

Features



Fig 1: 4007ES Hybrid Panel Front View

Satisfies a variety of new and retrofit applications 4.3" (109 mm) diagonal color touchscreen display:

- Provides detailed system status and point information
- Supports dual language selection, including unicode character languages
- A custom background display appears when operation is normal

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

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:

- Red or platinum cabinet; rated NEMA 1 and IP30

4007ES Listings reference:

- UL 864 - Control Units, System (UOJZ); Control Unit Accessories, System, Fire Alarm (UOXX); Control Units, Releasing Device Service (SYZV)
- UL 2017 - Emergency Alarm System Control Units (CO detection), (FSZI)
- ULC-S559 - Central Station Fire Alarm System Units (DAYRC)
- ULC-S527 - Control Units, System, Fire Alarm (UOJZC); Control Unit Accessories, System, Fire Alarm (UOXXC); Control Units, Releasing Device Service (SYZVC)

Software Feature Summary:

- Current and previous panel configuration maintained in on-board memory
- An internal Ethernet service port is available for service computer connections to perform configuration updates, downloads and uploads; report downloads, and system software
- Internal USB interface allows a memory stick to store job revisions, update revised jobs and panel software, and save detailed system reports from the panel

Optional modules and connections include:

- Fire Alarm Network Interface for Peer-to-Peer fire alarm network communications, supports either Class B or Class X operation
- Point or Event DACT assembly for 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; LEDs are programmable for up to 24 IDC zones of alarm and trouble annunciation or other custom annunciation requirements
- Remote LED annunciator support via RUI communications port for use with UTP wiring
- Dual RS-232 ports (for printer, PC annunciator or third party interface)
- TrueInsight Remote Gateway
- 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
- Battery brackets for seismic area protection

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. Panels can be configured for stand-alone or networked fire control operation. 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

* Additional listings may be applicable; contact your local product supplier for the latest status.

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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. 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 for printing to a connected printer, or downloaded to a service computer.

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.

Touchscreen Display with LED Status Indicators

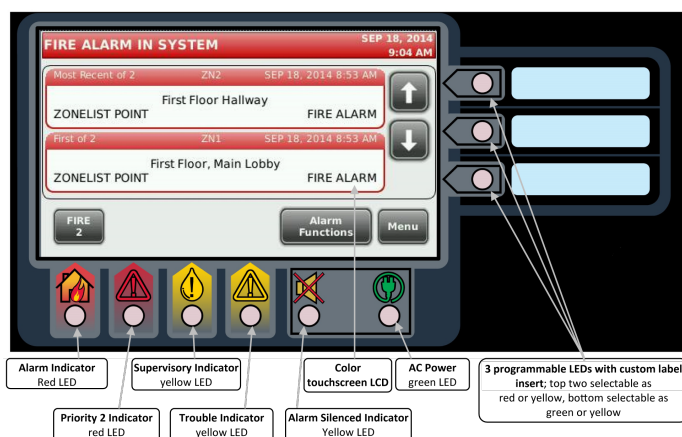


Fig 2: Touchscreen Display with LED Status Indicators

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.

Mechanical Description

- Locking door with polycarbonate window
- 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; for batteries greater than 18 Ah, refer to page 6 for external battery cabinet details
- Cabinet assembly design has been seismic tested and is certified to IBC and CBC standards as well as to ASCE 7 categories A through F, requires battery brackets as detailed on data sheet **AC2081-0019**

IDNet+ Addressable Device Control

The 4007ES Hybrid provides an IDNet+ addressable initiating device Signaling Line Circuit (SLC) that supervises wiring connections and the individual device 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.

Table 1: TrueAlarm Addressable Sensor Reference



Fig 3: TrueAlarm Photo Sensor with Base

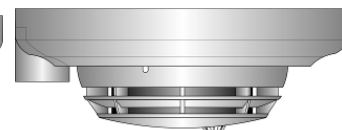


Fig 4: TrueAlarm Photo/Heat Sensor in CO Base

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

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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 **AC4098-0052** 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 A4098-9754 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 **AC4098-0024**.

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

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

IDNet+ Addressable 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 A007-9803 IDNet+ Loop Expansion Modules.)

Table 2: IDNet+ SLC Wiring Specifications

Specification		Rating
Maximum Distance from Control Panel per Device Load	0 to 125	4000 ft (1219 m); 50 ohms
	126-250	2500 feet (762 m); 35 ohms
Total Wire Length Allowed With "T" Taps for Class B Wiring		Up to 12,500 ft (3.8 km); 0.60 μ F
Maximum Capacitance Between IDNet+ 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.		

Note: * Some applications may require shielded wiring. Review your system with your local Autocall product supplier.

Power Supply Output and Zone/Relay Module Details

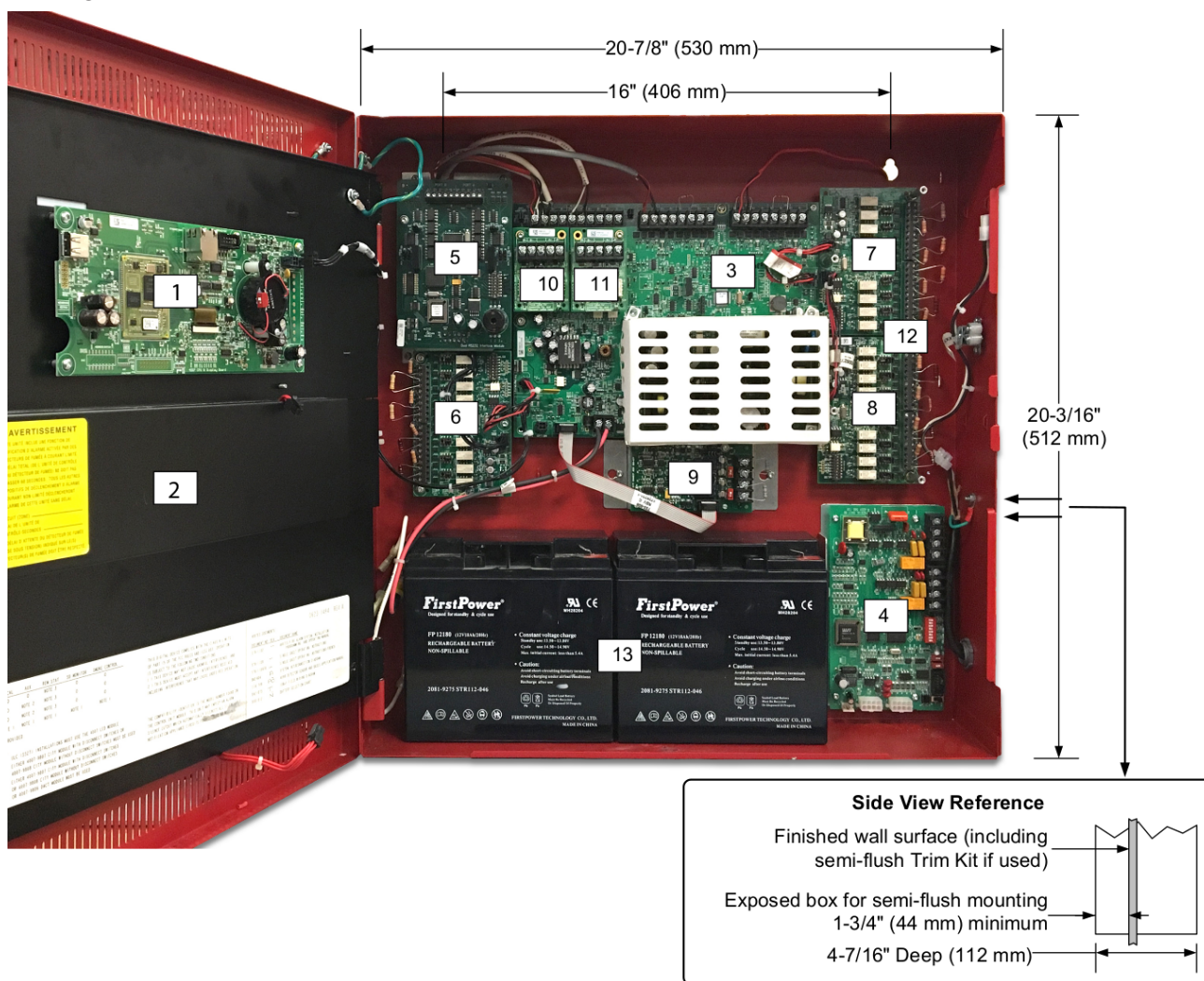
Power supply output details

- 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: A4606-9202 and A4606-9205 Color Touchscreen Annunciators (up to 6 total), 4100 Series 24 I/O and LED/Switch modules, A602 Series LED/Switch and I/O Annunciator modules, including A602-9101 Status Command Units (SCU), and A602-9102 Remote Command Units (RCU)
- IDNet+ SLC Output provides electrically isolated Class B or Class A communication; standard capacity is up to 100 addressable points with expansion for up to 250 points using up to two A007-9803 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
- 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

4007ES Mounting and Module Location Reference



Module Locations

- CPU and User Interface assembly.
- Location for optional A007-9805 LED Module.
- Power Supply Assembly.
- A007-9806 SDACT location.
Note: The SDACT includes a 650-1838 flat mounting bracket (available separately). Some pre-existing systems with an angled SDACT bracket will need to be replaced with the flat mounting bracket when a Network Interface Card is installed.
- Location for A007-9801 Zone/Relay Module, A007-9812 Dual RS-232 Interface, or (as shown) A007-9802 25 V Regulator Module
- Primary location for A007-9801 Zone/Relay Module.
- Location for additional A007-9801 Zone/Relay Module.
- Identical to Block 7 above.
- A007-9807 or A007-9808 City Circuit Module, or A007-9809 Relay Module.
- A007-9803 IDNet+ Loop Expansion Modules, maximum of two (two are shown).
- Identical to block 10 above.
- Block 12 is an additional block that sits on spacers above Block 7 and 8. The A007-9810 NIC can be mounted in block L with or without modules mounted below it in blocks 7 and H. When fiber media cards are used and an SDACT is present, the SDACT requires a 650-1838 flat mounting bracket (ordered separately).
- Battery location for up to 18 Ah batteries. Note: No conduit entry or wiring in this area, 14-7/8" (378 mm) wide.
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.

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Product Selection

Table 3: Product Selection

SKU	Color	Description	Supv.	Alarm
A007-9101 A007-9101BA	Red	4007ES Hybrid with 4 conventional 3 A NACs and a 6 A output power supply/battery charger; includes IDNet+ communications for 100 addressable points and 1, A007-9801 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
A007-9102 A007-9102BA	Platinum			
Note: * Models ending with BA are available assembled in the USA.				

Module and Accessories Selection Information

Table 4: Factory Programming Options

SKU	Description
A007-8810	Factory Programming (select)

Table 5: Field Installed Optional Modules

SKU	Description		Supv.	Alarm
A007-9801	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, detector current is added separately		83 mA max	351 mA max
A007-9802	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 <i>579-832 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
A007-9803	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
A007-9805	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	
A007-9806	SDACT Module for Point or Event Reporting		30 mA	40 mA
A007-9807	City Circuit Module with Disconnect Switch		20 mA	36 mA
A007-9808	City Circuit Module without Disconnect Switch		20 mA	36 mA
A007-9809	Relay Module; relays for Alarm, Supervisory, and Trouble; rated 2 A resistive @ 32 VDC		15 mA	37 mA
A007-9812	Dual RS-232 Interface Module; Compatible with Autocall remote printer, PC annunciator or third party interface (two ports/connections maximum)		60 mA	60 mA

Table 6: Field Installed Optional Network Modules

SKU	Description		Supv.	Alarm
A007-9810	Modular Network Interface Card; Class B or Class X (requires up to two media cards; ordered separately, see below)		30 mA (with no cards installed)	30 mA
A007-9813	Wired media card	Select media cards as required; mounts to A007-9810 modular network interface card	55 mA	55 mA
A007-6301	Left port, single-mode 4120 duplex fiber media card	Select media cards as required; mounts on A007-9810 modular network interface card;	55 mA	55 mA
A007-6302	Right port, single-mode 4120 duplex fiber media card	Maximum of 1 left port and 1 right port duplex fiber media card per modular network interface.	55 mA	55 mA
A007-6303	Left port, multi-mode 4120 duplex fiber media card	Field connections require left port to right port pairing. Order fiber media service kits for	55 mA	55 mA

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Table 6: Field Installed Optional Network Modules

SKU	Description	Supv.	Alarm
A007-6304	Right port, multi-mode 4120 duplex fiber media card	55 mA	55 mA

Table 7: Batteries

SKU	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	
2081-9275	18 Ah	
2081-9271	33 Ah	For remote mount in Battery Box 4009-9802

Batteries for remote mounting; see battery cabinet details below

Table 8: Battery accessories

SKU	Color	Capacity	Dimensions	Description
A009-9801	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-nipped 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)	

Table 9: Accessories

SKU	Description
A2975-9812	Red semi-flush box trim; 1 7/16" (37 mm) wide, four corners and trim pieces for top, bottom, and sides
A2975-9813	Platinum semi-flush box trim; 1 7/16" (37 mm) wide, four corners and trim pieces for top, bottom, and sides
A4081-9002	3.3 kΩ, 1 W end-of-line resistor for Class B non-addressable initiating zones
A4081-9018	10 kΩ, 1 W end-of-line resistor harness for non-addressable NACs

General Specifications

Table 10: General specifications

Specification	Rating
Input Power	120 VAC Input
	240 VAC Input
4007ES Hybrid Power Supply Output Ratings	Power Supply Output Rating
	NAC Ratings
	Auxiliary Power Tap
	Special Application Non-Addressable Appliances
Battery Charger Ratings (sealed lead-acid batteries)	Battery capacity range
	Charger characteristics and performance

2 A maximum @ 102 to 132 VAC, 50/60 Hz
1 A maximum @ 204 to 264 VAC, 50/60 Hz

Including module currents and auxiliary power outputs; 6 A total
3 A each for Special Application Appliances
2 A each for Regulated 24 DC Appliances
2 A maximum, 24 VDC nominal (19.5 to 31.1 VDC)

Output switches to battery backup during mains AC failure or brownout conditions

Autocall horns, strobes, and combination horn/strobes and speaker/strobes (contact your Autocall product representative for compatible appliances)

Power for other UL listed appliances; use associated external synchronization modules where required

battery charging of 6.2 Ah up to 33 Ah (batteries larger than 18 Ah require a remote battery cabinet)

Temperature compensated, dual rate, recharges depleted batteries within 48 hours per UL Standard 864; to 70% capacity in 12 hours per ULC Standard S527

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Table 11: Custom background and environmental details

Item		Description
Custom Background Display Details		Supported file types: JPG, BMP, GIF, and PNG
		Recommended image type is JPG, recommended image size is 480 x 240, and the file size limit is 100 kb
Environmental	Operating Temperature	32° to 120°F (0° to 49° C)
	Operating Humidity	Up to 93% RH, non-condensing @ 90° F (32° C) maximum

Table 12: Additional Technical Reference

Description	Document
Installation Manual	579-1102AC
Field Installed Optional Modules	579-1103AC
Detailed Operator's Manual	579-1165AC
Single Page Operator Instructions	579-1109AC

Additional Compatible Equipment and Reference

Table 13: Datasheet reference

Subject	Data Sheet
4009 IDNet NAC Extender	AC4009-0002
A4606 Series Color LCD Touchscreen Remote Annunciator	AC4606-0003
Graphic I/O Modules	AC4100-0005
A602 Series SCU/RCU	AC4602-0001
Agent Release Accessories	AC2080-0010
Battery and Battery Cabinet Reference	AC2081-0006
Seismic Battery Brackets Reference	AC2081-0019
Serial DACT (SDACT)	AC2080-0009
Multi-Signal Fiber Optics	AC4100-0049
PC Annunciator	AC4190-0013
120 VAC Desktop Remote Printer	AC4190-0011

Table 14: Additional Technical Reference

Description	Document
Installation Manual	579-1102AC
Zone/Relay Module Installation Manual	579-1103AC
Detailed Operator's Manual	579-1165AC
Single Page Operator Instructions	579-1109AC
4007ES Hybrid Data Sheet	AC4007-0001

4007ES Hybrid Additional Reference



Fig 5: 4007ES Hybrid with optional 48 LED Annunciator Module (A007-9805)



Fig 6: A4606-9205 (Platinum) Color LCD Touchscreen Remote Annunciator



Fig 7: A4606-9202 (Red) Color LCD Touchscreen Remote Annunciator



Fig 8: 4007ES Hybrid Operator View with door open