

Features

Flexible standard combination of conventional and addressable initiation satisfies a wide variety of new and retrofit applications

4.3" (109 mm) Diagonal color touchscreen display:

- Convenient and intuitive user interface provides detailed system status and individual point information

Eight Point Zone/Relay Module:

- Each point is selectable as an IDC input or Relay output, Class A IDCs require 2 points (one out and one return); one module is standard, up to 3 additional modules can be field installed for a total of 4 eight point zone/relay modules per system
- Each point on the IDC/Relay Module can be configured as a control relay rated 2 A @ 30 VDC (resistive) as either normally open or normally closed
- Can be powered directly from the power supply or through the optional 25 VDC Regulator Module
- **IDC end-of-line resistor value can be selected** from a wide range of resistance values for retrofit convenience

Electrically isolated IDNet+ addressable initiating device SLC:

- Provides built-in short circuit isolation for monitoring and control of TrueAlarm analog sensors and IDNet communications monitoring and control devices; for use with either shielded or unshielded, twisted or untwisted single pair wiring; outputs are Class A or Class B
- Standard panel SLC provides up to 100 addressable points; optional additional loop expansion modules provide an additional isolated loop with short circuit isolation for the IDNet+ channel; each loop expansion module also provides an additional 75 addressable points to the IDNet+ channel capacity for a total of up to 250 addressable points

Power Supply Features:

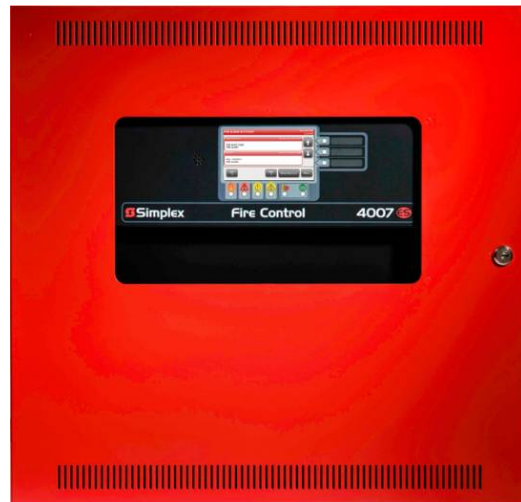
- Four Notification Appliance Circuits (NACs) selectable as Class A or Class B with 6 A total available current
- **NAC end-of-line resistor value can be selected** from a wide range of resistance values for retrofit convenience
- Additional notification power capacity is available using the 4009 IDNet NAC Extender
- Battery backup charging of up to 33 Ah; up to 18 Ah for cabinet mounted batteries and up to 33 Ah batteries for mounting in close-nipped remote battery cabinet

General Mechanical:

- Compact red or platinum cabinet for convenient surface or semi-flush mounting; rated NEMA 1 and IP30

Software Feature Summary:

- Current and previous panel configuration are both maintained in on-board memory to allow easy selection of desired revision



4007ES Hybrid Panel Front View

Software Feature Summary (Continued):

- An internal Ethernet service port and an internal serial service port are available for service computer connections to perform configuration updates, downloads and uploads; report downloads, and system software updates (Ethernet port only)
- An internal USB interface allows a compatible portable memory device (memory stick/thumb drive) to store job revisions, update revised jobs and panel software, and save detailed system reports from the panel without requiring a service computer

Optional modules and connections include:

- Point or Event DACT assembly that is compatible with IP Communicators
- Up to two additional IDNet+ addressable device output loop connections with short circuit fault protection and with 75 additional point capacity each
- Front mounted 48 LED annunciator with custom label inserts provides 24 Yellow LEDs, 20 Red LEDs, and 4 Red/Green LEDs; LEDs are programmable for up to 24 IDC zones of alarm and trouble annunciation or as required for custom annunciation requirements
- Remote LED annunciator support via RUI (remote unit interface) communications port for use with unshielded, twisted pair wiring (UTP)
- Alarm relays and auxiliary relays
- City connections, with or without disconnect switch
- 4003EC Voice Control Panels
- 4009 IDNet NAC Extenders to extend NAC capability for power and distance

4007ES Listings reference:

- UL 864, Fire Detection and Control (UOJZ)
- ULC S527, Control Units for Fire Alarm Systems

* 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 7165-0026:0378 for allowable values and/or conditions concerning material presented in this document. These products were not FM approved as of document revision date. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

Introduction

4007ES 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. The convenient and intuitive color touchscreen provides easy access for typical system response actions and for detailed system review or configuration updates with password control to limit user access.

Flexible for new and retrofit applications. Standard conventional IDCs and addressable IDNet+ communications provide flexibility for both new and retrofit systems. IDC and NAC end-of-line resistor values are selectable to match a wide range of existing initiating device circuits and notification appliance circuits.

Operator Interface

Convenient Status Information. With the locking door closed, the glass window allows viewing of the display status LEDs. The user interface is a 4.3" diagonal color touchscreen LCD with separate status LEDs as shown 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 functions and allows further inquiry by scrolling the display for additional detail.

Operator Interface and Software Features

- Convenient and detailed operator information is easily accessed using a logical, menu-driven touchscreen display with password access control

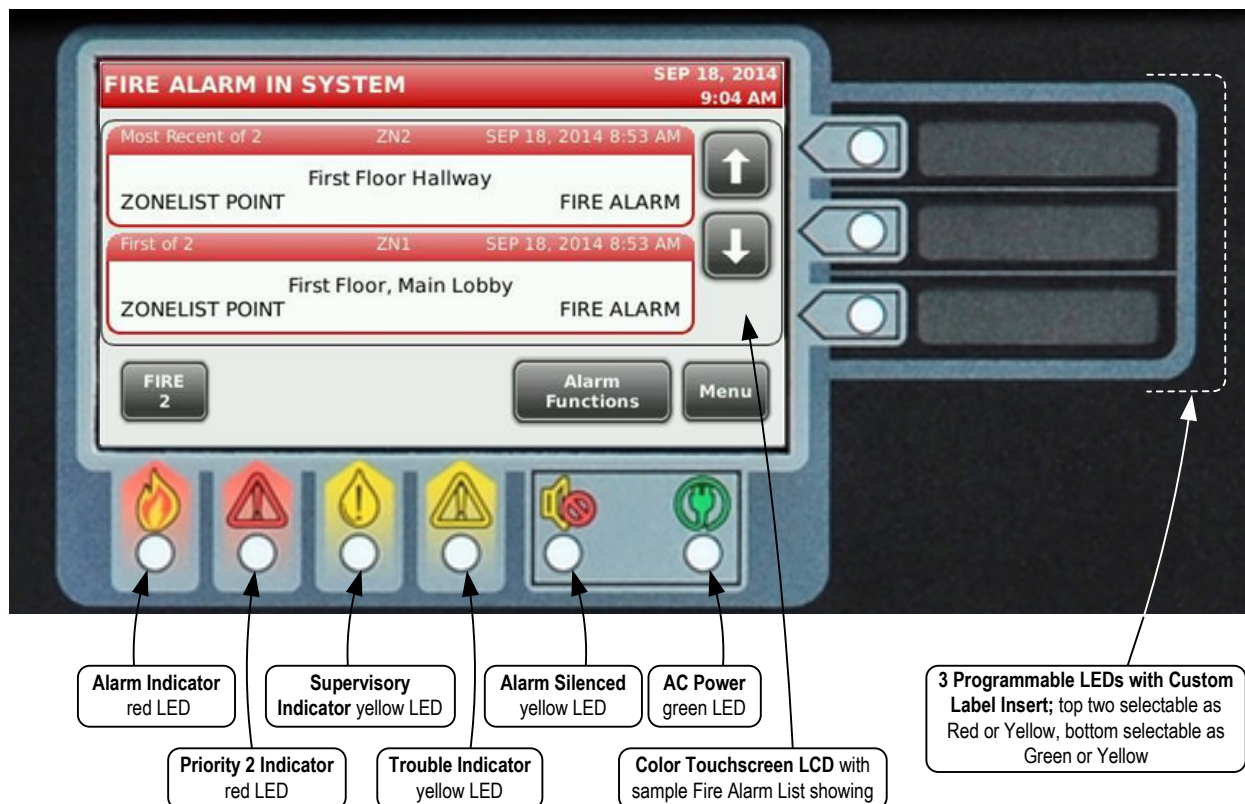
Operator Interface Features (Continued)

- Multiple automatic and manual diagnostics for maintenance reduction
- Alarm and Trouble History Logs (up to 1000 entries for each, 2000 total events) are available for viewing from the display or to be downloaded to a service computer or to the USB drive
- Module level ground fault searching assists installation and service by locating and isolating modules with grounded wiring
- WALKTEST silent or audible system test performs an automatic self-resetting test cycle and supports up to 8 WALKTEST groups
- 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

Mechanical Description

- Locking door with acrylic insert
- Latching front panel assembly swings forward for convenient internal access
- Smooth box surfaces are provided for locally cutting conduit entrance holes exactly where required
- Modules are power-limited (except as noted, such as relay modules)
- Battery compartment (bottom) accepts two batteries, up to 18 Ah, to be mounted within the cabinet without interfering with module space; charger capacity is up to 33 Ah; an external cabinet is available for batteries greater than 18 Ah, refer to page 6 for external battery cabinet details

Touchscreen Display with LED Status Indicators (approximately full size)



Operator Screen Reference

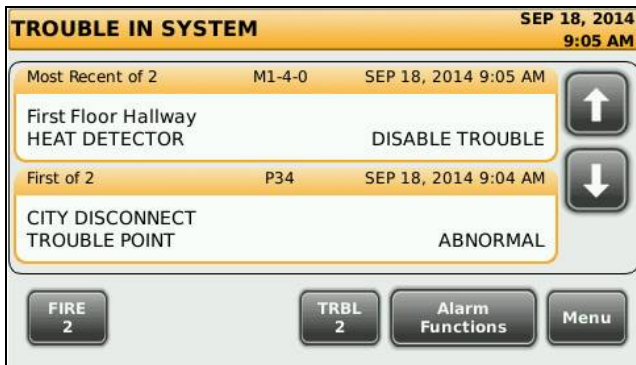
Main Menu Screen provides easy navigation to the function required. Buttons A, B, and C have programmable functions.



System Alarm Screen identifies active alarms with custom labels displayed, arrows allow navigation through the list



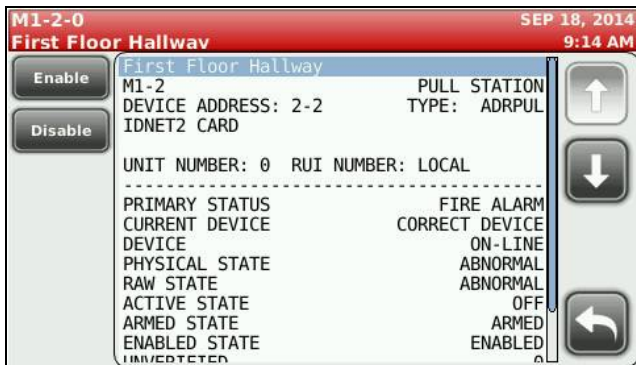
System Trouble Screen identifies active troubles with custom labels displayed, arrows allow navigation through the list



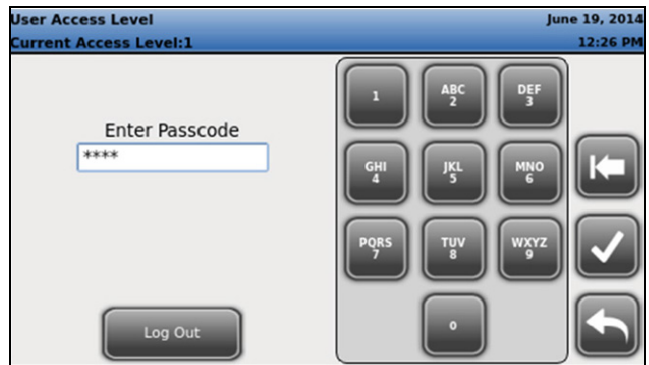
Trouble Log Screen allows review of past troubles with time stamp and point details shown.



Point Information Screen allows review of point details, arrows allow navigation through the information.



User Access Login Screen controls access to panel operations as determined per panel.



IDNet+ Addressable Device Control

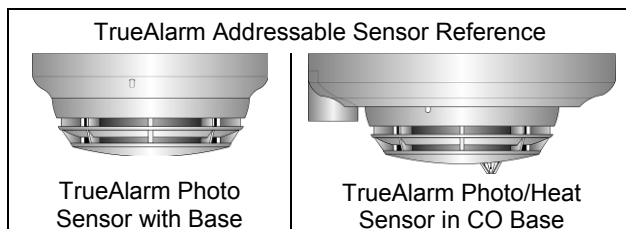
Overview. The 4007ES Hybrid provides an IDNet+ addressable initiating device Signaling Line Circuit (SLC) that supervises wiring connections and the individual device/appliance communications status on the SLC. With 2-wire IDNet+ SLCs, initiation, monitoring, and control devices such as manual fire alarm stations, TrueAlarm sensors, control relays, and sprinkler waterflow switches can communicate their identity and status and receive fire alarm system control. Additional addressable interface modules include circuit isolators, conventional IDC zone adapters, and interface to other system circuits such as fans, dampers, and elevator controls.

IDNet+ Addressable Device Operation

Each addressable device on the IDNet+ communication channel is continuously interrogated for status condition such as: normal, off-normal, alarm, supervisory, or trouble. Both Class B and Class A operation is available. Sophisticated poll and response communication techniques ensure supervision integrity and allow for "T-tapping" of the circuits for Class B operation. Devices with LEDs pulse the LED to indicate receipt of a communications poll and can be turned on steady from the panel. With addressable devices, the location and status of the connected device is monitored, logged, and displayed on the operator interface LCD with each device having its own 40 character custom label for precise identification.

TrueAlarm Addressable Sensor Operation

Addressable initiating device communications include operation of TrueAlarm smoke and temperature sensors. Smoke sensors transmit an output value based on their smoke chamber condition and the CPU maintains a current value, peak value, and an average value for each sensor. Status is determined by comparing the current sensor value to its average value. Tracking this average value as a continuously shifting reference point filters out environmental factors that cause shifts in sensitivity.



Programmable sensitivity of each sensor can be selected at the control panel for different levels of smoke obscuration (shown directly in percent) or for specific heat detection levels. To evaluate whether the sensitivity should be revised, the peak value is stored in memory and can be easily read (or downloaded as a report) and compared to the alarm threshold directly in percent.

CO sensor bases combine an electrolytic CO sensing module with a TrueAlarm analog sensor to provide a single multiple sensing assembly using one system address. The CO sensor can be enabled/disabled, and can be used in LED/Switch modes and custom control. (refer to data sheet S4098-0052 for details)

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

TrueSense Early Fire Detection. Multi-sensor 4098-9754 provides photoelectric and heat sensor data using a single 40070ES IDNet+ address. The panel evaluates smoke activity, heat activity, **and their combination**, to provide TrueSense early detection. For more details on this operation, refer to data sheet S4098-0024.

Diagnostics and Default Device Type

Sensor Status. TrueAlarm operation allows the control panel to automatically indicate when a sensor is almost dirty, dirty, and excessively dirty. The NFPA 72 requirement for a test of the sensitivity range of the sensors is fulfilled by the ability of TrueAlarm operation to maintain the sensitivity level of each sensor. CO Sensors track their 10 year active life status providing indicators to assist with service planning. Indicators occur at: 1 year, 6 months, and end of life.

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

IDNet+ Device Wiring Reference

IDNet+ Addressable Channel Capacity. The 4007ES Hybrid provides an isolated output IDNet+ signaling line circuit (SLC) that supports up to 250 addressable monitor and control points intermixed on the same pair of wires. (250 total requires two 4007-9803 IDNet+ Loop Expansion Modules.)

IDNet+ SLC Wiring Specifications

Maximum Distance from Control Panel	0 to 125	4000 ft (1219 m); 50 ohms
per Device Load	126-250	2500 feet (762 m); 35 ohms
Total Wire Length Allowed With "T" Taps for Class B Wiring		Up to 12,500 ft (3.8 km); 0.60 μ F
Maximum Capacitance Between IDNet+ Channels		1 μ F
Loading per device		0.8 mA supv., 1 mA alarm; 2 mA per activated device LED
Wire Type and Connections		Shielded or unshielded, twisted or untwisted wire*
Connections		Terminal blocks for 18 to 12 AWG

Compatibility includes: IDNet communicating devices and TrueAlarm sensors *including* QuickConnect and QuickConnect2 sensors; see data sheet S4090-0011 for additional reference

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

Power Supply Output and Zone/Relay Module Details

Power Supply Output Details:

- **RUI Communications** controls up to 10 remote devices at up to 2500 ft (762 m) for single run, or 10,000 ft (3048 m) total if wiring is Class B and T-tapped; selectable as Class B or Class A
- **Compatible RUI remote equipment** includes: 4100 Series 24 I/O and LED/Switch modules (refer to data sheet S4100-0005), 4602 Series LED/Switch and I/O Annunciator modules, including 4602-9101 Status Command Units (SCU), and 4602-9102 Remote Command Units (RCU); (refer to data sheet S4602-0001)
- **IDNet+ SLC Output** provides electrically isolated Class B or Class A communication; standard capacity is up to 100 addressable devices with expansion up to 250 devices using up to two 4007-9803 IDNet+ Loop Expansion Modules (as described on page 4)
- **6 A Output Rating.** This includes current for: special application notification appliances; IDNet devices; module currents; and auxiliary output current (battery charging, CPU, and power supply current does not subtract from the 6 A); when NACs are controlling Regulated 24 DC Appliances, total NAC current available is 3 A
- **Four on-board Class B/Class A NACs**, rated 3 A each for Special Application appliances; selectable for SmartSync horn and strobe control, or strobe synchronization; rated 2 A each for Regulated 24 DC appliances
- NAC end-of-line (EOL) resistor values are selectable as: 10 k Ω , 3.9 k Ω , 4.7 k Ω , 5.1 k Ω , 5.6 k Ω , or 15 k Ω

Power Supply Output Details (Continued):

- **Battery Charger** is dual rate, temperature compensated, and charges up to 18 Ah sealed lead-acid batteries mounted in the battery compartment, and charges up to 33 Ah batteries mounted in an external cabinet
- **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 NAC current
- **Low Battery Voltage Cutout** is selectable when required (required for ULC listing applications)
- **2 A Auxiliary Output (AUX/SNAC)** can be selected either as resettable auxiliary power of 2 A @ 24 VDC, or selected to be a simple NAC (SNAC) for sounder base power, 4-wire detector power, or door holder power

Zone/Relay Module Details:

- **Select as IDC or Relay;** configure up to 8, Class B IDCs, or up to 4, Class A IDCs; or up to 8, Relay outputs rated 2 A resistive @ 30 VDC (N.O. or N.C.); or combinations of IDCs and Relays; each zone is separately configurable as an IDC or Relay output
- **IDC Support.** Each IDC supports up to 30, two-wire devices
- **IDC EOL resistor values are selectable as:** 3.3 k Ω , 2 k Ω , 2.2 k Ω , 3.4 k Ω , 3.9 k Ω , 4.7 k Ω , 5.1 k Ω , 5.6 k Ω , 6.34/6.8 k Ω , and 3.6 k Ω + 1.1 k Ω ; see instructions for more details

Product Selection

Model*	Color	Description	Supv.	Alarm
4007-9101(BA)	Red	4007ES Hybrid with 4 conventional 3 A NACs and a 6 A output power supply/battery charger; includes IDNet+ communications for 100 addressable devices and 1, 4007-9801 Zone/Relay module; Note: Add optional module and other currents separately for battery calculations; base panel current does not subtract from the 6 A power available for optional modules and external loads	145 mA	190 mA
4007-9102(BA)	Platinum			

* Models with (BA) are available assembled in the USA by adding the suffix "BA".

Module and Accessories Selection Information

Factory Programming Options	Model	Description
	4007-8810	Factory Programming (select)
	4007-0831	Custom Labels and Programming (requires 4007-8810)

Field Installed Optional Modules (refer to diagram on page 7 for module locations)

Model	Description	Supv.	Alarm	
4007-9801	Eight Point Zone/Relay Module , each point is selectable as an IDC input or Relay output, Class A IDCs require 2 points (one out and one return); one module is included as standard, select up to 3 additional; current shown is for 8 Class B IDCs with 4 in alarm, <i>detector current is added separately</i>	83 mA max	351 mA max	
4007-9802	25 VDC Regulator Module ; 2 A maximum output; use to power Zone/Relay modules connected to initiating devices requiring nominal 25 VDC voltage; refer to technical publication 579-832, <i>2-Wire Detector Compatibility Chart</i> for application details	with 1 module	190 mA	445 mA
		with 2 modules	290 mA	801 mA
		with 3 modules	390 mA	1156 mA
4007-9803	IDNet+ Loop Expansion Module ; provides an additional isolated loop with short circuit isolation to the existing IDNet+ channel, also provides an additional 75 addressable points to the IDNet+ channel capacity, maximum of two	NA	NA	
4007-9805	Panel Mounted 48 LED Status Annunciator Module ; provides 24 Yellow LEDs, 20 Red LEDs, and 4 Red/Green LEDs that are programmable for up to 24 IDC zones of alarm and trouble annunciation, or as required for custom annunciation requirements	no LEDs on	10 mA	10 mA
		with LEDs on	1.75 mA per LED,	105 mA max
4007-9806	SDACT Module for Point or Event Reporting; order 2080-9047 connection cables as required (see cable details under accessories)	30 mA	40 mA	
4007-9807	City Circuit Module with Disconnect Switch	20 mA	36 mA	
4007-9808	City Circuit Module without Disconnect Switch	20 mA	36 mA	
4007-9809	Relay Module ; relays for Alarm, Supervisory, and Trouble; rated 2 A resistive @ 32 VDC	15 mA	37 mA	

continued on next page
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Module and Accessories Selection Information (Continued)

Batteries

Model	Capacity	Battery Mounting Details	
2081-9272	6.2 Ah	12 V Batteries for cabinet mounting; select one battery model per system standby requirements; order quantity of two; to be wired in series for 24 VDC	
2081-9274	10 Ah		
2081-9288	12.7 Ah		
2081-9275	18 Ah		
2081-9287	25 Ah	For remote mount in Battery Box 4009-9801	Batteries for remote mounting; see battery cabinet details below
2081-9276	33 Ah	For remote mount in Battery Box 4009-9802	

Battery Accessories

Model	Color	Capacity	Dimensions	Description
4009-9801	Beige	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)	External battery cabinet without charger, with locking solid door and battery harness; for close-nippled mounting to fire alarm control panel cabinet
4009-9802	Beige	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)	

Accessories

Model	Description
2080-9047	DACT cable, 14 ft (4.3 m) long, RJ45 plug one end, spade lugs on the other; order one per phone line connection required
2975-9812	Red semi-flush box trim; 1 7/16" (37 mm) wide, four corners and trim pieces for top, bottom, and sides
2975-9813	Platinum semi-flush box trim; 1 7/16" (37 mm) wide, four corners and trim pieces for top, bottom, and sides
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)
4081-9002	3.3 k Ω , 1 W end-of-line resistor harness for non-addressable NACs
4081-9018	10 k Ω , 1 W end-of-line resistor harness for Class B non-addressable initiating zones

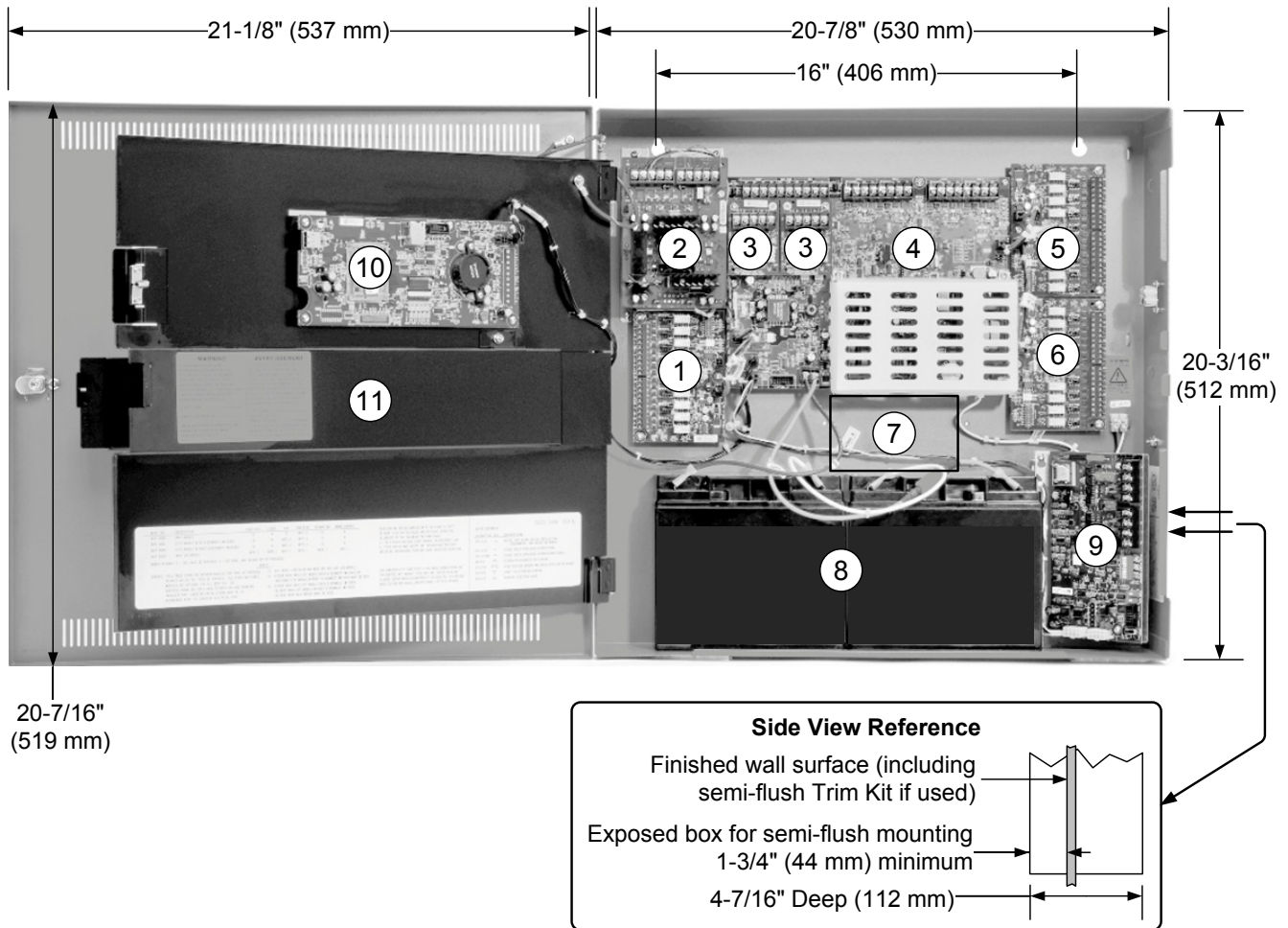
General Specifications

Input Power	120 VAC Input	2 A maximum @ 102 to 132 VAC, 50/60 Hz	
	240 VAC Input	1 A maximum @ 204 to 264 VAC, 50/60 Hz	
4007ES Hybrid Power Supply Output Ratings	Power Supply Output Rating	Including module currents and auxiliary power outputs; 6 A total	Output switches to battery backup during mains AC failure or brownout conditions
	NAC Ratings	3 A each for Special Application Appliances	
		2 A each for Regulated 24 DC Appliances	
	Auxiliary Power Tap	2 A maximum, 24 VDC nominal (19.5 to 31.1 VDC)	
Special Application Non-Addressable Appliances	Simplex horns, strobes, and combination horn/strobes and speaker/strobes (contact your Simplex product representative for compatible appliances)		
Regulated 24 DC Non-Addressable Appliances	Power for other UL listed appliances; use associated external synchronization modules where required		
Battery Charger Ratings (sealed lead-acid batteries)	Battery capacity range	UL and ULC listed for battery charging of 6.2 Ah up to 33 Ah (batteries larger than 18 Ah require a remote battery cabinet)	
	Charger characteristics and performance	Temperature compensated, dual rate, recharges depleted batteries within 48 hours per UL Standard 864; to 70% capacity in 12 hours per ULC Standard S527	
Environmental	Operating Temperature	32° to 120°F (0° to 49° C)	
	Operating Humidity	Up to 93% RH, non-condensing @ 90° F (32° C) maximum	

Additional Technical Reference

Description	Document	Description	Document
Installation Manual	579-1102	Single Page Operator Instructions	579-1109
Zone/Relay Module Installation Manual	579-1103	2-Wire Detector Compatibility Chart	579-832
Detailed Operator's Manual	579-1165		

4007ES Mounting and Module Location Reference

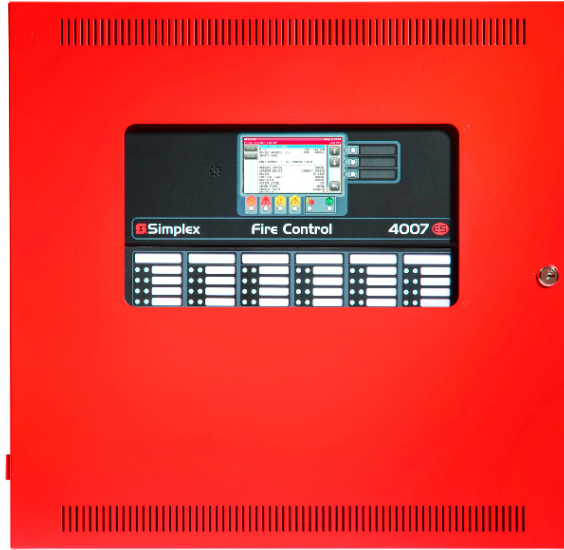


Module Locations:

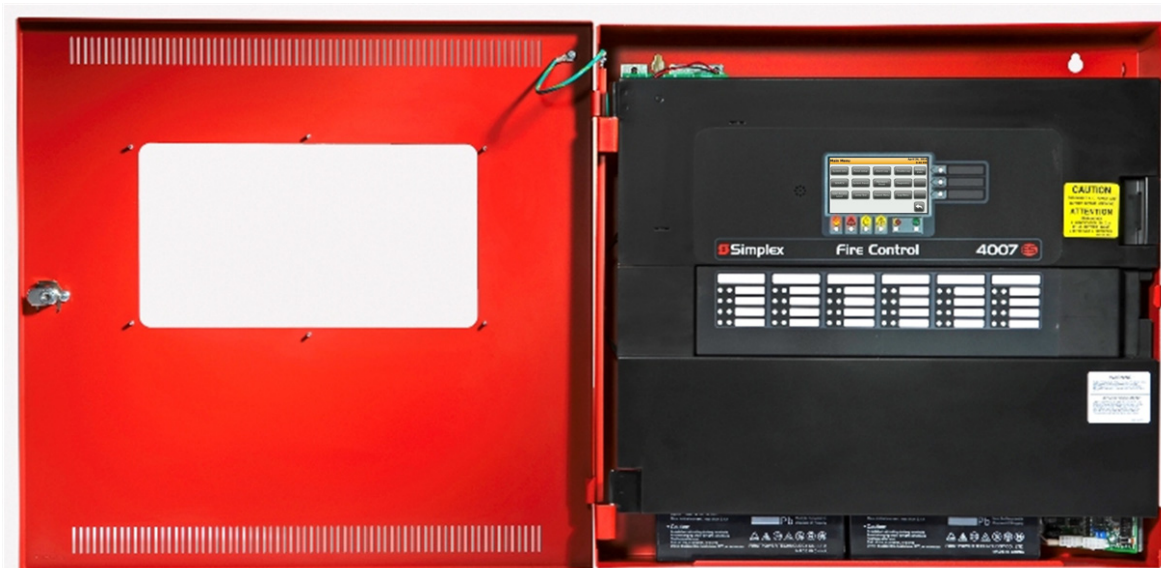
1. Primary location for 4007-9801 Zone/Relay Module.
2. Location for additional 4007-9801 Zone/Relay Module, or (as shown) 4007-9802 25 V Regulator Module.
3. 4007-9803 IDNet+ Loop Expansion Modules, maximum of two (two are shown).
4. Power Supply Assembly.
5. Location for additional 4007-9801 Zone/Relay Module.
6. Location for additional 4007-9801 Zone/Relay Module.
7. 4007-9807 or 4007-9808 City Circuit Module, or 4007-9809 Relay Module.
8. Battery location for up to 18 Ah batteries. Note: No conduit entry or wiring in this area, 14-7/8" (378 mm) wide.
9. 4009-9806 SDACT location.
10. CPU and User Interface assembly.
11. Location for optional 4007-9805 LED Module.

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.

4007ES Hybrid Additional Reference



4007ES Hybrid with optional 48 LED Annunciator Module (4007-9805)



4007ES Hybrid Operator View with door open

Additional Compatible Equipment and Reference

Subject	Data Sheet	Subject	Data Sheet
4009 IDNet NAC Extender	S4009-0002	Battery and Battery Cabinet Reference	S2081-0006
4003EC Voice Control Panel	S4003-0002	Serial DACT (SDACT)	S2080-0009
4602 Series SCU/RCU	S4602-0001	Graphic I/O Modules	S4100-0005
Addressable Device Compatibility, IDNet Communication Sensors and Devices	S4090-0011		

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