Simplex

4100ES Fire Control Panels

UL, ULC, CSFM Listed; FM Approved;
*MEA (NYC) Acceptance**

Addressable Fire Detection and Control
Basic Panel Modules and Accessories

Features

Master Controller (top) bay:

- 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 2500 addressable points
- CPU assembly includes 2 GB dedicated compact flash memory for on-site system programming and information storage
- System power supply (SPS) and charger (9 A total) with on-board: NACs, IDNet addressable device interface, programmable auxiliary output and alarm relay
- Available with InfoAlarm Command Center expanded content user interface (see data sheet S4100-0045)
- Upgrade kits are available for existing control panels

Standard addressable interfaces include:

- IDNet addressable device interface with 250 points that support TrueAlarm analog sensing and operate with *either shielded or unshielded* twisted pair wiring
- Remote annunciator module support via RUI (remote unit interface) communications port

Optional modules include:

- Building Network Interface Card (BNIC) for Ethernet connectivity options (see data sheet S4100-0061)
- Electrically isolated output IDNet 2 (two loop) and IDNet 2+2 (four loop) modules with short circuit isolation output loops allowing use with either shielded or unshielded, twisted or untwisted single pair wiring
- Fire Alarm Network Interfaces, DACTs, city connections, and up to five (5) RS-232 ports for printers and terminals
- IP communicator compatibility
- MAPNET II addressable device modules and MAPNET II quad isolator modules
- 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
- Emergency communications systems (ECS) equipment; 8 channel digital audio or 2 channel analog audio
- Battery brackets for seismic area protection (see page 2)
- 8-point zone/relay module, each point is selectable as an IDC input or relay output. Class A IDCs require 2 points (one out and one return). Relays rated for 2 A @ 30 VDC (resistive) and configurable as either normally open or normally closed.
- Compatible with Simplex® remotely located 4009 IDNet NAC Extenders, up to ten per IDNet SLC

4100ES and upgrade kits are UL Listed to:

- UL 864, Fire Detection and Control (UOJZ), and Smoke Control Service (UUKL)
- UL 2017, Process Management Equipment (QVAX)
- UL 1076, Proprietary Alarm Units-Burglar (APOU)
- UL 1730, Smoke Detector Monitor (UULH)
- UL 2572, Mass Notification Systems (PGWM)); refer to data sheet S4100-0034 for audio equipment
- ULC S527, Control Units for Fire Alarm Systems

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

Software Feature Summary

CPU provides dual configuration programs:

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

PC based programmer features:

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

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. InfoAlarm Command Center options provide convenient expanded display content (detailed on data sheet S4100-0045).

* See pages 5 and 6 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. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

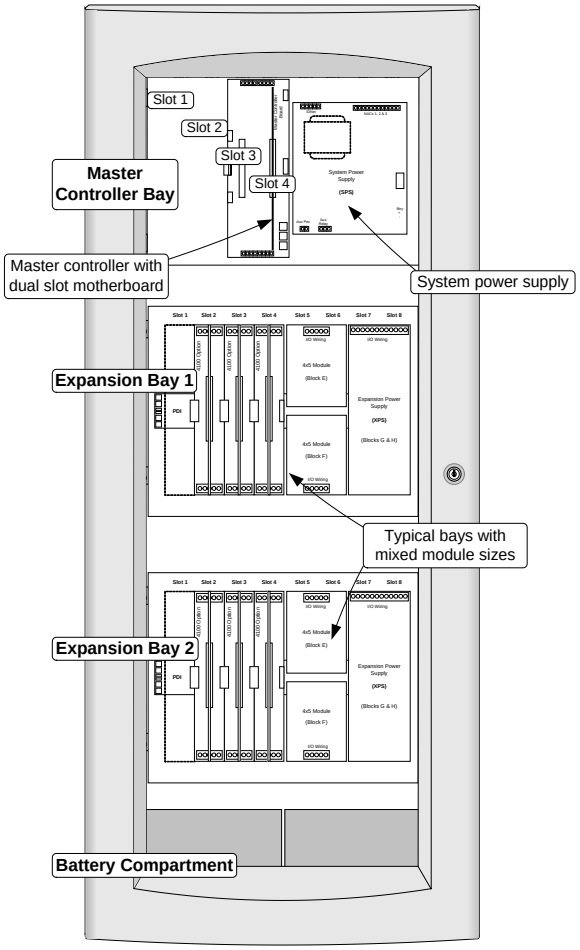
Module Bay Description

The Master Controller Bay (top) includes a standard multi-featured system power supply, the master controller board, and operator interface equipment.

The Expansion Bays include a Power Distribution Interface (PDI) for new 4" x 5" flat design option modules and also accommodate 4100-style modules.

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

The following illustration identifies bay locations using a three bay cabinet for reference.



4100ES Module Bay Reference

Mechanical Description

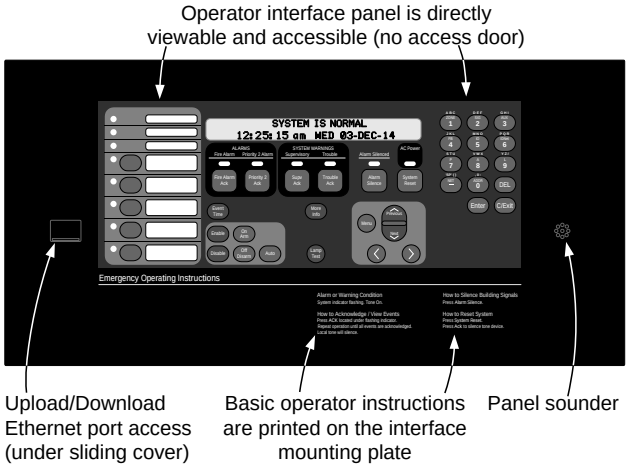
- Boxes can be close-nippled; each box provides convenient stud markers for drywall thickness and nail-hole knockouts for quicker mounting
- Smooth box surfaces are provided for locally cutting conduit entrance holes exactly where required
- Cabinet assembly design has been seismic tested and is certified 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

Mechanical Description *(Continued)*

- The latching dress panel (retainer) assembly easily lifts off for internal access
- NACs are mounted directly on power supply assemblies providing 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)
- 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 for details

Operator Interface Detail Reference

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



Software Feature Summary

- TrueAlarm individual analog sensing with front panel information and selection access
- "Dirty" TrueAlarm sensor maintenance alerts, service and status reports including "almost dirty"
- TrueAlarm magnet test indication appears as distinct "test abnormal" message on display when in test mode
- TrueAlarm sensor peak value performance report
- ***"Install Mode"*** allows grouping of multiple troubles for uninstalled modules and devices into a single trouble condition (typical with future phased expansion); with future equipment and devices grouped into a single trouble, operators can more clearly identify events from the commissioned and occupied areas
- Module level ground fault searching assists installation and service by locating and isolating modules with grounded wiring
- ***"Recurring Trouble Filtering"*** allows the 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

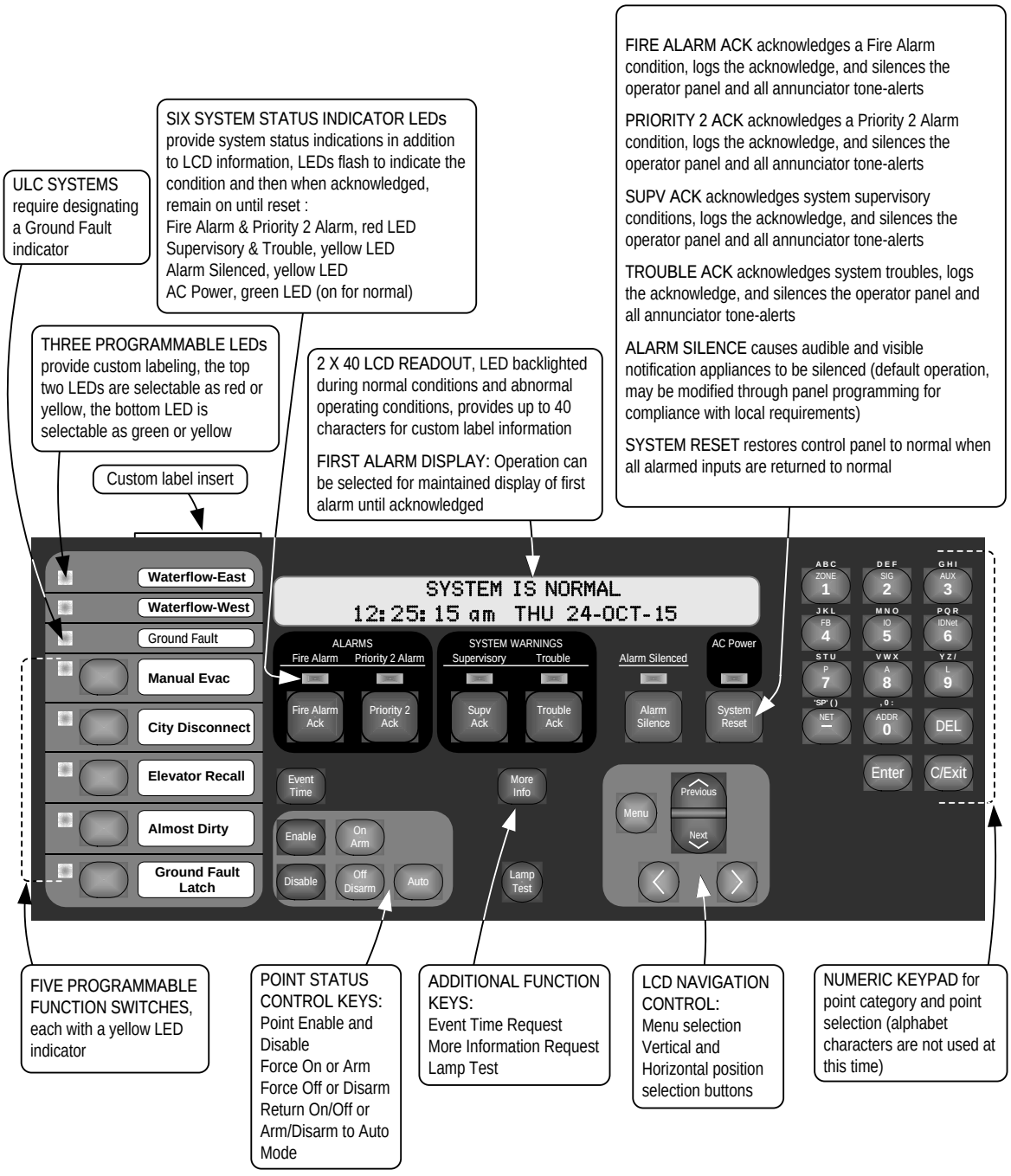
Operator Interface

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



Compatible Peripheral Devices

The 4100ES is compatible with an extensive list of remote peripheral devices including printers, CRT/keyboards (up to five total), and both conventional and addressable devices including TrueAlarm analog sensors.

Addressable Device Control

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, individual devices such as manual fire alarm stations, TrueAlarm sensors, conventional IDC zones, and sprinkler waterflow switches can be interfaced to the addressable controller to communicate their identity and status.

Addressability allows the location and condition of the connected device to be displayed on the operator interface LCD and on remote system annunciators. Additionally, control circuits (fans, dampers, etc.) may 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 operation 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 can be turned on steady from the panel.

IDNet Channel Capacity. The CPU bay system power supply (SPS) provides an IDNet signaling line circuit (SLC) that supports up to 250 addressable monitor and control points intermixed on the same pair of wires. Additional 250 point IDNet circuit modules are available, refer to IDNet 2 and IDNet 2+2 modules on page 7.

IDNet, MAPNET II, IDNet 2, and IDNet 2+2 SLC Wiring Common 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
Connections		Terminals for 18 to 12 AWG (0.82 mm^2 to 3.31 mm^2)
IDNet and MAPNET II Specifications		
Wire Type	Preferred	Shielded twisted pair (STP)
	Acceptable*	Unshielded twisted pair (UTP)
IDNet and MAPNET II Wiring, Total Wire Length Allowed With "T" Taps for Class B Wiring		Up to 10,000 ft (3 km); 0.58 µF
IDNet 2 and IDNet 2+2 Wiring Specifications		
Wire Type		Shielded or unshielded, twisted or untwisted wire*
Total Wire Length Allowed With "T" Taps for Class B Wiring		Up to 12,500 ft (3.8 km); 0.60 µF
Maximum Capacitance Between IDNet 2 Channels		1 µF
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.

True*Alarm* 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. 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 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 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 when end of life is reached.

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.

CPU Bay Module Details

Master Controller and Motherboard:

- Mounts in Slot 4 of a two slot motherboard (Slots 3 and 4 of the Master Controller Bay) and provides one Class B or Class A, RUI communications channel, available at Slot 4
- RUI communications controls up to 31 devices per master controller (on one or multiple RUI channels); devices include: MINIPLEX transponders, 4603-9101 LCD Annunciators, 4602-9101 Status Command Units (SCU), 4602-9102 Remote Command Units (RCU), 4602 Series LED Annunciator Panels, and 4100 Series 24 I/O and LED/Switch modules
- Up to four RUI channels are supported; use up to three 4100-1291 RUI expansion modules as required
- Optional Service Modem 4100-6030 mounts onto the master controller board with its own on-board connections
- Slot 3 of the motherboard is primarily for the 4100-6078 modular network interface card with media modules, and secondarily for the 4100-6038 dual RS-232 board (4100-6038 is required for 2120 system connections)

System Power Supply: (see page 9 for more detail)

- Rating is 9 A total with "Special Application" appliances; 4 A total for "Regulated 24 DC" appliance power
- Outputs are power-limited, except for the battery charger
- Provides system power, battery charging, auxiliary power, auxiliary relay, earth detection, on-board IDNet communications channel for 250 points, three on-board NACs, and provisions for either an optional City Connect Module or an optional Alarm Relay Module
- **IDNet SLC Output** provides Class B or Class A communications for up to 250 addressable devices (as described on page 4)
- Three, 3 A On-Board NACs, conventional reverse polarity operation; rated 3 A for Special Application appliances and 2 A for Regulated 24 DC power, with electronic control and overcurrent protection; selectable as Class B or Class A, and for synchronized strobe or SmartSync horn/strobe operation over two wires
- NACs can be selected as auxiliary power outputs derated to 2 A for continuous duty; the total auxiliary power output per SPS is limited to 5 A

System Power Supply *(Continued)*:

- **Battery Charger** is dual rate, temperature compensated, and charges up to 50 Ah sealed lead-acid batteries mounted in the battery compartment (33 Ah for single bay cabinets); also is UL listed for charging up to 110 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 NAC currents
- **2 A Auxiliary Power Output** is selectable for detector reset, door holder, or coded output operation
- **Auxiliary Relay** is selectable as N.O. or N.C., rated 2 A @ 32 VDC, 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
- **Optional Alarm Relay Module** (4100-6033) provides three Form C relays that are used for Alarm, Trouble, and Supervisory, rated 2 A resistive @ 32 VDC

8-Point Zone/Relay Module Details:

- **Select as IDC or Relay**; configure up to 8, Class B IDCs, or up to 4, Class A IDCs; or up to 8, Relay outputs rated 2 A resistive @ 30 VDC (N.O. or N.C.); or combinations of IDCs and Relays; each zone is separately configurable as an IDC or Relay output
- **IDC Support**. Each IDC supports up to 30, two-wire devices. Zone relay modules may be powered directly from the control unit power supply or through the optional 25 VDC regulator module where required for 2-wire detector compatibility (refer to 2-Wire Detector Compatibility document 579-832 for additional details).
- **IDC EOL resistor values are selectable as:** 3.3 kΩ, 2 kΩ, 2.2 kΩ, 3.4 kΩ, 3.9 kΩ, 4.7 kΩ, 5.1 kΩ, 5.6 kΩ, 6.34/6.8 kΩ, and 3.6 kΩ + 1.1 kΩ; see instructions for more details

Master Controller Selection Information

4100ES Master Controller and Expansion Bay Selection* (Canadian models have low battery cutout)

Model	Model Type and Listing			Description	Supv.**	Alarm**
4100-9111	120 VAC Input		UL	4100ES Master Controller Assembly **with LCD and operator interface**, 9 A system power supply/battery charger (SPS), 250 point IDNet interface, 3 NACs, auxiliary relay, and external RUI communications interface	373 mA	470 mA
4100-9112	English	120 VAC, Canadian	ULC			
4100-9113	French					
4100-9211	220-240 VAC Input		UL			
4100-9131	120 VAC Input		UL	4100ES Master Controller Assembly, **no display, no operator interface**, 9 A system power supply/battery charger (SPS), 250 point IDNet interface, 3 NACs, auxiliary relay, and external RUI communications interface	363 mA	425 mA
4100-9132	English, 120 VAC, Canadian		ULC			
4100-9230	220-240 VAC Input		UL			
4100-9121 (not ULC listed)	Redundant Master Controller with a two bay assembly, one for each of the primary and backup master controllers. Both bays have an LCD and operator interface, CPU card assembly, and 9 A system power supply (SPS) 120 VAC, 60 Hz input. Active SPS battery charger in Bay 1 only. External RUI connections require 4100-1291 RUI expansion modules. **Do not use circuit connections (IDNet, NACs, etc.) on primary and secondary SPS power supplies.**				718 mA	937 mA

* For InfoAlarm Command Center expanded content display products, refer to data sheet S4100-0045.

** Note: Master Controller current does not subtract from 9 A output rating.

(Continued on next page)

Master Controller Selection Information *(Continued)*

4100ES Master Controller Upgrades for Existing 4100 Series Fire Alarm Control Panels*

Model	Panel Type	Includes
4100-7150	1000 pt 4100 (4100+)	New Master Controller CPU card, 4100ES door assembly with LCD and user interface, and Ethernet connection
4100-7152	512 pt 4100	Same as 4100-7150 plus a Universal Power Supply
4100-7158	4100U **or** 1000 pt 4100 (4100+) **previously upgraded** to 4100U	New Master Controller CPU card with Ethernet Connection Upgrade Kit **(door assembly with LCD and user interface are not included)** for: • 4100U **with or without** LCD and operator interface, **or** • 4100+ **without** LCD and operator interface, **or** • An existing 4100 (512 pt) or 4100+ (1000 pt) panel that was previously **upgraded** to a 4100U Master Controller and Display

* For InfoAlarm Command Center expanded content display products, refer to data sheet S4100-0045.
** Note: Master Controller current does not subtract from 9 A output rating.

Master Controller Accessories

4100-2300	Expansion Bay Assembly; **order for each required expansion bay** (not required for 4100-9121)
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" x 5" 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

Master Controller Upgrades for Existing 4020 Series Fire Alarm Control Panel

Model	Description
4100-9833	4020 Master Controller Upgrade to 4100ES; Includes New Master Controller with LCD & operator interface assembly, 8 VDC Converter and RUI Interface in a single bay cabinet with locking glass door and retainer; mounts as an adjunct panel close-nippled to existing 4020 cabinet; also includes 8 VDC box-to-box power and communications harness and solid filler panel for the existing 4020 Master Controller bay

Module Selection Information

Communication Modules

Model	Description			Size	Supv.	Alarm
4100-6078	For Master Controller; mounts in Slot 3	Modular network interface card; Class B or Class X (requires up to two media cards ordered separately, see below)		1 Slot	46 mA	46 mA
4100-6061	For Redundant Master Controller			1 Slot	46 mA	46 mA
4100-6056	Wired Network media card	Mounts on 4100-6078 or 4100-6061 modular network interface card. Maximum of 2 media cards per modular network interface card.		N.A.	55 mA	55 mA
4100-6301	Left port, single-mode 4120 duplex fiber media card	Mounts on 4100-6078 or 4100-6061 modular network interface card. Maximum of 1 left port and 1 right port duplex fiber media card per modular network interface card. Field connections require left port to right port pairing. Order fiber media service kits for retrofit jobs where ST connectors are already installed (refer to data sheet S4100-0056 for full fiber media module specifications and retrofit information)		N.A.	55 mA	55 mA
4100-6302	Right port, single-mode 4120 duplex fiber media card			N.A.	55 mA	55 mA
4100-6303	Left port, multi-mode 4120 duplex fiber media card			N.A.	55 mA	55 mA
4100-6304	Right port, multi-mode 4120 duplex fiber media card			N.A.	55 mA	55 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 modular network interface card, requires telephone line connection			N.A.	60 mA	60 mA
4100-1291	Remote Unit Interface Module (RUI); up to three maximum per control panel			1 Slot	85 mA	85 mA
4100-6030	Service Port Modem, local panel access only, mounts to Master Controller Module, requires telephone line connection, accesses same information as front panel port			N.A.	70 mA	70 mA
4100-6031	**Select one per SPS** (fits on SPS)	City Circuit, with disconnect switches	For use with SPS only, not RPS	N.A.	20 mA	36 mA
4100-6032		City Circuit, w/o disconnect switches		N.A.	20 mA	36 mA
4100-6033		Alarm Relay, 3 Form C relays, 2 A @ 32 VDC; for SPS or RPS		N.A.	15 mA	37 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
4100-6038	Dual Port RS-232 with 2120 interface (slot module)		3 maximum of RS-232 type modules per panel	1 Slot	132 mA	132 mA
4100-6046	Dual Port RS-232 standard interface (4 x 5 module)			1 Block	60 mA	60 mA
4100-6045	Decoder Module			3 Slots	85 mA	163 mA
4100-6048	VESDA Aspiration System Interface			1 Slot	132 mA	132 mA
4100-6052	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			1 Slot	30 mA	40 mA

Module Selection Information *(Continued)*

Expansion, System and Remote Power Supplies and Accessories (Canadian models have low battery cutout)

Model	Voltage/Listing		Description	Size	Supv.	Alarm
4100-5101	120 VAC	UL	**Expansion Power Supply (XPS)**; 9 A output, 3 built-in Class A/B NACs; NAC operation is same as SPS, see page 5 for details	2 Blocks	50 mA	50 mA
4100-5103	120 VAC, Canadian	ULC				
4100-5102	220-240 VAC	UL				
4100-5115	NAC Expansion Module, 3 NACs, Class A/B, **mounts on XPS only**			N.A.	25 mA	25 mA
4100-5111	120 VAC	UL	**Additional System Power Supply (SPS)**; 9 A power supply/charger with 250 point IDNet channel, 3 Class A/B NACs, add IDNet device currents separately	4 Blocks	175 mA	185 mA
4100-5112	120 VAC, Canadian	ULC				
4100-5113	220-240 VAC	UL				
4100-5125	120 VAC	UL	**Remote Power Supply (RPS)**; 9 A power supply/charger similar to SPS except no IDNet channel or City Circuits; will accept one 4100-6033	4 Blocks	150 mA	185 mA
4100-5126	120 VAC, Canadian	ULC				
4100-5127	220-240 VAC	UL				

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 w/loads
4100-5130	Voltage Regulator Module, 22.8 to 26.4 VDC (25VDC 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
4100-0636	Box Interconnection Harness Kit (non-audio); **order one for each close-nippled cabinet**		
4100-0638	4100 Slot Module Additional 24 VDC Harness; **need when 4100 Slot module requirements exceed 2 A from SPS**		

8 Zone Initiating Device Circuits*

Model	Type	Supv.	Alarm
4100-5005	Class B	75 mA	195 mA
4100-5015	Class A	75 mA	195 mA

* IDC Modules are 1 Slot size

Expansion Signal Module and Options (1.5 A Class B except as noted)

Model	Description		Supv.	Alarm
4100-5116	Converts 1 NAC in to 3 NACs out; 1 Block size		18 mA	80 mA
4100-1266	Expands 3 NACs to 6	select one; mounts on 4100-5116	0.6 mA	60 mA
4100-1267	Converts 3 NACs to Class A		0.6 mA	30 mA

Module Selection Information *(Continued)*

8-Point Zone/Relay Card

Model	Description	Size	Supv.	Alarm
4100-5013	8 point zone/relay 4x5" flat module. Mounts in any open block in a master controller or expansion bay. Alarm current shown is for 8 Class B IDCs using 3.3K end-of-line-resistors with 4 in alarm and 4 in standby. Standby current shown is for all 8 IDCs in standby. Refer to 579-1236 Zone/Relay Module Installation Instructions for additional information.	1 block	83 mA	351 mA
4100-6305	25V regulator harness for 8 point zone/relay module. One required for each 8 point zone/relay module to be powered by the 4100-5130 25V regulator module. A maximum of (5) 8 point zone/relay modules may be powered from the 4100-5130 per bay.	N/A	N/A	N/A

Addressable Interface Modules (refer to location reference on pages 8 and 9)

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; this option is for aftermarket field installation only			

***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.

Model	Description		Supv.	Alarm
4100-3102	MAPNET II Module, 127 point capacity, add devices separately; Module size = 2 Slots; Loading per 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**; converts a single connected SLC into four isolated outputs selectable as Class A or Class B; up to two Isolator Modules can be connected to one SLC; Module size = 1 Slot; **NOTE:** Compatible with MAPNET II Remote Isolators only		50 mA	50 mA

Relay Modules; Nonpower-limited (for mounting in expansion bay only, refer to location reference on pages 8 and 9)

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

System Option for Seismic Compliance

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

Current Calculation Notes:

1. To determine total supervisory current, add currents of modules in panel to base system value **and** all external loads powered by panel power supplies.
2. 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.

Continued on next page

Module Selection Information *(Continued)*

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)

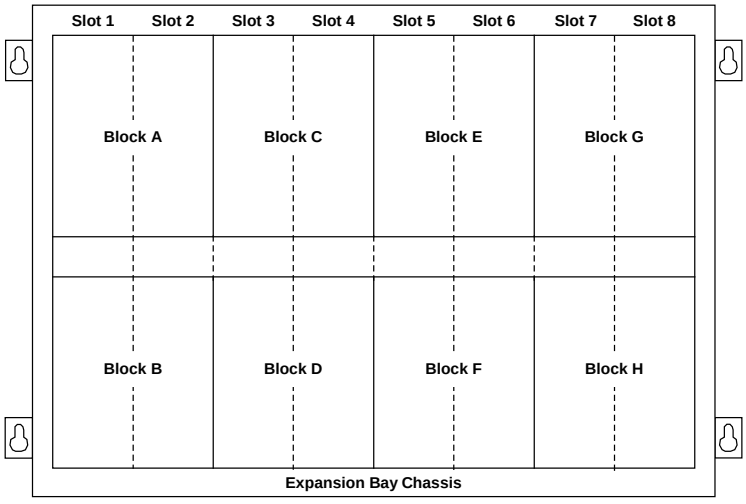
Model	Description
4100-0292	Custom Labels Editing; allows editing of 40 Character Custom Labels for non-system user points
4100-0296	Access Level/Passcode Editing; allows user to re-assign Access Levels and Passcodes for each display function; Acknowledge, Alarm Silence, System Reset, Point Enable/Disable, 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
4100-9856*	4100ES Canadian French Appliqué Kit; Simplex, 4100ES, Contrôle Incendie
4100-9857*	4100ES English Appliqué Kit; Simplex, 4100ES, Fire Control
4100-9858*	4100ES InfoAlarm Remote Display English Appliqué Kit; Simplex, Operator Interface, 4100ES
4100-9859*	4100ES InfoAlarm Remote Display Canadian French Appliqué Kit; Simplex, Interface de l’operateur, 4100ES
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
4100-9835	Termination and Address Label Kit (for module marking); provides additional labels for field installed modules
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)

*** Note:** 4100ES **English** Appliqués are included with 4100ES Upgrade and Retrofit Kits for mounting 4100ES in 4100, 2120, 2001, and Autocall 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 or 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 separately.**

Expansion Bay Module Loading Reference



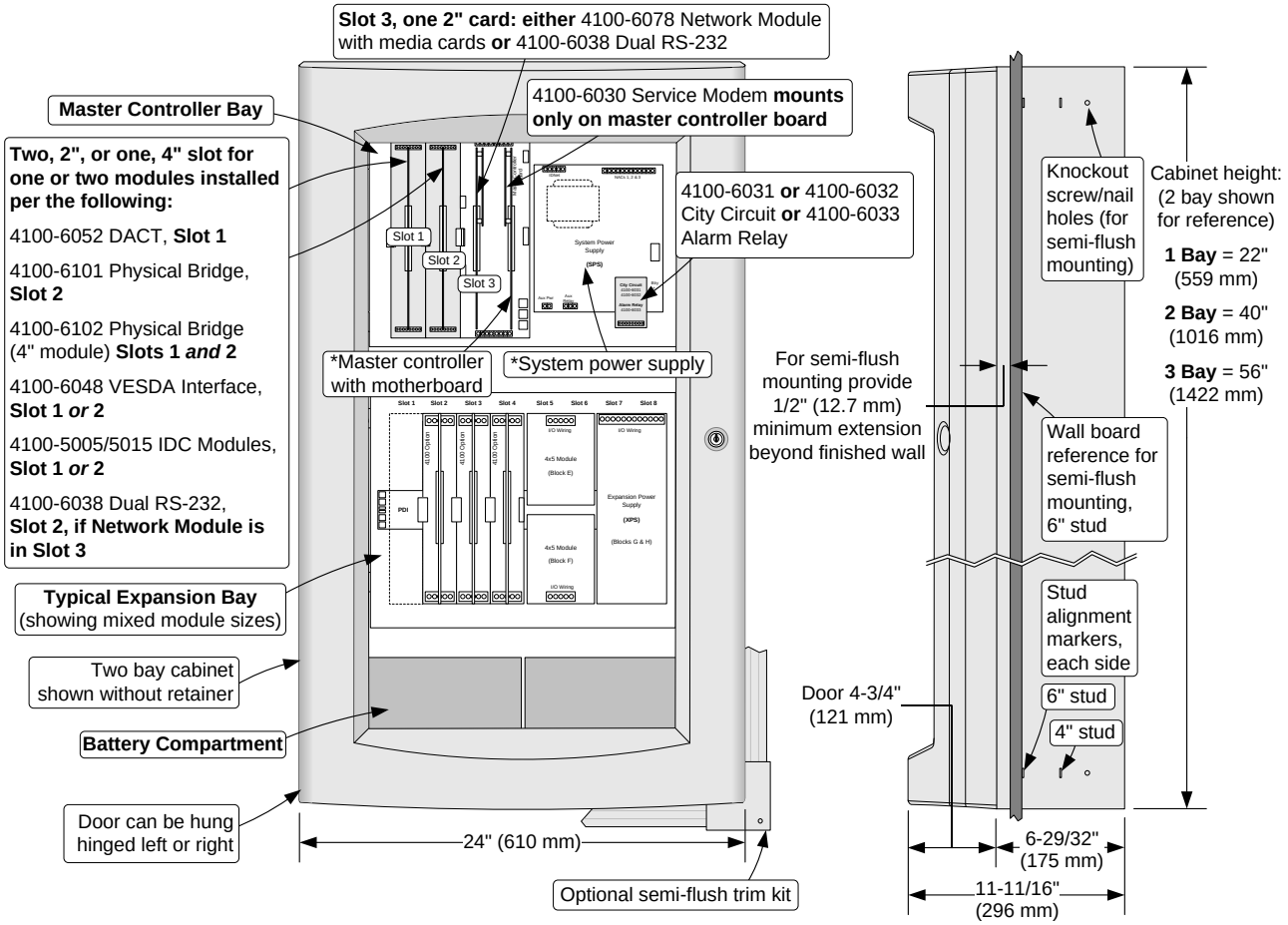
Size Definitions: Block = 4” W x 5” H (102 mm x 127 mm) card area
Slot = 2” W x 8” H (51 mm x 203 mm) motherboard with daughter card

Description		Mounting
IDNet 2, IDNet 2+2 Modules		1 Block
4, 2 A Relays	**NON Power-limited**	1 block
4, 10 A Relays		4”, 2 slots
8, 3 A Relays		1 block
VESDA Interface		2”, 1 Slot
Class B IDC		2”, 1 Slot
Class A IDC		2”, 1 Slot
MAPNET II Module		4”, 2 Slots
MAPNET II/IDNet Isolator		2”, 1 Slot
Class B Physical Bridge		2”, 1 Slot
Class X Physical Bridge		4”, 2 Slots
Decoder Module		6”, 3 Slots
System or Remote Power Supply		Blocks E, F, G & H ONLY
Expansion Power Supply		Blocks G & H ONLY
NAC Expansion Module		On XPS ONLY

General Specifications

Input Power	System Power Supplies (SPS) Expansion Power Supplies (XPS) Remote Power Supplies (RPS)	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 SPS, XPS, and RPS (nominal 28 VDC on AC; 24 VDC on battery backup)	Total Power Supply Output Rating	**Including module currents and auxiliary power outputs;** 9 A total for "Special Application" appliances; 4 A total for "Regulated 24 DC" power (see below for details)		Output switches to battery backup during mains AC failure or brownout conditions
	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			
Battery Charger Ratings for SPS and RPS (sealed lead-acid batteries)	Battery capacity range	UL listed for battery charging of 6.2 Ah up to 110 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		
Environmental	Operating Temperature	32° to 120°F (0° to 49° C)		
	Operating Humidity	Up to 93% RH, non-condensing @ 90° F (32° C) maximum		
Additional Technical Reference	Installation Instructions	574-848		
	Operating Instructions	579-197		

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.

Additional 4100ES Data Sheet Reference

Subject	Data Sheet	Subject	Data Sheet
Introducing the 4100ES	S4100-0060	Agent Release Applications	S4100-0040
4100ES Enclosures	S4100-0037	Fire Alarm Network Overview	S4100-0055
4100ES Control Panels with EPS+ Power Supplies for TrueAlert Addressable Notification	S4100-0100	Network Communications	S4100-0056
		Network Display Unit (NDU)	S4100-0036
4100ES Audio and Firefighter Phone Modules	S4100-0034	Network Physical Bridge	S4100-0057
LED/Switch Modules & Printer	S4100-0032	TCP/IP Physical Bridge Modules	S4100-0029
Remote Annunciators	S4100-0038	Addressable Device Compatibility	S4090-0011
MINIPLEX Transponders	S4100-0035	Remote Battery Charger	S4081-0002
Building Network Interface (BNIC)	S4100-0061	TFX Interface Module	S4100-0042
InfoAlarm Command Center	S4100-0045	Master Clock Interface	S4100-0033
Graphic I/O Modules	S4100-0005	2120 BMUX Module	S4100-0048
SafeLINC Internet Interface	S4100-0062	TrueInsight Remote Service	S4100-0063