Building Systems
Submittal Package

Good Samaritan Hospital
401 15th Ave SE
Puyallup, WA 98372

Doctors Sleeping Room TI
Fire Alarm System

Revision Date: 2/21/25

Johnson Controls Fire Protection
12781 Gateway Drive
Tukwila, WA 98108
Phone: 206-291-1400

www.JohnsonControls.com

Precision Electric Group
15301 NE 90th St
Redmond, WA 98052
Phone: 206-948-1847
Contact: Casey Beach

This Page Left Blank Intentionally

Table of Contents

This Page Left Blank Intentionally

Scheduling

Thank you for working with Johnson Controls on this project. We would like to take this opportunity to introduce you to the project team. **KEVIN BARREITH** is the Johnson Controls Project Manager assigned to this project to help with generic project information. **SCOTT HAYNES** is the project system specialist to assist with drawings/design questions. **YVONNE THOMPSON** is available for scheduling technicians.

Office: (206) 291-1400

In an effort to assist you in your installation we require you to arrange a Pre-Construction meeting with one of our Technicians. This meeting will allow your field foreman to ask any questions they may have in regard to the installation of your system. Based on the equipment quantities and current scope of work our Technician will need no less than **30** business days to complete all necessary programming and commissioning from the time the below checklist is complete prior to any AHJ testing. Please make sure this time is allowed for in the General Construction CPM schedule as it cannot be compressed. Change orders, change of scope, etc. may require additional time allotment to field personnel.

Installation Checklist

Johnson Controls is committed to providing the highest quality service available. As part of this service we want to ensure that the installation results in a trouble-free system. Please review the Checklist below and ensure each item is complete prior to our site visit.

A Technician will be dispatched only after the below checklist items have been completed. If these items are not completed prior to the visit by our technician, you may incur additional charges not covered by our quotation. Please feel free to contact our office if you have any questions.

- Fire Alarm Panel(s) have been mounted and all wiring (power, IDNET, signal, door-holders, etc.) pulled into panel(s).
- All wiring pulled into panel(s) or junction boxes have been permanently marked with wire markers and can easily be identified by a Johnson Controls
- System Power is supplied and on a dedicated circuit (Do Not Energize prior to Technician visit).
- All peripheral devices have been mounted (Smoke Detectors still covered).
- All end-of-line resistors have been installed.
- All alarm initiating circuits (smoke detectors, pull stations, etc.) have been checked for shorts, opens and grounds.
- All alarm notification circuits (speakers, horns, strobes, etc.) have been checked for shorts, opens and grounds.
- All remaining wiring (door-holders, FACP 24VDC, etc.) has been checked.
- Flows, Tampers, and Pressure Switches installed, properly wired and adjusted.
- All devices are properly protected against construction dust and contamination.
- Contact us immediately if there is no digital dialer or system monitoring provisions already in place. The dialer, phone lines and service will be required for system testing.
- There are no missing parts or equipment.

This Page Left Blank Intentionally

Hardware Warranty

1) JOHNSON CONTROLS WARRANTY STATEMENT:
   a) JOHNSON CONTROLS WARRANTS TO THE PURCHASER OF NEW JOHNSON CONTROLS PRODUCT(S) THAT THE PRODUCTS SHALL BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIAL.
2) WARRANTY PERIOD:
   a) THE WARRANTY PERIOD WILL TERMINATE IMMEDIATELY FOLLOWING THE EARLIEST OCCURRENCE OF EITHER OF THE FOLLOWING:
      i) 18 MONTHS HAVE ELAPSED FOLLOWING SHIPMENT OF ANY SYSTEM OR SUB-SYSTEM FROM JOHNSON CONTROLS TO THE CUSTOMER, OR
      ii) 12 MONTHS HAVE ELAPSED FOLLOWING THE FINAL CONNECTION OPERATION AND BENEFICIAL USE OF ALL OR ANY PART OF THE SYSTEM.
      iii) AS STATED IN THE SPECIFICATIONS AND/OR CONTRACT DRAWINGS
3) JOHNSON CONTROLS OBLIGATION UNDER THE TERMS OF THE WARRANTY:
   a) JOHNSON CONTROLS'S SOLE RESPONSIBILITY SHALL BE TO REPAIR, ADJUST OR REPLACE, AT ITS OPTION, ANY JOHNSON CONTROLS PRODUCT WHICH FAILS DURING THIS PERIOD PROVIDING PURCHASER HAS PROMPTLY REPORTED SUCH FAILURE TO JOHNSON CONTROLS IN WRITING. REPLACEMENT PARTS WILL BE WARRANTED ONLY FOR THE BALANCE OF THE EQUIPMENT WARRANTY. JOHNSON CONTROLS AGREES TO CONTINUE TO HONOR ALL OF THE UNEXPIRED EXPRESSED WARRANTIES SPECIFIED ABOVE ON DEFECTIVE EQUIPMENT AFTER TRANSFER OF THE EQUIPMENT TO PURCHASER'S CUSTOMER, PROVIDED PURCHASER'S CUSTOMER ASSUMES THE PURCHASER'S OBLIGATIONS SPECIFIED BELOW.
   b) EXCEPT FOR THE EXPRESSED WARRANTIES STATED HEREIN, JOHNSON CONTROLS DISCLAIMS ALL WARRANTIES ON PRODUCTS FURNISHED HEREUNDER, INCLUDING WITHOUT LIMITATION, ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND THE STATED WARRANTIES ARE IN LIEU OF ALL OBLIGATIONS OR LIABILITIES ON THE PART OF THE JOHNSON CONTROLS ARISING OUT OF OR IN CONNECTION WITH THE PERFORMANCE OF THE PRODUCTS. THE SELLER SHALL NOT BE LIABLE FOR ANY DIRECT, INCIDENTAL OR CONSEQUENTIAL LOSS OR DAMAGE TO THE PRUCHASER OR USER OF THIS EQUIPMENT ARISING OUT OF THE FAILURE OF THE EQUIPMENT TO OPERATE IN EXCESS OF THE PURCHASE PRICE OF SAID EQUIPMENT.
   c) JOHNSON CONTROLS MAKES NO WARRANTY AND NO WARRANTY SHALL BE DEEMED TO EXIST, THAT PURCHASER HOLDS THE GOODS FREE OF THE CLAIM OF ANY THIRD PERSON BYWAY OF PATENT INFRINGEMENT OR THE LIKE.
4) PURCHASER'S OBLIGATIONS UNDER THE TERMS OF THE WARRANTY.
   a) THIS WARRANTY IS CONTINGENT UPON THE PROPER INSTALLATION AND USE OF THE PRODUCT(S). SUCH WARRANTY SHALL NOT APPLY IF THE PRODUCT FAILURE IS THE RESULT OF ACCIDENT, UNUSUAL PHYSICAL, ELECTRICAL OR ELECTROMECHANICAL STRESS, NEGLECT, MISUSE, USER PROGRAMMING ERRORS, FAILURE OF ELECTRICAL POWER, AIR CONDITIONING OR HUMIDITY CONTROL, CONSTRUCTION DUST, DAMAGING FOREIGN SUBSTANCES, TRANSPORTATION OR CAUSES OTHER THAN MANUFACTURING DEFECT. PURCHASER AGREES TO PROVIDE FULL AND FREE ACCESS TO AUTHORIZED JOHNSON CONTROLS EMPLOYEES.
   b) WARRANTY SERVICE HOURS
      i) SERVICES PROVIDED UNDER THIS WARRANTY WILL BE PERFORMED DURING THE HOURS OF 8:00A.M. TO 5:00P.M., MONDAY THROUGH FRIDAY, EXCLUDING LOCALLY OBSERVED JOHNSON CONTROLS HOLIDAYS. OFF HOURS RESPONSE IS AVAILABLE AS AN EXTRA COST SERVICE OPTION.
5) WARRANTY EXCLUSIONS:
   a) LABOR, TRAVEL, AND MILEAGE FOR:
      i) SERVICE OUTSIDE OF JOHNSON CONTROLS NORMAL BUSINESS HOURS.
      ii) PROGRAMMING AND/OR LABEL CHANGES.
      iii) FAILURE DUE TO EXTERNAL CAUSES (LIGHTNING SURGES, CONSTRUCTION DUST, ETC.) OTHER THAN MANUFACTURING DEFECT.
   b) ELECTRICAL WORK EXTERNAL TO THE EQUIPMENT SUPPLIED BY JOHNSON CONTROLS OR MAINTENANCE OF ACCESSORIES, ALTERATIONS, ATTACHMENTS OR OTHER DEVICES NOT FURNISHED BY JOHNSON CONTROLS.
   c) BATTERIES.
   d) COVERAGE OF EQUIPMENT CLASSED AS A WATER FLOW MONITORING/CONTROL DEVICES INSTALLED IN OR ON WATER PIPING.

This Page Left Blank Intentionally

Manufacturer's Recommendation

1) CONTRACTOR IS EXPECTED TO PULL AND TERMINATE ALL CONDUCTORS AND INSTALL ALL DEVICES FOR A COMPLETE AND OPERATING SYSTEM.
2) WHERE FAN SHUTDOWN, ELEVATOR RECALL OR SPECIAL AUXILIARY FUNCTIONS ARE REQUIRED, CONTRACTOR IS TO VERIFY WIRING REQUIREMENTS WITH THE JOHNSON CONTROLS FACTORY TECHNICIAN ASSIGNED TO THE PROJECT (IN MANY CASES, SPECIAL WIRING WILL NOT BE SHOWN ON THE DRAWINGS).
3) WHERE POSSIBLE, THE CONTRACTOR IS TO USE COLOR CODE FOR ALL WIRING.
4) SMOKE DETECTORS ARE NOT TO BE MOUNTED WITHIN 3 FEET OF AIR OUTLETS.
5) CONTRACTOR MUST NOT INSTALL SMOKE DETECTOR HEADS IN BASES OR DUCT HOUSING UNTIL FINAL CHECKOUT TIME TO ENSURE THAT DIRT OR DUST DOES NOT CONTAMINATE THE UNITS. DIRTY DETECTORS ARE NOT COVERED BY WARRANTY.
6) DO NOT POWER-UP SYSTEM UNTIL JOHNSON CONTROLS FACTORY TECHNICIAN IS PRESENT.
7) A SEPARATE GROUND (ISOLATION FROM CONDUIT GROUND) MUST BE PULLED TO ALL CABINETS.
8) LOADS GREATER THAN 10 AMPS (FOR AUXILIARY FUNCTIONS) ARE NOT ALLOWED IN THE SAME CONDUIT AS FIRE ALARM.
9) CONTRACTOR IS TO ENSURE THAT ALL WIRING AND SHIELDS ARE FREE OF SHORTS, GROUNDS AND OPENS.
10) UNDERGROUND WIRING MUST MAINTAIN ONE MEGAOHM, 20F RESISTANCE TO GROUND.
11) ANY MANUFACTURER'S RECOMMENDATION IN CONFLICT WITH ENGINEERING DRAWINGS OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION. CONTRACTOR SHALL ADVISE JOHNSON CONTROLS OF ANY CHANGES.
12) PROTECTIVE COVERS ON SMOKE DETECTORS ARE NOT TO BE REMOVED UNTIL OWNERS ACCEPTANCE OF THE SYSTEM. (PREVENTS CONTAMINATION OF SMOKE CHAMBER).
13) IT IS THE CONTRACTOR'S RESPONSIBILITY TO REQUEST THE STATE OR LOCAL FIRE MARSHAL TO BE ON SITE FOR FINAL ACCEPTANCE AND CHECK OUT IF REQUIRED.
14) IT IS THE CONTRACTOR'S RESPONSIBILITY TO INVENTORY ALL EQUIPMENT RECEIVED FROM JOHNSON CONTROLS AGAINST THE CONTRACT DOCUMENTS AND REPORT ANY DISCREPANCIES WITHIN THIRTY (30) DAYS OR JOHNSON CONTROLS WILL ASSUME THE ORDER TO BE ACCURATE AND COMPLETE.
    a) *NOTE: IN THE EVENT OF DISCREPANCIES IN THE NUMBER OF DEVICES SUPPLIED, THE FOLLOWING JOHNSON CONTROLS POLICY WILL APPLY:
        i) TOO FEW DEVICES: IF THE DEVICE IS SHOWN ON THE CONTRACT DOCUMENTS AND HAS NOT BEEN ADDED AS A RESULT OF A POST BID ADDITION OR CHANGE ORDER, JOHNSON CONTROLS WILL SUPPLY THE DEVICE AT NO CHARGE TO THE CONTRACTOR OR END USER PER JOHNSON CONTROLS'S CONTRACT OBLIGATIONS.
        ii) TOO MANY DEVICES: IF THE DEVICE SHOWN IS EXTRA, DUE TO A POST BID ADDITION OR CHANGE ORDER; IT REMAINS THE PROPERTY OF THE CONTRACTOR OR END USER. IF THE DEVICE IS EXTRA DUE TO AN ERROR IN QUANTITIES SUPPLIED, THE DEVICE MUST BE RETURNED TO JOHNSON CONTROLS. NO CREDIT WILL BE ISSUED FOR THE RETURN OF EXTRA EQUIPMENT ABOVE THE QUANTITIES GIVEN IN THE CONTRACT DOCUMENTS.
15) OWNERS PRESENCE FOR FINAL DEMONSTRATION AND ACCEPTANCE.

Special Instructions - Johnson Controls

1) JOHNSON CONTROLS WILL PROVIDE WIRING INSTRUCTIONS FOR INSTALLATION OF JOHNSON CONTROLS EQUIPMENT.
2) JOHNSON CONTROLS WILL PROVIDE A FACTORY TRAINED TECHNICIAN TO ASSIST IN TRAINING:
   a) OPERATION OF THE CONTROL PANEL AND FUNCTIONS
   b) ALARM TEST OF ALL JOHNSON CONTROLS PERIPHERAL DEVICES (SMOKE DETECTOR, MANUAL PULL STATION, ETC.)
   c) SUPERVISE TEST OF ALL INITIATING, SIGNALING, AND CONTROL CIRCUITS.
3) JOHNSON CONTROLS WILL PROVIDE (1) INSTRUCTION AT FINAL TEST OF THE SYSTEM TO:
   a) OWNER REPRESENTATIVE
   b) FIRE INSPECTOR AND ELECTRICAL INSPECTOR
   c) ARCHITECT AND ENGINEER
4) UPON COMPLETION OF FINAL TEST, JOHNSON CONTROLS WILL PROVIDE:
   a) TEST REPORT
   b) CERTIFICATION (IF REQUIRED)
   c) ONE YEAR WARRANTY

Testing Procedure for Devices

GENERAL:

FOR ALL DEVICES (SUPPLIED BY JOHNSON CONTROLS) VISUALLY VERIFY PROPER LOCATION AND INSTALLATION.

SMOKE DETECTOR:

ACTIVATE THE DEVICE USING A SMOKE GENERATOR AND VERIFY ALARM CONDITION ON PANEL. RESET PANEL AND VERIFY RESET OF SMOKE DETECTOR AND PANEL. TEST FOR ALARM VERIFICATION IF APPROPRIATE.

HEAT DETECTOR:

FIXED TEMPERATURE REPLACEMENT ELEMENT - REMOVE ELEMENT ON HEAT DETECTOR TO INITIATE ALARM AND VERIFY ALARM CONDITION AT PANEL. REINSTALL ELEMENT, RESET SYSTEM, AND VERIFY.

NON-REPLACEABLE ELEMENT - NON-REPLACEABLE ELEMENT HEAT DETECTORS CAN ONLY BE TESTED FOR CONTINUITY.

RATE-OF-RISE DETECTORS - RATE OF RISE DETECTORS ARE TESTED WITH A HEATER OR BLOW DRYER UNTIL THEY INITIATE ALARM, THEN ALLOWED TO COOL. RESET PANEL AND VERIFY.

PULL STATIONS:

ACTIVATE STATION WITH THE T-HANDLE, VERIFY ALARM AND LABEL FOR LOCATION, RESET STATION, RESET PANEL.

DUCT DETECTOR:

(IF PROVIDED BY JOHNSON CONTROLS) WITH AIR HANDLING UNIT TURNED ON, OPEN ONE OF THE TEST PORT HOLES BY REMOVING THE RED COVER ON THE DUCT DETECTOR/SENSOR HOUSING. USING AN EXTENDED NOZZLE ON THE SMOKE DETECTOR AEROSOL TESTER SPRAY A FOUR TO EIGHT SECOND BURST OF AEROSOL THROUGH THE TEST PORT BUT NOT DIRECTLY AT THE DETECTOR/SENSOR HEAD. THE NOZZLE OF THE SMOKE DETECTOR AREOSOL TESTER SHOULD NOT EXTEND BEYOND THE INLET TUBE. AEROSOL IS SPRAYED INTO THE STREAM OF INCOMING AIR AND NOT DIRECTLY INTO DETECTOR/SENSOR. VERIFY ALARM, TEST ALL INDICATORS OR MANUAL TEST SWITCHES, RESET DETECTOR, RESET PANEL, TEST SAMPLE AND REFERENCE TUBE FOR POSITIVE AIR FLOW. (IF NOT PROVIDED BY JOHNSON CONTROLS) VERIFY THAT ZONE CIRCUIT IS PRESENT AT THE DEVICE.

AUDIBLES AND VISIBLES:

ACTIVATE ALARM AND CONFIRM THAT ALL INDICATING APPLIANCES, AUDIBLES AND VISIBLES, ARE OPERATING.

DOOR HOLDERS:

VERIFY THAT DOORS CLOSE ON ALARM.

VALVE SUPERVISORY SWITCHES (TAMPER):

(IF PROVIDED BY JOHNSON CONTROLS) ACTIVATE SWITCH BY MOVING VALVE OFF NORMAL, VERIFY STATUS CHANGE, RESET SWITCH, RESET PANEL. (IF NOT PROVIDED BY JOHNSON CONTROLS) VERIFY THAT ZONE CIRCUIT IS PRESENT AT THE SWITCH.

FLOW SWITCHES AND PRESSURE SWITCHES:

(IF PROVIDED BY JOHNSON CONTROLS) ACTIVATE SWITCH (WITH SPRINKLER CONTRACTOR PRESENT) BY A FLOW OF WATER, VERIFY STATUS CHANGE, RESET SWITCHES, RESET PANEL. (IF NOT PROVIDED BY JOHNSON CONTROLS) VERIFY THAT ZONE CIRCUIT IS PRESENT AND SUPERVISED AT THE SWITCH.

FAN/DAMPER CONTROL CIRCUITS:

VERIFY (WITH HVAC CONTRACTOR PRESENT) THAT THE CONTROL CIRCUIT IS OPERATING, AND THE DEVICES IS BEING CONTROLLED IN ACCORDANCE WITH THE SPECIFIED SEQUENCE OF OPERATION.

ELEVATOR CONTROL CIRCUITS:

VERIFY (WITH ELEVATOR CONTRACTOR PRESENT) THAT THE ELEVATOR IS BEING CONTROLLED IN ACCORDANCE WITH THE SPECIFIED SEQUENCE OF OPERATION.

TRAINING:

JOHNSON CONTROLS SHALL PROVIDE A ONE TRAINING SESSION TO THE CUSTOMER.

WARRANTY:

THE SYSTEM SHALL BE PROVIDED WITH A ONE YEAR HARDWARE WARRANTY.

This Page Left Blank Intentionally

Equipment List & Data Sheets
Fire Alarm System

Quantity	Product ID	Product Description
1	4009-9201	NAC PANEL
2	2081-9286	7Ah BATTERY
4	4098-9772	520HZ SOUNDER BASE
4	4098-9714	SMOKE SENSOR
4	4906-9109	HIGH CANDELA STROBE WALL MOUNT
1	4906-9154	MULTICANDELA SPEAKER/STROBE CEILING

Equipment List Subject to Change.

This Page Left Blank Intentionally

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

4009 IDNet NAC Extender for Control with IDNet Communications or Conventional NACs

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 4007ES, 4010, 4010ES, 4100U, or 4100ES Fire Alarm Control Panel. See note.
- 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 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

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 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*.

Note: 4100U requires revision 11 software or higher for compatibility. 4010 requires revision 2 software or higher for compatibility.

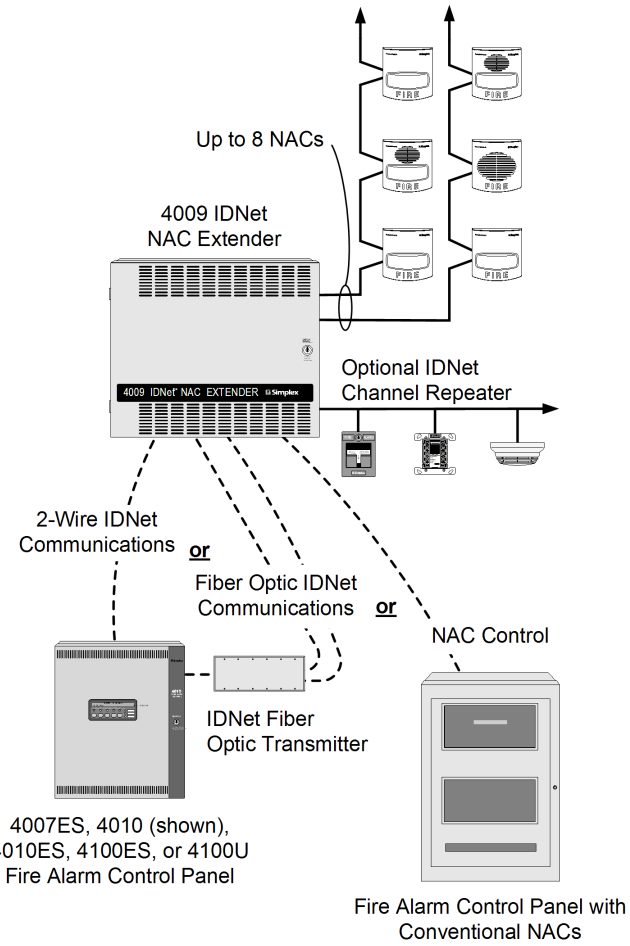


Figure 1: 4009 IDNet NAC Extender connection reference drawing

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.

Application and operation information

IDNet addressable communications compatible. Up to 10, 4009 IDNet NAC Extenders can be controlled for each 4007ES, 4010ES, 4100U, or 4100ES IDNet communications channel; up to 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 for each Extender. Individual Extender NACs can also be manually controlled from the host panel. IDNet controlled extenders will inform the host panel of troubles using 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 Typical IDNet connection example and 4009 IDNet NAC Extender specifications for details). Repeated IDNet communications also support the "device level" earth fault location utility of the host panel.

Hardwire 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. (See Hardwire Control Connection Information for more detail.) Alarms from the host panel will activate the four, 4009 IDNet NAC Extender NACs (or optionally, 8 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 Service diagnostic features for more diagnostic information.

Product selection

Table 1: Standard models

Model	Description	
4009-9201**	120 VAC input	4009 IDNet NAC Extender with 4, Class B NACs and 8 A power supply
4009-9301	240 VAC input	
4009-9202CA (ULC listed model)	120 VAC input	-
** 4009-9201 has been seismic tested and is certified to IBC and CBC standards as well as to ASCE 7 categories A through F, requires battery brackets as detailed on data sheet *S2081-0019*		

Table 2: 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		1 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 **either** an IDNet Repeater **or** 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	1 7/16 in. wide (78 mm), use if required for semi-flush installations
2975-9802		Red trim	

Table 3: Battery selection (select battery size using 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

Table 4: External accessories (select using system requirements)

Model	Description		Comments
4090-9105	IDNet Fiber Optic Transmitter	Class B operation	Mounts in six-gang electrical box, refer to 4090-9105/9107 IDNet fiber optic transmitter mounting information for mounting details **Note:** Class B Fiber Transmitter Rev C or higher, IS NOT COMPATIBLE with Class B Fiber Receiver before Rev J.
4090-9107		Class X operation	
4009-9801	External battery cabinet for up to 18 Ah batteries, beige		16-1/4 in. W x 13-1/2 in. H x 5-3/4 in. 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

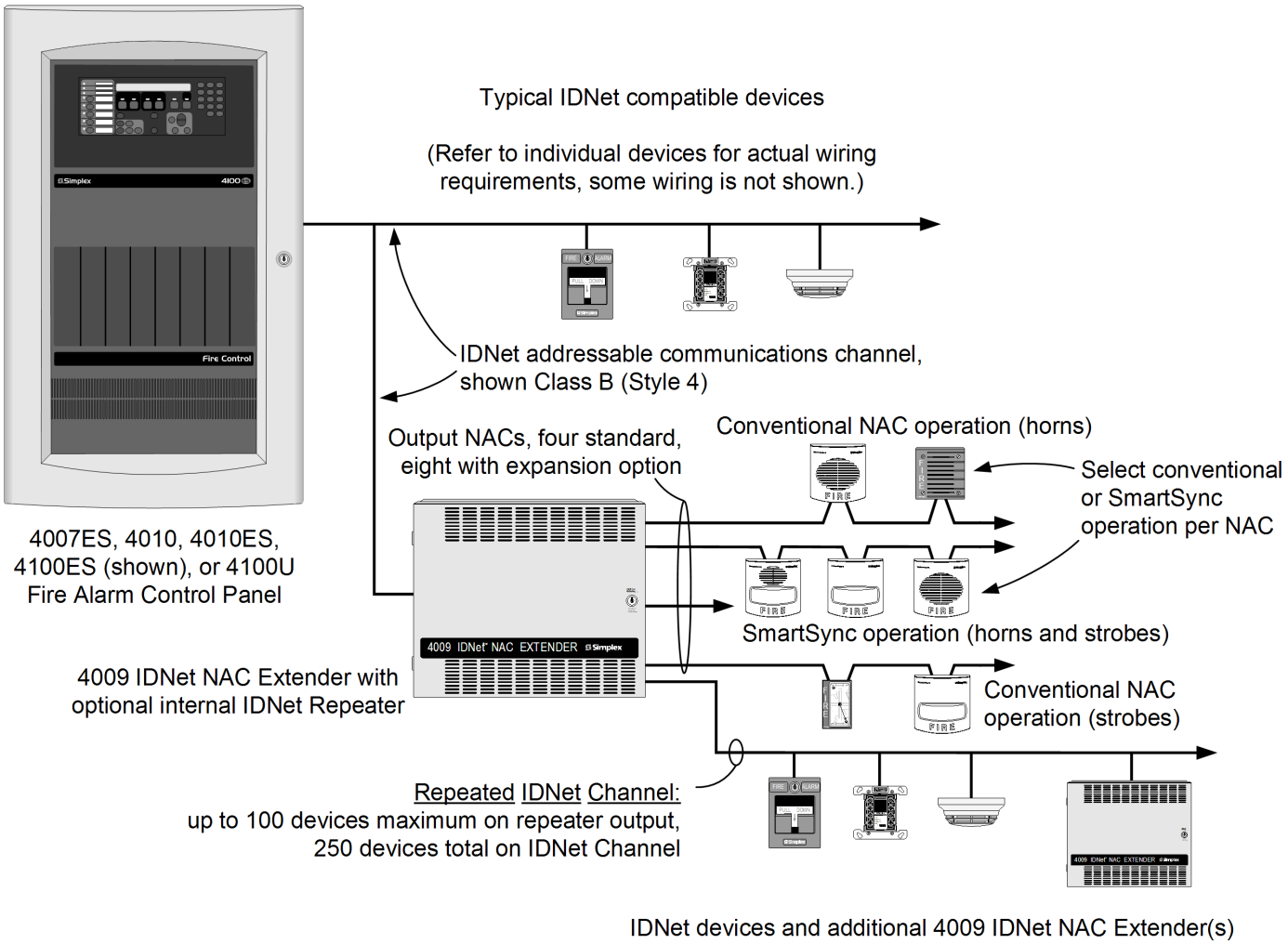


Figure 2: Typical IDNet connection example

Note: Up to 10 4009 IDNet NAC Extenders may be connected using 4007ES, 4010ES, 4100U, or 4100ES IDNet channel, up to 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

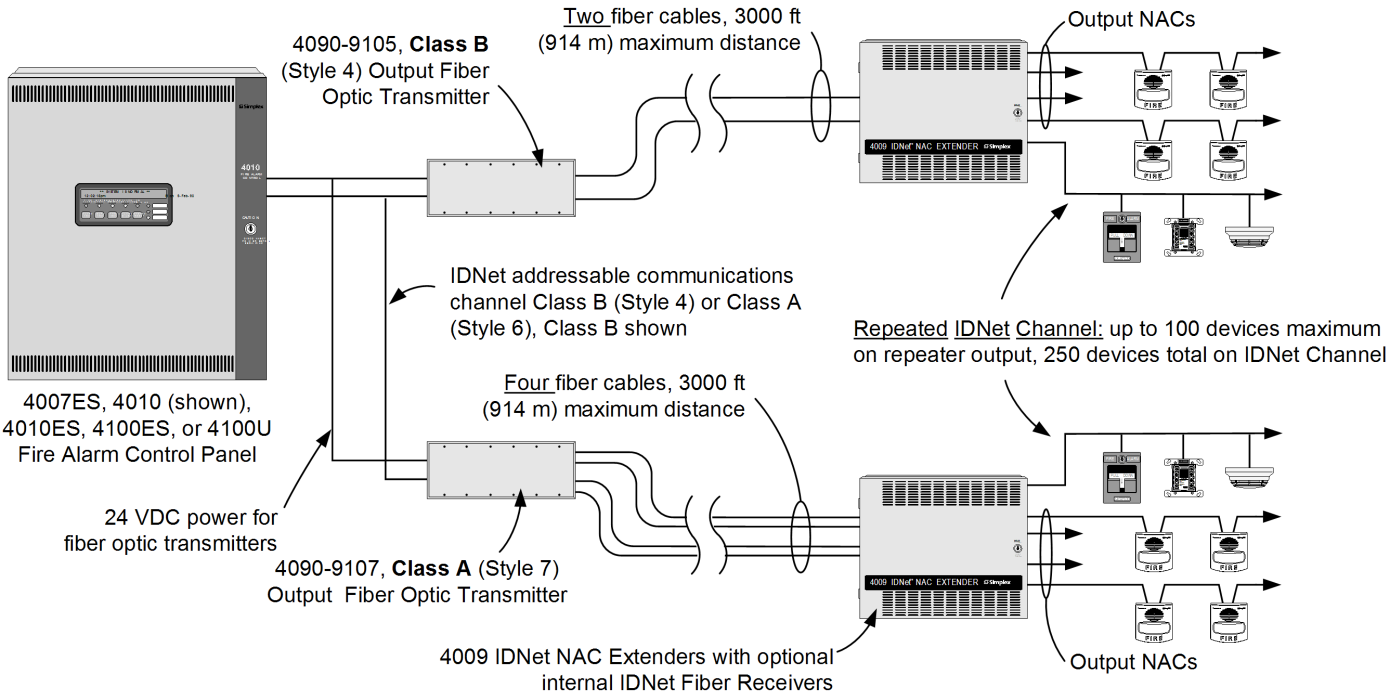


Figure 3: Typical fiber optic system connections

Note: Up to 10 4009 IDNet NAC Extenders may be connected per 4007ES, 4100ES, or 4010ES. Up to 5 4009 IDNet NAC Extenders may be connected 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 using 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:

Table 5: Conventional NAC Output Operation Options

Input	A	B	C
NAC 1	NACs 1 and 2, 5 and 6	NACs 1 - 4	NACs 1 - 8
NAC 2	NACs 3 and 4, 7 and 8	NACs 5 - 8	-

Table 6: 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 cne-line reference diagram

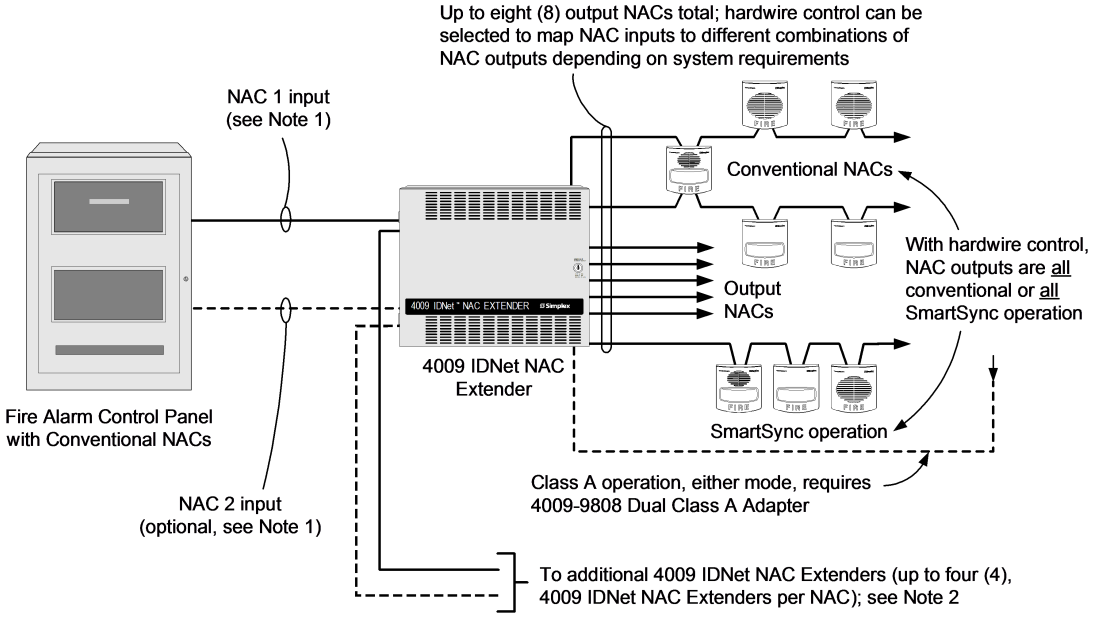


Figure 4: Hardwire control NAC connection one-line reference diagram

Note:

1. For separate audible and visible output NAC control, or SmartSync NAC output operation, 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 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

Table 7: Input ratings

Specification	Rating
120 VAC input (4009-9201)	3A @ 102 VAC -132 VAC, 60 Hz
240 VAC input (4009-9301)	1.5A @ 204 VAC -264 VAC, 50 Hz /60 Hz
Hardwire control from external NACs, input requirements	Conventional reverse polarity operation
	5 mA maximum; 16 VDC to 33 VDC

Table 8: Output ratings

Specification	Rating
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 for each NAC can be synchronized; output NACs configured for Simplex synchronized strobe operation are synchronized to each other
Auxiliary output	500 mA @ 24 VDC nominal

Table 9: Optional modules ratings

Specification		Rating
IDNet Repeater Module (4009-9809)	Input power	70 mA @ 24 VDC, system supplied
	IDNet input, one address	Maximum distance from IDNet source is 2,500 ft (762 m)
	IDNet output specifications	Repeated IDNet output for up to 100 devices (total IDNet devices not to exceed 250 for each channel)
		Maximum distance to farthest device is 2,500 ft (762 m)
		Total distance including "T-taps" is 10,000 ft (3048 m)
		Class A loop maximum distance is 2,500 ft (762 m), no "T" taps

Table 10: Fiber optic receiver modules

Specification	Rating
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
Fiber optic transmission distance	3000 ft (914 m) maximum

Table 11: General specifications

Specification	Rating
Operating temperature	32° F to 120° F (0° C to 49° C)
Operating humidity range	10% to 90% RH from 32° F to 104° F (0° C to 40° C)
Wiring Connections* **Note:** * Metric wire equivalents: 18 AWG = 0.82 mm^2; 12 AWG = 3.31 mm^2	Terminal blocks for 18 AWG (stranded) to 12 AWG (solid)

Fiber optic transmitter specifications

Table 12: Fiber optic transmitter specifications

Specification	Rating
Input voltage	18.9 VDC -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 in. W x 3-3/4 in. H x 1-1/8 in. 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° F to 104° F (0° C to 40° C)
Operating temperature	32° F to 120° F (0° C to 49° C)
* Metric wire equivalents: 18 AWG = 0.82 mm^2; 12 AWG = 3.31 mm^2	

4009 IDNet NAC Extender mounting and module placement information

Additional four point module shown model 4009-9807 .

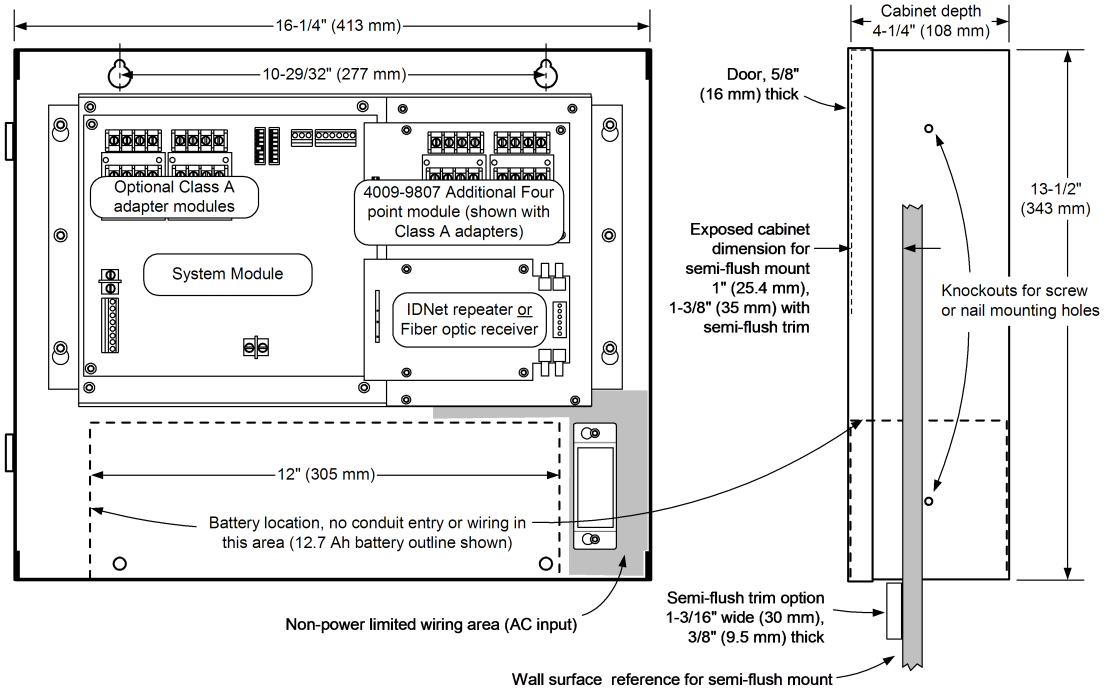


Figure 5: 4009 IDNet NAC Extender mounting and module placement information

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

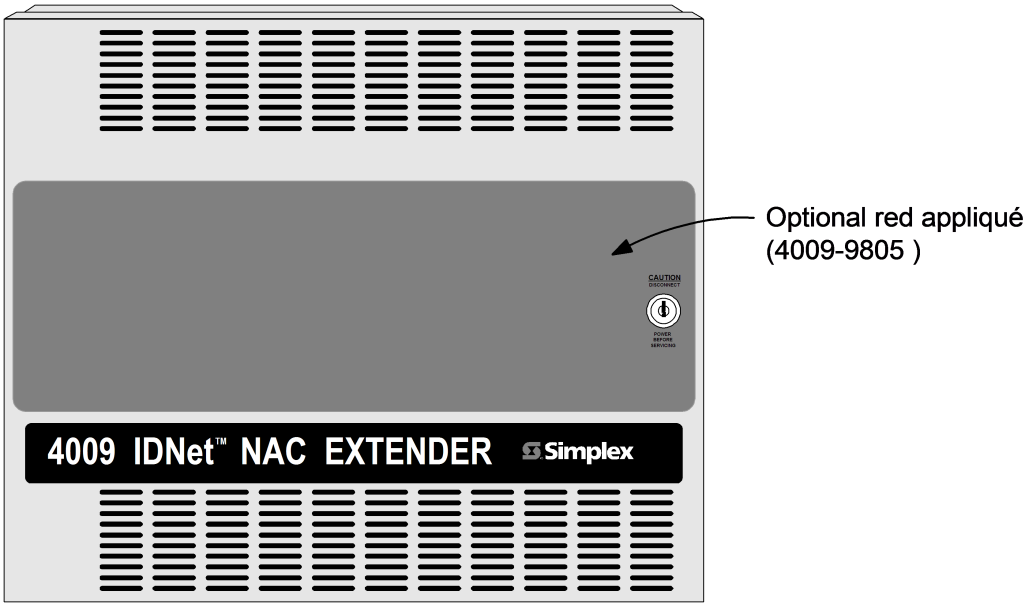


Figure 6: 4009 IDNet NAC extender cabinet with door detail

4009 IDNet NAC extender current calculation chart

Step 1. Calculate the 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	Basic Panel	85 mA	85 mA	185 mA	185 mA
4009-9301	240 VAC input					
4009-9807	Additional four point NAC		40 mA	+_____	40 mA	+_____
4009-9808	Dual class A adapter (no additional current)		–	–	–	–
Auxiliary power output			(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)

4009-9809	IDNet Repeater	Select one for each extender	70 mA	+_____	70 mA	+_____
4009-9810 *	Fiber Optic Receiver, Class B		65 mA		65 mA	
4009-9811 *	Fiber Optic Receiver, Class X		80 mA		80 mA	
IDNet devices (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] _____**
Step 2. Calculate available NAC current				Maximum available current		**= 8 A***
				Subtract auxiliary power output		**- [A1] _____**
				Subtract IDNet module current		**- [A3] _____**
* 8 A for special application appliances; 6 A for regulated 24 DC appliances				Available NAC current		**= [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, 2 A maximum for each NAC	Circuit 1	+_____
	Circuit 2	+_____
	Circuit 3	+_____
	Circuit 4	+_____
Optional four point NAC module, 1.5 A maximum special application rating, **1 A maximum** 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]** =	_____

Step 5. Calculate total alarm current

Total alarm current = Basic panel current [A2] + IDNet module current **[A3]** + actual NAC Current **[A5]** =	_____

This Page Left Blank Intentionally

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

Battery sizes

- Batteries for internal mounting from 6.2 Ah to 50 Ah
- Larger batteries, up to 110 Ah, for mounting in external battery cabinets. Models with internal chargers are available.

Battery cabinets with chargers

Battery cabinets with chargers communicate with their connected fire alarm control unit (FACU) and are available for 4100ES/4010ES/4100U Series and 4010 Series FACUs.

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 feature immobilized electrolyte in an absorbent separator, which provides rated capacity on the first cycle.

Because of their sealed construction, packaging is possible within the system electronics enclosure, see Figure 3. When this is applicable, the quantity of system cabinets and the battery wiring distances are minimized. Where required, external battery cabinets can be close-nippled to the FACU to house larger batteries with battery chargers available in some battery cabinet sizes.

Battery details

Charging: Compatible with Simplex battery chargers.

Series connections: Connect the batteries in series to produce 24 V system voltage. Battery sets must be of identical voltage, model number, appearance, and have approximately the same date of manufacture for optimal operation.

Testing: Test battery capacity with a sealed lead-acid battery tester to withdraw a minimum of battery charge. Testing is available through your local Simplex product supplier.

Shipping: Sealed lead-acid batteries only ship by ground or sea transportation.

Disposal: Battery chemicals and materials can be recycled. Refer to information shipped with the battery or on its case. Return to the 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. Refer to data sheet *S2081-0019* for details.

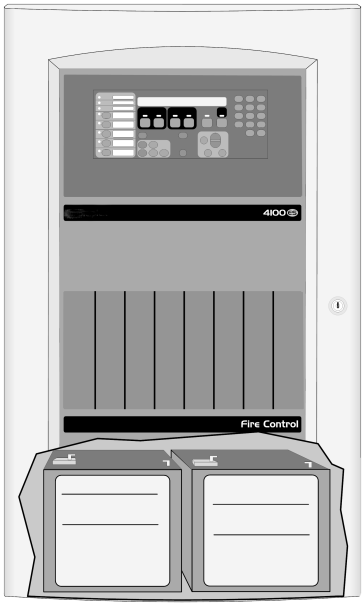


Figure 1: Compatible sealed lead-acid batteries inside an FACU cabinet

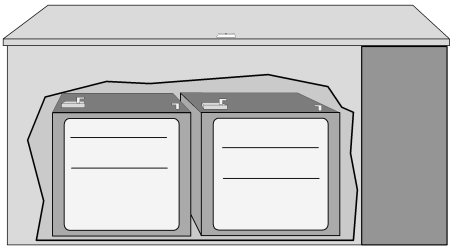


Figure 2: A remote battery cabinet for larger battery requirements

* Refer to page 4 for battery charger and cabinet agency listings. The batteries detailed in this document meet the requirements of UL, ULC, and Factory Mutual for use with respective equipment battery chargers as listed below. 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 varies with battery size.

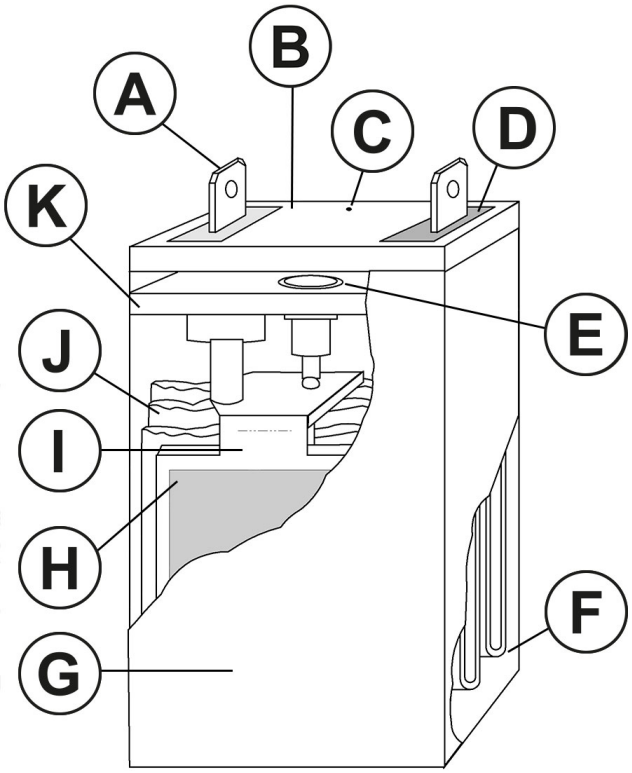


Figure 3: Battery contruction reference

Callout	Description	Callout	Description
A	Quick connect or post type terminal. Type varies with battery size.	B	Sealed outer cover
C	Vent hole	D	Potting material, black for negative, red for positive. Polarity is also clearly marked with + and -.
E	Pressure relief valve	F	Semi-permeable membrane separator
G	Cell case, high impact polystrene	H	Lead-calcium grids
I	Cell group	J	Absorbent separator used to immobilize electrolyte
K	Inner cover	-	-

Battery size specifications

Battery model	Capacity at 20 hour discharge rate	Width*	Depth*	Height with terminals	Approximate weight*
2081-9272	6.2 Ah	6.12 in. (156 mm)	2.65 in. (68 mm)	4 in. (102 mm)	5.75 lb (2.6 kg)
2081-9286	7.0 Ah	6.12 in. (156 mm)	2.65 in. (68 mm)	4 in. (102 mm)	5.75 lb (2.6 kg)
2081-9274	10 Ah	6 in. (153 mm)	4.06 in. (103 mm)	4 in. (102 mm)	9.2 lb (4.2 kg)
2081-9288	12.7 Ah	6 in. (153 mm)	4 in. (102 mm)	4 in. (102 mm)	9 lb (4.1 kg)
2081-9275	18 Ah	7.25 in. (184 mm)	3.38 in. (86 mm)	6.63 in. (168 mm)	14.3 lb (6.5 kg)
2081-9287	25 Ah	6.63 in. (168 mm)	5 in. (127 mm)	7 in. (178 mm)	19.4 lb (8.8 kg)
2081-9271 (rectangular case, typically for service)	33 Ah	12.5 in. (318 mm)	3.38 in. (86 mm)	7.06 in. (179 mm)	26.6 lb (12.1 kg)
2081-9276 (square case, use for new)	33 Ah	7.75 in. (197 mm)	5.25 in. (133 mm)	6.75 in. (171 mm)	26.5 lb (12 kg)
2081-9296	50 Ah	9 in. (229 mm)	5.5 in. (140 mm)	8.88 in. (225 mm)	41.8 lb (19 kg)
2081-9279	110 Ah	11.38 in. (289 mm)	10.5 in. (267 mm)	9 in. (230 mm)	82 lb (37 kg)

* Dimensions and weight are per battery and are for reference only. Exact size may vary. Refer to Battery compatibility for FACU mounting and External battery cabinet compatibility reference for mounting compatibility. Batteries are 12 V each and connected in series 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 have approximately the same date of manufacture.

General battery specifications

Specifications	
Nominal Voltage Rating	12 V
Discharge Rating	20 hour rate
Typical Charge/Discharge Cycles	100 cycles to 150 cycles
Preferred Charge Temperature Range	60°F to 90°F (15.6°C to 32.2°C)

Battery compatibility for FACU mounting

Note: Refer to individual FACU product data sheets for additional battery application information.

Table 1: Battery compatibility for FACU mounting

Simplex FACU model series										
Battery Model	**Capacity**	**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	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2081-9286	7.0 Ah	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2081-9274	10 Ah	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2081-9288	12.7 Ah	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2081-9275	18 Ah	Ext	Note 3	Yes	Ext	Ext	Note 2	Yes	Yes	Yes
2081-9287	25 Ah	Ext	Note 3	Ext	Ext	N/A	Yes	Yes	Yes	Yes
2081-9271 rectangular	33 Ah	Ext	Note 3	Ext	N/A	N/A	Note 3	Yes	Yes	Ext
2081-9276 square	33 Ah	Ext	Note 3	N/A	N/A	N/A	Note 3	Yes	Yes	Yes
2081-9296	50 Ah	N/A	Note 3	N/A	N/A	N/A	Note 3	Note 4	2 or 3 bay	Ext
2081-9279	110 Ah	Requires external battery cabinet, compatible with 4100ES, 4010ES, 4100, and 4120 Series only								

Yes = Compatible with included FACU cabinet.

Ext = Requires external battery cabinet, refer to External battery cabinet specification reference.

Note:

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 accommodate 2081-9275, 18 Ah batteries, but do not allow bottom entry conduit.
3. Use 4081 series companion cabinet and charger, refer to External battery cabinet specification reference.
4. For two bay cabinets only, 50 Ah batteries will fit in the cabinet.

External battery cabinet compatibility reference

Table 2: External battery cabinet compatibility reference

Battery cabinets without chargers, connected to FACU charger							
Cabinet	**Panel compatibility**	**Battery**					
		2081-9275 18 Ah*	2081-9287 18 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+	N/A	N/A	N/A	N/A	N/A	Yes
2081-9281	multiple	Yes	Yes	Yes	Yes	Yes	N/A
2081-9282							
4009-9801	multiple	Yes	Yes**	N/A	Yes	N/A	N/A

Table 3: External battery cabinet compatibility reference

Battery cabinets with chargers							
Cabinet	**Panel compatibility**	**Battery**					
		2081-9275 18 Ah*	2081-9287 18 Ah*	2081-9271 Rectangular 33 Ah	2081-9276 Square 33 Ah	2081-9296 Square 50 Ah	2081-9279 110 Ah
4081-9301	4004R and 4010	Yes	Yes	Yes	Yes	Yes	N/A
4081-9302							
4081-9306	4100ES, 4010ES and 4100U	N/A	N/A	N/A	N/A	Yes	Yes
4081-9308							

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

** 25 AH capacity is effective as of 7/2005

Yes = Compatible with included FACU cabinet

External battery cabinet specification reference

Table 4: Battery cabinets without chargers, shallow design with front door

Model	Color	Listings	Description		Dimensions
2081-9281	Beige	UL and CSFM	2-Unit, 4100 style cabinet without charger; with locking solid door and battery shelf, primarily for use with 50 Ah batteries		25.75 in. W x 20.75 in. H x 6.75 in. D (654 mm x 527 mm x 171 mm)
2081-9282	Red	UL			
4003-9860*	Beige	FM	For use with 4003EC systems, for batteries up to 33 Ah (refer to 4003EC data sheet S4003-0002)		9.5 in. H x 24 in. W x 9 in. D (241 mm x 610 mm x 229 mm)
4009-9801*	Beige	UL, ULC, and FM	For batteries up to 33 Ah	External battery cabinet without charger, with locking solid door and battery harness; for close-nippled mounting to FACU cabinet	16.25 in. W x 13.5 in. H x 5.75 in. D (413 mm x 343 mm x 146 mm)*
* Depth increased for 2081-9276 square 33 Ah batteries effective 7/2005.					

Table 5: Battery cabinet without charger, deep design with hinged lid

Model	Color	Listings	Description	Dimensions
2081-9270	Red	UL	Battery cabinet without charger; cabinet has vented front, and hinged lid with support rod and lock on top	26.5 in. W x 12 in. H x 12 in. D (673 mm x 305 mm x 305 mm)

Table 6: Chargers for use with 4010 FACUs and 4004R suppression release systems, refer to data sheet S4081-0001

Model	Color	Listings	Input voltage	Description	Dimensions
4081-9301	Beige	UL and FM	120 VAC	Battery cabinet with charger for the 4010 and 4004R FACU, for batteries up to 50 Ah, with front door	22.5 in. W x 16.75 in. H x 8.38 in. D (572 mm x 425 mm x 213 mm)
4081-9302	Red				

Table 7: Battery cabinet without charger for 110 Ah batteries, for use with compatible FACU mounted chargers, refer to data sheet S2081-0012

Model and listing	Color	Listings	Cabinet description	Compatible chargers	Charger description	Dimensions
2081-9280	Red	UL, ULC, CSFM	Battery cabinet without charger for 2081-9279, 110 Ah batteries. Includes 80 A battery fuse, terminals and battery connection cables. See data sheet for details.	4100-9xxx Series	4100ES/4100U Power Supplies for Master Controller/CPU Bays	26.5 in. W x 12 in. H x 12 in. D (673 mm x 305 mm x 305 mm)
				4100-5401	4100ES Additional ES Power Supply (ES-PS)	
				4100-5111 4100-5113	4100ES/4100U Additional SPS	
				4100-5311 4100-5313	4100ES Additional EPS+	
				4100-5325 4100-5327	4100ES Additional EPS	
				4100-5125 4100-5127	4100ES/4100U Remote Power Supply (RPS)	
				4100-5120 4100-5122	4100ES/4100U TrueAlert Addressable Power Supply (TPS)	
				4100-0104 4100-0114 4100-0124	4100 legacy power supplies	

Table 8: Battery cabinet with charger for 110 Ah batteries, for use with compatible FACU mounted chargers, refer to data sheet S2081-0012

Model	Color	Listings	Input voltage	Description	Dimensions
4081-9306	Red	UL, ULC, FM, MEA (NYC)	120 VAC	Battery cabinet with charger for batteries up to 110 Ah	27.88 in. W x 13.5 in. H x 14.63 in. D (708 mm x 343 mm x 371 mm)
4081-9308	Red	UL, ULC, FM	220/230/240 VAC, multi-tapped		
4100-9837	Green LED Power-on Indicator Kit, required for ULC listing, mounts above access panel using knockout provided				

Simplex

*UL, ULC, CSFM Listed; FM Approved**

Datasheet

TrueAlarm ES Analog Sensing

TrueAlarm 4098-9772 Sensor Base with 520 Hz Sounder

Features

TrueAlarm addressable sensor base with 520 Hz sounder

- TrueAlarm sensor bases with 520 Hz tone require a TrueAlarm photoelectric, photo/heat or heat sensor, ordered separately
- TrueAlarm sensor bases with 520 Hz tone are multi-point devices, use a single IDNet address, and receive communications and sensor power from the IDNet channel. The sounder base requires separate 24 VDC system power or NAC connection
- IDNet circuit allows the sounder to be supervised and coded by compatible NACs, allowing synchronized temporal, march time, or other channel coding
- Sensor and sounder operation is listed to UL Standard 268, UL Standard 464, and ULC Standard S529
- Sounder operation is also listed to UL Standard 464 as an audible notification appliance

Sensor base with photoelectric or photo/heat sensor operation

- Independent sensor operation or selectable multi-sensor modes for false alarm reduction or faster detection
- Photoelectric, photo/heat, or heat sensors can be analyzed to reject non-fire conditions that can trigger false alarms, such as steam or dust

520 Hz Sounder base operation

- Low Frequency sound output: 520 Hz at 85 dBA
- The base can supervise the sounder drive circuit when an AUX 24 V power line is used for sounder power. Alternatively, you can disable base supervision if you need a supervised NAC to power the sounder for coded outputs.
- Sounder can be manually activated from the control unit.
- 520 Hz Sounder bases are listed for **Special Application** when used with a compatible NAC circuit.

Control unit operation summary

Analog sensor information is digitally transmitted to the host control unit via IDNet communicationsfor processing to evaluate and track status.

General features

- Ceiling mount operation
- Optional accessories include remote alarm LED and mounting adapter plate
- Designed for EMI compatibility
- Magnetic test feature

520 Hz Sounder base features

Base mounted address selection allows the address to remain with its programmed location when the sensor is removed for service or type change.

Automatic sensor type identification provides default sensitivity when substituting sensor types. Different sensor types can be easily interchanged to meet specific location requirements. This feature also allows intentional sensor substitution during building construction. Instead of covering the smoke sensors when conditions are temporarily dusty, heat sensors may be installed without reprogramming the control unit.

Integral red LED indicates power-on by pulsing, or alarm or trouble when steady on. The exact status is annunciated at the fire alarm control unit.

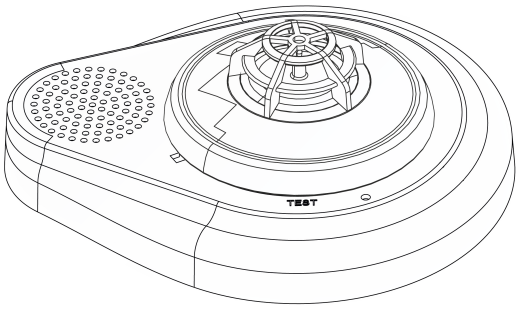


Figure 1: TrueAlarm sensor base with 520 Hz sounder 4098-9772 with heat sensor installed

Application reference

Determine sensor locations after careful consideration of the physical layout and contents of the area to be protected.

For fire alarm applications:

- Refer to NFPA 72, *the National Fire Alarm and Signaling Code*
- On smooth ceilings, use smoke sensor spacing of 30 ft or 9.1 m as a guide.

For detailed application information:

Refer to *4098 Detectors, Sensors, and Bases Application Manual,* Part Number 574-709.

Control unit operations

Smoke sensor features include: sensitivity monitoring satisfying NFPA 72 sensitivity testing requirements, automatic individual sensor calibration checking to verify sensor integrity, automatic environmental compensation, available multi-stage alarm operation, display of sensitivity directly in percent per foot, monitoring of peak activity per sensor, alarm set point, and time of day or multi-stage alarm selection.

Sensor Alarm and Trouble LED Indications

The sensor base LED pulses to indicate communications with the control unit. If a sensor is in alarm, or has a trouble condition, the status is annunciated at the control unit and that base LED will turn on steady. During a system alarm, the control unit will control LEDs such that a trouble indication will return to pulsing to help identify the sensors in alarm.

Multi-Point Allocation 4007ES, 4010ES, and 4100ES control units require only one point at the host unit for each sensor base. Depending on sensor base and sensor choice, up to seven points can be made public to a connected Simplex Fire Alarm Network. Each sensor base uses a single address with "sub-points" layered underneath (such as 1-1-0, 1-1-1, 1-1-2, ...1-1-6).

For 4100U control units, the requirement is three points at the host unit for each sensor base with the 4098-9754 multi-sensor, and two points for the other sensors. Additional multi-point allocation detail is described in reference data sheet *S4090-0011*.

Sensor base with 520 Hz power requirements Power for the sensor base is provided by IDNet communications. No additional wiring is required for upgrading of existing installed TrueAlarm sensor bases. Sensor sounder bases do require system supplied separate VDC or NAC wiring, the same as the standard sounder base.

* 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 Listings 7300-0026:0315, 7300-2269:0503, 7300-2269:0560, 7272-2269:0537, 5278-2269:0571, 7270-2269:0512 and 7300-2269:0551 for allowable values and/or conditions concerning material presented in this document. Additional listings may be applicable; contact your local product supplier for the latest status.

Accessories

2098-9808, Remote red LED Alarm Indicator mounts on a single gang box to provide status indications where the sensor location may not be readily visible.

TrueAlarm analog sensor features

Sealed against rear air flow entry Electronics are EMI/RFI shielded Heat sensing:
Selectable rate compensated, fixed temperature sensing with or without rate-of-rise operation.

Table 1: Rated spacing distance between sensors

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

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 unit. For detailed application information about sensitivity selection, refer to Installation Instructions 574-709.

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

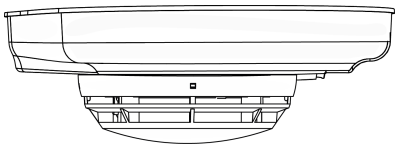


Figure 2: 4098-9714 Photoelectric Sensor on sensor base

4098-9754 Multi-Sensor

TrueAlarm multi-sensors combine the performance of TrueAlarm photoelectric smoke sensing with TrueAlarm thermal sensing to provide both features in a single assembly. Each sensing element provides data for evaluation at the fire alarm control unit where the following four independent detection modes are evaluated:

- Fixed temperature heat detection
- Rate-of-rise heat detection
- TrueAlarm photoelectric smoke detection
- And TrueSense correlation detection

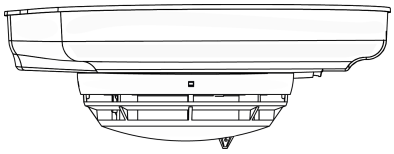


Figure 3: Multi-Sensor on sensor base

TrueSense analysis correlates thermal activity and smoke activity at a single multi-sensor location using an extensively tested covariance relationship. As a result, TrueSense detection improves response to conditions indicative of faster acting, hot flaming fires when compared to the response of either photoelectric smoke activity or thermal activity alone.

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 unit.

Rate-of-rise temperature detection is selectable at the control unit 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 or 0°C to 68°C. This feature can provide freeze warnings or alert to HVAC system problems.

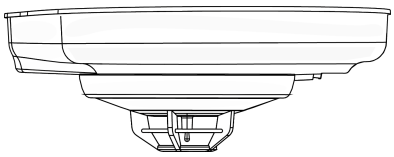


Figure 4: 4098-9733 Heat sensor on sensor base

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.

Install reference

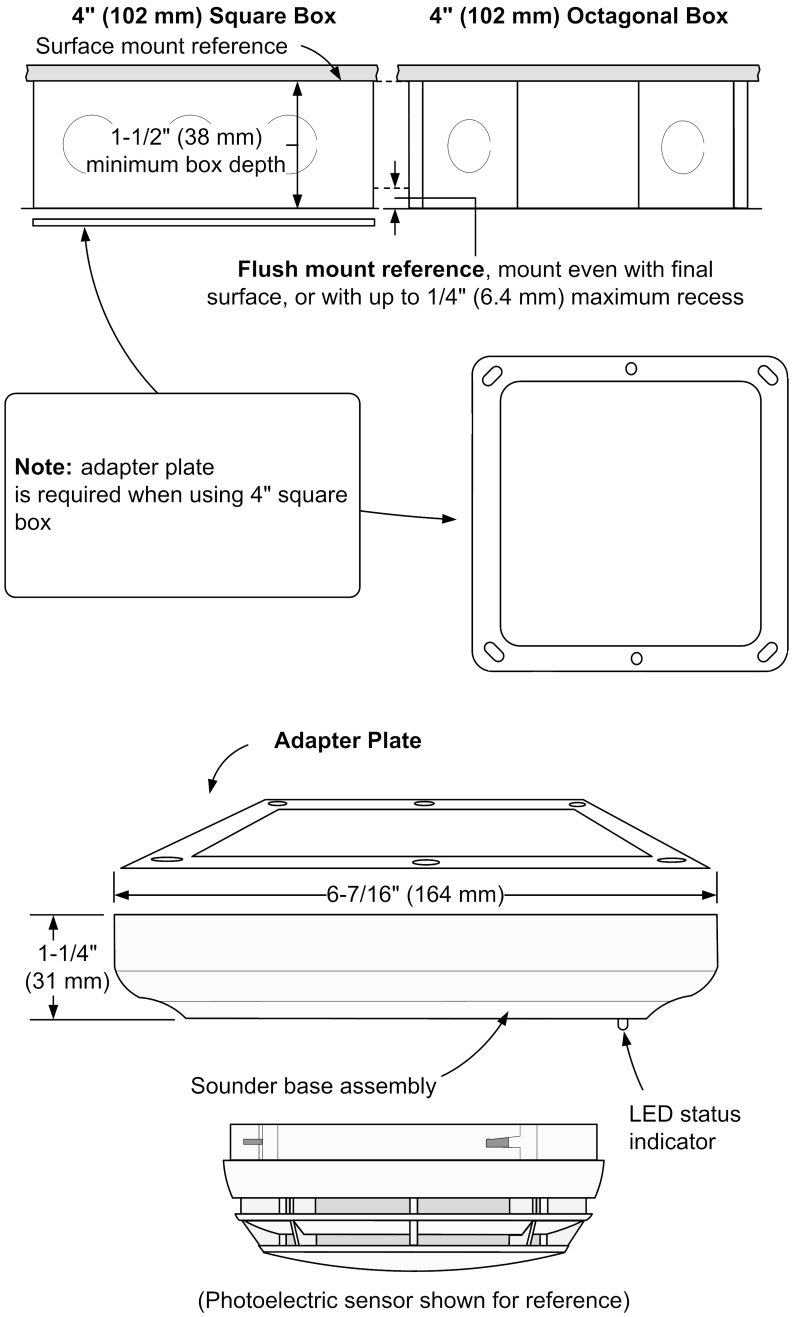


Figure 5: Install Reference

Note:

- Use the 4098-9863 adapter plate when using the 4 in. square box.
- The Sounder base 4098-9772 requires flush mounting.
- Review actual wire size, wire count and box type before determining box size.
- Mounting to flush mounted box also fits single gang handy box, 2 1/8 in. or 51 mm deep if wiring allows.
- You can mount the 4098-9772 Sounder base at 90 degrees rotation using a single gang box, consult your local Simplex contact for further information.
- Refer to Installation Instructions 574-707 for additional information.

Sensors and accessories product selection

Table 2: TrueAlarm sensor base

Model	Description
4098-9772	Sensor base with 520 Hz Sounder

Table 3: TrueAlarm Sensors (select one per Sensor Base with 520 Hz Sounder)

Model	Description	
4098-9714	Photoelectric Smoke Sensor	See Table 5 for available operation modes
4098-9754	Multi-Sensor Photoelectric and Heat Sensing	
4098-9733	Heat Sensor	

Table 4: Accessories (ordered separately as required)

Model	Description	Mounting Requirements
4098-9863	Adapter Plate required for surface flush 4 in. square electrical boxes.	See Figure 5
2098-9808	Remote red LED Alarm Indicator on single gang stainless steel plate.	Single gang box, 1 1/2 in. minimum depth

Note: Refer to Installation Instructions 574-707 and Application Manual 574-709 for additional information.

Sensor base operation options with sensor choice

Table 5: Sensor base operational mode choices

Sensor choice	Mode	Operational mode choices (see note)						
		False alarm reduction	Faster detection	TrueSense Photo/Heat	Photo Fire	Heat Fire (see note)	Utility Temp.	Ion Fire
Photoelectric Smoke Sensor 4098-9714	1	Yes	—	—	—	—	—	—
	2	—	Yes	—	Optional	—	—	—
Photo/Heat Multi-Sensor 4098-9754	3	Yes	—	—	—	Optional	Optional	—
	4	—	Yes	—	Optional	Optional	Optional	—
	5		—	Yes	Optional	Optional	Optional	
Heat Sensor 4098-9733	6	—	—	—	—	Yes	Optional	—
	7	—	—	—	—	Optional	Yes	—

Note:

- Duct detection modes are not applicable and are not available.
- Heat Fire Mode is 135°F or 155°F (57.2°C or 68°C), fixed or rate-of-rise.

Specifications

Table 6: General operating specifications

Specification		Rating
Communications and Sensor Supervisory Power		IDNet communications, 1 address for each base
Communications and Sounder Power Connections		Screw terminals for in/out wiring, 18 to 14 AWG or 0.82 mm^2 to 2.08 mm^2
Remote LED Alarm Indicator	Current	1 mA typical supplied from communications, no impact to alarm current
	LED Connections	Color coded wire leads, 18 AWG or 0.82 mm^2
UL Listed Temperature Range		32°F to 100°F or 0°C to 38°C
Operating Temperature Range	with 4098-9733, 4098-9714 or 4098-9754	32°F to 122°F or 0°C to 50°C
Humidity Range		10% to 95% RH
Smoke Sensor Ambient Ratings	4098-9714, Photoelectric Sensor	Air velocity is 0 to 4000 ft/min or 0 to 1220 m/min
Housing Color		Frost White
Installation Instructions		574-707

Table 7: Sounder operation

Specification		Rating
Sounder Voltage		24 VDC nominal, 16 to 32 VDC from NAC
Alarm Current (Sounder On)	520 Hz signal	129 mA at 16 V, 115 mA at 18 V
	Broadband signal	139 mA at 16 V, 125 mA at 18 V

Table 7: Sounder operation

Specification			Rating	
Sounder Output			Minimum sound output at 10 ft (3 m) per UL Standard 464, Audible Signaling Appliance	Minimum sound output at 10 ft or 3 m per UL Standard 268, Smoke Detectors for Fire Protective Signaling Systems and CSA 6.19-01
	520 Hz signal		80 dBA	86 dBA
	Broadband signal		81 dBA	87 dBA
Base Supervision of Sounder Power Input (Selectable)		Supervised	Select for continuous 24 VDC power, loss of power is communicated to the control unit	
		Unsupervised	Select when connected to NAC for sounder power, NAC provides supervision	
NAC Powered Operation			When in alarm, will sound when NAC is in alarm, allowing synchronized pattern, such as Temporal or March Time, controlled by the NAC control	

Additional information reference

Product	Data Sheet	Product	Data Sheet
Temporal Code 4 Module	*S4905-0006*	4100ES Control Panels with EPS Power Supplies	*S4100-0100*
Standard Bases	*S4098-0019*	4100ES Standard Control Panels	*S4100-0031*
Isolator Bases	*S4098-0025*	4100ES Audio Control Reference	*S4100-0034*
Standard Sounder Base	*S4098-0028*	4010ES Control Panels	*S4010-0004*
TrueSense Multi-Sensor	*S4098-0024*	4007ES Hybrid Control Panels	*S4007-0001*
TrueAlarm 4098-9773 CO Sensor Base with 520 Hz Sounder	*S4098-0053*		

Simplex

*UL, ULC, CSFM Listed; FM Approved**

TrueAlert Multi-Candela Notification Appliances

Multi-Candela, High Intensity (non-addressable) Strobe and Horn/Strobe

Features

24 VDC high intensity notification appliance common features:

- Xenon strobe with intensity selectable as 135, 177, or 185 candela; visible selection jumper is secured behind strobe housing
- Regulated circuit design ensures consistent flash output and provides controlled inrush current
- Control is compatible with Simplex SmartSync two-wire operation
- Operation is compatible with ADA requirements
- Rugged, high impact, flame retardant thermoplastic housings available in red or white with clear lens
- Models are available for wall or ceiling mount
- Strobe operation is UL listed to Standard 1971

Appliances with audible notification (horn):

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

Strobes provide synchronized flash for use with:

- Simplex fire alarm control panels and NAC Extenders when selected to provide strobe synchronization or SmartSync two-wire control
- Separate strobe Synchronization Modules or SmartSync Control Modules (SCMs) that convert conventional NAC inputs to a Smartsync output

SmartSync two-wire operation provides:

- Horns controlled separately from strobes on the same two-wire circuit, activated as Temporal pattern, March Time pattern (at 60 BPM), or on continuously

Wall mount appliance 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
- A/V models have an 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 2975-9145 boxes
- UL listed red wire guards are available for wall or ceiling mount A/Vs.

Description

Convenient Selection and Installation

TrueAlert multi-candela high intensity appliances provide convenient installation to standard electrical boxes. They 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

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

Strobe appliances install using standard single gang electrical boxes. Horn/strobe appliances install using standard 4" electrical boxes. Color choice is determined by model number.

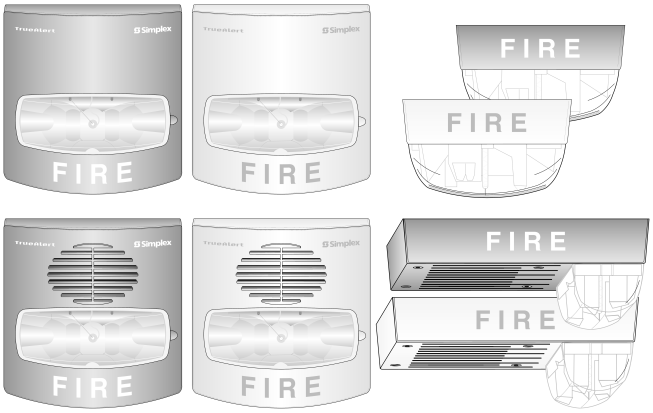


Figure 1: High Intensity Strobes and Horn/Strobes

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 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).

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

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*)

* 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 7125-0026:333 for allowable values and/or conditions concerning material presented in this document. Additional listings may be applicable; contact your local product supplier for the latest status.

Product Selection

Table 1: Strobe (V/O) Product Selection

Model	Housing	Lettering	Mounting	Description
4906-9109	Red	White	Wall	Multi-candela strobe with intensity selectable as: 135, 177, or 185 candela; synchronized flash rate; SmartSync two-wire control compatible
4906-9111	White	Red		
4906-9110	Red	White	Ceiling	
4906-9112	White	Red		

Table 2: Horn/Strobe (A/V) Product Selection

Model	Housing	Lettering	Mounting	Description
4906-9139	Red	White	Wall	Horn and multi-candela strobe with intensity selectable as: 135, 177, or 185 candela; synchronized flash rate; operates with SmartSync two-wire control
4906-9141	White	Red		
4906-9140	Red	White	Ceiling	
4906-9142	White	Red		

Table 3: Wall Mount Common 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 w/strobe = 4-3/8" (111 mm)
4905-9940	White		
4905-9931	Red Adapter Plate for mounting to 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)
4905-9838	A/V only; Optional Sound Damper; package of 20; field installed adhesive backed horn output attenuator; reduces output 5 to 6 dBA **Note:** 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
V/O Model	**A/V Model**	**Description**	**Dimensions**
4905-9992	4905-9994	Red Wall Mount Replacement 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)
4905-9993	4905-9995	White Wall Mount Replacement cover with red "FIRE" lettering	

Table 4: Wire Guards and Adapters

Model	Description		Dimensions
4905-9961*	A/V or V/O Wall Mount Red Wire Guard with Mounting Plate, for 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	V/O Ceiling Mount Red Wire Guard with Mounting Plate, for semi-flush or surface mounted boxes		6-1/8" x 4-3/8" x 2-7/8" deep (156 mm x 111 mm x 73 mm)
4905-9927*	A/V Ceiling Mount 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*	Red Adapter Plate, required to mount 4905-9927 guard to surface mounted electrical box		9" x 7" (229 mm x 178 mm)
4905-9910	Surface Mount Adapter Plate; zinc plated; required for mounting to handy box; not needed when using 4905-9926 guard		4-7/8" x 3-1/8" x 0.060" D (124 mm x 79 mm x 1.5)
4905-9915	White	Ceiling Mount A/V 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	Red		
Note: * UL listed by Space Age Electronics Inc.			

Installation Reference, Surface or Semi-Flush Mounting

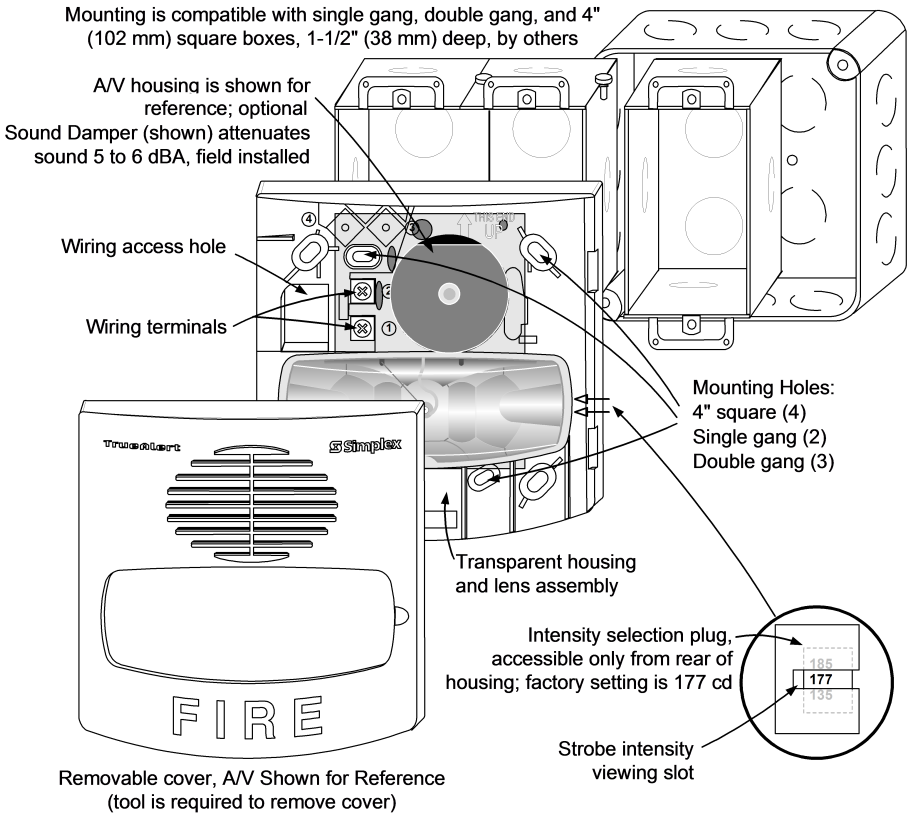


Figure 2: Installation reference, surface or semi-flush mounting

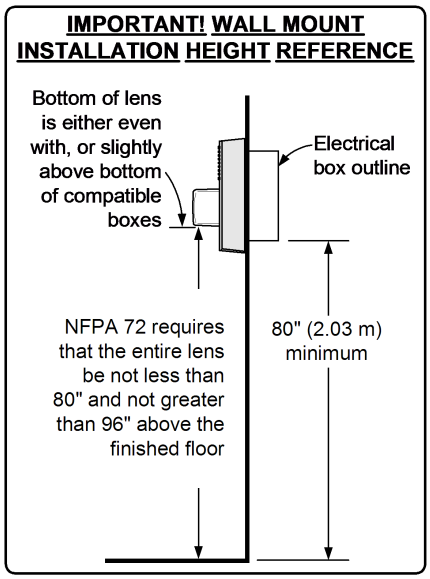


Figure 3: Wall mount installation height reference

Note: Figure 2 shows optional 4905-9838 sound damper.

Ceiling Mount High Candela Appliances Installation Reference

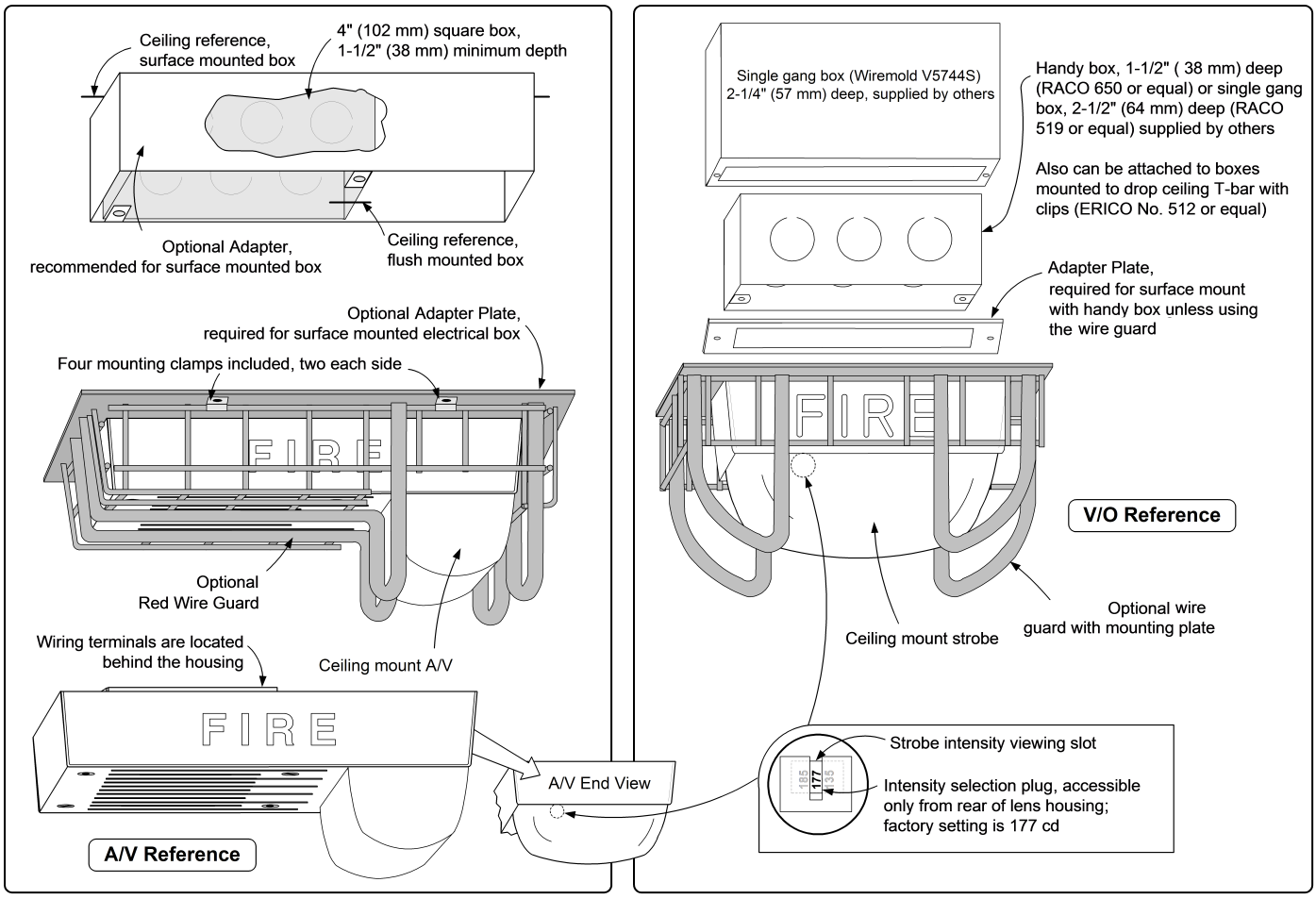


Figure 4: Ceiling Mount High Candela Appliances Installation Reference

Note: Figure 4 shows:

- Optional 4905-9915/4905-9916 Adapter for A/V installation, recommended for surface mounted box
- Optional A/V 4905-9927 Red Wire Guard
- 4905-9910 Adapter Plate, required for surface mount V/O installation with handy box unless using the 4905-9926 wire guard
- Optional 4905-9926 wire guard with mounting plate for V/O installation

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

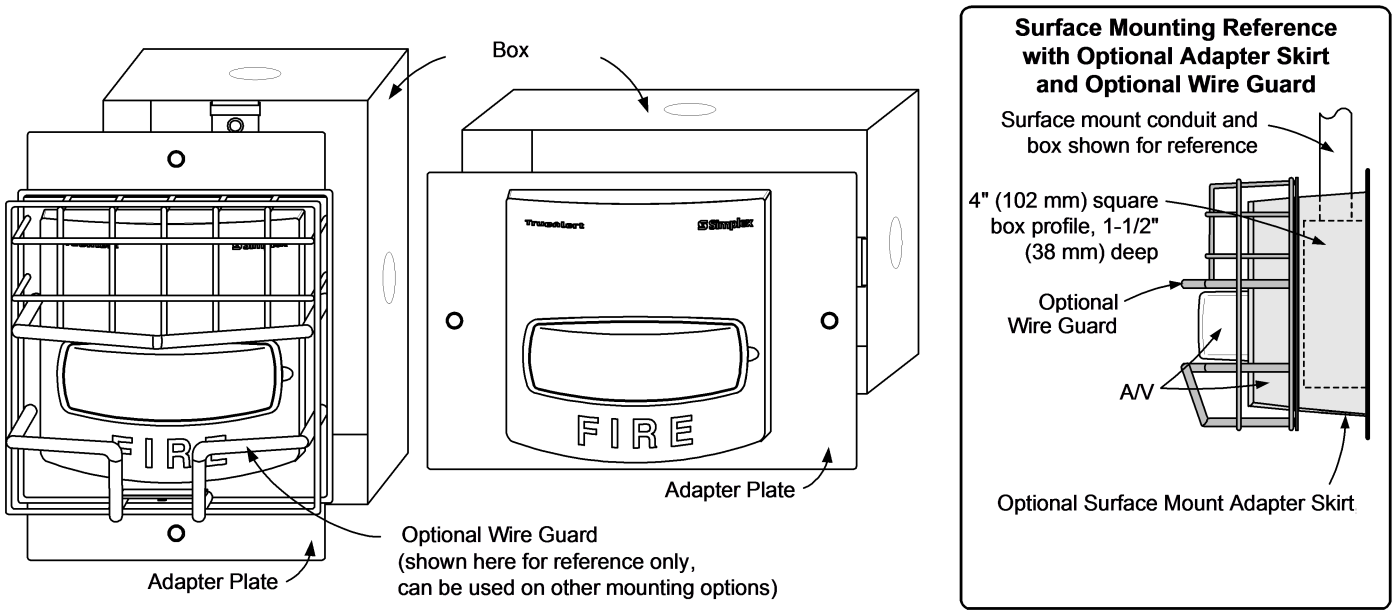


Figure 5: Wall Mount Installation Reference; Adapter Plate, Guard, and Adapter Skirt

Note: Figure 5 shows:

1. 4905-9931 Adapter Plate
2. 4905-9961 Optional Wire Guard
3. 2975-9145 back box
4. Optional Surface Mount Adapter Skirt, 1-1/2" deep: 4905-9937, Red; 4905-9940, White (conduit knockouts are provided on all four sides)

V/O shown for reference, A/V mounts the same.

Specifications

Refer to Instructions 579-859 for additional information.

Table 5: Specifications

Specification			Rating					
Rated Voltage Range	UL Listed Rating		Regulated 24 DC; see Note 1 below					
	ULC Listed Rating		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)					
Screw Terminal Connections			18 AWG to 12 AWG (0.82 mm2 to 3.31 mm2); two wires per terminal for in/out wiring					
Dimensions (with lens)	A/V and V/O Wall Mount		5-1/8" H x 5" W x 2-3/4" D (130 mm x 127 mm x 70 mm)					
	V/O Ceiling Mount		4-3/4" L x 2-5/16" W x 2-5/8" D (121 mm x 75 mm x 67 mm)					
	A/V Ceiling Mount		4-3/4 L" x 6-7/8" W x 2-5/8" D (121 mm x 175 mm x 67 mm)					
Horn Output Characteristics			2400 to 3700 Hz sweep, modulated at 120 Hz rate					
A/V Horn Ratings, dBA @ 10 ft (3 m); at 24 VDC (see Note 2)			**Steady Sound Output**			**Coded Sound Output (see Note 2 below)**		
	UL 464 Reverberant Chamber		**Wall Mount**	**Ceiling Mount**		**Wall Mount**	**Ceiling Mount**	
			86 dBA	87 dBA		82 dBA	83 dBA	
	Anechoic Chamber		92 dBA	93 dBA		92 dBA	93 dBA	
	Angular Dispersion		Per ULC S525; -3 dB at 45° off-axis for both wall and ceiling mount models					
Wall Mount			**Visible Only (V/O)**			**Audible/Visible (A/V)**		
	Maximum RMS Current Rating per Strobe Setting (see Note 3 below)		135 cd	177 cd	185 cd	135 cd	177 cd	185 cd
			330 mA	410 mA	430 mA	350 mA	440 mA	455 mA
	Reference RMS Currents at other voltages	18 VDC	279 mA	347 mA	364 mA	296 mA	372 mA	385 mA
		24 VDC	209 mA	260 mA	273 mA	222 mA	279 mA	289 mA
Ceiling Mount			**Visible Only (V/O)**			**Audible/Visible (A/V)**		
	Maximum RMS Current Rating per Strobe Setting (see Note 3 below)		135 cd	177 cd	185 cd	135 cd	177 cd	185 cd
			356 mA	431 mA	447 mA	389 mA	456 mA	463 mA
	Reference RMS Currents at other voltages	18 VDC	316 mA	383 mA	397 mA	346 mA	405 mA	412 mA
		24 VDC	237 mA	287 mA	298 mA	259 mA	304 mA	309 mA

Note:

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 pattern 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.)

Simplex

True*Alert* Multi-Candela Notification Appliances

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

Visible Notification Appliances with Speaker and Multi-Candela Strobe; Non-Addressable

Features

Speaker/visible (S/V) notification appliances with multi-tapped speaker and multi-tapped high intensity xenon strobe with synchronized flash:

- Rugged, high impact, flame retardant thermoplastic housings are available for wall or ceiling mount
- Operation is compatible with ADA requirements (refer to important wall mount installation information on page 4)

Wall mount S/V features:

- Housings are available in red or white with clear lens with contrasting white or red "FIRE" lettering
- Covers are available separately to convert housing color

Ceiling mount S/V features:

- Housing is white with clear lens
- Red "FIRE" lettering is printed on two sides

Audible notification appliance (speaker):

- High quality voice and tone reproduction with taps for ¼, ½ , 1, or 2 W, at 25 or 70.7 VRMS
- Capacitor input for connection to supervised notification appliance circuits
- Speakers are wired separately from strobe wiring
- UL listed to Standard 1480 and ULC-S541*
- Compliant with NFPA 72, 520 Hz Low Frequency Signal Requirements for Sleeping Areas

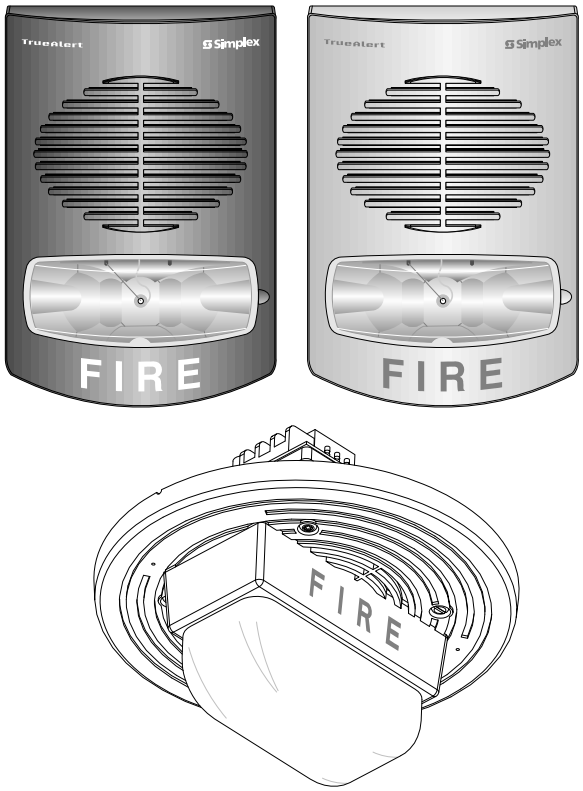
Visible notification appliance (strobe):

- 24 VDC xenon strobe; intensity is selectable as 15, 30, 75, or 110 candela with visible selection jumper secured behind strobe housing
- Strobes are activated from NACs selected to provide Simplex® strobe synchronization signals or from separate strobe Synchronization Modules that are available for Class B or Class A operation
- Regulated circuit design ensures consistent flash output and provides controlled inrush current
- UL listed to Standard 1971 and ULC-S526*

Options for wall mounted S/Vs:

- Red or white adapters to cover surface mounted electrical boxes
- Red adapter for mounting to Simplex 2975-9145 boxes
- Red wire guard

* See page 2 for additional listing details and wire guard listings. 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 7320-0026:247 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.



Wall and Ceiling Mount S/Vs

Description

Multi-Candela TrueAlert S/Vs with speaker and synchronized strobe provide convenient installation to standard electrical boxes with extensions. 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 S/V housings are a one-piece assembly (including lens) that mounts to a 4" square electrical box with extension (see details on page 4). The cover can be quickly removed (a tool is required) and covers are available separately for color conversion.

Ceiling mount S/Vs also install using 4" electrical boxes with an extension (see details on page 4).

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.

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 S/Vs are activated by NACs that provide the Simplex synchronization format. For additional information, refer to data sheet S4905-0003.

Strobe Application Selection

Proper selection of visible notification is dependent on occupancy, location, local codes, and proper applications of: the *National Fire Alarm and Signaling 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).

Product Selection

Wall Mount Multi-Candela S/Vs

Model	Housing Color	"FIRE" Lettering	Listings	Description	Housing Dimensions with Lens
4906-9151	Red	White	UL & ULC	Multi-tapped Speaker with Multi-Candela Synchronized Strobe; strobe intensity selectable as: 15, 30, 75, or 110 candela	7 ¼" H x 5" W x 2 ⅝" D (184 mm x 127 mm x 67 mm)
4906-9153	White	Red			

Ceiling Mount Multi-Candela S/V

Model	Housing Color	"FIRE" Lettering	Listings	Description	Dimensions
4906-9154	White	Red	UL	Multi-tapped Speaker with Multi-Candela Synchronized Strobe; strobe intensity selectable as: 15, 30, 75, or 110 candela	Housing = 7 ½" (191 mm) diameter, ½" (13 mm) deep Strobe lens protrusion = 2 ⅝" (67 mm) above speaker housing Depth into box = 2 ¾" (70 mm)
4906-9157	White	Red	ULC		

Wall Mount S/V Adapters

Model	Description		Dimensions
4905-9946	Surface mount red adapter skirt	Required when mounting to surface mounted electrical box, 4" square, 1 ½" deep with 1 ½" deep extension	7 ¾" H x 5 ⅜" W x 3 $^{3}/_{16}$" D (197 mm x 137 mm x 81 mm) depth with S/V = 5 ⅞" (149 mm)
4905-9947	Surface mount white adapter skirt		
4905-9903	Adapter Plate, red, required to mount S/V on 2975-9145		8 $^{5}/_{16}$" H x 5 ¾" W x 0.060" Thick (211 mm x 146 mm x 1.5 mm)
2975-9145	Mounting box, red, for surface or flush mount, requires adapter plate 4905-9903 (this box may be available for retrofit applications)		7 ⅞" H x 5 ⅛" W x 2 ¾" D (200 mm x 130 mm x 70 mm)

Wall Mount S/V Replacement Covers

Model	Description	Dimensions
4905-9996	Red S/V cover with white "FIRE" lettering	7 ¼" H x 5" W x 1 ⅜" D (184 mm x 127 mm x 35 mm)
4905-9997	White S/V cover with red "FIRE" lettering	

Synchronized Flash Control Modules

Model	Description		Dimensions
4905-9914*	Synchronized Flash Module, Class B operation	Epoxy encapsulated with in/out 18 AWG (0.82 mm^2) wire leads, rated for 2 A NAC, requires 5 mA for power	1 ⅜" W x 2 $^{7}/_{16}$" L x $^{13}/_{16}$" H (35 mm x 62 mm x 20 mm)
4905-9922*	Synchronized Flash Module, Class A operation		

Wall Mount S/V Wire Guard

Model	Description	Dimensions
4905-9998	Wire guard with mounting plate, red, compatible with surface and semi-flush boxes (UL listed by Space Age Electronics Inc.)	8 ⅜" H x 6 $^{5}/_{16}$" W x 3 ¼" D (213 mm x 154 mm x 79 mm)

Ceiling Mount Tile Bridge

Model	Description	Dimensions
2905-9946	Tile Bridge	See diagram on page 4

* Refer to data sheet S4905-0003 for additional flash control module information

S/V Specifications

Common Specifications	Environmental	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^2 to 3.31 mm^2); two wires per terminal for in/out wiring

Speaker Specifications

Input Voltage		25 or 70.7 VRMS, see Note 1 below
Power Taps		¼, ½, 1, and 2 W
Frequency Response	Fire Alarm	400 to 4000 Hz
	General Signaling	125 to 12 kHz

Speaker Output Ratings @ 10 ft (3 m) (see Note 1 below)		Wattage Tap	**¼ W**	**½ W**	**1 W**	**2 W**
	UL Listed Models, Reverberant Chamber Test, per UL 1480		76 dBA	79 dBA	82 dBA	85 dBA
	Wall Mount Models **4906-9151** and **4906-9153**, Anechoic Chamber Test, per ULC-S541		77 dBA	80 dBA	83 dBA	86 dBA*
	Ceiling Mount Model **4906-9157**, per ULC-S541	25 VRMS Input	81.6 dBA	84.3 dBA	87.1 dBA*	89.7 dBA*
		70.7 VRMS Input	80.9 dBA	84.1 dBA	87.3 dBA*	90.2 dBA*

* **NOTE:** Select taps as indicated to satisfy the ULC fire alarm applications requirement of 85 dBA minimum

	Attenuation	**Angle**	**Attenuation**	**Angle**
Polar Dispersion Reference (per ULC-S541 Anechoic Chamber Testing)	-3 dB	+/- 30° off-axis	-6 dB	+/- 55° off-axis

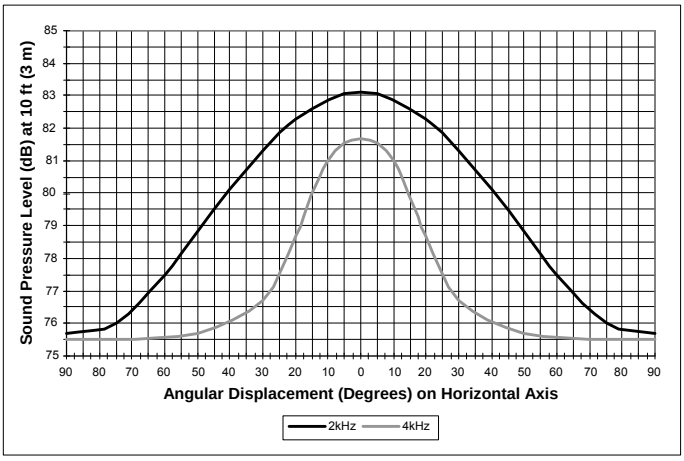
Strobe Specifications

Rated Voltage Range			Regulated 24 VDC; 16 VDC to 33 VDC, see Note 2 below			
Flash Rate and Synchronized NAC Loading			1 Hz; with up to 35 synchronized strobes maximum per NAC			
Wall Mount	Housing Dimensions (with lens)		7 ¼" H x 5" W x 2 ⅝" D (184 mm x 127 mm x 67 mm)			
	Maximum RMS Current Rating per Strobe Setting		**15 cd**	**30 cd**	**75 cd**	**110 cd**
			60 mA	**94 mA**	**186 mA**	**252 mA**
	Reference RMS Currents at other voltages	18 VDC	53 mA	84 mA	165 mA	224 mA
		24 VDC	40 mA	63 mA	124 mA	168 mA
Ceiling Mount	Housing Dimensions		Speaker housing = 7 ½" (191 mm) diameter, ½" deep (13 mm); lens protrusion above speaker housing = 2 ⅝" (67 mm); depth into box = 2 ¾" (70 mm)			
	Maximum RMS Current Rating per Strobe Setting		**15 cd**	**30 cd**	**75 cd**	**110 cd**
			75 mA	**125 mA**	**233 mA**	**316 mA**
	Reference RMS Currents at other voltages	18 VDC	67 mA	111 mA	207 mA	281 mA
		24 VDC	50 mA	83 mA	155 mA	211 mA

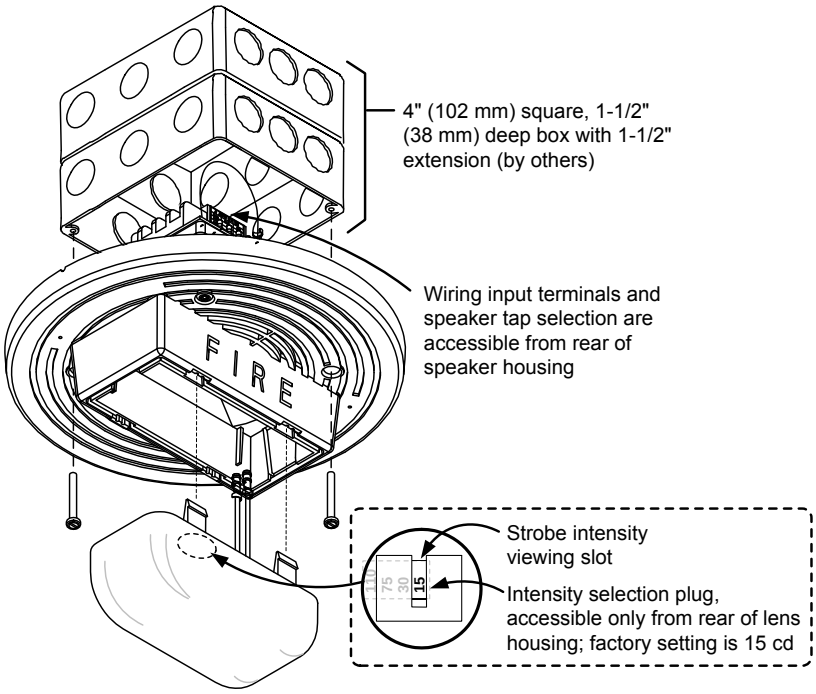
NOTES:

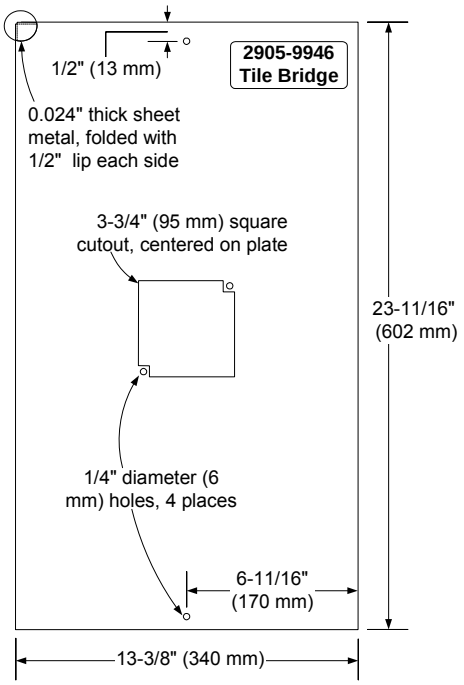
1. Speakers are for connection to conventional fire alarm audio circuits. Anechoic speaker output ratings are typically more representative of actual installed sound output.
2. The maximum RMS strobe current listed is the device nameplate rating. Strobe designs are constant wattage and the maximum RMS 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.)

Speaker Directional Characteristics Reference



Ceiling Mount S/V Installation Reference and Tile Bridge Dimensions





Wall Mount Installation Reference