

Features

Master Controller (top) bay:

- 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 2000 addressable points
- CPU assembly includes dedicated compact flash memory for on-site system 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 Module (BNIC) for Ethernet connectivity options (see data sheet S4100-0061)
- TrueAlert® addressable notification appliance power supplies with three, 3 A SLC outputs
- Additional IDNet and MAPNET II® addressable device modules and IDNet/MAPNET II quad isolator modules
- IDNet+ output module with built-in quad isolator and enhanced operation for better retrofit to existing wiring (see data sheet S4100-0046)
- Fire Alarm Network Interfaces, DACTs, city connections, and up to five (5) RS-232 ports for printers and terminals
- IP communicator compatibility
- 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)

Compatible with Simplex® remotely located:

- 4009 IDNet NAC Extenders, up to ten per IDNet SLC
- TrueAlert Addressable Controllers

4100ES and upgrade kits are UL Listed to:

- UL Std. 864, Fire Detection and Control (UOJZ), and Smoke Control Service (UUKL)
- UL Std. 2017, Process Management Equipment (QVAX)
- UL Std. 1076, Proprietary Alarm Units-Burglar (APOU)
- UL Std. 1730, Smoke Detector Monitor (UULH)
- ULC Std. S527-99



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 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 approved 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 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. 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 Safety Products Westminster.

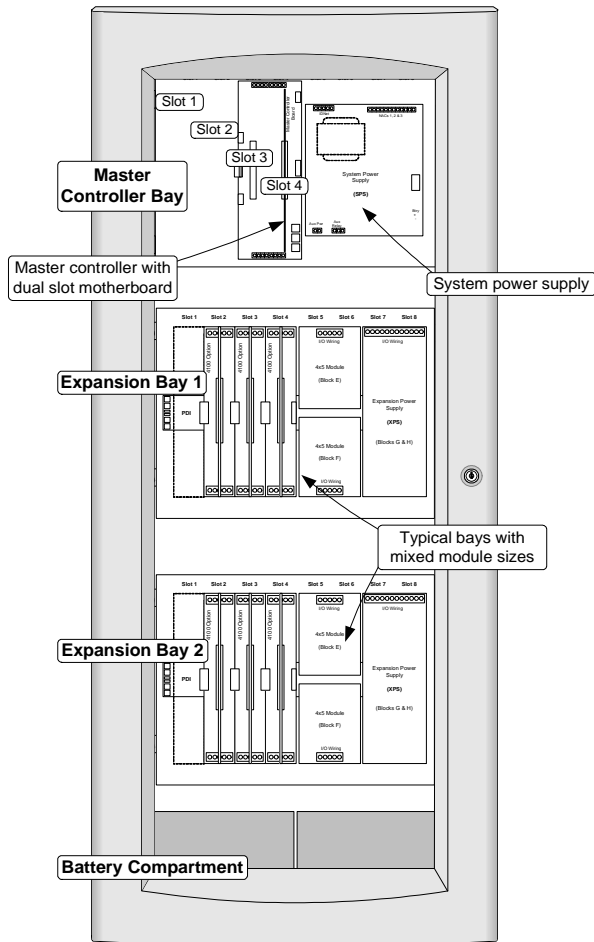
Module Bay Description

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

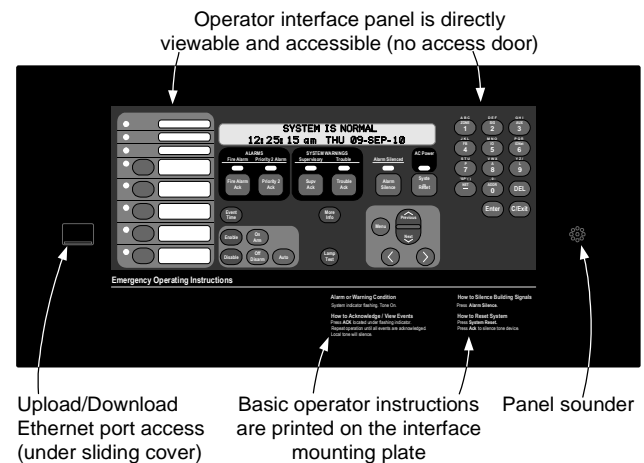
- Boxes can be close-nipped; each box provides convenient stud markers for drywall thickness and nail-hole knockouts for quicker mounting
- Smooth box surfaces are provided for locally cutting conduit entrance holes exactly where required
- Cabinet assembly design has been seismic tested and is certified to IBC and CBC standards as well as to ASCE 7-05 category D, requires 33 Ah or 50 Ah batteries with 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 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

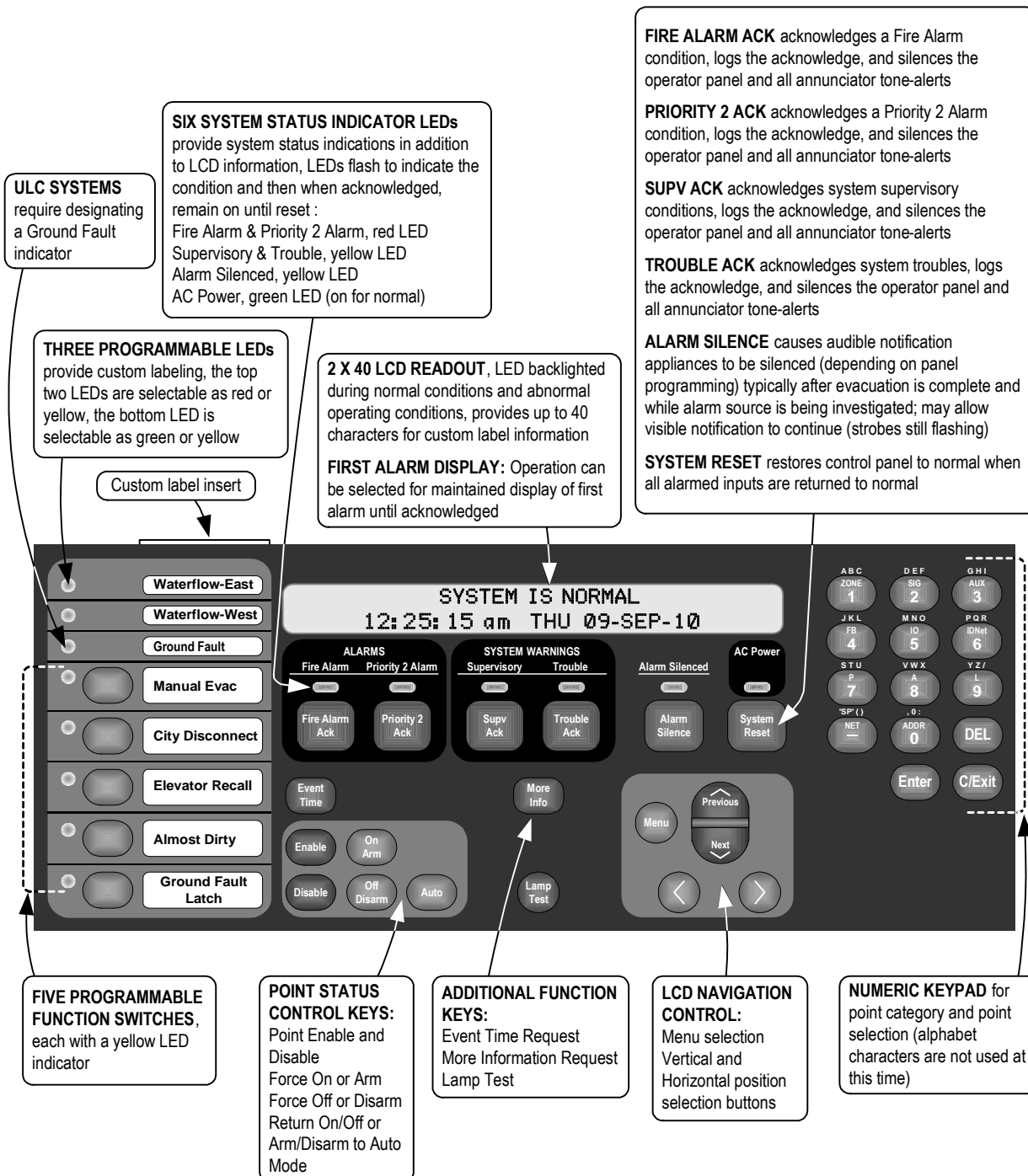
Operator Interface

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 1300 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 IDNet circuit modules are available for 64, 127, or 250 addressable devices.

IDNet/MAPNET II Communications wiring specifications. Distances are for shielded or unshielded wire. Shielded wire may provide protection from unexpected sources of interference.

Wiring Specifications

Size		18 AWG (0.82 mm ²)
Type	Preferred	Shielded twisted pair (STP)
	Acceptable*	Unshielded twisted pair (UTP)
Farthest Distance from Control Panel per Device load	126-250	Up to 2500 feet (762 m)
	up to 125	Up to 4000 ft (1219 m)
Total Wire Length Allowed With "T" Taps for Class B Wiring		Up to 10,000 ft (3 km); 0.58 μ F

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

TrueAlert Addressable Notification

TrueAlert Power Supplies provides three, 3 A Signaling Line Circuits (SLCs) for controlling and powering addressable notification appliances. With addressable appliances, Class B wiring can be "T-tapped" for easier wiring and reduced wire run lengths. Appliances include horns, strobes, and combination units. For more detail, refer to data sheet S4009-0003.

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. 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 S4098-0041 for details)

TrueAlarm heat sensors can be selected for fixed temperature detection, with or without rate-of-rise detection. Utility temperature sensing is also available, typically to provide freeze warnings or alert to HVAC system problems. Readings can be selected as either Fahrenheit or Celsius.

TrueSense® Early Fire Detection. Multi-sensor 4098-9754 provides photoelectric and heat sensor data using a single 4100ES IDNet address. The panel evaluates smoke activity, heat activity, **and their combination**, to provide TrueSense early detection. For more details on this operation, refer to data sheet S4098-0024.

Diagnostics and Default Device Type

Sensor Status. TrueAlarm operation allows the control panel to automatically indicate when a sensor is almost dirty, dirty, and excessively dirty. The NFPA 72 requirement for a test of the sensitivity range of the sensors is fulfilled by the ability of TrueAlarm operation to maintain the sensitivity level of each sensor. CO Sensors track their 5 year active life status providing indicators to assist with service planning. Indicators occur at: 1 year, 6 months, and 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 Style 4 or Style 7, 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, 4100 Series 24 I/O and LED/Switch modules, and remote mount 4009 TPS units
- 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 4100-6014 Network Interface Board 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 8 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)

Master Controller Selection Information

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		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		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
4100-9133	French					
4100-9230	220-240 VAC Input					UL
4100-9121 (not ULC listed)	Redundant Master Controller, two bay assembly; top bay contains LCD and operator interface, CPU card assembly, and 4100ES, 9 A system power supply/battery charger (SPS); second bay contains CPU card in Slot 2, and LCD and operator interface; 120 VAC, 60 Hz input; NOTE: RUI connections require use of 4100-1291 RUI expansion modules			718 mA	937 mA	
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					

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

Model	Panel Type	Includes
4100-7150	1000 pt 4100 (4100+)	New Master Controller and 4100ES user interface door assembly with Ethernet connection
4100-7152	512 pt 4100	Same as 4190-7150 plus includes a Universal Power Supply
4100-7158	1000 pt 4100 (4100+) or 4100ES	New Master Controller with Ethernet Connection Upgrade Kit; uses existing 4100ES user interface; for 4100+ without LCD
4100-2301	Expansion Bay Upgrade Kit for mounting 4100ES style (4" x 5" modules) in existing 4100 style panels	

Master Controller Upgrades for Existing 4020 Series Fire Alarm Control Panel

Model	Description
4100-9833	4020 Master Controller Upgrade with LCD & operator interface assembly; mounts as an adjunct panel; single bay cabinet with locking glass door and retainer

System Power Supply (Continued):

- 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
- 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

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

Module Selection Information

Communication Modules

Model	Description		Size	Supv.	Alarm	
4100-6014	For Master Controller; mounts in Slot 3		1 Slot	46 mA	46 mA	
4100-6061	For Redundant Master Controller		1 Slot	46 mA	46 mA	
4100-6056	Wired Media Module	Select two media cards as required; mounts on 4100-6014 or 4100-6061	N.A.	55 mA	55 mA	
4100-6057	Fiber Optic Media Module		N.A.	25 mA	25 mA	
4100-6047	Building Network Interface Card (BNIC), refer to data sheet S4100-0061 for details		2 Blocks	291 mA	291 mA	
4100-6055	Network Access Dial-in Service Modem, mounts to 4100-6014 or 4100-6061 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
4100-6036	Physical Bridge, Class B, includes 1 modem module and 2 wired modules		1 Slot	210 mA	210 mA	
4100-6037	Physical Bridge, Class A, 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	

Expansion, System, Remote, and TrueAlert 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				
4100-5120	120 VAC	UL	TrueAlert Power Supply (TPS); 3 Class B SLCs rated 3 A each for up to 63 TrueAlert addressable (special application) appliances per channel, 189 per TPS; built-in battery charger; 2 A aux. power output; add device current separately (see S4009-0003 for details)	4 Blocks	88 mA	100 mA
4100-5121	120 VAC, Canadian	ULC				
4100-5122	220-240 VAC	UL				
4100-5124	TrueAlert SLC Class A Adapter for all 3 SLCs, mounts on TPS only			N.A.	10 mA	10 mA
4100-5152	12 VDC Power Option, 2 A maximum			1 Block	1.5 A maximum	
4100-0156	8 VDC Converter, required for multiple Physical Bridge Modules, 3 A maximum			1 Block	included w/loads	
4009-9813	4009 TPS Transponder Interface Card (TIC), mounts in a remote cabinet with TPS; order card, TPS, and batteries separately, and select a 2975-9229 (red) or 2975-9230 (beige) cabinet (field installed); refer to data sheet S4100-0037 for cabinet detail; Supervisory and Alarm current = 87 mA					
4100-0636	Box Interconnection Harness Kit (non-audio); order one for each close-nipped cabinet					
4100-0638	4100 Slot Module Additional 24 VDC Harness; need when 4100 Slot module requirements exceed 2 A from SPS					

8 Zone Initiating Device Circuits*

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

Model	Type	Supv.	Alarm	Model	Description	Supv.	Alarm
4100-5005	Class B	75 mA	195 mA	4100-5116	Converts 1 NAC in to 3 NACs out; 1 Block size	18 mA	80 mA
4100-5015	Class A	75 mA	195 mA	4100-1266	Expands 3 NACs to 6	select one; mounts on 4100-5116	0.6 mA
* IDC Modules are 1 Slot size				4100-1267	Converts 3 NACs to Class A		0.6 mA

Continued on next page

Module Selection Information (Continued)

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, English; 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'opérateur, 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 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.

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

Model	Description	Supv.	Alarm
4100-3101	IDNet Module, 250 point capacity With 250 IDNet devices, add	200 mA	250 mA
4100-3104	IDNet Module, 127 point capacity With 127 IDNet devices, add	102 mA	127 mA
4100-3105	IDNet Module, 64 point capacity With 64 IDNet devices, add	51 mA	64 mA
IDNet Modules, Specifications for each capacity; Module size = 1 Block		Module without devices	75 mA
		Loading per IDNet device	0.8 mA
			1 mA
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
		Fully loaded module, total	471 mA
			491 mA
4100-3103	Isolator Module for MAPNET II or IDNet ; 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; for quad isolation with IDNet Remote Isolators, use 4100-3107 IDNet+ Module (see data sheet S4100-0046 for details)	50 mA	50 mA

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

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

Current Calculation Notes:

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

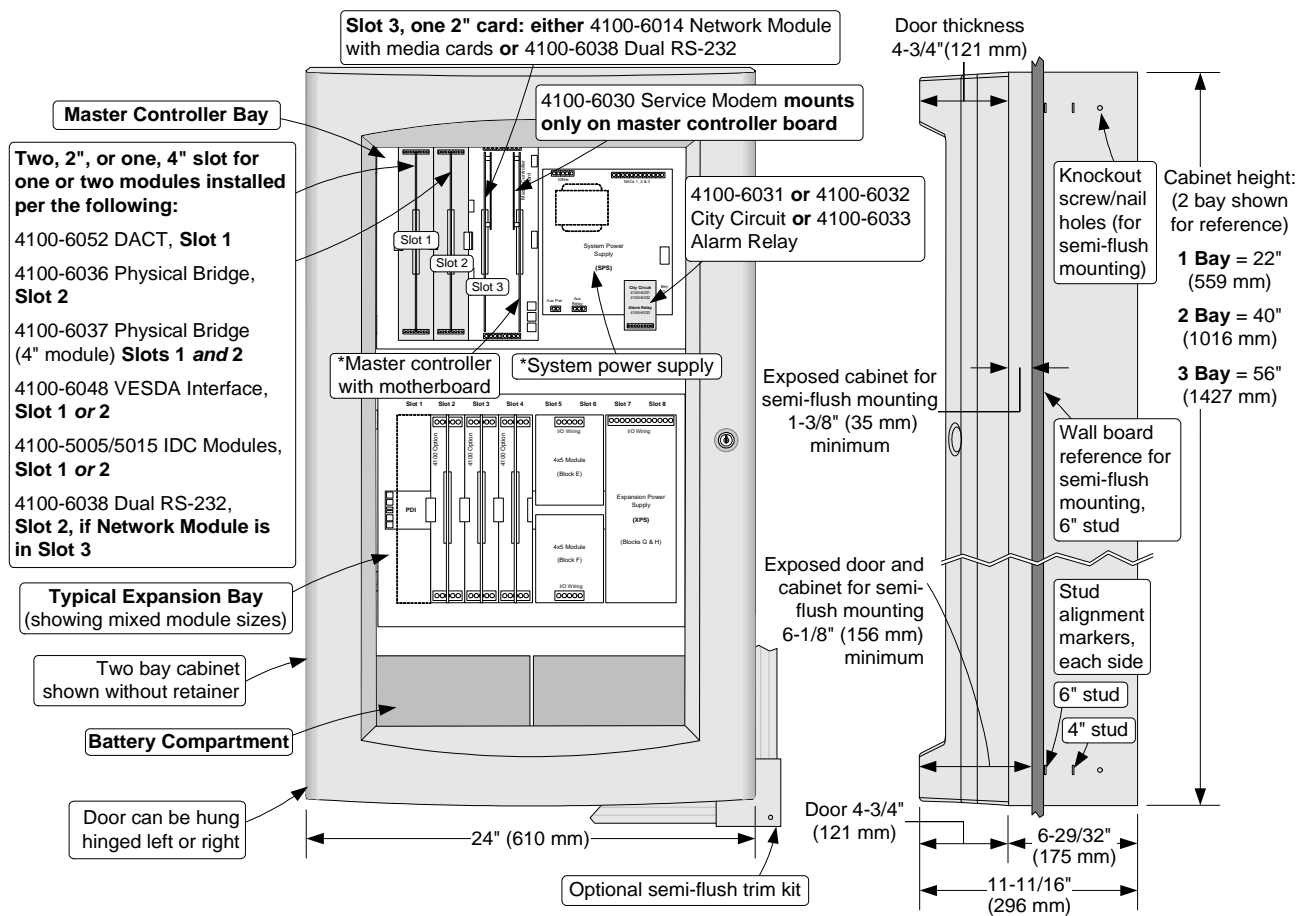
General Specifications

Input Power	System Power Supplies (SPS)	120 VAC Models	4 A maximum @ 102 to 132 VAC, 60 Hz	
	Expansion Power Supplies (XPS) Remote Power Supplies (RPS) TrueAlert Power Supplies (TPS)	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 4901, 4903, 4904, and 4906 Series 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, RPS and TPS (sealed lead-acid batteries)	Battery capacity range	UL listed for battery charging of 6.2 Ah up to 110 Ah (110 Ah batteries 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 4100ES Data Sheet Reference

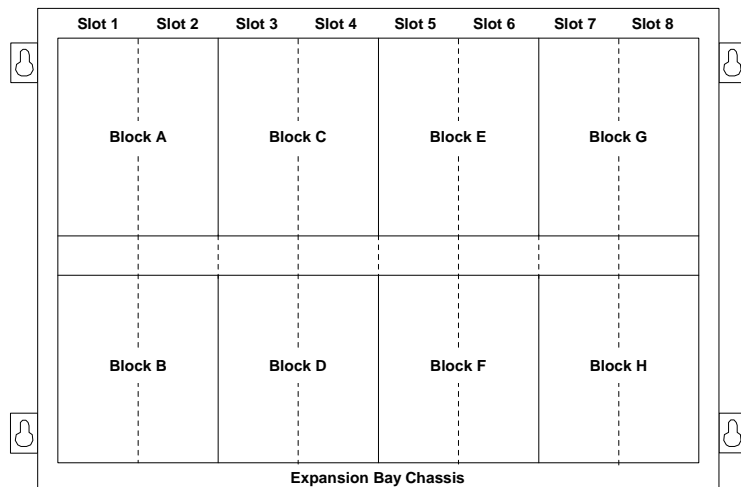
Subject	Data Sheet	Subject	Data Sheet	Subject	Data Sheet
Introducing the 4100ES	S4100-0060	MINIPLEX Transponders	S4100-0035	InfoAlarm Comm. Center	S4100-0045
Enclosures	S4100-0037	TFX Interface Module	S4100-0042	Graphic I/O Modules	S4100-0005
Building Network Interface	S4100-0061	IDNet+ Module w/Quad Iso.	S4100-0046	2120 BMUX Module	S4100-0048
LED/Switch Modules & Printer	S4100-0032	Remote Annunciators	S4100-0038	SafeLINC Internet Interface	S4100-0028
4100ES Audio/Phone Modules	S4100-0034	Network Display Unit (NDU)	S4100-0036	Master Clock Interface	S4100-0033
TrueAlert Addressable Products	S4009-0003	Remote Battery Charger	S4081-0002	Addr. Device Compatibility	S4090-0011
Fire Alarm Network Overview	S4100-0055	Network Communications	S4100-0056	Agent Release Applications	S4100-0040

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.

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 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 A Physical Bridge		4", 2 Slots
Decoder Module		6", 3 Slots
System, Remote, or TrueAlert Power Supply		Blocks E, F, G & H ONLY
Expansion Power Supply		Blocks G & H ONLY
NAC Expansion Module		On XPS ONLY

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S4100-0031-17

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Features

4100ES Box and door options:

- Boxes are available sized for one, two, or three equipment bays, each with a battery bay located at the bottom
- Colors include platinum or red
- Doors are glass front with modular dress panels, or solid
- Models are available with box and door combined for single package shipping, or packaged separately
- Enclosures are NEMA 1 rated
- Refer to individual 4100ES data sheets for product application listings (see list on page 2)

Door and dress panel selection is coordinated with cabinet function:

- Glass doors with modular dress panels provide visibility of annunciation and interface modules for Control Panels, Network Display Units (NDU), and Remote Annunciators
- Solid doors are for MINIPLEX Transponders and utility function cabinets where module visibility is not required

4100ES Enclosure details:

- Latching dress panels easily lift off for internal access
- Smooth box surfaces are provided for locally cutting conduit entrance holes exactly where required
- Alignment markers are provided at the top and bottom of each box side for 6" (152 mm) or 4" (102 mm) wall studs
- Knockout screw/nail holes are supplied for semi-flush mounting

Upright cabinet rack packaging reference:

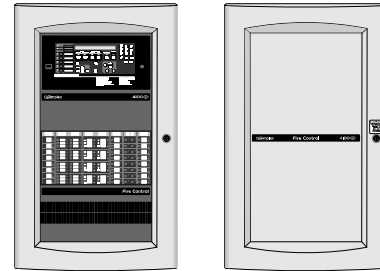
- For use with Bud Industries Inc. special cabinet rack model number 45964
- Refer to page 2 for cabinet rack listing

4009 TPS (TrueAlert Addressable Power Supply) cabinet assemblies:

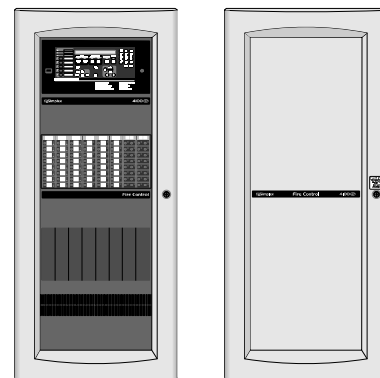
- Cabinet assemblies are available for remote mounting of the TrueAlert addressable power supply (TPS)
- Refer to page 2 for listings information



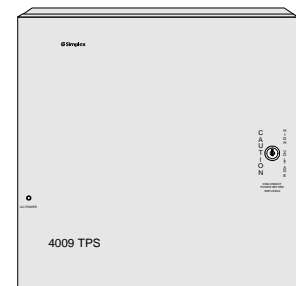
4100ES One Bay Cabinets



4100ES Two Bay Cabinets



4100ES Three Bay Cabinets



4009 TPS Cabinet
Assembly (not to scale)

Cabinet Rack Enclosure
(shown with door open)

* For 4100ES one, two, and three bay cabinets with associated equipment: Products are 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 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. 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.

Enclosure Selection Chart (refer to pages 3 and 4 for dimensions)



Combined Box and Door Selection (select if box and door are to be shipped together)

Description	Platinum 1 Bay	Platinum 2 Bay	Platinum 3 Bay	Red 1 Bay	Red 2 Bay	Red 3 Bay
Box with Glass Door and Dress Panel	2975-9444	2975-9445	2975-9446	2975-9441	2975-9442	2975-9443
Box with Solid Door	2975-9450	2975-9451	2975-9452	2975-9447	2975-9448	2975-9449
Model	Color	Description	Details			Listings
2975-9230	Beige	4009 TPS Cabinet Assembly for remote TrueAlert	Includes box with door and mounting plate, input terminal block, and wiring harnesses; <i>Separately Order:</i> 4100 Series TPS (4100-5120 for US, 4100-5121 for Canada, 4100-5122, 240 VAC for international use), 4009-9813 Interface Card, and batteries (12.7 Ah maximum for cabinet mounting); refer to page 3, to data sheets S4100-0031 and S4009-0003, and instructions 579-875 for additional details			ETL Listed to: UL 864 and ULC S527 (not CSFM listed or FM approved)
2975-9229	Red	Power Supply (TPS) mounting				

Separate Box and Door Selection (select if boxes and doors are required to be shipped separately)

Description	Platinum 1 Bay	Platinum 2 Bay	Platinum 3 Bay	Red 1 Bay	Red 2 Bay	Red 3 Bay
Box	2975-9438	2975-9439	2975-9440	2975-9407	2975-9408	2975-9409
Glass Door and Dress Panel	4100-2104	4100-2105	4100-2106	4100-2124	4100-2125	4100-2126
Solid Door	4100-2114	4100-2115	4100-2116	4100-2134	4100-2135	4100-2136

Cabinet Rack Mounting (refer to page 4 for additional details)

Model	Description	#45964 Listings
#45964, from Bud Industries Inc.	Special upright cabinet rack for 4100ES; 19" (483 mm) E.I.A.; gray texture; includes front polycarbonate door and rear louvered door, both keyed with Simplex "B" keys	UL and ULC listed only as of document revision date; cabinets are listed with the Simplex 4100ES product line
4100-2140	Master Controller Rack Mount Kit, one required per master controller	Master Controller and Option Bays each require 9 Rack Units; 15.75" height (400 mm)
4100-2145	Option Bay Rack Mounting Kit, one required per expansion bay	
4100-2144	Power Distribution Module (PDM) Rack Mount Kit, order PDM separately per system voltage, one required per cabinet rack	

Power Distribution Modules (Not required for 4009 TPS Cabinets 2975-9229 and 2975-9230)

Model	Voltage	Description
4100-0634	120 VAC	Power Distribution Module (PDM); select per system voltage; one required per 4100ES box or cabinet rack
4100-0635	220/230/240 VAC	

Miscellaneous Accessories

Model	Description
4100-9856	Canadian French Appliqué Kit, for 1, 2, or 3 bay sizes
4100-9857	4100ES Appliqué Retrofit Kit, for 1, 2, or 3 bay sizes; use to identify 4100ES features when new door is not used; included with Master Controller Upgrade kits as detailed on data sheet S4100-0031
4100-9835	Termination and Address Label Kit, for module marking NOTE: One kit is supplied for each cabinet; order this if required for additional field module installation
4100-9837	Green LED Power-on Indicator Kit, required for ULC listing of MINIPLEX transponder Mounts using knockout provided in solid door
2975-9813	Platinum semi-flush box trim
2975-9812	Red semi-flush box trim
	1-7/16" (37 mm) wide, four corners and trim pieces for top, bottom, and sides

Battery Reference

Model	Capacity	Model	Capacity	Battery Notes
2081-9272	6.2 Ah	2081-9287	25 Ah	1. Sealed lead-acid batteries, 12 VDC each; two required per battery location. 2. Battery selection is required if batteries are internal. 3. Select one size per battery set 4. Refer to data sheet S2081-0006 for battery details.
2081-9274	10 Ah	2081-9276	33 Ah	
2081-9288	12.7 Ah	2081-9296	50 Ah	
2081-9275	18 Ah			

Battery Accessories

Model	Description
4100-0650	Battery Shelf, required for 50 Ah batteries
4100-5128	Battery Distribution Terminal Block, mounts to side of box, required for all close-nipped cabinets unless cabinet receives all power from power supplies and batteries located in the adjacent cabinet

Additional Data Sheet Reference

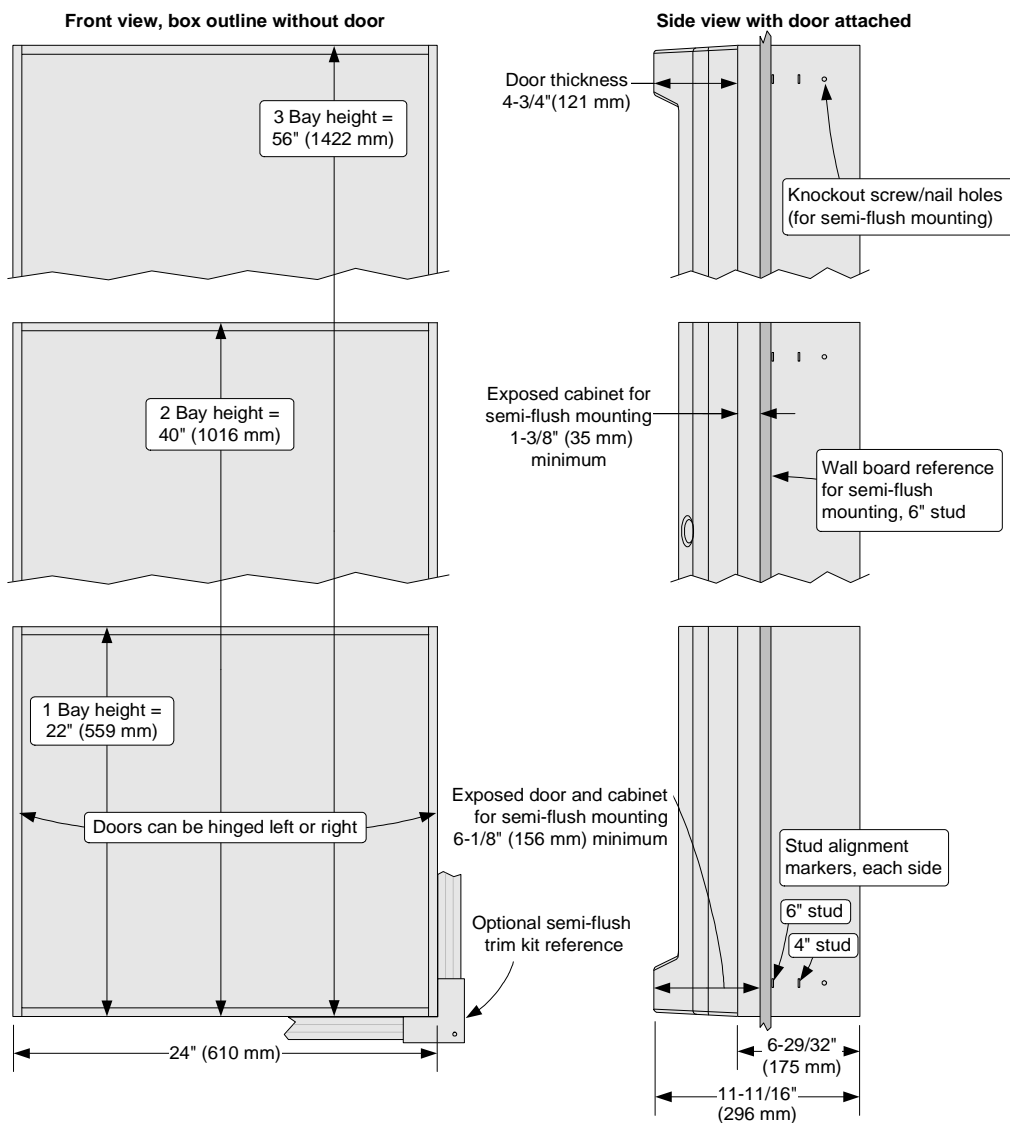
Subject	Data Sheet	Subject	Data Sheet
4100ES Basic Panel Modules and Accessories	S4100-0031	Network Display Unit (NDU)	S4100-0036
LED/Switch Modules	S4100-0032	Remote Annunciators	S4100-0038
4100ES Audio/Phone Modules	S4100-0034	InfoAlarm Command Center	S4100-0045
MINIPLEX Transponders	S4100-0035	Remote Battery Charger	S4081-0002

Wall Mounted Enclosure Installation Reference

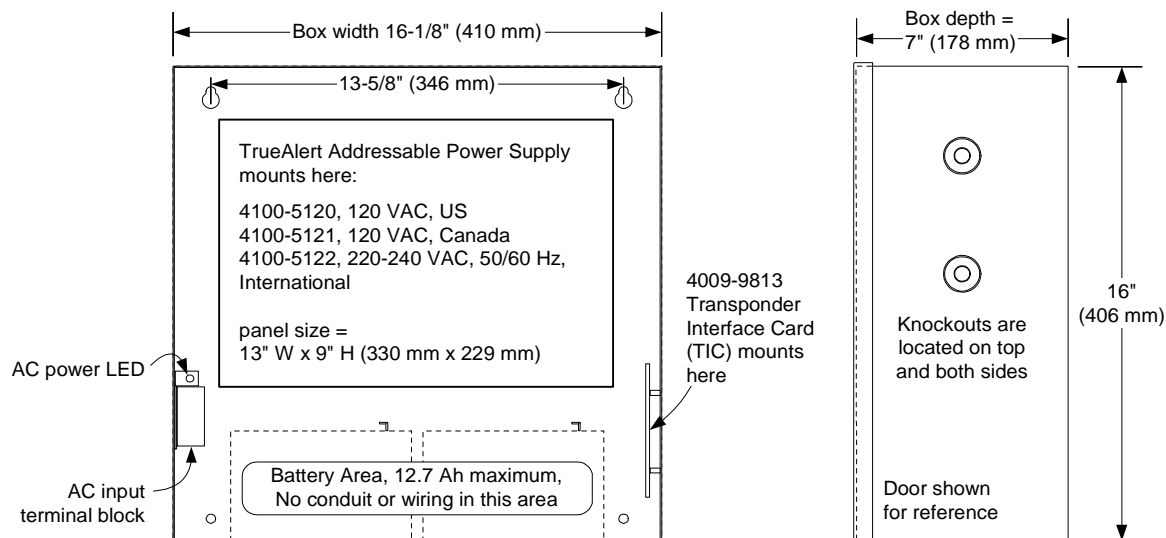
NOTE:

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.

For additional installation information refer to Installation Instructions 579-117.



4009 TPS Cabinet Installation Reference



Console Package Reference



Front View

Side View

Rear View

Cabinet Rack Specifications (refer to Installation Instructions 579-229 for additional details)

Type	Upright cabinet rack for exclusive use with Simplex 4100ES Fire Alarm Products	
Supplier	Order from Bud Industries Inc. (www.budind.com)	
Model Number	45964	
Outside Dimensions	Height	69-7/8" (1775 mm)
	Width	24-1/16" (611 mm)
	Depth	22" (559 mm)
Color	Gray texture	
Panel Space Width	19" E.I.A. (483 mm)	
Front Door	Surface mount with 1/8" thick (3.18 mm) smoke gray polycarbonate, locked with Simplex "B" key, hinged on left of cabinet	
Rear Door	Ventilated top and bottom, locked with Simplex "B" key	
Sides	Side panels are removable from the inside for rack-to-rack mounting	
Bottom	Pan attached for battery mounting	
Levelers	Includes 4 stem levelers on bottom	

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S4100-0037-10 10/2011

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Features

Panel mounted annunciation modules for use with 4100U/4100ES Fire Alarm Control Panels, Remote Annunciators, and Network Display Units (NDU):

- Modules mount on front of panel bay providing convenient access and high visibility
- Panel monitors switches for user input and controls LED indicators to annunciate function status
- Compact 64 LED/64 switch controller modules mount on back of LED/switch modules

LED/Switch Modules:

- Raised momentary switches provide tactile feedback
- Alternate action operation provides on/off functions
- High intensity LEDs provide clear status annunciation
- Slide-in labels provide custom on-site labeling (label kit is ordered separately)

8 LED, 8 Switch Modules:

- One status LED per switch
- Available as all red LEDs or all yellow LEDs

16 LED, 8 Switch Modules:

- Two status LEDs per switch
- Available with two LEDs per switch as: red/yellow, yellow/yellow, red/green, or green/yellow

16 LED, 16 Switch Modules:

- One status LED per switch in 2" (51 mm) module
- Available as all red LEDs, or 8 red and 8 yellow
- Two configurations are available, one with pluggable LEDs, refer to illustrations on page 2 and product selection details on page 4

24 LED, 24 Switch Modules:

- Double slot module with one red status LED per switch

HOA (Hand-Off-Auto) Switch Modules:

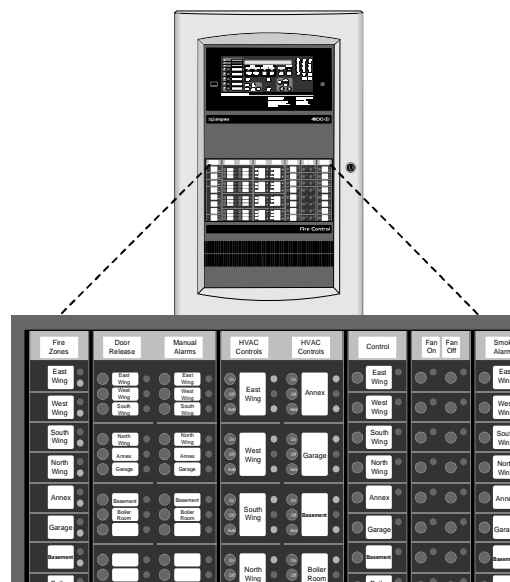
- Eight controls in a double slot module, each control has three switches for status selection and one LED per switch position
- Switch selection is On/Hand, Off, and Auto

Available with three HOA Module LED Options:

- On/Hand (green LED), Off (red LED) and Auto (green LED)
- On/Hand (green LED), Off (red LED) and Auto (white LED) to comply with International Building Code (IBC) requirements
- On/Hand (green LED), Off (yellow LED) and Auto (green LED) for applications requiring no red LEDs
- Available with or without switch buttons labels (On, Off, Auto)

LED Modules with 8 or 16 pluggable LEDs:

- 8 LED Module has red LEDs, 16 LED module has 8 red with 8 yellow
- Red, yellow, green, or blue LEDs are available in packages of eight (8) to change color on-site per application requirement (ordered separately)



4100ES 2-Bay Fire Alarm Control Panel
with Sample of Available LED/Switch Modules

Features (Continued)

24 Point I/O Module for external connections:

- Each point is selectable as either a switch input (momentary or maintained) or lamp/relay driver output
- Multiple switch monitoring modes are available

Panel mounted printer (see pages 6 and 7 for details):

- Records system events and provides 20 visible lines

Listed to:

- UL Std. 864, Fire Detection and Control (UOJZ), and Smoke Control Service (UUKL)
- UL Std. 2017, Process Management Equipment (QVAX)
- UL Std. 1076, Proprietary Alarm Units-Burglar (APOU)
- UL Std. 1730, Smoke Detector Monitor (UULH)
- ULC Std. S527-99

Description

Annunciation Options. 4100U/4100ES fire alarm panels support a variety of switch input and LED status indicators to complement the information and controls available at the operator interface. These modules provide a convenient interface efficiently packaged onto the front panel space of the cabinet bay. Additionally, the panel mounted printer can conveniently record system status without requiring a separately located printer.

* Refer to additional listing details on page 4. This product has been approved 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 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. 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 Safety Products Westminster

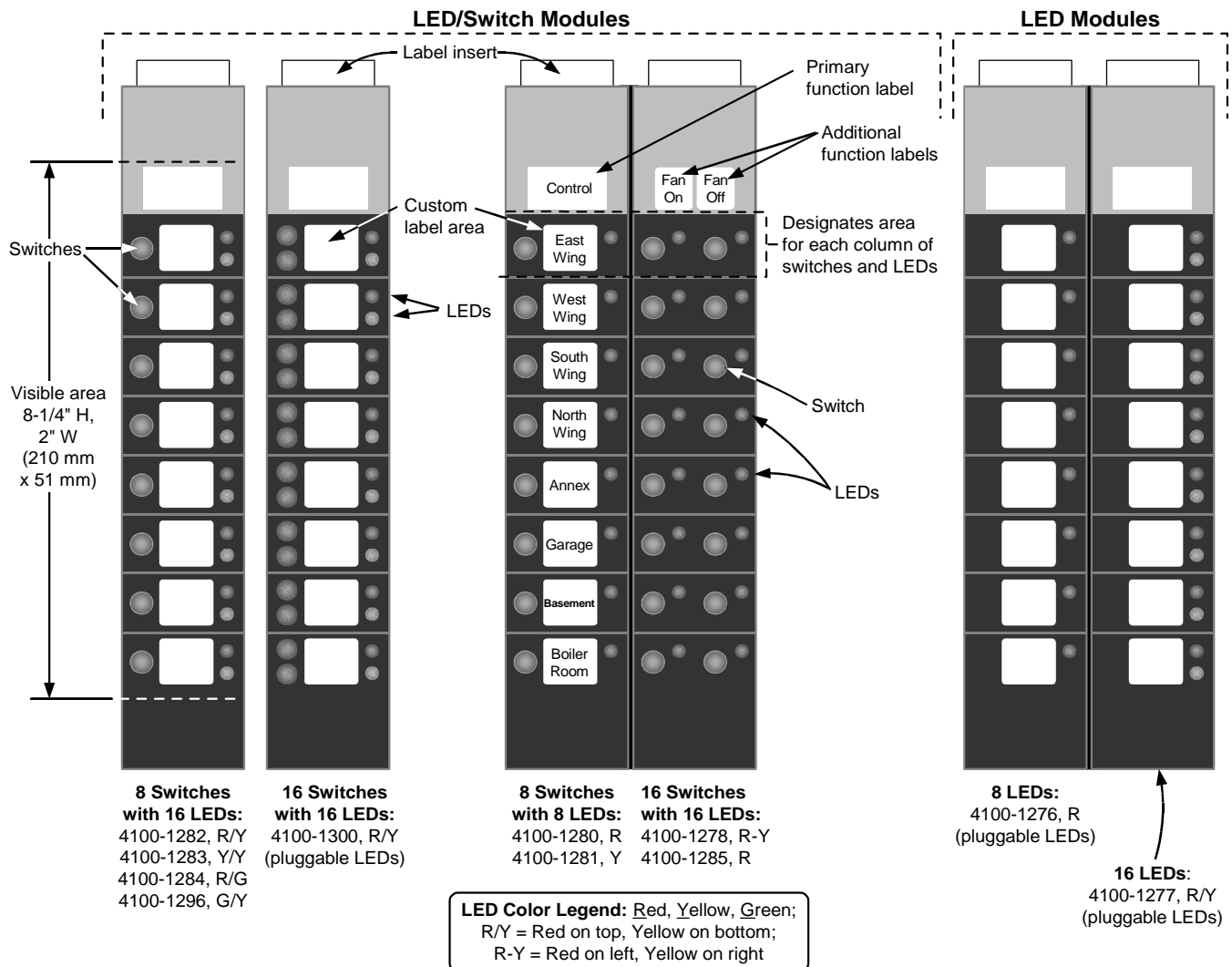
Description (Continued)

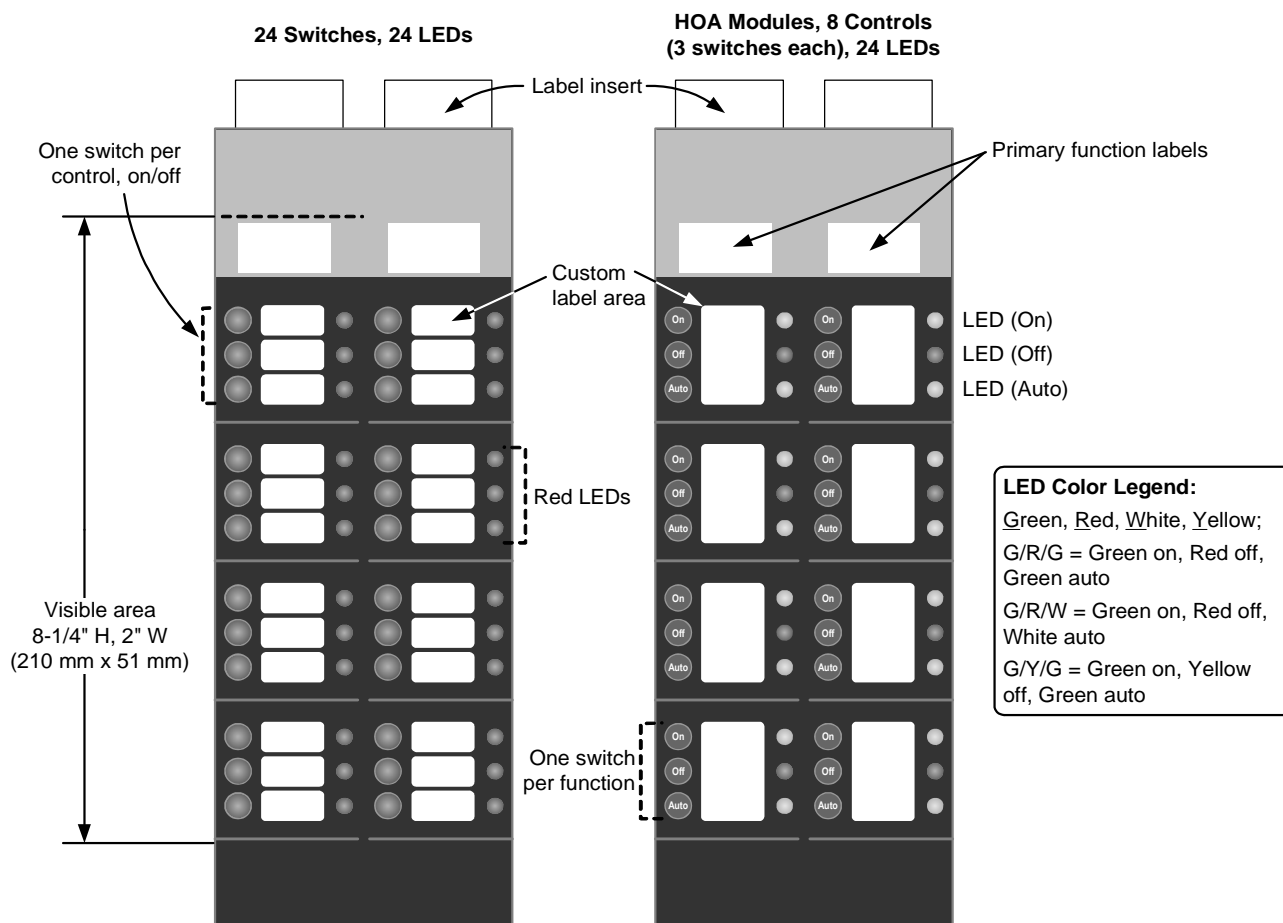
Easy Interface. Switches are alternate action ON/OFF (depending on programming selection) using a tactile feel, raised rubber button. High efficiency LEDs provide clear status annunciation readily visible through the glass door.

Selectable Functions. Switch functions, LED status indications, and printer output is selected when the control panel CPU is customized for site specific requirements. Slide-in labels are locally printed to indicate the exact function of the LEDs and switches.

The 24 Point I/O Module is selectable for input switch type and supervision type. Outputs are selectable for steady on or pulsing to drive remotely connected relays, incandescent lamps, or LEDs.

LED/Switch Module Detail Reference





4100-1287

HOA Modules, G/R/G LEDs:

4100-1286, with labeled switches as shown
 4100-1295, with unlabeled switches (not shown)

HOA Modules for IBC Applications, G/R/W LEDs:

4100-1275, with labeled switches as shown
 4100-1299, with unlabeled switches (not shown)

HOA Modules, G/Y/G LEDs:

4100-1302, with labeled switches as shown
 4100-1301, with unlabeled switches (not shown)

LED/Switch Module Product Selection (panel mounted switches are momentary pushbutton)

LED/Switch Modules, General Purpose (LED/switch controller and label kit is ordered separately)

Model	LEDs per Switch	LED Color(s)	Custom Label Area	LED Quantity	Switch Quantity
4100-1280	One	Red	Per module and per switch	8	8
4100-1281	One	Yellow			
4100-1282	Two	Red on top, Yellow on bottom	Per module and per switch	16	8
4100-1283	Two	Yellow on top and bottom			
4100-1284	Two	Red on top, Green on bottom			
4100-1296	Two	Green on top, Yellow on bottom			
4100-1285	One	Red	One per column of 8 LED/switch pairs (see illustration on page 2)	16	16
4100-1278	One	8 Red on left, 8 Yellow on right			
4100-1300*	One	With pluggable LEDs; shipped Red on top, Yellow on bottom	Per module and per LED/switch pair	24	24
4100-1287	One	Red	Per module and per switch		

* UL, ULC, and CSFM listed only.

LED Only Modules and LED Kits (LED/switch controller and label kit is ordered separately)

Model	Description	
4100-1276	Eight (8) LED Module with Red LEDs; custom label area per module and per LED	LEDs are pluggable; select LED kits as required to change LED color
4100-1277	Sixteen (16) LED Module; Red LED on top and Yellow LED on bottom at each position; custom label area per module and per LED pair	
4100-9843	Yellow	Kits of 8 LEDs; order as required for modules with pluggable LEDs to change LED color on-site per application requirement; compatible with LED Modules 4100-1276, 4100-1277, and 4100-1300 (Blue is typically used for Ancillary Device status indication per ULC S527)
4100-9844	Green	
4100-9845	Red	
4100-9855	Blue	

LED/Switch Modules, HOA (Hand-Off-Auto) with Green/Red/Green LEDs

(LED/switch controller and label kit is ordered separately)

Model	Operation	Switch Function (Location)	LED Description
4100-1286	Eight function HOA (On, Off, Auto) Control Module with labeled switches; custom label area per module and per LED/switch set	On (top)	Green LED
		Off (middle)	Red LED
		Auto (bottom)	Green LED
4100-1295	Eight function HOA (On, Off, Auto) Control Module, same as 4100-1286 except switches are unlabeled		

LED/Switch Modules, HOA (Hand-Off-Auto) with Green/Red/White LEDs for IBC Applications

(LED/switch controller and label kit is ordered separately)

Model	Operation	Switch Function (Location)	LED Description
4100-1275	Eight function HOA (On, Off, Auto) Control Module with labeled switches; LED colors meet International Building Code (IBC) requirements; custom label area per module and per LED/switch set	On (top)	Green LED
		Off (middle)	Red LED
		Auto (bottom)	White LED
4100-1299	Eight function HOA (On, Off, Auto) Control Module, same as 4100-1275 except switches are unlabeled		

LED/Switch Modules, HOA (Hand-Off-Auto) with Green/Yellow/Green LEDs

(LED/switch controller and label kit is ordered separately)

Model	Operation	Switch Function (Location)	LED Description
4100-1302**	Eight function HOA (On, Off, Auto) Control Module with labeled switches; for applications requiring no red LEDs; custom label area per module and per LED/switch set	On (top)	Green LED
		Off (middle)	Yellow LED
		Auto (bottom)	Green LED
4100-1301**	Eight function HOA (On, Off, Auto) Control Module, same as 4100-1302 except switches are unlabeled		

** UL, ULC, and CSFM listed only.

Continued on next page

LED/Switch Module Product Selection (Continued)

LED/Switch Controller Modules and Accessories

Model	Description	
4100-1288	64 LED/64 Switch Controller Module with mounting plate; controls up to 64 LEDs and interfaces to up to 64 switches; mounts behind the LED/switch modules and has provisions for one 4100-1289 Controller Module	NOTE: LED/switch controllers and their connected modules must be in the same bay.
4100-1289	64 LED/64 Switch Controller Module without mounting plate; mounts on extra space of 4100-1288; controls an additional 64 LEDs and 64 switches	
4100-0636	Harness Kit, Power and Communications	One of each is required per 4100-1288 that is located in the same bay as two Flex-35/50 amplifiers and an SPS
4100-0641	Harness Kit, 26 Position Flex Cable, 14-1/2" (368 mm) long	
4100-1290	24 Point I/O Module for external connections, select each point as either input or output; 2" (51 mm) wide, 1 Slot	
4100-1294	LED/Switch Module Slide-in Labels, required when LED/switch or LED only modules are present ; order one per cabinet	
4100-1279	Single blank 2" display cover; order as required (8 fill a bay front); two maximum in a row between LED/switch modules	

Panel Mounted Printer (refer to pages 6 and 7 for printer details)

Model	Description
4100-1293	Panel Mount Thermal Printhead Printer, supplied with one roll of paper
4190-9803	Replacement Paper for 4100-1293 Printer, one roll

LED/ Switch Modules and Controllers Specifications

(For additional LED/Switch Module information, refer to Installation Instructions 574-843)

64 LED/64 Switch Controller Modules (4100-1288 and 4100-1289)

Input Voltage	19 to 33 VDC, from control panel
Current, No LEDs On	20 mA @ 24 VDC
Current, All 64 LEDs On	210 mA @ 24 VDC (approx. 3 mA/LED)
Mounting Reference	Bracket of 4100-1288 attaches to the back of the LED/switch modules
Controllers per Bay	Maximum of two per bay; for control of LED/switch modules within that bay only
Bay Location Reference	Slots 1 & 2 or Slots 3 & 4; mounts onto the back of the LED/switch modules
Clearance Behind Controller Module	Space accepts low profile 4100U/4100ES modules only

24 Point I/O Module (4100-1290)

Module Current	Supervisory = 34 mA; Alarm = 75 mA (add output currents separately)
Switch Input Details	Momentary or maintained, 2 or 3 position; max. distance is 2500 ft (762 m) or 65 Ω
Output Current	150 mA @ 24 VDC per point; inrush current is limited for use with incandescent bulbs
Output Details	Diode suppress relay loads at the coil; max. distance is 600 ft (183 m) or 2 Ω

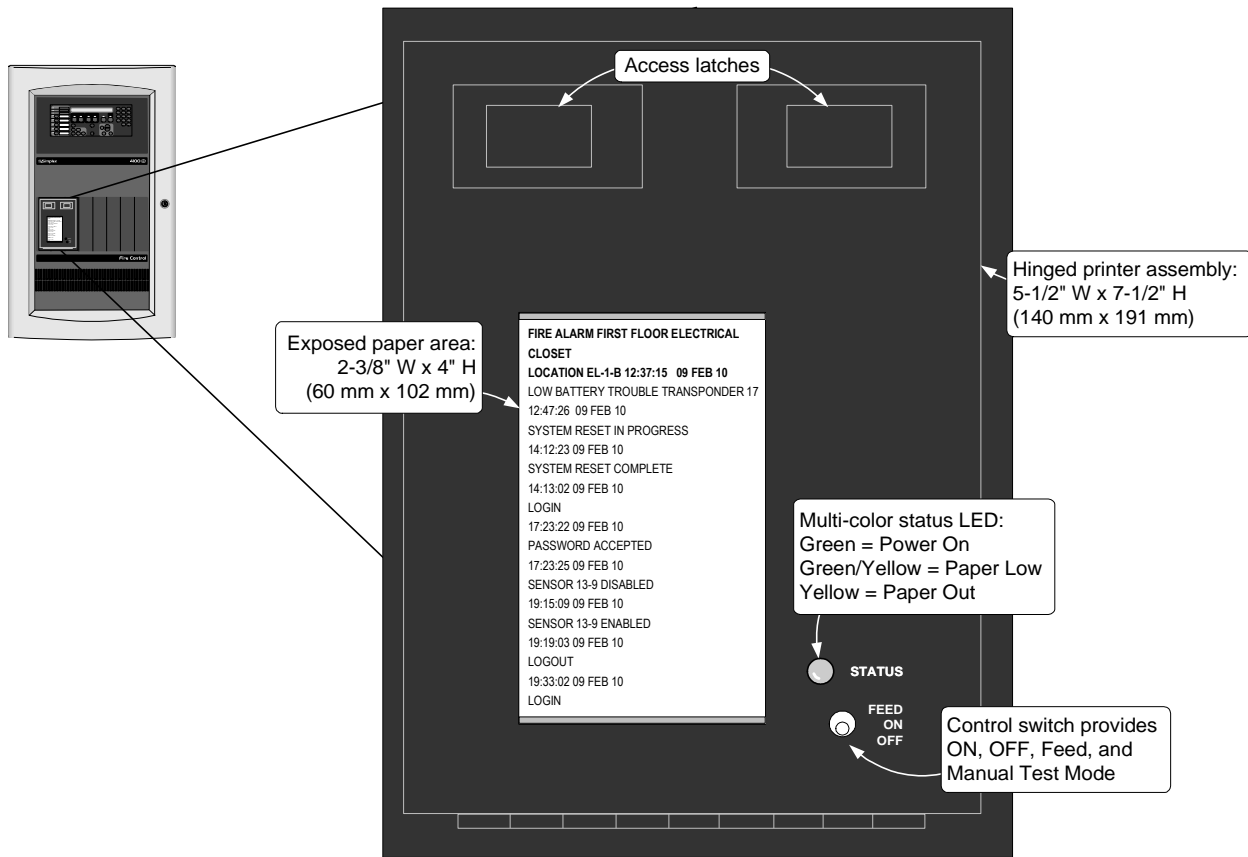
General Specifications

Operating Temperature Range	32° to 120°F (0° to 49° C)
Operating Humidity Range	Up to 93% RH, non-condensing @ 90° F (32° C) maximum

Additional Data Sheet Reference

Subject	Data Sheet	Subject	Data Sheet
4100ES Basic Panel Modules and Accessories	S4100-0031	Network Display Unit (NDU)	S4100-0036
4100ES Audio/Phone Modules	S4100-0034	Enclosure Reference	S4100-0037
MINIPLEX® Transponders	S4100-0035	Remote Annunciators	S4100-0038

Model 4100-1293 Panel Mount Printer Details



Printer Specifications

(For additional printer information, refer to Installation Instructions 579-249)

Electrical & Communications

Input Voltage		19 to 33 VDC, from control panel
Current	Standby	125 mA @ 24 VDC
	Printing	800 mA @ 24 VDC
Communications		RS-232, 9600 baud, from control panel RS-232 module

Print Characteristics

Print Format	Fixed thermal printhead producing black characters
Characters	11 x 28 dot matrix; alarm information printed in bold
Paper Format	40 columns; 6 lines per inch; 20 lines visible; paper is wound onto top take-up reel, paper can be manually unwound from take-up reel and rewound using Feed switch
Paper Speed	1.33 in/sec maximum
Print Speed	312 cps
Sound Output	55 dB maximum, with cabinet door open

Paper (one roll included)

Type and Size	Thermal; 2.35" wide, 160 ft long (60 mm x 49 m)
Replacement Paper	4190-9803, 1 roll

Mounting Specifications

Bay Location Reference	Requires 3 expansion bay slots, can be located as required
Clearance Behind Printer	Space accepts low profile 4100U/4100ES modules only

Environmental Specifications

Operating Temperature Range	32° to 120°F (0° to 49° C)
Operating Humidity Range	Up to 93% RH, non-condensing @ 90° F (32° C) maximum

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S4100-0032-10

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Features**Rechargeable, sealed lead-acid batteries:**

- Lead-calcium grid structure with immobilized electrolyte in absorbent separator
- Low maintenance with no need to add water
- Low self-discharge characteristics
- One-piece, high impact polystyrene cell cover with high reliability dual seal construction
- UL 924 recognized pressure relief valves

Available in a variety of capacities:

- Batteries for internal mounting range from 6.2 Ah up to 50 Ah, depending on control panel cabinet size
- Larger batteries, up to 110 Ah, mount in external battery cabinets that are available with internal chargers
- Includes battery chargers with communications compatibility for use with 4010 Series fire alarm control panels and with 4100U Series fire alarm control panels

Description

Simplex® rechargeable sealed-lead acid batteries provide reliable and repeatable discharge and recharge characteristics for use in fire alarm and other systems applications. They are designed with immobilized electrolyte in an absorbent separator, allowing them to provide rated capacity on the first cycle.

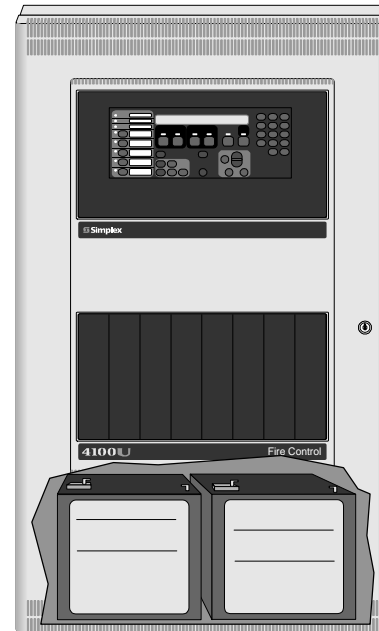
Because of their sealed construction, packaging is allowed within the system electronics enclosure (see illustration on page 2). When this is applicable, the quantity of system cabinets and the battery wiring distances are both minimized. Where required, external battery cabinets can be close-nipped to the control panel to house larger batteries with battery chargers available in some battery cabinet sizes.

Battery Details

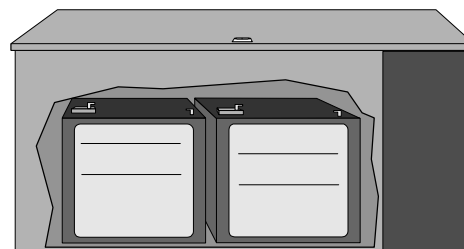
Charging. These batteries are intended to be used with compatible Simplex battery chargers.

Series Connections. These batteries are required to be connected in series to produce 24 V system voltage. Battery sets must be of identical voltage, model number, appearance, and approximately the same date of manufacture for proper operation.

Testing. Battery capacity testing is recommended to be performed by using a sealed lead-acid battery tester designed to withdraw a minimum of battery charge. The preferred tester applies a variety of amplitude and duration controlled test pulses that compares terminal voltage against those predicted for the specific battery size. (Testing is available through your local Simplex product supplier.)



Compatible Sealed Lead-Acid Batteries can be Installed Inside Fire Alarm Control Panel Cabinets



Remote Battery Cabinets are Available for Larger Battery Requirements

Battery Details (Continued)

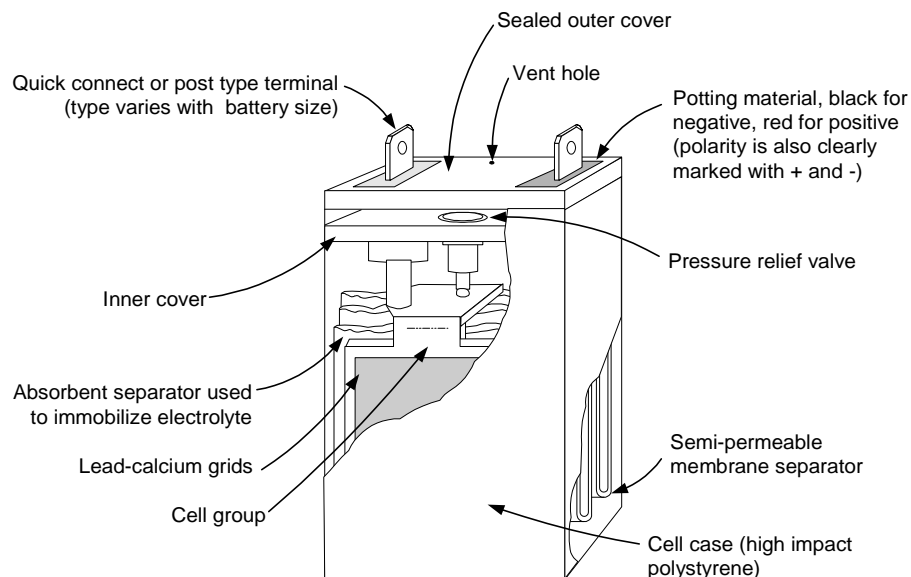
Shipping. Sealed lead-acid batteries are shipped via ground or sea transportation only. They are not shipped via air.

Disposal. Battery chemicals and materials can be recycled. Refer to information shipped with the battery or on its case. Return to the battery manufacturer or to a similarly qualified battery processing facility for proper disposal.

* Refer to details on page 4 and to the referenced individual product data sheets for agency listing status of battery cabinets and chargers. The batteries detailed in this document meet the requirements of UL, ULC, and Factory Mutual for use with respective equipment battery chargers as listed on page 3. Contact your local Simplex product supplier for proper battery selection per system requirements. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Safety Products Westminster.

Battery Construction Reference

Actual appearance will vary with battery size.



Battery Size Specifications

Battery Model	Capacity @ 20 Hour Discharge Rate	Width*	Depth*	Height with Terminals	Approximate Weight*
2081-9272	6.2 Ah	6-1/8" (156 mm)	2-5/8" (67 mm)	4" (102 mm)	5.75 lbs (2.6 kg)
2081-9274	10 Ah	6" (153 mm)	4-1/16" (103 mm)	4" (102 mm)	9.2 lbs (4.2 kg)
2081-9288	12.7 Ah	6" (153 mm)	4" (102 mm)	4" (102 mm)	9 lbs (4.1 kg)
2081-9275	18 Ah	7-1/4" (184 mm)	3-3/8" (86 mm)	6-5/8" (168 mm)	14.3 lbs (6.5 kg)
2081-9287	25 Ah	6-5/8" (168 mm)	5" (127 mm)	7" (178 mm)	19.4 lbs (8.8 kg)
2081-9271 (angular case, typically for service)	33 Ah	12-1/2" (318 mm)	3-3/8" (86 mm)	7-1/16" (179 mm)	26.6 lbs (12.1 kg)
2081-9276 ("square" case, use for new)	33 Ah	7-3/4" (197 mm)	5-1/4" (133 mm)	6-3/4" (171 mm)	26.5 lbs (12 kg)
2081-9296	50 Ah	9-1/2" (241 mm)	5-1/2" (140 mm)	8-7/8" (225 mm)	41.8 lbs (19 kg)
2081-9279	110 Ah	11-3/16" (284 mm)	10-1/2" (267 mm)	9" (230 mm)	82 Lbs (37 kg)

* Dimensions and weight are per battery and are for reference only. Exact size may vary. Refer to the tables on page 3 mounting compatibility. These batteries are 12 V each and series connected for 24 V system use.

NOTE: When wired in series for 24 V output, these batteries are to be of identical voltage, appearance, model number, and approximately the same date of manufacture.

General Battery Specifications

Nominal Voltage Rating	12 Volts per battery
Discharge Rating	20 Hour Rate
Typical Charge/Discharge Cycles	100 to 150
Preferred Charge Temperature Range	60° F to 90° F (15.6°C to 32.2° C)

Battery Compatibility for Fire Alarm Control Panel Mounting

NOTE: Refer to individual fire alarm control panel product data sheets for additional battery application information

Battery Model	Capacity	Simplex Control Panel Model Series (see legend and notes below)									
		4003	4004	4004R	4005	4006 & 4008	4009 (all models)	4010	4100U	4100 & 4120 (2, 4 or 6-Unit)	4020 (2, 4 or 6-Unit)
2081-9272	6.2 Ah	✓	✓	✓	✓	✓	✓	✓	1, 2, or 3 bay	✓	✓
2081-9274	10 Ah	✓	✓	✓	✓	✓	✓	✓	1, 2, or 3 bay	✓	✓
2081-9288	12.7 Ah	✓	NA	✓	✓	✓	✓	✓	1, 2, or 3 bay	✓	✓
2081-9275	18 Ah	✓	NA	Note 3	✓	Ext	Ext	Note 2	1, 2, or 3 bay	✓	✓
2081-9287	25 Ah	NA	NA	Note 3	Ext	Ext	NA	✓	1, 2, or 3 bay	✓	Ext
2081-9271 (rectangular)	33 Ah	NA	NA	Note 3	Ext	NA	NA	Note 3	1, 2, or 3 bay	Ext	Note 4
2081-9276 ("square")	33 Ah	NA	NA	Note 3	Ext	NA	NA	Note 3	1, 2, or 3 bay	✓	Ext
2081-9296	50 Ah	NA	NA	Note 3	NA	NA	NA	Note 3	2 or 3 bay	Ext	Ext
2081-9279	110 Ah	Requires external battery cabinet									

✓ = Can be placed in the respective equipment cabinet

Ext = External battery cabinet is required, refer to selection chart on page 4

NA = Not applicable/not compatible

NOTES:

- These batteries meet the requirements of UL, ULC, and Factory Mutual for use with respective equipment battery chargers listed above. Contact your local Simplex product supplier for proper battery selection per system requirements.
- 4010 Cabinets will accommodate 2081-9275, 18 Ah batteries, but will not allow bottom entry conduit.
- Use 4081 series companion cabinet and charger, refer to page 4.
- 4020 Cabinets will accommodate 2081-9271, 33 Ah batteries, but will not allow bottom entry conduit.
- Some control panel models are listed for battery replacement reference only.

External Battery Cabinet Compatibility Reference

Battery Cabinets without Chargers (connects to charger in panel)

Cabinet	Panel Compatibility	2081-9275 18 Ah*	2081-9287 25 Ah	2081-9271 Rectangular 33 Ah	2081-9276 Square 33 Ah	2081-9296 50 Ah	2081-9279 110 Ah
2081-9270	multiple	✓	✓	✓	✓	✓	NA
2081-9280	4100U/4100+	NA	NA	NA	NA	NA	✓
2081-9281 2081-9282	multiple	✓	✓	✓	✓	✓	NA
4009-9801	multiple	✓	✓**	NA	NA	NA	NA
4009-9802	multiple	✓	NA	✓	NA	NA	NA

Battery Cabinets with Chargers

Cabinet	Panel Compatibility	2081-9275 18 Ah*	2081-9287 25 Ah	2081-9271 Rectangular 33 Ah	2081-9276 Square 33 Ah	2081-9296 50 Ah	2081-9279 110 Ah
4081-9301 4081-9302	4004R and 4010	✓	✓	✓	✓	✓	NA
4081-9306 4081-9308	4100U	NA	NA	NA	NA	✓	✓

* Batteries smaller than those listed are normally mounted in the product cabinet

** 25 Ah capacity was effective as of 7/2005.

✓ = Can be placed in the respective equipment cabinet

NA = Not applicable/not compatible

External Battery Cabinet Specification Reference

Battery Cabinets Without Chargers; Shallow Design with Front Door

Model	Color	Listings	Description	Dimensions
2081-9281	Beige	UL and FM	2-Unit, 4100 style cabinet without charger; with locking solid door and battery shelf, primarily for use with 50 Ah batteries	25-3/4" W x 20-3/4" H x 6-3/4" D (654 mm x 527 mm x 171 mm)
2081-9282	Red			
4009-9801*	Beige	UL and FM	For up to 25 Ah batteries*	16-1/4" W x 13-1/2" H x 5-3/4" D (413 mm x 343 mm x 146 mm)*
4009-9802	Beige	UL	For up to 33 Ah batteries	25-3/4" W x 20-3/4" H x 4-1/8" D (654 mm x 527 mm x 105 mm)

* Depth increased for 25 Ah batteries effective 7/2005.

Battery Cabinet Without Charger; Deep Design with Hinged Lid

Model	Color	Listings	Description	Dimensions
2081-9270	Red	Not listed	Battery cabinet without charger; cabinet has vented front, and hinged lid with support rod and lock on top	26-1/2" W x 12" H x 12" D (673 mm x 305 mm x 305 mm)

Chargers for use with 4010 Fire Alarm Control Panels and 4004R Suppression Release Systems

(refer to data sheet S4081-0001)

Model	Color	Input Voltage	Description	Dimensions
4081-9301	Beige	120 VAC	Battery cabinet with charger for the 4010 and 4004R fire alarm control panel; for up to 50 Ah batteries ; with front door	22-1/2" W x 16-3/4" H x 8-3/8" D (572 mm x 425 mm x 213 mm)
4081-9302	Red		<i>Listings include: UL, ULC, FM, CSFM, and MEA (NYC), see data sheet for details</i>	

Battery Cabinet Without Charger for 110 Ah Batteries; for use with compatible panel mounted chargers

(refer to data sheet S2081-0012)

Model & Listings	Color	Cabinet Description	Compatible Chargers	Charger Description	Dimensions
2081-9280 <i>Listings include: UL and CSFM</i>	Red	Battery cabinet for 2081-9279, 110 Ah batteries; includes 80 A battery fuse, terminals and battery connection cables; see data sheet for details	4100-9xxx Series	4100U System Power Supplies (SPS)	26-1/2" W x 12" H x 12" D (673 mm x 305 mm x 305 mm)
			4100-5111 4100-5112 4100-5113	4100U Additional SPS	
			4100-5125 4100-5126 4100-5127	4100U Remote Power Supply (RPS)	
			4100-5120 4100-5121 4100-5122	4100U TrueAlert Addressable Power Supply (TPS)	
			4100-0104 4100-0114 4100-0124	4100 Legacy power supplies	

4100U Compatible Battery Cabinet With Charger for 110 Ah Batteries (for ULC listed systems and for other applications unable to use panel mounted power supply charger; refer to data sheet S4081-0002)

Model	Color	Input Voltage	Description	Dimensions
4081-9306	Red	120 VAC	Battery cabinet with charger for up to 110 Ah batteries; NOTE: Required for ULC listed charging of 110 Ah batteries; <i>Listings include: UL, ULC, FM, CSFM, and MEA (NYC), see data sheet for details</i>	27-7/8" W x 13-1/2" H x 14-5/8" D (708 mm x 343 mm x 371 mm)
4081-9308	Red	220/230/240 VAC, multi-tapped		
4100-9837	Green LED Power-on Indicator Kit, required for ULC listing , mounts above access panel using knockout provided			

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S2081-0006-19 10/2008

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Features

Remote LCD annunciator for use with Simplex® model:

- 4100U, 4100, 4120, and 4020 fire alarm control panels
- 4100/4120 Universal Transponders

Information display features:

- Wide viewing angle, super-twist LCD technology with green LED backlighting
- Two lines of 40 characters each
- LED status indicators
- During battery backup, backlighting is disabled until there is switch activity

Controls include:

- Switches for system acknowledge, alarm silence, and system reset
- Four programmable control switches
- Lamp/LCD test

Wiring information:

- RUI (Remote Unit Interface) communications require a single twisted, shielded wire pair
- Separate wiring is required for 24 VDC control panel power

Flush mount on standard electrical boxes

Options

- 2975-9206, Surface mount box
- 4603-9111, Brushed stainless steel trim

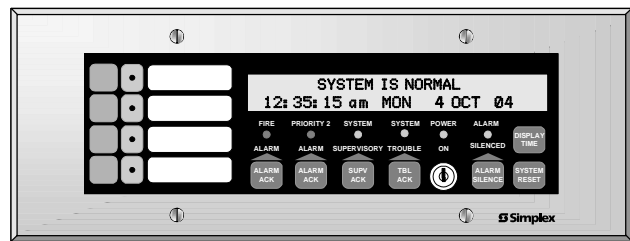
UL Listed to Standard 864

Description

Remote Control and Annunciation is provided using an 80 character, back-lit, alphanumeric display. Information is presented in clear, descriptive English language and includes: **Point Status** (alarm, trouble, etc.); **Alarm Type** (smoke detector, manual station, etc.); **Number of System Alarms, Supervisory Conditions, and Trouble Conditions**; and a **Custom Location Label**.

Wiring. A single twisted, shielded wire pair provides serial RUI communications that also supports other Simplex serial annunciators on the same wire pair.

Multiple Indications. Alarm, Supervisory, and Trouble conditions are also indicated by dedicated LEDs and a tone-alert audible sounder. Each condition has a dedicated acknowledge push-button switch that silences the tone-alert but leaves the LED on until all conditions in that category are restored to normal. Switch operation is either globally or individually acknowledgeable, determined by the control panel operation.



4603-9101 LCD Annunciator

Description (Continued)

Repeated operation of the appropriate acknowledge switch will scroll the LCD display showing activity in the sequence of occurrence. The tone-alert also pulses to indicate the operation of any of the push-button switches.

Consult local code requirements for guidance in determining applications and location of the 4603-9101 LCD annunciator.

Operation

System Controls. Notification appliances can be deactivated by pressing the "ALARM SILENCE" switch. (Exact operation is determined by the host control panel such as visible appliances remaining on until system is reset.) Pressing the "SYSTEM RESET" switch restores the system to normal operation. When system activity is normal, the LCD displays the time, date, and "SYSTEM IS NORMAL."

Control Switches. Four programmable "CONTROL" switches and associated LEDs are included. Typical applications include manual evacuation, door holder release bypass, and elevator capture bypass.

Keyswitch Enable. All switches on the annunciator are controlled by the "ENABLE" keyswitch with a key that is removable only in the disabled position. A brief lamp/LCD test is performed whenever the keyswitch is changed from enabled to disabled.

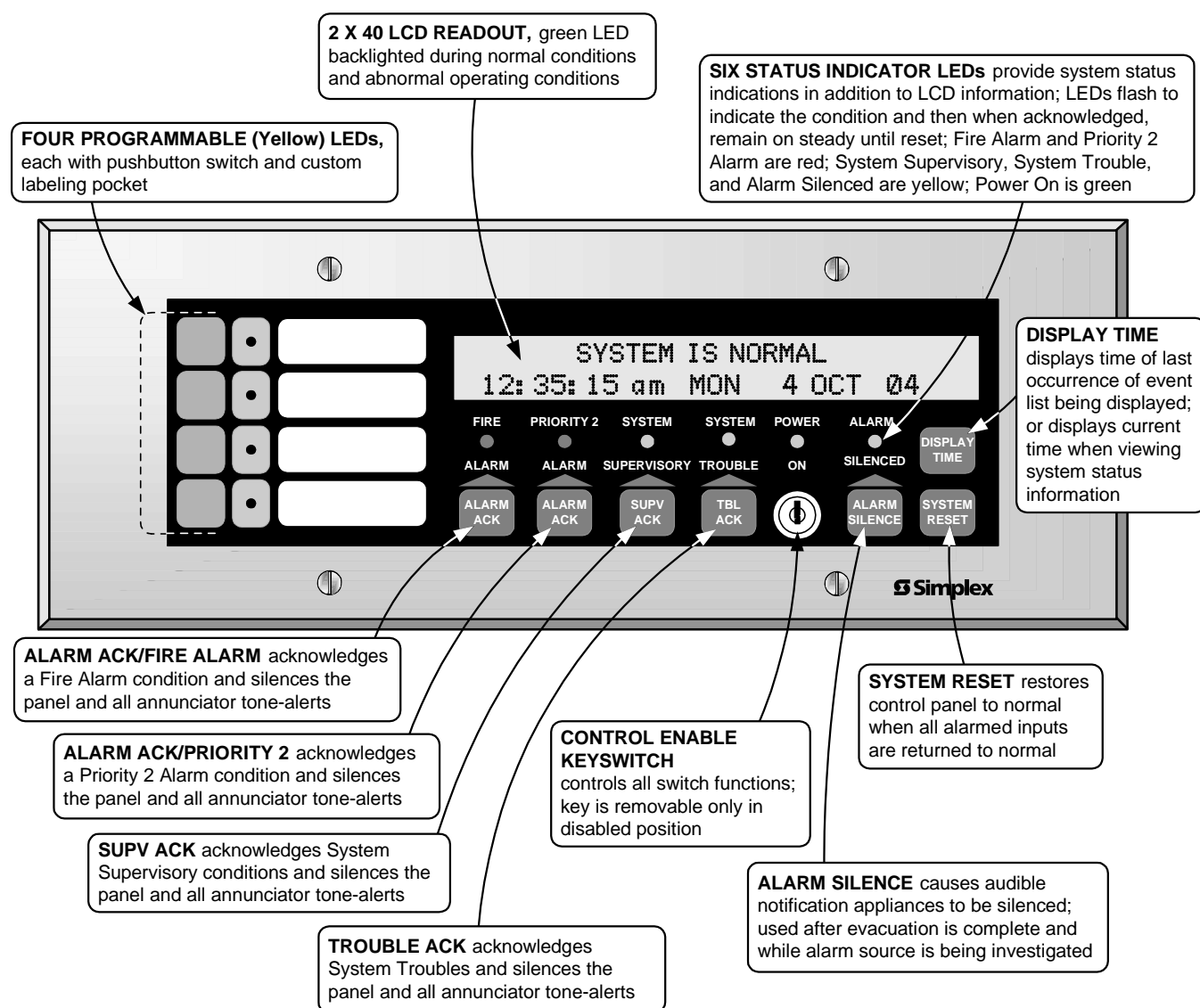
Battery Backup Operation. During battery backup, the LED backlighting is disabled to conserve battery power. When an annunciator switch is activated, the backlighting is automatically enabled. After approximately 30 seconds of inactivity, the backlighting will again be disabled.

* This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7120-0026:179 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. 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 Safety Products Westminster.

Product Selection

Model	Description	
4603-9101	Remote LCD Annunciator with beige trim	Refer to specifications on page 3 for additional details
4603-9101C	Remote LCD Annunciator with beige trim, for Canada	
4603-9111	Brushed stainless steel trim option	
2975-9206	Matching surface mount box; ivory finish	
2081-9044	Overvoltage protector; required where annunciator communications and power wiring exits and enters a building; refer to data sheet S2081-0016 for details	

4603-9101 Operator Information



General Operating Specifications

Voltage	20.4 to 32 VDC, system supplied
Normal Operating Current	170 mA, backlighting enabled
Battery Standby Current	Supervisory 30 mA, backlighting disabled
	Alarm 170 mA, backlighting enabled
Operating Temperature Range	32° to 120° F (0° to 49° C)
Operating Humidity Range	10% to 90% from 32° F to 104° F (0° C to 40° C)

Communications

4100U Capacity, Per RUI Output	Type	RUI (Remote Unit Interface) external annunciator communications line SLC (signaling line circuit)
	Capacity	Up to 31 remote annunciators/MINIPLEX [®] transponders per channel including the 4603-9101 LCD Annunciator, the 4602-9101 Status Command Unit (SCU), and 4602-9102 Remote Command Unit (RCU); refer to data sheet S4100-0031 for additional 4100U information
Wiring Requirements	Data	Single twisted, shielded pair, 18 AWG (0.82 mm ²)
	Power	18 to 12 AWG (0.82 mm ² to 3.31 mm ²) wires for 24 VDC system power
	Earth	A dedicated earth ground connection to the electrical box is required for proper ESD and EMI protection; wire in accordance with NFPA 70 (<i>National Electrical Code</i> [®]) Article 250

Mounting Information

NOTE: General Conduit Entrance Requirement	Conduit entrance must be located a minimum of 2-3/4" (70 mm) from the front of the box to clear assembly
Trim Dimensions	4-1/2" H x 11-13/16" W (114 mm x 300 mm)
Standard Trim Finish	Steel, painted beige
4603-9111, Optional Trim	Brushed stainless steel (ordered separately)
Trim Hardware	Supplied with both slotted and tamper resistant screws
Boxes for Flush Mounting (supplied by others)	6-Gang, 3-1/2" (89 mm) deep: RACO 965, 6-gang masonry box; RACO 590, gangable switch box, 6 required; or equal

2975-9206, Surface Mount Box Option (ordered separately)

Dimensions	11-31/32" W x 4-5/8" H x 2-3/4" D (304 mm x 117 mm x 70 mm)
Finish	Painted steel, ivory finish

Mounting Information

NOTE: Conduit entrance must be located a minimum of 2-3/4" (70 mm) from the front of the box to clear assembly. Review box choice with assembly layout before selecting conduit entrance location.

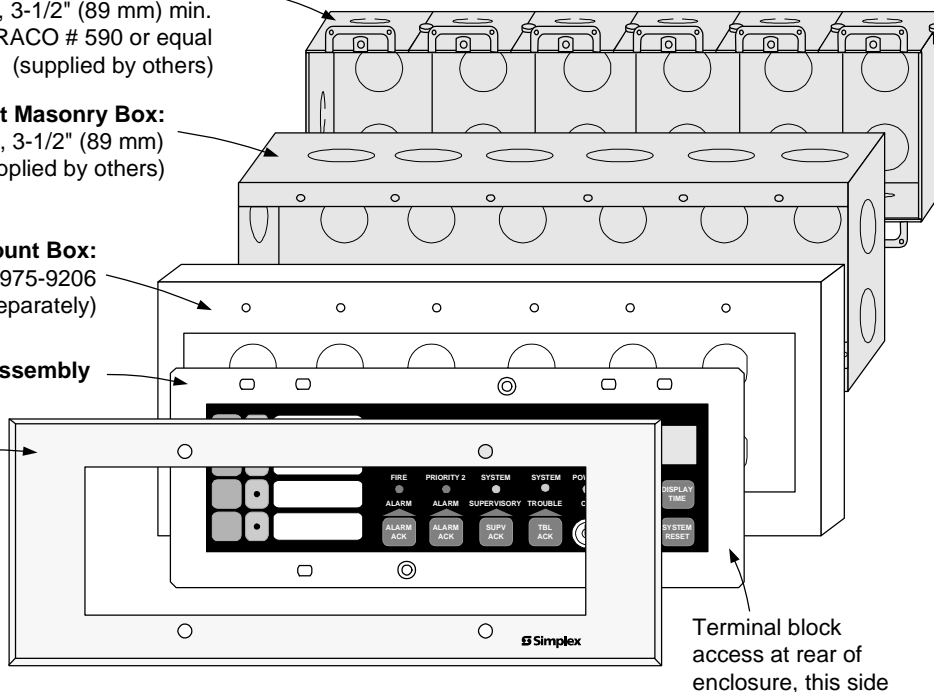
Flush Mount Ganged Boxes:
Requires 6-gang box, 3-1/2" (89 mm) min. depth, use (6) RACO # 590 or equal (supplied by others)

Flush Mount Masonry Box:
Use RACO # 965 or equal, 3-1/2" (89 mm) deep (supplied by others)

Surface Mount Box:
Simplex model 2975-9206 (ordered separately)

LCD Annunciator Assembly

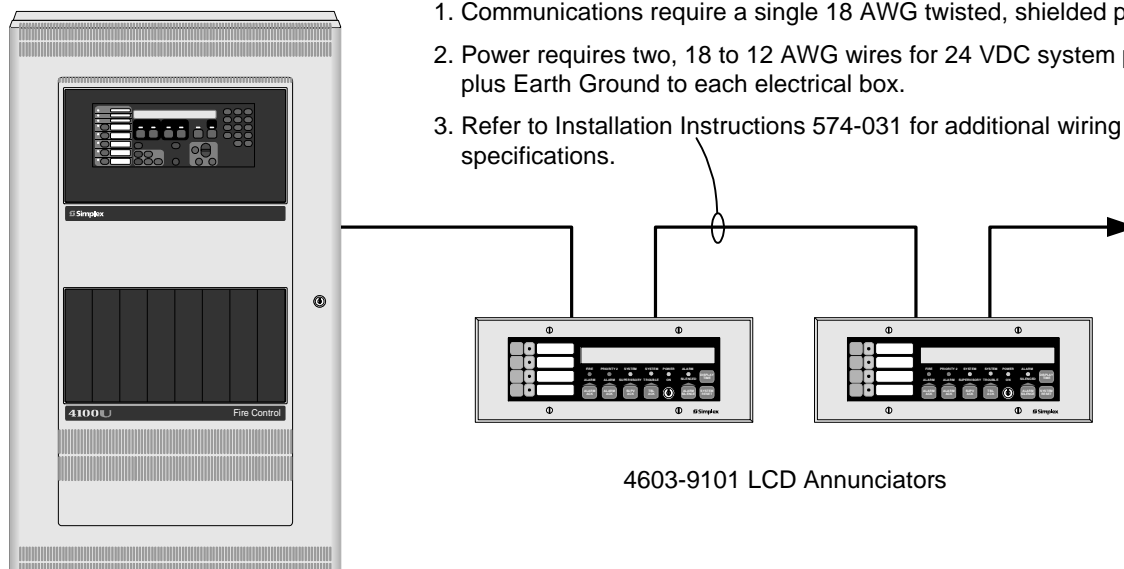
Trim plate



Wiring Reference

Wiring Notes:

1. Communications require a single 18 AWG twisted, shielded pair.
2. Power requires two, 18 to 12 AWG wires for 24 VDC system power, plus Earth Ground to each electrical box.
3. Refer to Installation Instructions 574-031 for additional wiring specifications.



4100U Fire Alarm Control Panel

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S4603-0001-10 10/2004

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

TrueAlarm Analog Sensing

TrueAlarm Analog Sensors – Photoelectric,
Ionization, and Heat; Standard Bases and Accessories

Features

TrueAlarm analog sensing provides:

- Digital transmission of analog sensor values via IDNet or MAPNET II two-wire communications

For use with the following Simplex® products:

- 4100ES, 4100U, 4010ES, and 4010 Series control panels; and 4008 Series control panels with reduced feature set (refer to data sheet S4008-0001 for details)
- 4020, 4100, and 4120 Series control panels, Universal Transponders and 2120 TrueAlarm CDTs equipped for MAPNET II operation

Fire alarm control panel provides:

- Peak value logging allowing accurate analysis of each sensor for individual sensitivity selection
- Sensitivity monitoring satisfying NFPA 72 sensitivity testing requirements; automatic individual sensor calibration check verifies sensor integrity
- Automatic environmental compensation, multi-stage alarm operation, and display of sensitivity directly in percent per foot
- Ability to display and print detailed sensor information in plain English language

Photoelectric smoke sensors provide:

- Seven levels of sensitivity from 0.2% to 3.7%

Heat sensors provide:

- Fixed temperature sensing
- Rate-of-rise temperature sensing
- Utility temperature sensing

Ionization smoke sensors provide:

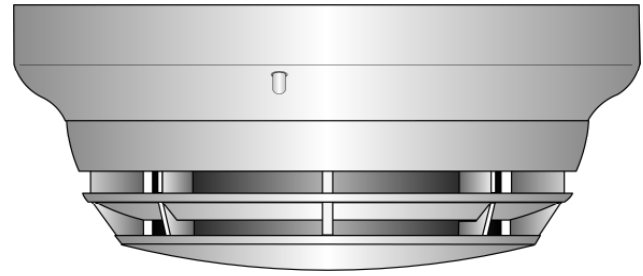
- Three levels of sensitivity; 0.5%, 0.9%, and 1.3%

General features:

- UL listed to Standard 268
- Louvered smoke sensor design enhances smoke capture by directing flow to chamber; entrance areas are minimally visible when ceiling mounted
- Designed for EMI compatibility
- Magnetic test feature is provided
- Optional accessories include remote LED alarm indicator and output relays

Additional base reference:

- For isolator bases, refer to data sheet S4098-0025
- For sounder bases, refer to data sheet S4098-0028
- For photo/heat sensors, refer to data sheet S4098-0024 (single address) and S4098-0033 (dual address)



4098-9714 TrueAlarm Photoelectric
Sensor Mounted in Base

Description

Digital Communication of Analog Sensing.

TrueAlarm analog sensors provide an analog measurement digitally communicated to the host control panel using Simplex addressable communications. At the control panel, the data is analyzed and an average value is determined and stored. An alarm or other abnormal condition is determined by comparing the sensor's present value against its average value and time.

Intelligent Data Evaluation. Monitoring each sensor's average value provides a continuously shifting reference point. This software filtering process compensates for environmental factors (dust, dirt, etc.) and component aging, providing an accurate reference for evaluating new activity. With this filtering, there is a significant reduction in the probability of false or nuisance alarms caused by shifts in sensitivity, either up or down.

Control Panel Selection. Peak activity per sensor is stored to assist in evaluating specific locations. The alarm set point for each TrueAlarm sensor is determined at the host control panel, selectable as more or less sensitive as the individual application requires.

Timed/Multi-Stage Selection. Sensor alarm set points can be programmed for timed automatic sensitivity selection (such as more sensitive at night, less sensitive during day). Control panel programming can also provide multi-stage operation per sensor. For example, a 0.2% level may cause a warning to prompt investigation while a 2.5% level may initiate an alarm.

Sensor Alarm and Trouble LED Indication. Each sensor base's LED pulses to indicate communications with the panel. If the control panel determines a sensor is in alarm, or is dirty or has some other type of trouble, the details are annunciated at the control panel and that sensor base's LED will be turned on steadily. During a system alarm, the control panel will control the LEDs such that an LED indicating a trouble will return to pulsing to help identify the alarmed sensors.

* These products have been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listings 7272-0026:218, 7271-0026:231, 7270-0026:216, and 7300-0026:217 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. 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.

TrueAlarm Sensor Bases and Accessories

Sensor Base Features

Base mounted address selection:

- Address remains with its programmed location
- Accessible from front (DIP switch under sensor)

General features:

- Automatic identification provides default sensitivity when substituting sensor types
- Integral red LED for power-on (pulsing), or alarm or trouble (steady on)
- Locking anti-tamper design mounts on standard outlet box
- Magnetically operated functional test

Sensor Bases

4098-9792, Standard sensor base

4098-9789, Sensor base with wired connections for:

- 2098-9808 Remote LED alarm indicator **or** 4098-9822 relay (unsupervised)

4098-9791, Sensor base with supervised relay driver output (not compatible with 2120 CDT):

- Relay operation is programmable and can be manually operated from control panel
- Use with remote mount 2098-9737 relay
- Also includes wired connections for remote LED alarm indicator **or** 4098-9822 relay

Sensor Base Options

2098-9737, Remote or local mount supervised relay:

- DPDT contacts for resistive/suppressed loads, power limited rating of 3 A @ 28 VDC; non-power limited rating of 3 A @ 120 VAC (requires external 24 VDC coil power)

4098-9822, LED Annunciation Relay:

- Activates when base LED is on steady, indicating local alarm or trouble
- DPDT contacts for resistive/suppressed loads, power limited rating of 2 A @ 28 VDC; non-power limited rating of 1/2 A @ 120 VAC, (requires external 24 VDC coil power)

4098-9832, Adapter plate:

- Required for surface or semi-flush mounting to 4" square electrical box and for surface mounting to 4" octagonal box
- Can be used for cosmetic retrofitting to existing 6-3/8" diameter base product

2098-9808, Remote red LED Alarm Indicator:

- Mounts on single gang box (shown in illustration to right)



Description

TrueAlarm sensor bases contain integral addressable electronics that constantly monitor the status of the detachable photoelectric, ionization, or heat sensors. Each sensor's output is digitized and transmitted to the system fire alarm control panel every four seconds.

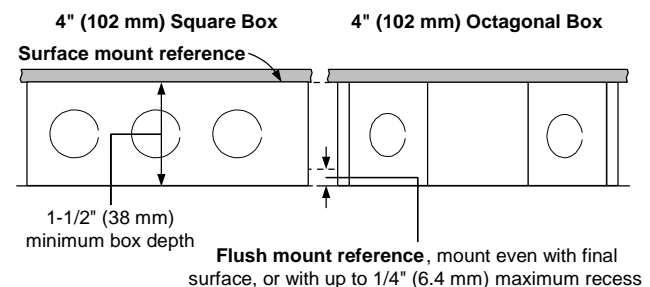
Since TrueAlarm sensors use the same base, different sensor types can be easily interchanged to meet specific location requirements. This feature also allows intentional sensor substitution during building construction. When conditions are temporarily dusty, instead of covering the smoke sensors (causing them to be disabled), heat sensors may be installed without reprogramming the control panel. Although the control panel will indicate an incorrect sensor type, the heat sensor will operate at a default sensitivity providing heat detection for building protection at that location.

Mounting Reference

Electrical Box Requirements: (boxes are by others)

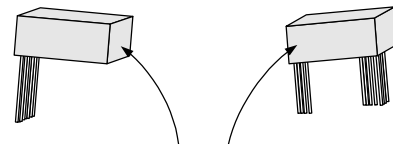
Without relay: 4" octagonal or 4" square, 1-1/2" deep; single gang, 2" deep

With relay: 4" octagonal or 4" square, 1-1/2" deep, with 1-1/2" extension ring



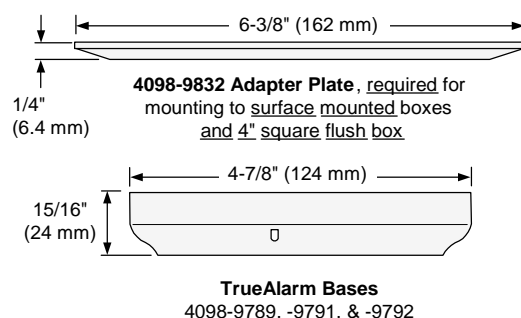
2098-9737 Relay (mounts in base electrical box or remotely)

4098-9822 Relay (mounts in base electrical box)



Relay Size: 2-1/2" X 1-1/2" X 1" (3.75 cubic inches)
(64 mm X 38 mm X 25.4 mm)

NOTE: Review total wire count, wire size, and accessories being wired to determine required box volume.



TrueAlarm Bases
4098-9789, -9791, & -9792

TrueAlarm Sensors

Features

Sealed against rear air flow entry

Interchangeable mounting

EMI/RFI shielded electronics

Heat sensors:

- Selectable rate compensated, fixed temperature sensing with or without rate-of-rise operation
- Rated spacing distance between sensors:

Fixed Temp. Setting	UL & ULC Spacing	FM Spacing, Either Fixed Temperature Setting
135° F (57.2° C)	60 ft x 60 ft (18.3 m)	20 ft x 20 ft (6.1 m) for fixed temperature only; RTI = Quick
155° F (68° C)	40 ft x 40 ft (12.2 m)	50 ft x 50 ft (15.2 m) for fixed temperature with either rate-of-rise selection; RTI = Ultra Fast

Smoke Sensors:

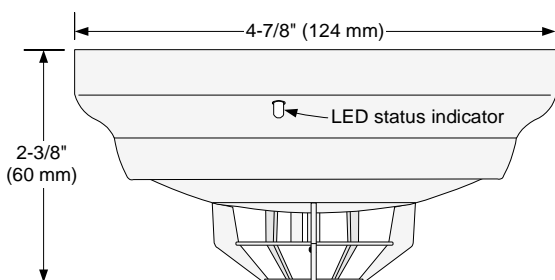
- Photoelectric or ionization technology sensing
- 360° smoke entry for optimum response
- Built-in insect screens

4098-9733 Heat Sensor

TrueAlarm heat sensors are self-restoring and provide rate compensated, fixed temperature sensing, selectable with or without rate-of-rise temperature sensing. Due to its small thermal mass, the sensor accurately and quickly measures the local temperature for analysis at the fire alarm control panel.

Rate-of-rise temperature detection is selectable at the control panel for either 15° F (8.3° C) or 20° F (11.1° C) per minute. Fixed temperature sensing is independent of rate-of-rise sensing and programmable to operate at 135° F (57.2° C) or 155° F (68° C). In a slow developing fire, the temperature may not increase rapidly enough to operate the rate-of-rise feature. However, an alarm will be initiated when the temperature reaches its rated fixed temperature setting.

TrueAlarm heat sensors can be programmed as a utility device to monitor for temperature extremes in the range from 32° F to 155° F (0° C to 68° C). This feature can provide freeze warnings or alert to HVAC system problems. Refer to specific panels for availability.



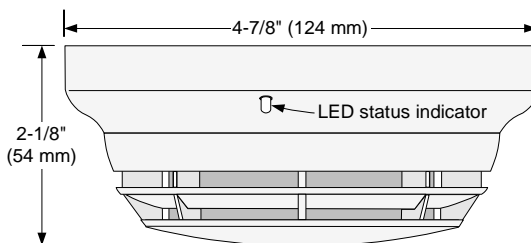
4098-9733 Heat Sensor with Base

WARNING: In most fires, hazardous levels of smoke and toxic gas can build up before a heat detection device would initiate an alarm. In cases where Life Safety is a factor, the use of smoke detection is highly recommended.

4098-9714 Photoelectric Sensor

TrueAlarm photoelectric sensors use a stable, pulsed infrared LED light source and a silicon photodiode receiver to provide consistent and accurate low power smoke sensing. Seven levels of sensitivity are available for each individual sensor, ranging from 0.2% to 3.7% per foot of smoke obscuration. Sensitivity is selected and monitored at the fire alarm control panel.

The sensor head design provides 360° smoke entry for optimum response to smoke from any direction. Due to its photoelectric operation, air velocity is not normally a factor, except for impact on area smoke flow.

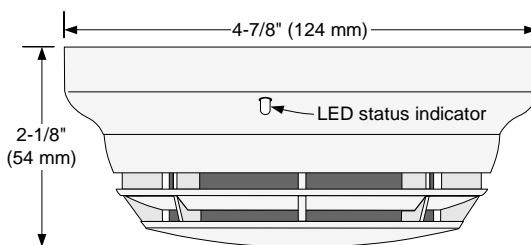


4098-9714 Photoelectric Sensor with Base

4098-9717 Ionization Sensor

TrueAlarm Ionization sensors use a single radioactive source with an outer sampling ionization chamber and an inner reference ionization chamber to provide stable operation under fluctuations in environmental conditions such as temperature and humidity. Smoke and invisible combustion gases can freely penetrate the outer chamber. With both chambers ionized by a small radioactive source [Am 241 (Americium)], a very small current flows in the circuit. The presence of particles of combustion will cause a change in the voltage ratio between chambers. This difference is measured by the electronics in the sensor base and digitally transmitted back to the control panel for processing.

Three levels of sensitivity are available for each ionization sensor: 0.5, 0.9, and 1.3% per foot of smoke obscuration.



4098-9717 Ionization Sensor with Base

Application Reference

Sensor locations should be determined only after careful consideration of the physical layout and contents of the area to be protected. Refer to NFPA 72, the *National Fire Alarm and Signaling Code*. On smooth ceilings, smoke sensor spacing of 30 ft (9.1 m) may be used as a guide. For detailed application information, refer to *4098 Detectors, Sensors, and Bases Application Manual* (574-709).

TrueAlarm Analog Sensing Product Selection Chart

TrueAlarm Sensor Bases

(Refer to Application Manual 574-709 and Installation Instructions 574-707 for additional information)

Model	Description	Compatibility	Mounting Requirements
4098-9792	Standard Sensor Base, no options	Sensors 4098-9714, -9733, & -9717	4" octagonal or 4" square box, 1-1/2" min. depth; or single gang box, 2" min. depth
4098-9789	Sensor Base with connections for Remote LED Alarm Indicator or Unsupervised Relay	Sensors 4098-9714, -9733, & -9717 2098-9808 remote LED alarm indicator or 4098-9822 relay	4" octagonal or 4" square box Note: Box depth requirements depend on total wire count and wire size, refer to accessories list below for reference.
4098-9791**	Sensor Base with connections for Supervised Remote Relay and connections for Remote Alarm Indicator or Unsupervised Relay	Sensors 4098-9714, -9733, & -9717 2098-9737 remote relay (supervised) 2098-9808 remote alarm indicator or 4098-9822 relay (unsupervised)	** NOTE: 4098-9791 is NOT compatible with the 2120 CDT

TrueAlarm Sensors

Model	Description	Compatibility	Mounting Requirements
4098-9714	Photoelectric Smoke Sensor	Bases 4098-9792, 4098-9789, and 4098-9791	Refer to base requirements
4098-9717	Ionization Smoke Sensor		
4098-9733	Heat Sensor		

TrueAlarm Sensor/Base Accessories

Model	Description	Compatibility	Mounting Requirements
2098-9737	Supervised Relay, mounts remote or in base electrical box	For use with 4098-9791 base	Remote Mounting requires 4" octagonal or 4" square box, 1-1/2" minimum depth Base Mounting requires 4" octagonal box, 2-1/8" deep with 1-1/2" extension ring
2098-9808	Remote Red LED Alarm Indicator on single gang stainless steel plate	Bases 4098-9789 and 4098-9791	Single gang box, 1-1/2" minimum depth
4098-9822	Relay, tracks base LED status (unsupervised, mounts only in base electrical box)		4" octagonal box, 2-1/8" deep with 1-1/2" extension ring
4098-9832	Adapter Plate	Bases 4098-9792, -9789, & -9791	Required for surface or semi-flush mounted 4" square box and for surface mounted 4" octagonal box

Specifications

General Operating Specifications

Communications and Sensor Supervisory Power	MAPNET II or IDNet, auto-select, 24-40 VDC w/data, 400 μ A typical, 1 address per base
Communications Connections	Screw terminals for in/out wiring, 18 to 14 AWG (0.82 mm ² to 2.08 mm ²)
Remote LED Alarm Indicator Current	1 mA typical, no impact to alarm current
Remote LED Alarm Indicator and Relay Connections	Color coded wire leads, 18 AWG (0.82 mm ²)
UL Listed Temperature Range	32° to 100° F (0° to 38° C)
Operating Temperature Range	with 4098-9717 or 4098-9733 32° to 122° F (0° to 50° C) with 4098-9714 15° to 122° F (-9° to 50° C)
Humidity Range	10 to 95% RH
Smoke Sensor	4098-9714, Photoelectric Sensor
Ambient Ratings	4098-9717, Ionization Sensor
Housing Color	Frost White
4098-9791 Base With Supervised Remote Relay 2098-9737 (see page 2 for contact ratings)	
Externally Supplied Relay Coil Voltage	18-32 VDC (nominal 24 VDC)
Supervisory Current	270 μ A, from 24 VDC supply
Alarm Current with 2098-9737 Relay	28 mA, from 24 VDC supply
4098-9822 Unsupervised Relay, Requirements for Bases 4098-9789 and 4098-9791 (see page 2 for contact ratings)	
Externally Supplied Relay Coil Voltage	18-32 VDC (nominal 24 VDC)
Supervisory Current	Supplied from communications
Alarm Current	13 mA from separate 24 VDC supply

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