatic Self-Test to occur at a convenient time on a regular basis.

Note: Requires software version 2.03.01 or later.

Automatic self-test

Appliances communicate their automatic self-test results to the control panel with a time and date stamp. The control panel stores the results. You can view results at the front panel display and you can generate printed reports from the panel service port.

Individual self-test

You can select individual self-test from the control panel when you need to observe individual operation of appliances. Each appliance in the selected VNAC group turns 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 similarly to the automatic test.

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TrueAlert ES appliance self-test last test results report example

Figure 6: TrueAlertES self-test report

Service Port Page 1

REPORT 10 TrueAlertES Self-Test Report 12:34:56pm WED 03-DEC-14

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 (strobes only) and audible appliance was not activated
- **N/A** = Not applicable (no strobe, on audible only)
- **UNSUPP** = Appliance not compatible with self-test (TrueAlert addressable appliance not TrueAlert ES addressable appliance)

Note: For additional TrueAlert ES self-test information refer to *ES Operating Instructions 579-197* shipped with the panel.

TrueAlert ES appliance Self-Test all test results report example

Figure 7: TrueAlertES Self-Test report

Service Port Page 1

REPORT 10 TrueAlertES Self-Test Report 12:34:56pm WED 03-DEC-14

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

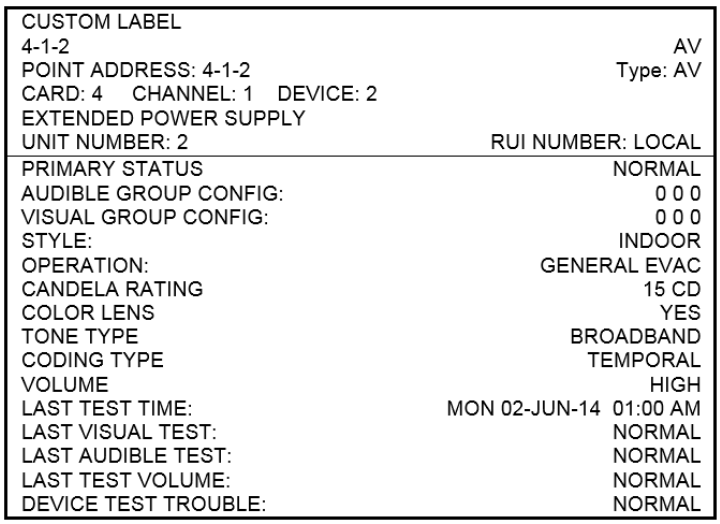
Press RETURN for next Screen OR CTRL-X to abort

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TrueAlert ES appliance Self-Test individual appliance report example

Figure 8: Appliance report



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

IDNAC SLC hardware reference

ES-PS power supplies

ES-PS power supplies configured with an IDNAC card 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 two to three times farther than available with conventional notification. They can also support more appliances for each SLC, or work with smaller gauge wiring, or combinations of these benefits. All result in installation and maintenance savings with assurance that appliances that operate during regular system testing can also operate during worst case alarm conditions.

IDNAC SLC appliance wiring reference

IDNAC SLC capacity

The IDNAC SLC has a capacity of up to 127 addresses and up to 139 unit loads. Appliances are often one unit load. Devices such as Isolators may require more than one load. For specific information refer to individual device data sheet.

Table 4: IDNAC SLC appliance wiring reference

Specification	Rating
Required wire type	Unshielded twisted pair (UTP)
Maximum wire length supported with T-Taps for Class B wiring, for each SLC	10,000 ft (3,048 m)
Maximum wire length for each SLC to any appliance	4,000 ft (1,219 m)
Appliance supervisory current	1 unit load = 0.8 mA for each appliance
Wiring connections	Terminals for 18 to 12 AWG (0.82 mm^2 to 3.31 mm^2)
Installation Instructions	579-1015

8-Point Zone/Relay module details

Select as IDC or Relay and configure:

- Up to eight Class B IDCs or up to four Class A IDCs
- Up to eight Relay outputs rated 2 A resistive at 30 VDC (N.O. or N.C.)
- Combinations of IDCs and Relays.

Note: Each zone is separately configurable as an IDC or Relay output.

IDC Support: each IDC supports up to 30 two-wire devices. Zone relay modules can be powered directly from the control unit power supply or through the optional 25 VDC regulator module where required for two-wire detector compatibility. Refer to *2-Wire Detector Compatibility (579-832)* for additional details.

IDC EOL resistor values are selectable as: 3.3 kΩ, 2 kΩ, 2.2 kΩ, 3.4 kΩ, 3.9 kΩ, 4.7 kΩ, 5.1 kΩ, 5.6 kΩ, 6.34/6.8 kΩ, and 3.6 kΩ + 1.1 kΩ.

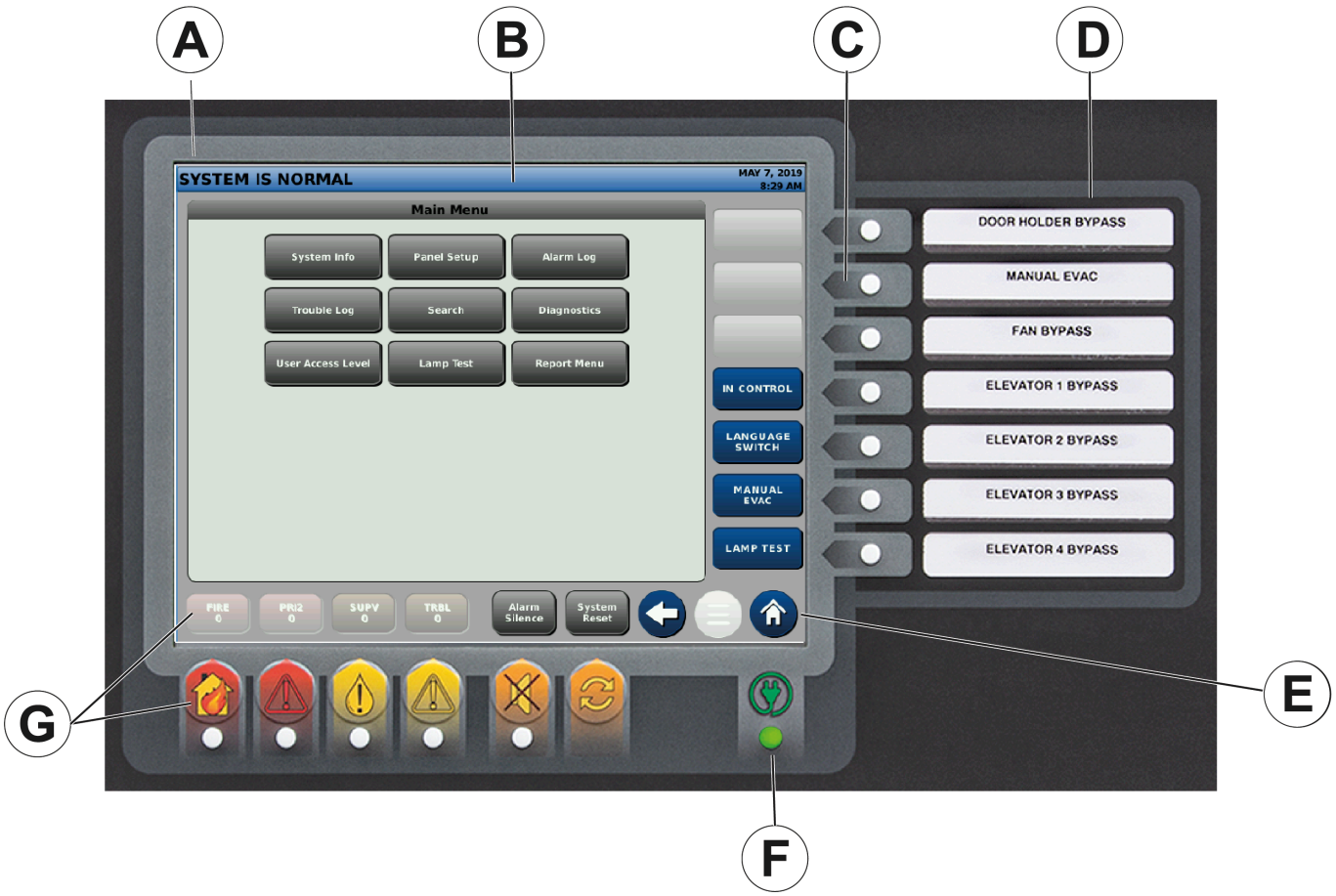
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Color ES touch screen display

The color ES touch screen display interface includes an intuitive operation similar to a tablet or smart phone. It has a larger area format instead of an individual text line display. More information is available at a glance, and you need minimal key presses to access detailed information.

Figure 9: ES Touch Screen Display operator interface



Callout	Component
A	System status bar
B	8 in. (203 mm) diagonal 800 x 600 resolution color touch screen display. You can annunciate up to eight active events without scrolling. It has resistive touchscreen technology for operation with or without gloves.
C	Seven programmable soft keys available for user-defined control or maintenance functions.
D	Home and menu navigation soft keys.
E	Primary power indicator indicates the presence of AC power at the panel.
F	Hard and soft keys provided for critical functions such as Event Acknowledge, Alarm Silence, and Reset Functions

Soft keys for Event Acknowledge include the number of active events for each event category such as:

- FIRE reviews and acknowledges alarm conditions on the system
- PR12 reviews and acknowledges priority 2 alarm conditions on the system.
- SUPV reviews and acknowledges any supervisory conditions on the system
- TRBL reviews and acknowledge any supervisory conditions on the system.
- ALARM SILENCE silences the building's audible notification appliances, such as horns.
- SYSTEM RESET directs the panel to reset all attached devices and clear all acknowledged alarm conditions.

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Touch screen display features

Customized operating experience

- Event activity display choices include: First 8 Events or First 7 Events with emphasis on the most recent, or First 6 Events with emphasis on the First and Most Recent. You can select them individually for each event type.
- System reports are easily viewable. You can read logs with minimal scrolling.
- Up to two languages are available for a system, easily selected by programmable key press.
- Information sent to Remote ES Touch Screen Displays can be vectored by point or zone.
- Both Hard and Soft keys available for critical functions: Event Acknowledge, Alarm Silence, and Reset Functions.
- Resistive touchscreen technology can be used with or without gloves.
- Seven programmable RGY LEDs are available for user-defined display status. An LED has two status conditions.
- Seven programmable Soft keys available for user-defined control or maintenance functions.
- You can change the PRI2 Soft key label to CO to annunciate Carbon Monoxide detection status.
- You can program the ES Touch Screen Display to report individual points or groups of points as a single zone.
- Supports a custom watermark background file company logo display or other display content.
- Seismically compliant under the State of California Statewide Office of Housing and Development (OSHPD) Special Seismic Certification (SSC) program guidelines. Refer to *Simplex Seismic Application Guide (579-1213)* and *Battery Brackets for Seismic Activity Applications (S2081-0019)* for details.

Display properties

- 8 inch (203 mm) diagonal, 800 x 600 resolution color touch screen display that can annunciate up to eight active events without scrolling.
- Bright white LED backlighting provides efficient and long lasting illumination. The backlight is dim in quiescent state, it automatically switches to full power on touch or on event activity in system.

Description

ES Touch Screen Displays for 4100ES fire alarm systems have a large display with extended information content, dual language support including UTF-8 character languages, and an intuitive control key interface with the following:

- Up to 10 ES Touch Screen Displays for each 4100ES control panel. One ES Touch Screen Display can take-control and designate access levels for interfaces not in-control. You can assign programmable LEDs to in-control status indications.
- Menu-driven format conveniently prompts operators for the next action required.
- Direct point callup displays individual points alphabetically and then homes in on the logical choice as you enter more point information.
- Event categories are color-coded for quick visual representation:
  - Red for Alarm and Priority 2 Events
  - Yellow for Supervisory and Trouble events.
- Date formats are either MM/DD/YY or DD/MM/YY.
- Time formats are either 24 hour or 12 hour with AM/PM.
- System Normal screen supports a color background (watermark) for company name, company logo, or other display content.

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Example display screens

Figure 10: First and most recent alarm display

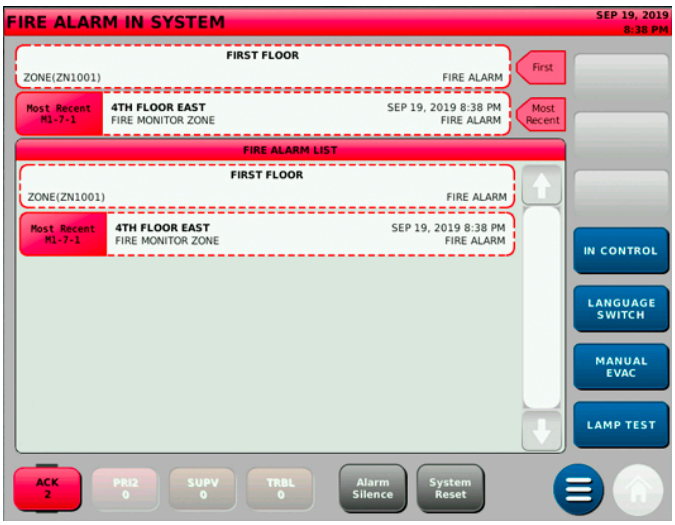


Figure 11: Main menu

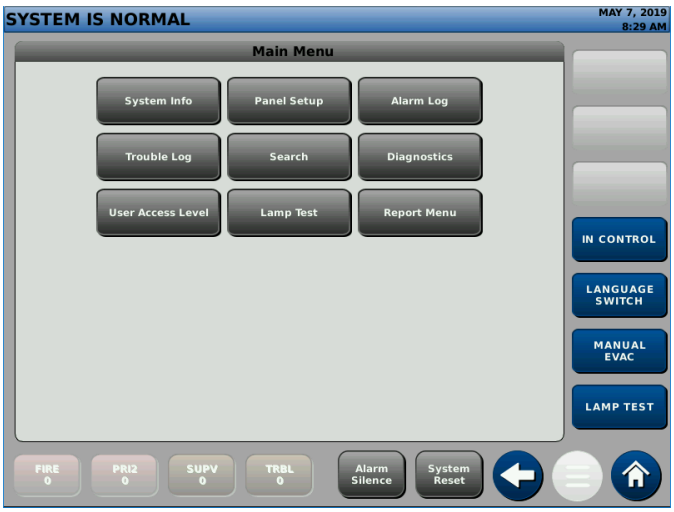


Figure 12: First eight active trouble events list



Figure 13: Direct point callup

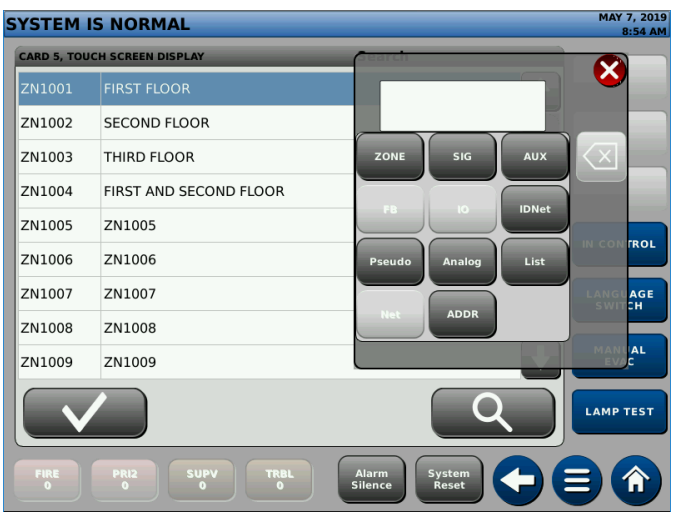


Figure 14: Alarm history log

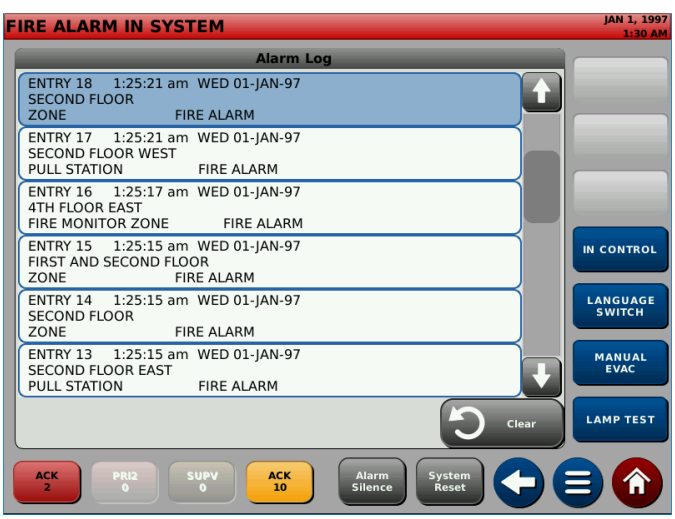
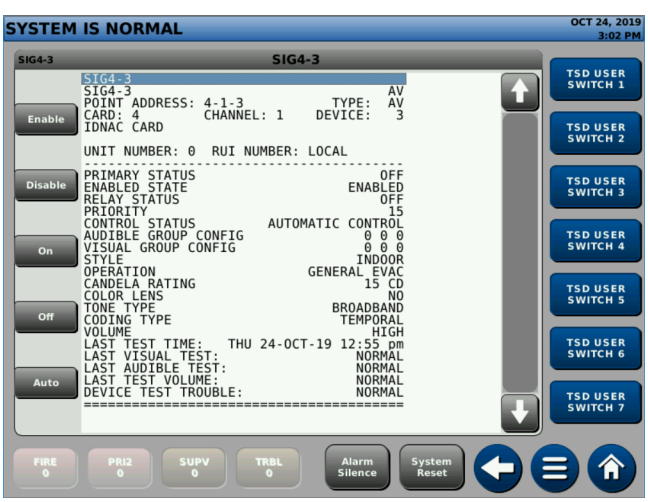


Figure 15: Detailed point status screen for TrueAlert ES appliance



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Specifications

Table 5: General ES Touch Screen display specifications

Specification	Rating
Resolution	800 x 600 pixels, RGB
Size	8 in. (203 mm) diagonal
Type	Color touch screen
Touch screen technology	Resistive
Event display	Up to eight events without scrolling
Normal screen custom watermark file format	680 x 484 pixels: BMP, JPG, TIFF, GIF, or PNG file format
Environmental	Operating temperature: 32°F to 120°F (0°C to 49°C)
	Operating humidity: Up to 93% RH, non-condensing at 90°F (32°C) maximum

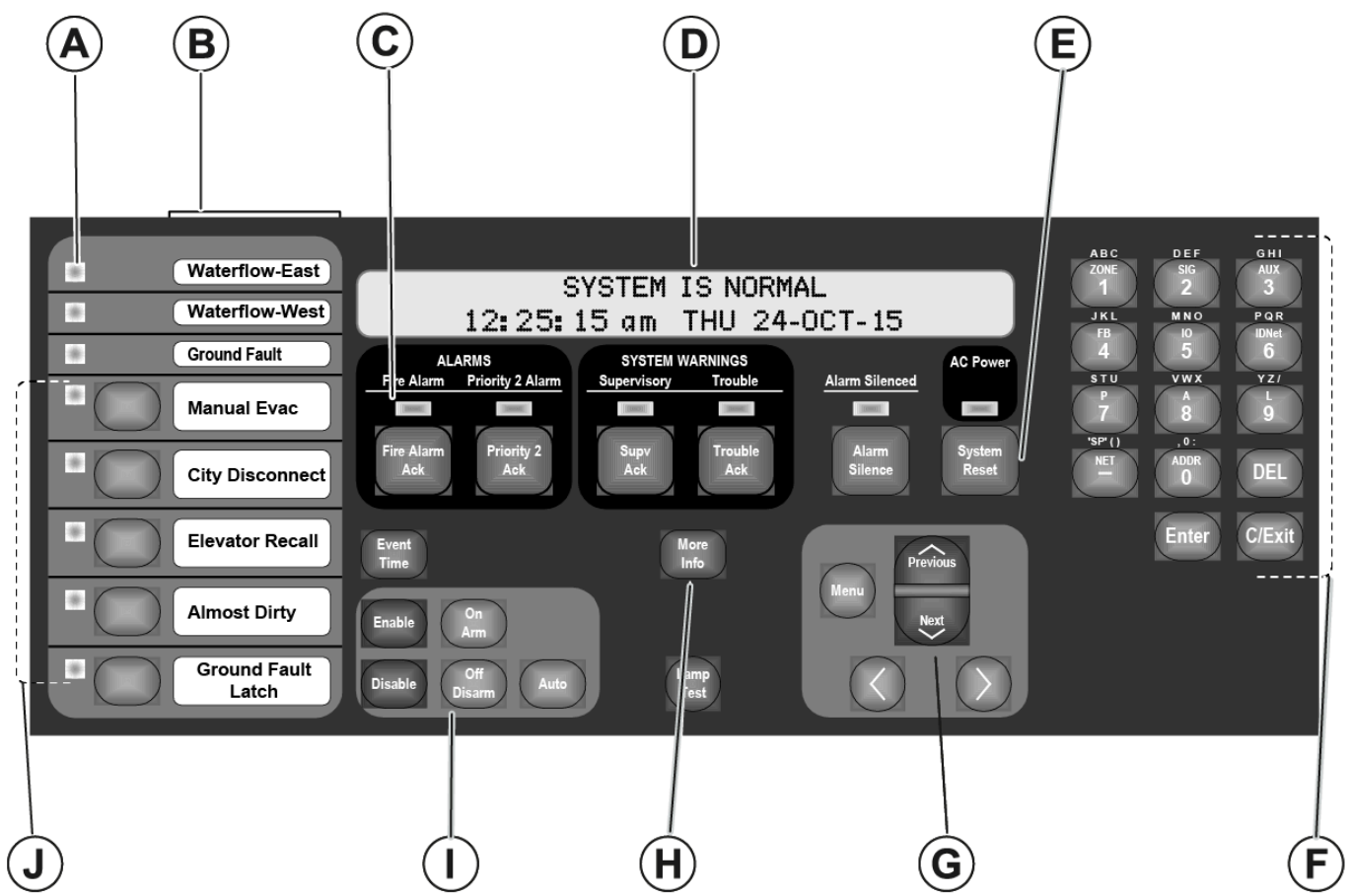
Operator interface with monochrome 2 x 40 LCD

When you lock the door closed, you can view the display, status LED, and available operator switches through the glass window. Features include a two-line by 40-character, wide viewing angle, super-twist, LCD with status LEDs, and switches as shown in Figure 16.

LED indicators describe the general category of activity displayed and the LCD has more detail. For the authorized user, unlocking the door provides access to the control switches and enables further inquiry by scrolling the display for additional detail.

- 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 for up to 1,000 entries for each, 2,000 total events are available for viewing from the LCD. They can also be printed to a connected printer, or downloaded to a service computer
- Convenient computer programmer label editing
- Password access control

Figure 16: Operator interface



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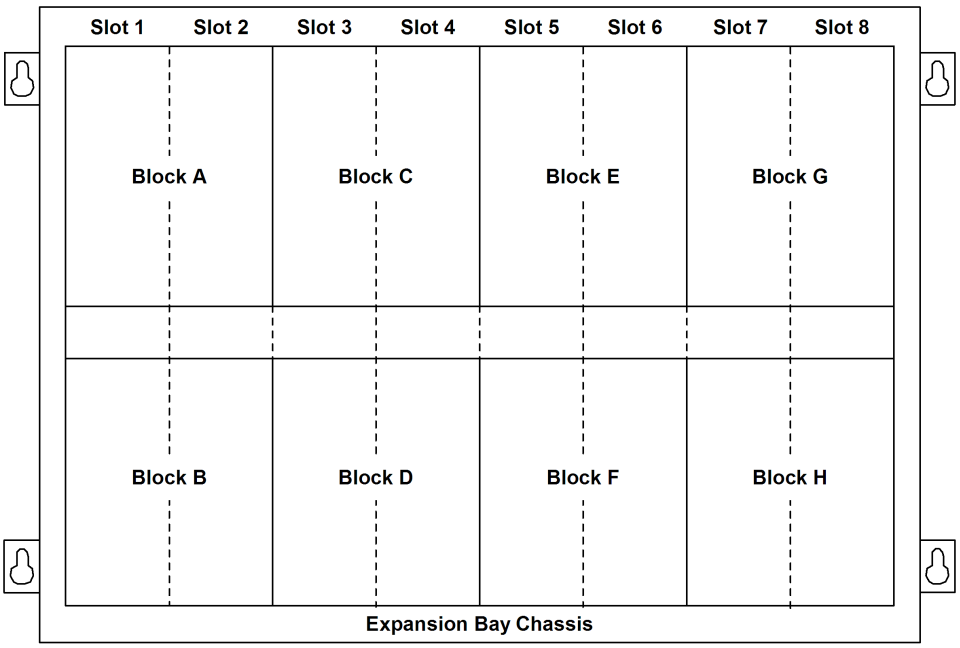
Callout	Component
A	Three programmable LEDs provide custom labeling. You can select the top two LEDs as red or yellow. You can select the bottom LED as green or yellow.
B	Custom label insert
C	Six system status indicator LEDs that provide system status indication in addition to LCD information. LEDs flash to indicate the condition and, when acknowledged, remain on until reset: • Red LED: Fire Alarm and Priority 2 alarm • Yellow LED: Supervisory and Trouble • Yellow LED: Alarm Silenced • Yellow LED: AC power • Green LED: On for normal
D	2 x 40 LCD readout. LED black-lit during normal conditions and abnormal operating conditions. Provides up to 40 characters for custom label information. First alarm display: Operation can be selected for maintained display on first alarm until acknowledged.
E	• FIRE ALARM ACK: Acknowledges a fire alarm condition, logs the acknowledge, and silences the operator panel and all annunciator tone alerts. • PRIORITY 2 ACK: Acknowledges a priority 2 alarm condition, logs the acknowledge, and silences the operator panel and all annunciator tone alerts. • SUPV ACK: Acknowledges system supervisory conditions, logs the acknowledge, and silences the operator panel and all annunciator tone alerts. • TROUBLE ACK: Acknowledges system troubles, logs the acknowledge and silences the operator panel and all annunciator tone alerts. • ALARM SILENCE: Causes silence for all audible and visible notification appliances. For compliance with local requirements, you can modify the preset operation through panel programming. • SYSTEM RESET: Restores control panel to normal when all alarmed imputs are returned to normal.
F	Numeric keypad for point category and to select a point. Alphabet characters are not used at this time.
G	LCD Navigation control: You can choose vertical and horizontal menu positions.
H	Additional function keys: Event time, request more information, and request a lamp test.
I	Point status control keys: Set point and disable, Force on or arm Force off or disarm Return on/off or Arm/Disarm to auto mode
J	Five programmable function switches, each with a yellow LED indicator

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Expansion Bay module loading reference

Figure 17: Expansion Bay chassis



Size definitions: Block W x H = 4 in. x 5 in. (102 mm x 127 mm) card area
Slot W x H = 2 in. x 8 in. (51 mm x 203 mm) motherboard with daughter card

Table 6: Expansion Bay loading reference

Description		Mounting
IDNet 2, IDNet 2+2 Modules		1 block
Four 2 A relays	NON Power-limited	1 block
Four 10 A relays		4 in., 2 slots
Eight 3 A relays		1 block
VESDA interface		2 in., 1 slot
Class B IDC		2 in., 1 slot
Class A IDC		2 in., 1 slot
MAPNET II Module		4 in., 2 slots
MAPNET II/IDNet Isolator		2 in., 1 slot
NAC card		1 block
IDNAC card		2 blocks (on ES Power Supply only)
ES-PS		Blocks G and H ONLY
ES-PS configured as backup		Blocks E and F ONLY
ES-XPS		2 blocks

Mounting and Master Controller Bay module reference

The Mounting and CPU Bay module reference figure shows side view dimensions with minimal cabinet and door protrusion from the exterior wall. For a 6 in. stud construction with minimum protrusion shown, the door opens 90 degrees. To enable the door to open 180 degrees, the exposed cabinet dimension from the exterior wall must be a minimum of 3 in. (76 mm) for both 4 in. and 6 in. stud construction.

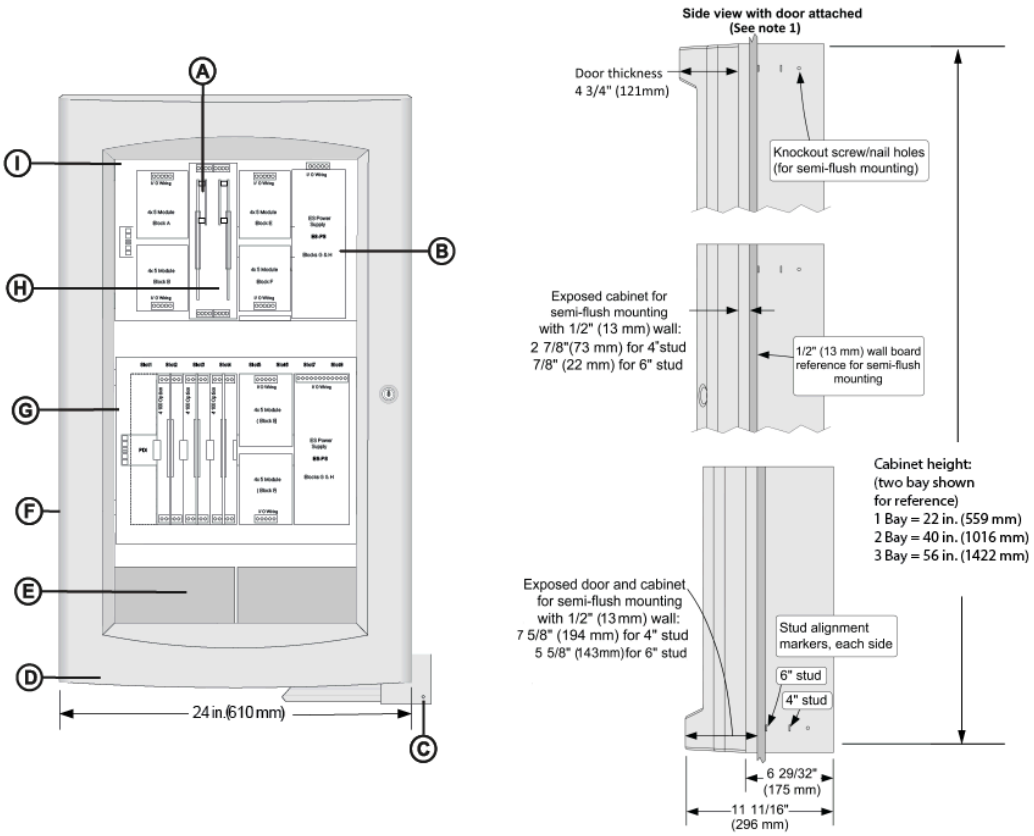
You must provide a system ground for earth detection and transient protection devices. You can make this connection to an approved, dedicated earth connection for each NFPA 70, article 250, and NFPA 780.

Asterisks (*****) indicate supplied modules.

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Figure 18: Mounting and CPU Bay module reference



Callout	Component
A	Slot 3, one 2 in. card: 4100-6038 Dual RS-232 or 4100-6104 ES Net NIC with media cards or 4100-6078 4120 NIC with media cards
B	*ES Power supply
C	Optional semi-flush trim kit
D	Door hinge can be left or right
E	Battery compartment
F	Two bay cabinet shown without retainer
G	Expansion bay showing mixed module sizes
H	*Master controller with motherboard
I	Master controller bay

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General specifications

Table 7: ES Power Supply specifications (ES-PS and ES-XPS)

Specifications	Rating
AC input power	120 to 240 VAC
120 VAC	3.72 A
220 to 240 VAC	1.82 A
Total DC output power capacity	
Without fan	9.5 A
With 4100-5131 fan and 4100-5451 IDNAC modules	9.7 A
With 4100-5131 fan, without a 4100-5451 IDNAC module	12.7 A
With regulated 24V appliance loads, with or without a 4100-5131 fan	5.0 A
Special application appliance loads: supports full total DC output power capacity ratings	Simplex horns, strobes, and combination horn/strobes and speaker/strobes (contact your Simplex product representative for compatible appliances)
Regulated 24V appliances: reduces total DC output power capacity to 5.0 A	Power for other UL listed appliances. Use associated external synchronization modules where required.
Auxiliary power tap	2 A maximum (taken from total output power capacity)
NACs programmed for auxiliary power	3 A maximum for each NAC, 5 A maximum total (taken from total output power capacity)
Battery charger (ES-PS only)	Sealed lead-acid batteries
Battery Ah capacity	UL/ULC listed for battery charging of up to 110 Ah (batteries larger than 50 Ah require a remote battery cabinet)
Charger characteristics and performance	Temperature compensated, dual rate, recharges depleted batteries in 48 hours
Environmental specifications	
Operating temperature	32°F to 120°F (0°C to 49°C)
Operating humidity	Up to 93% RH, non-condensing at 90°F (32°C) maximum
Option card mounting	Two vertical blocks are available for compatible modules. Refer to *579-1288* installation instructions for additional details.

Note:

1. Battery charger is only available on the ES-PS Power Supply.
2. When an ES-PS powers Flex-35 or Flex-50 amplifiers, the ES-PS battery charger is not available.

Master Controller selection information

Note: *Supervisory and alarm currents are without IDNet devices. Add IDNet device currents seperately for Table 8 and Table 9.

Table 8: 4100ES Master Controller selection

Model	Description	Includes	Listings	Supv.*	Alarm*
4100-9701	ES-PS Master Controller with 2x40 Display - English	Master Controller – English, 2x40 Display, CPU Card, IDNet 2 Card supports up to 250 addressable/analog points, ES Power Supply (120 V to 240 V 50/60 Hz, 24 V Aux. Relay, 24 V Aux. Power Tap/Simple NAC, 110 Ah Battery Charger) and external RUI+ (isolated or un-isolated) communications interface.	UL/ULC	277 mA	321 mA
4100-9702	ES-PS Master Controller with 2x40 Display - Canadian French	Same as 4100-9701 except with Canadian French user interface.	ULC		
4100-9706	ES-PS Master Controller with ES Touch Screen Display	Same as 4100-9701 except with color ES Touch Screen Display user interface. For dual language support, required language is switch selectable.	UL/ULC, CSFM	*362 mA	*441 mA
4100-9709	ES-PS Master Controller without Display - English	Same as 4100-9701 except with no 2x40 Display or user interface.	UL/ULC	*277 mA	*321 mA

Note:

- The Master Controller current draw specifications do not include IDNet, NAC, or IDNAC current draws. You must add these separately as required.
- International orders might substitute MX Loop Module (4100-3120) in place of IDNet 2 Module (4100-3117). Refer to data sheet *S4100-0059* for more details. The 4100-3120 provides the same module and specifications as the 4100-6311 but is dedicated as a Master Controller feature selection.
- At the time of publication English and Canadian French languages are available for ES Touch Screen Display models. Contact your local Simplex product supplier for the latest status and availability for other languages.

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Table 9: 4100ES Master Controller upgrades for existing 4100 series Fire Alarm Control Panels

Model	Panel type	Included
4100-7150	1000 pt 4100 (4100+)	New Master Controller CPU card, 4100ES door assembly with 2 x 40 LCD operator interface, and Ethernet connection
4100-7158	4100U or1000 pt 4100 (4100+) previously upgraded to 4100U	New Master Controller CPU card with Ethernet Connection Upgrade Kit (door assembly with user interface not included) for: 4100U with or without operator interface, or 4100+ and operator interface, or an existing 4100 (512 pt) or 4100+ (1,000 pt) panel that was previously upgraded to a 4100U Master Controller and operator interface
4100-7162	1000 pt 4100 (4100+)	New Master Controller CPU card, 4100ES door assembly with color ES Touch Screen Display user interface and Ethernet connection for 4100+ cabinet (requires 4100ES Version 6.01 or later)
4100-7163	4100+ cabinet upgraded with new Master Controller CPU card	4100ES door assembly with color ES Touch Screen Display user interface and Ethernet connection for 4100+ cabinet previously upgraded with New Master Controller CPU card (requires 4100ES Version 6.01 or later)
4100-7164	2000 pt 4100 (4100U)	New Master Controller CPU card, 4100ES door assembly with color ES Touch Screen Display user interface and Ethernet connection for 4100U cabinet (requires 4100ES Version 6.01 or higher)

Table 10: ES Touch Screen Display user interface upgrade kit

Model	Panel type	Description
4100-7165	4100ES or 4010ES	New ES Touch Screen Display user interface for upgrading an existing 4100ES 2x40 LCD or InfoAlarm user interface, or for upgrading an existing 4010ES InfoAlarm User Interface to a new ES Touch Screen Display user interface

Table 11: 4100ES Pre-Configured Bays

Model	Description	Included
4100-5208	1-bay, pre-configured panel with IDNet, 240 V	Same as 4100-9701 (see Table 8) with IDNet2 loop card, 220 V or 240 V power distribution module, and 240 V PDM harness. .
4100-5209	1-bay, pre-configured panel with ESMX, 240 V	Same as 4100-9701 (see Table 8) with ESMX loop card, 220 V or 240 V power distribution module, and 240 V PDM harness

Table 12: Master Controller accessories

Model	Description
4100-2300	Expansion Bay Assembly, order for each required expansion bay.
4100-2303	Legacy Module Stabilizer Bracket, used when expansion bays have legacy slot style modules
4100-2301	Expansion Bay upgrade kit for mounting 4100ES style (4 in. x 5 in. modules) in existing 4100 style panels **Note:** When using this kit to upgrade a 4100+ transponder, a 4100-0620 Transponder Interface Card (TIC) is also required for communications to the 4100ES module

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Selecting the module

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 NAC loads and all external loads powered from panel power supplies.

Table 13: Communication modules

Model	Description			Size	Supv.	Alarm
4100-1291	Un-isolated remote unit interface module (RUI), up to three maximum for each control panel			1 slot	85 mA	85 mA
4100-6031	Select one for each ES Power Supply (non power-limited)	City Circuit, with disconnect switches	For use only with ES-PS. Not for backup ES-PS or ES-XPS	1 block	20 mA	36 mA
4100-6032		City Circuit, without disconnect switches			20 mA	36 mA
4100-6033		Alarm Relay, three Form C relays, 2 A at 32 VDC			15 mA	37 mA
4100-6038	Dual Port RS-232 with 2120 interface (slot module)		Three maximum of RS-232 type modules for each panel	1 slot	132 mA	132 mA
4100-6048	VESDA Aspiration System Interface			1 slot	132 mA	132 mA
4100-6080	DACT, Point or Event Reporting. One shipped unless 4100-7908 is selected. Two max. for each system, includes two 2080-9047 cables, 14 ft (4.3 m) long, RJ45 plug and spade lugs.			side mount	30 mA	40 mA

Table 14: Redundant CPU ES net Conversion Kit

Model	Description	Includes
4100-7170	Redundant CPU ES net Conversion Kit **Note:** Compatible with 4100-9706 ES-PS Master Controller with ES Touch Screen Display	• NXP main CPU controller board • CPU switcher card assembly • Expansion bay assembly • Harnesses

Table 15: Connected Services Gateway with IP communicator

Model	Description	Size
4100-2504	Connected Services Gateway with IP communicator, side mount	1 slot
4100-2506	Connected Services Gateway with IP communicator, vertical mount	2 blocks

Table 16: ES power supplies

Model	Voltage	Description	Includes	Provides power to bay	Size	Supv.	Alarm
4100-5401	120 to 240 V 50/60 Hz	ES-PS	24 V Aux. Relay, 24 V Aux. Power 2 A Tap/ Simple NAC, 110 Ah Battery Charger, 2 PDI Blocks for compatible option cards.	Yes	2 blocks	68 mA	77 mA
4100-5402	120 to 240 V 50/60 Hz	ES-XPS	Same as ES-PS, except without battery charger	No			

Table 17: Power supply accessories

Model	Description	Size	Current
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 with loads
4100-5130	Voltage Regulator Module, 22.8 to 26.4 VDC (25 VDC nominal). Isolated and resettable output. Includes earth detection circuit and trouble relay for status monitoring.	1 block	3 A maximum with 2.5 A load, 4.9 A maximum with 4 A load
4100-5131	ES-PS Fan Module enables more than one power supply for installation in a single bay, and may increase total DC output power capacity for each power supply. See Table 7 for specifications.	N/A	0 mA Supv. 200 mA Alarm
4100-0636	Box Interconnection Harness Kit (non-audio). Order one for each close-nippled cabinet		
4100-0638	4100 Slot Module Additional 24 VDC Harness. This is needed when 4100 slot module requirements exceed 2 A from ES-PS		
4100-5403	Harness for ES-PS Backup Power Supply		
4100-0644	120 VAC PDM Harness	One PDM harness is required for each power supply, select as required for appropriate input voltage	
4100-0645	220 VAC PDM Harness		
4100-0646	230 VAC PDM Harness		
4100-0647	240 VAC PDM Harness		

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Table 18: Conventional and Addressable Notification Appliance Modules

Model	Description	Outputs	Size	Max load - special application		Max load - regulated 24 V		Current draw	
				On ES-PS / ES-XPS	In bay	On ES-PS / ES-XPS	In bay	Supv.	Alarm
4100-5450	Conventional NAC Module	Three 3 A NACs	1 block	3.0 A / NAC 9.0 A / Card	3.0 A / NAC 6.0 A / Card	2.0 A / NAC 5.0 A / Card	2.0 A / NAC 2.0 A / Card	66 mA	66 mA
4100-5451	IDNAC Addressable Notification SLC Module	Three 3 A SLCs	2 blocks. Only on ES Power Supply	3.0 A / NAC 9.0 A / Card	N/A	N/A		124 mA	230 mA

Note:

- Special Application specifications apply to both Special Application and Steady Aux Power loads during alarm operation. Available power during non-alarm operation is 5.0 A maximum.
- The 4100-5450 and 4100-5451 can only be powered from a 4100-5401 and 4100-5402 power supply.

Table 19: Dual Class A Isolator for IDNAC

Model	Description	Size	Supv.	Alarm
4100-6103	**Dual Class A IDNAC Isolator (DCAI)**: • Converts a single Class B IDNAC SLC input to two Class A SLC outputs • Provides short circuit isolation between each Class A output circuit • Connect up to two DCAI Modules for each IDNAC SLC input up to a maximum of 6 DCAI Modules for each IDNAC SLC • 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 • Each isolated loop supports up to 30 device addresses **Note:** You can install up to 30 additional device addresses between each 4905-9929 TrueAlert Addressable Isolator+ Module, not to exceed the maximum address and unit loading specifications for the IDNAC channel	1 block	8.3 mA	18.5 mA

Table 20: 8-Point Zone/Relay Card

Model	Description	Size	Supv.	Alarm
4100-5013	8 point zone/relay 4 in. x 5 in. flat module. Supports eight Class B or four Class A IDCs. Mounts in any open block in a Master Controller or expansion bay. Alarm current shown is for eight Class B IDCs using 3.3K end-of-line-resistors with four in alarm and four in standby. Standby current shown is for all eight IDCs in standby. Refer to 579-1236 Zone/Relay Module Installation Instructions for additional information.	1 block	83 mA	295 mA
4100-6305	25 V regulator harness for 8 point zone/relay module. One required for each 8 point zone/relay module to be powered by the 4100-5130 25 V regulator module. For each bay, the 4100-5130 can power a maximum of five 8 point zone/relay modules.	N/A	N/A	N/A

Note: Modules in Table 20 requires 4100ES Version 3.06 or later.

Table 21: IDNet-addressable interface modules

Model	Description	Devices	Standby	Alarm
4100-3109 4100-3117	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 ES-PS with IDNet 2 Module. Alarm currents for 50 or more devices includes 20 device LEDs in alarm.	none	50 mA	60 mA
		50	90 mA	150 mA
		125	150 mA	225 mA
		250	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, one block. Alarm currents for 50 or more devices includes 20 device LEDs in alarm.	none	50 mA	60 mA
		50	90 mA	150 mA
		125	150 mA	225 mA
		250	250 mA	350 mA
4100-3111	IDNet Short Circuit Isolating Loop Output Module. Mount up to two on a 4100-3109 or 4100-3117 module. This option is for aftermarket field installation only. Total initiating SLCs for each CPU, including VESDA Interface is 30.			

Note: 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.

Table 22: Current draw for each IDNet device

Condition	Current
Standby	0.8 mA
Alarm, with LED off	1.0 mA
Alarm, with LED on	3.0 mA
Note: A maximum of 20 devices with LED on is supported for each channel. Additional device LEDs do not turn on.	

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Table 23: MAPNET-addressable interface modules

Model	Description		Supervisory	Alarm
4100-3102	MAPNET II Module, 127 point capacity, add devices separately. Module size = 2 Slots. Loading for each MAPNET II device = 1.7 mA.	Module without devices	255 mA	275 mA
		Fully loaded module, total	471 mA	491 mA
4100-3103	Isolator Module for MAPNET II communications. This converts a single connected SLC into four isolated outputs selectable as Class A or Class B. You can connect up to two Isolator Modules to one SLC. Module size = 1 slot. **Note:** Compatible with MAPNET II Remote Isolators only		50 mA	50 mA

Table 24: Relay modules. Non power-limited for mounting in expansion bay only

Model	Description	Resistive ratings		Inductive ratings		Size	Supv.	Alarm
4100-3207	Four double-pole, double-throw (DPDT) switches with feedback	2 A	30 VDC or 30VAC	0.5 A	30 VDC or 120 VAC	1 block	18 mA	65 mA
4100-3208	Four double-pole, double-throw (DPDT) switches with feedback	10 A	30 VDC or 120 VAC or 240 VAC	10 A	30 VDC or 120 VAC or 240 VAC	2 slots	20 mA	188 mA
4100-3209	Eight single-pole, double-throw (SPDT) switches	3 A	30 VDC or 120 VAC	1.5 A	30 VDC or 120 VAC	1 block	16 mA	200 mA

Table 25: Miscellaneous accessories

Model	Description	
4100-1279	Single blank 2 in. display cover, 4100-2302 provides a single plate for a full bay	
4100-9856	4100ES Canadian French Appliqué Kit, Simplex, 4100ES, Contrôle Incendie	See note
4100-9857	4100ES English Appliqué Kit, Simplex, 4100ES, Fire Control	
4100-9858	4100ES InfoAlarm Remote Display English Appliqué Kit, Simplex, Operator Interface, 4100ES	
4100-9869	Special Purpose Appliqué Kit, Simplex, Sprinkler Waterflow and Supervisory Station, 4100ES	
4100-9835	Termination and Address Label Kit (for module marking), provides additional labels for field installed modules	
4100-6034	Tamper Switch, one for each 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 mm2), 2 1/2 in. L x 1 3/8 in. W x 1 in. H (64 mm x 35 mm x 25 mm)	

Note: 4100ES English Appliqués are included with 4100ES Upgrade and Retrofit Kits for mounting 4100ES in 4100, 2120, 2001, and Simplex back boxes so that upgrades can be easily identified as 4100ES. 4100ES Appliqué Kits are available for applications such as:

- to update Remote InfoAlarm Displays connected to a panel that was upgraded to 4100ES
- for an existing 4100U when the New Master Controller is upgraded to 4100ES and only a software upgrade is required

When required, French appliqués are ordered seperately.

Network Interface and Network Media Card product selection

4100ES FACUs are compatible with Simplex ES Net network or 4120 network fire alarm products.

- Refer to datasheet *S4100-0076* for additional information on compatible ES Net fire alarm products.
- Refer to datasheet *S4100-0056* for additional information on compatible 4120 fire alarm products.

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Additional 4100ES and network product reference

Table 26: Additional 4100ES and network product reference

Title	Datasheet
Serial DACT (SDACT) for 4100ES, 4010ES, 4007ES	*S2080-0009*
Connected Services Gateway - Central Station Communication and SafeLINC Cloud Services	*S2080-0091*
Battery and battery cabinet reference for 4100ES	*S2081-0006*
110 Ah batteries and cabinets for 4100ES	*S2081-0012*
4009 IDNet NAC Extender	*S4009-0002*
4009 IDNAC Repeater	*S4009-0004*
External 110 Ah battery charger for 4100ES, 4010ES	*S4081-0002*
IDNet Isolator2	*S4090-0017*
IDNet Isolator2 Base	*S4098-0026*
Graphic I/O modules for 4100ES, 4010ES, 4007ES	*S4100-0005*
Interface to VESDA Air Aspiration Detection Systems	*S4100-0026*
4100ES LED/Switch modules and printer	*S4100-0032*
Master Clock Interface	*S4100-0033*
4100ES enclosures	*S4100-0037*
4100ES Extinguishing Release Applications	*S4100-0040*
TFX Interface Module	*S4100-0042*
2120 BMUX Module	*S4100-0048*
Multiple signal fiber optic modems for 4120 networks	*S4100-0049*
BACpac Ethernet Module	*S4100-0051*
4120 network products and specifications	*S4100-0056*
Building network interface card (BNIC)	*S4100-0061*
SafeLINC Internet Interface	*S4100-0062*
Emergency Voice/Alarm communications equipment with ES-PS power supplies	*S4100-1034*
MINIPLEX transponders with ES-PS power supplies	*S4100-1035*
NDU with ES-PS power supplies for 4120 network	*S4100-1036*
4100ES remote annunciator panels with ES-PS power supplies	*S4100-1039*
Remote ES Touch Screen Displays for 4100ES and 4010ES panels	*S4100-1070*
ES Net network products and specifications	*S4100-0076*
NDU with ES-PS power supplies for ES Net	*S4100-1077*
TrueSite Workstation	*S4190-0016*
TrueSite Incident Commander	*S4190-0020*
Network system integrator (NSI) for ES Net and 4120 Networks	*S4190-0026*
24-pin dot matrix fire alarm system remote printer	*S4190-0027*
SCU/RCU annunciators for 4007ES, 4010ES, 4100ES	*S4602-0001*
LCD annunciator for 4100ES	*S4603-0001*

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