

EcoMaine  
Locker Room Renovation

Portland, ME

Fire Alarm System Addition  
Equipment Submittal  
09/20/16



30 Thomas Drive  
Westbrook, ME 04092-3824



**Project:** EcoMaine  
**Locker Room Renovation**  
**64 Blueberry Rd**  
**Regional Waste Systems**  
**Portland, ME 04102-1945**

**Customer:** Milliken Brothers Inc.  
**474 Riverside Industrial Parkway #1**  
**Portland, Me 04103**

**Sales Representative:** Christopher Ayres

**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: \_\_\_\_\_



**ECOMAINE  
LOCKER ROOM RENOVATION  
FIRE ALARM SYSTEM EQUIPMENT SUBMITTAL**

**TABLE OF CONTENTS**

**Insert 1 Project Bill of Material (BOM)**

**Insert 2 Initiating/Addressable Devices, Door Holders & Accessories**

**Insert 3 Notification Appliances & Accessories**



INSERT 1

PROJECT BILL OF MATERIAL



**BILL OF MATERIAL**  
**FIRE ALARM SYSTEM EQUIPMENT - LOCKER ROOM RENOVATION**  
**ecoMaine Regional Waste Systems - Portland, ME**

TAB	QTY	MODEL	DESCRIPTION	DATASHEET
<b>Fire Alarm System Initiating/Addressable Devices, Door Holders &amp; Accessories</b>				
2	2	4098-9714	TRUEALARM PHOTO SMOKE SENSOR	S4098-0019
2	2	4098-9792	TRUEALARM SENSOR BASE	S4098-0019
2	1	4090-9002	IDNET RELAY IAM	S4090-0002
2	1	4090-9801	SEMI-FLUSH MNT DOUBLE GANG BOX COVER PLATE	S4090-0002
2	2	DH24120FC	ELECTROMAGNETIC DOOR HOLDER	S2084-0001
<b>Notification Appliances &amp; Accessories</b>				
3	3	4906-9101	V/O M-C NON-ADDRESS, RED, WALL	S4906-0001
3	2	4906-9127	A/V M-C NON-ADDRESS, RED, WALL	S4906-0002



## INSERT 2

### INITIATING/ADDRESSABLE DEVICES, DOOR HOLDERS & ACCESSORIES



### Features

#### TrueAlarm analog sensing provides:

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

#### For use with the following Simplex® products:

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

#### Fire alarm control panel provides:

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

#### Photoelectric smoke sensors provide:

- Seven levels of sensitivity from 0.2% to 3.7%

#### Heat sensors provide:

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

#### Ionization smoke sensors provide:

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

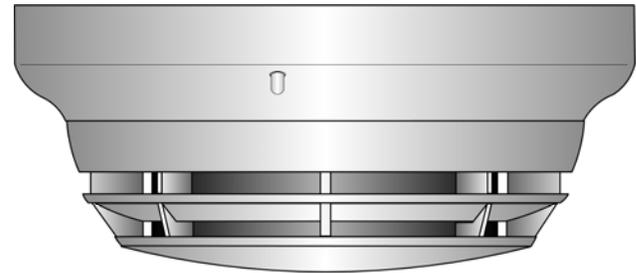
#### General features:

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

#### Additional base reference:

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

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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 (unsupervised)

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

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

## Sensor Base Options

### 2098-9737, Remote or local mount supervised relay:

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

### 4098-9822, LED Annunciation Relay:

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

### 4098-9832, Adapter plate:

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

### 2098-9808, Remote red LED Alarm Indicator:

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



## Description

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

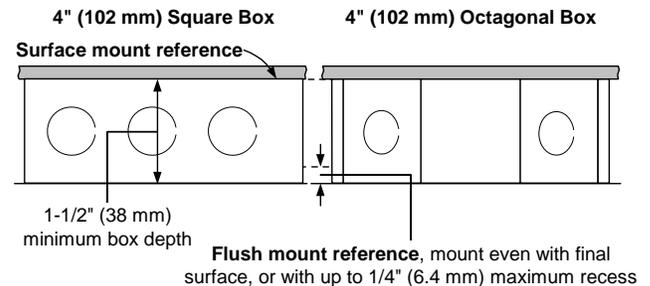
Since TrueAlarm sensors use the same base, different sensor types can be easily interchanged to meet specific location requirements. This feature also allows intentional sensor substitution during building construction. When conditions are temporarily dusty, instead of covering the smoke sensors (causing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

## Mounting Reference

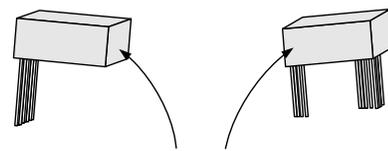
**Electrical Box Requirements:** (boxes are by others)

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

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

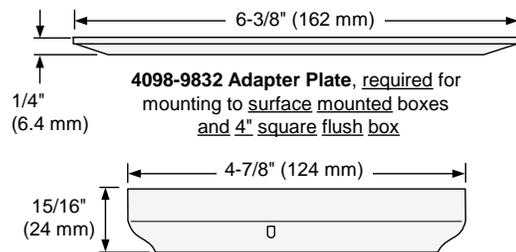


**2098-9737 Relay** (mounts in base electrical box or remotely)      **4098-9822 Relay** (mounts in base electrical box)



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

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



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

## TrueAlarm Sensors

### Features

Sealed against rear air flow entry

Interchangeable mounting

EMI/RFI shielded electronics

Heat sensors:

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

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

Smoke Sensors:

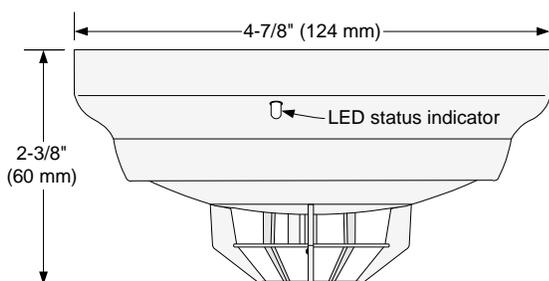
- Photoelectric or ionization technology sensing
- 360° smoke entry for optimum response
- Built-in insect screens

### 4098-9733 Heat Sensor

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

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

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



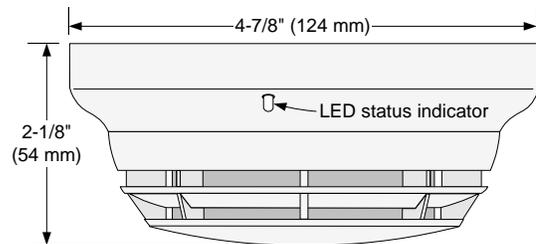
4098-9733 Heat Sensor with Base

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

### 4098-9714 Photoelectric Sensor

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

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

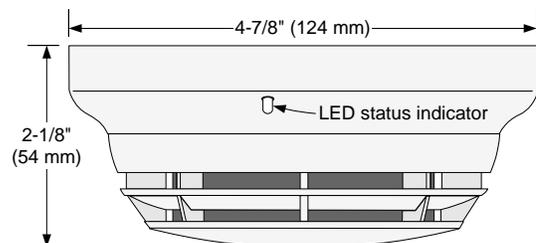


4098-9714 Photoelectric Sensor with Base

### 4098-9717 Ionization Sensor

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

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



4098-9717 Ionization Sensor with Base

### Application Reference

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

## TrueAlarm Analog Sensing Product Selection Chart

### TrueAlarm Sensor Bases

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

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

### TrueAlarm Sensors

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

### TrueAlarm Sensor/Base Accessories

Model	Description	Compatibility	Mounting Requirements
2098-9737	Supervised Relay, mounts remote or in base electrical box	For use with 4098-9791 base	<b>Remote Mounting</b> requires 4" octagonal or 4" square box, 1-1/2" minimum depth <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 and 4098-9791	Single gang box, 1-1/2" minimum depth
4098-9822	Relay, tracks base LED status (unsupervised, mounts only in base electrical box)		4" octagonal box, 2-1/8" deep with 1-1/2" extension ring
4098-9832	Adapter Plate	Bases 4098-9792, -9789, & -9791	<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	MAPNET II or IDNet, auto-select, 24-40 VDC w/data, 400 $\mu$ A typical, 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 Temperature Range	32° to 100° F (0° to 38° C)
Operating Temperature Range	with 4098-9717 or 4098-9733: 32° to 122° F (0° to 50° C) with 4098-9714: 15° to 122° F (-9° to 50° C)
Humidity Range	10 to 95% RH
Smoke Sensor	4098-9714, Photoelectric Sensor: Air velocity = 0-4000 ft/min (0-1220 m/min)
Ambient Ratings	4098-9717, Ionization Sensor: Air velocity = 0-200 ft/min (0-61 m/min); Altitude is up to 8000 ft (2.4 km)
Housing Color	Frost White
<b>4098-9791 Base With Supervised Remote Relay 2098-9737</b> (see page 2 for contact ratings)	
Externally Supplied Relay Coil Voltage	18-32 VDC (nominal 24 VDC)
Supervisory Current	270 $\mu$ A, from 24 VDC supply
Alarm Current with 2098-9737 Relay	28 mA, from 24 VDC supply
<b>4098-9822 Unsupervised Relay, Requirements for Bases 4098-9789 and 4098-9791</b> (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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### Features

#### Individual Addressable Relay Module (Relay IAM):

- IDNet addressable control for use with Simplex® fire alarm control panel models 4007ES, 4008, 4010, 4010ES, 4100ES, and 4100U
- A single addressable point provides control and status tracking of a Form “C” contact
- Low power latching relay design allows IDNet communications to supply both data and module power
- Relay is set to OFF on initial power up and upon loss of IDNet communications

#### Compact, sealed construction:

- Enclosed design minimizes dust infiltration
- Mounts in standard 4” (102 mm) square electrical box, optional adapter bracket is available to mount in a 4 11/16” (119 mm) square electrical box
- Screw terminals for wiring connections
- Visible LED flashes to indicate communications
- Optional covers are available to allow LED to be viewed after installation

#### UL listed to Standard 864

### Description

**IDNet Relay IAMs** allow fire alarm control panels to control a remotely located Form “C” contact using IDNet addressable communications for both data and module power. Typical applications would be for switching local power for control functions such as elevator capture, or control of HVAC components, pressurization fans, dampers, etc. Relay status is also communicated requiring only one device address.

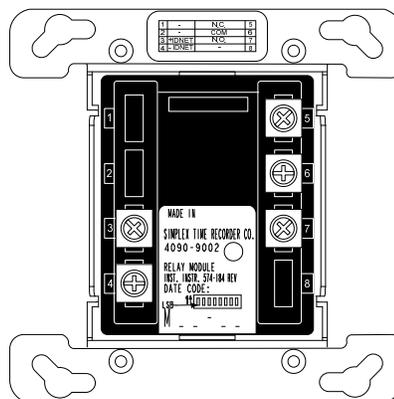
### Product Selection

Model	Description
4090-9002	Relay IAM

#### Optional Adapter and Trim Plates

Model	Description	
4090-9813	Adapter plate to fit 4 11/16” (119 mm) square electrical box	
4090-9801	For semi-flush mounted box	Trim Plate, galvanized steel, with LED viewing window; includes mounting screws
4090-9802	For surface mounted box	

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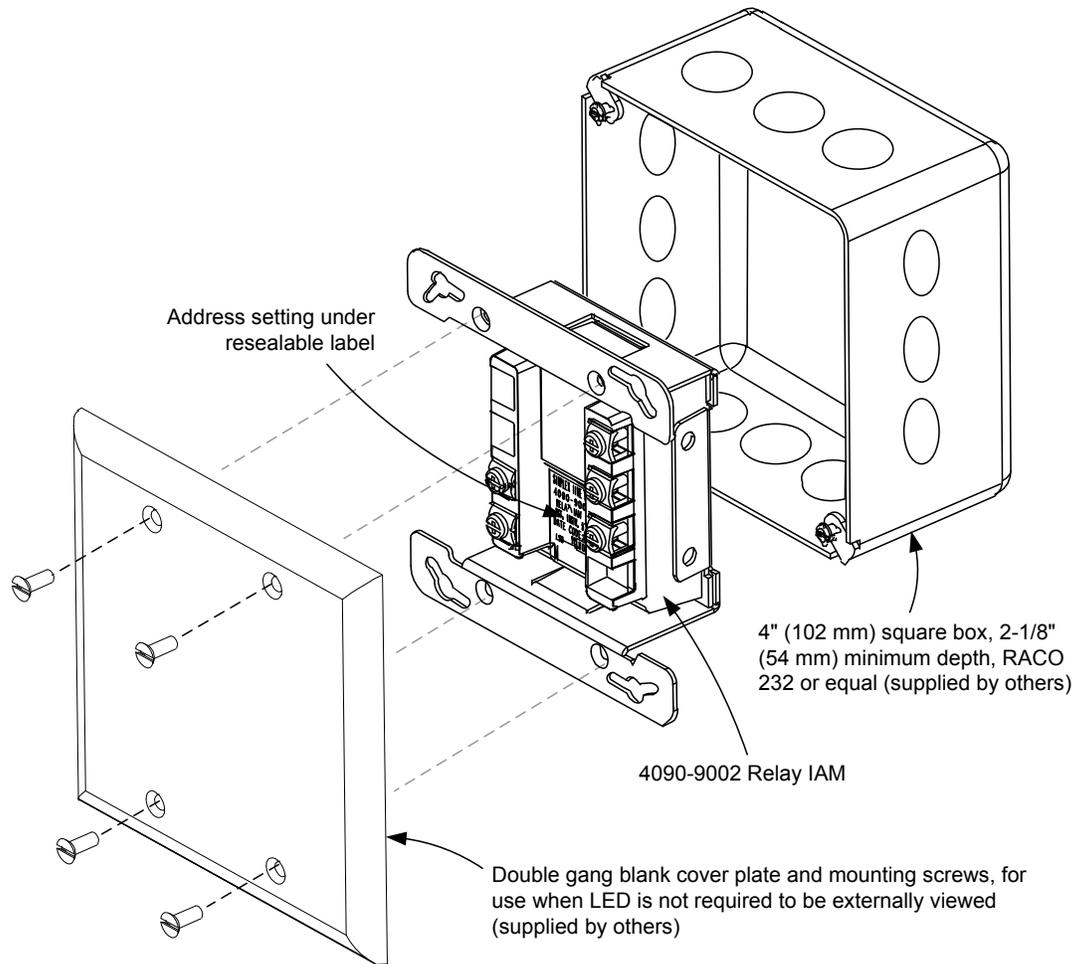


4090-9002 IDNet Relay IAM Package  
(shown approximately 1/2 size)

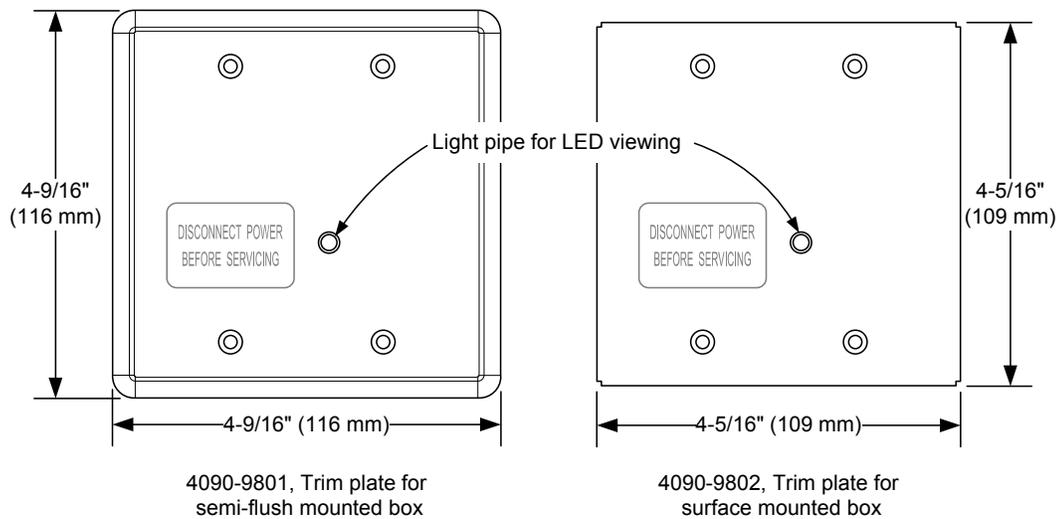
### Specifications

Communications	IDNet communications, 1 address per device	
Relay IAM Power	Supplied by IDNet communications	
<b>Contact Ratings*</b> (not rated for incandescent switching)		
Type	Form C, SPDT	
Power-Limited	2 A @ 24 VDC, resistive	from listed fire alarm supply
	1 A @ 24 VDC, inductive	
Nonpower-Limited	0.5 A @ 120 VAC, resistive	
* Provide circuit fusing and transient suppression as required per application. DC inductive loads can typically be diode suppressed; 120 VAC loads may require RC networks or varistors, depending on device type. Refer to the installation instructions for additional information.		
Wire Connections	Screw terminals for in/out wiring, 18 to 14 AWG wire (0.82 to 2.08 mm <sup>2</sup> )	
IDNet Communications Wiring Reference	Up to 2500 ft (762 m) from control panel	
	Up to 10,000 ft (3048 m) total wiring distance (including T-Taps) Compatible with Simplex 2081-9044 Overvoltage Protectors	
Dimensions	4 1/8" H x 4 1/8" W x 1 3/8" D (105 mm x 105 mm x 35 mm)	
Housing Material	Black thermoplastic	
Mounting Plate	Sheet metal, galvanized	
Temperature Range	32° to 120° F (0° to 49° C), intended for indoor operation	
Humidity Range	Up to 93% RH at 100° F (38° C)	
Installation Instructions	574-184	

## Relay IAM Mounting Information



### Mounting Reference, Double Gang Blank Cover Plate



### Optional Trim Plates for Visible LED

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#### Features

##### Electromagnetic door holders from RSG (Reliable Security Group) with four mounting types:

- Semi-flush wall mount for shallow box applications
- Surface wall mount with matching box
- Flush wall mount with recessed magnet for low profile applications
- Floor mount, for single or double doors

##### Multiple finish options:

- High luster plating of chrome, brass, or dark bronze
- Powdercoated in chrome or dark bronze

##### Low current, multi-voltage design reduces power supply and battery demands:

- Models are available for operation with 24 VDC, 24 VAC, or 120 VAC
- Internal full wave rectifier allows AC or DC operation and provides switching transient suppression
- Low residual magnetism allows easy door release for compatibility with low pressure door closers
- Rated holding force ranges from 20 lbs (9 kg) minimum; to up to 110 lbs (49.8 kg)

##### Quick and easy installation:

- Self-adjusting swivel catch plate adjusts to door alignment changes
- Adhesive mounting templates assure alignment
- Required mounting hardware is supplied with each door holder
- Magnet catch plates can be screwed to wooden doors or drilled through and attached to a mounting bracket
- Floor mount door holders include drills and anchors for mounting to concrete floors and hardware for mounting to wooden floors
- Front plates provide convenient grounding screw location

##### Optional accessories:

- Extension rods are available in multiple lengths to allow proper alignment, including a 4" (102 mm) long pivoting rod
- Drilling fixture for accurate repetitive installation

##### UL listed to Standard 228

#### Description

Door holders are normally energized to magnetically hold doors open. In the event of a fire emergency, the fire alarm control panel or other compatible control means will release the magnet allowing the door to close to prevent the spread of smoke. Doors may be manually closed or opened when the door holder is energized.

Product Reference Images  
(shown without screw hole caps in place)



Semi-Flush Wall Mount Door Holder Magnet and Catch Plate Assembly



Surface Wall Mount Door Holder Magnet with Supplied Box



Floor Mount Door Holder Magnet with Supplied Bracket and Box  
(Single door model shown, available for double doors)

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**Product Selection** (see specifications on page 4 and part number selection below)

Mounting Type	Hardware Included	Electrical Box Requirement
Semi-flush Mount (partially recessed magnet)	Magnet assembly, catch plate with bracket, screw hole caps, and required mounting hardware	Single gang box, 1 ½" deep minimum (supplied separately)
Flush Mount (fully recessed magnet)	Magnet assembly, catch plate with bracket, screw hole caps, and required mounting hardware (not shown on page 1, refer to illustration on page 3)	Single gang box, 2 ¼" deep minimum (supplied separately)
Surface Mount	Magnet assembly, catch plate with bracket, screw hole caps, matching electrical box, and required mounting hardware	Box is supplied with door holder: 4 ¾" H x 2 ¾" W x 1 ½" D (117 mm x 70 mm x 54 mm)
Floor (ground) Mount for single door with single magnet	Magnet assembly with electrical box, catch plate with bracket, floor mounting bracket, screw hole caps, and required mounting hardware including drills and anchors for concrete floors	
Floor (ground) Mount for double door with double magnets	Two surface mount magnet assemblies with electrical box, each with electrical box; two catch plates with brackets, screw hole caps, and required mounting hardware including drills and anchors for concrete floors	

**Optional Door Holder Accessories**

Model		Description	
Powdercoat Chrome	Brass		
DHE1PC	DHE1B	Catch plate extender rod, 1" (25.4 mm) long	Each extender rod includes two DHW extension wrenches
DHE1.5PC	DHE1.5B	Catch plate extender rod, 1 ½" (38 mm) long	
DHE2PC	DHE2B	Catch plate extender rod, 2" (51 mm) long	
DHE3PC	DHE3B	Catch plate extender rod, 3" (76 mm) long	
DHE4APC	DHE4AB	Catch plate with adjustable extender rod, 4" (102 mm) long with center pivot	
Model	Description		
DHDF	Drilling Fixture, provides convenient alignment for repetitive installation		
DHW	Extension Wrench for adding extender rod to catch plate (two are needed, two are shipped with each extension)		

**Door Holder Part Number Selection**

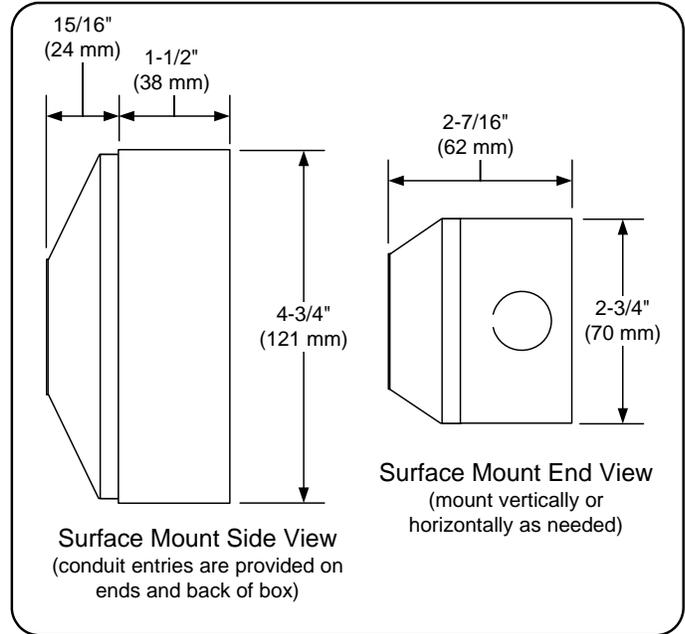
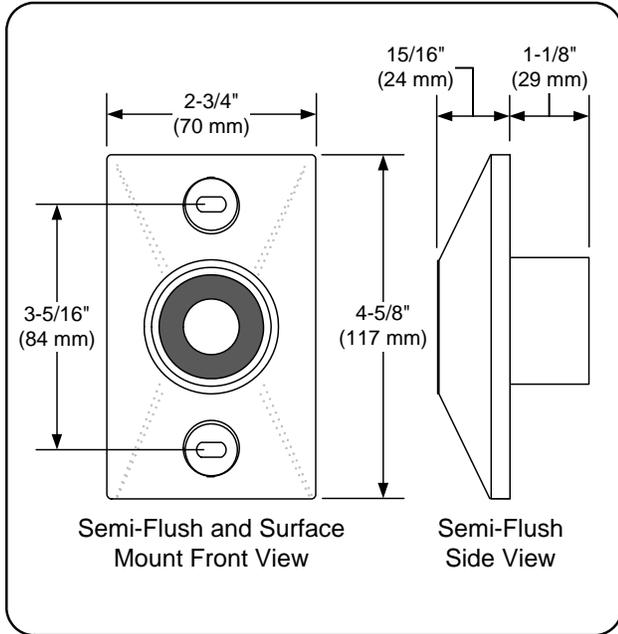
Select from each of the 6 categories to create part number (see examples below)

1		2		3		4		5		6					
Door Holder		Operating Voltages		Mounting Style		Finish Type		Finish Color		Floor Mount Coils					
Select	Select	For	Select	For	Select	For	Select	For	Select	For					
➡ <u>DH</u>	➡ <u>24120</u>	12 VDC 12 VAC 24 VDC 24 VAC	➡ <u>E</u>	<u>S</u> Surface Mount	<u>P</u> Powdercoated	➡ <u>C</u>	<u>C</u> Chrome	<u>1</u>	<u>1</u>	<u>S</u> Single door					
		24 VDC 24 VAC 120 VAC		<u>G</u> Floor (Ground) Mount							<u>blank</u>	High luster plated	<u>B</u> Brass	<u>2</u>	<u>2</u> Double door
		24 VDC 24 VAC 220 VAC		<u>R</u> Flush Mount (Recessed Magnet)											

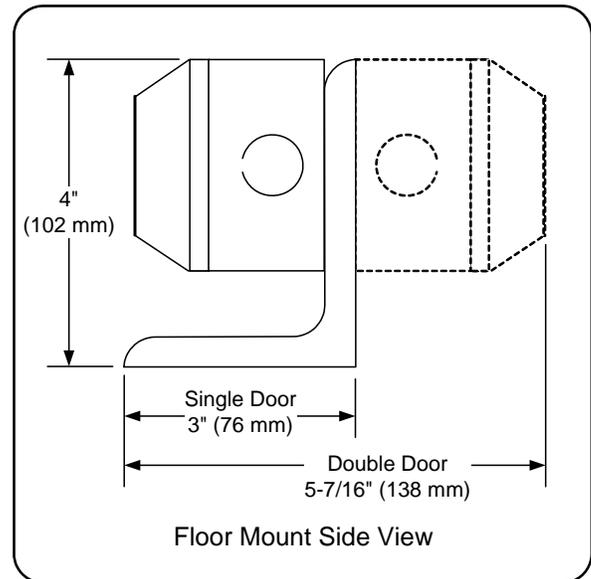
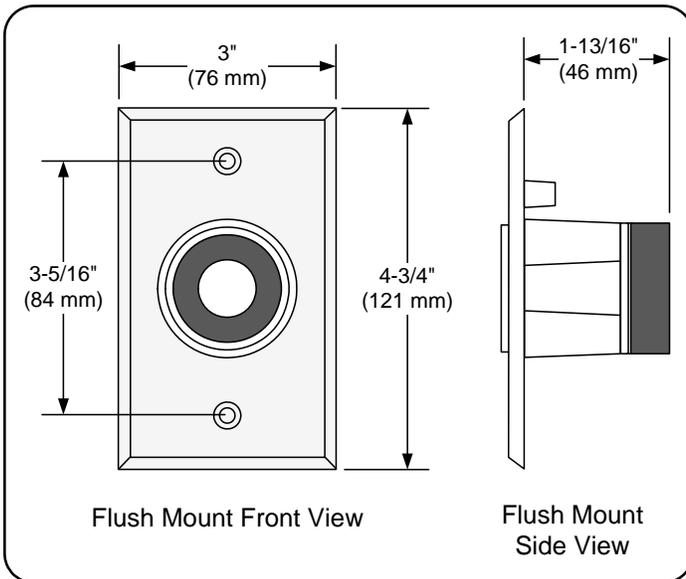
**Examples:**

1. **DH24120RPC:** Door holder; 24 VDC/VAC, or 120 VAC operation; Recessed magnet/flush mount; Powdercoated; Chrome finish
2. **DH24120GB2:** Door holder; 24 VDC/VAC, or 120 VAC operation; Ground/floor mount; Brass finish, high luster; Double door
3. **DH1224SPC:** Door holder; 12 or 24 VDC/VAC operation; Surface mount; Powdercoated; Chrome finish

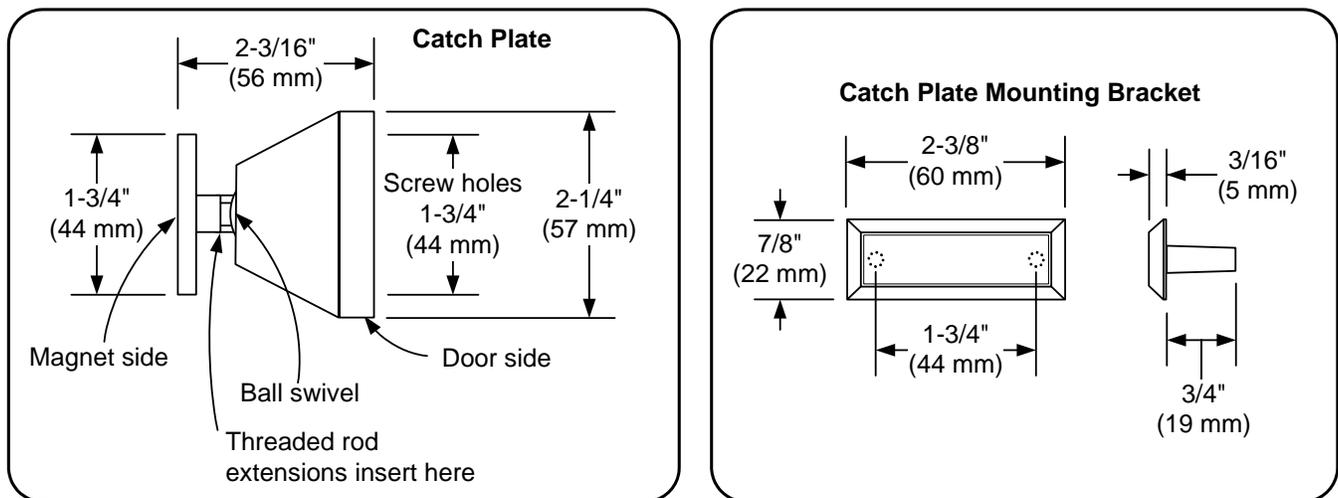
## Semi-Flush and Surface Mount Dimensions



## Flush and Floor Mount Dimensions



## Catch Plate and Mounting Bracket Dimensions



## Specifications

### Mechanical Specifications

Material	Durable die-cast metal
Wiring Connections	Three position terminal block with provisions for in/out wiring; common (C), low voltage, high voltage); 22 to 12 AWG (0.5 to 3.31 mm <sup>2</sup> )

### Electrical Specifications and Performance

Model	Voltage	Current DC	Current AC	Terminals	Holding
1224	12 V	40 mA	38 mA	C & L	30 lbs (13.6 kg)
	24 V	40 mA	36 mA	C & H	
1224 High Holding Force	24 V	85 mA	81 mA	C & L	75 lbs (34 kg)
24120	24 V	20 mA	19 mA	C & L	40 lbs (18.1 kg)
	120 VAC	–	20 mA	C & H	35 lbs (15.8 kg)
24120 High Holding Force	120 VAC	–	100 mA	C & L	110 lbs (49.8 kg)
24220	24 V	20 mA	19 mA	C & L	20 lbs (9 kg)
	220 VAC	–	15 mA	C & H	22 lbs (9.8 kg)

For additional information, visit the RSG website: <http://www.rsgsecurity.com/>

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S2088-0014-2 8/2012

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**INSERT 3**

**NOTIFICATION APPLIANCES & ACCESSORIES**



## 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:**

- 4006, 4008, 4010, and 4100U Series 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:**

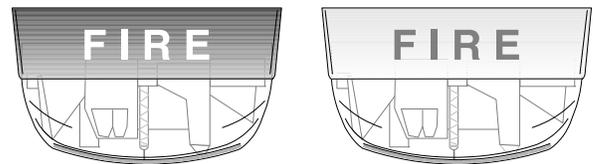
- Wiring terminals are accessible from the front of the housing providing easy access for installation, inspection, and testing
- Covers are available separately to convert housing color

**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. It is subject to re-examination, revision, and possible cancellation. 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 Safety Products Westminster.

\*\* Simplex multi-candela SmartSync two-wire horn/strobe appliance operation is protected under one or more of the following U.S. Patent Numbers: 5,559,492; 5,622,427; 5,865,527; 5,886,620; 6,281,789; 6,954,137; 7,005,971; and 7,006,003.

## 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, 4008, 4100U, and 4010 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	5-3/8" H x 5-1/4" W x 1-5/8" D (136 mm x 133 mm x 41 mm) Total depth with strobe = 4-3/8" (111 mm)
4905-9940		
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	1-3/8" x 2-7/16" x 13/16" (35 mm x 62 mm x 20 mm)
4905-9922		
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	

\* UL listed by Space Age Electronics Inc.

## Strobe Specifications

### Wall Mount or Ceiling Mount, Common Specifications

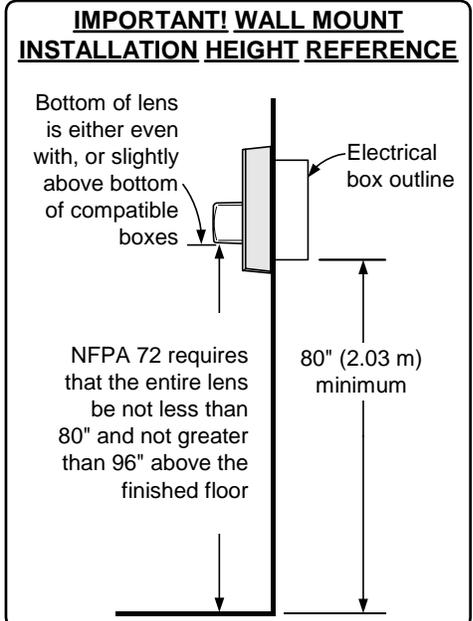
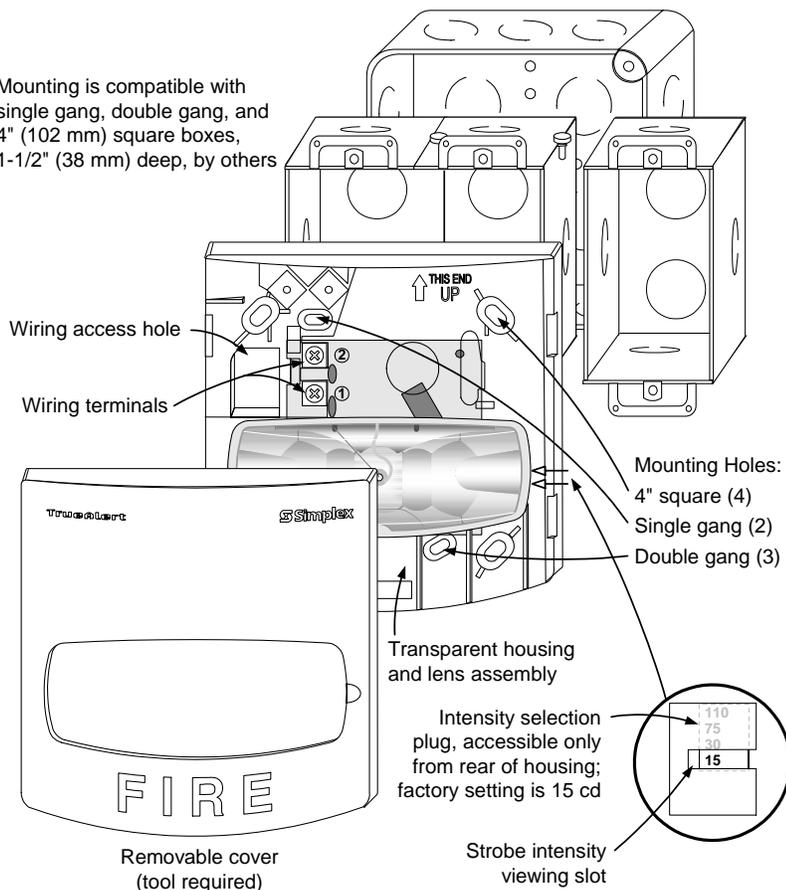
Rated Voltage Range		Regulated 24 VDC; see Note 1 below			
Flash Rate		1 Hz			
Synchronized NAC Loading		Up to 35 synchronized strobes maximum per NAC			
Temperature Range		32° to 122° F (0° to 50° C)			
Humidity Range		10% to 93%, non-condensing at 100° F (38° C)			
Connections		Terminal blocks for 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:

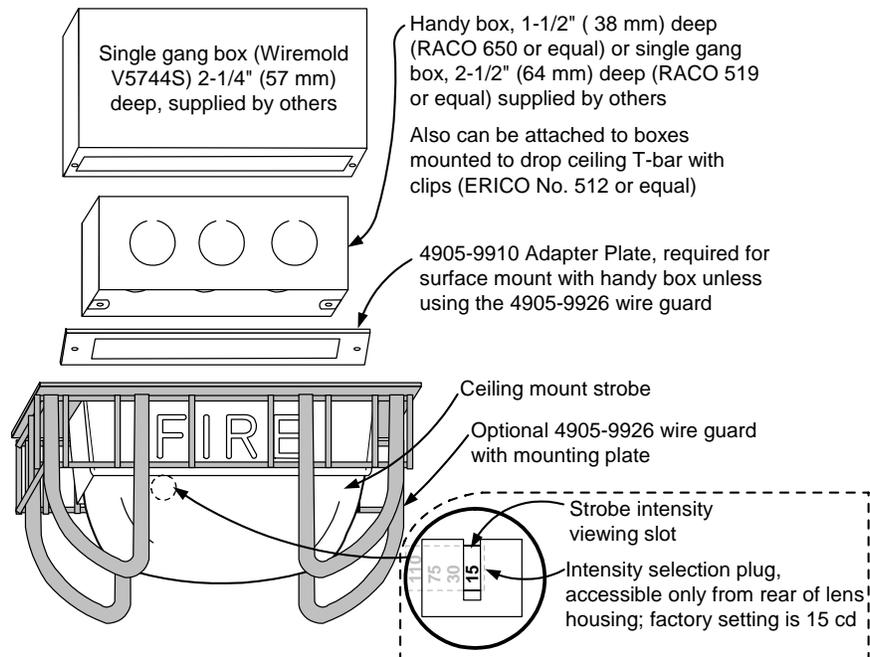
1. "Regulated 24 VDC" refers to the voltage range of 16 to 33 VDC per UL Standard 1971, *Signaling Devices for the Hearing Impaired*, changes effective May 1, 2004. This voltage range is the absolute operating range. Operation outside of this range may cause permanent damage to the strobe. Please note 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

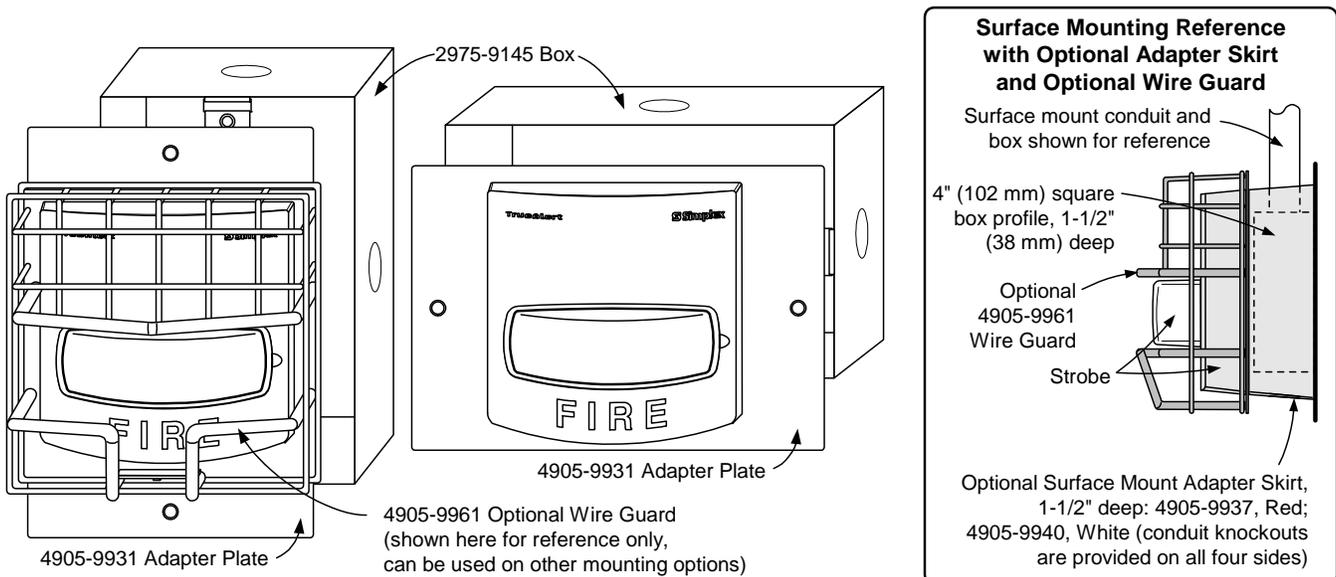
Mounting is compatible with single gang, double gang, and 4" (102 mm) square boxes, 1-1/2" (38 mm) deep, by others



## Ceiling Mount Strobe Installation Reference



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



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S4906-0001-4 9/2009

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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
- Operation requires connection to a compatible SmartSync operation NAC or to SmartSync Control Module (SCM) 4905-9938

**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
- Optional UL/ULC listed sound damper for locations requiring attenuation of 5 to 6 dBA (stairwells, small rooms, highly reverberant areas, etc.)

**Optional adapters and wire guards:**

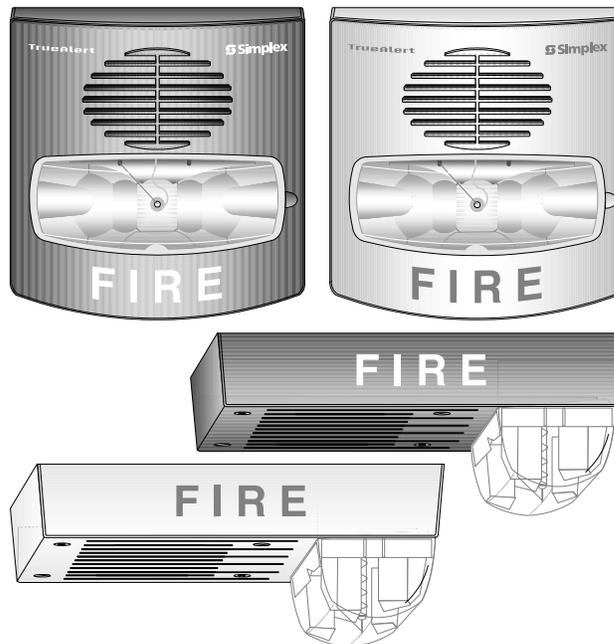
- Wall mount A/V adapters are available to cover surface mounted electrical boxes and to adapt to Simplex® 2975-9145 boxes
- UL listed red wire guards are available for wall or ceiling mount A/Vs\*

**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
- Regulated circuit design ensures consistent flash output and provides controlled inrush current
- Listed to UL 1971 and ULC S526

**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)
- Listed to UL 464 and ULC S525



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.

\* 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 7125-0026:317 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. Accepted for use – City of New York Department of Buildings – MEA35-93E. 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 Safety Products Westminster.

\*\* Simplex multi-candela SmartSync two-wire horn/strobe appliance operation is protected under one or more of the following U.S. Patent Numbers: 5,559,492; 5,622,427; 5,865,527; 5,886,620; 6,281,789; 6,954,137; 7,005,971; and 7,006,003.

## 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) 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)
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	White	4-3/4" x 6-7/8" x 1-1/2" deep, (121 mm x 175 mm x 38 mm)
4905-9916	Red	

\* 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, 4008, 4100U, and 4010 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

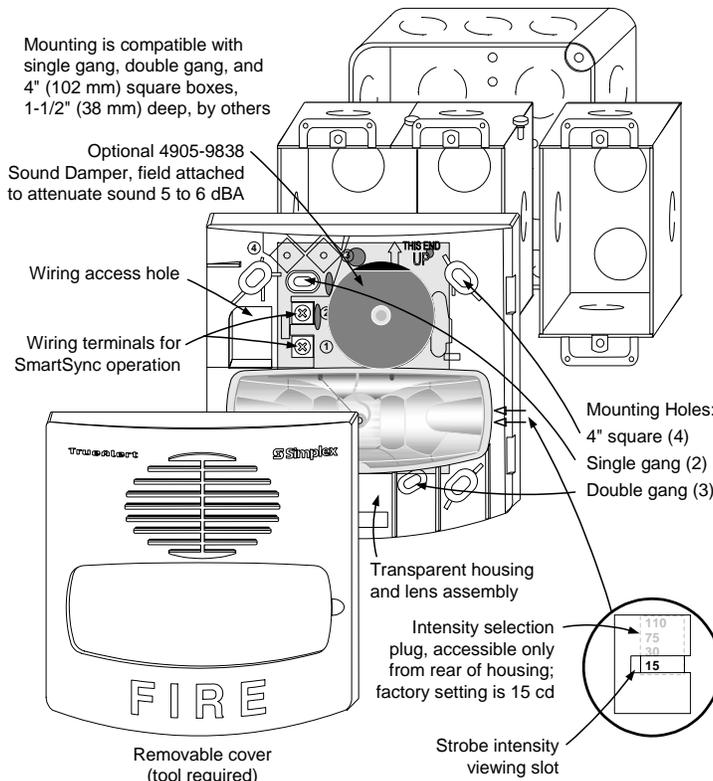
### Wall Mount or Ceiling Mount, Common Specifications

Rated Voltage Range		Regulated 24 DC; see Note 1 below			
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 (see Note 2 for polar dispersion reference)	Model Type	Wall Mount		Ceiling Mount	
	Sound Type (see Note 2)	Steady	Coded	Steady	Coded
	Reverberant Chamber Test, per UL 464 @ 10 ft (~3 m)	86 dBA	82 dBA	87 dBA	83 dBA
	Anechoic Chamber Test, per ULC S525 @ 3 m (~10 ft)	88 dBA	94 dBA	90 dBA	98 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
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
24 VDC		57 mA	88 mA	167 mA	213 mA

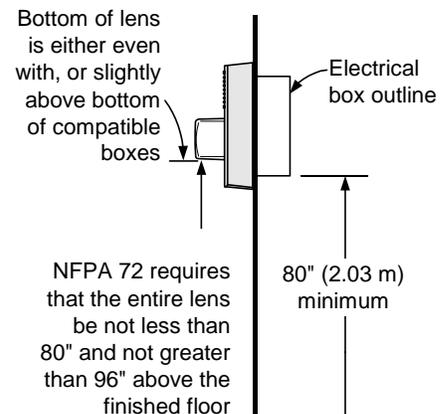
#### NOTES:

- "Regulated 24 DC" refers to the voltage range of 16 to 33 VDC per UL Standard 1971, *Signaling Devices for the Hearing Impaired*, changes effective May 1, 2004. 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.
- 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. Polar dispersion per ULC S525 testing = -3 dBA at +/-40° off-axis; -6 dBA at +/- 50° off-axis.
- 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.)

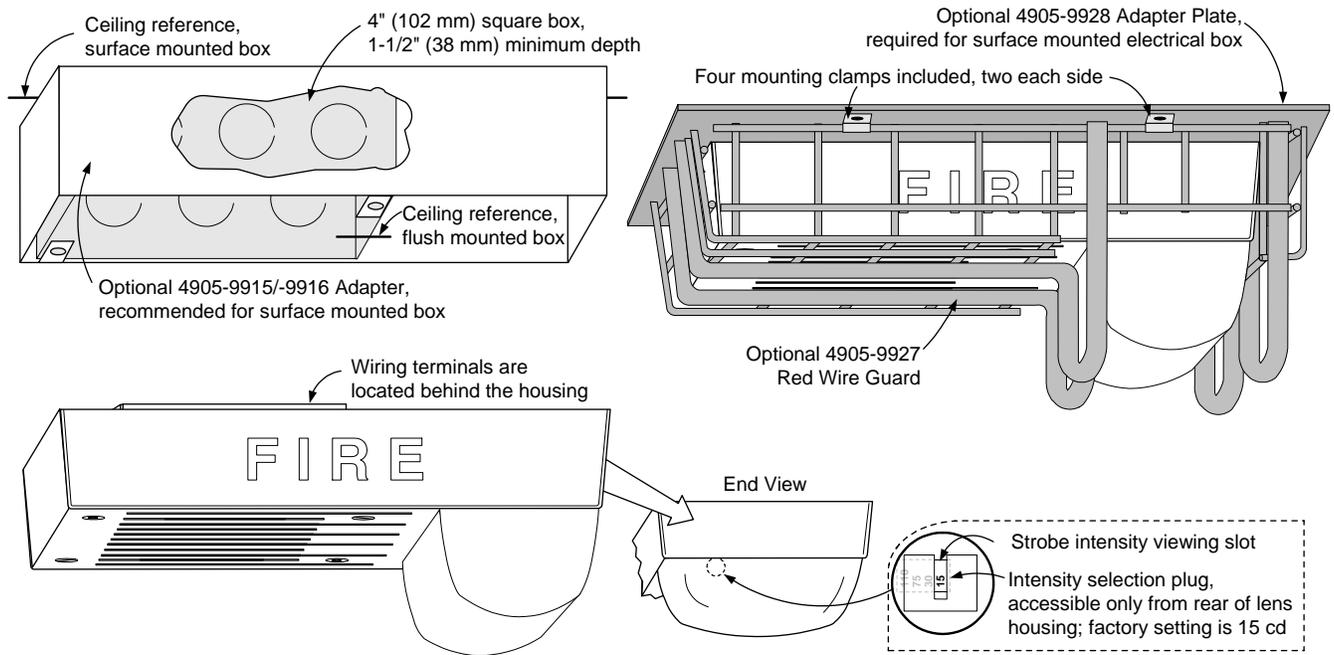
### Installation Reference, Surface or Semi-Flush Mounting



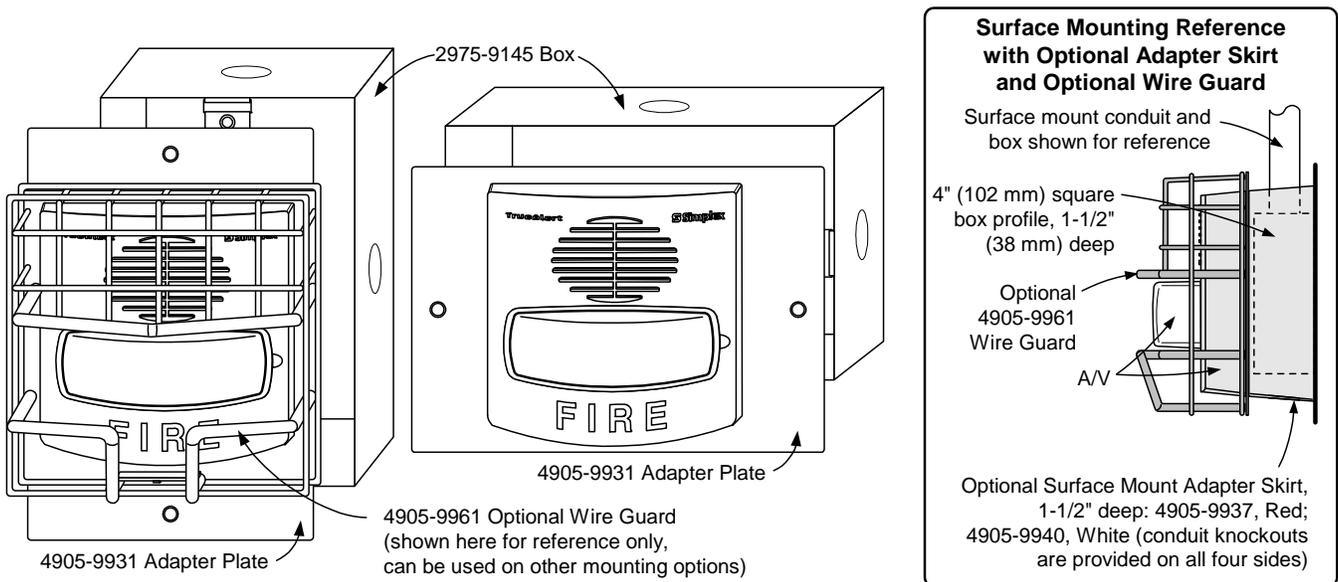
#### IMPORTANT! WALL MOUNT INSTALLATION HEIGHT REFERENCE



## Ceiling Mount A/V and Guard Installation Reference



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



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