

440 Western Avenue Associates

Portland, ME

Fire Alarm System  
Equipment Submittal  
5/29/15



30 Thomas Drive  
Westbrook, ME 04092-3824



**Project:** 440 Western Avenue Associates  
131 Johnson Rd  
Portland, ME 04102

**Customer:** Trades Center Inc.  
10 Pomerleau Street  
Biddeford, ME 04005

**Sales Representative:** Kenneth Plourde

**FIRE ALARM SYSTEM  
EQUIPMENT SUBMITTAL**

Please contact the SimplexGrinnell Service Department **TWO WEEKS IN ADVANCE** to schedule a technician for checkout.

SimplexGrinnell District Contact Information:

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**Submittal Approval:**

Approved By: \_\_\_\_\_

Date: \_\_\_\_\_



**440 WESTERN AVENUE ASSOCIATES  
FIRE ALARM SYSTEM  
EQUIPMENT SUBMITTAL**

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INSERT 1

PROJECT BILL OF MATERIAL





**BILL OF MATERIAL  
444 WESTERN AVENUE ASSOCIATES  
FIRE ALARM SYSTEM EQUIPMENT**

<b>TAB</b>	<b>QTY</b>	<b>MODEL</b>	<b>DESCRIPTION</b>
<b>CONTROL EQUIPMENT &amp; ACCESSORIES</b>			
2	1	4010-9816	DACT (POINT REPORTING)
2	1	4009-9201	4009 IDNET NAC EXTENDER, 120 VAC
2	2	2081-9272	BATTERY, SYSTEM, 12VOLT, SEALED, LEAD ACID 6.2Ah
<b>INITIATING/ADDRESSABLE DEVICES &amp; ACCESSORIES</b>			
3	1	4098-9714	TRUEALARM PHOTO SMOKE SENSOR
3	1	4098-9792	TRUEALARM SENSOR BASE
<b>NOTIFICATION APPLIANCES &amp; ACCESSORIES</b>			
4	27	4906-9101	V/O M-C NON-ADDRESS, RED, WALL
4	9	4906-9127	A/V M-C NON-ADDRESS, RED, WALL



## INSERT 2

# CONTROL EQUIPMENT, BATTERIES & ACCESSORIES DATA SHEETS



**Features****Standard features include:**

- Up to 250 addressable TrueAlarm sensor or addressable device points using IDNet communications that operate with either shielded or unshielded twisted pair wiring
- Four, 2 A notification appliance circuits (NACs) with solid state current protection
- Power supply/battery charger with 4 A available for NACs and auxiliary power
- Internal event reporting DACT module (standard on models 4010-9101, 4010-9102, & 4010-9150)
- UL listed to Standard 864

**Installation convenience features:**

- Power-limited design provides electronic modules on a one-piece chassis with up-front terminal blocks for wiring access
- Compact NEMA 1 rated cabinet is available in beige or red and can be pre-shipped for early installation

**Setup, programming, and maintenance features:**

- Device level ground fault search, locate, and isolate
- *Auto Program* for general alarm operation
- TrueAlarm individual analog sensing with front panel information and selection access
- “Dirty” TrueAlarm sensor maintenance alerts, service and status reports including “almost dirty”
- Default TrueAlarm sensor device type operation
- TrueAlarm sensor peak value performance report
- Duplicate address error detection
- Front panel or PC programming
- WALKTEST silent or audible system test
- Software verification simulation mode

**Supports the following IDNet devices:**

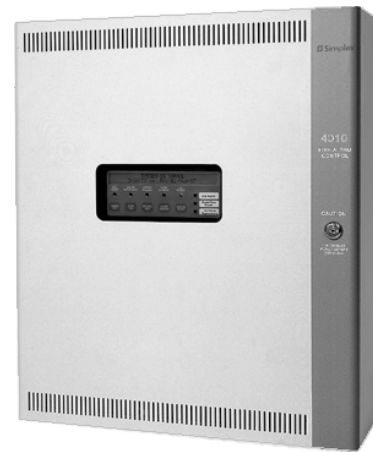
- Addressable manual stations; TrueAlarm sensor bases, duct housings, and isolator bases
- Quad-state zone adapter modules (ZAMs) for initiating device monitoring
- Quad-state line powered individual addressable modules (IAMs) for initiating device monitoring and relay control
- 4009 IDNet NAC Extenders and accessories

**Available option modules include:**

- Door mounted 24 LED annunciator (std. on ULC models)
- Network connection, or Point Reporting DACT
- Class A, NAC adapter module
- RS-232 ports for printer and maintenance PC
- Expansion power supply; Auxiliary Relay Module or City Interface
- Equipment for Suppression Release Applications (refer to data sheet S4010-0003)

**Compatible with Simplex® auxiliary panels:**

- 4003 Voice Control Panel
- 4081 Battery Cabinet with charger for 50 Ah batteries



4010 Fire Alarm Control Panel (with standard door)

**Description**

**TrueAlarm fire alarm control panels** have the ability to provide location accuracy for monitoring and control. When equipped with TrueAlarm analog sensing for smoke and heat detection, the processing power of the control panel also has the ability to analyze conditions at each location to provide accurate detection with significantly reduced maintenance costs.

The 4010 TrueAlarm Fire Alarm Control Panel has been specifically designed to provide addressable operation and analog detection in a cost-effective package for application sizes that previously were considered only appropriate for conventional zoned monitoring.

**Installation and Service Ease.** The 4010 mounts on a single chassis for quick installation and removal. Terminal blocks are large and up-front for easy access and inspection. Optional modules are easily and quickly installed, and programmed as required.

The 4010 cabinet provides convenient stud markers for drywall thickness and nail-hole knockouts for quicker mounting. Smooth cabinet surfaces are provided for locally cutting conduit entrance holes exactly where required. 4010 cabinets and electronics can be ordered separately, allowing early cabinet installation.

**Ground Fault Assistance.** Ground fault problems often occur during installation. The 4010 provides isolating circuitry, control of isolator bases, and software-controlled sequencing to isolate ground faults to specific identified locations. This assistance helps the installer to accurately locate the wiring problem for quicker repair.

\* Refer to page 6 for listing details. 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 7170-0026:226 for allowable values and/or conditions concerning material presented in this document. Accepted for use – City of New York Department of Buildings – MEA35-93E. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

## 4010 Operator Control Summary

**Extensive Feature List.** The 4010 Fire Alarm Control Panel provides access to an extensive feature list that includes:

- Providing easy and powerful operator information with a logical, menu-driven display
- Extensive and automatic diagnostics for maintenance reduction
- History Logs available from the LCD or capable of (optionally) being printed
- Software Verification, allowing detailed logic programming simulation to be conducted without activating connected outputs
- Control Panel (or service PC) label editing
- Password access control
- Auto Program Quick Configuration (Quick-CFIG) of connected modules and IDNet devices for general alarm operation to quickly get the system up and running

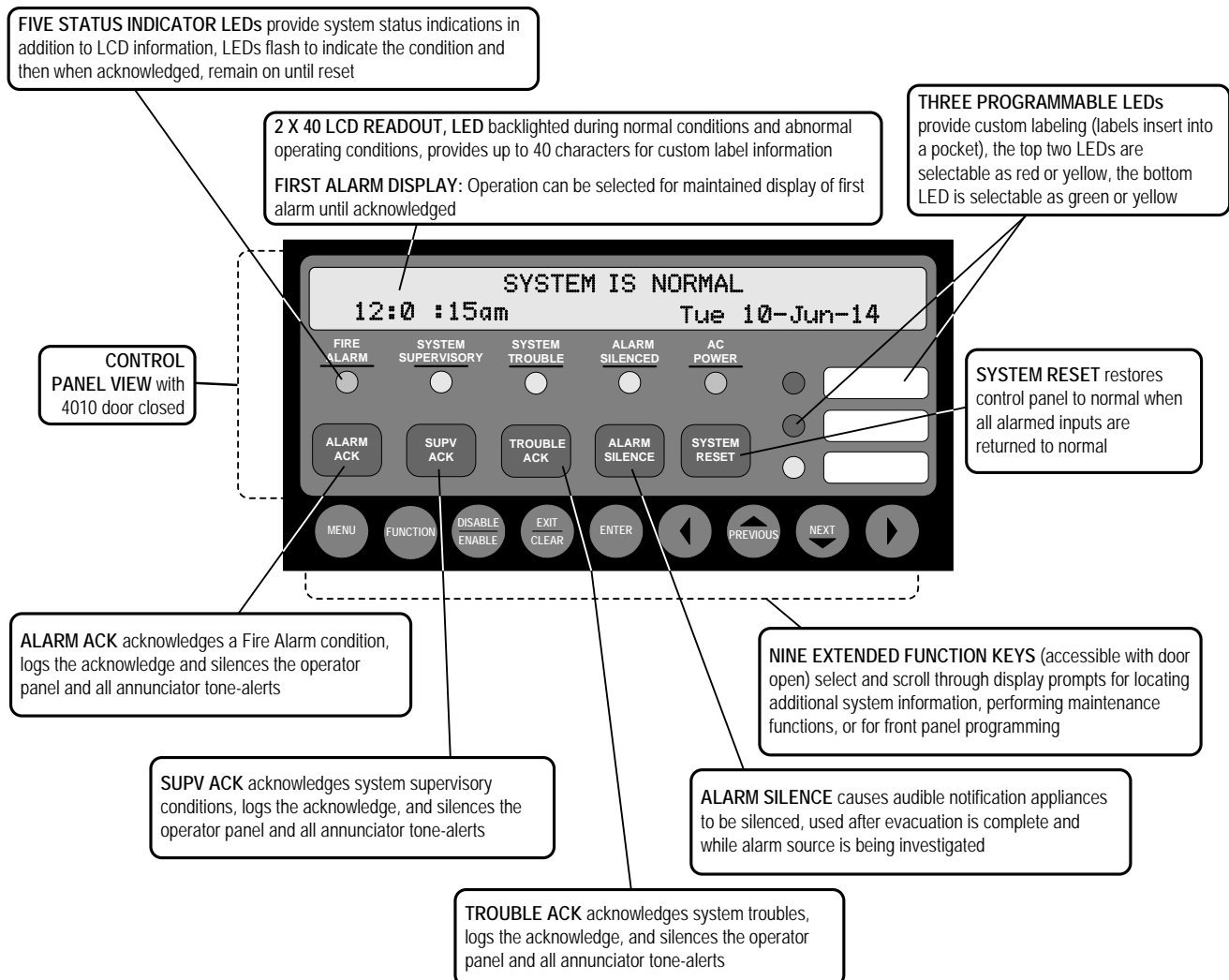
## 4010 Display Panel and Diagnostic Mode

**Convenient Status Information.** With the locking door closed, a window allows viewing of the status display. The 4010 status panel provides a two line by 40 character, super-twist LCD information display and eight status LED indicators as shown in the illustration below.

From this display, the LED indicators will describe the general category of activity being displayed with the LCD providing more detail. For the authorized user, unlocking the door will provide access to the control switches and allow further inquiry by scrolling the display for additional detail. (Refer to control panel functional illustration below.)

**WALKTEST Diagnostic Operation Mode.** The WALKTEST process allows a single person to perform system test. The system records test inputs such as intentional alarms or trouble and either logs the response (silent WALKTEST operation) or outputs a brief, recognizable audible notification signal (audible WALKTEST operation).

## Extended Operator Control Panel Functions



## IDNet Addressable Interface

**Overview.** The 4010 provides IDNet addressable device communications. Using a two-wire circuit, individual devices such as manual fire alarm stations, TrueAlarm sensors, and sprinkler waterflow switches can be directly connected (or interfaced) to the IDNet controller to communicate their identity and status. This addressability allows the location and condition of the connected device to be displayed on the 4010 panel LCD and on system annunciators. Additionally, control circuits (fans, dampers, etc.) may be individually controlled by using a relay IAM (individual addressable module). The 4009 IDNet NAC Extender can be controlled for local or remote notification appliance expansion. (Refer to compatible device lists on document S4090-0011 and to individual device documentation for further details.)

**Capacity.** A total of 250 addressable monitor and control points may be intermixed on the same pair of wires. By using Zone Adaptor Modules (ZAMs) or Individual Addressable Modules (IAMs), conventional initiating devices can be connected to the IDNet circuit.

**IDNet Addressable Operation.** The IDNet controller continuously interrogates each addressable device on the communication channel for status condition such as: normal, off-normal, alarm, supervisory, or trouble. Sophisticated poll and response communication techniques ensure supervision integrity and allow for "T-tapping" of the circuit for Class B operation.

**Wiring Requirements.** Refer to the specifications chart below. Distances are for shielded or unshielded wire. Shielded wire may provide protection from unexpected sources of interference and may be required for some applications.

### Wiring Specifications

Size		18 AWG (0.82 mm <sup>2</sup> )
Wire	Preferred	Shielded twisted pair (STP)
	Acceptable	Unshielded twisted pair (UTP)
Farthest Distance from Control Panel to Device		Up to 2500 feet (762 m)
Total Wire Length Allowed With "T" Taps for Class B Wiring		Up to 10,000 ft (3 km).

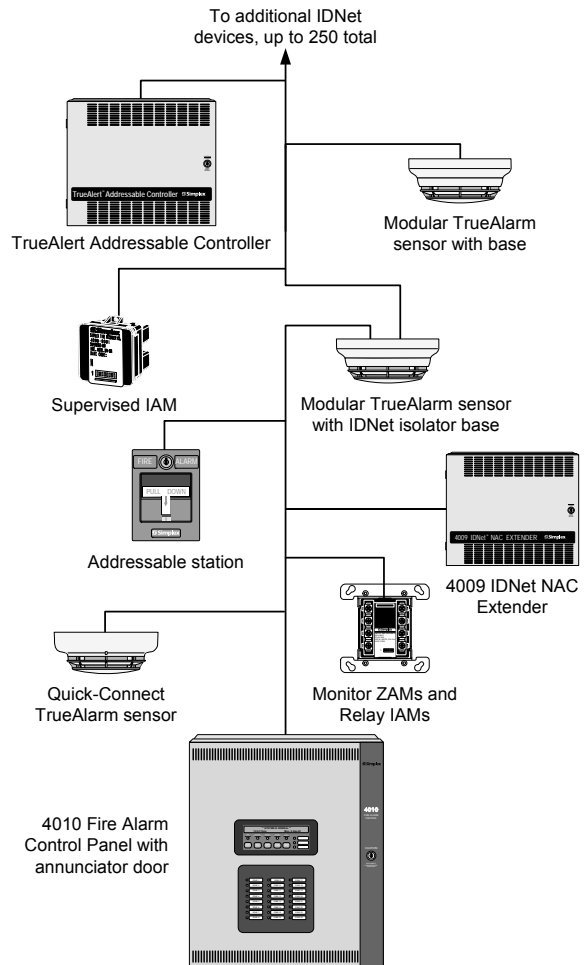
## TrueAlarm Analog Sensors

**TrueAlarm System Operation.** IDNet communications are used for TrueAlarm smoke and temperature sensors. Every four seconds, smoke sensors transmit an output value based on their smoke chamber condition. The 4010 CPU maintains a current value, peak value, and an average value of each sensor's output. 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.** The sensitivity of each sensor can be field programmed at the 4010 Control Panel for different levels of smoke obscuration (in percent) or for specific heat detection levels. In order 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.

## TrueAlarm Analog Sensors (Continued)

**TrueAlarm heat sensors** can be selected for rate-of-rise detection as either 15° F (8.3° C) or 20° F (11.1° C) per minute with an independent fixed limit of 135° F (57° C) or 155° F (68° C). TrueAlarm heat sensors can also 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.



4010 Control Panel with Typical IDNet Devices

## Diagnostics and Default Device Type

TrueAlarm operation gives the 4010 system the ability to automatically indicate when a sensor is almost dirty, dirty, and excessively dirty. The NFPA 72 (*National Fire Alarm and Signaling Code*) requirement for a test of the sensitivity range of the sensors is fulfilled by the TrueAlarm ability to maintain the sensitivity level of each sensor.

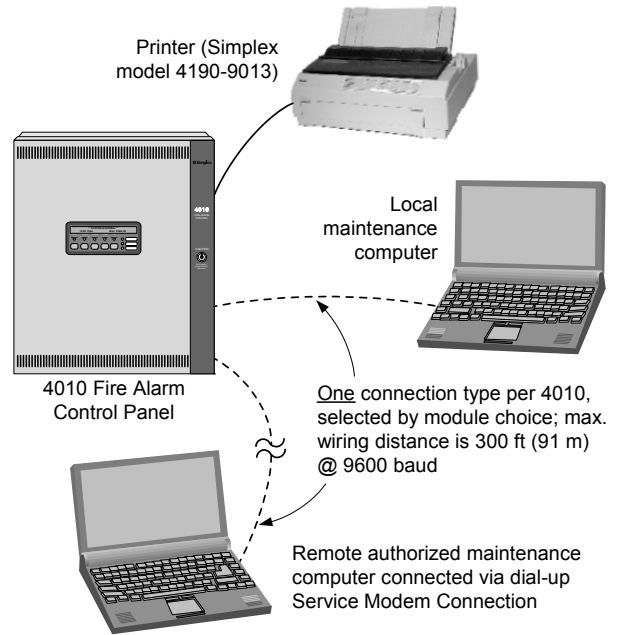
Modular TrueAlarm sensors use the same base and different sensor types (photoelectric smoke sensor, or heat sensor) can be easily interchanged to meet specific location requirements. This feature also allows intentional sensor substitution during building construction. When conditions are temporarily 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 to provide heat detection for building protection at that location.

## TrueAlarm Information Details

**True Alarm sensor data** can be displayed on the system LCD, on a remote maintenance PC, or printed on a remote printer. With the proper operator access, a TrueAlarm Service Report can be generated to list the specific details of each TrueAlarm device. This report, as well as the Status Report can either be displayed on the remote maintenance PC or captured permanently by using a remote 80 character printer.

**Status and Service Reports.** The report samples below illustrate the format provided on either the remote maintenance PC or a printer. This information is available at the system LCD by identifying the specific point of interest and reading one point at a time.

**Compatible Printer.** Model 4190-9013 is a UL Standard 864 listed 80 column, 24 pin dot matrix printer (refer to data sheet S4190-0011).



RS-232 Connection Options  
(refer to module selection on page 6)

## TrueAlarm Status and Service Report Samples

Simplex 4010 Fire Alarm System				Page 1	
REPORT 3 : TrueAlarm Status Report				2:43:03 pm Tue 10-Jun-14	
Zone Name	Custom Label	Sensitivity	Device Status	Almost Dirty	
M1-1	ANALOG PHOTO CLEAN ROOM	0.5 %	NORMAL		
M1-2	ANALOG ION CLEAN ROOM	1.3 %	NORMAL		
M1-3	ANALOG PHOTO MAIN LOBBY	2.5 %	NORMAL	*YES*	
M1-4	ANALOG PHOTO CONFERENCE ROOM 1	2.5 %	NORMAL		
M1-10	HEAT DETECTOR GARAGE	135 F	NORMAL		
M1-11	ANALOG PHOTO KITCHEN	3.7 %	NORMAL	*YES*	
END OF REPORT					

Typical TrueAlarm Status Report Information Printout and/or Maintenance PC Screen

Simplex 4010 Fire Alarm System				Page 1		
REPORT 4 : TrueAlarm Service Report				2:56:09 pm Tue 10-Jun-14		
Dev Num	Custom Label	Alarm at:	Avg val	Current/ % alarm	Peak/ % alarm	State
1	ANALOG PHOTO - CLEAN ROOM	0.5/ 83	67	68/ 1%	72/ 10%	NOR
2	ANALOG ION - CLEAN ROOM	1.3/209	94	97/ 2%	101/ 1%	NOR
3	ANALOG PHOTO - MAIN LOBBY	2.5/185	117	117/ 0%	125/ 42%	NOR
4	ANALOG PHOTO - CONFERENCE ROOM 1	2.5/161	93	93/ 0%	93/ 0%	NOR
10	HEAT DETECTOR - GARAGE	135F/253	---	63/-67F	66/ 69F	NOR
11	ANALOG PHOTO - KITCHEN	3.7/216	116	116/ 1%	110/ 36%	NOR
END OF REPORT						

Typical TrueAlarm Service Report Information Printout and/or Maintenance PC Screen



## Standard Panel Features

### **N2 Communications for Serial Annunciator Control.**

Control for up to 6 remote Simplex Annunciator products including 24 Point I/O Module, and LCD Annunciator. Includes extensive troubleshooting diagnostics. (See list in next column for compatible devices.)

**Access Port.** RS-232 service port for connecting PC tools for service diagnostics and for programming the CPU Flash EPROM memory.

### **IDNet Addressable Communications Channel.**

Addressable channel provides communications for up to 250 remote addressable devices, including TrueAlarm analog sensors and isolator bases (see details on page 3).

**Four NACs.** Class B output is standard, rated for 2 A @ 24 VDC nominal, with solid state current protection. Class A operation is optional with the addition of an adapter module.

**NAC operation** can be selected for “on-until-Silence” or “on-until-Reset,” and can be Continuous, Temporal pattern, or March Time pattern. (*March Time is selectable for 20 bpm or 120 bpm for conventional appliances; or 60 bpm for SmartSync appliances.*) NACs are individually selectable to control Simplex synchronized strobes or for Simplex SmartSync control that provides separate horn and synchronized strobe control using a 2-wire circuit.

**Two Auxiliary Output Circuits.** Operation is programmable for trouble, alarm, supervisory, or other fire response functions. Output is one Form “C” dry contact each, rated 2 A @ 24 VDC. An optional relay kit is available for switching up to 0.5 A at 120 VAC.

**Standard Power Supply.** Output is rated 4 A for “Special Application” appliances and for “Regulated 24 DC” appliance power. (*Special Application appliances include Simplex 4901, 4903, 4904, and 4906 Series horns, strobes, horn/strobes, and speaker/strobes. See page 7 for additional information.*) Internal system power is provided separately, allowing the 4 A to be available for NAC and auxiliary power tap functions. Over-current protection is solid state and self-resetting.

**Auxiliary Power Tap.** Provides up to 0.5 A of the standard power supply voltage, over-current protected. Compatible uses include power for: remote LCD annunciators, 24 Point I/O modules, sensor bases and duct housings that require external power, and addressable devices requiring external power.

**Battery Charger.** Capable of charging up to 25 Ah sealed lead-acid batteries (4010 cabinet mounted). A recharge time of 24 hours is typical with stable 120 VAC input. For applications requiring larger batteries, external charger/cabinet assemblies are available.

A depleted battery cutout feature is programmable to advise and/or to reduce current when battery voltage is low.

## Optional Expansion Slot Modules

(The 4010 is available with a Simplex Network Interface. 4010 points can be declared “public.”)

**Network Interface, Modular Media.** Available for wired connections or fiber optic. Require separate media modules. May be both wired, both fiber optic, or one of each.

## Optional Expansion Slot Modules (Cont'd)

**Network Interface, Fixed Media.** Available for wired applications.

**DACT, Point Reporting Module.** Provides serial output information that can send location details to a remote receiving station.

**DACT, Event Reporting Module.** For applications where simple event status information is required (Alarm, Trouble, Supervisory, and AC power failure).

**Dual RS-232 Module.** Available for interfacing to a printer and a maintenance PC.

**Single RS-232 Module with Service Modem Connection.** Provides one port dedicated for connection to a printer, and a second port dedicated for dial-in from a service computer, typically located off-site. With an off-site computer, programming changes and system diagnostics can be performed remotely, reducing service time for repair or reprogram. Security is maintained by password protection.

## Optional Chassis Mount Modules

**4 A Expansion Power Supply** provides two taps of 2 A each, 28 VDC, filtered, non-regulated. Output rating is 4 A for auxiliary power, 4 A for “Special Application” appliances and 2 A for “Regulated 24 DC” appliance power.

**Dual Circuit Class A NAC Adapter Module** mounts on the main 4010 printed circuit assembly and provides the additional circuitry needed for Class A operation.

**Dual Circuit City Connect Module** provides the interface required for direct wired reporting to conventional city connection circuits. (Available with or without disconnect switches.)

**Expansion Power Distribution Module** provides two additional termination points for the 0.5 A auxiliary power output, or for one tap of the expansion power supply.

**Relay Option Module** provides three relays, one each for Alarm, Supervisory, and Trouble. Relay contacts are selectable for normally open or normally closed and are rated 2 A @ 32 VDC maximum.

## N2 Communications Modules

Up to six of the following modules may be connected to the Simplex N2 serial communications bus.

**4606-9101 LCD Annunciators** provide remote acknowledge, reset, and alphanumeric status display. First Alarm display will work same as for the panel when selected (see page 2). (Refer to data sheet S4606-0001.)

**24 LED Annunciator Doors** are standard on ULC listed models and are available as door-only assemblies for electronics only packages or other aftermarket applications. This option uses the 24 Point I/O module with all points pre-assembled as LED outputs, with individual labels and each LED is selectable as red or yellow.

**4605 Series 24 Point I/O Modules** are available for remote mounting and provide 24 points that can be programmed as either general purpose switch inputs or system controlled outputs. Typical applications are for remote annunciators and monitoring and control of other related processes. (Refer to data sheet S4010-0002.)

**4010 Fire Alarm Control Selection Chart and Module Location Rules** (refer to diagrams on page 8)

Category	Model	Description	Voltage	Color	
<b>Control Panel Assembly</b> (select one)	4010-9101	<b>UL Listed 4010 Fire Alarm Control Panel</b> with: door, cabinet, power supply/battery charger, IDNet interface, 4 NACs, 2 programmable auxiliary relays, and external N2 communications interface; 4010-9101 and 4010-9102 include internal common event reporting DACT	120 VAC	Beige	
	4010-9102			Red	
	4010-9201		240 VAC	Beige	
	4010-9202			Red	
	4010-9101C	English	<b>ULC Listed 4010 Fire Alarm Control Panel</b> ; same as above except: with 24 LED Annunciator door; and without DACT	120 VAC	Beige
	4010-9101CF	French			
	4010-9150	UL Listed	<b>4010 Fire Alarm Control Panel, Electronics Only</b> ; for pre-shipped cabinets, requires door and cabinet ordered separately; 120 VAC input; 4010-9150 has event reporting DACT; C & CF suffix models delete DACT		
	4010-9150C	ULC			
4010-9150CF	Listed	French			

**Optional Expansion Slot Features** (two slots are available, select modules as required)

Category	Model	Description
<b>Reporting and Network Modules</b> (select one)	4010-9810	DACT Module (Common Event Reporting) — Includes two, 7 ft (2.1 m) long RJ45 cables
	4010-9816	DACT Module (Point Reporting)
	4010-9821	Network Interface Module with fixed, wired connections
	4010-9817	Network Interface Module, Modular; requires 2 (In/Out) media modules (see below)
<b>Media Modules</b>	4010-9818	Network Wired Media Module — Media modules mount on the 4010-9817 module without impact to slot allocation space.
	4010-9819	Network Fiber Optic Media Module
<b>RS-232 Communications</b> (select one)	4010-9811	Dual RS-232 Interface Module
	4010-9812	Single RS-232 Interface Module with Service Modem connection

**Chassis Mounted Expansion Modules** (select as required)

Category	Model	Description
<b>Expansion Power Supply</b> (select one)	4010-9813	120 VAC input 4 A Expansion Power Supply; rated 4 A for “Special Application” appliances;
	4010-9823	240 VAC input rated 2 A for “Regulated 24 DC” appliance power
<b>Optional Features</b> (select as indicated)	4010-9825	24 VDC Expansion Power Distribution Module, provides two additional termination points for an expansion power supply tap or the auxiliary power output
	4010-9806	Dual Circuit Class A NAC Adapter Module, <b>two maximum</b>
	4010-9809	Dual Circuit City Connect Module
	4010-9829*	Dual Circuit City Connect Module w/o disconnect switches
	4010-9803	Relay Option Module
		<b>Select one maximum</b>

**Accessories**

Category	Model	Description
<b>Optional Features</b>	4010-9826	120 VAC Auxiliary Relay Kit, allows <b>one</b> auxiliary relay to control up to 0.5 A @120 VAC, select as required; <b>2 maximum</b>
	4010-9830 (CAF)	Suppression Release Appliqué, required for suppression release applications; suffix CAF selects a French appliqué
	2975-9801	Semi-flush trim, beige, 1 1/16" (37 mm) wide
	2975-9802	Semi-flush trim, red, 1 1/16" (37 mm) wide
<b>Batteries</b> (required if batteries are internal; select one size; <b>two batteries are required</b> )	2081-9272	6.2 Ah Battery, 12 VDC
	2081-9274	10.0 Ah Battery, 12 VDC
	2081-9288	12.7 Ah Battery, 12 VDC
	2081-9275	18 Ah Battery, 12 VDC; <b>NOTE: This battery size will not allow bottom entry conduit</b>
	2081-9287	25 Ah Battery, 12 VDC
<b>Cabinets</b> (select one if pre-shipped)	2975-9215	Red Cabinet
	2975-9214(CF)	Beige Cabinet; CF suffix has French labels
<b>Doors</b> (select one if pre-shipped or for use with 4010-9150)	4010-9858	Red Door with dress panel
	4010-9857(CF)	Beige Door with dress panel; CF has French labels
	4010-9860*	Beige Door with 24 LED Annunciator and dress panel
	4010-9861*	Red Door with 24 LED Annunciator and dress panel
		Dimensions: 22" H x 18" W x 5 5/8" D (559 mm x 457 mm x 137 mm)
		Dimensions: 22" H x 18" W x 5 5/8" D (559 mm x 457 mm x 16 mm)
		Dimensions: 22" H x 18" W x 1 23/32" D (559 mm x 457 mm x 44 mm) [see also S4010-0002]

\* As of document revision date: 4010-9829 is not ULC listed; 4010-9860 and 4010-9861 are listed by UL, ULC, and CSFM; and FM approved;

## 4010 Operating Specifications

Input Power Requirements	Voltage Range	Frequency	Maximum Current
AC Input, 120 VAC base models	102 to 132 VAC	60 Hz	2 A
AC Input, 240 VAC base models	204 to 264 VAC	50/60 Hz	1 A
AC Input with 120 VAC expansion power supply	102 to 132 VAC	60 Hz	4 A
AC Input with 240 VAC expansion power supply	204 to 264 VAC	50/60 Hz	2 A
Environmental			
Operating Temperature Range	32° to 120°F (0° to 49° C)		
Operating Humidity Range	up to 93% RH, non-condensing @ 100.4° F (38° C) maximum		
Output Ratings			
Standard Power Supply Output	Rated 4 A for "Special Application" appliances and for "Regulated 24 DC" appliance power; Battery charger for up to 25 Ah sealed lead-acid batteries		
Notification Appliance Reference	Special Application	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	Power for other UL listed appliances; use associated external synchronization modules where required	
Auxiliary Power Output Tap from Standard Power Supply	Rated 0.5 A maximum @ 19.4 to 32 VDC; subtract current used from standard power supply output		
Expansion Power Supply Output	Rated 4 A for "Special Application" appliances and auxiliary power; Rated 2 A for "Regulated 24 DC" appliance power; Two output taps of 2 A each are provided		
NAC Ratings	2 A each maximum; up to 33 synchronized strobes maximum per NAC		

### Current Ratings for Optional Modules and Remote LCD Annunciator

Model	Module	Supervisory Current	Alarm Current
4010-9810	DACT (Common Event Reporting)	40 mA	40 mA
4010-9816	DACT (Point Reporting)	40 mA	40 mA
4010-9821	Network, wired communications	125 mA	125 mA
4010-9817	Network Modular, add media cards separately	24 mA	24 mA
4010-9818	Network Wired Media	47 mA	47 mA
4010-9819	Network Fiber Optic Media	36 mA	36 mA
4010-9811	Dual RS-232	75 mA	75 mA
4010-9812	Single RS-232 with Service Modem	100 mA	100 mA
4010-9806	Dual Class A NAC Adapter	0 mA	0 mA
4010-9809	Dual Circuit City Connect	20 mA	36 mA
4010-9829	Dual Circuit City Connect w/o disconnect switches	20 mA	36 mA
4010-9803	Relay Option Module	10 mA	37 mA
4010-9860 4010-9861 & ULC 4010s	24 LED Annunciator door	60 mA	83 mA (all LEDs on)
4606-9101	Remote LCD Annunciator (refer to data sheet S4606-0001)	65 mA	140 mA

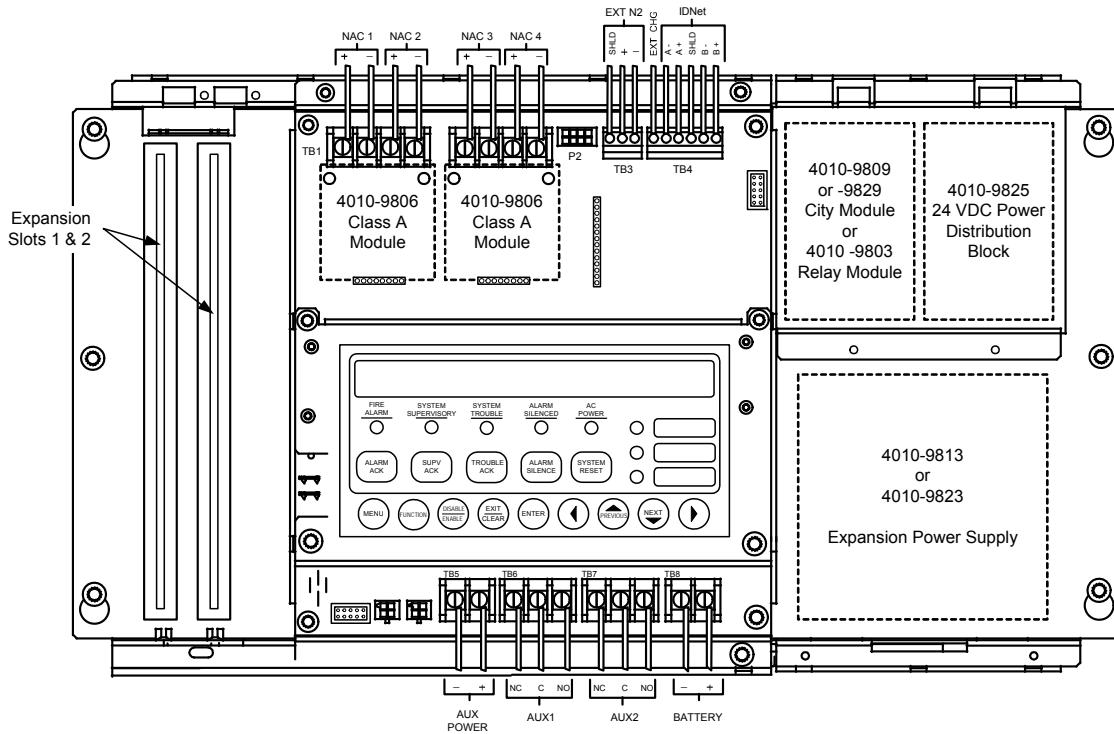
### System Current (supplied separate from power supply output)

Base System with:	Supervisory Current**	Alarm Current**
no IDNet devices	195 mA	295 mA
50 IDNet devices	230 mA	330 mA
100 IDNet devices	265 mA	365 mA
150 IDNet devices	300 mA	400 mA
200 IDNet devices	335 mA	435 mA
250 IDNet devices	370 mA	470 mA

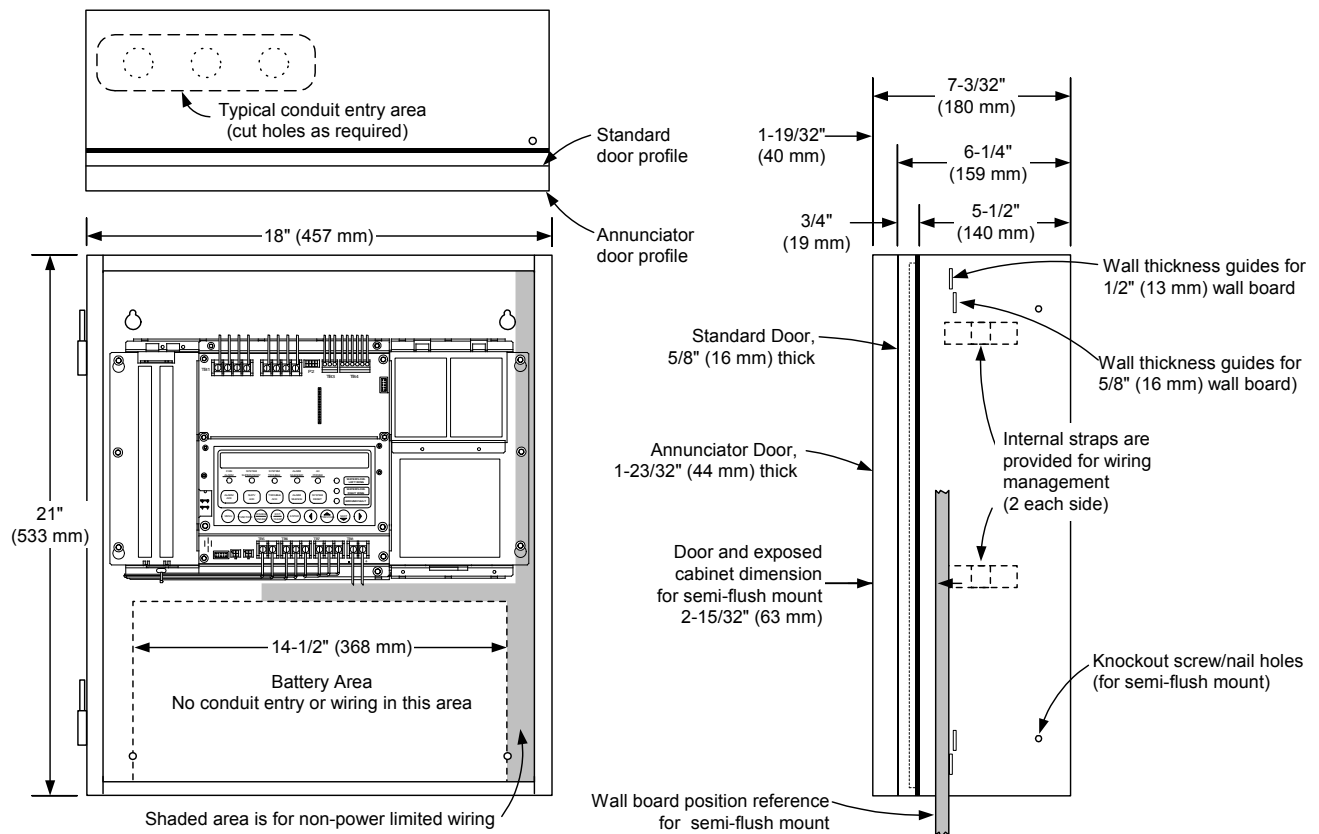
#### \*\* Current Calculation Information:

- To determine total supervisory current, add currents of modules in panel to base system value **and** all auxiliary loads.
- To determine total alarm current, add currents of modules in panel to base system alarm current **and** add all panel NAC loads **and** all auxiliary loads.

# 4010 Module Layout Reference



# Mounting Information



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S4010-0001-14 6/2014

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#### Features

**Provides additional notification appliance circuit (NAC) capacity with flexible operation modes and power-limited design**

**Four, Class B NACs are standard:**

- Rated 2 A each for conventional reverse polarity 24 VDC notification appliances and providing multiple operation modes
- Can be selected to provide synchronization for Simplex® visible notification strobe flashes
- Capable of controlling TrueAlert non-addressable notification appliances operating with SmartSync two-wire control mode\*\*

**Input control options:**

- IDNet addressable communications from a Simplex model 4007ES, 4010, 4010ES, 4100ES, or 4100U Fire Alarm Control Panel\*\*
- Or from one or two conventional 24 VDC NACs with multiple output control options

**IDNet communications control benefits:**

- Provides status monitoring and individual NAC control using a single address per 4009 IDNet NAC Extender
- Supports IDNet “Device Level” earth fault location

**WALKTEST operation is available with either input choice**

**Internal 8 A power supply/battery charger:**

- Charges internal batteries up to 12.7 Ah or up to 18 Ah batteries in external cabinet
- Provides status monitoring of battery, input power, and earth faults
- Rated 8 A for “Special Application” appliances; including Simplex 4901, 4903, 4904, and 4906 Series horns, strobes, horn/strobes, and speaker/strobes
- Rated 6 A for “Regulated 24 DC” appliance power

**Optional 4009 IDNet NAC Extender modules:**

- IDNet Communications Repeater provides Class B or Class A output
- IDNet Communications Fiber Optic Receiver/Repeater, available as Class B or Class X
- Four additional Class B NACs, rated 1.5 A for Special Application appliances; 1 A for Regulated 24 DC appliance power
- Class A, Two Circuit Adapter Module

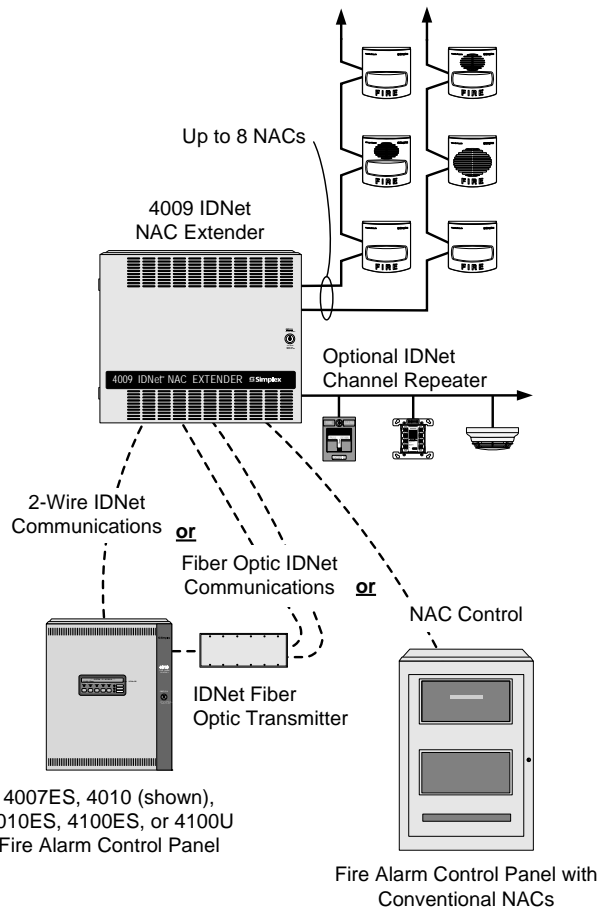
**UL Listed to Standard 864**

#### External Accessories

**IDNet communication fiber optic transmitters:**

- For applications requiring the data integrity available with fiber optic communications
- Available as Class B or Class X
- Mounts in standard six-gang electrical box

**External battery cabinet for 18 Ah batteries**



4009 IDNet NAC Extender Connection Reference Drawing

#### Introduction

**ADA Compliance.** Complying with the notification requirements of ADA (Americans with Disabilities Act) may require more notification appliance power than is available within the fire alarm control panel. When additional power is required, a Simplex 4009 IDNet NAC Extender can provide up to 8 A of NAC power with up to eight, supervised reverse polarity NACs.

**Location Flexibility.** The 4009 IDNet NAC Extender can be mounted close to a compatible dedicated host panel or can be located remotely for convenient power distribution. Multiple operation modes and multiple connection options further increase location flexibility.

**Additional Information.** For additional operation detail and application information, refer to Installation Instructions 574-181 and field wiring diagram 842-068.

\* ULC listed model is 4009-9202CA. 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 7300-0026:214 for allowable values and/or conditions concerning material presented in this document. Accepted for use - City of New York Department of Buildings - MEA35-93E. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

\*\* 4100U requires revision 11 software or higher for compatibility. 4010 requires revision 2 software or higher for compatibility.

## Application and Operation Information

### IDNet Addressable Communications Compatible.

Up to ten (10), 4009 IDNet NAC Extenders can be controlled per 4007ES, 4010ES, 4100ES, or 4100U IDNet communications channel; up to five (5) can be controlled on the 4010 IDNet communications channel. Each output NAC can be individually controlled for general alarm or selective area notification requiring only one point address per Extender. Individual Extender NACs can also be manually controlled from the host panel. IDNet controlled extenders will inform the host panel of troubles via IDNet communications. 4007ES, 4010ES, 4100ES, and 4100U control panels control using multi-point rules, refer to data sheet S4090-0011 for details.

**Optional IDNet Repeaters.** IDNet communications can be repeated with the optional IDNet Repeater Module or with the optional Fiber Optic Receiver Module. Up to 100 of the IDNet channel points can be repeated once (refer to pages 3 and 5 for details). Repeated IDNet communications also support the “device level” earth fault location utility of the host panel.

**Hardware Control Applications.** For applications where an existing (or new) conventional NAC needs additional power, the 4009 IDNet NAC Extender can be controlled directly from the NAC. Either one or two NACs, from either the same, or from different host fire alarm control panels, can be connected to control the 4009 IDNet NAC Extender output NACs. Multiple control selections provide flexible operation. (Refer to page 4 for more detail.) Alarms from the host panel will activate the four, 4009 IDNet NAC Extender NACs (or optionally, eight NACs) to extend the alarm.

The 4009 IDNet Extender monitors itself and each of its output NACs for trouble conditions, including earth faults. Extenders wired to conventional NACs will indicate a trouble by opening the path to the NAC’s end-of-line resistor, but retaining the ability to respond to alarms. Individual troubles are also annunciated by LEDs located on the 4009 IDNet NAC Extender main circuit board. (Refer to page 7 for more diagnostic information.)

## Product Selection

### Standard Models

Model	Description	
4009-9201	120 VAC input	4009 IDNet NAC Extender with 4, Class B NACs and 8 A power supply
4009-9202CA*		
4009-9301		

\* ULC listed model

### Optional Modules (for on-site installation)

Model	Description	Comments	
4009-9807	Additional four point NAC module, rated 1.5 A Special Application appliances; 1 A for Regulated 24 DC appliance power, Class B	One maximum	
4009-9808	Dual Class A adapter (for two NAC outputs)	Select as required (4 maximum)	
4009-9809	IDNet Repeater, output is Class A or Class B	Select <b>either</b> an IDNet Repeater <b>or</b> a Fiber Optic Receiver as required; one transmitter can connect to one receiver	
4009-9810	Fiber Optic Receiver		Class B
4009-9811			Class A (IDNet), Class X (fiber)
4009-9805	Red Appliqué for door	Select if required	
2975-9801	Semi-Flush Trim Kit	Beige trim	
2975-9802		Red trim	

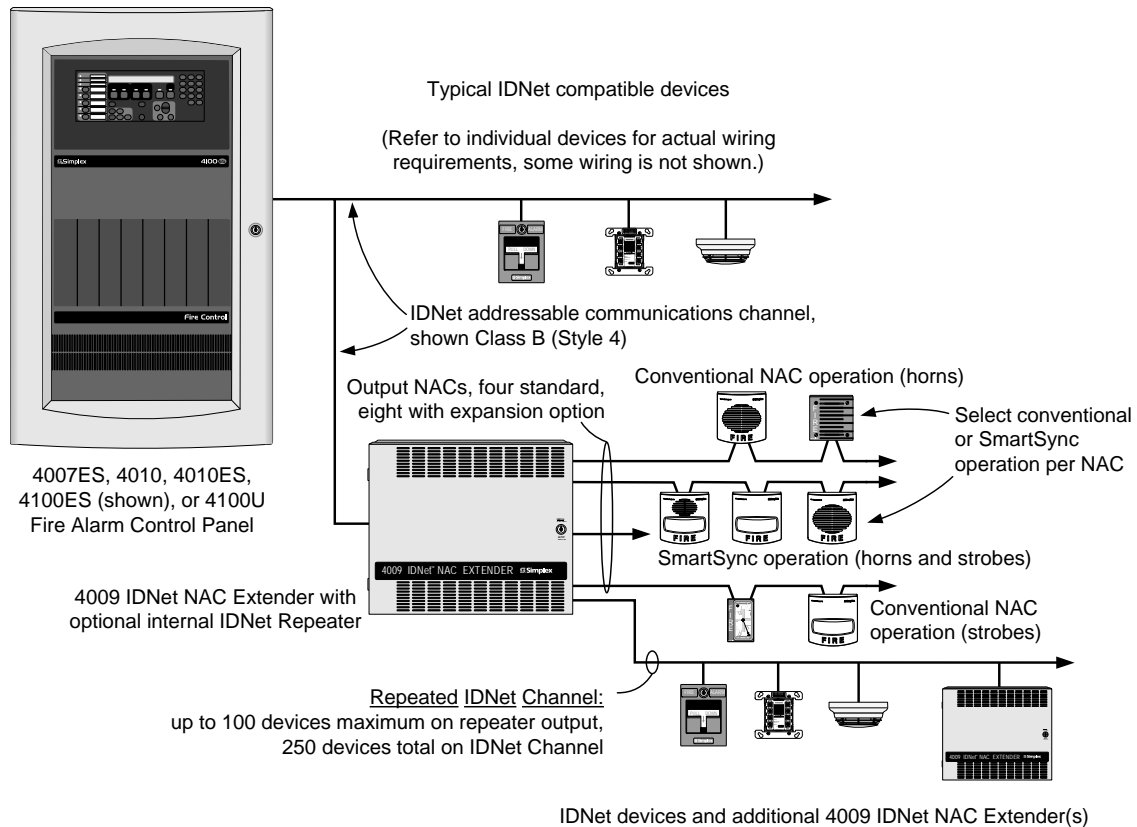
### Battery Selection (select battery size per system requirements)

Model	Description	Comments
2081-9272	6.2 Ah Battery, 12 VDC	Two batteries are required, 24 VDC operation
2081-9274	10 Ah Battery, 12 VDC	
2081-9288	12.7 Ah Battery, 12 VDC	
2081-9275	18 Ah Battery, 12 VDC	Requires external battery cabinet, two batteries are required, 24 VDC operation

### External Accessories (select per system requirements)

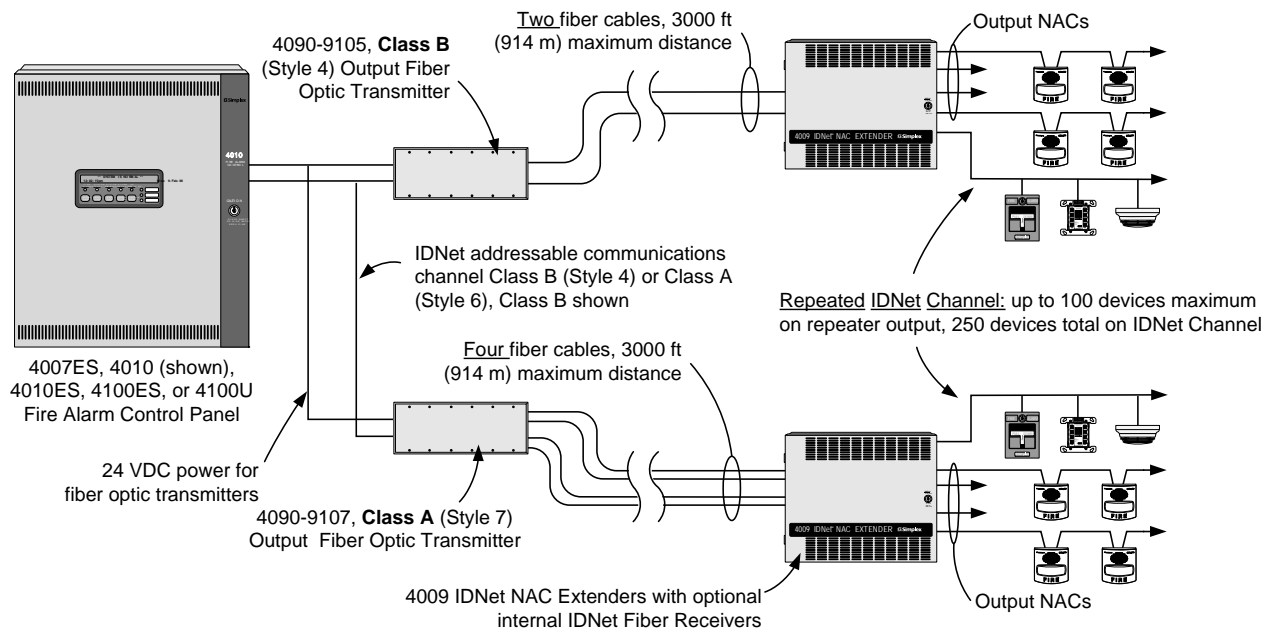
Model	Description	Comments
4090-9105	IDNet Fiber Optic Transmitter	Class B operation
4090-9107		Class X operation
4009-9801	External battery cabinet for up to 18 Ah batteries, beige	16-1/4" W x 13-1/2" H x 5-3/4" D (413 mm x 343 mm x 146 mm)
4081 Series	End-of-Line Resistor Harnesses; see data sheet S4081-0003 for details	

## Typical IDNet Connection Example



**NOTE:** Up to ten (10) 4009 IDNet NAC Extenders may be connected per 4007ES, 4010ES, 4100ES, or 4100U IDNet channel, up to five (5) on the 4010 IDNet channel. IDNet communications can be repeated only once (can pass through only one series connected repeater or one fiber optic receiver).

## Typical Fiber Optic System Connections



**NOTE:** Up to ten (10) 4009 IDNet NAC Extenders may be connected per 4007ES, 4010ES, 4100ES, or 4100U IDNet channel, up to five (5) on the 4010 IDNet channel. IDNet communications can be repeated only once (can pass through only one series connected repeater or one fiber optic receiver). Fiber optic transmitters connect to only one receiver in a 4009 IDNet NAC Extender.

## Hardwire Control Connection Information

**NAC Input Selections.** The 4009 IDNet NAC Extender can be selected to:

- Track input NAC operation **or** to provide a locally generated code, selectable per NAC input
- If selected for local coding, NAC outputs can be either **Temporal Coded** or **60 Beats/min March Time Coded**, one code selection per extender (input NACs must be on continuous with Alarm)
- Additionally, NAC outputs can be selected to provide the Simplex strobe synchronization signal. This signal will synchronize the flashes of synchronized strobes but will be ignored by free-run strobes and audible devices. (Strobes are for operation by noncoded NACs.)

**NAC input to NAC output control** can be selected for standard and optional NACs per the following table:

### Conventional NAC Output Operation Options

Input	A	B	C
NAC 1	NACs 1 & 2, 5 & 6	NACs 1-4	NACs 1-8
NAC 2	NACs 3 & 4, 7 & 8	NACs 5-8	None

### SmartSync NAC Output Operation

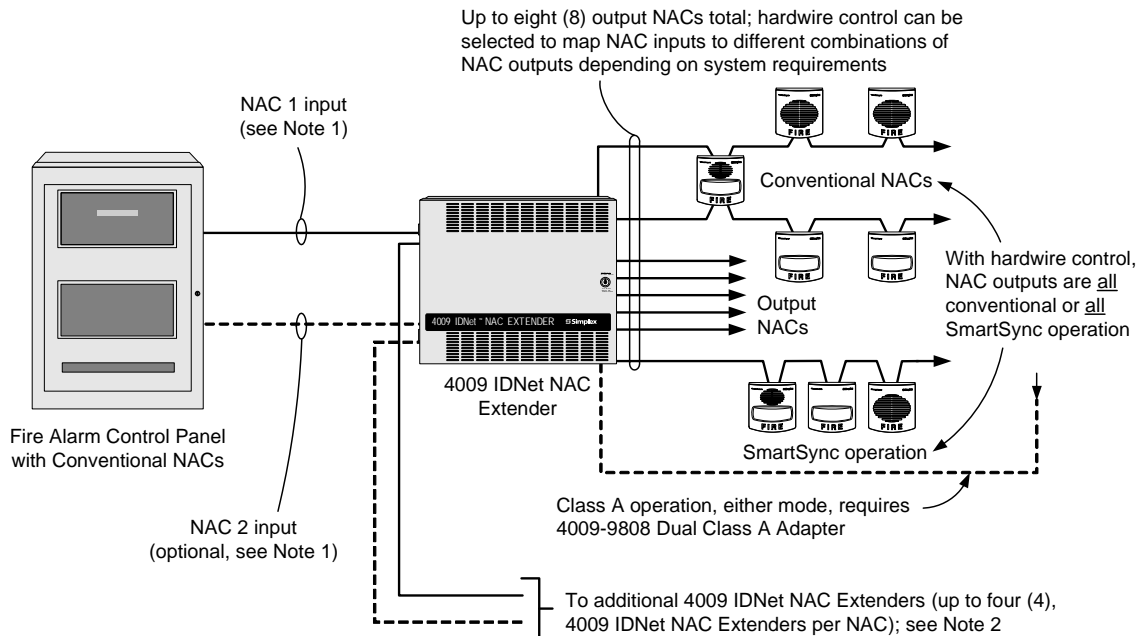
Input	NAC Control Function	
NAC 1	Strobe Control	All NAC outputs (1-8)
NAC 2	Horn Control	

## SmartSync Notification Appliance Control

**The TrueAlert Notification Appliance** product line includes addressable and non-addressable operation. Non-addressable models are available with 2-wire SmartSync operation or conventional 4-wire operation. The following details apply to use with the 4009 IDNet NAC Extender:

- TrueAlert non-addressable models with SmartSync operation allow audible notification to be separately controlled over the same wire pair that controls visible notification
- 4009 IDNet NAC Extenders can be selected to provide SmartSync operation whether controlled by IDNet communications or conventional NACs
- IDNet control allows output NACs to be **individually selected** for conventional **or** SmartSync operation
- With NAC input control, **all** output NACs are selected for either conventional **or** SmartSync operation
- Refer to data sheet S4009-0003 for TrueAlert Addressable operation details, contact your local Simplex product supplier for further information on specific TrueAlert notification appliances

## Hardwire Control NAC Connection One-Line Reference Diagram



### Notes:

1. For separate audible and visible output NAC control, or SmartSync NAC output operation, two (2) input NACs are required. NAC 1 is "on-until-reset" and NAC 2 is "on-until-silenced."
2. To synchronize strobe flash outputs for up to four (4) 4009 IDNet NAC Extenders, use the synchronized strobe output from a Synchronized Flash Module (4905-9914 for Class B operation, 4905-9922 for Class A operation) or, if available, from a NAC selected to provide synchronized strobe flash output. **NOTE: DO NOT USE a NAC selected for SmartSync operation for this function.**

Refer to Installation Instructions 574-181 for additional information and application guidance



## 4009 IDNet NAC Extender Specifications

<b>Input Ratings</b>	120 VAC Input (4009-9201)	3A @ 102-132 VAC, 60 Hz
	240 VAC Input (4009-9301)	1.5A @ 204-264 VAC, 50/60 Hz
	Hardwire Control from External NACs, Input Requirements	Conventional reverse polarity operation 5 mA maximum; 16 to 33 VDC
<b>Output Ratings</b>	Total Rating	8 A, Special Application appliances 6 A, Regulated 24 DC appliance power
	Standard NACs	2 A each, Special Application or Regulated 24 DC appliance power
	Optional NACs (requires 4009-9807)	1.5 A each, Special Application appliances 1 A each, Regulated 24 DC appliance power
	Special Application Appliances	Simplex non-addressable 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
	Strobe Operation	Up to 33 strobes per NAC can be synchronized; output NACs configured for Simplex synchronized strobe operation are synchronized to each other
	Auxiliary Output	500 mA @ 24 VDC nominal

### Optional Modules Ratings

<b>IDNet Repeater Module (4009-9809)</b>	Input Power	70 mA @ 24 VDC, system supplied
	IDNet Input, One Address	Maximum distance from IDNet source is 2500 ft (762 m)
	IDNet Output Specifications	Repeated IDNet output for up to 100 devices (total IDNet devices not to exceed 250 per channel)
		Maximum distance to farthest device is 2500 ft (762 m)
		Total distance including "T-taps" is 10,000 ft (3048 m)
Class A loop maximum distance is 2500 ft (762 m), no "T" taps		

### Fiber Optic Receiver Modules

Input Current	4009-9810, Class B, 65 mA @ 24 VDC, system supplied
	4009-9811, Class X, 80 mA @ 24 VDC, system supplied
IDNet Output Specifications	Same as those for Repeater Module (see above)
Fiber Optic Transmission Distance	3000 ft (914 m) maximum

**General** (LED status indicators are listed on page 7, dimensions and mounting details are on page 6)

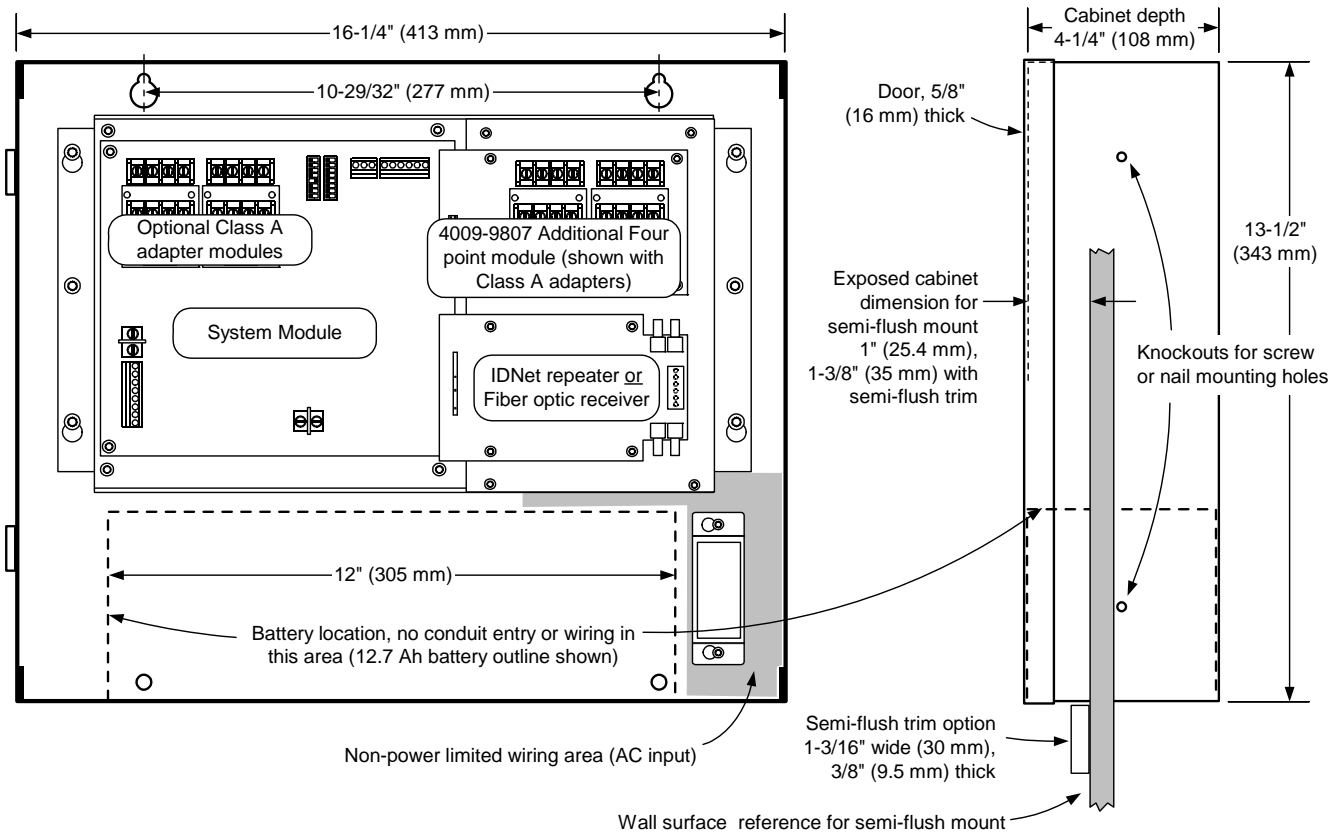
Operating Temperature	32° to 120° F (0° to 49° C)
Operating Humidity Range	10% to 90% RH from 32° F to 104° F (0° C to 40° C)
Wiring Connections*	Terminal blocks for 18 AWG (stranded) to 12 AWG (solid)

### Fiber Optic Transmitter Specifications

Input Voltage	18.9-32 VDC from compatible listed fire alarm supply
Input Current	4090-9105, Class B, 30 mA @ 24 VDC
	4090-9107, Class X, 35 mA @ 24 VDC
Fiber Optic Connections and cable requirements	Multimode, graded index, 50/125µm, 62.5/125 µm, 100/40 µm, or 200 µm
	Type ST connectors
	4090-9105, Class B operation, two fiber cables required
	4090-9107, Class X operation, four fiber cables required
Module Size (with mounting bracket)	6-13/16" W x 3-3/4" H x 1-1/8" D (173 mm x 95 mm x 29 mm)
On-board Status Indicators	Green LED flashing = transmit
	Red LED flashing = receive
	Separate red LED on 4090-9107 = Class X receive
Communications	Simplex IDNet
Fiber Optic Transmission Distance	3000 ft (914 m) maximum
Wiring Connections*	Terminal blocks for 18 AWG (stranded) to 12 AWG (solid)
Operating Humidity	10% to 90% RH from 32° to 104° F (0° to 40° C)
Operating Temperature	32° F to 120° F (0° to 49° C)

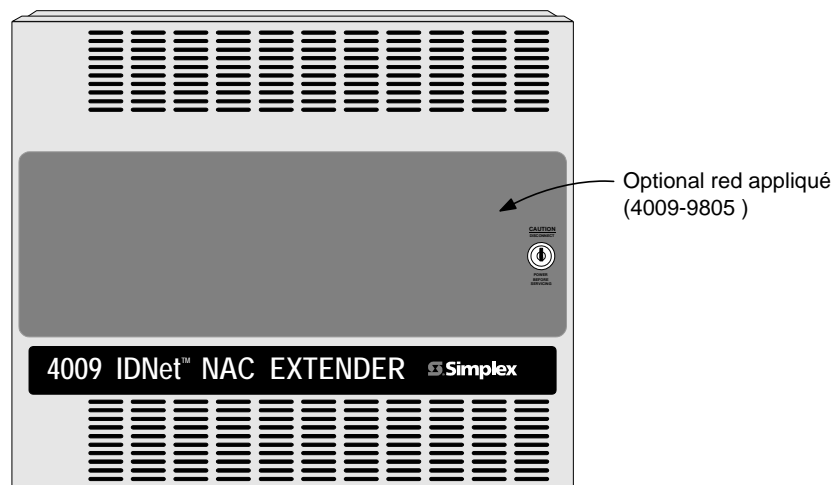
\* Metric wire equivalents: 18 AWG = 0.82 mm<sup>2</sup>; 12 AWG = 3.31 mm<sup>2</sup>

## 4009 IDNet NAC Extender Mounting and Module Placement Information

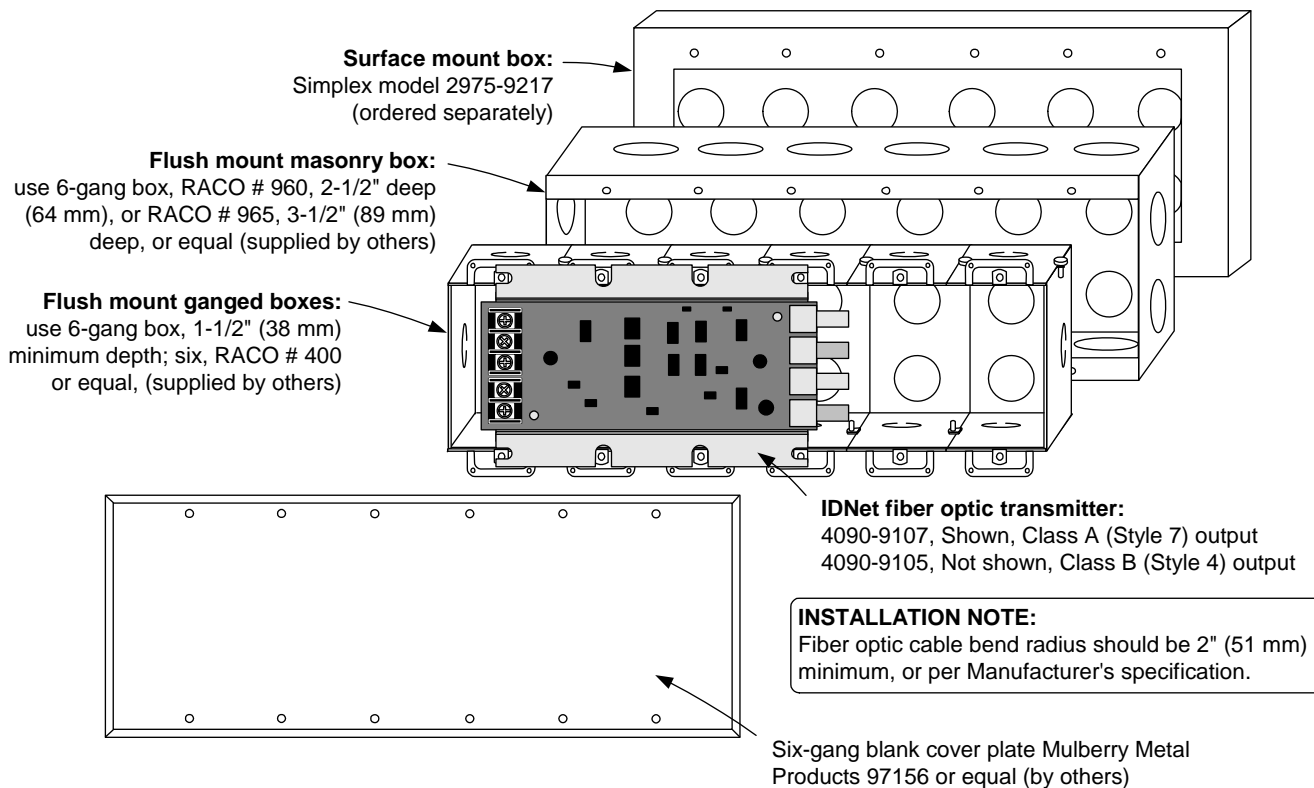


**NOTE:** Recommended conduit entrance varies with module selection. Refer to general installation instructions 574-181, specific module installation instructions, and to field wiring diagrams 842-068 before locating conduit entrance.

## 4009 IDNet NAC Extender Cabinet with Door Detail



## 4090-9105/9107 IDNet Fiber Optic Transmitter Mounting Information



## Service Diagnostic Features

**Power-up Self-Diagnostics.** Upon power-up, the 4009 IDNet NAC Extender tests each module and performs earth fault diagnostics. Trouble conditions are communicated to the host control panel and are also displayed on diagnostic status LEDs in the 4009 IDNet NAC Extender. When connected via IDNet communications, detailed status information is available at the host. When controlled with conventional NAC inputs, common troubles are signaled by providing a polarized open circuit that disconnects the NAC wiring from its end-of-line resistor but still allows a reversed polarity alarm to be received.

**Door Mounted Reference Label.** The 4009 IDNet NAC Extender has a detailed programming and diagnostic label inside the front door that provides a quick reference for both installation and checkout.

**LED Status Indicators** are provided for the following:

- **Each NAC** (standard and optional) has a dedicated yellow LED that:
  - During supervision provides a slow flash to indicate a short circuit condition and a fast flash to indicate an open circuit
  - During an alarm, the LED follows the NAC output (on steady or flashing with coded output)
- **Four, general status yellow LEDs** provide nine separate indications listed in priority of urgency. As a trouble is eliminated, any remaining trouble(s) will then be indicated until the 4009 IDNet NAC Extender is returned to normal operation.
- **AC power status** is indicated by a green LED that is on when AC is normal. During low AC (brownout) conditions or with no AC, the LED is off. Additional power and battery status is indicated by the general status LEDs.

## 4009 IDNet NAC Extender Current Calculation Chart

### Step 1. Calculate Basic Extender Battery Requirements (minus NAC loads)

Panel, NAC Options, and Auxiliary Power (underlined model numbers are optional modules)

Model	Description	Supervisory Current	Actual Supervisory	Alarm Current	Actual Alarm
4009-9201	120 VAC input	85 mA	85 mA	185 mA	185 mA
4009-9301	240 VAC input				
Basic Panel					
<u>4009-9807</u>	Additional Four Point NAC	40 mA	+ _____	40 mA	+ _____
<u>4009-9808</u>	Dual Class A Adapter (no additional current)	-	-	-	-
<b>Auxiliary Power Output</b>		(500 mA maximum)	+ _____	(500 mA maximum)	+ [A1] _____
Basic Panel Supervisory Current			= [S1] _____		
Basic Panel Alarm Current			= [A2] _____		

### Step 2. Calculate IDNet Output Module and Device Current (if used)

<u>4009-9809</u>	IDNet Repeater		70 mA		70 mA	
<u>4009-9810*</u>	Fiber Optic Receiver, Class B	Select <u>one</u> per Extender	65 mA	+ _____	65 mA	+ _____
<u>4009-9811*</u>	Fiber Optic Receiver, Class X		80 mA		80 mA	
<b>IDNet Devices</b> (connected to Repeater or Receiver above), 0.7 mA each, maximum of 100			Total devices x 0.7 mA each	+ _____	Total devices x 0.7 mA each	+ _____
* Note: IDNet Fiber Optic Transmitter current is supplied from the host fire alarm control panel		IDNet Module Supervisory Current	[S2] = _____			
			IDNet Module Alarm Current		= [A3] _____	
			Maximum Available Current		= 8 A*	
<b>Step 2. Calculate Available NAC Current</b>			Subtract Auxiliary Power Output		- [A1] _____	
			Subtract IDNet Module Current		- [A3] _____	
* 8 A for Special Application Appliances; 6 A for Regulated 24 DC Appliances			<b>Available NAC Current</b>		= [A4] _____	

### Step 3. Calculate Actual NAC Loading (Limited to Available NAC Current per Step 2.)

NAC Type	NAC Circuit #	NAC Alarm Current
Standard Panel NACS, <u>2 A maximum</u> per NAC	Circuit 1	+ _____
	Circuit 2	+ _____
	Circuit 3	+ _____
	Circuit 4	+ _____
Optional Four Point NAC Module, <u>1.5 A maximum</u> Special Application rating, <u>1 A maximum</u> Regulated 24 DC rating, per NAC	Circuit 5	+ _____
	Circuit 6	+ _____
	Circuit 7	+ _____
	Circuit 8	+ _____
Total Actual NAC Load Alarm Current		= [A5] _____

### Step 4. Calculate Total Supervisory Current

Total Supervisory Current = Basic Panel Current [S1] + IDNet Module Current [S2] =	_____
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### Step 5. Calculate Total Alarm Current

Total Alarm Current = Basic Panel Current [A2] + IDNet Module Current [A3] + Actual NAC Current [A5] =	_____
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S4009-0002-12 11/2014

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### Features

#### Rechargeable, sealed lead-acid batteries:

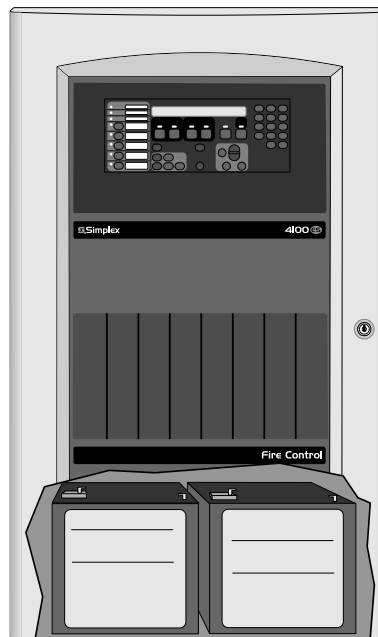
- Lead-calcium grid structure with immobilized electrolyte in absorbent separator
- Low maintenance with no need to add water
- Low self-discharge characteristics
- One-piece, high impact polystyrene cell cover with high reliability dual seal construction
- UL 924 recognized pressure relief valves

#### 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 with models available with internal chargers

#### Battery cabinets with chargers:

- Battery cabinets with charger communicate with their connected fire alarm control panel and are available for 4100ES/4010ES/4100U Series and 4010 Series panels

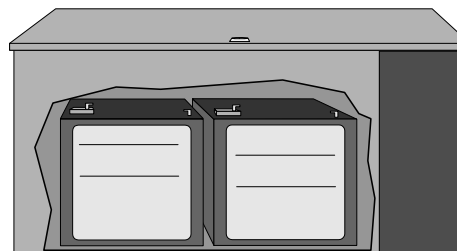


Compatible Sealed Lead-Acid Batteries can be Installed Inside Fire Alarm Control Panel Cabinets

### 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.



Remote Battery Cabinets are Available for Larger Battery Requirements

### 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.)

### Battery Details (Continued)

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

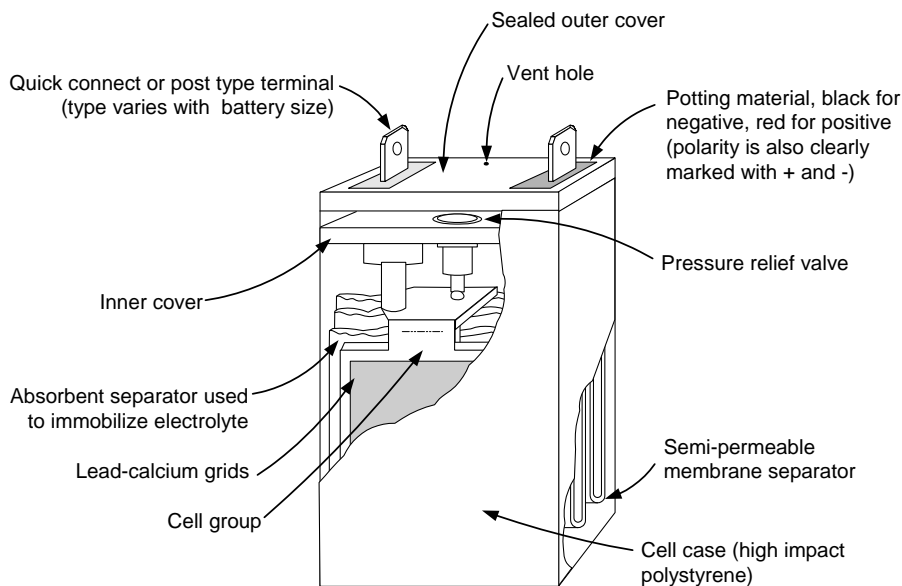
**Disposal.** Battery chemicals and materials can be recycled. Refer to information shipped with the battery or on its case. Return to the battery manufacturer or to a similarly qualified battery processing facility for proper disposal.

**Seismic Activity Applications.** Battery brackets are available for systems tested for compliance with specific batteries. Please refer to data sheet S2081-0019 for details.

\* 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 Fire Protection Products.

## 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 (rectangular 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" (229 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 for 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)								
		4003EC	4004R	4007ES & 4005	4006 & 4008	4009 (all models)	4010	4010ES	4100ES/4100U	4100 & 4120 (2, 4 or 6-Unit)
2081-9272	6.2 Ah	✓	✓	✓	✓	✓	✓	✓	✓	✓
2081-9274	10 Ah	✓	✓	✓	✓	✓	✓	✓	✓	✓
2081-9288	12.7 Ah	✓	✓	✓	✓	✓	✓	✓	✓	✓
2081-9275	18 Ah	Ext	Note 3	✓	Ext	Ext	Note 2	✓	✓	✓
2081-9287	25 Ah	Ext	Note 3	Ext	Ext	NA	✓	✓	✓	✓
2081-9271 rectangular	33 Ah	Ext	Note 3	Ext	NA	NA	Note 3	✓	✓	Ext
2081-9276 "square"	33 Ah	Ext	Note 3	Ext	NA	NA	Note 3	✓	✓	✓
2081-9296	50 Ah	NA	Note 3	NA	NA	NA	Note 3	Note 6	2 or 3 bay	Ext
2081-9279	110 Ah	Requires external battery cabinet, compatible with 4100ES, 4010ES, 4100, and 4120 Series only								

✓ = 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:

1. 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.
2. 4010 Cabinets will accommodate 2081-9275, 18 Ah batteries, but will not allow bottom entry conduit.
3. Use 4081 series companion cabinet and charger, refer to page 4.
4. Some control panel models are listed for battery replacement reference only.
5. For 2 bay international applications only, 50 Ah batteries will fit in the cabinet.

## External Battery Cabinet Compatibility Reference

### Battery Cabinets without Chargers (connects to charger in panel)

Cabinet	Panel Compatibility	Battery					
		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
2081-9280	4100ES, 4010ES, 4100U, and 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	4100ES, 4010ES, and 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 <b>without</b> 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				
4003-9860	Beige	Multiple	Intended for use with 4003EC systems, for up to 33 Ah batteries (refer to 4003EC data sheet S4003-0002)	9-1/2" H x 24" W x 9" D (241 mm x 610 mm x 229 mm)	
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		
				External battery cabinet <b>without</b> charger, with locking solid door and battery harness; for close-nipped mounting to fire alarm control panel cabinet	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.

### 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 <b>with</b> charger for the 4010 and 4004R fire alarm control panel; <b>for up to 50 Ah batteries</b> ; with front door <i>Listings include: UL, ULC, FM, CSFM, and MEA (NYC), see data sheet for details</i>	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			

### 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	4010-9xxx Series	4010ES Main System Supply (MSS)	26-1/2" W x 12" H x 12" D (673 mm x 305 mm x 305 mm)
			4100-9xxx Series	4100ES/4100U System Power Supplies (SPS)	
			4100-5111 4100-5112 4100-5113	4100ES/4100U Additional SPS	
			4100-5125 4100-5126 4100-5127	4100ES/4100U Remote Power Supply (RPS)	
			4100-5120 4100-5121 4100-5122	4100ES/4100U TrueAlert Addressable Power Supply (TPS)	
			4100-0104 4100-0114 4100-0124	4100 Legacy power supplies	

### 4100ES/4010ES/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;	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	<b>NOTE:</b> 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>	
4100-9837	Green LED Power-on Indicator Kit, <b>required for ULC listing</b> , mounts above access panel using knockout provided			

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S2081-0006-21 12/2014

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**INSERT 3**

**INITIATING/ADDRESSABLE DEVICES &  
ACCESSORIES DATA SHEETS**



### 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:

- 4007ES, 4010, 4010ES, 4100ES, and 4100U 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% (refer to additional information on page 3)

#### Heat sensors provide:

- Fixed temperature sensing
- Rate-of-rise temperature sensing
- Utility temperature sensing
- Listed to UL 521 and ULC-S530

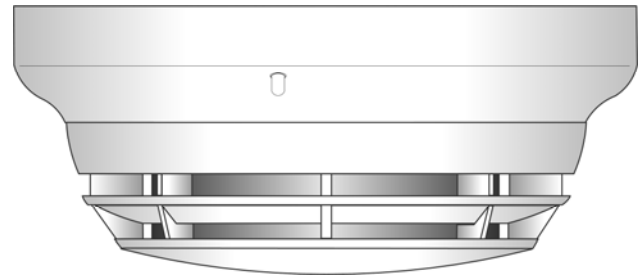
#### General features:

- Operation is for ceiling or wall mounting
- Listed to UL 268 and ULC-S529
- 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
- Different bases are available to support a supervised or unsupervised output relay, and/or a remote LED alarm indicator

#### 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)

\* 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. 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.



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.

# 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 (relay is unsupervised and requires separate 24 VDC)

### Supervised Relay Bases (not compatible with 2120 CDT):

- **4098-9791, 4-Wire Sensor Base**, use with remote or locally mounted 2098-9737 relay, requires separate 24 VDC
- **4098-9780, 2-Wire Sensor Base**, use with remote or locally mounted 4098-9860 relay, no separate power required
- Supervised relay operation is programmable and can be manually operated from control panel
- Includes wired connections for remote LED alarm indicator or 4098-9822 relay (relay is unsupervised and requires separate 24 VDC)

## 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)

### 4098-9860, Remote or local mount supervised relay:

- SPDT dry contacts, power limited rating of 2 A @ 30 VDC, resistive; non-power limited rating of 0.5 A @ 125 VAC, resistive

### 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 or heat sensors. Each sensor's output is digitized and transmitted to the system fire alarm control panel every four seconds.

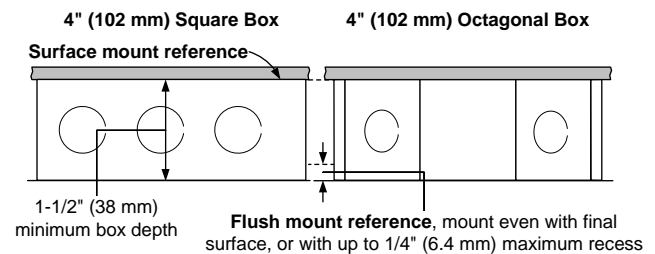
Since TrueAlarm sensors use the same base, different sensor types can be easily interchanged to meet specific location requirements. This feature also allows intentional sensor substitution during building construction. When conditions are temporarily dusty, instead of covering the smoke sensors (causing 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

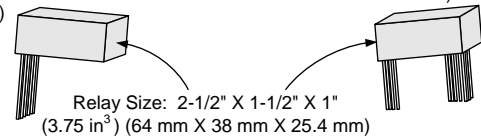
**Electrical Box Requirements:** (boxes are by others)

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

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

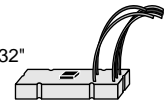


**2098-9737 Supervised Relay** (mounts in base electrical box or remotely)

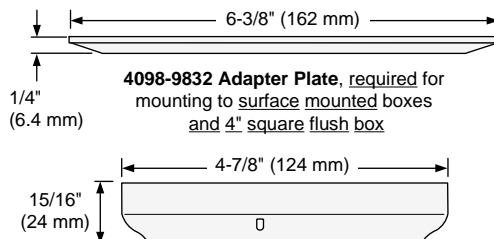


**4098-9822 Relay** (mounts in base electrical box)

**4098-9860 Supervised Relay** (mounts in base electrical box or remotely; 2-3/8" X 1-1/4" X 11/32" (1 in³) (60.4 mm X 31.8 mm X 8.6 mm))



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



**TrueAlarm Bases**  
4098-9780, 4098-9789, 4098-9791, & 4098-9792

## 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 = <b>Quick</b>
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 = <b>Ultra Fast</b>

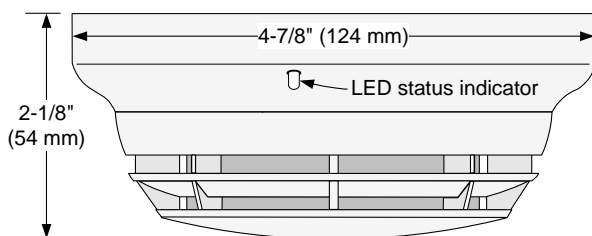
Smoke Sensors:

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

### 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. Sensitivities of 0.2%, 0.5%, and 1% are for special applications in clean areas. Standard sensitivities are 1.5%, 2.0%, 2.5%, 3.0%, and 3.7%. Application type and sensitivity are selected and then 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.



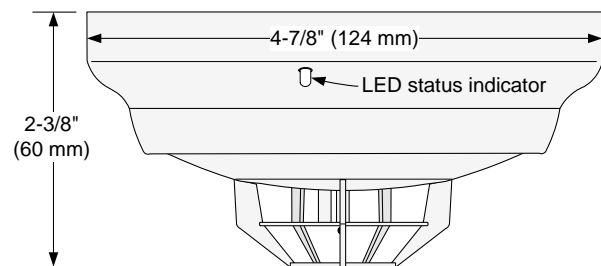
4098-9714 Photoelectric Sensor with Base

### 4098-9733 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.

### 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 including sensitivity selection, refer to Installation Instructions 574-709.

## TrueAlarm Analog Sensing Product Selection Chart

### TrueAlarm Sensor Bases (for use with Sensors 4098-9714 and 4098-9733)

(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	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	2098-9808 Remote Alarm Indicator or 4098-9822 Unsupervised Relay	4" octagonal or 4" square box
4098-9791**	4-Wire Sensor Supervised Relay Base with connections for LED Indicator or Unsupervised Relay	2098-9737 Supervised Remote Relay 2098-9808 Remote Alarm Indicator or 4098-9822 Unsupervised Relay	<b>Note:</b> Box depth requirements depend on total wire count and wire size, refer to accessories list below for reference.
4098-9780**	2-Wire Sensor Supervised Relay Base with connections for LED Indicator or Unsupervised Relay	4098-9860 Supervised Remote Relay 2098-9808 Remote Alarm Indicator or 4098-9822 Unsupervised Relay	<b>** NOTE:</b> 4098-9791 and 4098-9780 are NOT compatible with the 2120 CDT

### TrueAlarm Sensors

Model	Description	Compatibility	Mounting Requirements
4098-9714	Photoelectric Smoke Sensor	Bases 4098-9792, 4098-9789, 4098-9791, and 4098-9780	Refer to base requirements
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	<b>Remote Mounting</b> requires 4" octagonal or 4" square box, 1-1/2" minimum depth
4098-9860	Supervised Relay, mounts remote or in base electrical box	For use with 4098-9780 base	<b>Base Mounting</b> 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, 4098-9791, and 4098-9780	Single gang box, 1-1/2" minimum depth
4098-9822	Unsupervised Relay, tracks base LED status; Note: Mounts only in base electrical box	Bases 4098-9789, 4098-9791, and 4098-9780	4" octagonal box, 2-1/8" deep with 1-1/2" extension ring
4098-9832	Adapter Plate	Bases 4098-9792, 4098-9789, 4098-9791, and 4098-9780	<b>Required</b> 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	IDNet or MAPNET II communications, auto-selected, 1 address per base
Communications Connections	Screw terminals for in/out wiring, 18 to 14 AWG (0.82 mm <sup>2</sup> to 2.08 mm <sup>2</sup> )
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 <sup>2</sup> )
UL Listed Operating Temperature Range	32° to 100° F (0° to 38° C)
Operating Temperature Range	with 4098-9733 Heat Sensor: 32° to 122° F (0° to 50° C) with 4098-9714 Smoke Sensor: 15° to 122° F (-9° to 50° C)
Storage Temperature Range	0° F to 140° F (-18° C to 60° C)
Humidity Range	10 to 95% RH
4098-9714 Smoke Sensor Air Velocity Rating	0-4000 ft/min (0-1220 m/min)
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 µA, from 24 VDC supply
Alarm Current with 2098-9737 Relay	28 mA, from 24 VDC supply

### 4098-9780 Base With Supervised Remote Relay 4098-9860 (see page 2 for contact ratings)

Power	Supplied from communications
-------	------------------------------

### 4098-9822 Unsupervised Relay, Requirements for Bases 4098-9789, 4098-9791, and 4098-9780 (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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INSERT 4

NOTIFICATION APPLIANCES & ACCESSORIES  
DATA SHEETS





### Features

**Visible only (V/O) 24 VDC notification appliances with high output xenon strobe, available for wall or ceiling mount:**

- Intensity is selectable as 15, 30, 75, or 110 candela with visible selection jumper secured behind strobe housing
- Operation is compatible with ADA requirements (refer to important installation information on page 3)
- Polarized input allows connection to compatible reverse polarity, supervised notification appliance circuit (NAC)
- Regulated circuit design ensures consistent flash output and provides controlled inrush current
- Rugged, high impact, flame retardant thermoplastic housings are available in red or white with clear lens
- Listed to UL 1971 and ULC S526

**Strobes provide synchronized flash for use with:**

- Simplex® fire alarm control panels with NACs selected to provide strobe synchronization or SmartSync two-wire control
- 4009 IDNet NAC Extenders
- Separate strobe Synchronization Modules that are available for Class B or Class A operation
- Separate SmartSync Control Modules (SCMs) that provide Class B or Class A output from conventional NAC inputs

**Strobe housings provides flexible, easy, and convenient semi-flush or surface wall mounting:**

- Rear of housing does not extend into box
- Wall mount strobes easily mount to single gang, double gang, or 4-inch square outlet box
- Ceiling mount strobes mount to single gang boxes

**Wall mount strobe features:**

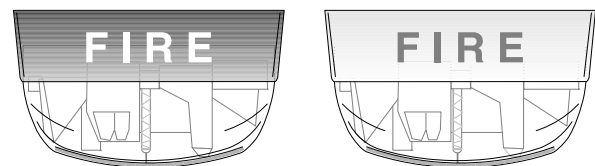
- Wiring terminals are accessible from the front of the housing providing easy access for installation, inspection, and testing
- Covers are available separately to convert housing color

**Optional adapters and wire guards:**

- Wall mount strobe adapters are available to cover surface mounted electrical boxes and to adapt to Simplex 2975-9145 boxes
- UL listed red wire guards are available for wall or ceiling mount strobes\*



Wall Mount Strobes



Ceiling Mount Strobes

### Description

**Multi-Candela TrueAlert synchronized strobes**

provide convenient installation to standard electrical boxes. The enclosure designs are both impact and vandal resistant and provide a convenient strobe intensity selection. Since each model can be selected for intensity output, on-site model inventory is minimized and changes encountered during construction can be easily accommodated.

**Wall mount** strobe housings are a one-piece assembly (including lens) that mounts to a single or double gang, or 4" square standard electrical box. The cover can be quickly removed (a tool is required) and covers are available separately for color conversion.

**Ceiling mount** strobes install using standard single gang electrical boxes. Color choice is determined by model number.

### Strobe Intensity Selection

During installation, a selection plug at the back of the housing determines the desired strobe intensity. An attached flag with black letters on a highly visible yellow background allows the selected intensity to be seen at the side of the strobe lens.

### Strobe Application Reference

Proper selection of visible notification is dependent on occupancy, location, local codes, and proper applications of: the *National Fire Alarm Code* (NFPA 72), ANSI A117.1; the appropriate model building code: BOCA, ICBO, or SBCCI; and the application guidelines of the Americans with Disabilities Act (ADA).

\* Refer to page 2 for guard listing. 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 7125-0026:316 for allowable values and/or conditions concerning material presented in this document. Refer to page 2 for listing status of wire guards. 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.

## Synchronized Strobes

**Multiple Strobes.** When multiple strobes and their reflections can be seen from one location, synchronized flashes reduce the probability of photo-sensitive reactions as well as the annoyance and possible distraction of random flashing. These multi-candela strobes are synchronized over a two-wire circuit when connected to compatible NACs, to compatible Synchronized Flash Modules, or to SmartSync Control Modules.

## SmartSync Two-Wire Control

Some applications desire the audible notification appliances to be capable of being silenced before the alarm condition is reset (on-until-silenced) while the visible notification appliances are kept activated until the alarm condition is reset (on-until-reset). SmartSync operation mode provides this function using a single circuit (two-wire operation).

## SmartSync Control Sources

**SmartSync two-wire control is available from:**

- 4006, 4007ES Hybrid, 4008, 4010, 4010ES, 4100ES, and 4100U Fire Alarm Control Panels (refer to individual product data sheets for more information)
- 4009 IDNet NAC Extenders (refer to data sheet S4009-0002)
- SmartSync Control Module (SCM) Model 4905-9938 (refer to data sheet S4905-0003)

**Additional SmartSync** compatible notification appliances include separate horns and combination horn/strobe notification appliances.

## Product Selection

### Multi-Candela Visible Notification Appliances (Strobes)

Model	Mounting	Housing Color	"FIRE" Lettering	Description
4906-9101	Wall	Red	White	Multi-candela strobe with intensity selectable as: 15, 30, 75, or 110 candela; synchronized flash rate; SmartSync two-wire control compatible
4906-9103		White	Red	
4906-9102	Ceiling	Red	White	
4906-9104		White	Red	

### Wall Mount Strobe Adapters

Model	Description	Dimensions
4905-9937	Red	Surface Mount Adapter Skirt; use to cover 1-1/2" (38 mm) deep surface mounted boxes Total depth with strobe = 4-3/8" (111 mm)
4905-9940	White	
4905-9931	Red Adapter Plate for mounting to Simplex 2975-9145 box (typically for retrofit, may be mounted vertical or horizontal)	8-5/16" x 5-3/4" x 0.060" Thick (211 mm x 146 mm x 1.5 mm)
2975-9145	Red Mounting Box, requires Adapter Plate 4905-9931	7-7/8" x 5-1/8" x 2-3/4" D (200 mm x 130 mm x 70 mm)

### Ceiling Mount Strobe Adapter

Model	Description	Dimensions
4905-9910	Surface Mount Adapter Plate; zinc plated; <b>required for mounting to handy box; not needed when using 4905-9926 guard</b>	4-7/8" x 3-1/8" x 0.060" D (124 mm x 79 mm x 1.5)

### Synchronization Modules (refer to data sheet S4905-0003 for additional information)

Model	Description	Dimensions
4905-9914	Class B	Synchronized Flash Module; epoxy encapsulated with in/out 18 AWG (0.82 mm <sup>2</sup> ) wire leads, rated for 2 A NAC, requires 5 mA for power
4905-9922	Class A	
4905-9938	SmartSync Control Module with Class B or Class A output; mounts in 4" (102 mm) square box	4" x 4-1/8" x 1-1/4" D (102 mm x 105 mm x 32 mm)

### Replacement Covers and Guards

Model	Description	Dimensions
4905-9992	Red cover with white "FIRE" lettering	For Wall mount strobes 5-1/8" H x 5" W x 1-1/2" D (130 mm x 127 mm x 38 mm)
4905-9993	White cover with red "FIRE" lettering	
4905-9961*	Wall mount	Red wire guard with mounting plate, compatible with semi-flush or surface mounted boxes 6-1/16" H x 6-1/16" W x 3-1/8" D (154 mm x 154 mm x 79 mm)
4905-9926*	Ceiling mount	
		6-1/8" x 4-3/8" x 2-7/8" deep (156 mm x 111 mm x 73 mm)

\* UL listed by Space Age Electronics Inc.

## Strobe Specifications

### Wall Mount or Ceiling Mount, Common Specifications

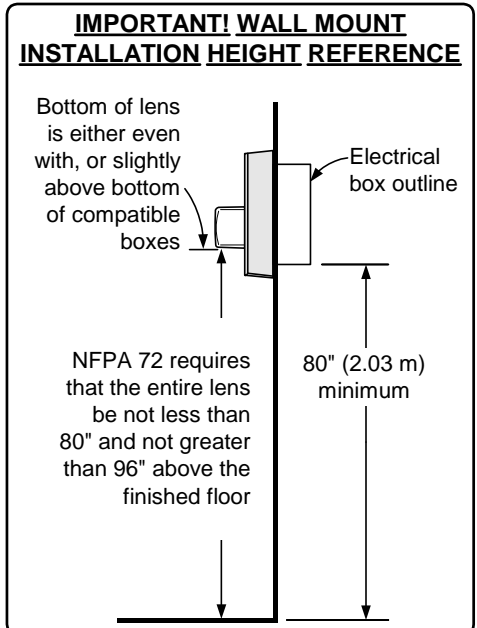
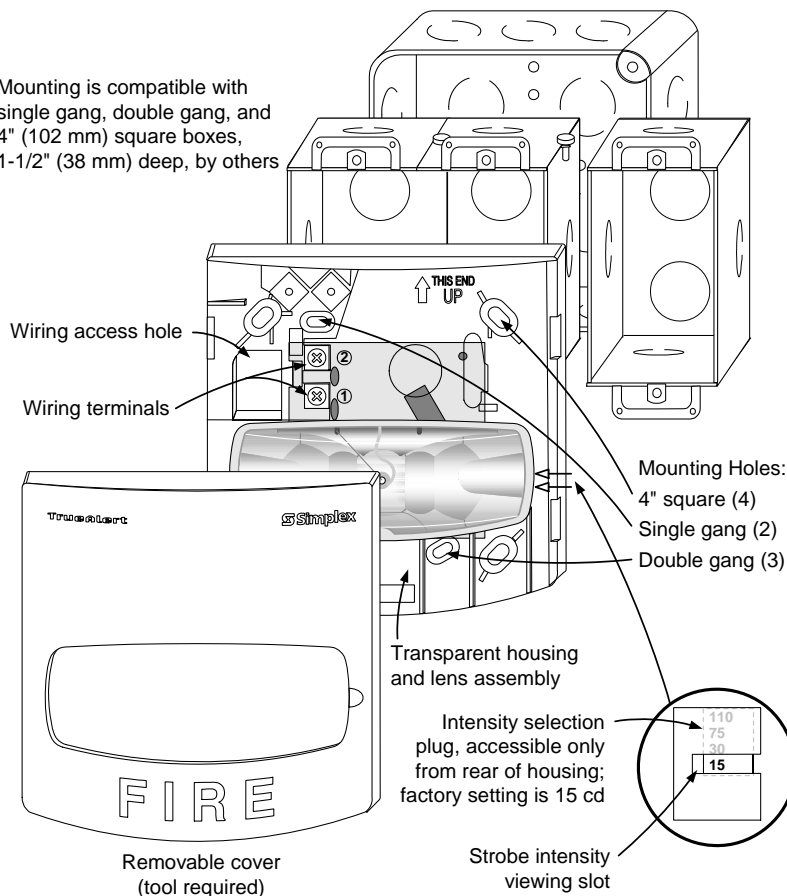
Rated Voltage Range		Regulated 24 VDC; see Note 1 below			
Flash Rate		1 Hz			
Synchronized NAC Loading		Up to 35 synchronized strobes maximum per NAC			
Temperature Range		32° to 122° F (0° to 50° C)			
Humidity Range		10% to 93%, non-condensing at 100° F (38° C)			
Connections		Terminal blocks for 18 AWG to 12 AWG (0.82 mm <sup>2</sup> to 3.31 mm <sup>2</sup> ); two wires per terminal for in/out wiring			
<b>Wall Mount</b>	Housing Dimensions (with lens)	5-1/8" H x 5" W x 2-3/4" D (130 mm x 127 mm x 70 mm)			
	Maximum RMS Current Rating per Strobe Setting (see Note 2 below)	<b>15 cd</b>	<b>30 cd</b>	<b>75 cd</b>	<b>110 cd</b>
		<b>60 mA</b>	<b>94 mA</b>	<b>186 mA</b>	<b>252 mA</b>
	Reference RMS Currents at other voltages	18 VDC	53 mA	84 mA	165 mA
24 VDC		40 mA	63 mA	124 mA	168 mA
<b>Ceiling Mount</b>	Housing Dimensions (with lens)	4-3/4" L x 2-5/16" W x 2-5/8" D (121 mm x 75 mm x 67 mm)			
	Maximum RMS Current Rating per Strobe Setting (see Note 2 below)	<b>15 cd</b>	<b>30 cd</b>	<b>75 cd</b>	<b>110 cd</b>
		<b>75 mA</b>	<b>125 mA</b>	<b>233 mA</b>	<b>316 mA</b>
	Reference RMS Currents at other voltages	18 VDC	67 mA	111 mA	207 mA
24 VDC		50 mA	83 mA	155 mA	211 mA

#### NOTES:

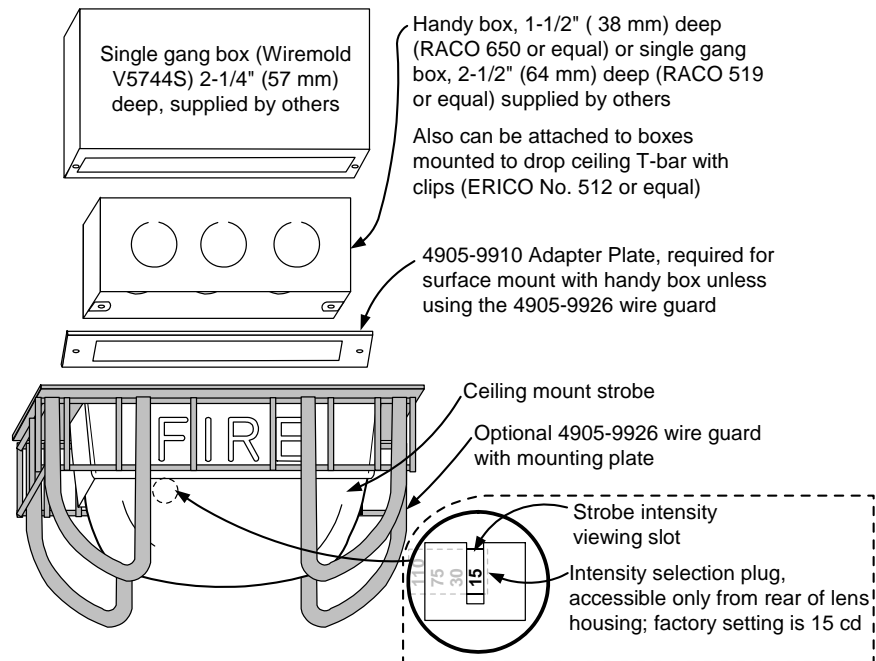
1. "Regulated 24 VDC" refers to the voltage range of 16 to 33 VDC per UL Standard 1971, *Signaling Devices for the Hearing Impaired*. This voltage range is the absolute operating range. Operation outside of this range may cause permanent damage to the strobe. Please note that 16 VDC is the lowest operating voltage that is allowed at the last appliance on the NAC under worst case conditions.
2. The maximum RMS current listed is the device nameplate rating. Strobe designs are constant wattage and the maximum RMS current rating occurs at the lowest allowable operating voltage. (RMS is root mean square and refers to the effective value of a varying current waveform.)

## Installation Reference, Surface or Semi-Flush Wall Mounting

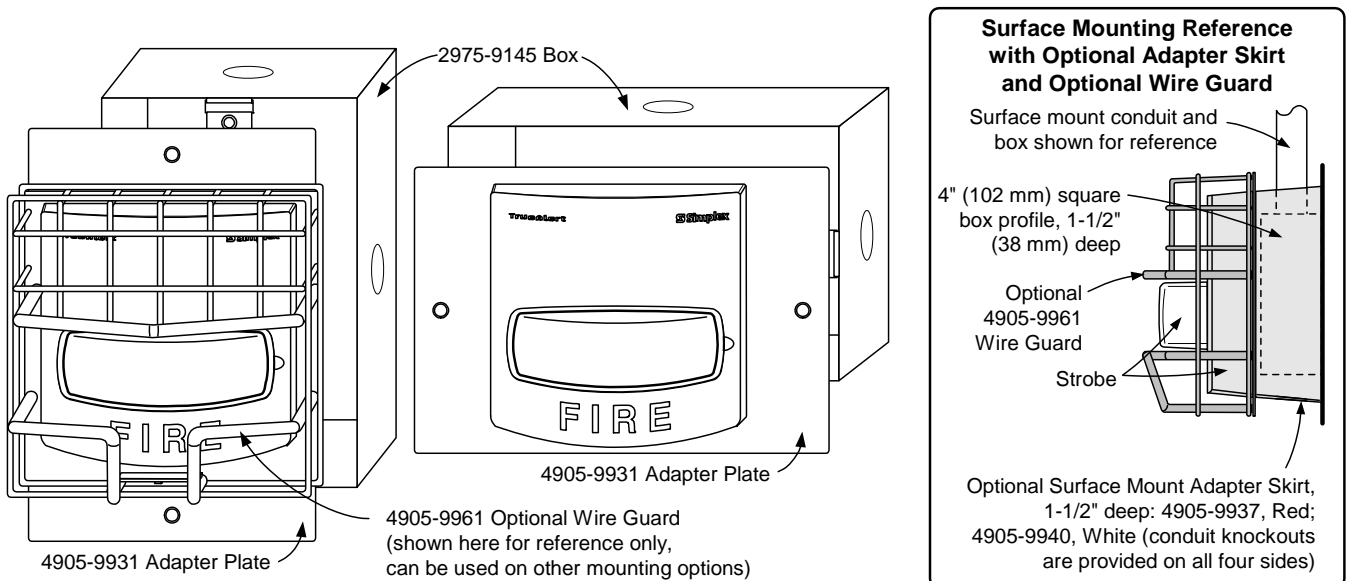
Mounting is compatible with single gang, double gang, and 4" (102 mm) square boxes, 1-1/2" (38 mm) deep, by others



## Ceiling Mount Strobe Installation Reference



## Wall Mount Installation Reference; Adapter Plate, Guard, and Adapter Skirt



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**Features****Audible/visible (A/V) notification appliances with efficient electronic horn and high output xenon strobe, available for wall or ceiling mount**

- Operation is compatible with ADA requirements (refer to important installation information on page 3)
- Rugged, high impact, flame retardant thermoplastic housings are available in red or white with clear lens

**Operates over a two-wire SmartSync circuit to provide:**

- Horns that are controlled separately from strobes on the same two-wire circuit
- “On-until-silenced” and “on-until-reset” operation on the same two-wire pair
- SmartSync horn activation of Temporal pattern, March Time pattern (at 60 BPM), or on continuously
- Strobe appliances on the same circuit operating at a synchronized 1 Hz flash rate
- Class B operation requires connection to a compatible SmartSync NAC or to SmartSync Control Module (SCM) 4905-9938
- Class A operation when connected to the 4905-9938 SCM or with 4100U series fire alarm control panel NACs

**Wall mount A/Vs features:**

- Wiring terminals are accessible from the front of the housing providing easy access for installation, inspection, and testing
- Covers are available separately to convert housing color
- Available UL listed sound damper for locations requiring attenuation of 5 to 6 dBA (stairwells, small rooms, highly reverberant areas, etc.)

**Optional adapters and wire guards:**

- Wall mount A/V adapters are available to cover surface mounted electrical boxes and to adapt to Simplex® 2975-9145 boxes
- UL listed red wire guards are available for wall or ceiling mount A/Vs

**Visible notification appliance (strobe):**

- 24 VDC xenon strobe; intensity is selectable as 15, 30, 75, or 110 candela with visible selection jumper secured behind strobe housing
- UL listed to Standard 1971
- Regulated circuit design ensures consistent flash output and provides controlled inrush current

**Audible notification appliance (horn):**

- Low current, 24 VDC electronic horn with harmonically rich sound output suitable for either steady or coded operation (Temporal or 60 BPM March Time pattern)
- UL listed to Standard 464



Wall and Ceiling Mount A/Vs

**Description**

**Multi-Candela TrueAlert A/Vs with horn and synchronized strobe** provide convenient installation to standard electrical boxes. The enclosure designs are both impact and vandal resistant and provide a convenient strobe intensity selection. Since each model can be selected for strobe intensity output, on-site model inventory is minimized and changes encountered during construction can be easily accommodated.

**Wall mount A/V** housings are a one-piece assembly (including lens) that mounts to a single or double gang, or 4” square standard electrical box. The cover can be quickly removed (a tool is required) and covers are available separately for color conversion.

**Ceiling mount A/Vs** install using standard 4” electrical boxes. Color choice is determined by model number.

**Strobe Intensity Selection**

During installation, a selection plug at the back of the housing determines the desired strobe intensity. An attached flag with black letters on a highly visible yellow background allows the selected intensity to be seen at the side of the strobe lens.

\* 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 7125-0026:317 for allowable values and/or conditions concerning material presented in this document. Accepted for use – City of New York Department of Buildings – MEA35-93E. Refer to page 2 for listing status of wire guards. 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.

## Strobe Application Selection

Proper selection of visible notification is dependent on occupancy, location, local codes, and proper applications of: the *National Fire Alarm Code* (NFPA 72), ANSI A117.1; the appropriate model building code: BOCA, ICBO, or SBCCI; and the application guidelines of the Americans with Disabilities Act (ADA).

## Synchronized Strobes

**Multiple Strobes.** When multiple strobes and their reflections can be seen from one location, synchronized flashes reduce the probability of photo-sensitive reactions as well as the annoyance and possible distraction of random flashing. The multi-candela strobes of these A/Vs are synchronized by the controlling SmartSync operation NAC.

## Product Selection

### Multi-Candela A/Vs

Model	Mounting	Housing Color	"FIRE" Lettering	Description
4906-9127	Wall	Red	White	Horn with Multi-Candela Strobe; strobe intensity selectable as: 15, 30, 75, or 110 candela; operates with SmartSync two-wire control
4906-9129		White	Red	
4906-9128	Ceiling	Red	White	
4906-9130		White	Red	

### Wall Mount A/V Accessories

Model	Description	Dimensions
4905-9937	Red Surface Mount Adapter Skirt; use to cover 1-1/2" (38 mm) deep surface mounted boxes	5-3/8" H x 5-1/4" W x 1-5/8" D (136 mm x 133 mm x 41 mm)
4905-9940	White Surface Mount Adapter Skirt; use to cover 1-1/2" (38 mm) deep surface mounted boxes	5-3/8" H x 5-1/4" W x 1-5/8" D (136 mm x 133 mm x 41 mm)
4905-9931	Red Adapter Plate for mounting to Simplex 2975-9145 box (typically for retrofit, may be mounted vertical or horizontal)	8-5/16" x 5-3/4" x 0.060" Thick (211 mm x 146 mm x 1.5 mm)
2975-9145	Red Mounting Box, requires Adapter Plate 4905-9931	7-7/8" x 5-1/8" x 2-3/4" D (200 mm x 130 mm x 70 mm)
4905-9838	Optional Sound Damper; package of 20; field installed adhesive backed horn output attenuator; reduces output 5 to 6 dBA <b>NOTE:</b> After Sound Damper installation, measure sound level to ensure compliance with applicable code requirements	1-3/4" Diameter (44.5 mm) with 0.31" (8 mm) sound opening

### SmartSync Control Module

Model	Description	Dimensions
4905-9938	SmartSync Control Module with Class B or Class A output; mounts in 4" (102 mm) square box; refer to data sheet S4905-0003 for details	4" x 4-1/8" x 1-1/4" D (102 mm x 105 mm x 32 mm)

### Replacement Covers for Wall Mount A/Vs

Model	Description	Dimensions
4905-9994	Red cover with white "FIRE" lettering	5-1/8" H x 5" W x 1-1/2" D (130 mm x 127 mm x 38 mm)
4905-9995	White cover with red "FIRE" lettering	

### Wire Guards and Ceiling Mount A/V Adapter

Model	Description	Dimensions
4905-9961*	Wall mount red wire guard with mounting plate, compatible with semi-flush or surface mounted boxes	6-1/16" H x 6-1/16" W x 3-1/8" D (154 mm x 154 mm x 79 mm)
4905-9927*	Red Wire Guard for mounting to flush mounted electrical box	8-1/2" x 6-1/8" x 3" (216 mm x 156 mm x 76 mm)
4905-9928*	Ceiling Mount Red Adapter Plate, required to mount guard to surface mounted electrical box	9" x 7" (229 mm x 178 mm)
4905-9915	Surface Mount Adapter Box Extension, use to cover 1-1/2" deep surface mounted boxes	4-3/4" x 6-7/8" x 1-1/2" deep, (121 mm x 175 mm x 38 mm)
4905-9916		

\* UL listed by Space Age Electronics Inc.

## SmartSync Two-Wire Control

SmartSync operation mode allows a two-wire circuit to provide the ability to activate both the horn and strobe on the same NAC and then allow the horn to be silenced while the strobe remains flashing. The horn operates as "on-until-silenced" while the strobe operation is "on-until-reset."

## SmartSync Control Sources

- **4006, 4007ES Hybrid, 4008, 4010, 4010ES, 4100ES, and 4100U Fire Alarm Control Panels** (refer to individual product data sheets for more information)
- **4009 IDNet NAC Extender** (refer to data sheet S4009-0002)
- **SmartSync Control Module (SCM) 4905-9938** (refer to data sheet S4905-0003)

**Additional SmartSync** compatible notification appliances include separate horns and combination horn/strobe notification appliances.

## A/V Specifications

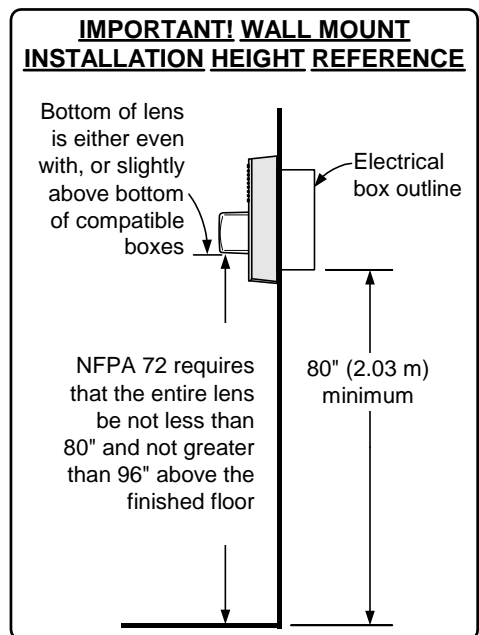
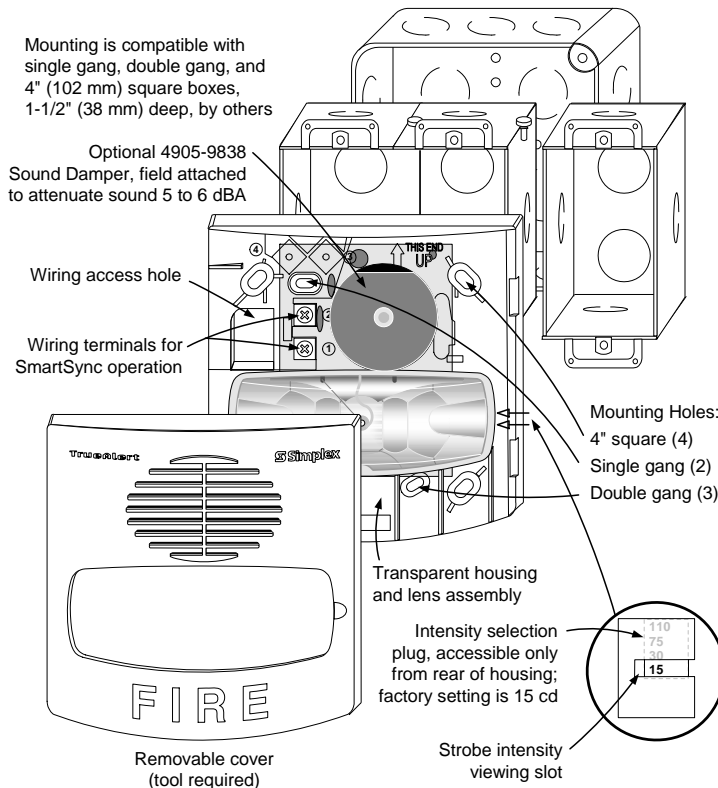
### Wall Mount or Ceiling Mount, Common Specifications

Rated Voltage Range	UL Listed Rating ULC Listed Rating	Regulated 24 DC; see Note 1 below 20 VDC to 30 VDC per ULC S526-M878					
Flash Rate and Synchronized NAC Loading		1 Hz; with up to 35 synchronized strobes maximum per NAC					
Environmental; Temperature and Humidity		32° to 122° F (0° to 50° C); 10% to 93%, non-condensing at 100° F (38° C)					
Connections		Terminal blocks for 18 AWG to 12 AWG (0.82 mm <sup>2</sup> to 3.31 mm <sup>2</sup> ); two wires per terminal for in/out wiring					
Horn Output Characteristics		2400 to 3700 Hz sweep, modulated at 120 Hz rate					
Horn Output Ratings @ 10 ft (3 m) (see Note 2)	Voltage	16 VDC		24 VDC		33 VDC	
	Sound Type (see Note 2)	Steady	Coded	Steady	Coded	Steady	Coded
	UL 464 Reverberant Chamber	86 dBA	82 dBA	88 dBA	84 dBA	90 dBA	86 dBA
	Anechoic Chamber	92 dBA	91 dBA	94 dBA	95 dBA	96 dBA	96 dBA
Wall Mount	Housing Dimensions (with lens)	5-1/8" H x 5" W x 2-3/4" D (130 mm x 127 mm x 70 mm)					
	Maximum RMS Current Rating per Strobe Setting (see Note 3 below)	15 cd	30 cd	75 cd	110 cd		
		75 mA	116 mA	221 mA	285 mA		
	Reference RMS Currents at other voltages	18 VDC	67 mA	103 mA	196 mA	253 mA	
24 VDC		50 mA	77 mA	147 mA	190 mA		
Ceiling Mount	Housing Dimensions (with lens)	4-3/4 L" x 6-7/8" W x 2-5/8" D (121 mm x 175 mm x 67 mm)					
	Maximum RMS Current Rating per Strobe Setting (see Note 3 below)	15 cd	30 cd	75 cd	110 cd		
		86 mA	132 mA	250 mA	320 mA		
	Reference RMS Currents at other voltages	18 VDC	76 mA	117 mA	222 mA	284 mA	
24 VDC		57 mA	88 mA	167 mA	213 mA		

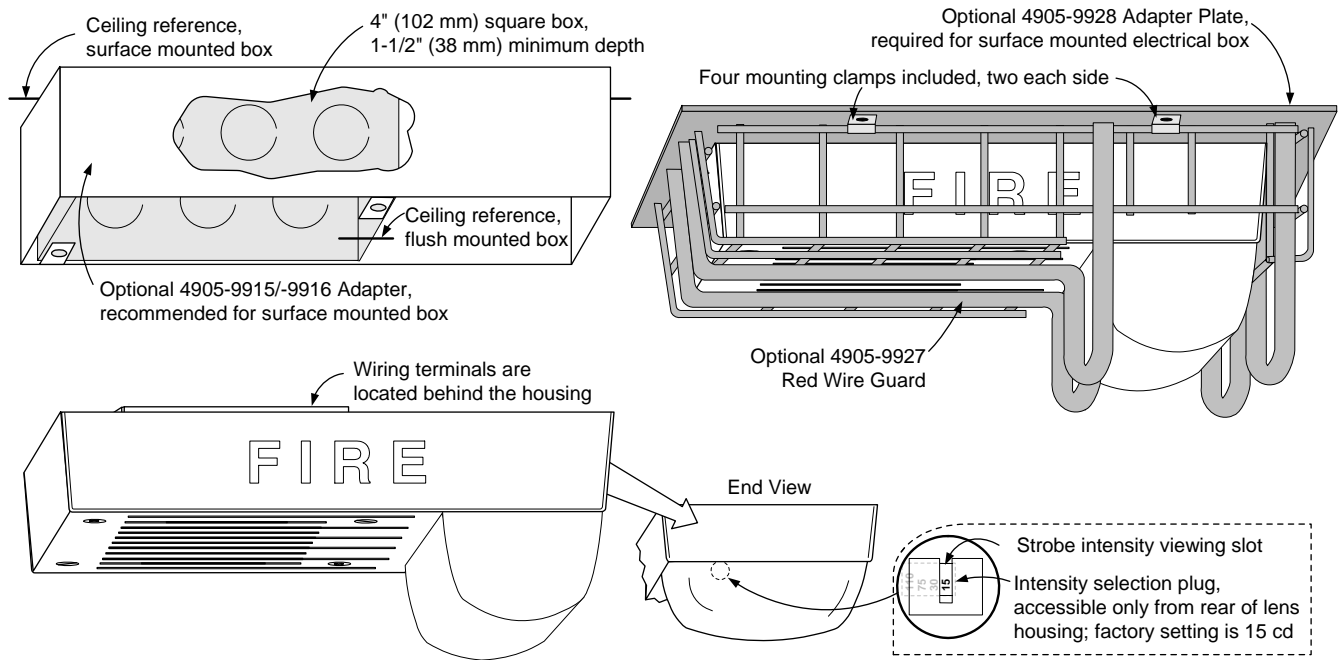
#### NOTES:

1. "Regulated 24 DC" refers to the voltage range of 16 to 33 VDC per UL Standard 1971, *Signaling Devices for the Hearing Impaired*. This voltage range is the absolute operating range. Operation outside of this range may cause permanent damage to the appliance. Please note that 16 VDC is the lowest operating voltage that is allowed at the last appliance on the NAC under worst case conditions.
2. Coded values are typical of the output measured with a Temporal coded or a March Time coded pulse and with a sound level meter reading on a "fast" setting. Under the same test conditions, coded horn output "peak" sound level readings are typically 4 dBA higher. Anechoic horn output ratings are typically more representative of actual installed sound output.
3. Currents are with horn on steady. The maximum RMS current listed is the device nameplate rating. Strobe designs are constant wattage and the maximum RMS current rating occurs at the lowest allowable operating voltage. (RMS is root mean square and refers to the effective value of a varying current waveform.)

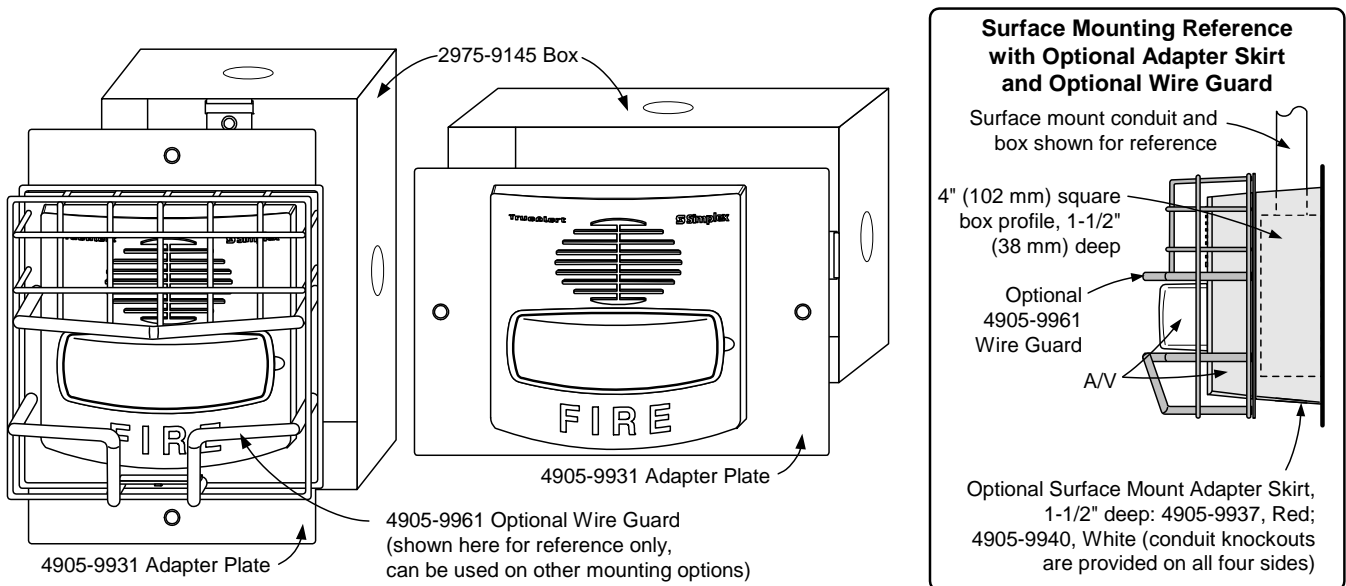
### Installation Reference, Surface or Semi-Flush Mounting



## Ceiling Mount A/V and Guard Installation Reference



## Wall Mount Installation Reference; Adapter Plate, Guard, and Adapter Skirt



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