

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK



CITY OF PORTLAND BUILDING PERMIT



This is to certify that

LARKIN ROBERT /Simplex / Grinnell

Located at

92 PORTLAND ST

PERMIT ID: 2012-50039

CBL: 036 I001001

has permission to **install supervised fire alarm system.**

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statues of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of the buildings and structures, and of the application on file in the department.

Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise clsoed-in. 48 HOUR NOTICE IS REQUIRED.

A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be procured prior to occupancy.


Fire Prevention Officer

(58)

Code Enforcement Officer / Plan Reviewer

**THIS CARD MUST BE POSTED ON THE STREET SIDE OF THE PROPERTY
THERE IS A PENALTY FOR REMOVING THIS CARD**

BUILDING PERMIT INSPECTION PROCEDURES
Please call 874-8703 (ONLY)
or email: buildinginspections@portlandmaine.gov

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the city of Portland Inspections Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**
- **Permits expire in 6 months. If the project is not started or ceases for 6 months.**
- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue.**

REQUIRED INSPECTIONS:

Final - Fire

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OF CIRCUMSTANCES.

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCUPIED.

City of Portland, Maine - Building or Use Permit

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 2012-50039	Date Applied For: 11/07/2012	CBL: 036 I001001
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Location of Construction: 92 PORTLAND ST	Owner Name: LARKIN ROBERT	Owner Address: 2 COTTAGE RD	Phone:
Business Name:	Contractor Name: Simplex / Grinnell	Contractor Address: 20 Thomas Drive Westbrook	Phone (207) 842-6440
Lessee/Buyer's Name	Phone:	Permit Type: Fire Alarm System	

Proposed Use: Fire Alarm System	Proposed Project Description: install supervised fire alarm system.
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Dept: Zoning **Status:** Approved **Reviewer:** Marge Schmuckal **Approval Date:** 11/06/2012
Note: **Ok to Issue:**

Dept: Fire **Status:** Approved w/Conditions **Reviewer:** Ben Wallace Jr **Approval Date:** 02/21/2013
Note: **Ok to Issue:**

- 1) The installation shall comply with the following:
City of Portland Chapter 10, Fire Prevention and Protection;
NFPA 1, Fire Code (2009 edition), as amended by City Code;
NFPA 101, Life Safety Code (2009 edition), as amended by City Code;
City of Portland Fire Department Rules and Regulations;
NFPA 72, National Fire Alarm and Signaling Code (2010 edition), as amended by Fire Department Rules and Regulations; and
NFPA 70, National Electrical Code (2011 edition) as amended by the State of Maine
- 2) A master box connection is not authorized for this building.
- 3) Fire protection systems shall be maintained. If system is to be off line over 4 hours a fire watch shall be in place. Dispatch notification required 874-8576.
- 4) The fire alarm technician shall be present for the fire inspection. System acceptance and commissioning must be coordinated with alarm and suppression system contractors and the Fire Department. Call 874-8703 to schedule.
- 5) Visible signals are required per NFPA 101:9.6.3.5 in accordance with NFPA 72:18.5.4.4.
- 6) An exterior strobe shall be located with the Knox Box at the fire department entrance.
- 7) All smoke detectors shall be photoelectric.
- 8) The fire alarm system shall have a new fire alarm inspection sticker.
- 9) Supervising Station monitoring for addressable fire alarm systems shall be by point.
- 10 All fire alarm records required by NFPA 72 should be stored in an approved cabinet located at the FACP labeled "FIRE ALARM RECORDS".
- 11 Notice: The first scheduled final inspection fee is at no charge. Additional inspections shall be billed at \$75 for each inspector.
- 12 A 4100 series Knox Box is required.
- 13 Records cabinet, FACP, annunciator(s), and pull stations shall be keyed alike.
- 14 Manual Pull Stations are required per NFPA 101:30.3.4.2.1 at all exit doorways and within 200 feet of travel.
- 15 In field installation shall be installed per code as conditions dictate.

City of Portland, Maine - Building or Use Permit Application

389 Congress Street, 04101 Tel: (207) 874-8703, FAX: (207) 8716

Job No: 2012-11-5358-FAFS UT 2012-50039	Date Applied: 11/7/2012 6	CBL: 036-1-001-001		
Location of Construction: 92 PORTLAND ST	Owner Name: ROBERT LARKIN	Owner Address: 2 COTTAGE RD SOUTH PORTLAND, ME 04106	Phone:	
Business Name: Bubba's Silky Lounge	Contractor Name: SIMPLEX GRINNELL	Contractor Address: 20 THOMAS DR WESTBROOK MAINE 04092	Phone: 239-5100	
Lessee/Buyer's Name:	Phone:	Permit Type: Fire Alarm	Zone: B-2b	
Past Use: Drinking Establishment/Restaurant	Proposed Use: Same: Drinking Establishment/Restaurant - to install fire alarm	Cost of Work: \$18,000.00	CEO District:	
		Fire Dept: 2/24/13	Inspection: Use Group: Type:	
		Signature: <i>[Signature]</i> (58)	Signature:	
Proposed Project Description: Fire Alarm System		Pedestrian Activities District (P.A.D.)		
Permit Taken By: Gayle		Zoning Approval		

1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.
2. Building Permits do not include plumbing, septic or electrical work.
3. Building permits are void if work is not started within six (6) months of the date of issuance. False informatin may invalidate a building permit and stop all work.

Special Zone or Reviews <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetlands <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan <input type="checkbox"/> Maj <input type="checkbox"/> Min <input type="checkbox"/> MM Date: <i>[Signature]</i> 11/7/12	Zoning Appeal <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied	Historic Preservation <input checked="" type="checkbox"/> Not in Dist or Landmark <input type="checkbox"/> Does not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date: <i>[Signature]</i>
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CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the appication is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT	ADDRESS	DATE	PHONE
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE		DATE	PHONE

By Mail
called for
electronic file
60

202 11 5358



Fire Alarm Permit

If you or the property owner owes real estate or property taxes or user charges on any property within the city, payment arrangements must be made before permits of any kind are accepted.

84 Portland

Installation address: 92 Portland St. Bubbas Sulky Lounge CBL: 036 I 001

Exact location: (within structure) Whole Building

Type of occupancy(s) (NFPA & ICC): Restaurant/Bar

Building owner: Robert Larkin 828-0549

System Designer (point of contact): Must be Ken Plourde Nicet III 088704

Designer phone: 207-749-6726 E-mail: kplourde@simplexgrinnell.com

Installing contractor: Bana Corp/ SimplexGrinnell Certificate of Fitness No: 1019

Contractor phone: John Hale 207-239-5100 E-mail: johale@simplexgrinnell.com

This is a new application: YES NO New AES Master Box: YES NO
(Include Master Box approval form)

Amendment to an existing permit: YES NO Permit no: _____

The following documents shall be provided with this application:

- Floor plans
- Wiring diagram
- Annunciator details
- Input/ Output Matrix
- Equipment data sheets
- Electrical Permit Pulled (check alarm/com)
- Scope of Work
- 11 1/2 x 17s
- pdf copy (may be e-mailed)
- Designer qualifications
- Battery/ voltage drop calcs

COST OF WORK: \$18,000.⁰⁰

PERMIT FEE: \$200.⁰⁰
(\$10 PER \$1,000 + \$30 FOR THE FIRST \$1,000)

RECEIVED

NOV 06 2012

**Dept. of Building Inspections
City of Portland Maine**

Master box approval only: YES NO
(If yes check *New AES Master Box* above)

The designer shall be the responsible party for this application. Download a new copy of this application at www.portlandmaine.gov/fire for every submittal. Submit all plans in electronic PDF in addition to readable 11 1/2 x 17s to the Building Inspections Department, 389 Congress Street, Room 315, Portland, Maine 04101.

Prior to acceptance of any fire alarm system, a complete commissioning and acceptance test must be coordinated with all fire system contractors and the Fire Department, and proper documentation of such test(s) provided.

All installation(s) must comply with the *City of Portland Technical Standard for Signaling Systems for the Protection of Life and Property*, available at www.portlandmaine.gov/fire.

Applicant signature: [Signature] Date: 10/24/12

Plourde, Ken

Subject: Bubbas Scope of Work

Bubbas Scope of Work

Install a new 4010ES Addressable Fire Alarm Panel and all Devices as shown on the plans.

This will include Pull Stations at each Exit, ADA Signaling Devices throughout and a Smoke Detector above the FACP. A Knox Box will be Installed at the Door that leads to the Fire Alarm Control Panel and a Weatherproof Strobe will be mounted above to it.

The Sprinkler and Range Hood will be connected to the Fire Alarm.

Relays will be added to remove power from the DJs outlets and the Juke Box, during an alarm condition.

Ken Plourde

Service Sales Representative

SimplexGrinnell ,

20 Thomas Drive,

Westbrook, ME 04092

Direct 207-482-2324

Cell 207-749-6726

Fax 207-482-2358

kplourde@simplexgrinnell.com

tyco
SimplexGrinnell



20 Thomas Dr
 WESTBROOK, ME 04092-3824
 (207) 842 6440
 FAX: (207) 842 6439
 www.simplexgrinnell.com

SimplexGrinnell Material List (THIS IS NOT A PRICE QUOTATION)

TO:
 Bubba's Sulky Lounge
 92 PORTLAND ST
 PORTLAND, ME 04101-2828
 Attn: Ted Larkin
 (207) ___-___ EXT(____) Fax:

Project: Bubba's Sulky Lounge Fire 9-12
 Customer Reference:
 SimplexGrinnell Reference: 147422252
 Date: 02/19/2013
 Page 1 of 2

QUANTITY	MODEL NUMBER	DESCRIPTION
Bubba's Sulky Lounge Fire 9-12		
Bubba's Sulky Lounge Fire 9-12		
1	4010-9402	4010ES FACP 120V PLATINUM
1	4010-9912	SERIAL DACT
1	4010-9908	4 POINT AUX RELAY MODULE
1	ETHEDROP	ETHERNET-NETWORK COMPATIBLE
1	SSU00672	CAB.DOC STORAGE 12X13X2D RED
BUBBAS PERIPHERALS		
3	4090-9001	SUPERVISED IAM
2	4090-9002	RELAY IAM
1	4098-9714	PHOTO SENSOR
1	4098-9792	SENSOR BASE
4	4099-9003	MANUAL STATION - DOUBLE ACTION
4	2975-9178	BACKBOX MANUAL STATION
NOTIFICATION DEVICES		
13	4906-9101	STROBE MC RED
11	4906-9127	HORN/STROBE MC RED
1	4906-9105	WP VO MC NON-ADDR WALL RED
1	4905-9828	WP AV/VO 1.5IN BACK BOX RED
BATTERIES		
2	2081-9275	BATTERY 18AH
KNOX BOX		
1	KNOX 4101	KNOX BOX 4101
1	KNOX SHP	SHIPPING
WIRING AND INSTALLATION		
WIRING AND INSTALLATION		

Comments

This Quote includes Wiring, Installation, Programming and Testing.

This quote includes a relay to activate a Shunt Trip Breaker, but does not include a Shunt Trip Breaker or any additional wiring to connect one.

This quote does not include Central Station Monitoring, which will be quoted separately, if required.



Project: Bubba's Sulky Lounge Fire 9-12
Customer Reference:
SimplexGrinnell Reference: 147422252
Date: 02/19/2013
Page 2 of 2

SimplexGrinnell Material List (THIS IS NOT A PRICE QUOTATION)

Comments (continued)

This quote is subject to the approval of the Portland Fire Department.
Any additional devices that may be required would be at an additional cost.

Note: This quote now includes a Knox Box as it is required under current City of Portland Fire Codes.

This quote is valid for 30 days.

Features

Basic system includes:

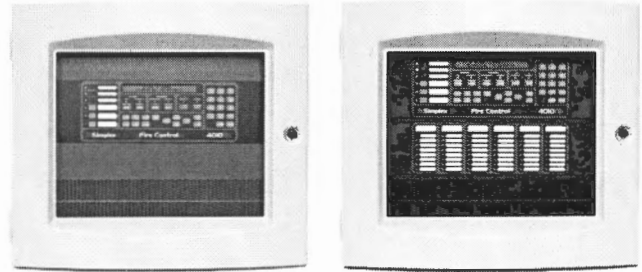
- Capacity for up to 248 addressable devices, up to 127 VESDA SLI points, up to 2000 points of Annunciation and up to 20 internal and external card addresses
- Color-coded operator interface with membrane keypad includes 2 x 40 Super-twist LCD display, 3 programmable control keys and 6 programmable LEDs
- CPU assembly includes dedicated compact flash memory for on-site system information storage and convenient Ethernet service port access
- 8 A power supply with up to 2 A of Auxiliary power and battery charger capacity for up to 110 Ah batteries (UL) or up to 50 Ah batteries (ULC) (33 Ah max in control panel cabinet)
- 4 on-board Class A or B, 3 A NACs and one programmable auxiliary relay output rated for 2 A @ 32 VDC
- Class A or B Two-loop Isolated IDNet Communications (IDNet+) supports up to 248 addressable and analog sensing devices on non-twisted, non-shielded wiring
- Remote annunciator module support via RUI (Remote Unit Interface) communications port, supports either Class B (Style 4) or X (Style 7) Pathway operation
- 48 LED panel mount annunciation provides 40 Red and 8 Yellow pluggable LEDs (select models, meets ULC requirements), optional LED kits are available for custom LED configurations

Optional Main System Supply and door mounted modules include:

- City Connect (with or without disconnect switches)
- Alarm Relay Module
- TrueInsight Remote Gateway

Optional block space modules include:

- Fire Alarm Network Interface Card for 4120/4100 Peer-to-Peer network communications, supports either Class B or X (Style 7) Pathway operation
- Ethernet connectivity options include Building Network Interface Module (BNIC), SafeLINC Internet Interface, and BACpac Ethernet Portal
- Dual RS-232 Module (for printer, PC annunciator or third party interface)
- VESDA Air Aspiration High Level Interface
- Serial DACT
- 8 Zone IDC Modules Class A or B
- 4 Point Auxiliary Relay Module
- Physical Bridge Network Modules



4010ES Fire Alarm Control Panels are available standard (left) or with LED Annunciation (right)

Compatible with Simplex® remotely located:

- 4098-9757 QuickConnect 2 and legacy 4098-9710 QuickConnect TrueAlarm smoke sensors
- 4003EC Small Voice Panels
- 4009 IDNet NAC Extenders (4009A)
- TrueAlert Addressable Controllers (4009T) and Remote TrueAlert Power Supplies (4009 TPS)
- 4081 Series, 110Ah Battery Chargers
- 4100-7400 Series Graphic Annunciators
- 4190 Series PC Annunciator
- 4190 Series Fiber Modems and Physical Bridges
- 4606-9102 Remote LCD Annunciator, 4100-9400 Series Remote InfoAlarm Command Centers, and 4602 Series Status Command Units (SCU) and Remote Command Units (RCU) Annunciators
- IP communicator compatibility

4010ES Agency listings:

- UL Std. 864, Fire Detection and Control (UOJZ), and Smoke Control Service (UUKL), and Releasing Service (SYZV)
- UL Std. 2017, Process Management Equipment (QVAX)
- UL Std. 1076, Proprietary Alarm Units-Burglar (APOU)
- UL Std. 1730, Smoke Detector Monitor (UULH)
- ULC Std. S527-99, Fire Detection and Control (UOJZC)
- ULC Std. S559-04, Supervising Station (DAYRC)

* See pages 5 and 6 for additional listing information. This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7165-0026:0369 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. NYC Fire Dept COA #6095. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

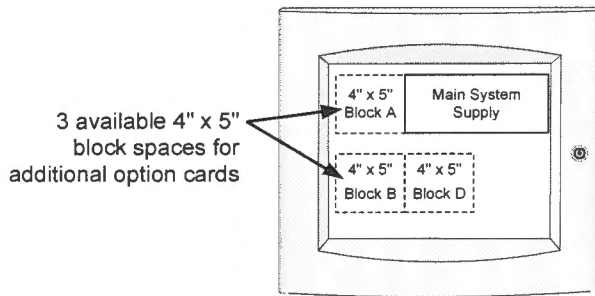
Introduction

4010ES Series Fire Detection and Control Panels provide leading edge installation, operator, and service features for customer applications in the mid-range addressable fire alarm systems market. An on-board Ethernet port provides fast external system communications to expedite installation and service activity. Dedicated compact flash memory archiving provides secure on-site system information storage of electronic job configuration files to meet NFPA 72 (*National Fire Alarm and Signaling Code*) requirements.

Modular design. A variety of functional modules are available to meet specific system requirements. Selections allow panels to be configured for either Stand-Alone or Networked fire control operation.

Panel Hardware

The Master Controller and Main System Supply are mounted in the upper section of the 4100ES cabinet.



Mounting Locations for Optional Modules

Panel Hardware (Continued)

4010ES Block Space Option Cards mount to the left of the 4010ES Main System Supply. There are 3 available 4\" x 5\" blocks for mounting 4010ES hardware options.

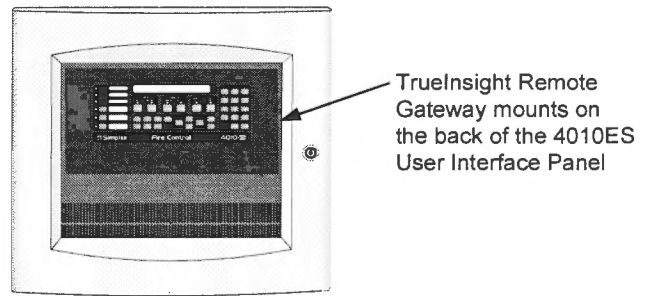
Other 4010ES Options: The 4010ES City Connect module or the optional Alarm Relay module mount directly to the Main System Supply. These options are mutually exclusive.

Network Media modules mount directly to the 4010ES Network Interface Card.

The TrueInsight Remote Gateway mounts on the back side of the 4010ES User Interface Panel.

The Battery Compartment located in the bottom of the 4010ES cabinet accepts two batteries, up to 33 Ah, without interfering with expansion module space.

The illustrations below identify mounting locations available for optional 4010ES modules.



Mechanical Description

- Mounting box provides convenient stud markers for drywall thickness and nail-hole knockouts for quicker mounting
- Smooth box surfaces are provided for locally cutting conduit entrance holes exactly where required
- The hinged User Interface panel easily opens for internal access
- Modules are power-limited (except as noted, such as relay modules)
- Doors include tempered glass inserts, boxes and doors are available in platinum or red
- Box and door/retainer assemblies are included with Basic Panel assemblies

Software Feature Summary

- TrueAlarm individual analog sensing with front panel information and selection access
- "Dirty" TrueAlarm sensor maintenance alerts, service and status reports including "almost dirty"
- TrueAlarm magnet test indication appears as distinct "test abnormal" message on display when in test mode
- TrueAlarm sensor peak value performance report
- **"Install Mode"** allows grouping of multiple troubles for uninstalled modules and devices into a single trouble condition (typical with future phased expansion); with future equipment and devices grouped into a single trouble, operators can more clearly identify events from the commissioned and occupied areas
- Module level ground fault searching assists installation and service by locating and isolating modules with grounded wiring
- **"Recurring Trouble Filtering"** allows the panel to recognize, process, and log recurring intermittent troubles (such as external wiring ground faults), but only sends a single outbound system trouble to avoid nuisance communications
- WALKTEST silent or audible system test performs an automatic self-resetting test cycle

Operator Interface Features

- Convenient and extensive operator information is provided using a logical, menu-driven display
- Multiple automatic and manual diagnostics for maintenance reduction
- Convenient PC programmer label editing
- Password access control
- Alarm and Trouble History Logs (up to 2000 total events) are available for viewing from the LCD, or capable of being printed to a connected printer, or downloaded to a service computer

Convenient Status Information. With the locking door closed, the glass window allows viewing of the display, status LEDs, and available operator switches. Features include a two-line by 40-character, wide viewing angle (super-twist) LCD with status LEDs and switches as shown in the illustration below.

LED indicators describe the general category of activity being displayed with the LCD providing more detail. For the authorized user, unlocking the door provides access to the control switches and allows further inquiry by scrolling the display for additional detail.

The following illustration identifies the primary functions of the operator interface.



Compatible Peripheral Devices

The 4010ES is compatible with an extensive list of remote peripheral devices including printers, PC Annunciators and both conventional and addressable devices including TrueAlarm analog sensors.

Addressable Device Control

Overview. The 4010ES provides standard addressable device communications for IDNet compatible devices. Using a two wire communications circuit, individual devices such as manual fire alarm stations, TrueAlarm sensors, conventional IDC zones, and sprinkler waterflow switches can be interfaced to the addressable controller to communicate their identity and status.

Addressability allows the location and condition of the connected device to be displayed on the operator interface LCD and on remote system annunciators. Additionally, control circuits (fans, dampers, etc.) may be individually controlled and monitored with addressable devices.

Addressable Operation. Each addressable device on the communication channel is continuously interrogated for status condition such as: normal, off-normal, alarm, supervisory, or trouble. Both Class B and Class A pathway operation are available. Sophisticated poll and response communication techniques ensure supervision integrity and allow for "T-tapping" of the circuit for Class B operation. Devices with LEDs pulse the LED to indicate receipt of a communications poll and can be turned on steady from the panel.

IDNet+ Channel Capacity. The Main System Supply provides an IDNet+ signaling line circuit (SLC) that supports up to 248 addressable monitor and control devices intermixed on the same pair of wires.

IDNet+ Communications wiring specifications. IDNet+ circuits may be run on NEC 760 untwisted pair, twisted pair, or shielded twisted pair conductors.

IDNet+ Wiring Specifications

Size		18 AWG (0.82 mm ²)
Type		NEC 760 Wire (untwisted, twisted, or shielded twisted pair)
Farthest Distance from Control Panel per Device load	126-248	Up to 2500 feet (762 m)
	up to 125	Up to 4000 ft (1219 m)
Total Wire Length Allowed Class A or Class B, including "T-taps" for Class B wiring (total for both isolated circuits combined)		Up to 12,500 ft (3.8 km) Note: The sum of line-to-line capacitance plus the capacitance of either line-to-shield (if shield is present) = 0.6 µF maximum (total for both isolated circuits combined)

* Other circuits may require shielded wiring. Review your system with your local Simplex product supplier.

TrueAlarm System Operation

Addressable device communications include operation of TrueAlarm smoke and temperature sensors. Smoke sensors transmit an output value based on their smoke chamber condition and the CPU maintains a current value, peak value, and an average value for each sensor.

Status is determined by comparing the current sensor value to its average value. Tracking this average value as a continuously shifting reference point filters out environmental factors that cause shifts in sensitivity.

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

CO sensor bases combine an electrolytic CO sensing module with a TrueAlarm analog sensor to provide a single multiple sensing assembly using one system address. The CO sensor can be enabled/disabled, used in LED/Switch modes and custom control, and can be made public for communication across a fire alarm Network. (refer to data sheet S4098-0041 for details)

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

TrueSense Early Fire Detection. Multi-sensor 4098-9754 provides photoelectric and heat sensor data using a single 4010ES IDNet address. The panel evaluates smoke activity, heat activity, **and their combination**, to provide TrueSense early detection. For more details on this operation, refer to data sheet S4098-0024.

Diagnostics and Default Device Type

Sensor Status. TrueAlarm operation allows the control panel to automatically indicate when a sensor is almost dirty, dirty, and excessively dirty. The NFPA 72 requirement for a test of the sensitivity range of the sensors is fulfilled by the ability of TrueAlarm operation to maintain the sensitivity level of each sensor. CO Sensors track their 5 year active life status providing indicators to assist with service planning. Indicators occur at: 1 year, 6 months, and when end of life is reached.

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

Master Controller (CPU)

- The 4010ES Master Controller includes dedicated 2GB compact flash Mass Storage memory for on-site system information storage and convenient Ethernet service port access
- Convenient front panel accessed Ethernet port for quick and easy *download* of site-specific programming
- *AND*, firmware enhancements are made via software downloads to the on-board flash memory
- Every downloaded job is automatically stored to Compact flash without overwriting earlier versions providing a means for recovering previous configurations
- Downtime is reduced because the system stays running during download
- Modifications can be *uploaded* as well as downloaded for greater service flexibility
- Mass Storage allows job specific files to be store in the control panel such as test and inspection reports, record drawings, specifications, and more...
- Ethernet connectivity options include Building Network Interface Module (BNIC) and SafeLINC Internet Interface
- RUI (Remote Unit Interface) communications port supports either Class B or X Pathway operation for remote annunciation equipment and for 4009 Series TrueAlert Controllers and TrueAlert Power Supplies

Basic Panel Description

4010ES panels include: an Operator Interface, Master Controller with 2GB Compact Flash, Class A or B Two-loop Isolated IDNet Communications (IDNet+) supporting up to 248 addressable and analog sensing devices, 8 A power supply with up to 2 A of auxiliary power, 110 Ah (UL) / 50 Ah (ULC) battery charger (33 Ah maximum in the control panel cabinet), 4 Class A or Class B NACs rated @ 3 A each for Special Application and 2 A for Regulated 24 DC operation, 1 programmable auxiliary relay rated for 2 A @ 32 VDC, 1 RUI Class B or X communications port for remote annunciation devices, cabinet, and door.

Support is for up to 20 internal and external card addresses. Other standard options may be provided depending on model (see basic panel model selection below for additional details on specific models).

Main System Supply

The Main System Supply provides the power source and the Input/Output connections for the basic 4010ES panel. The main features are listed in the Basic Panel description below.

Basic Panel Model Selection

Note: Supervisory and Alarm current specifications are for determining battery standby requirements. Current specifications include an active RUI channel and alarm currents include 20 IDNet device LEDs activated. Actual IDNet channel device current is not included, refer to page 6 for details. For models with 48 LED Annunciation, alarm also includes 24 LEDs activated.

Model*	Panel Color	Language & Voltage	Listings	Features	Supv. Current	Alarm Current	Available Option Blocks
4010-9401(BA)	Red	English 120 VAC	UL, CSFM, FM, NYC Fire Dept	Basic panel with 2x40 LCD Operator Interface and (1) Two-loop Isolated IDNet+ Channel, Class A or B, with support for up to 248 addressable devices	316 mA	430 mA	3 4"x5" blocks
4010-9402(BA)	Platinum						
4010-9403(BA)	Red	English 120 VAC	UL, ULC, CSFM, FM, NYC Fire Dept	Same features as above with 48 LED annunciation	336 mA	495 mA	
4010-9404(BA)	Platinum						
4010-9405	Red	French 120 VAC	ULC, CSFM, FM				
4010-9406	Platinum						

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

Addressable Device Load Specifications for Battery Standby

Addressable Channel	Device Load	Supervisory Current	Alarm Current
Main System Supply IDNet+ Channel Output (does not include device LEDs in alarm)	With 248 Devices, Add	199 mA	248 mA
	With 125 Devices, Add	100 mA	125 mA
	With 50 Devices, Add	40 mA	50 mA

Block Space Option Card Selection

Note: Refer to diagram on page 2 for Option Module availability. Supervisory and Alarm current specifications are for determining battery standby requirements.

**Single Block Option Modules, Select Three (3) Maximum if No Dual Block Module is Selected;
Select One (1) Maximum if a Dual Block Module or the Module Bracket is Selected**

Model	Features	Option Block Usage	Supervisory Current	Alarm Current
4010-9912	Serial DACT	1 Block (must mount in block D under main system supply)	30 mA	40 mA
4010-9908	4 Point Aux Relay Module	1 Block	15 mA	60 mA
4010-9916	Voltage Regulator Module, 22.8 to 26.4 VDC (25 VDC nominal); isolated and resettable output; includes earth detection circuit and trouble relay for status monitoring	1 Block	3 A maximum with 2.5 A load	4.9 A maximum with 4 A load
4010-9918	Dual RS-232 Module	1 Block	60 mA	60 mA
4010-9915	BACpac Ethernet Portal Module; requires 4010-9918 RS-232 Module (no address required)	1 Block	123 mA	123 mA
4010-9901	VESDA HLI	1 Block	60 mA	60 mA

Dual Vertical Block (Flat) Modules, Select One, or Two with 4010-9928 Bracket Kit (except for Media Cards)

Model	Features	Option Block Usage	Supervisory Current	Alarm Current
4010-9928	Dual Vertical Block Card Mounting Kit, allows selecting two, dual Vertical Block (flat) modules from the list below	2 Vertical Blocks	NA	NA
4010-9922	Modular Network Interface Card (requires two media modules, see below)	2 Vertical Blocks	30 mA	30 mA
4010-9818	Network Media Card Wired	N/A (mounts to 4010-9922)	55 mA	55 mA
4010-9819	Network Media Card Fiber Optic		25 mA	25 mA
4010-9914	Building Network Interface Card	2 Vertical Blocks	236 mA	236 mA
4010-9923*	SafeLINC Internet Interface	2 Vertical Blocks	115 mA	115 mA
4010-9924*	Modem Physical Bridge Class B (Style 4)	Requires one of the 2 Vertical Block spaces on the 4010-9928 Mounting Kit	193 mA	193 mA
4010-9925*	Modem Physical Bridge Class X (Style 7)		246 mA	246 mA
4010-9926**	TCP/IP Physical Bridge Class B (Style 4)	3 Block "L" Shape, requires one of the 2 Vertical Block spaces on the 4010-9928 Mounting Kit, plus Block D	196 mA	196 mA
4010-9927**	TCP/IP Physical Bridge Class X (Style 7)		236 mA	236 mA

Dual Vertical Block (Slot) Modules, Select One if no Dual Vertical (Flat) Modules from Above are Selected

Model	Features	Option Block Usage	Supervisory Current	Alarm Current
4010-9920	8 Zone Initiating Device Circuit - Class B	2 Vertical Blocks (mother/daughter card)	75 mA	195 mA
4010-9921	8 Zone Initiating Device Circuit - Class A			

*UL, ULC, and CSFM listed.

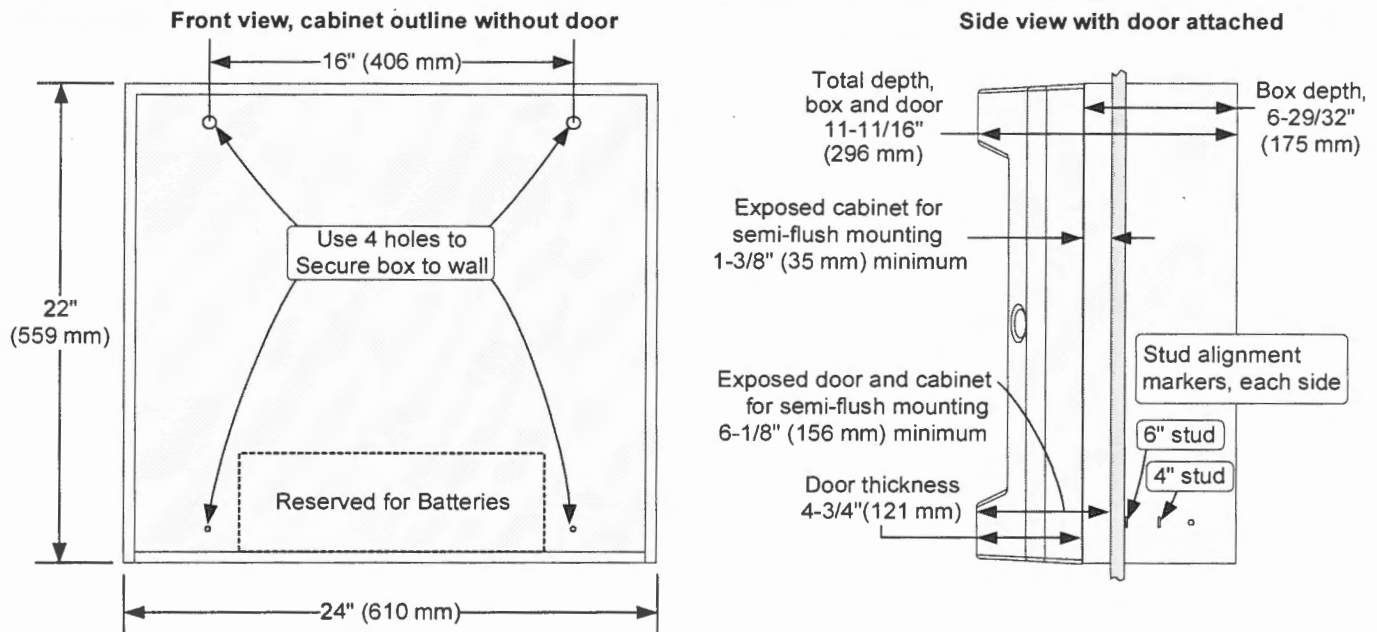
** FM Approved only.

Additional Panel Option Selection (block space is not used)

Model	Features	Supervisory Current	Alarm Current	Mounting Requirements
4010-9909	City Connect Module w/ disconnect switches	20 mA	36 mA	Select one maximum, mounts on Main System Supply
4010-9910	City Connect Module	20 mA	36 mA	
4010-9911	Alarm Relay Module	15 mA	37 mA	
4010-9919*	TrueInsight Remote Gateway	62 mA	62 mA	Mounts on Front Door
4100-5128	Battery Distribution Terminal Block, mounts to side of box, required when battery connection leaves the 4010ES box (also used in the 4100ES fire alarm control panel)			

* Refer to data sheet S4100-0063 and contact your local Simplex product representative for more details.

Cabinet Dimension Reference



Miscellaneous Accessories

LED Kits

Model	Description
4100-9843	8 Yellow LED Kit
4100-9844	8 Green LED Kit
4100-9845	8 Red LED Kit
4100-9855	8 Blue LED Kit

End User Programming Tools

Model	Description
4100-8802	End User Programming Unit Software
4100-0292	Custom Label Editing (USB Dongle)
4100-0295	Port Vectoring Setup and Control (USB Dongle)
4100-0296	User Group / Passcode Editing (USB Dongle)
4100-0298	WalkTest Configuration Setup and Control (USB Dongle)

4010ES Factory Programming

Model	Description
4010-8810	4010ES Factory Programming
4010-0831	Custom Label and Panel Programming

4010ES Card Address Allocation

The 4010ES has a maximum Internal and External Card Address Limit of 20 Card Addresses. Use the Table below to calculate 4010ES card address allocation.

INSTRUCTIONS: Below is a list of 4010ES equipment and the quantity of card addresses they consume

1. For the applicable control panel, write in the Card Address Consumption value in the Card Address Allocation column.
(Note: Only select 1 control panel)
2. For the option cards to be installed on the 4010ES, write in the Card Address Consumption value in the Card Address Allocation column.
3. Total the Card Address Allocation column (total must not exceed 20).

Model	Description	Card Address Consumption	Card Address Allocation	Notes
Control Panels (Select One)				
4010-9401 4010-9402	2x40 Display, Single IDNet Channel, Single Bay Box	2		
4010-9403 4010-9404 4010-9405 4010-9406	2x40 Display, Single IDNet Channel, 48 Pluggable LED Module	3		4010-9405 & 4010-9406 are for Canada
Panel Option Cards (Select As Required)				
4010-9901	Flat VESDA HLI Card	1		
4010-9922	Flat Network Card	1		
4010-9908	4 Point Flat Aux Relay Module	1		
4010-9912	Serial DACT	1		
4010-9923	SafeLINC Internet Interface Card	1		
4010-9914	Building Network Interface Card	1		
4010-9918	Dual RS-232 Module	1		
4010-9920	8 Zone Initiating Device Circuit - Class B	1		
4010-9921	8 Zone Initiating Device Circuit - Class A	1		
Remote Power / Notification (Select As Required)				
4009-9401	TrueAlert Addressable Controller (4009T) 120 VAC	1		
4009-9402CA	TrueAlert Addressable Controller (4009T) w/ Low Battery Cutout	1		for Canada
4009-9813	Transponder Interface Card for 4009 TPS	1		
4100-5120	120 VAC Domestic TrueAlert Power Supply for 4009 TPS	1		
4100-5121	120 VAC Canadian TrueAlert Power Supply for 4009 TPS	1		for Canada
Remote Annunciation (Select As Required)				
4100-9401	Remote InfoAlarm Command Center	Red Cabinet, English	2	
4100-9403		Platinum Cabinet, English	2	
4100-9421		Red Cabinet, French	2	for Canada
4100-9423		Platinum Cabinet, French	2	for Canada
4100-9441		Red Cabinet, with blank inserts for key labels	2	
4100-9443		Platinum Cabinet, with blank inserts for key labels	2	
4606-9102	4010ES RUI LCD Annunciator, English	1		
4606-9102BA	4010ES RUI LCD Annunciator, English	1		
4606-9102CF	4010ES RUI LCD Annunciator, French	1		for Canada
4602-9101	Status Command Unit (SCU) LED Annunciator	1		
4602-9102	Remote Command Unit (RCU) LED Annunciator w/control	1		
4602-9150	Graphic I/O RCU/SCU Assembly for custom annunciator panels	1		
4602-7101	Graphic I/O RCU/SCU Assembly for custom annunciator panels	1		
4602-7001	RCU for cabinet mount	1		
4602-6001	SCU for cabinet mount	1		
4100-7401	24 Point I/O Graphic Module for custom annunciator panels	1		
4100-7402	64/64 LED Switch Controller for custom annunciator panels	1		
4100-7403	32 Point LED Driver Module for custom annunciator panels	1		
4100-7404	32 Point Switch Input Module for custom annunciator panels	1		
Total Card Addresses (Not to Exceed 20)		TOTAL		

General Specifications

AC Input Current	4 A maximum, 120 VAC @ 60 Hz nominal		
Power Supply Output Ratings (nominal 28 VDC on AC, 24 VDC on battery backup)	Total Power Supply Output Rating	Including module currents and auxiliary power outputs; 8 A total for "Special Application" appliances; 4 A total for "Regulated 24 DC" power (see below for details)	Output switches to battery backup during mains AC failure or brownout conditions
	Auxiliary Power Tap	2 A maximum, rated 19.1 to 31.1 VDC	
Special Application Appliances, maximum of 70 appliances per NAC	Simplex 4901, 4903, 4904, and 4906 Series horns, strobes, and combination horn/strobes and speaker/strobes (contact your Simplex product representative for compatible appliances)		
Regulated 24 DC Appliances	Power for other UL listed appliances; use associated external synchronization modules where required		
Battery Charger Rating (sealed lead acid batteries)	Battery capacity range	UL listed for battery charging of 6.2 Ah up to 110 Ah; ULC listed for charging up to 50 Ah batteries; batteries above 33 Ah require separate cabinet	
	Charger characteristics and performance	Temperature compensated, dual rate, recharges depleted batteries within 48 hours per UL Standard 864; to 70% capacity in 12 hours per ULC Standard S527	
Environmental	Operating Temperature	32° to 120°F (0° to 49° C)	
	Operating Humidity	Up to 93% RH, non-condensing @ 90° F (32° C) maximum	
Additional Technical Reference	Installation Instructions	579-989	
	Operating Instructions	579-969	

Additional Compatible Equipment and Reference

Subject	Data Sheet	Subject	Data Sheet
4010ES Agent Release Applications and Accessories	S4010-0005	Network Communications	S4100-0056
Agent Release Accessories	S2080-0010	Multi-Signal Fiber Optics	S4100-0049
Building Network Interface	S4100-0061	4602 Series SCU/RCU	S4602-0001
SafeLINC Internet Interface	S4100-0062	PC Annunciator	S4190-0013
Interface to VESDA Air Aspiration Detection Systems	S4100-0026	TrueAlert Addressable Controller (4009T)	S4009-0003
Serial DACT (SDACT)	S2080-0009	4009 IDNet NAC Extender	S4009-0002
Fire Alarm Network Overview	S4100-0055	4003EC Voice Control Panel	S4003-0002
TrueInsight Remote Service	S4100-0063	120 VAC Desktop Remote Printer	S4190-0011
Addressable Device Compatibility, IDNet Communication Sensors and Devices	S4090-0011	4009 TPS (Remote TrueAlert Power Supply) Reference	S4100-0037
4606-9102 Remote LCD Annunciator	S4606-0002	110 Ah Batteries and Cabinets	S2081-0012
Graphic I/O Modules	S4100-0005	Remote 110 Ah Battery Chargers and Cabinets	S4081-0002
Remote InfoAlarm Command Center	S4010-0008	BACpac Ethernet Portal Module	S4100-0051
PC Annunciator	S4190-0013	Network Physical Bridge	S4100-0057
TCP/IP Physical Bridge	S4100-0029		

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www.simplexgrinnell.com

S4010-0004-5 9/2012

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PORTLAND MAINE

Strengthening a Remarkable City, Building a Community for Life • www.portlandmaine.gov

Receipts Details:

Tender Information: Check , BusinessName: Visa, Check Number: 16040\$200.00

Tender Amount: 200.00

Receipt Header:

Cashier Id: gguertin

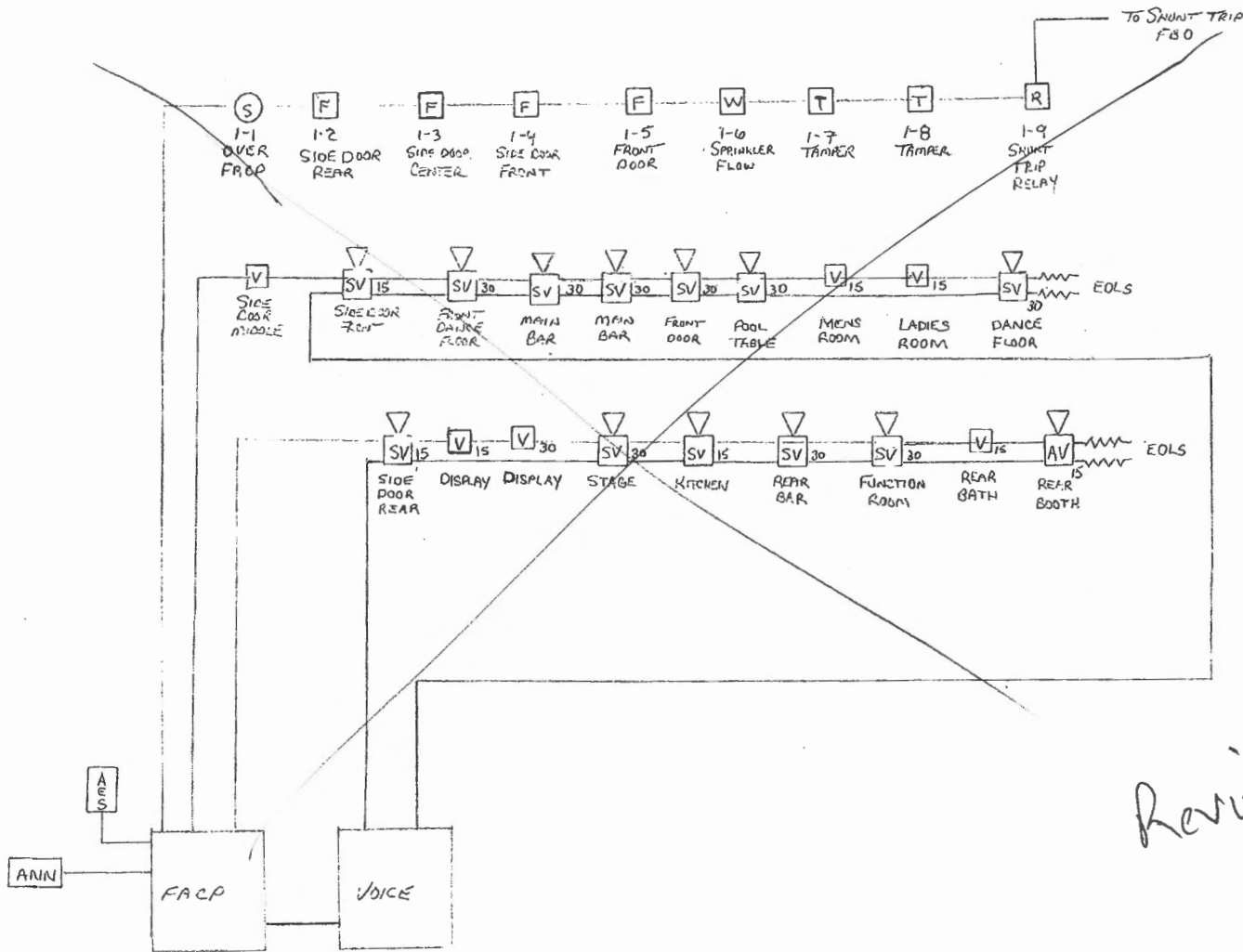
Receipt Date: 11/7/2012

Receipt Number: 50041

Receipt Details:

Referance ID:	8677	Fee Type:	BP-Constr
Receipt Number:	0	Payment Date:	
Transaction Amount:	200.00	Charge Amount:	200.00
Job ID: Job ID: 2012-11-5358-FAFS - Fire Alarm System			
Additional Comments: 92 Portland St.			

Thank You for your Payment!



Revised

BUBBA'S SULKY LOUNGE 11-16-12

BUBBAS SULKY LOUNGE

N.F.P.A. OPERATIONS MATRIX

SYSTEM INPUTS		Control Unit Annunciation																										Required Fire Safety Control							Supplementary															
		A	B	C	D	E	F	G	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	EE	FF	GG																			
1	MANUAL FIRE ALARM BOXES - 1ST FLOOR	X	X							X	X	X	X																																					
2	SMOKE DETECTOR - FIRST FLOOR	X	X							X	X	X	X																																					
3	WATERFLOW - 1ST FLOOR	X	X							X	X	X	X																																					
4	SPRINKLER CONTROL VALVE - 1SR FLOOR			X																																														
5	FIRE ALARM AC POWER FAILURE				X																																													
6	FIRE ALARM SYSTEM LOW BATTERY				X																																													
7	OPEN CIRCUIT				X																																													
8	GROUND FAULT				X																																													
9	NOTIFICATION APPLIANCE CIRCUIT SHORT				X																																													

Revised

Master Box Approval

Applicant: Robert Larkin

Emergency Contact: Robert Larkin

App Phone #: 831-1171

Emergency phone #: 831-1171

Building Name: Bubbas Sulky Lounge

Date of Application: 10-24-12

Building Address: 92 Portland St

Billing Address: 2 Cottage Rd. South Portland

ME, 04106

Occupancy: Restaurant < 300
Assembly OL>300, 20 unit apartment building, etc.

Comments: _____

Applicant completes above and submits with Fire Alarm Permit

1

FIRE PREVENTION: Approved Denied

____/____/____
Date

Fire Prevention Officer

Zone 1: _____ Zone 2: City disconnect Zone 3: _____

Zone 4: _____ Zone 5: _____ Zone 6: _____

Zone 7: _____ Zone 8: AES Tamper switch

Modify City Box response to alarm sounding in CAD

2

FIRE ALARM: Box #: _____

ELECTRICAL DIVISION: Approved Denied

Box Type: AES Radio Box / _____
New Other

3

Test Date: ____/____/____ In Service Date: 10/24/12 _____
Fire Alarm Technician

AES

Circuit if applicable: _____

4

FIRE ALARM: Same Running Assignment As Box: _____

Notifications: All Stations Run Books Digitizer Computer Cad Box Test

South Portland _____ Other _____ Dispatcher

5

BILLING: Entered _____
Financial Officer

SimplexGrinnell Material List (THIS IS NOT A PRICE QUOTATION)

TO:
 Simplex Financial Services
 50 Technology Dr
 Attn: Dyan Ricciutti
 WESTMINSTER, MA 01441

Project: Bubba's Sulky Lounge Fire 9-12
 Customer Reference:
 SimplexGrinnell Reference: 966801301
 Date: 10/25/2012
 Page 1 of 2

QUANTITY	MODEL NUMBER	DESCRIPTION
Bubba's Sulky Lounge Fire 9-12		
Bubba's Sulky Lounge Fire 9-12		
1	4010-9402	4010ES FACP 120V PLATINUM
1	4010-9912	SERIAL DACT
1	4010-9908	4 POINT AUX RELAY MODULE
1	ETHEDROP	ETHERNET-NETWORK COMPATIBLE
1	4003-9301	MULTIFUNC COMM SYST BEIGE
1	SSU00672	CAB DOC STORAGE 12X13X2D RED
1	DPSVC	DP SVCS (PERMITS/FEES/BONDS)
BUBBAS SULKY LOUNGE AES		
1	7788-F	8ZONES W/2.5DB RED
1	BD7-12	12V 7AH SEALED LEAD ACID
1	1640	UL TRNSFR FOR 7750-F SUBSCRIBE
BUBBAS PERIPHERALS		
6	4090-9001	SUPERVISED IAM
1	4090-9002	RELAY IAM
1	4098-9714	PHOTO SENSOR
1	4098-9792	SENSOR BASE
4	4099-9003	MANUAL STATION - DOUBLE ACTION
4	2975-9178	BACKBOX MANUAL STATION
1	4606-9102	REMOTE LCD ANNUN FOR 4010ES
1	2975-9206	6 GANG BOX, IVORY, 5744-6
NOTIFICATION DEVICES		
10	4906-9154	SPKR/STROBE MC WHITE CEILING
3	4906-9151	SPKR/STROBE MC RED
7	4906-9101	STROBE MC RED
BATTERIES		
2	2081-9274	BATTERY 10AH
2	2081-9275	BATTERY 18AH
KNOX BOX		
1	KNOX 4101	KNOX BOX 4101
1	KNOX SHP	SHIPPING

SimplexGrinnell Material List (THIS IS NOT A PRICE QUOTATION)

QUANTITY	MODEL NUMBER	DESCRIPTION
	Technical Services - Bubba's Sulky Lounge Fire 9-12	
8	TECH LAB	TECHNICAL SERVICE
8	COMM LAB	Commissioning Labor
	Professional Services - Bubba's Sulky Lounge Fire 9-12	
4	CAD LAB	CAD LABOR
4	PM LAB	PROJECT/CONSTRUCTION MGMT
	WIRING AND INSTALLATION	
	WIRING AND INSTALLATION	
1	DPSUB	WIRING AND INSTALLATION

Comments

This Quote includes Wiring, Installation, Programming and Testing.

This quote includes a relay to activate a Shunt Trip Breaker, but does not include a Shunt Trip Breaker or any additional wiring to connect one.

This quote does not include Central Station Monitoring, which will be quoted separately, if required.

This quote is subject to the approval of the Portland Fire Department.
Any additional devices that may be required would be at an additional cost.

Note: This quote now includes a Knox Box as it is required under current City of Portland Fire Codes.

This quote is valid for 30 days.

Bubba's Sulky Lounge 4010ES 4010es FACP								
Module	Qty	Description		Standby Current	Total Standby	Alarm Current	Total Alarm	
Panel Equipment								
4010-9402	1	FACP, 248PT IDNET, 1 BAY, 120V, PLATINUM *		0.3160	0.3160	0.4300	0.4300	
4010-9912	1	SERIAL DACT		0.0300	0.0300	0.0400	0.0400	
4010-9908	1	4 POINT FLAT AUX RELAY MODULE		0.0150	0.0150	0.0600	0.0600	
Panel Totals					0.3610		0.5300	
IDNet Addressable Devices (SLC)								
4099-9003	4	IDNET DOUBLE ACTION PULL STATION *		0.0000	0.0000	0.0000	0.0000	
4090-9001	6	IDNET SUPERVISED IAM *		0.0000	0.0000	0.0000	0.0000	
4090-9002	1	IDNET RELAY IAM *		0.0000	0.0000	0.0000	0.0000	
4098-9714	1	TRUEALARM PHOTO SMOKE SENSOR		0.0000	0.0000	0.0000	0.0000	
4098-9792	1	TRUEALARM SENSOR BASE *		0.0000	0.0000	0.0000	0.0000	
Miscellaneous Peripheral Devices That May Require System Power								
4606-9102	1	LCD ANNUN FOR 4010ES FACP (RUI)		0.0650	0.0650	0.1400	0.1400	
Notification Appliances								
4906-9101	7	V/O MC NON-ADDRESS, RED, WALL	15	0.0000	0.0000	0.0600	0.4200	
4906-9151	3	S/V M-C NON-ADDRESS, RED, WALL	15	0.0000	0.0000	0.0600	0.1800	
4906-9154	10	S/V M-C NON-ADDRESS, WHT, CEIL	15	0.0000	0.0000	0.0750	0.7500	
Peripheral Totals					0.0650		1.4900	
RUI Totals			0		0.0000		0.0000	
Address Totals			12 Addresses		0.0096		0.0120	
* Additional Current included under "Device Addresses Used" (See below under "Additional Current Draws:")					Total Standby	0.4356	Total Alarm	2.0320
1. 2-wire detector alarm current is included in the alarm current of the Initiating Device Circuit. 2. Backup Amplifier assumes Main Amplifier alarm current on failure.								
Battery Set #1 (Cabinet/Charger #1)				Standby Current	Standby Total	Alarm Current	Alarm Total	
Select ALL Power Supplies on this battery set:								
4010es					0.4260		0.6700	
Sub Total					0.4260		0.6700	
Additional Current Draws:								
RUI Connected Peripheral Devices 0				x 0.0035	= 0.0000	x 0.0035	= 0.0000	
MAPNET/IDNet Device Addresses ordered / used 0				x 0.000800	= 0.0000	x 0.001000	= 0.0000	
Sub Total					0.4260		0.6700	
Spare addressable point capacity 0% 0				x 0.0008	= 0.0000	x 0.001	= 0.0000	
Total					0.4260		0.6700	
Standby Time = 24 Hrs				x 0.4260	= 10.2240	Standby Ah		
Alarm Time = 5 Min				0.08333 x 0.67	= 0.0558	Alarm Ah		
					10.2798			
Additional Spare Capacity = 0%					+ 0.0000			
					10.2798			
Battery Discharge Factor = 20%					* 2.0560			
Minimum Battery Required 2081-9275 18AH (2x)					12.3358			
Battery Supplied 2081-9275 18AH (2x)								



UL, ULC, CSFM Listed; FM Approved*

4010ES Fire Control Panels

Addressable Fire Detection and Control
Basic Panel Modules and Accessories

Features

Basic System includes:

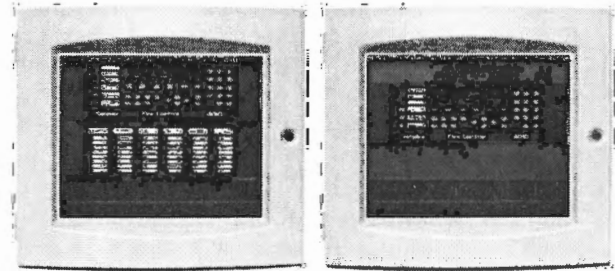
- Capacity for up to 248 addressable devices, up to 127 VESDA SLI points, up to 2000 points of Annunciation and up to 20 internal and external card addresses
- Color-coded operator interface with membrane keypad includes 2 x 40 Super-twist LCD display, 3 programmable control keys and 6 programmable LEDs
- CPU assembly includes dedicated compact flash memory for on-site system information storage and convenient Ethernet service port access
- 8 Amp power supply with up to 2 Amps of Auxiliary power and battery charger capacity for up to 110 Ah batteries (UL) or up to 50 Ah batteries (ULC) (33 Ah max in control panel cabinet)
- 4 on-board Class A or B 3 Amp NACs and one programmable auxiliary relay output rated for 2 Amps @ 32 VDC
- Class A or B Two-loop Isolated IDNet™ Communications (IDNet+) supports up to 248 addressable and analog sensing devices on non-twisted, non-shielded wiring
- Remote annunciator module support via RUI (remote unit interface) communications port, supports either Class B (Style 4) or X (Style 7) Pathway operation
- 48 LED panel mount annunciation provides 40 Red and 8 Yellow pluggable LEDs (select models, meets ULC requirements), optional LED kits are available for custom LED configurations

Optional MSS and Door Mount Modules include:

- City Connect (with or without disconnect switches), Alarm Relay Module, TrueInsight Remote Gateway

Optional Block Space Modules include:

- Fire Alarm Network Interface Card for 4120/4100 Peer-to-Peer network communications, supports either Class B or X (Style 7) Pathway operation
- Ethernet connectivity options include Building Network Interface Module (BNIC) and SafeLINC Internet Interface
- Dual RS-232 Module (for printer, PC annunciator or third party interface)
- VESDA® Air Aspiration High Level Interface
- Serial DACT
- 8 Zone IDC Modules Class A or B
- 4 Point Auxiliary Relay Module



4010ES Fire Alarm Control Panel
with or without LED Annunciation

Compatible with Simplex® remotely located:

- 4003EC Small Voice Panels
- 4009 IDNet NAC Extenders
- 4009 TrueAlert Addressable Controllers and TrueAlert Power Supplies (TPS)
- 4081 110Ah Battery Chargers
- 4100-7400 Series Graphic Annunciators
- 4190 PC Annunciator
- 4190 Fiber Modems and Physical Bridges
- 4606-9102 Remote LCD Annunciator and 4100-9400 Series Remote InfoAlarm Command Centers
- IP communicator compatibility

4010ES Agency Listing:

- UL Std. 864, Fire Detection and Control (UOJZ), and Smoke Control Service (UUKL), and Releasing Service (SYZV)
- UL Std. 2017, Process Management Equipment (QVAX)
- UL Std. 1076, Proprietary Alarm Units-Burglar (APOU)
- UL Std. 1730, Smoke Detector Monitor (UULH)
- ULC Std. S527-99, Fire Detection and Control (UOJZC)
- ULC Std. S559-04, Supervising Station (DAYRC)

* See pages 5 and 6 for additional listing information. This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7165-0026:0369 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. 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 SimplexGrinnell LP, Westminster.

Introduction

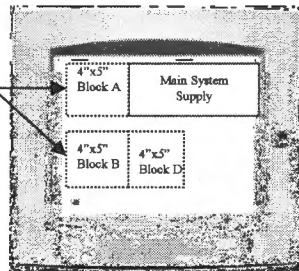
4010ES Series Fire Detection and Control Panels provide leading edge installation, operator, and service features for customer applications in the mid-range addressable fire alarm systems market. An on-board Ethernet port provides fast external system communications to expedite installation and service activity. Dedicated compact flash memory archiving provides secure on-site system information storage of electronic job configuration files to meet NFPA 72® (*National Fire Alarm and Signaling Code*®) requirements.

Modular design. A variety of functional modules are available to meet specific system requirements. Selections allow panels to be configured for either Stand-Alone or Networked fire control operation.

Panel Hardware

The Master Controller and Main System Supply are mounted in the upper section of the 4100ES cabinet.

3 available
4"x5" block spaces for
additional option cards



Panel Hardware (continued)

4010ES Block Space Option Cards mount to the left of the 4010ES Main System Supply. There are 3 available 4" x 5" blocks for mounting 4010ES hardware options.

Other 4010ES Options: The 4010ES City Connect module or the optional Alarm Relay module mount directly to the Main System Supply. These options are mutually exclusive.

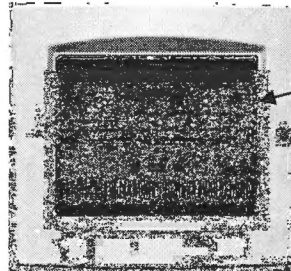
Network Media modules mount directly to the 4010ES Network Interface Card.

The TrueInsight Remote Gateway mounts on the back side of the 4010ES User Interface Panel.

The Battery Compartment located in the bottom of the 4010ES cabinet accepts two batteries, up to 33 Ah, without interfering with expansion module space.

The illustrations below identify mounting locations optional 4010ES modules.

TrueInsight
Remote Gateway
mounts on the
back of the
4010ES User
Interface Panel



Mechanical Description

- Mounting box provides convenient stud markers for drywall thickness and nail-hole knockouts for quicker mounting
- Smooth box surfaces are provided for locally cutting conduit entrance holes exactly where required
- The hinged User Interface panel easily opens for internal access
- Modules are power-limited (except as noted, such as relay modules)
- Doors include tempered glass inserts, boxes and doors are available in platinum or red
- Box and door/retainer assemblies are included with Basic Panel assemblies

Software Feature Summary

- TrueAlarm individual analog sensing with front panel information and selection access
- "Dirty" TrueAlarm sensor maintenance alerts, service and status reports including "almost dirty"
- TrueAlarm magnet test indication appears as distinct "test abnormal" message on display when in test mode
- TrueAlarm sensor peak value performance report
- "**Install Mode**" allows grouping of multiple troubles for uninstalled modules and devices into a single trouble condition (typical with future phased expansion); with future equipment and devices grouped into a single trouble, operators can more clearly identify events from the commissioned and occupied areas
- Module level ground fault searching assists installation and service by locating and isolating modules with grounded wiring
- "**Recurring Trouble Filtering**" allows the panel to recognize, process, and log recurring intermittent troubles (such as external wiring ground faults), but only sends a single outbound system trouble to avoid nuisance communications
- WALKTEST™ silent or audible system test performs an automatic self-resetting test cycle

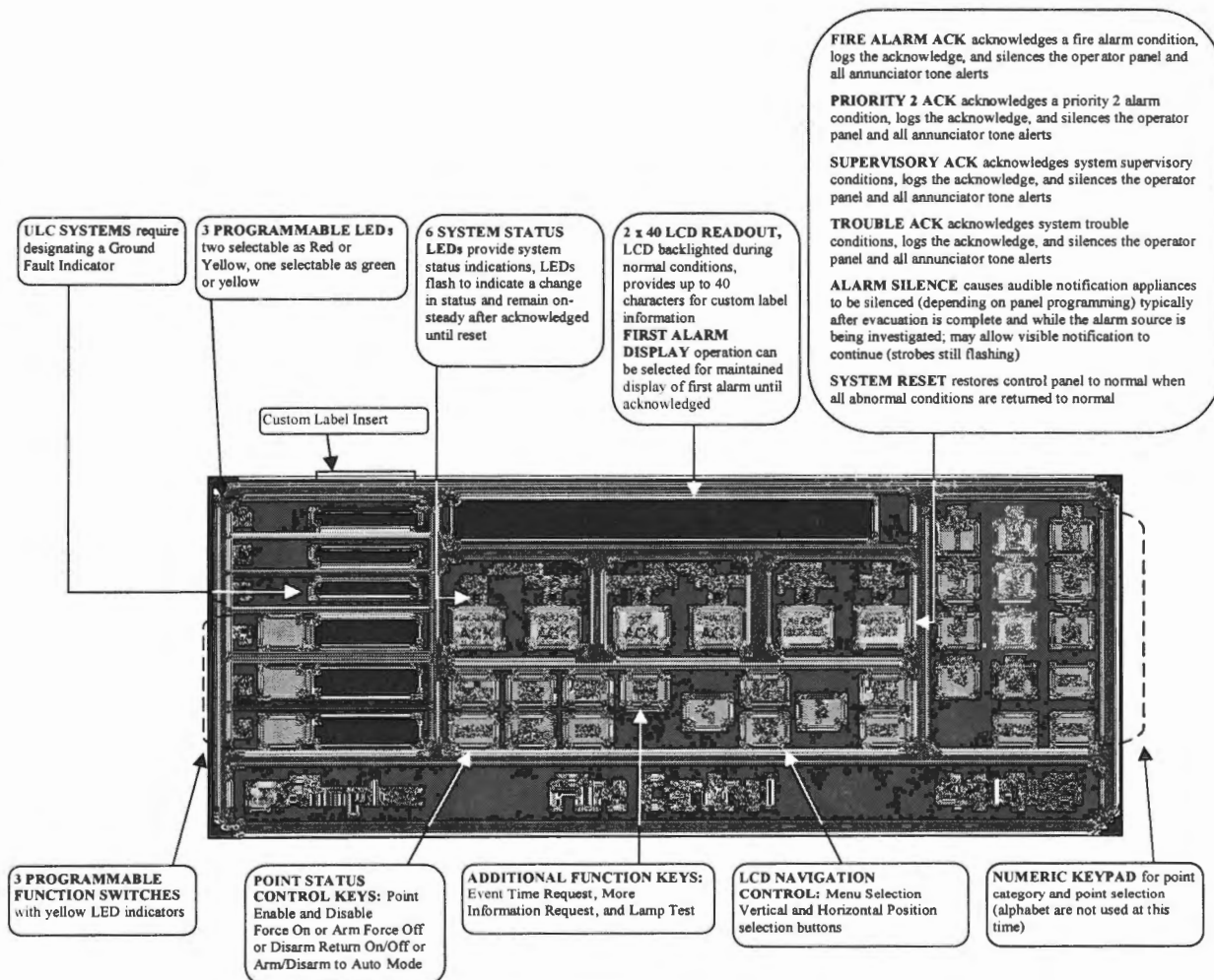
Operator Interface Features

- Convenient and extensive operator information is provided using a logical, menu-driven display
- Multiple automatic and manual diagnostics for maintenance reduction
- Convenient PC programmer label editing
- Password access control
- Alarm and Trouble History Logs (up to 2000 total events) are available for viewing from the LCD, or capable of being printed to a connected printer, or downloaded to a service computer

Convenient Status Information. With the locking door closed, the glass window allows viewing of the display, status LEDs, and available operator switches. Features include a two-line by 40-character, wide viewing angle (super-twist) LCD with status LEDs and switches as shown in the illustration below.

LED indicators describe the general category of activity being displayed with the LCD providing more detail. For the authorized user, unlocking the door provides access to the control switches and allows further inquiry by scrolling the display for additional detail.

The following illustration identifies the primary functions of the operator interface.



Compatible Peripheral Devices

The 4010ES is compatible with an extensive list of remote peripheral devices including printers, PC Annunciators and both conventional and addressable devices including TrueAlarm analog sensors.

Addressable Device Control

Overview. The 4010ES provides standard addressable device communications for IDNet compatible devices. Using a two wire communications circuit, individual devices such as manual fire alarm stations, TrueAlarm sensors, conventional IDC zones, and sprinkler waterflow switches can be interfaced to the addressable controller to communicate their identity and status.

Addressability allows the location and condition of the connected device to be displayed on the operator interface LCD and on remote system annunciators. Additionally, control circuits (fans, dampers, etc.) may be individually controlled and monitored with addressable devices.

Addressable Operation. Each addressable device on the communication channel is continuously interrogated for status condition such as: normal, off-normal, alarm, supervisory, or trouble. Both Class B and Class A pathway operation are available. Sophisticated poll and response communication techniques ensure supervision integrity and allow for "T-tapping" of the circuit for Class B operation. Devices with LEDs pulse the LED to indicate receipt of a communications poll and can be turned on steady from the panel.

IDNet+ Channel Capacity. The Main System Supply provides an IDNet+ signaling line circuit (SLC) that supports up to 248 addressable monitor and control devices intermixed on the same pair of wires.

IDNet+ Communications wiring specifications. IDNet+ circuits may be run on NEC 760 untwisted pair, twisted pair, or shielded twisted pair conductors.

IDNet+ Wiring Specifications

Size	18 AWG (0.82 mm ²)	
Type	NEC 760 Wire (untwisted, twisted, or shielded twisted pair)	
Farthest Distance from Control Panel	126-248	Up to 2500 feet (762 m)
per Device load	up to 125	Up to 4000 ft (1219 m)
Total Wire Length Allowed Class A or Class B, including "T-taps" for Class B wiring (total for both isolated circuits combined)	Up to 12,500 ft (3.8 km) Note: The sum of line-to-line capacitance plus the capacitance of either line-to-shield (if shield is present) = 0.6 µF maximum (total for both isolated circuits combined)	

* Other circuits may require shielded wiring. Review your system with your local Simplex product supplier.

TrueAlarm System Operation

Addressable device communications include operation of TrueAlarm smoke and temperature sensors. Smoke sensors transmit an output value based on their smoke chamber condition and the CPU maintains a current value, peak value, and an average value for each sensor. Status is determined by comparing the current sensor

value to its average value. Tracking this average value as a continuously shifting reference point filters out environmental factors that cause shifts in sensitivity.

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

CO sensor bases combine an electrolytic CO sensing module with a TrueAlarm analog sensor to provide a single multiple sensing assembly using one system address. The CO sensor can be enabled/disabled, used in LED/Switch modes and custom control, and can be made public for communication across a fire alarm Network. (refer to data sheet S4098-0041 for details)

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

TrueSense® Early Fire Detection. Multi-sensor 4098-9754 provides photoelectric and heat sensor data using a single 4010ES IDNet address. The panel evaluates smoke activity, heat activity, *and their combination*, to provide TrueSense early detection. For more details on this operation, refer to data sheet S4098-0024.

Diagnostics and Default Device Type

Sensor Status. TrueAlarm operation allows the control panel to automatically indicate when a sensor is almost dirty, dirty, and excessively dirty. The NFPA 72 requirement for a test of the sensitivity range of the sensors is fulfilled by the ability of TrueAlarm operation to maintain the sensitivity level of each sensor. CO Sensors track their 5 year active life status providing indicators to assist with service planning. Indicators occur at: 1 year, 6 months, and when end of life is reached.

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

Master Controller (CPU)

- The 4010ES Master Controller includes dedicated 2GB compact flash Mass Storage memory for on-site system information storage and convenient Ethernet service port access
- Convenient front panel accessed Ethernet port for quick and easy *download* of site-specific programming
- *AND*, firmware enhancements are made via software downloads to the on-board flash memory
- Every downloaded job is automatically stored to Compact flash without overwriting earlier versions providing a means for recovering previous configurations
- Downtime is reduced because the system stays running during download
- Modifications can be *uploaded* as well as downloaded for greater service flexibility

Master Controller (CPU) continued

- Mass Storage allows job specific files to be store in the control panel such as test and inspection reports, record drawings, specifications, and more...
- Ethernet connectivity options include Building Network Interface Module (BNIC) and SafeLINC Internet Interface
- RUI (remote unit interface) communications port supports either Class B or X Pathway operation for remote annunciation equipment and for 4009 TrueAlert Controllers and TrueAlert Power Supplies

Main System Supply

- The Main System Supply provides the power source and the Input/Output connections for the basic 4010ES panel. The main features are listed in the Basic Panel description below.

Basic Panel Description

All 4010ES panels include an Operator Interface, Master Controller with 2GB Compact Flash, Class A or B Two-loop Isolated IDNet™ Communications (IDNet+) supports up to 248 addressable and analog sensing devices, 8 Amp power supply with up to 2 Amps of auxiliary power, 110 Ah (UL) / 50 Ah (ULC) battery charger (33 Ah max control panel cabinet), 4 Class A or B NACs rated @ 3 Amps each, 1 programmable auxiliary relay rated for 2 Amps @ 32 VDC, 1 RUI Class B or X communications port for remote annunciation devices, cabinet and door . Supports up to 20 internal and external card addresses. Other standard options may be provided depending on model (see basic panel model selection below for additional details on specific models).

Basic Panel Model Selection

Note: Supervisory and Alarm current specifications are for determining battery standby requirements . Current specifications consider no load on addressable channels (see addressable device load specifications for device load battery standby), RUI channel active, and 24 of 48 LEDs active (for 48 LED models)

Model	Features	Panel Color	Language and AC Voltage	Listing	Available Option Blocks	Supv.	Alarm
4010-9401	Basic panel with 2x40 LCD Operator Interface and (1) Two-loop Isolated IDNet+ Channel Class A or B with support for up to 248 addressable analog devices	Red	English 120 V	UL, FM	3 4"x5" blocks	316 mA	390 mA
4010-9402		Platinum					
4010-9403	Same as above with 48 LED annunciation	Red	English 120 V	UL, ULC, FM		336 mA	455 mA
4010-9404		Platinum					
4010-9405		Red	French 120 V	ULC, FM			
4010-9406		Platinum					

Addressable Device Load Specifications for Battery Standby

Addressable Channel	Device Load	Supv.	Alarm
Main System Supply IDNet+	With 248 Devices Add	199 mA	288 mA
	With 125 Devices Add	100 mA	165 mA
	With 50 Devices Add	40 mA	90 mA

Block Space Option Card Selection

Note: Supervisory and Alarm current specifications consider no load on addressable channels (see addressable device load specifications for device load battery standby)

Model	Features	Option Block Usage	Supv.	Alarm
4010-9901	VESDA HLI	1 Block	60 mA	60 mA
4010-9902	Modular Network Interface Card (requires two media modules below)	2 Vertical Blocks	30 mA	30 mA
4010-9818	- Network Media Card Wired	N/A (mounts to 4010-9902)	55 mA	55 mA
4010-9819	- Network Media Card Fiber Optic		25 mA	25 mA
4010-9908	4 Point Aux Relay Module	1 Block	15 mA	60 mA
4010-9912	Serial DACT	1 Block (must mount in block D under main system supply)	30 mA	40 mA
4010-9913*	SafeLINC	2 Vertical Blocks	115 mA	115 mA
4010-9914	Building Network Interface Card	2 Vertical Blocks	236 mA	236 mA
4010-9918	Dual RS232 Module	1 Block	60 mA	60 mA
4010-9920	8 Zone Initiating Device Circuit - Class B	2 Vertical Blocks (must mount top bay, left most blocks A & B)	75 mA	195 mA
4010-9921	8 Zone Initiating Device Circuit - Class A			

* UL/ULC Listed only

Additional Panel Option Selection (block space not used)

Model	Features	Mounting Requirements	Supv.	Alarm
4010-9909	City Connect Module w/ disconnect switches	Mounts on MSS, Mutually exclusive with 4010-9910 and 4010-9911	20 mA	36 mA
4010-9910	City Connect Module	Mounts on MSS, Mutually exclusive with 4010-9909 and 4010-9911	20 mA	36 mA
4010-9911	Alarm Relay Module	Mounts on MSS, Mutually exclusive with 4010-9909 and 4010-9910	15 mA	37 mA
N/A*	TrueInsight Remote Gateway	N/A, Mounts on Front Door	62 mA	62 mA

* Contact your local SimplexGrinnell office for more details

General Specifications

AC Input Specifications

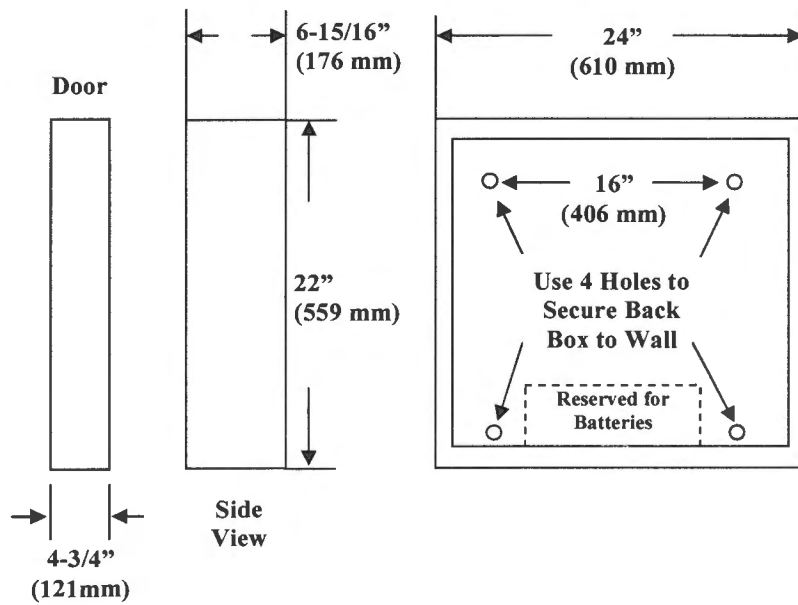
120 VAC Fire Alarm Control Panels

4 A Maximum, 120 VAC @ 60 Hz nominal

Cabinet Specifications

Cabinet	Height	Width	Depth	Depth with Door
1 Bay Box	22 in. (559 mm)	24 in. (610 mm)	6-15/16 in. (176 mm)	11-11/16 in. (297 mm)

One-Bay Back Box and Door



Miscellaneous Accessories

PID	Description
4100-9843	8 Yellow LED Kit
4100-9844	8 Green LED Kit
4100-9845	8 Red LED Kit
4100-9855	8 Blue LED Kit

End user Programming Tools

PID	Description
4100-8802	End User Programming Unit Software
4100-0292	Custom Label Editing (USB Dongle)
4100-0295	Port Vectoring Setup and Control (USB Dongle)
4100-0296	User Group / Passcode Editing (USB Dongle)
4100-0298	WalkTest Configuration Setup and Control (USB Dongle)

4010ES Factory Programming

PID	Description
4010-8810	4010ES Factory Programming
4010-0831	Custom Label and Panel Programming

4010ES Card Address Allocation

The 4010ES has a maximum Internal and External Card Address Limit of 20 Card Addresses. Use the Table below to calculate 4010ES card address allocation.

INSTRUCTIONS: Below is a list of 4010ES equipment and the quantity of card addresses they consume

- 1) For the applicable control panel, write in the Card Address Consumption value in the Card Address Allocation column (note: only select 1 control panel)
- 2) For the option cards to be installed on the 4010ES, write in the Card Address Consumption value in the Card Address Allocation column
- 3) Total the Card Address Allocation column (total must not exceed 20)

PID	Description	Card Addresses Consumption	Card Address Allocation	Notes
Control Panels (Select One)				
4010-9401, -9402, -9501, or -9502	2x40 Display, Single IDNet Channel, Single Bay Box	2		
4010-9403, -9404, -9405, or -9406	2x40 Display, Single IDNet Channel, 48 Pluggable LED Module	3		4010-9405 & -9406 Canada only
Panel Option Cards (Select As Required)				
4010-9901	Flat Vesda HLI	1		
4010-9902	Flat Network Card	1		
4010-9908	4 Point Flat Aux Relay Module	1		
4010-9912	Serial DACT	1		
4010-9913	SafeLinc	1		
4010-9914	Building Network Interface Card	1		
4010-9918	Dual RS232 Module	1		
4010-9920	8 Zone Initiating Device Circuit - Class B	1		
4010-9921	8 Zone Initiating Device Circuit - Class A	1		
Remote Power / Notification (Select As Required)				
4009-9401	4009T TrueAlert Controller 120V	1		
4009-9402CA	4009T TrueAlert Controller 120V w/ Low Battery Cutout	1		Canada Only
4009-9813	Transponder Interface Card	1		
4100-5120	120V Domestic TrueAlert Power Supply	1		
4100-5121	120V Canadian TrueAlert Power Supply	1		Canada Only
Remote Annunciation (Select As Required)				
4100-9401	Remote Unit Interface Panel w/FUI – Red – Domestic & Canadian English	2		
4100-9403	Remote Unit Interface Panel w/FUI – Platinum – Domestic & Canadian English	2		
4100-9421	Remote Unit Interface Panel w/FUI – Red – Canadian French	2		
4100-9423	Remote Unit Interface Panel w/FUI – Platinum – Canadian French	2		Canada Only
4100-9441	Remote Unit Interface Panel w/FUI – Red – International	2		
4100-9443	Remote Unit Interface Panel w/FUI – Platinum – International	2		
4606-9102	4010ES RUI LCD Annunciator (English)	1		
4606-9102BA	4010ES RUI LCD Annunciator (English)	1		
4606-9102CF	4010ES RUI LCD Annunciator (French)	1		Canada Only
4100-7401	24 Point I/O Graphic Module (requires mounting cabinet)	1		
4100-7402	64 Switch and 64 LED Driver Module with 32 on-board LED drivers (requires mounting cabinet)	1		
Total Card Addresses - Not to Exceed 20		TOTAL		

Additional Data Sheet References for 4010ES Compatible Equipment

4010ES Releasing Panels and Accessories, 4606 LCD Annun, Remote InfoAlarm Displays, Remote Graphic Annunciators, 110Ah Batt Chargers and Cabinets, BNIC, SafeLINC, SDACT, IDNet+, NIC, Fiber Modem Expansion Cabinets, 4009 IDNet, 4009T and TPS, Printer, PC Annunciator, IDNet Sensors and Devices

Agent Release Applications	S4010-0005			4009 TrueAlert Controller & PS	S4009-0003
Building Network Interface	S4100-0061	Addr. Device Compatibility	S4090-0011	4009 IDNet NAC Extender	S4009-0002
SafeLINC Internet Interface	S4100-0028	Remote LCD Annunciator	S4606-0002	4003EC Voice Control Panel	S4003-0002
		Graphic I/O Modules	S4100-0005	Remote Battery Charger	S4081-0002
VESDA HLI	S4100-0026	Remote InfoAlarm Cmd Ctr	S4010-0008	Remote Printer	S4190-0011
SDACT	S2080-0009	Network Communications	S4100-0056	PC Annunciator	S4190-0013
Fire Alarm Network Overview	S4100-0055			Multi-Signal Fiber Optics	S4100-0049

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Panel Mounted Digital Alarm Communicating Transmitters (DACT) with Serial Communications

Features

UL 864 listed per NFPA 72® for Central Station Service:

- Listed to UL Standard 1459
- Registered to FCC Part 68

Dual telephone line interface

Mounts internally to Simplex® models:

- 4010, 4010ES, 4100U and 4100ES
- Legacy models 4020, 4100, and 4120, with software revision 8 or higher
- For Network applications, select a 4100ES node for Network DACT status reporting when available

Provides specific building event information:

- Communicates point status changes, phone line status, and other off-normal information
- 4010, 4010ES, 4100U and 4100ES modules provide *point information*
- 4020/4100/4120 modules provide *event status information*
- Reports up to ten events per phone call

Provides programmable control for:

- Automatic 24 hour test
- Power fail report delay

SDACT status indicators include:

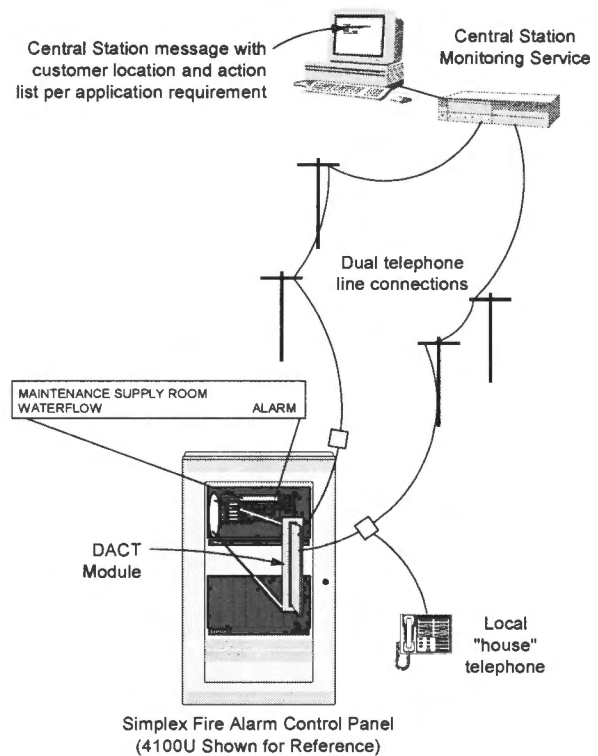
- Panel LCD indicates off-normal status
- Module LEDs provide service diagnostics

Description

Serial DACT. Simplex serial digital alarm communicating transmitter (DACT) modules monitor the status of the host fire alarm control panel and its connections to the Central Station monitoring location. When status changes require information to be reported, the DACT provides detailed messages that can assist the Central Station in accurately implementing the required response. Typical information reports include alarms, troubles, and supervisory conditions. Model series 4100ES, 4100U, 4010ES and 4010 provide specific point information. Model series 4020, 4100, and 4120 provide panel level information.

DACT modules directly communicates with the fire alarm control panel CPU and are custom programmed for the specific requirements of the Central Station and the connected fire alarm control panel.

* Refer to individual fire alarm control panel data sheets and receiving DACR product information for listing status. Contact your local Simplex® product supplier for additional information. Listings and approvals under Simplex Time Recorder Co. are the property of SimplexGrinnell LP, Westminster.



SDACT Application Diagram

Specifications

Model Identification	4010-9816 (4010); 4010-9912 (4010ES) 4100-6052 (4100U or 4100ES) 4020-0155; 4100-0155; 4120-0155
Voltage	18-32 VDC, from panel
Standby Current	30 mA
Alarm Current	40 mA, when communicating
4010/4010ES and 4100U/4100ES Point Capacity	4000 points maximum Note: Information received is determined by capability of the digital alarm communicating receiver (DACR) and communication format used.
4100U/4100ES DACT Capacity	Up to 2, 4100-6052 DACTs can be selected
Operating Temperature	32° F to 120° F (0° C to 49° C)
Operating Humidity	10-90% RH @ 85° F (30° C)
Telephone Requirements	
FCC Registration	5QWUSA-30334-AL-E
Jack	RJ31X (2 required)
Connection Type	Loop start, pulse or tone dialing
Compatible DACT Cables with Plug (two required)	
2080-9047	14 ft long (4.3 m); included with 4010-9816 and 4100-6052; terminated with RJ-45 plug to spade lugs

Available Reporting Formats

Contact ID (CID). CID is the preferred format for SDACT operation. It provides a four digit account code followed by a three digit event code, a two (hex) digit group number, and a three (hex) digit contact number, all of which are used to encode specific point identification.

3/1 Pulse. A three digit account code followed by a one digit reporting code. Transmissions are sent as a double round at a rate of 20 PPS (pulses per second). Reporting codes are programmable.

4/2 Pulse. Similar to 3/1 except for a four digit account code and a two digit reporting code. Transmission is sent as a double round at 20 PPS. Report codes are programmable.

BFSK. Three digits of account code and two digits of reporting code in a single transmission of constant tones. The format has built-in error checking so that a double round is not required. Reporting codes are fixed.

SIA. Security Industry Association (SIA) Digital Communication Standard. The SDACT provides level 1 compatibility which includes tonal acknowledge, basic reports only, and fixed reporting codes.

SDACT DACR Compatibility Reference

Available Communication Format (✓ = Compatible)

Receiver/Service	ADEMCO Contact ID (Preferred)	3/1 Standard 1800/2300 Hz (10 and 20 PPS)	3/1 Standard 1900/1400 Hz (10 and 20 PPS)	4/2 Standard 1800/2300 Hz (10 and 20 PPS)	4/2 Standard 1900/1400 Hz (10 and 20 PPS)	Radionics BFSK 1800/2300 Hz	Radionics BFSK 1900/1400 Hz	SIA
Osborne/Hoffman QuickAlert Model II	✓	✓	✓	✓	✓	✓	✓	✓
ADEMCO 685, with 685-8 Line Card	✓	✓	✓	✓	✓	✓	✓	—
Silent Knight 9000	—	✓ With 9032 line card	✓ With 9032 line card	✓ With 9032 line card	✓ With 9032 line card	✓ With 9032 line card	✓ With 9032 line card	✓ With 9004 line card
FBI CP220FB, with Rec-11 Line Card	✓	✓	✓	✓	✓	✓	✓	—
Bosh Radionics D6500	—	✓	✓	✓	✓	✓	✓	—
Bosch Radionics D6600	✓	✓	✓	✓	✓	✓	✓	✓
SUR-GARD MLR2-DG	✓	✓	✓	✓	✓	✓	✓	✓

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Features

Real time data gathering and diagnostics for fire alarm control panel systems:

- An internally mounted interface module securely connects the panel computer port protocol interface to an Ethernet connection allowing information about trouble (or potential trouble) conditions to be sent to the remote service via an Internet connection
- At the remote service center, receipt of trouble information triggers an email to an experienced technician who reviews the information and can further query the panel for more information as the condition is investigated; (**NOTE: Alarm information is only logged by this service; Alarm information must be sent separately to the designated monitoring/response location.**)
- Technicians can connect to the panel from a remote location via secured internet communications and interrogate the system status
- After details of the panel status are analyzed, the service personnel dispatched to the site can be selected for their specific experience and equipped with the needed replacement parts and tools before visiting the site
- TrueInsight Remote Service logs panel activity (troubles and alarms) and maintains it for one year allowing detailed activity historical review or forensic review if required

For use with Simplex® 4100ES, 4010ES, and 4100U Fire Alarm Control panels:

- **Model 4100-6049** is for use with 4100ES and 4100U control panels
- **Model 4010-9919** is for use with 4010ES control panels
- Modules connect without need for panel programming

Secure Communications:

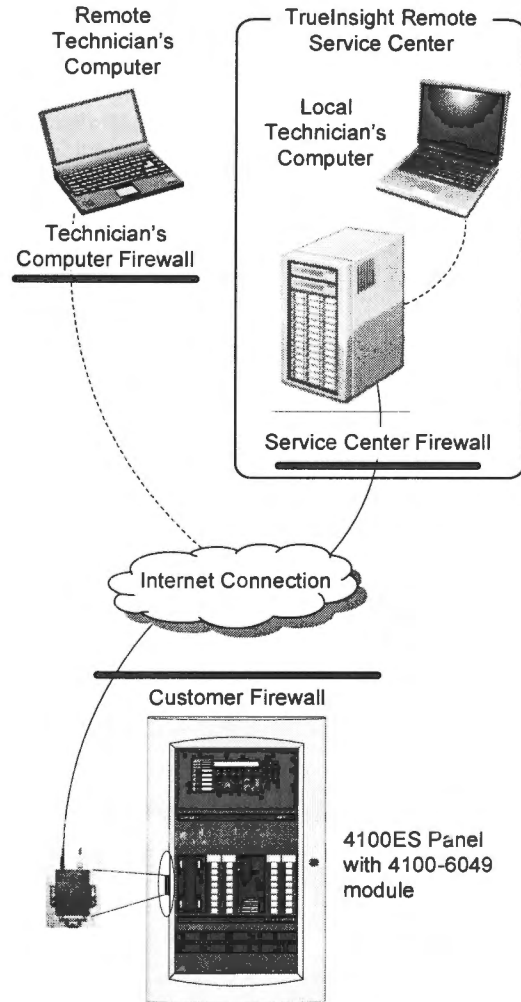
- Control panel interface module is connected behind customer's firewall
- Receiving equipment resides under the Remote Service Center firewall or under the individual technician's computer firewall
- Customer to provide network access/connectivity

Additional Information:

- Contact your local Simplex product representative for specific details on how to connect your panel to TrueInsight Remote Services

Introduction

Connecting to Control Panel Intelligence. 4100ES, 4010ES, and 4100U addressable fire alarm control panels provide intelligent monitoring of internal modules, incoming power, battery connections, and of connected remote devices and appliances such as TrueAlarm analog sensors, TrueAlert addressable notification, devices controlled by IDNet communications, and the connected wiring. TrueInsight Remote Service monitors this information and takes action when trouble conditions are reported.



TrueInsight Remote Services Reference Diagram
(4100ES shown for reference)

Trouble Condition Sources

Modules and remote devices of a fire alarm control panel are interconnected with internal wiring harnesses and with external wiring. Over time, or even during initial installation, those connections may become loose or otherwise compromised. Due to module and wiring supervision, these trouble conditions are discovered and their locations are identified by the panel.

(continued next page)

* This product has been listed by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing s 7165-0026:0251 and 7165-0026:0369 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. This product was not FM approved or accepted by the NYC FD as of document revision date. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

Trouble Condition Sources (Continued)

Devices and their wiring are subject to motion. Mechanical wiring disturbances can be due to a variety of subtle or significant activity such as earthquakes (even seemingly minor earthquakes may shake buildings more than expected), forklift activity coming closer than planned, large fire doors or outside shipping dock doors slamming shut closer to fire alarm devices than realized, and other human intervention can unintentionally cause fire alarm wiring connections to become loose or broken. When the panel discovers this type of condition, it declares a trouble, the circuit and specific condition is logged and identified with a local sound and flashing yellow light, however the exact details are not normally available other than by querying the individual panel for more information on-site. Accessing this information remotely allows TrueInsight Remote Service personnel to determine the source of the trouble including which devices by specific model number may be involved.

Smoke sensors get dirty. TrueAlarm smoke sensors are open to the environment in order to sample for the presence of smoke particles. This also allows a collection of dirt or other debris, sometimes a lot of it, and in a short period of time. TrueAlarm technology compensates very well up to the point where a device is identified as dirty and needs to be inspected and cleaned. Knowing that a sensor is in need of service before it actually gets out of compensation allows a system to provide essentially uninterrupted service.

TrueAlarm Sensor Monitoring. TrueAlarm smoke sensing tracks the Peak Analog Value associated with each sensor's environment.

TrueAlarm Sensor Monitoring (Continued).

Should a difficult environment experience nuisance alarms, this diagnostic tool can be accessed remotely as a means of analyzing the stability of the sensor's environment. This allows the sensor sensitivity to be properly selected for its actual environment ensuring optimal response time and protection from nuisance alarm sources.

Batteries wear out. Fire alarm control panels typically rely upon internally mounted, or perhaps remotely mounted batteries with battery chargers to provide power during local AC mains failure. Rechargeable batteries are complex chemical/mechanical/electrical designs and after repeated charge and discharge cycles, will begin to lose total capacity. By monitoring battery capacity at the panel, battery condition can be tracked, but to better understand battery charging status, detailed charger operation needs to be queried. Using TrueInsight Remote Service allows that extra information to be investigated to diagnose specific panel conditions and then to determine whether it is time to replace batteries, inspect battery connections, or to test the battery charger, allowing the anticipated equipment to be available at the time of a service call.

Monitoring includes communicating devices and devices they monitor. With IDNet communications, these panels monitor and control a wide variety of remotely connected devices. If communications fail to properly operate, the device(s) not communicating are identified. If the devices are in turn monitoring connections local to their location, such as relay coils, conventional IDCs or NACs, problems with those connections are communicated back to the control panel.

TrueInsight Module Specifications (refer to Installation Instructions 579-953 for additional information)

Module mounting	4100ES or 4100U	Left side of expansion bay bracket, preferred location is bay 2			NOTE: Module locations do not require bay space
	4010ES	On back side of dress panel			
Voltage	24 VDC, system supplied				
Current	62 mA in standby 73 mA maximum when active				
Environmental	10 to 93% RH from 32° to 120°F (0° to 49° C)				
Connection Requirements	System Power; RS-232 Communications Port to panel; Ethernet RJ45 connection NOTE: When possible, terminate the Ethernet drop in the panel enclosure. If not possible, and the panel is in a secure area, locate an external drop within 6 ft (1.8 m) of the panel enclosure.				
Module LED Diagnostics (5 LEDs)	Power/Ready: Steady Green = system ready; Flashing Green or Flashing Yellow = system is booting up (details are described in Installation Instructions); Red = Error condition				
	Link/10/100: Green = 10 Mbit connection; Yellow = 100 Mbit connection; Dark = no connection				
	Activity: Steady Green = heavy traffic; Flashing Green = some traffic; Dark = no traffic, possibly no connection				
	Transmit (Tx): Flashing or Steady Green = sending data Receiver (Rx): Flashing or Steady Green = receiving data				
Simplex Product Reference	Product Data Sheet	4100ES S4100-0031	4010ES S4010-0004	TrueAlarm Sensors S4098-0019	TrueAlarm Addressable Notification S4009-0003

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S4100-0063 11/2011

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LifeAlarm® Fire Alarm Controls

FM Approved to ANSI/UL 864, Control Unit Accessory to CAN/ULC S527; to FM Standards; CSFM Listed*

Emergency Communication Systems and Mass Notification Systems; 4003EC Voice Control Panels

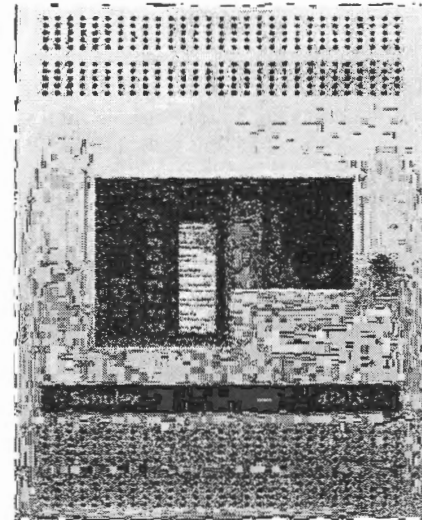
Features

Add digital voice message capability to non-voice fire alarm control panels:

- Remote booster amplifiers are available to expand coverage area or extend to multiple notification areas
- Activate up to 8 separate messages by direct connection to fire alarm control panel NACs using the NAC Interface Module option, or via supervised connection to relay contact closures
- 4003EC Voice Control Panel status (alarm, system trouble, or separate AC trouble) is via isolated contact closure allowing compatibility with a wide range of Simplex brand and other fire alarm systems
- Multiple 4003EC control panels can be interconnected for system-wide Emergency Communication Systems (ECS)/Mass Notification Systems (MNS) message control using Simplex® fire alarm Network node products
- Broadcast live messages using the internal microphone or by using a remote microphone; up to 18 remote microphones are supported for compatibility with UFC 4-021-01 (Unified Facilities Criteria) requirements
- Select from 8 digitally pre-recorded messages using the control panel switches or controlled from the fire alarm control panel; select a pre-tone and include a post tone if desired
- Custom messages can be ordered separately (as custom chip sets), or recorded directly at the panel (requires external equipment – new messages override standard messages)

4003EC control panel details:

- Efficient Class D amplifier design provides 40 W @ 25 or 70.7 VRMS with power-limited output
- One general alarm Class B audio NAC rated at 40 W; can be optionally expanded to 4, Class B NACs or 2, Class A NACs using a Class A/B Splitter
- One general alarm Class B, 2 A strobe NAC with strobe output formatted to synchronize either Simplex or Cooper Notification (Wheelock) strobes (not mixed)
- Internal push-to-talk microphone and individual manual tone/message controls for convenient operator control
- Strobe circuit activation is DIP switch selectable for each recorded message, for microphone use, and for Auxiliary input
- Multiple connections are available for auxiliary output power, 24 VDC, 1/2 A maximum
- Internal battery charger for up to 12 Ah batteries in cabinet or up to 33 Ah batteries in a separate cabinet
- Removable terminal blocks for easy wiring
- Beige or red cabinet for surface mounting
- ULC listed models include low battery cutoff board



4003EC Voice Control Panel

Remote booster amplifier details:

- Remote booster amplifiers are available with 80 W (with 2, 2 A strobe circuits), 160 W, and 320 W; each has an efficient Class D amplifier design
- Wiring options allow limited or detailed control with respect to AC power failure and non-fire alarm operation modes
- Wiring options allow control of non-alarm audio output when on battery standby and selection of monitoring main trouble contacts or AC trouble contacts
- Booster amplifiers support local connection of general paging microphones
- Removable terminal blocks for easy wiring
- Beige or red cabinet for surface mounting
- ULC listed models include low battery cutoff board

Additional optional features:

- Supervised remote microphones with keyswitch control, beige or red for alarm paging, black for general paging
- Local Operating Console (LOC) providing enclosed microphone and switch control for the 8 panel messages; meets UFC 4-021-01 requirements for local control
- Four circuit NAC module, Class A or Class B for boosters or control panel allows zone wiring separation
- Extensive non-fire alarm features are available for night ringer tone activation, telephone page input, and background music
- Non-fire alarm paging includes zone control and zone volume adjustments that are bypassed when the panel is in alarm mode
- Models are available for 120 or 240 VAC input

* Refer to page 4 for CSFM models listed by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 6911-0026:332 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. This product was tested and approved by FM Approvals against both standard FM testing referenced to NFPA 72, and ANSI/UL Standard 864, 9th Edition. This product was not listed by MEA (NYC) as of document revision date. Additional listings may be applicable, contact your local Simplex product supplier for the latest status.

Introduction

When non-voice fire alarm control panels require the addition of voice and tone generation, Simplex 4003EC Emergency Communications Voice Control Panels conveniently supply an extensive feature list. Available equipment includes up to 18 remote microphones, up to 5000 W of distributed remote booster amplifiers, and extensive non-fire alarm general paging controls

Manual Operation requires opening the locked 4003EC cabinet door to access the 8 message selection switches, the local microphone, and status indicator LEDs. Control of Remote Microphones is secured by use of a keyswitch (refer to remote microphone illustrations on page 6).

Typical applications:

- Compatibility with UFC (Unified Facilities Criteria) requirements for Mass Notification systems for Army and Air Force requiring an LOC within 200 ft (61 m) horizontally of travel and no travel vertically to reach an LOC within a building; the Navy and Marines only require a single LOC per structure (refer to UFC 4-021-01, 9 April, 2008 for details)
- Add audio operations to existing fire alarm control panels or non-audio panels
- Connect to fire alarm Network using the Network System Integrator (NSI) to provide network control of a remote audio panel
- Allows the fire alarm Network to take control for Emergency Communications messages
- Use of non-emergency operations is suspended during battery standby operation and is overridden during emergency conditions

4003EC Voice Control Module Features

Selection of pre- and post audio tones. Pre-message tones can be selected and if desired, the same tone can also be selected as a post message tone. Tones are switch selected on-board and assigned per message pairs: IN1 and IN2 message will have the same tone, IN3 and IN4 message will have the same tone, etc.

Available tones:

- **Temporal Pattern Bell;** a digitally recorded mechanical bell sound
- **Temporal Pattern Horn;** 500 Hz tone
- **Slow Whoop,** a slowly ascending tone
- **Wail,** ascends, then descends between 600 to 940 Hz
- **Chime Tone**
- **Announcement Chime**
- **High/Low,** with high frequency of 750 Hz for 100 ms and low frequency of 500 Hz for 400 ms
- **GSA Tone,** continuous 2000 Hz
- **Fast Whoop,** a quickly ascending tone
- **Horn Tone at 120 beats per minute**
- **Horn Tone at 20 beats per minute**
- **Bell Tone at 60 beats per minute**

Temporal Pattern evacuation signal reference:

1/2 sec on, 1/2 sec off, 1/2 sec on, 1/2 sec off, 1/2 sec on, 1-1/2 sec off.

Standard Messages and Input Priority List (custom messages and priorities are available, see Note below)

	Priority	Input		
	1	Panel push-to-talk microphone for on-site messages		
	2	Auxiliary input from one, or multiple remote microphones; or from a separate audio input with voltage selectable as: 1, 25, or 70.7 VRMS; NOTE: Multiple microphones require use of 4003-9834 Microphone Expansion Modules and each remote microphone input is prioritized by electrical wiring sequence. Operation also requires a separate contact closure to enable the Auxiliary input.		
Message	Priority	Message Type	Voice	Message
IN1	3	Fire	Male	"Attention! Attention! Attention! This is a fire alarm. Exit the building."
IN2	4	Hostile Intruder	Male	"Attention! Attention! Attention! There is an armed intruder in the building. Immediately take cover."
IN3	5	Bomb Threat	Male	"We have received a bomb threat. The police have been notified and we are conducting a search of the building perimeter. Please standby for further information."
IN4	6	Weather/Shelter	Male	"A severe weather condition has been reported. Please go directly to the nearest shelter area and wait for further instructions."
IN5	7	Weather	Male	"Attention please! Severe weather has been reported in the vicinity. Please proceed to a designated shelter area."
IN6	8	Alert	Male	"Attention! Attention! Attention! We have been alerted to a possible emergency situation. Please stay alert and you will be advised if emergency action is required."
IN7	9	Drill	Male	"This is a drill. This is a drill. This is a drill. This is a building emergency drill. Walk to the nearest exit and vacate the building."
IN8	10	All Clear	Male	"Attention! Your attention please! The building emergency condition has been cleared. You may return to normal activities."
	Priority	Non-Alarm Signal Inputs		
	11	Night Ring, contact closure plays bell tone to alert facility personnel of doorbell ringing, etc.		
	12	Telephone input, requires telephone page port, voice activated switch allows facility paging		
	13	Background Music (BGM), requires a line level input signal		

NOTE: When the system is being used as an Emergency Communications System (ECS) or a Mass Notification System (MNS), ECS or MNS messaging may take precedence over Fire Alarm Activation whether new or in process.

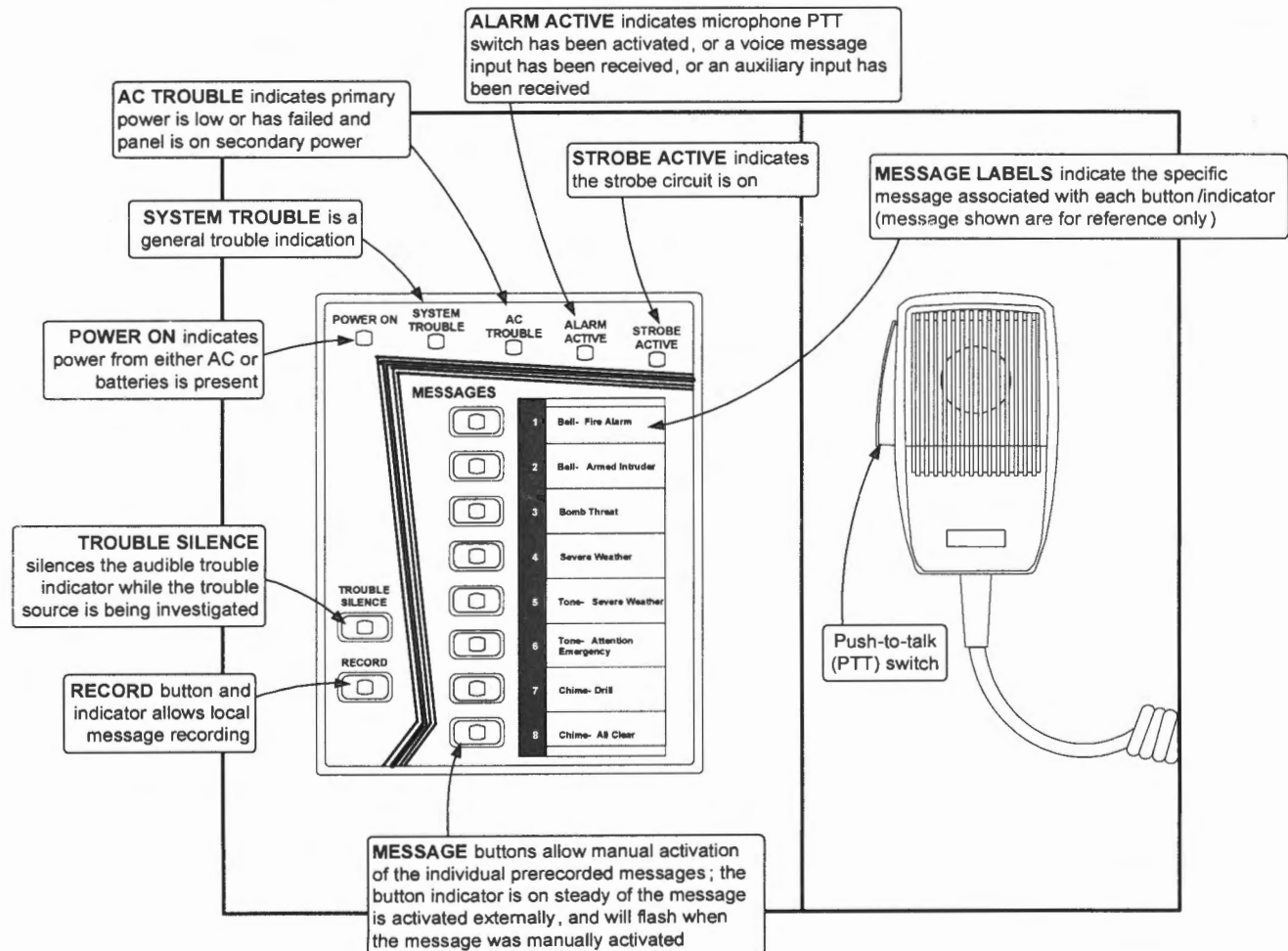
Custom Digitally Recorded Messages

- Messages can be reproduced from high quality customer supplied audio (professionally recorded to customer requirements) or selected from the archived message library
- To order Custom Messages, provide a CD or tape as appropriate; a completed custom message questionnaire; and include an English language transcript (Internal Order Processing Note: Document this information using the FASTool configurator)
- If supplied via CD, provide a WAV file format with 44,100 HZ and 16 bit mono (contact your local Simplex product representative for details)
- Custom messages can be recorded at the control panel; (locally recorded messages overwrite the pre-recorded messages and external equipment is required)

Power Supply/Battery Charger Features

- Charges up to 33 Ah batteries; up to 12 Ah batteries for cabinet mounting, larger batteries are housed in a separate close-nipped battery cabinet
- Green power-on LED, yellow trouble LED
- Earth fault detection; battery supervision circuitry; power loss, and brownout voltage supervision

Internal Control Panel Operator Controls



Non-Fire Alarm Operation Features

- Addressable Paging Splitters (Model 4003-9845) allow non-Alarm paging to be routed to zones as desired
- Supervised Volume Controls (Model 4003-9848) allow non-Alarm paging and background music local volumes to be adjusted as desired; during alarm conditions the volume controls are bypassed (*Note: This is not a Non-Fire feature, it was specifically developed for Fire/ECS/MNS Applications*)
- Telephone Zone Controller (Model 4003-9835) allows phone control selection of zones for background music or paging
- Night ringer (telephone) and security alert modes allow the 4003EC panel to provide system tones alerting of non-alarm conditions needing attention
- In night ringer mode, an externally mounted switch (such as a doorbell switch) can allow the 4003EC to create a specific tone to alert a security guard who may not be in normal hearing range of the daytime doorbell sound

4003 Product Selection

Control Panels (* = CSFM listed models)

Model	Cabinet/Listing	Input Voltage	Description
4003-9301	Beige	120 VAC, 60 Hz	Emergency Communications Voice Control Panel with internal user control panel and microphone, 40 W Class D amplifier with one audio NAC standard, internal power supply/battery charger
4003-9302*	Red		
4003-9303	Beige		
4003-9304	Beige	240 VAC, 50/60 Hz	

Remote Booster Amplifiers (* = CSFM listed models)

Model	Cabinet/Listing	Input Voltage	Description
4003-9810	Beige	120 VAC, 60 Hz	80 Watt Remote Booster Amplifier with strobe power (APB/80); provides <u>one</u> 80 W audio NAC and <u>two</u> , 2 A strobe NACs; accepts <u>one</u> 4003-9840 Class A/B Splitter (audio NAC expansion module); efficient Class D amplifier design
4003-9811*	Red		
4003-9812	Beige		
4003-9813	Beige	240 VAC, 50/60 Hz	
4003-9814	Beige	120 VAC, 60 Hz	160 Watt Remote Booster Amplifier (APB/160); provides <u>two</u> , 80 W audio NACs; allows up to <u>two</u> 4003-9840 Class A/B Splitters; (no strobe power); efficient Class D amplifier design
4003-9815*	Red		
4003-9816	Beige		
4003-9817	Beige	240 VAC, 50/60 Hz	
4003-9818	Beige	120 VAC, 60 Hz	320 Watt Remote Booster Amplifier (APB/320); provides <u>four</u> , 80 W audio NACs; allows up to <u>four</u> 4003-9840 Class A/B Splitters; (no strobe power); contains dual power supplies, dual 160 W amplifiers, and requires dual battery sets (4, 12 V batteries); efficient Class D amplifier design
4003-9819*	Red		
4003-9820	Beige		
4003-9821	Beige	240 VAC, 50/60 Hz	

Remote Microphone Controls and Associated Equipment (* = CSFM listed models)

Model	Description
4003-9830	Surface mount
4003-9831	Flush mount
4003-9849	Local Operator Console (LOC) HVAC Emergency Shut Off Kit; field installed behind door of either 4003-9830 or 4003-9831; red emergency shutoff button, push to activate; rated 3 A @ 240 VAC
4003-9832 (Beige)	4003-9833* (Red)
4003-9842*	Remote Microphone Control (RM), for fire alarm paging (see diagram on page 6)
4003-9842*	Remote Non-Alarm Microphone Control (RM-GP) black mounting plate, connects at Remote Booster and is for general paging through that booster only
4003-9834*	Remote Microphone Expansion Module (RMX) in black cabinet; expands panel remote microphone output to three (3); up to 6 RMX modules can be connected for a total of 18 remote microphones per system; (NOTE: Only one 4003EC system microphone can page at time, priority of RMX connected microphones is determined by wiring location); dimensions = 13" H x 7-3/4" W x 2-1/8" D (330 mm x 197 mm x 54 mm)

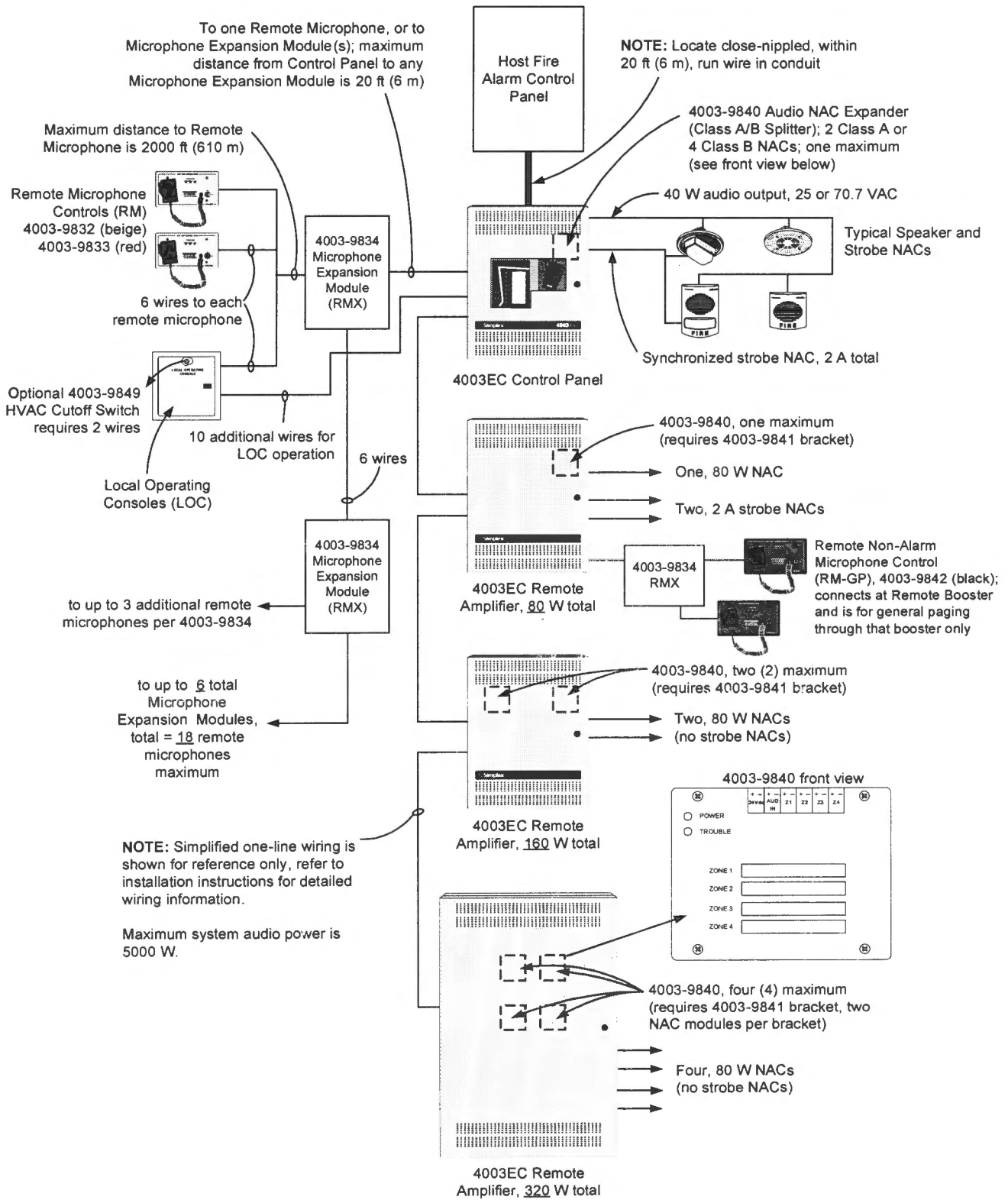
4003EC Accessories (* = CSFM listed models)

Model	Description
4003-9840*	Class A/B Splitter (SP4Z-A/B), audio NAC expansion module, 4 Class B zones or 2 Class A zones; requires one dedicated NAC input; rated 40 W output maximum per zone (Class A or Class B operation); requires 4003-9841 mounting bracket when mounted in booster cabinet; module dimensions = 4-1/2" H x 5-1/2" H x 1-1/2" D (114 mm x 140 mm x 38 mm)
4003-9841*	Mounting bracket for (2), 4003-9840 or (2) 4003-9845 Splitters; <u>required</u> when splitter is mounted in an 80, 160, or 320 W booster amplifier cabinet; (not required when mounting splitter in the control panel)
4003-9850	NAC Interface Module (NACIM); converts one NAC input to one contact closure for activating messages; one required per message to be activated; mounts in the 4003EC control panel; 4 maximum; dimensions = 2-1/2" H x 1-1/4" W x 1/2" D (64 mm x 32 mm x 13 mm)
4003-9851	End-of-Line Resistor Module Kit, quantity of 8, Agency listed; 10 kΩ, 1/2 W
4003-9860	Battery Cabinet, beige (cabinet only, for use with panel mounted charger); dimensions = 9-1/2" H x 24" W x 9" D (241 mm x 610 mm x 229 mm); Note: Battery Cabinet is available in red by special order (RPQ)
4003-8801	Custom Message Ordering, select 4003-8801 and specify message type per the choices below: 4003-0204, from CD 4003-0205, from transcript 4003-0206, from message archive
4003-9836	Aftermarket Message Kit, 8 <i>standard</i> messages; (<i>restores original messages</i> if local changes are no longer wanted)

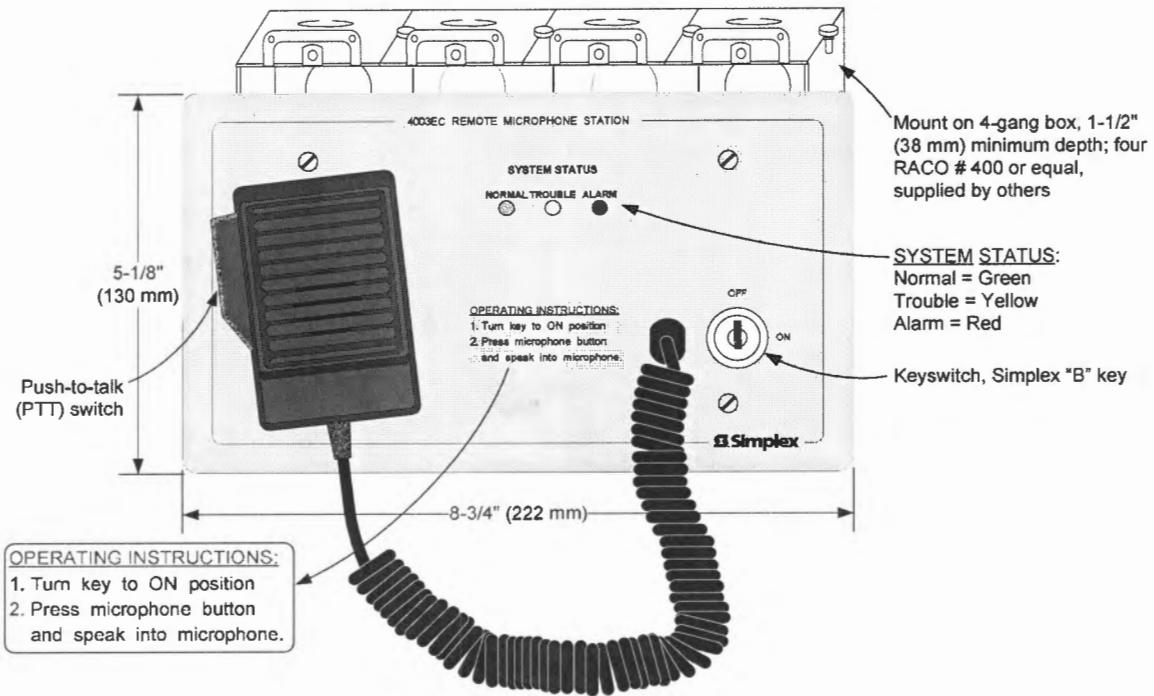
Non-Fire Alarm Accessories (* = CSFM listed models)

Model	Description
4003-9835	Telephone Zone Controller (TZC); use to select zones connected to background music and for general paging; cabinet; size: 13" H x 7-3/4" W x 2-1/8" D (330 mm x 197 mm x 54 mm)
4003-9847	Telephone Zone Controller Programming Cable; connects to service PC for programming selections
4003-9845*	Addressable Paging Splitter (SP4-APS); 4 Class B, or 2 Class A output zones, plus 2 Expansion outputs; allows Telephone Zone Controller to select non-alarm paging per zone; alarm paging connects to all zones; requires 4003-9841 bracket when mounted in booster cabinet; 80 W max. input, 40 W max. output per zone; (same size as 4003-9840 Class A/B Splitter)
4003-9848*	Supervised Volume Control Module (SP-SVC); for background music, disabled during alarm
4003-9843	CO Port Adapter (SP-COA); use to connect an unused CO Port (central office port) to the telephone input on the 4003EC panel; dimensions = 4-1/2" W x 5-1/2" H x 1-1/2" D (114 mm x 140 mm x 38 mm)

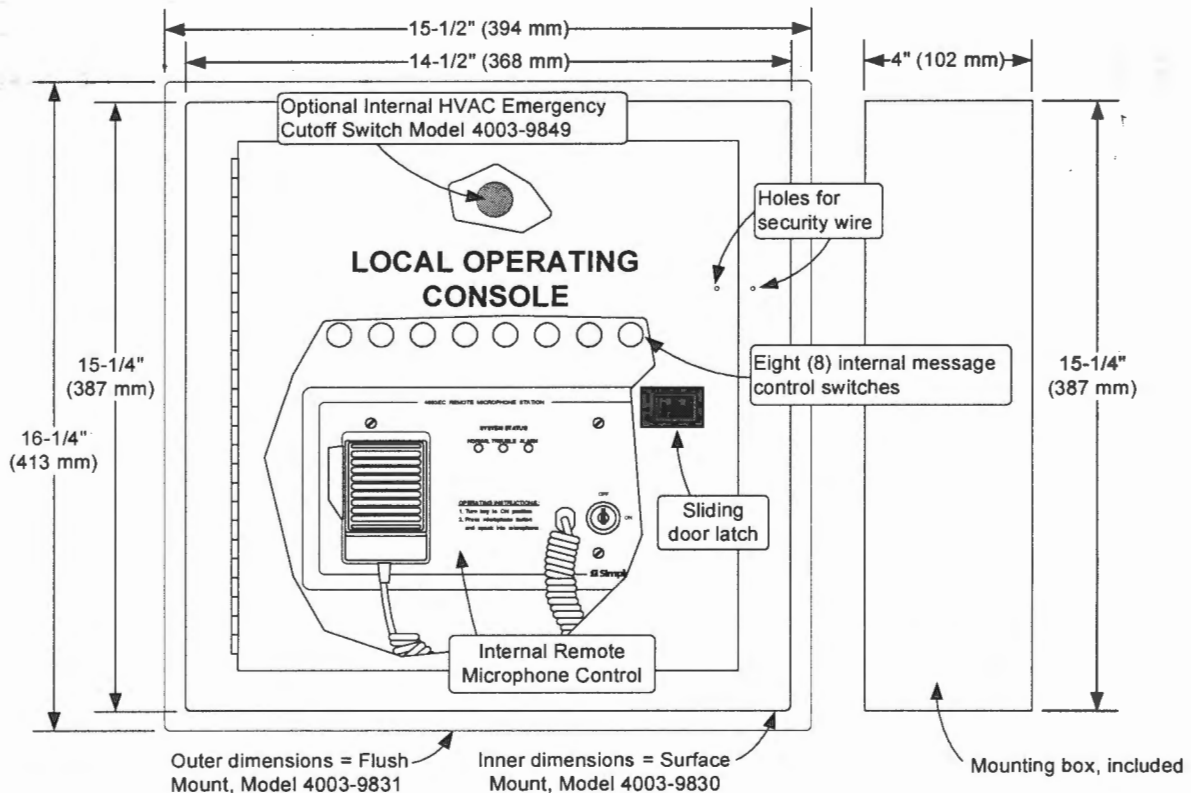
System Interconnection Reference



Remote Microphone Control Reference

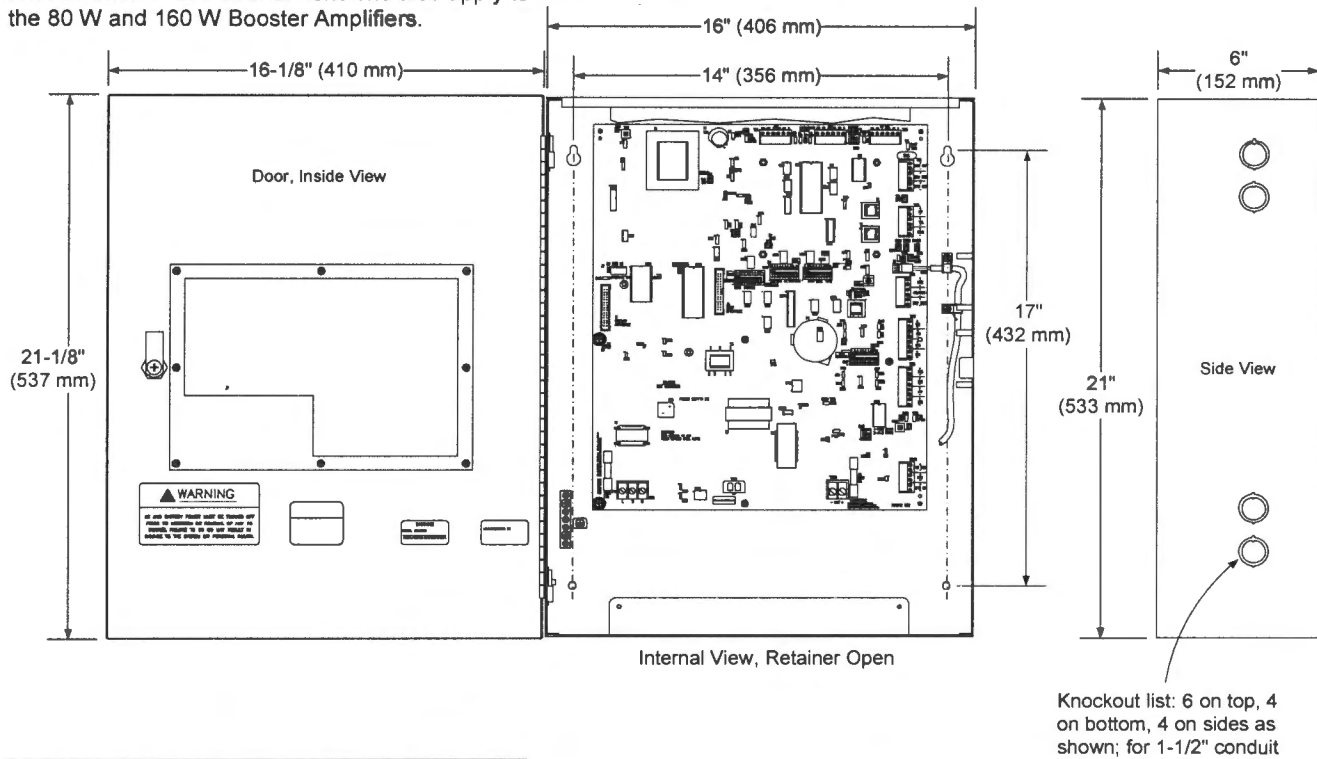


Local Operating Console (LOC) Reference

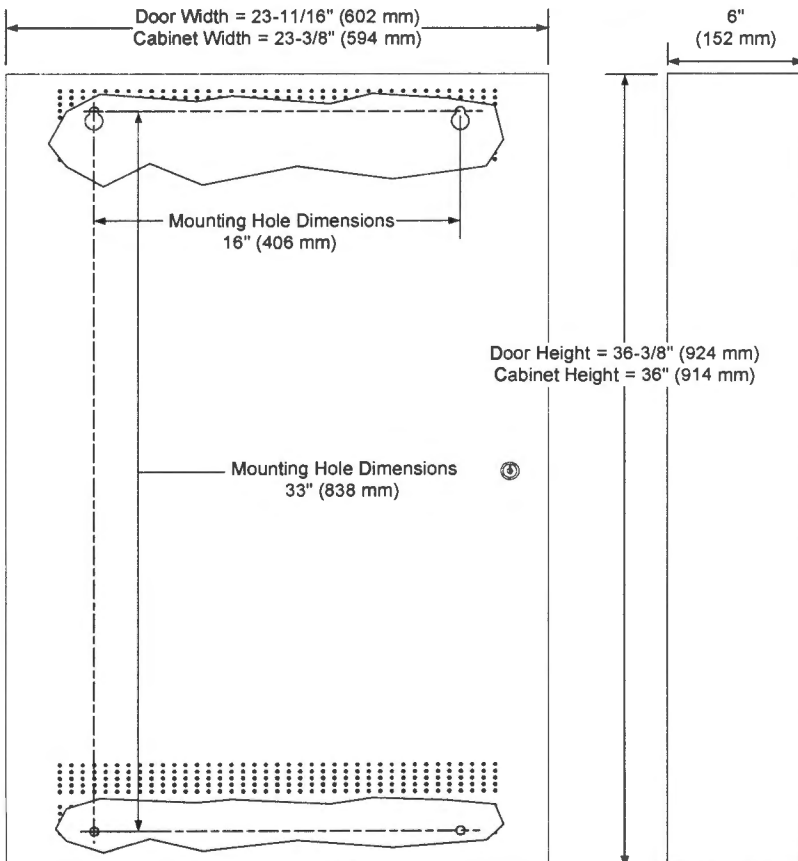


4003EC Control Panel Internal Reference

NOTE: Cabinet and door dimensions also apply to the 80 W and 160 W Booster Amplifiers.



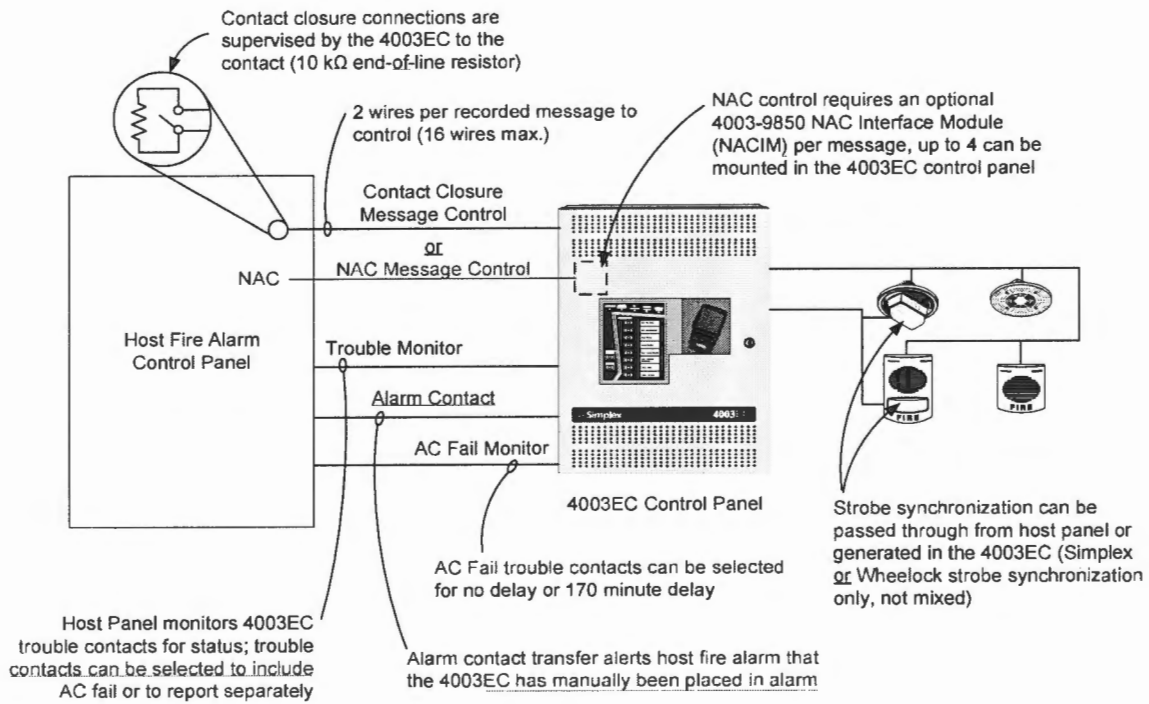
320 W Booster Dimension Reference



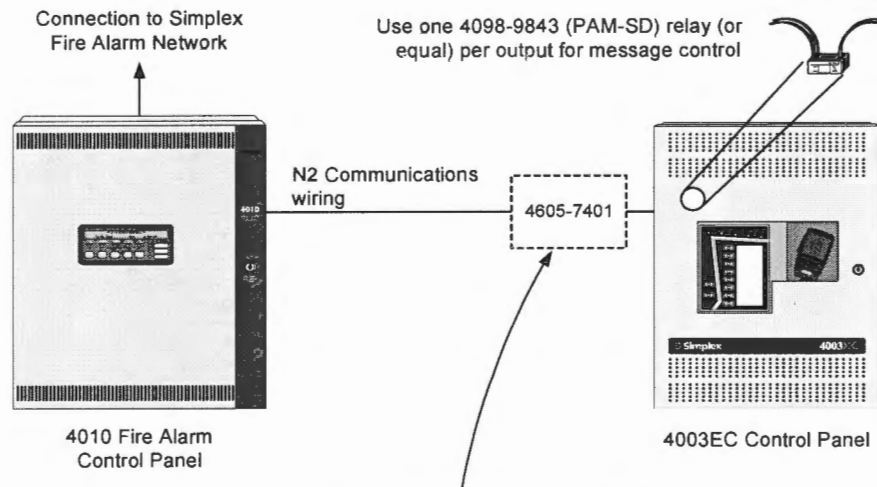
Instructions Reference

Product		Instructions
4003EC Control Panels	120 VAC	P84714-001
	240 VAC	P84992-001
Remote Booster Amplifiers (APB/80, /160, /320)	120 VAC	P84748-001
	240 VAC	P84994-001
Local Operating Consoles (LOC)		P85173-001
LOC HVAC Emergency Cutoff Kit		P84858-001
Remote Alarm Microphone (RM)		P84207-004
Microphone Expansion Module (RMX)		P84557-001
Class A/B Splitter (SP4Z-A/B)		P84205-001
CO Port Adapter (SP-COA)		P84341-001
Addressable Paging Splitter (SP4-APS)		P84577-001
Supervised Volume Control (SP-SVC)		P84598-001
NAC Interface Module (NACIM)		P83487-001
Remote Paging Microphone (RM-GP)		P84207-003
Telephone Zone Controller (TZC)		P84567-001
Battery Cabinet		P83096-001
Low Battery Cutoff Board		P85091

Reference Application 1, Generic Host Panel to 4003EC



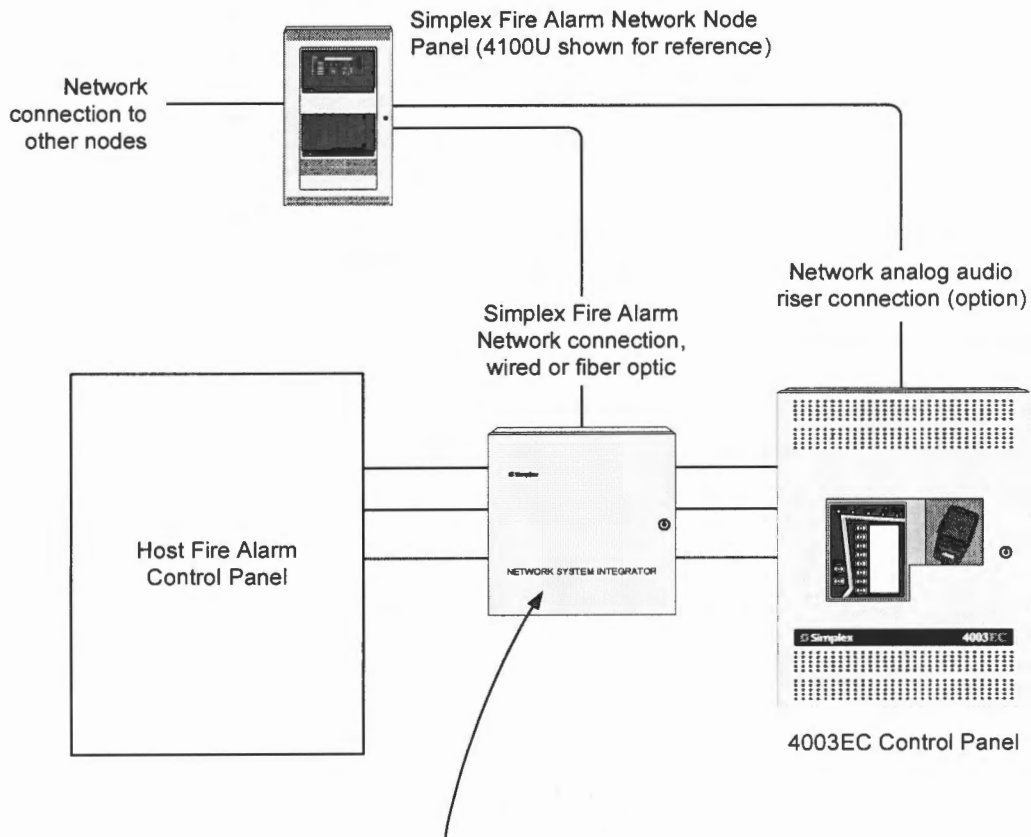
Reference Application 2, 4003EC Connected to Simplex 4010 Control Panel



Alternate monitoring and control using the 4605-7401, 24 Point I/O module with mounting hardware mounted in suitable location.

Size is 5-3/4" x 6-1/2" (146 mm x 165 mm); module power and relay power can be sourced from the 4003EC or from the 4010.

Reference Application 3, Host Panel to 4003EC with NSI Connection



Simplex Network System Integrator (NSI) Model 4190-9826 (red) 4190-9827 (beige):

1. Power is supplied by the Host Fire Alarm Control Panel (or the 4003EC).
2. NSI has seven (7) available separate, isolated contact closures controlled by the Fire Alarm Network (a separate contact is dedicated to system trouble).
3. NSI has eight (8) isolated, polarized, separate inputs for information into the Fire Alarm Network.
4. Flexible operation allows interconnection of the Host Fire Alarm Control Panel and the NSI to control the 4003EC per system requirements.

Specifications (refer to Installation Instructions for more information, see list on page 7)

Product Type		Ratings
AC Input Ratings	4003EC Control Panels (4003-9301, -9302, -9303, & -9304)	2.4 A maximum @ 102 to 132 VAC, 60 Hz 1.2 A maximum @ 204 to 264 VAC, 50/60 Hz
	80 W Booster Amplifiers (APB/80) (4003-9810, -9811, -9812, & -9813)	3.8 A maximum @ 102 to 132 VAC, 60 Hz 1.9 A maximum @ 204 to 264 VAC, 50/60 Hz
	160 W Booster Amplifiers (APB/160) (4003-9814, -9815, -9816, & -9817)	3.8 A maximum @ 102 to 132 VAC, 60 Hz 1.9 A maximum @ 204 to 264 VAC, 50/60 Hz
	320 W Booster Amplifiers (APB/320) (4003-9818, -9819, -9820, & -9821)	7.4 A maximum @ 102 to 132 VAC, 60 Hz 3.7 A maximum @ 204 to 264 VAC, 50/60 Hz
	Strobe NAC Ratings, Regulated 24 DC	2 A per strobe NAC; provides synchronization for either Simplex or Wheelock strobes (not mixed); contact your Simplex product representative for compatible appliances; for other UL listed appliances, use associated external synchronization modules where required; (refer to Instructions P84714-001 for additional information)
Battery Currents	4003EC Control Panels (4003-9301, -9302, -9303, & -9304)	Supervisory Current = 130 mA Alarm Current = 4.7 A maximum
	80 W Booster Amplifiers (APB/80) (4003-9810, -9811, -9812, & -9813)	Supervisory Current = 120 mA Alarm Current = 10.1 A maximum, including 500 mA Auxiliary output
	160 W Booster Amplifiers (APB/160) (4003-9814, -9815, -9816, & -9817)	Supervisory Current = 120 mA Alarm Current = 10.1 A maximum, including 500 mA Auxiliary output
	320 W Booster Amplifiers (APB/320) (4003-9818, -9819, -9820, & -9821)	Supervisory Current = 120 mA, <u>each</u> power supply/amplifier set Alarm Current = 10.1 A maximum, <u>each</u> power supply/amplifier set, including 500 mA Auxiliary output NOTE: 320 W Booster Amplifiers have dual amplifiers, dual power supplies, dual battery chargers, and dual battery sets (4, 12 V batteries)
Total Amplifier Power per System		5000 W maximum
Booster Input Requirements	with 25 VRMS Input	Input voltages are selectable for 1, 25, or 70.7 VRMS; output voltage and input voltage can be selected differently (25 VRMS versus 70.7 VRMS) Input power = 0.25 W input for 80 W and 160 W boosters Input power = 0.5 W for 320 W boosters (dual 160 W amplifiers)
	with 70.7 VRMS Input	Input power = 1.2 W input for 80 W and 160 W boosters Input power = 2.4 W for 320 W boosters (dual 160 W amplifiers)
Additional Module Current Requirements (24 VDC system power)		
Local Operator Console (LOC) (4003-9830, 4003-9831)	Standby = 26 mA; Alarm/Paging = 38 mA	select these values if only <u>one</u> remote microphone is connected to the 4003EC control panel
Remote Microphone Controls for Alarm (RM) (4003-9832, 4003-9833) and (RM-GP) (4003-9842)	Standby = 23 mA; Alarm/Paging = 30 mA	
Remote Microphone Expansion Module (RMX) (4003-9834)	Standby = 62 mA maximum; Alarm/Paging = 52 mA maximum; NOTE: includes attached remote microphones and/or LOCs; only one remote microphone can page at a time	
Class A/B Splitter (SP4Z-A/B) (4003-9840)	Standby = Alarm = 15 mA	
NAC Interface Module (NACIM) (4003-9850)	NAC powered, no impact to panel power	
CO Port Adapter (SP-COA) (4003-9843)	Standby = 2 mA; with input = 49 mA; telephone input level = telephone output level = 500 mVRMS	
Addressable Paging Splitter (SP4-APS) (4003-9845)	120 mA; splitter uses 1.35 W of input power per output for operation, 8 W maximum (6 total outputs available; Zones 1-4, and two Expansion outputs)	
Supervised Volume Control (SP-SVC) (4003-9848)	10 mA	
Telephone Zone Controller (TZC) (4003-9835)	73 mA	
Battery Charger Details for Voice Control Panel and Booster Amplifiers (sealed lead-acid batteries)		Agency listed for battery charging up to 33 Ah; up to 12 Ah batteries can be cabinet mounted, larger batteries require a remote battery cabinet; see note above concerning 320 W Booster Amplifier batteries (4, 12 V)
Environmental	Operating Temperature Range	32° to 120°F (0° to 49° C)
	Operating Humidity Range	Up to 93% RH, non-condensing @ 90° F (32° C) maximum

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S4003-0002-6 7/2011

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

Multi-Application Peripherals

IDNet™ and MAPNET II® Communicating Devices,
Individual Addressable Modules (IAMs)

Features

IDNet or MAPNET II addressable communications supply both data and power over a single wire pair to provide**:

- Supervised Class B monitoring of normally open, dry contacts
- Total wiring distance from IAM to supervision resistor(s) of up to 500 ft (152 m)
- Monitored connection is compatible with Simplex® 2081-9044 Overvoltage Protectors for outdoor wiring or electrically noisy applications
- For use in indoor locations up to 158° F (70° C) such as attic spaces or similar applications

For use with following Simplex control panels:

- Model Series 4008, 4010, 4010ES, 4100U and 4100ES fire alarm control panels for IDNet communications
- Model Series 4100/4100U/4100ES, 4120, 4020, and 2120 Communicating Device Transponders (CDTs) equipped with MAPNET II communications

Model 4090-9001:

- Enclosed design minimizes dust infiltration
- Mounts in standard single gang 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 (requires mounting bracket, ordered separately)

Model 4090-9051:

- Encapsulated design for extended exposure to high humidity (LED is not present on this model)
- Color coded 18 AWG leads for wiring

IDNet communications provides current limited monitoring:

- Provides monitoring of tamper switch (supervisory) and waterflow switch (alarm) on same circuit using one point
- Available with IDNet communications only

Multiple operation modes are available and are selectable at the control panel:

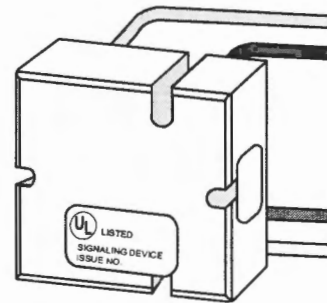
- Contact closure status can be tracked
- Momentary contact closure conditions can be selected at the panel to be latched or tracked (not available with the 2120 CDT)

UL listed to Standard 864

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4090-9001 Supervised IAM
(shown approximately 3/4 size)



4090-9051 Supervised IAM
(shown approximately 3/4 size)

Description

Individual addressable modules (IAMs) receive both power and communications from a two-wire MAPNET II or IDNet circuit. They provide location specific addressability to a single initiating device (such as single station smoke detector alarm contacts or heat detector contacts) or multiple devices at the same location by monitoring normally open dry contacts and the wiring to an end-of-line resistor.

Model 4090-9001 is packaged in a thermoplastic housing and provides screw terminal connections and a status indicating LED.

Model 4090-9051 is an encapsulated package with wire leads. It does not provide a status indicating LED.

Operation

Contact Closure. Closure of the monitored contact(s) initiates an alarm or other response as programmed at the fire alarm control panel. An open in the monitored circuit wiring will cause a trouble to be reported.

Panel Selections. Selections can be made at the control panel to maintain the alarm condition if the initiating device contacts are momentary, such as from a rate-of-rise heat detector, or to track the device contact status (not available with the 2120 CDT).

Current Limited Operation Applications

For use with IDNet communications only, these IAMs can provide quad-state sensing of normal, open circuit, short circuit, and current limited conditions. (Program type is "T-sense.") With the proper end-of-line and current limiting resistors, dual functions such as tamper switch and waterflow switch monitoring can be determined and communicated by a single addressable point.

IAM Product Selection

Model	Description
4090-9001	Supervised IAM, mounted in thermoplastic housing with screw terminals; see applicable options below
4090-9051	Supervised IAM, encapsulated with wire leads

Optional Trim Plates and Mounting Bracket for Model 4090-9001

Model	Description
4090-9806	For semi-flush mounted box Trim plate with LED viewing window, requires 4090-9810 mounting bracket, includes mounting screws; galvanized steel
4090-9807	For surface mounted box
4090-9810	Mounting bracket, mounts IAM to electrical box and provides screw holes for trim plate, required for optional trim plates

End-of-Line Resistor Harnesses (ordered separately as required)

Model	Reference No.	Description
4081-9004	733-886	6.8 k Ω , 1/2 W; Standard end-of-line resistor harness for N.O. contact supervision
4081-9003	733-896	4.7 k Ω , 1/2 W
4081-9005	733-984	1.8 k Ω , 1/2 W Use for current limited monitoring applications

Specifications

Electrical

Power and Communications	MAPNET II or IDNet, auto selected, 1 address per IAM
Input Requirements	Normally open, dry contacts
Wire Connections	4090-9001 Screw terminals for in/out wiring, 18 to 14 AWG wire (0.82 mm ² to 2.08 mm ²) 4090-9051 Color coded wire leads, 18 AWG (0.82 mm ²), 8" long (203 mm)
Reference Documents	Installation Instructions 574-331 for 4090-9001; 579-572 for 4090-9151 Field Wiring Diagrams 842-073 for IDNet operation; 841-804 for MAPNET II operation

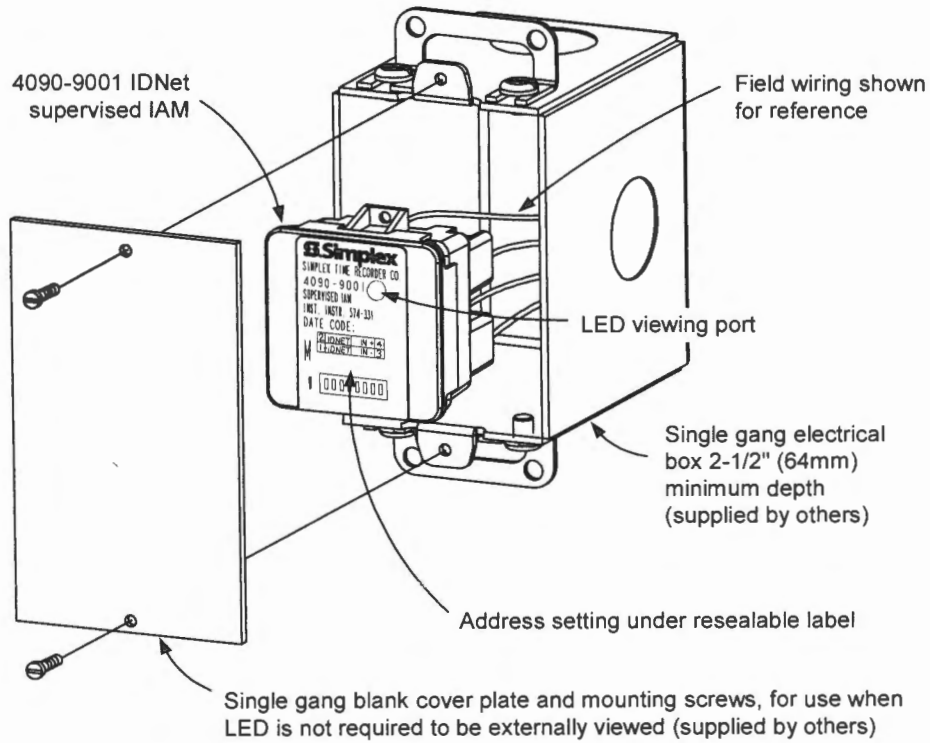
Wiring Distances

Distance from IAM to Contacts	500 ft (152 m) maximum without protectors 400 ft (122 m) maximum with 2081-9044 Overvoltage Protectors
Wiring Distance Reference per channel, MAPNET II or IDNet Communications	2500 ft (762 m) maximum from fire alarm control panel 10,000 ft (3048 m) maximum total wiring distance (including T-Taps)

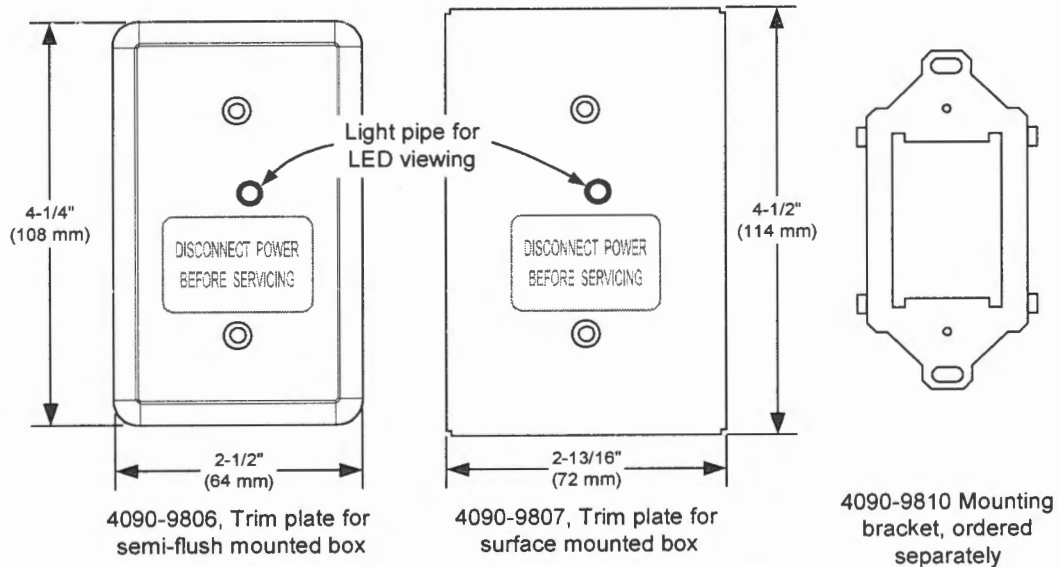
Mechanical

Dimensions	4090-9001 1-9/16" W x 1-3/4" H x 1-1/4" D (40 mm x 44 mm x 32 mm) 4090-9051 1-9/16" W x 1-9/16" H x 9/16" D (40 mm x 40 mm x 14 mm)
Housing Material, 4090-9001	Black thermoplastic
Encapsulation Material, 4090-9051	Epoxy, beige
Temperature Range	32° to 158° F (0° to 70° C); intended for indoor operation
Humidity Range	Up to 93% RH at 100° F (38° C)

Mounting Information



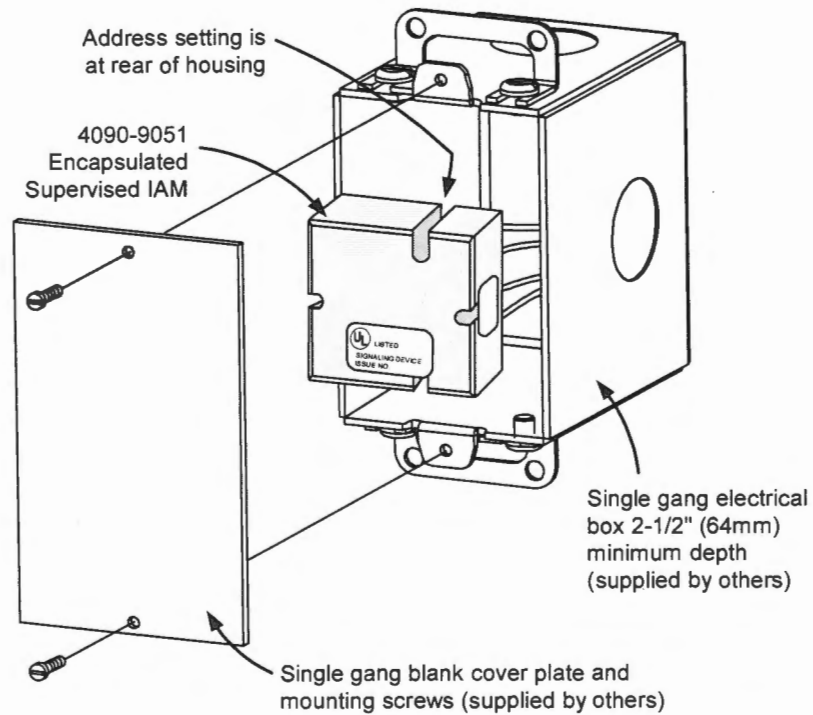
Mounting Reference, Single Gang Blank Cover Plate



NOTE: These mounting plates require mounting bracket 4090-9810.

Optional Trim Plates and Mounting Bracket for Visible LED

4090-9051 Mounting Information



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

Multi-Application Peripherals

IDNet™ Communicating Devices
Model 4090-9002 Relay IAM

Features

Individual Addressable Relay Module (Relay IAM):

- IDNet addressable control for use with Simplex® fire alarm control panel models 4100ES, 4100U, 4010ES and 4010
- 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

Compact, sealed construction:

- Enclosed design minimizes dust infiltration
- Mounts in standard 4” (102 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.

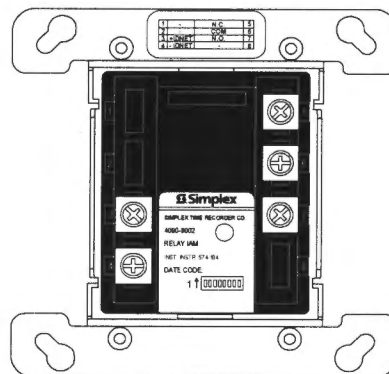
Product Selection

Model	Description
4090-9002	Relay IAM

Optional Trim Plates

Model	Description	
4090-9801	For semi-flush mounted box	Trim plate, galvanized steel, with LED viewing window; includes wiring screws
4090-9802	For surface mounted box	

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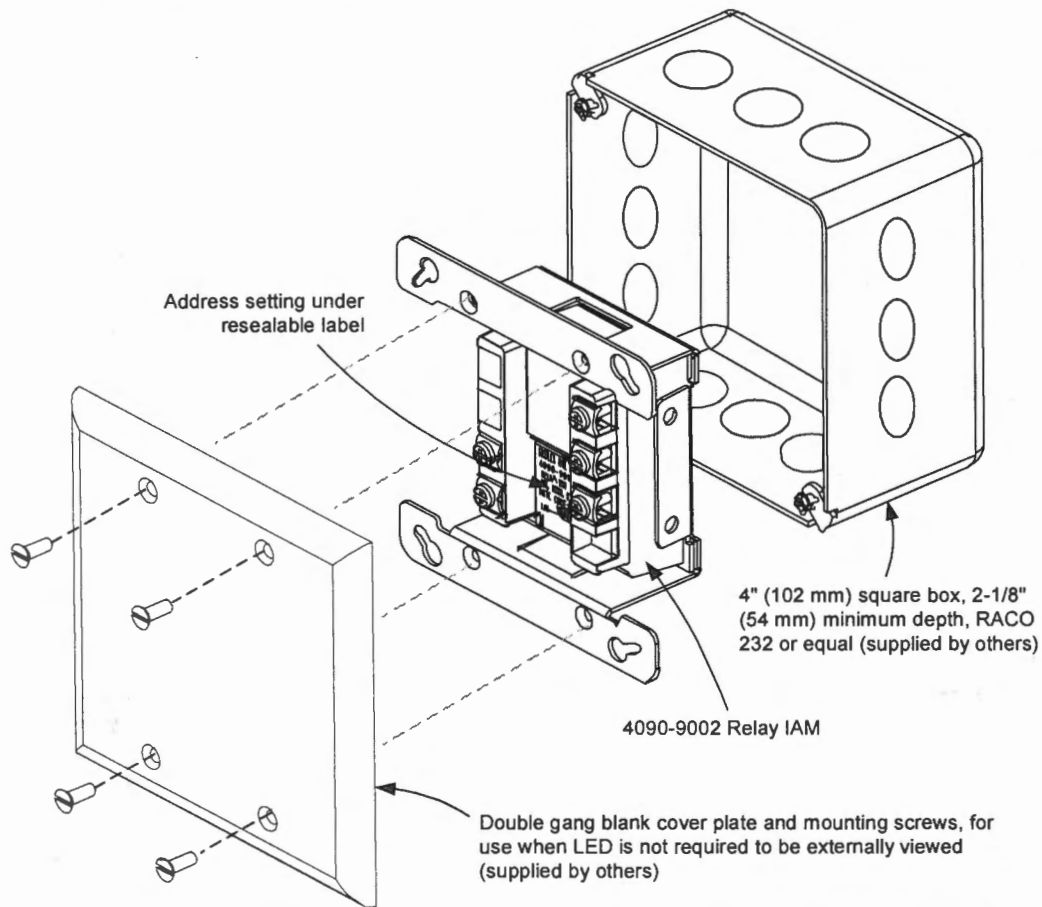


4090 Series IDNet Relay IAM Package
(shown approximately 1/2 size)

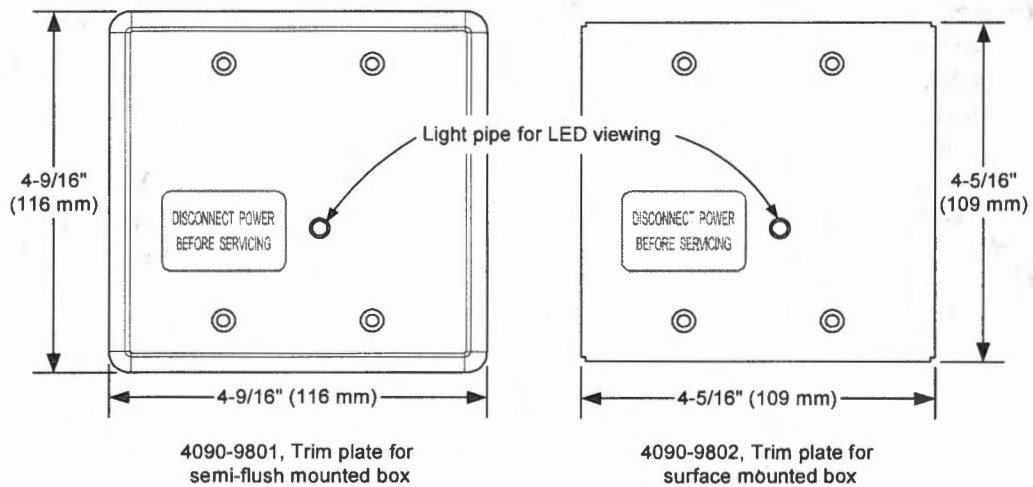
Specifications

Communications	4100ES, 4100U, 4010ES or 4010 IDNet communications, 1 address per device	
Relay IAM Power	Supplied by IDNet communications	
Contact Ratings* (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 Installation Instructions 574-184 for additional information.		
Wire Connections	Screw terminals for in/out wiring, 18 to 14 AWG wire (0.82 to 2.08 mm ²)	
IDNet 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)	

Relay IAM Mounting Information



Mounting Reference, Double Gang Blank Cover Plate



Optional Trim Plates for Visible LED

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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%

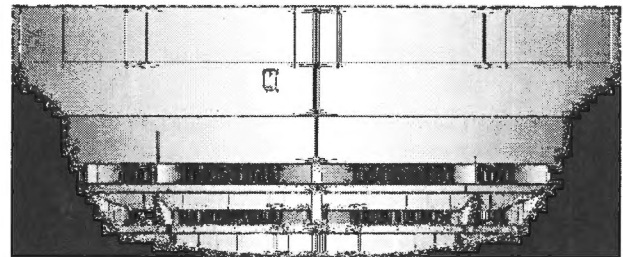
General features:

- 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.

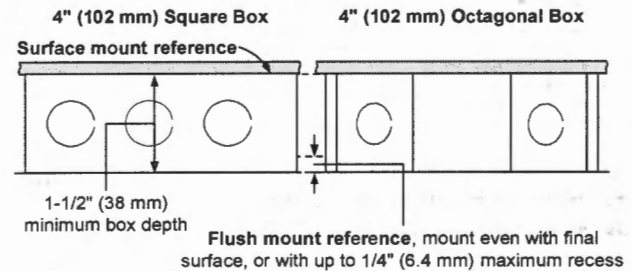
Since TrueAlarm sensors use the same base, different sensor types can be easily interchanged to meet specific location requirements. This feature also allows intentional sensor substitution during building construction. When conditions are temporarily dusty, instead of covering the smoke sensors (causing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



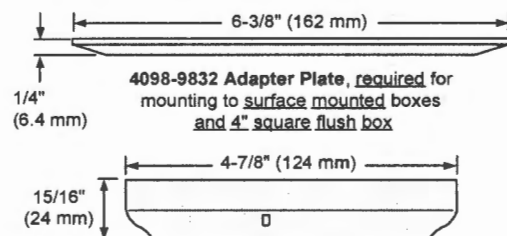
2098-9737 Relay (mounts in base electrical box or remotely)

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:

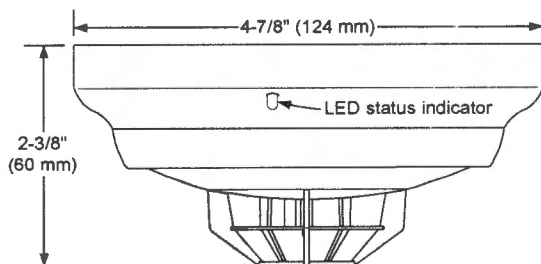
- Photoelectric or ionization technology sensing
- 360° smoke entry for optimum response
- Built-in insect screens

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.*



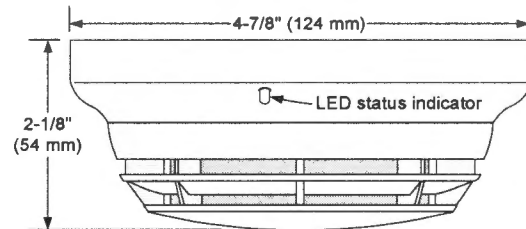
4098-9733 Heat Sensor with Base

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.

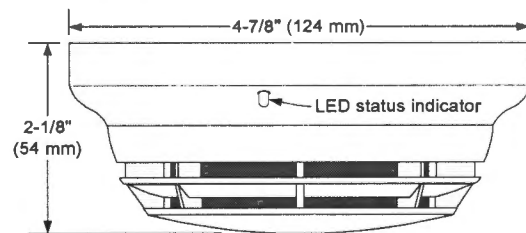


4098-9714 Photoelectric Sensor with Base

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 or Unsupervised Relay	Sensors 4098-9714, -9733, & -9717 2098-9808 remote LED alarm indicator or 4098-9822 relay	4" octagonal or 4" square box Note: 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 Supervised Remote Relay and connections for Remote Alarm Indicator or Unsupervised Relay	Sensors 4098-9714, -9733, & -9717 2098-9737 remote relay (supervised) 2098-9808 remote alarm indicator or 4098-9822 relay (unsupervised)	** NOTE: 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	Remote Mounting requires 4" octagonal or 4" square box, 1-1/2" minimum depth Base Mounting 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	Required 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 μ A typical, 1 address per base	
Communications Connections	Screw terminals for in/out wiring, 18 to 14 AWG (0.82 mm ² to 2.08 mm ²)	
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 ²)	
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 Ambient Ratings	4098-9714, Photoelectric Sensor	Air velocity = 0-4000 ft/min (0-1220 m/min)
	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	
4098-9791 Base With Supervised Remote Relay 2098-9737 (see page 2 for contact ratings)		
Externally Supplied Relay Coil Voltage	18-32 VDC (nominal 24 VDC)	
Supervisory Current	270 μ A, from 24 VDC supply	
Alarm Current with 2098-9737 Relay	28 mA, from 24 VDC supply	
4098-9822 Unsupervised Relay, Requirements for Bases 4098-9789 and 4098-9791 (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

Individually addressable manual fire alarm stations with:

- Power and data supplied via IDNet or MAPNET II addressable communications using a single wire pair
- Operation that complies with ADA requirements
- The NO GRIP Single Action Station and Retrofit Kit are available with a more easily operated pull lever for applications where anticipated users may find the standard station lever difficult to activate
- Pull lever that protrudes when alarmed
- Break-rod supplied (use is optional)
- Models are available with single or double action (breakglass or push) operation
- UL listed to Standard 38

Compatible with the following Simplex® control panels:

- Model Series 4100ES, 4100U, 4010ES, 4010, 4008, 4020, 4100, and 4120 fire alarm control panels equipped with either IDNet or MAPNET II communications
- Model Series 2120 Communicating Device Transponders (CDTs) equipped with MAPNET II communications

Compact construction:

- Electronics module enclosure minimizes dust infiltration
- Allows mounting in standard electrical boxes
- Screw terminals for wiring connections

Tamper resistant reset key lock (keyed same as Simplex fire alarm cabinets)

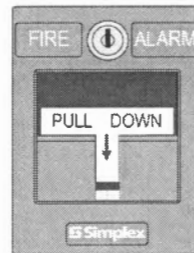
Multiple mounting options:

- Surface or semi-flush with standard boxes or matching Simplex boxes
- Flush mount adapter kit
- Adapters are available for retrofitting to commonly available existing boxes

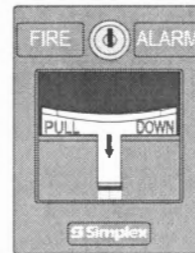
Description

The Simplex addressable manual station combines the familiar Simplex manual station housing with a compact communication module that is easily installed to satisfy demanding applications. Its integral individual addressable module (IAM) constantly monitors status and communicates changes to the connected control panel via IDNet or MAPNET II communications wiring.

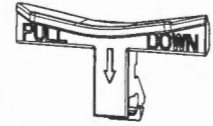
* Refer to page 2 for specific model listings. This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7150-0026:224 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. Accepted for use – City of New York Department of Buildings – MEA35-93E. 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.



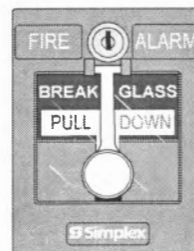
4099-9001
Single action



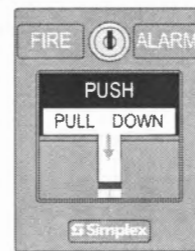
4099-9020
NO GRIP
Single action



4099-9805
NO GRIP
Retrofit kit



4099-9002
Breakglass



4099-9003
Push



With 2099-9828
Institutional
Cover kit

Operation

Activation of the 4099-9001 single action manual station requires a firm downward pull to activate the alarm switch. Completing the action breaks an internal plastic break-rod (visible below the pull lever, use is optional). The use of a break-rod can be a deterrent to vandalism without interfering with the minimum pull requirements needed for easy activation. The pull lever latches into the alarm position and remains extended out of the housing to provide a visible indication.

Single Action NO GRIP Station 4099-9020. For applications such as California Building Code, Title 24, which requires "Controls and operating mechanisms shall be operable with one hand and shall not require tight grasping, pinching or twisting of the wrist" the model 4099-9020 station provides a more easily operated pull lever compared to standard stations. Retrofit of existing stations is available using the 4099-9805 Retrofit kit.

Double Action Stations (Breakglass) require the operator to strike the front mounted hammer to break the glass and expose the recessed pull lever. The pull lever then operates as a single action station.

Double Action Stations (Push Type) require that a spring loaded interference plate (marked PUSH) be pushed back to access the pull lever of the single action station.

Station reset requires the use of a key to reset the manual station lever and deactivate the alarm switch. (If the break-rod is used, it must be replaced.)

Station testing is performed by physical activation of the pull lever. Electrical testing can be also performed by unlocking the station housing to activate the alarm switch.

Addressable Manual Station Product Selection

Addressable Manual Stations, Red Housing with White Letters and White Pull Lever

Model	Description	Housing	Pull Lever	Listings
4099-9001	Single action, English	FIRE ALARM	PULL DOWN	UL, ULC, FM, CSFM, MEA
4099-9001CB	Single action, Bilingual English and French	FEU FIRE	TIREZ PULL	ULC, FM
4099-9001CF	Single action, French	ALARME FEU	ABAISSÉZ	
4099-9002	Double action, Breakglass operation, English	FIRE ALARM	PULL DOWN	UL, ULC, FM, CSFM, MEA
4099-9003	Double action, Push operation, English			
4099-9020	Single action NO GRIP operation, English			

Accessories

Model	Description	
2975-9178	Surface mount steel box, red	Refer to page 3 for dimensions
2975-9022	Cast aluminum surface mount box, red	
2099-9813	Semi-flush trim plate for double gang switch box, red	Typically for retrofit, refer to page 4
2099-9814	Surface trim plate for Wiremold box V5744 -2, red	
2099-9819	Flush mount adapter kit, black	Refer to page 4 for details
2099-9820	Flush mount adapter kit, beige	
2099-9803	Replacement breakglass	
2099-9804	Replacement break-rod	
2099-9828	Institutional cover kit for field installation on 4099-9001	
4099-9805	Retrofit Kit for field conversion of a single action station to a NO GRIP station; refer to Installation Instructions 579-1007 for details	

Specifications (refer to Installation Instructions 574-332 for additional information)

Power and Communications	IDNet or MAPNET II communications, 1 address per station
Address Means	DIP switch, 8 position
Wire Connections	Screw terminal for in/out wiring, for 18 to 14 AWG wire
UL Listed Temperature Range	32° to 120° F (0° to 49° C) intended for indoor operation
Humidity Range	Up to 93% RH at 100° F (38° F)
Housing Color	Red with white raised lettering
Material	Housing and pull lever are Lexan polycarbonate or equal
Pull Lever Color	White with red raised lettering
Housing Dimensions	5" H x 3-3/4" W x 1" D (127 mm x 95 mm x 25 mm)

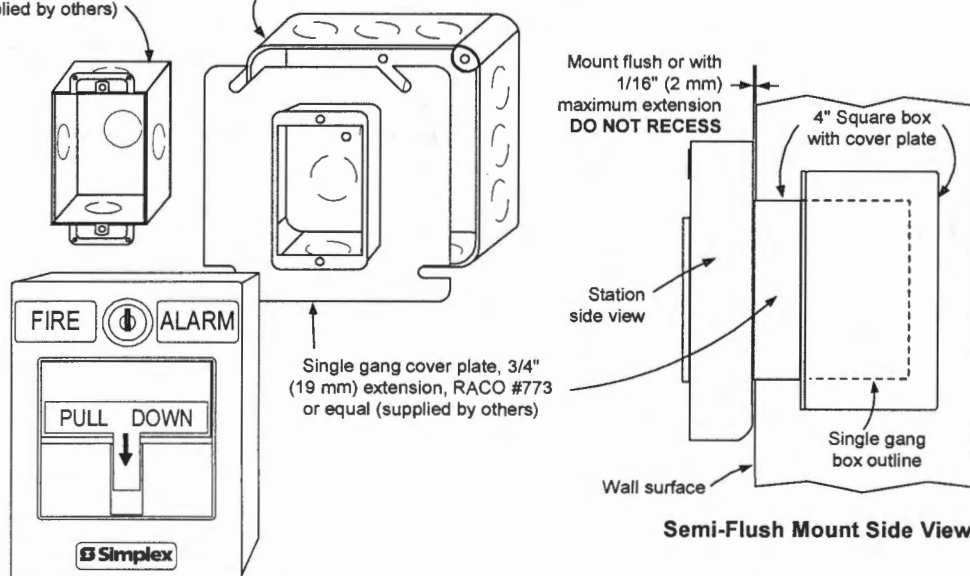
Addressable Manual Station Semi-Flush Mounting

Single Gang Box Mount

Single gang box, 2-1/2" deep (64 mm), RACO #500 or equal (supplied by others)

4" Square Box Mount

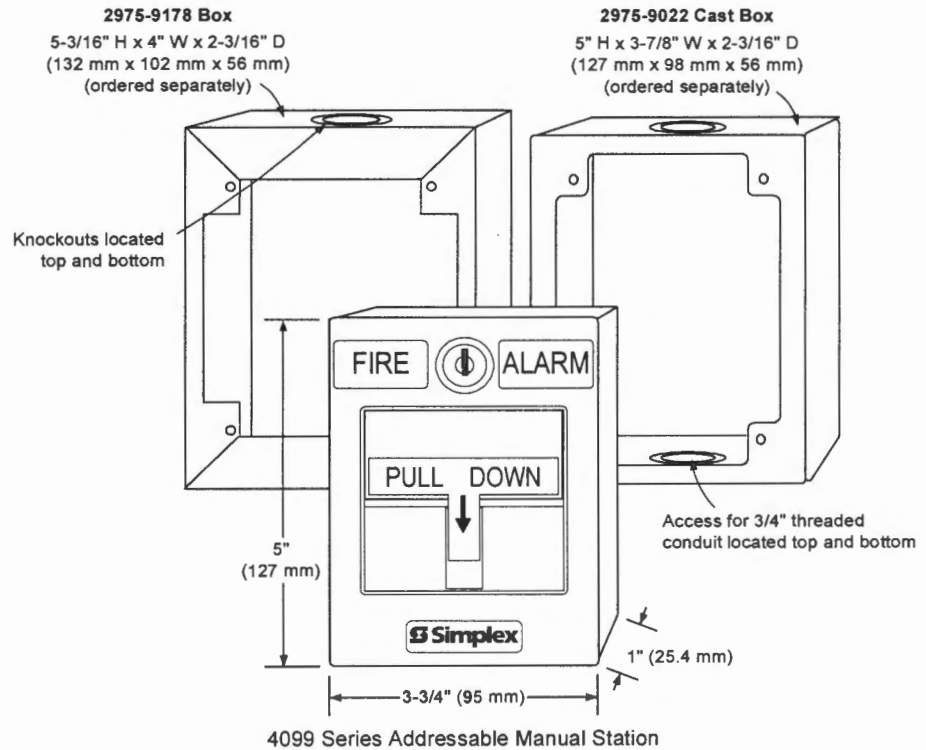
4" (102 mm) square box, 2-1/8" (54 mm) minimum depth, RACO #231 or equal (supplied by others)



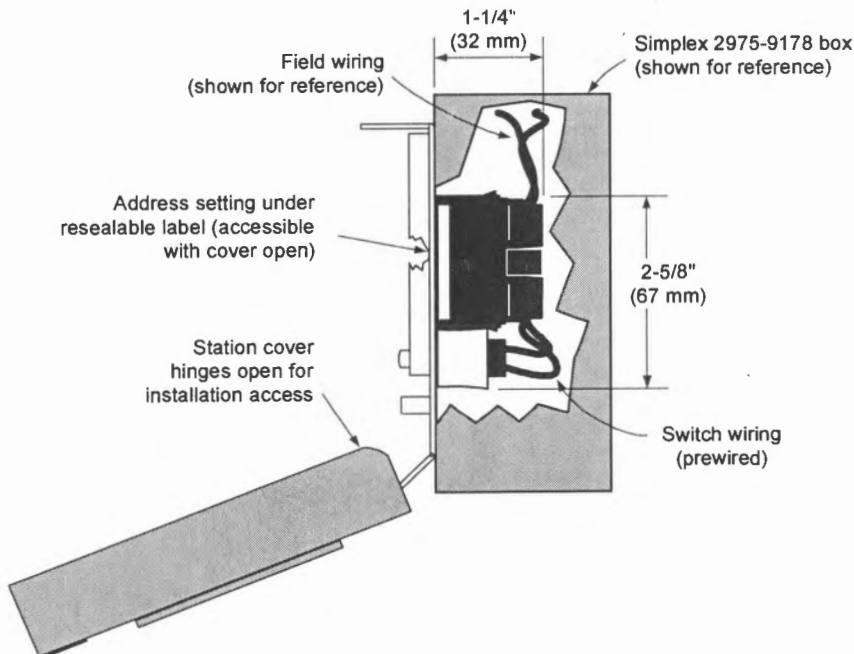
Addressable Manual Stations Surface Mounting

Preferred Mounting. For surface mounting of these addressable manual stations, the preferred electrical boxes are shown in the illustration to the right.

Additional Mounting Reference. Refer to page 4 for Wiremold box mounting compatibility.



Surface Mount Side View with Internal Detail



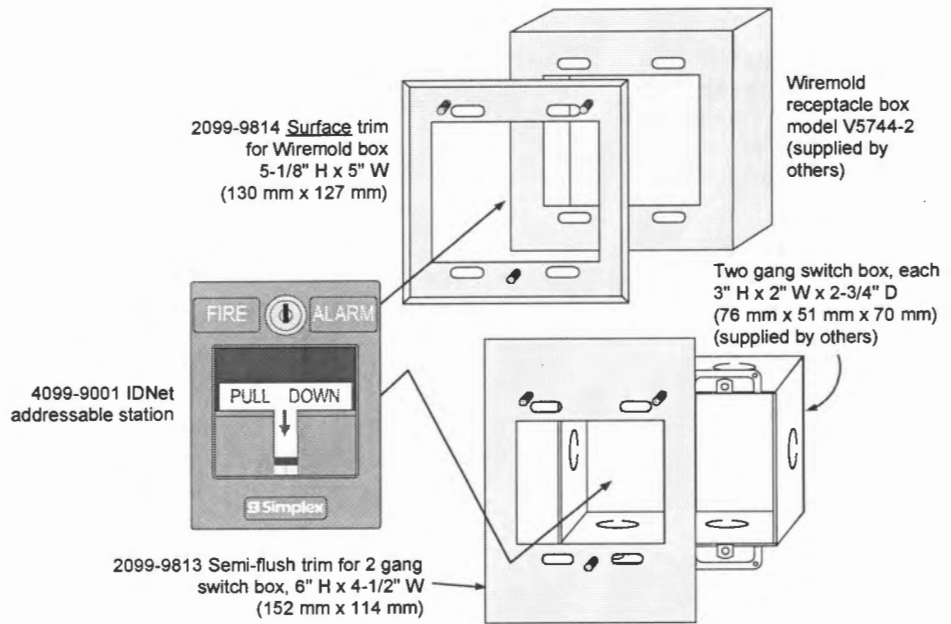
Application Reference

Refer to NFPA 72, the *National Fire Alarm and Signaling Code*, and all applicable local codes for complete requirements for manual stations. The following summarizes the basic requirements.

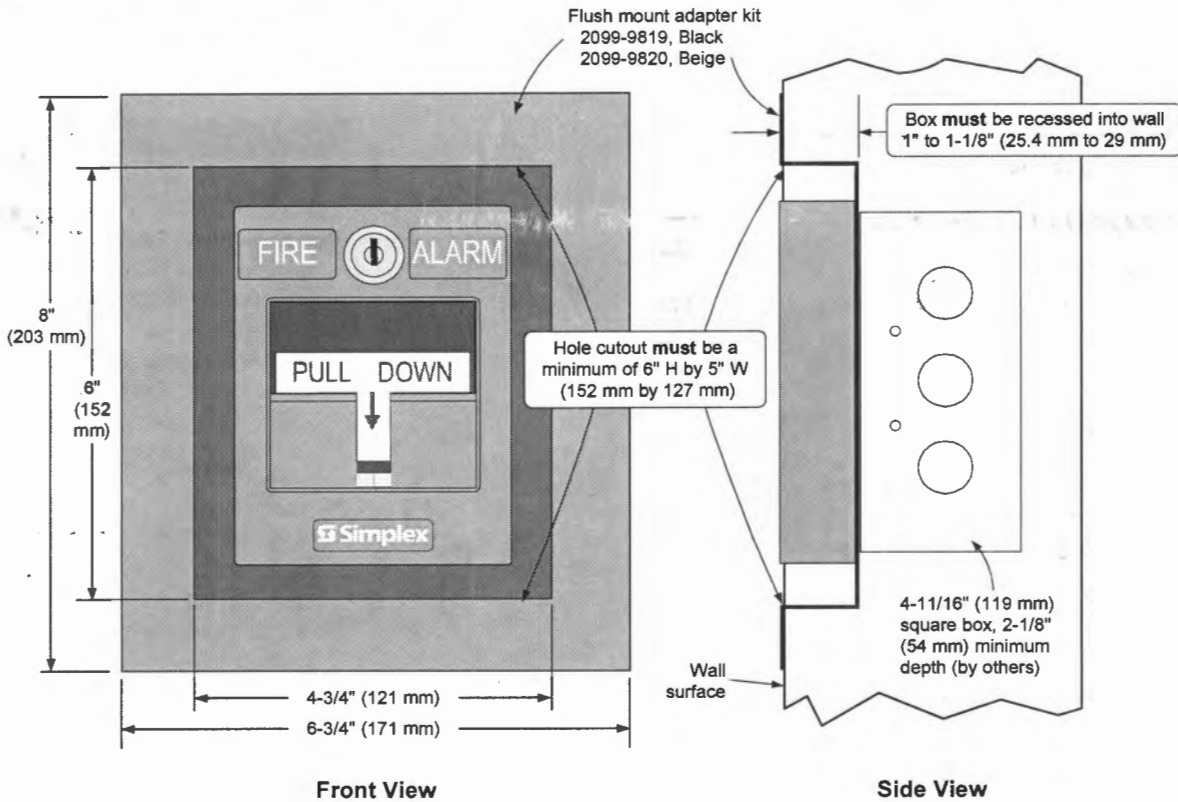
1. Stations shall be located in the normal path of exit and distributed in the protected area such that they are unobstructed and readily accessible.
2. Mounting shall be with the operable part not less than 3-1/2 ft (1.1 m) and not more than 4-1/2 ft (1.37 m) above floor level.
3. At least one station shall be provided on each floor. Additional stations shall be provided to obtain a travel distance not more than 200 ft (61 m) to the nearest station from any point in the building.
4. When manual station coverage appears limited in any way, additional stations should be installed.

Addressable Manual Station, Additional Mounting Information

For retrofit and new installations, additional compatible mounting boxes and the required adapter plates are shown in the illustration to the right.



Addressable Manual Station, Flush Mounting Information



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S4099-0001-8 11/2011

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Features

Manual fire alarm stations for general purpose applications:

- Operation complies with ADA requirements
- Pull lever protrudes when alarmed
- Break-rod is supplied (use is optional)
- Screw terminals for wiring connections
- Tamper resistant reset key lock (keyed same as Simplex® fire alarm cabinets)

Operation types include:

- Single action
- Double Action, Breakglass or Push Type
- Institutional Model, key operated only
- Optional Local Alarm cover
- Optional pre-signal and annunciator contacts

Multiple mounting options:

- Surface or semi-flush with standard boxes or matching Simplex boxes
- Flush mount adapter kit

UL listed to Standard 38

Operation

Activation of the Simplex single action manual stations requires a firm downward pull to activate the alarm switch. Completing the action breaks an internal plastic break-rod (visible below the pull lever, use is optional). The use of a break-rod can be a deterrent to vandalism without interfering with the minimum pull requirements needed for easy activation. The pull lever latches into the alarm position and remains extended out of the housing to provide a visible indication.

Double Action Stations (Breakglass) require the operator to strike the front mounted hammer to break the glass and expose the recessed pull lever. The pull lever then operates as a single action station.

Double Action Stations (Push Type) require that a spring loaded interference plate (marked PUSH) be pushed back to access the pull lever of the single action station.

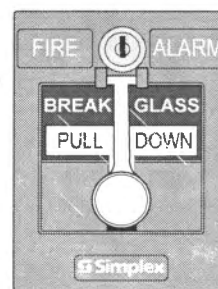
Station reset requires the use of a key to reset the manual station lever and deactivate the alarm switch. (If the break-rod is used, it must be replaced.)

Station testing is performed by physical activation of the pull lever. Electrical testing can be also performed by unlocking the station housing to activate the alarm switch.

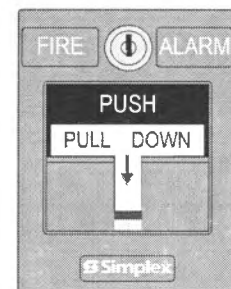
Institutional Stations activate by key operation only allowing access for manual alarms to be initiated by authorized personnel. Operation requires key insertion and opening of the station cover.



Single Action Station



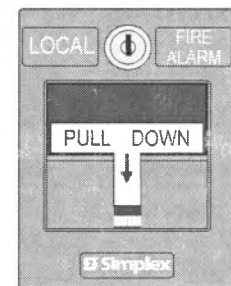
Double Action Station (Breakglass)



Double Action Station (Push Type)



Single Action Station with Institutional Cover



Local Fire Alarm Cover Option

Operation (Continued)

Pre-Signal Option activates when the lever is pulled. General alarm initiation requires a key to activate a keyswitch located behind the pull lever.

Station Reset requires the use of a key to reset the manual station lever and deactivate the alarm switch. If the break-rod is used, it must be replaced.

Testing requires physical activation of the pull lever (except for institutional stations).

* Refer to page 2 for models with MEA acceptance. These products have been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7150-0026:175 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. 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.

Application Reference

Refer to NFPA 72, the *National Fire Alarm Code*, and all applicable local codes for complete requirements for manual stations. The following summarizes the basic requirements.

1. Stations shall be located in the normal path of exit and distributed in the protected area such that they are unobstructed and readily accessible.
2. Mounting shall be with the operable part not less than 3-1/2 ft (1.1 m) and not more than 4-1/2 ft (1.37 m) above floor level.

3. At least one station shall be provided on each floor. Additional stations shall be provided to obtain a travel distance not more than 200 ft (61 m) to the nearest station from any point in the building.
4. When manual station coverage appears limited in any way, additional stations should be installed.

Product Selection

Single Action Models (General Alarm)

Model	MEA	Pre-Signal	Annunciator Contacts, N.O.	Annunciator Contacts, N.C.	Local Alarm Cover	Institutional Cover	Mounting Notes
2099-9754	✓						1
2099-9101	✓		✓				2
2099-9102	✓			✓			
2099-9107		✓	✓				
2099-9755	✓				✓		1
2099-9762	✓					✓	1

Double Action Models (General Alarm)

Model	MEA	Break-Glass	Push	Pre-Signal	Annunciator Contacts N.O.	Annunciator Contacts N.C.	Mounting Notes
2099-9103	✓	✓					1
2099-9104	✓	✓			✓		2
2099-9105	✓	✓				✓	
2099-9108		✓		✓	✓		
2099-9756	✓		✓				1
2099-9757	✓		✓		✓		2
2099-9758	✓		✓			✓	
2099-9759			✓	✓	✓		

Accessories

Model	Description
2099-9803	Replacement breakglass (standard, English)
2099-9804	Replacement break-rod
2099-9819	Flush adapter kit, black (refer to page 4)
2099-9820	Flush adapter kit, beige (refer to page 4)
2099-9822	Replacement retaining clip for breakglass
2099-9828	Institutional cover kit
2975-9178	Red, surface mount box, sheet metal, 5-3/16" H x 4" W x 2-3/16" D (127 mm x 102 mm x 56 mm)
2975-9022	Red, cast aluminum surface mount box, 5" H x 3-7/8" W x 2-3/16" D (127 mm x 98 mm x 56 mm)

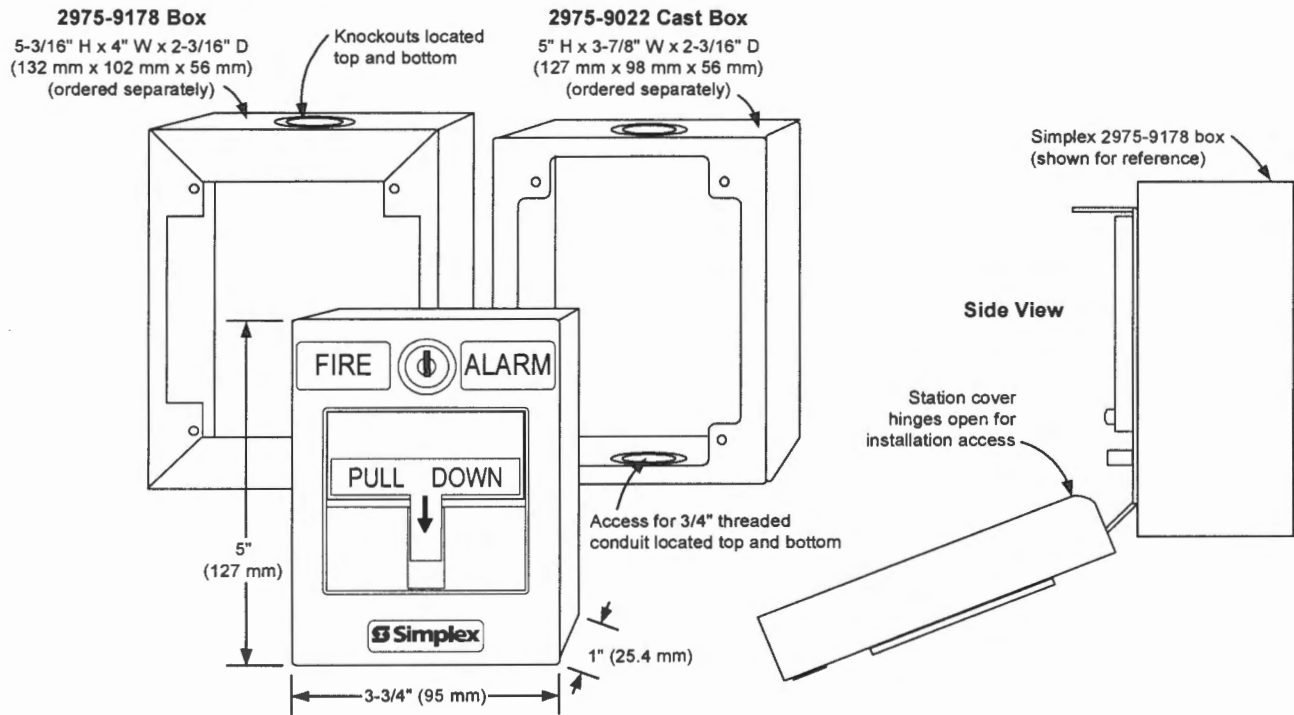
Notes:

1. These models can be semi-flush mounted using a standard single gang 2-1/2" (64 mm) deep switch box. DO NOT RECESS BOX, mount box flush or with 1/16" (2 mm) maximum protrusion. These models can also be surface mounted on a Wiremold box model number V5744S, 4-5/8" H x 2-7/8" W x 2-1/4" D (117 mm x 73 mm x 57 mm).
2. For surface mount, these models require 2975-9178 or 2099-9022 boxes. For semi-flush mount, these models require a 4" (102 mm) square box with a single gang cover plate (see diagram on page 3).

Additional Manual Station Reference

Non-Addressable Manual Stations	Data Sheet	Addressable Manual Stations	Data Sheet
Releasing Stations	S2099-0010	Standard Addressable	S4099-0001
Stations for hazardous locations (Ring -Pull)	S2099-0008	Addressable for Releasing	S4099-0002
Metal housing and explosion-proof/weather-proof stations (T-Handle)	S2099-0009	Wire Guard (addr./non-addr.)	S2099-0004

Surface Mounting Reference



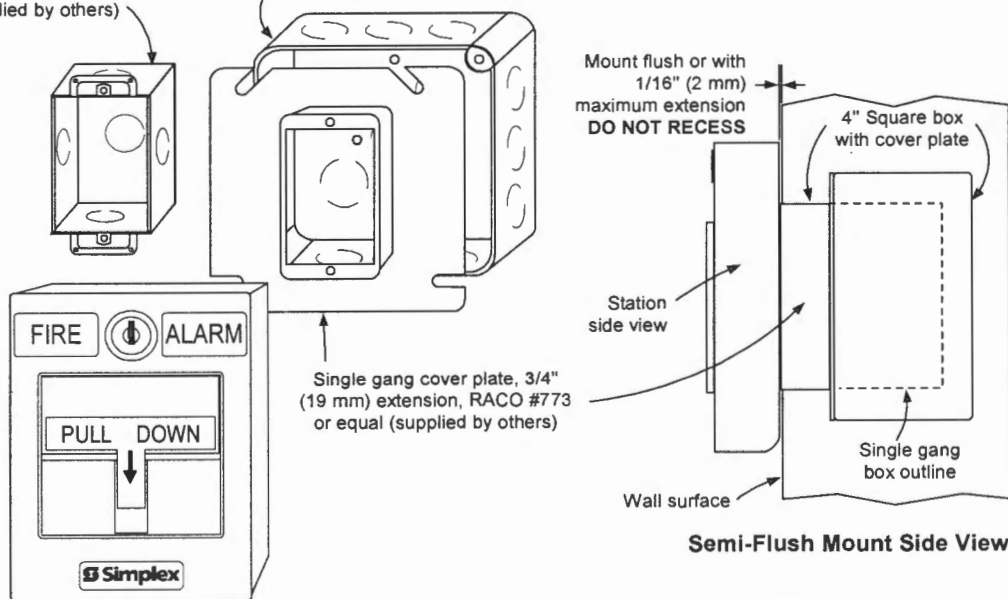
Semi-Flush Mounting Reference

Single Gang Box Mount

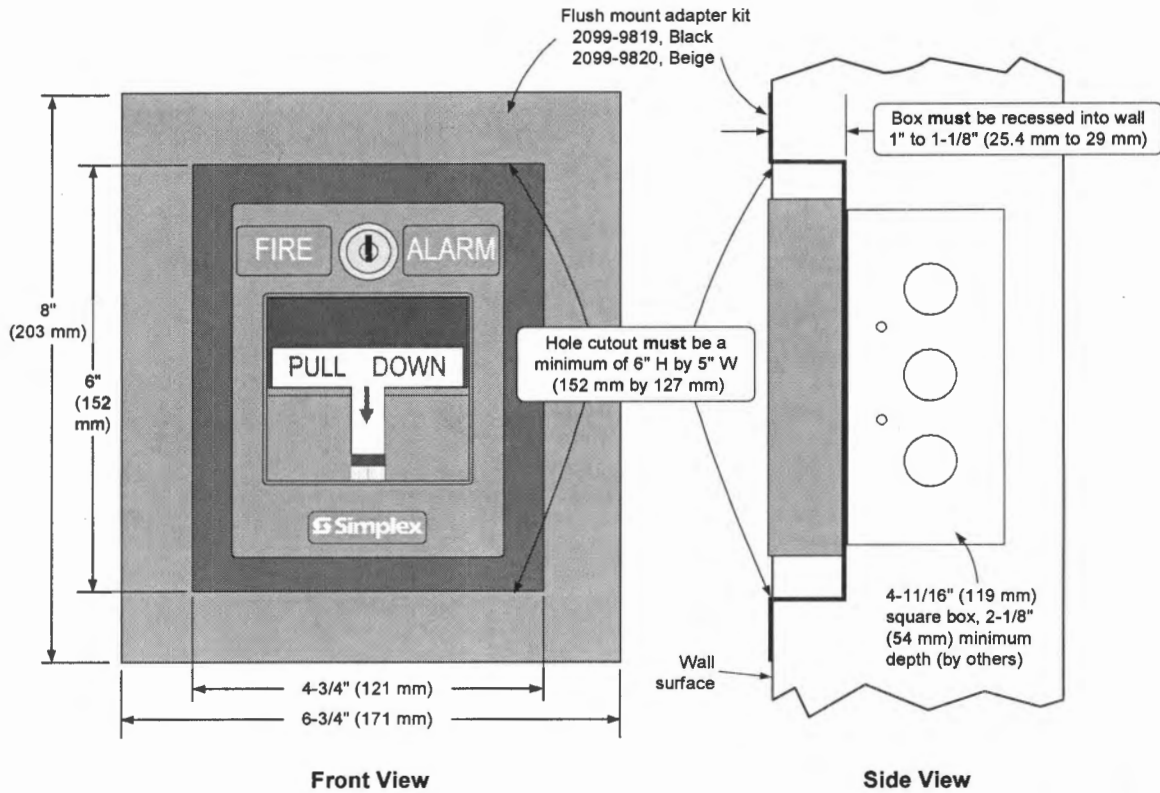
Single gang box, 2-1/2" deep (64 mm), RACO #500 or equal (supplied by others)

4" Square Box Mount

4" (102 mm) square box, 2-1/8" (54 mm) minimum depth, RACO #231 or equal (supplied by others)



Flush Mount Reference



Specifications

Wire Connections	Screw terminal for in/out wiring, for 18 to 14 AWG wire
UL Listed Temperature Range	32° to 120° F (0° to 49° C) intended for indoor operation
Humidity Range	Up to 93% RH at 100° F (38° F)
Housing Color	Red with white raised lettering
Material	Housing and pull lever are Lexan® polycarbonate or equal
Pull Lever Color	White with red raised lettering
Housing Dimensions	5" H x 3-3/4" W x 1" D (127 mm x 95 mm x 25 mm)

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S2099-0007-15 7/2007

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Features

Remote LCD annunciator for use with Simplex® model 4010ES fire alarm control panels

LCD readout provides:

- Two lines of 40 characters each
- Wide viewing angle, super-twist design
- LED backlighting

Control switches and status LEDs for:

- Alarm, Priority 2, Supervisory, or Trouble acknowledge (keyswitch access controlled)
- Alarm silence, System reset
- Three programmable control switches

Three programmable LED indicators:

- Two LEDs are selectable as red or yellow
- One LED is selectable as green or yellow
- With provisions for custom labeling

Additional features:

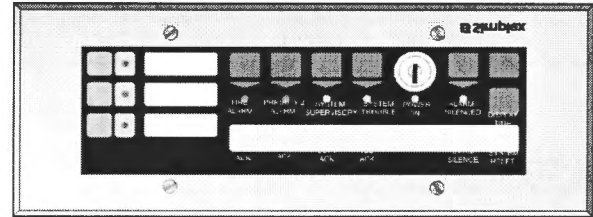
- Information is transmitted over a single unshielded twisted pair; separate wiring is required for 24 VDC control panel power
- Tone-alert sounder provides local audible indication
- Lamp and LCD are functionally tested each time the keyswitch is turned on
- Mounts flush on standard 6-gang electrical box
- Up to up to 20 internal and external card addresses per 4010ES fire alarm control panel

Mounting and trim options (ordered separately, see page 3 for more details):

- Surface mount box models 2975-9206 or 2975-9217
- Flush mount box models RACO 965 masonry box or RACO 590 gangable switch box plasterboard box or equivalent
- Brushed aluminum trim model 4603-9111

Description

Local Annunciation. 4606-9102 LCD Annunciator allows 4010ES fire alarm control panels to provide information and control switches at convenient locations away from the control panel. The LCD is an 80 character, back-lit, alphanumeric display with information presented in clear and descriptive English. Typical content includes: point status (alarm, trouble, etc.), alarm type (smoke detector, manual station, etc.), number of system alarms, supervisory conditions, troubles, and custom location labels up to 40 characters long.



4606-9102 LCD Annunciator

Description (Continued)

Communications. Data communications require a single unshielded twisted pair that supports other annunciators on the same communications channel.

Indications. Alarm, Priority 2, Supervisory, and Trouble conditions are also indicated by dedicated LEDs and a tone-alert audible indication. Each condition has a dedicated acknowledge push-button switch that silences the tone-alert but leaves the LED on until all conditions in that category are restored to normal.

Activity Scrolling. Repeated operation of the appropriate acknowledge switch will scroll the LCD display showing activity in the sequence of occurrence. The internal tone-alert also sounds to indicate the operation of any of the push-button switches.

Operation

Keyswitch Access. All switches on the annunciator are controlled by the "ENABLE" keyswitch with a key that is removable only in the disabled position. A brief Lamp/LCD test is performed whenever the keyswitch is changed from enabled to disabled.

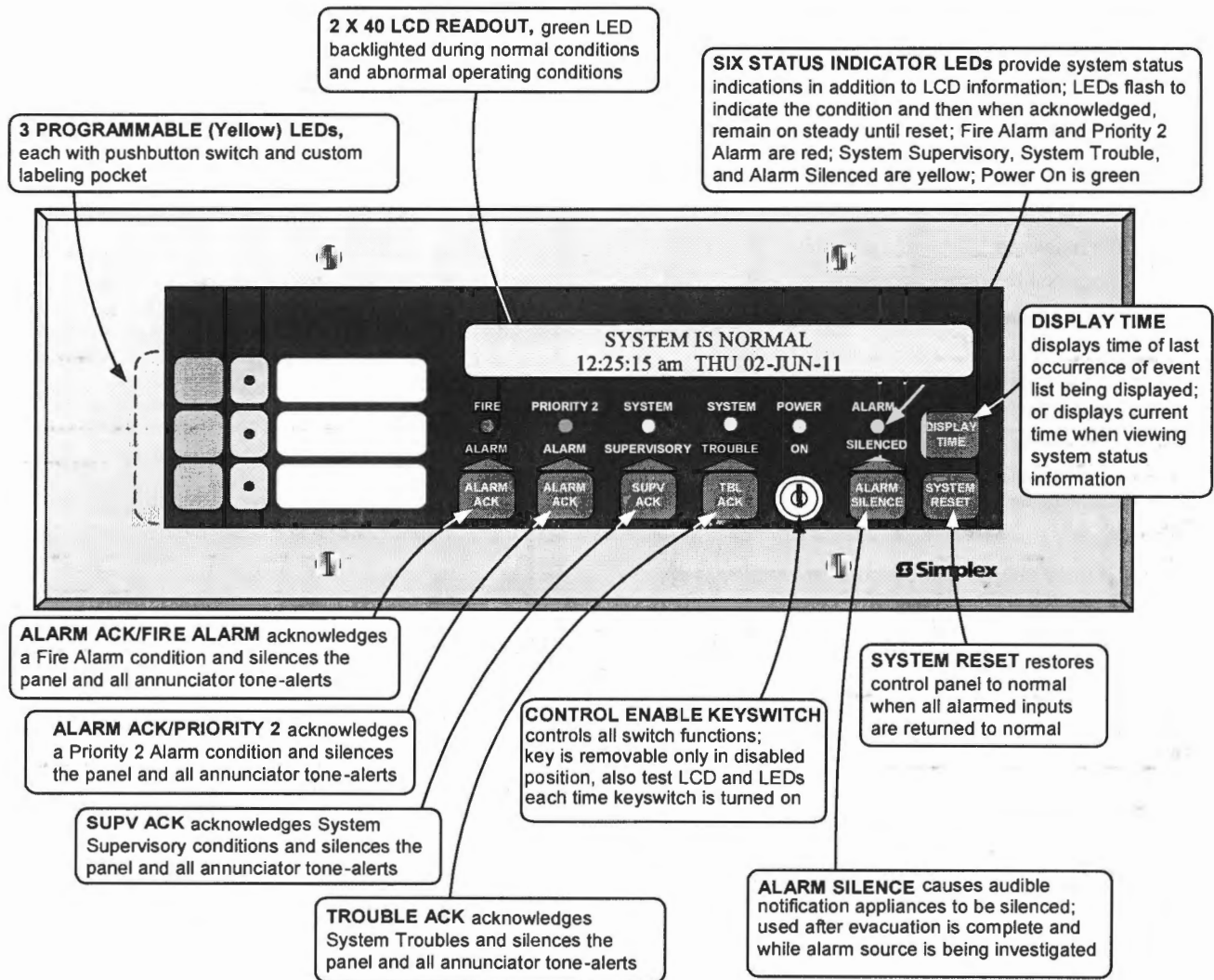
Enabled Operations. When enabled, notification appliances can be deactivated by pressing the "ALARM SILENCE" switch. Pressing the "SYSTEM RESET" switch restores the system to normal operation. When system activity is normal, the LCD displays the time, date, and "SYSTEM IS NORMAL."

* 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 7120-0026:0370 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. 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 SimplexGrinnell LP, Westminster.

Product Selection

Model	Description	
4606-9102	Remote LCD Annunciator with beige trim for 4010ES	Refer to specifications on page 3 for additional details
4603-9111	Brushed aluminum trim option	
2975-9206	Matching surface mount box; ivory finish	
2081-9044	Overvoltage protector; required where annunciator communications and power wiring exits and enters a building; refer to data sheet S2081-0016 for details	

4606-9102 Operator Information



4606-9102 LCD Annunciator Specifications

General Operating Specifications

Voltage	18 to 32 VDC, system supplied
Normal Operating Current	110 mA (with LED backlighting on)
Battery Standby Current	65 mA (during battery backup, LED backlighting is turned off after 30 seconds without switch activity)
Alarm Current	140 mA maximum (LED backlighting is on and tone-alert is sounding)
Operating Temperature Range	32° to 120° F (0° to 49° C)
Operating Humidity Range	Up to 93% RH, non-condensing at 100° F (38° C)

Communications

For 4010ES Panels*	Type	RUI (Remote Unit Interface) external annunciator communications line SLC (signaling line circuit)
	Capacity	Up to 20 total internal and external card addresses
Wiring Requirements	Data	Unshielded Twisted Pair, 18 to 12 AWG (0.82 mm ² to 3.31 mm ²) wires
	Power and Earth	18 to 12 AWG (0.82 mm ² to 3.31 mm ²) wires for 24 VDC system power and Earth ground for electrical box (ground per local code)
	Resistance and Capacitance	0.58 µF (580 nF) maximum capacitance between conductors; 35 Ω maximum total line resistance
Distance	Class X wiring	Up to 2500 ft (762 m)
	Class B "T-Tap" wiring	Up to 10,000 ft (3048 m) total wiring; up to 2500 ft (762 m) to farthest device

Mounting Information

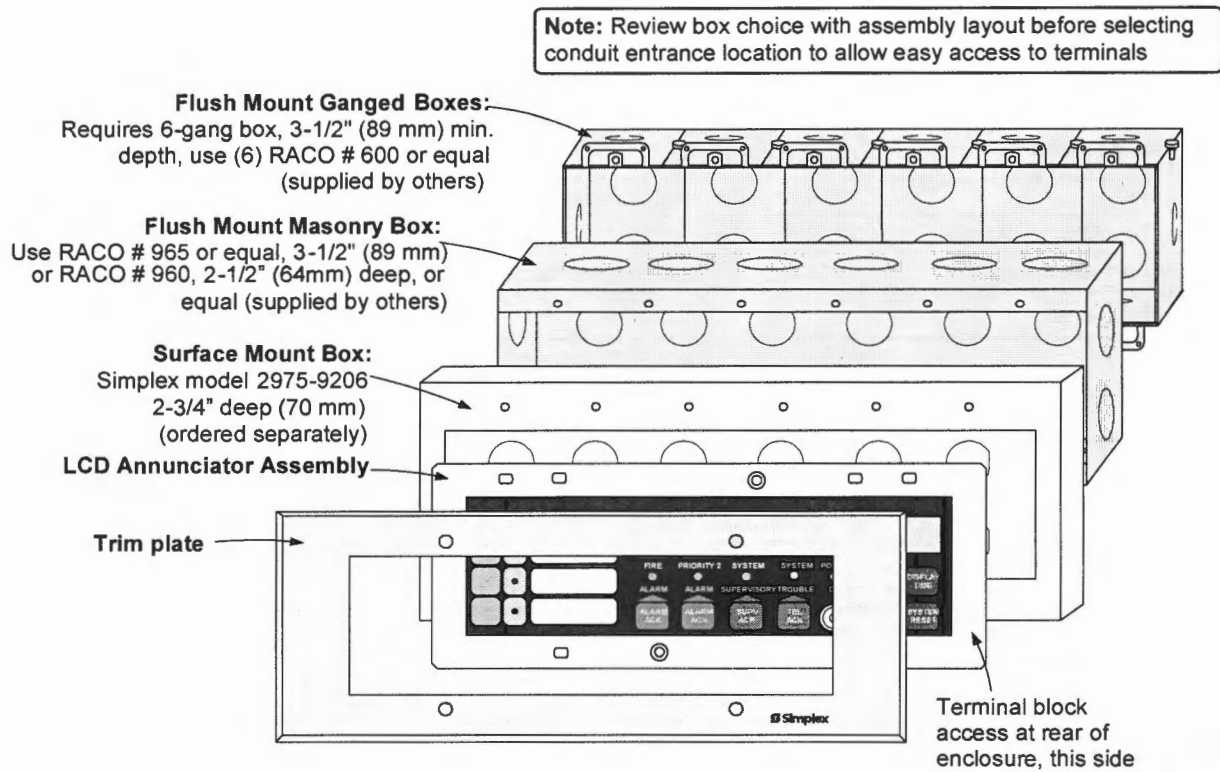
Trim Dimensions	4-1/2" H x 11-13/16" W (114 mm x 300 mm)	
Assembly Depth	1-5/16" (33 mm), 1-1/2" at terminal block location (38 mm)	
Standard Trim Finish	Steel, painted beige	
4603-9111, Optional Trim	Brushed aluminum (ordered separately)	
Boxes for Flush Mounting (supplied by others)	Masonry boxes	Six-gang box, RACO # 965, 3-1/2" (89 mm) deep or equal
	Single gang boxes	Six, single gang boxes, 3-1/2" (89 mm) deep minimum, RACO # 590 or equal
	Box selection note	Conduit entrance is box dependent, refer to Installation Instructions 579-997 for additional mounting information and conduit entry requirements

2975-9206, Surface Mount Box Option (ordered separately)

Dimensions	12" W x 4-5/8" H x 2-3/4" D (305 mm x 117 mm x 70 mm)
Finish	Painted steel, ivory finish
Mounting Note	Mounting is compatible with an installed Surface Mount Box 2975-9217 (1-3/4", 44 mm deep); however, use of the deeper 2975-9206 box is recommended for easier installation

* Refer to 4010ES control panel data sheet for additional panel information.

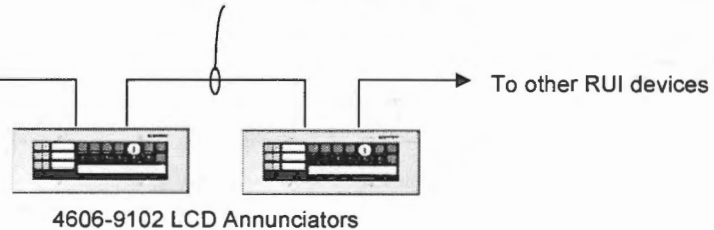
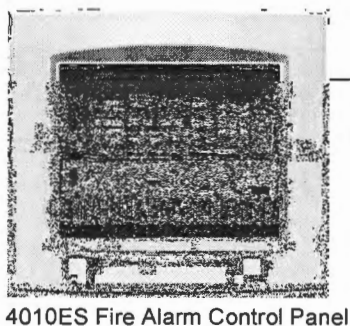
Mounting Information



Wiring Reference

Interconnection Wiring Notes

1. Communications require 18 to 12 AWG unshielded twisted pair
2. Power requires two 18 to 12 AWG wires for 24 VDC system power plus Earth Ground to each electrical box
3. Refer to installation instructions supplied with the compatible control panel for additional information and wiring specifications



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S4606-0002-2

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Features

Remote LCD annunciator for use with Simplex® model:

- 4100U, 4100, 4120, and 4020 fire alarm control panels
- 4100/4120 Universal Transponders

Information display features:

- Wide viewing angle, super-twist LCD technology with green LED backlighting
- Two lines of 40 characters each
- LED status indicators
- During battery backup, backlighting is disabled until there is switch activity

Controls include:

- Switches for system acknowledge, alarm silence, and system reset
- Four programmable control switches
- Lamp/LCD test

Wiring information:

- RUI (Remote Unit Interface) communications require a single twisted, shielded wire pair
- Separate wiring is required for 24 VDC control panel power

Flush mount on standard electrical boxes

Options

- 2975-9206, Surface mount box
- 4603-9111, Brushed stainless steel trim

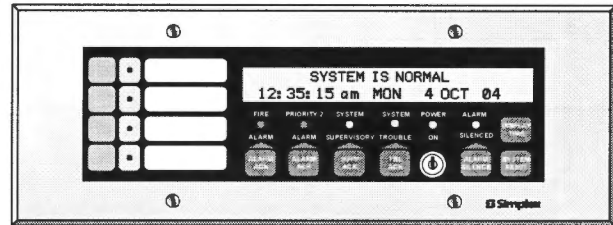
UL Listed to Standard 864

Description

Remote Control and Annunciation is provided using an 80 character, back-lit, alphanumeric display. Information is presented in clear, descriptive English language and includes: **Point Status** (alarm, trouble, etc.); **Alarm Type** (smoke detector, manual station, etc.); **Number of System Alarms, Supervisory Conditions, and Trouble Conditions**; and a **Custom Location Label**.

Wiring. A single twisted, shielded wire pair provides serial RUI communications that also supports other Simplex serial annunciators on the same wire pair.

Multiple Indications. Alarm, Supervisory, and Trouble conditions are also indicated by dedicated LEDs and a tone-alert audible sounder. Each condition has a dedicated acknowledge push-button switch that silences the tone-alert but leaves the LED on until all conditions in that category are restored to normal. Switch operation is either globally or individually acknowledgeable, determined by the control panel operation.



4603-9101 LCD Annunciator

Description (Continued)

Repeated operation of the appropriate acknowledge switch will scroll the LCD display showing activity in the sequence of occurrence. The tone-alert also pulses to indicate the operation of any of the push-button switches.

Consult local code requirements for guidance in determining applications and location of the 4603-9101 LCD annunciator.

Operation

System Controls. Notification appliances can be deactivated by pressing the "ALARM SILENCE" switch. (Exact operation is determined by the host control panel such as visible appliances remaining on until system is reset.) Pressing the "SYSTEM RESET" switch restores the system to normal operation. When system activity is normal, the LCD displays the time, date, and "SYSTEM IS NORMAL."

Control Switches. Four programmable "CONTROL" switches and associated LEDs are included. Typical applications include manual evacuation, door holder release bypass, and elevator capture bypass.

Keyswitch Enable. All switches on the annunciator are controlled by the "ENABLE" keyswitch with a key that is removable only in the disabled position. A brief lamp/LCD test is performed whenever the keyswitch is changed from enabled to disabled.

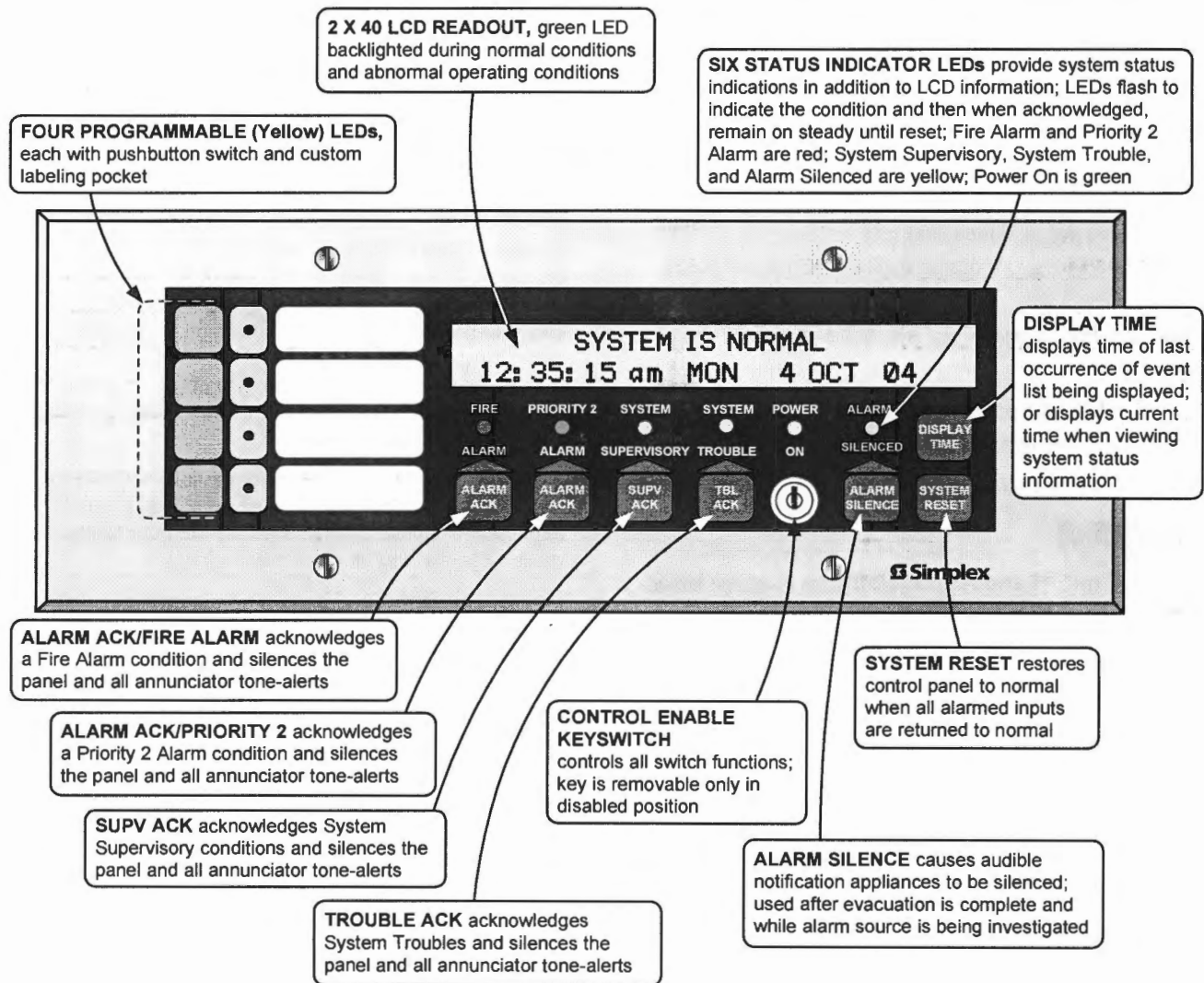
Battery Backup Operation. During battery backup, the LED backlighting is disabled to conserve battery power. When an annunciator switch is activated, the backlighting is automatically enabled. After approximately 30 seconds of inactivity, the backlighting will again be disabled.

* 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 7120-0026:179 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. 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.

Product Selection

Model	Description	
4603-9101	Remote LCD Annunciator with beige trim	Refer to specifications on page 3 for additional details
4603-9101C	Remote LCD Annunciator with beige trim, for Canada	
4603-9111	Brushed stainless steel trim option	
2975-9206	Matching surface mount box; ivory finish	
2081-9044	Overvoltage protector; required where annunciator communications and power wiring exits and enters a building; refer to data sheet S2081-0016 for details	

4603-9101 Operator Information



4603-9101 LCD Annunciator Specifications

General Operating Specifications

Voltage	20.4 to 32 VDC, system supplied
Normal Operating Current	170 mA, backlighting enabled
Battery Standby Current	Supervisory: 30 mA, backlighting disabled Alarm: 170 mA, backlighting enabled
Operating Temperature Range	32° to 120° F (0° to 49° C)
Operating Humidity Range	10% to 90% from 32° F to 104° F (0° C to 40° C)

Communications

4100U Capacity, Per RUI Output	Type	RUI (Remote Unit Interface) external annunciator communications line SLC (signaling line circuit)
	Capacity	Up to 31 remote annunciators/MINIPLEX [®] transponders per channel including the 4603-9101 LCD Annunciator, the 4602-9101 Status Command Unit (SCU), and 4602-9102 Remote Command Unit (RCU); refer to data sheet S4100-0031 for additional 4100U information
Wiring Requirements	Data	Single twisted, shielded pair, 18 AWG (0.82 mm ²)
	Power	18 to 12 AWG (0.82 mm ² to 3.31 mm ²) wires for 24 VDC system power
	Earth	A dedicated earth ground connection to the electrical box is required for proper ESD and EMI protection; wire in accordance with NFPA 70 (<i>National Electrical Code</i> [®]) Article 250

Mounting Information

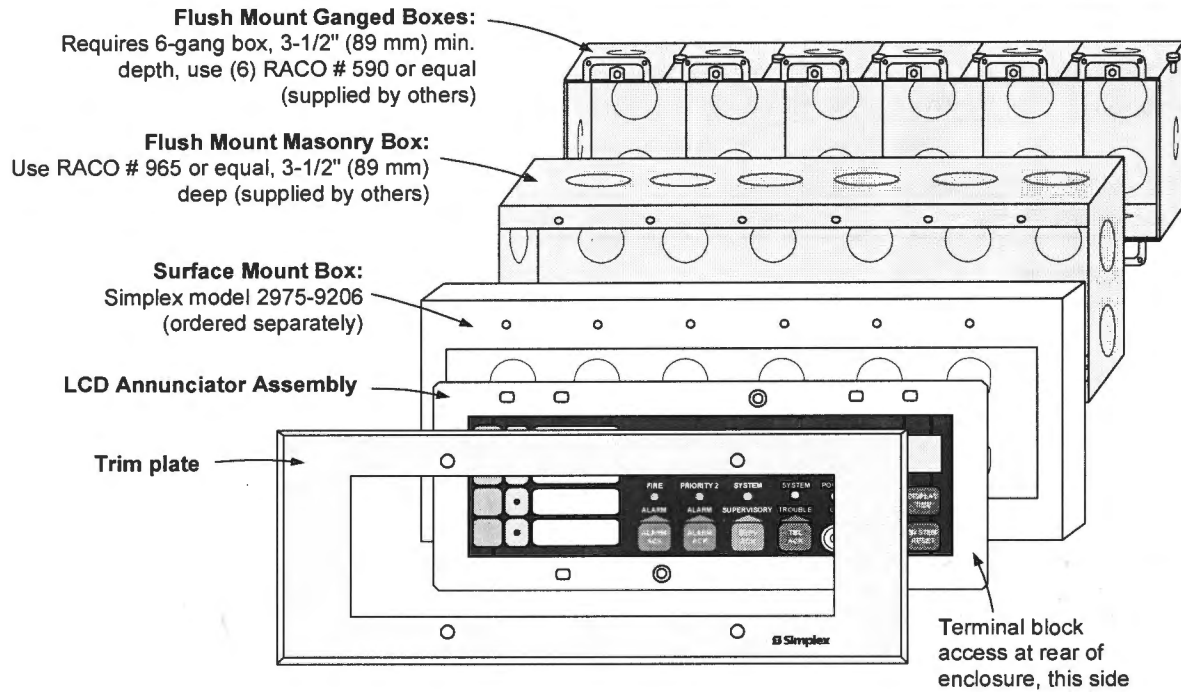
NOTE: General Conduit Entrance Requirement	Conduit entrance must be located a minimum of 2-3/4" (70 mm) from the front of the box to clear assembly
Trim Dimensions	4-1/2" H x 11-13/16" W (114 mm x 300 mm)
Standard Trim Finish	Steel, painted beige
4603-9111, Optional Trim	Brushed stainless steel (ordered separately)
Trim Hardware	Supplied with both slotted and tamper resistant screws
Boxes for Flush Mounting (supplied by others)	6-Gang, 3-1/2" (89 mm) deep: RACO 965, 6-gang masonry box; RACO 590, gangable switch box, 6 required; or equal

2975-9206, Surface Mount Box Option (ordered separately)

Dimensions	11-31/32" W x 4-5/8" H x 2-3/4" D (304 mm x 117 mm x 70 mm)
Finish	Painted steel, ivory finish

Mounting Information

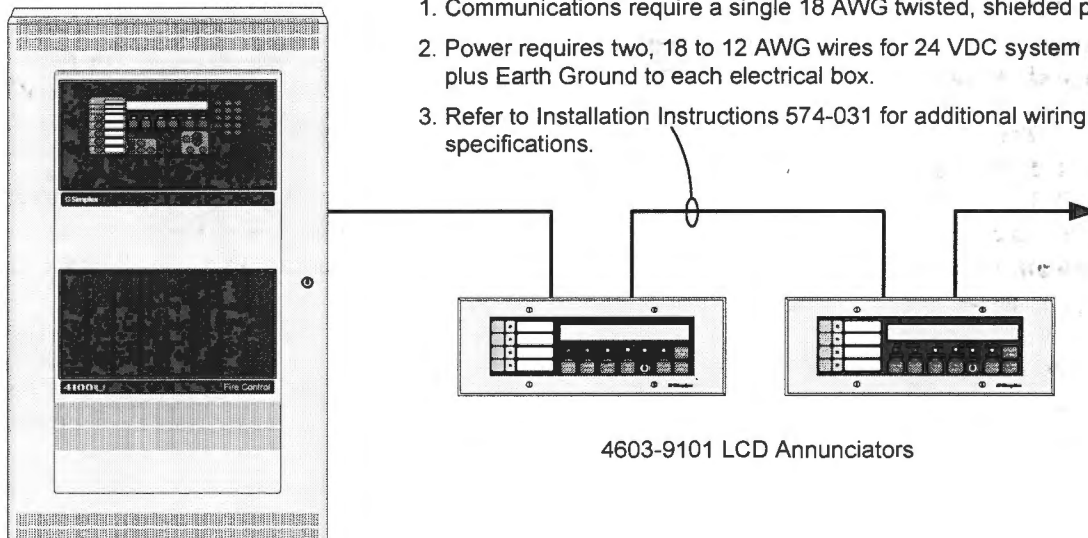
NOTE: Conduit entrance must be located a minimum of 2-3/4" (70 mm) from the front of the box to clear assembly. Review box choice with assembly layout before selecting conduit entrance location.



Wiring Reference

Wiring Notes:

1. Communications require a single 18 AWG twisted, shielded pair.
2. Power requires two, 18 to 12 AWG wires for 24 VDC system power, plus Earth Ground to each electrical box.
3. Refer to Installation Instructions 574-031 for additional wiring specifications.



4100U Fire Alarm Control Panel

4603-9101 LCD Annunciators

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S4603-0001-10 10/2004

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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 1/4, 1/2, 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

Visible notification appliance (strobe):

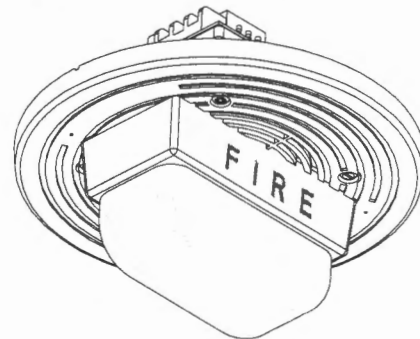
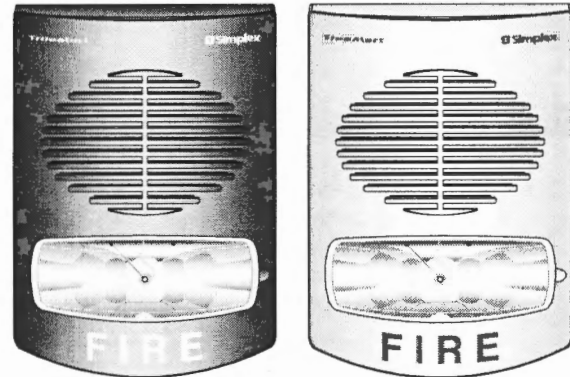
- 24 VDC xenon strobe; intensity is selectable as 15, 30, 75, or 110 candela with visible selection jumper secured behind strobe housing
- Strobes are activated from NACs selected to provide Simplex® strobe synchronization signals or from separate strobe Synchronization Modules that are available for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

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

* Refer to page 2 for listing status of wire guards. 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. It is subject to re-examination, revision, and possible cancellation. 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 Safety Products Westminster.

** Simplex two-wire strobe synchronization operation is protected by U.S. patent Nos. 5,559,492; 5,886,620; 6,741,164; and 6,954,137.



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 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	Description	Housing Dimensions with Lens
4906-9151	Red	White	Multi-tapped Speaker with Multi-Candela Synchronized Strobe; strobe intensity selectable as: 15, 30, 75, or 110 candela	7-1/4" H x 5" W x 2-5/8" D (184 mm x 127 mm x 67 mm)
4906-9153	White	Red		

Ceiling Mount Multi-Candela S/V

Model	Housing Color	"FIRE" Lettering	Description	Dimensions
4906-9154	White	Red	Multi-tapped Speaker with Multi-Candela Synchronized Strobe; strobe intensity selectable as: 15, 30, 75, or 110 candela	Housing = 7-1/2" (191 mm) diameter, 1/2" (13 mm) deep Strobe lens protrusion = 2-5/8" (67 mm) above speaker housing Depth into box = 2-3/4" (70 mm)

Wall Mount S/V Adapters

Model	Description	Dimensions
4905-9946	Surface mount red adapter skirt	7-3/4" H x 5-3/8" W x 3-3/16" D (197 mm x 137 mm x 81 mm) depth with S/V = 5-7/8" (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 5-3/4" 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)	7-7/8" H x 5-1/8" W x 2-3/4" 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	7-1/4" H x 5" W x 1-3/8" 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 (Style Y) operation	1-3/8" 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 (Style Z) 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.)	8-3/8" H x 6-1/16" W x 3-1/4" 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; 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 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	1/4, 1/2, 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)	Wattage Tap	1/4 W	1/2 W	1 W	2 W
	Reverberant Chamber, UL 1480 Test	76 dBA	79 dBA	82 dBA	85 dBA
(see Note 1 below)	Anechoic Chamber, 1 kHz Input, On-Axis	87 dBA	90 dBA	93 dBA	96 dBA

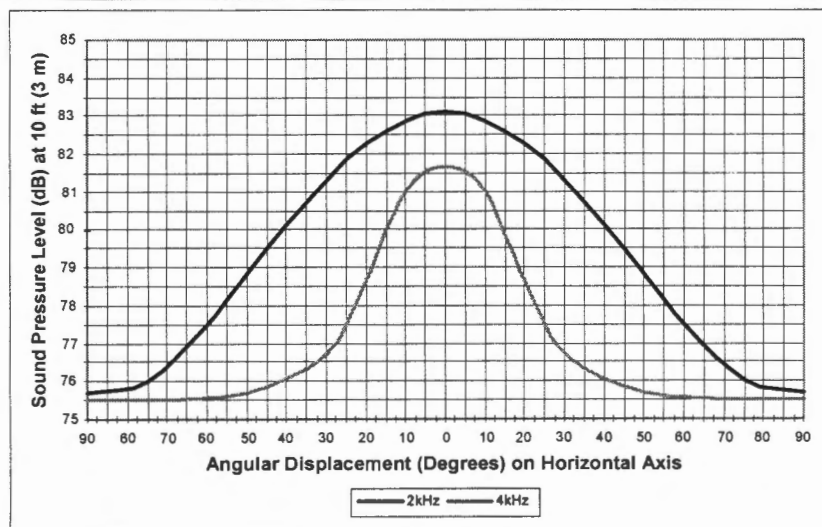
Strobe Specifications

Rated Voltage Range	UL Listed Rating	Regulated 24 VDC; see Note 2 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			
Wall Mount	Housing Dimensions (with lens)	7-1/4" H x 5" W x 2-5/8" D (184 mm x 127 mm x 67 mm)			
	Maximum RMS Current Rating per Strobe Setting (see Note 3 below)	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
24 VDC		40 mA	63 mA	124 mA	168 mA
Ceiling Mount	Housing Dimensions	Speaker housing = 7-1/2" (191 mm) diameter, 1/2" deep (13 mm); lens protrusion above speaker housing = 2-5/8" (67 mm); depth into box = 2-3/4" (70 mm)			
	Maximum RMS Current Rating per Strobe Setting (see Note 3 below)	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
24 VDC		50 mA	83 mA	155 mA	211 mA

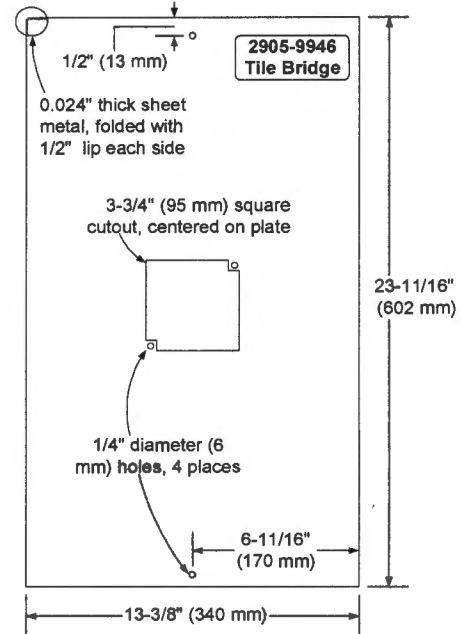
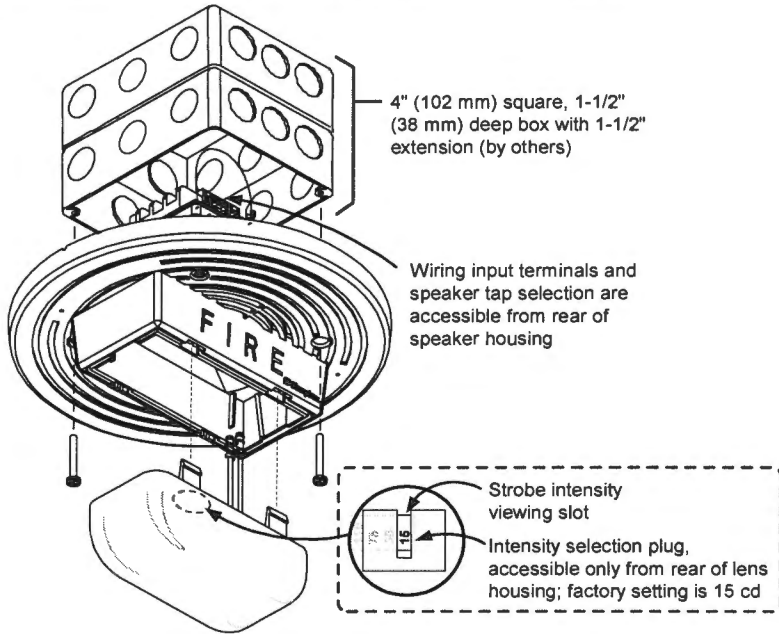
NOTES:

- Speakers are for connection to conventional fire alarm audio circuits. A nechoic speaker output ratings are typically more representative of actual installed sound output.
- "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 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.
- 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.)

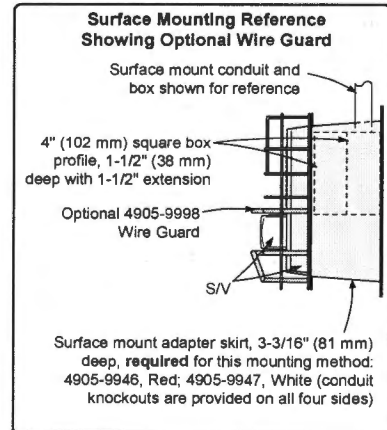
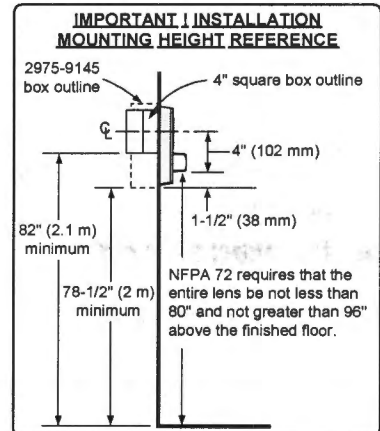
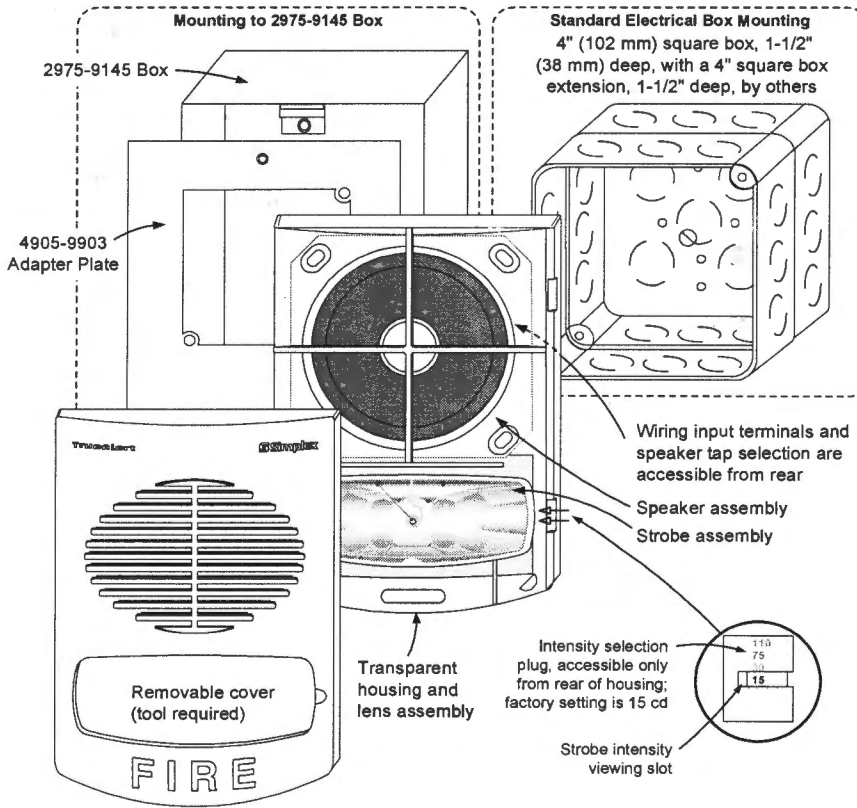
Speaker Directional Characteristics



Ceiling Mount S/V Installation Reference and Tile Bridge Dimensions



Wall Mount Installation Reference



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

Visible Notification Appliances with Synchronized Flash;
Non-Addressable, SmartSync™ Operation Compatible

Features

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

- UL listed to Standard 1971
- 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

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

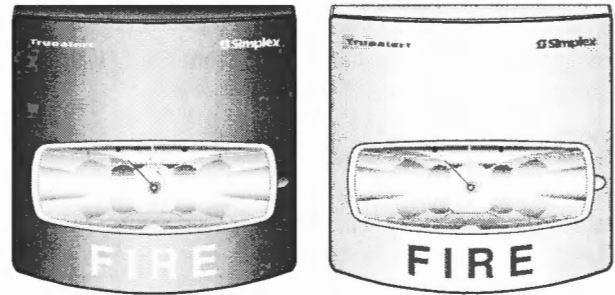
Wall mount strobe features:

- 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

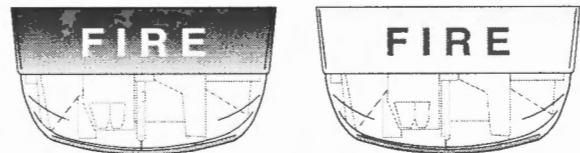
Optional adapters and wire guards:

- 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

* 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.



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).

** 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).

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

Ceiling Mount Strobe Adapter

Model	Description	Dimensions
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)

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 ²) wire leads, rated for 2 A NAC, requires 10 mA for power
4905-9922	Class A	
4905-9938	SmartSync Control Module with Class B or Class A output; mounts in 4" (102 mm) square box	4" x 4-1/8" x 1-1/4" D (102 mm x 105 mm x 32 mm)

Replacement Covers and Guards

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

* UL listed by Space Age Electronics Inc.

SmartSync Control Sources

Class B 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 Extender** (refer to data sheet S4009-0002)
- **SmartSync Control Module (SCM) 4905-9938** (refer to data sheet S4905-0003)

Class A SmartSync two-wire control is available from 4100U NACs and from the 4905-9938 SCM.

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

Strobe Specifications

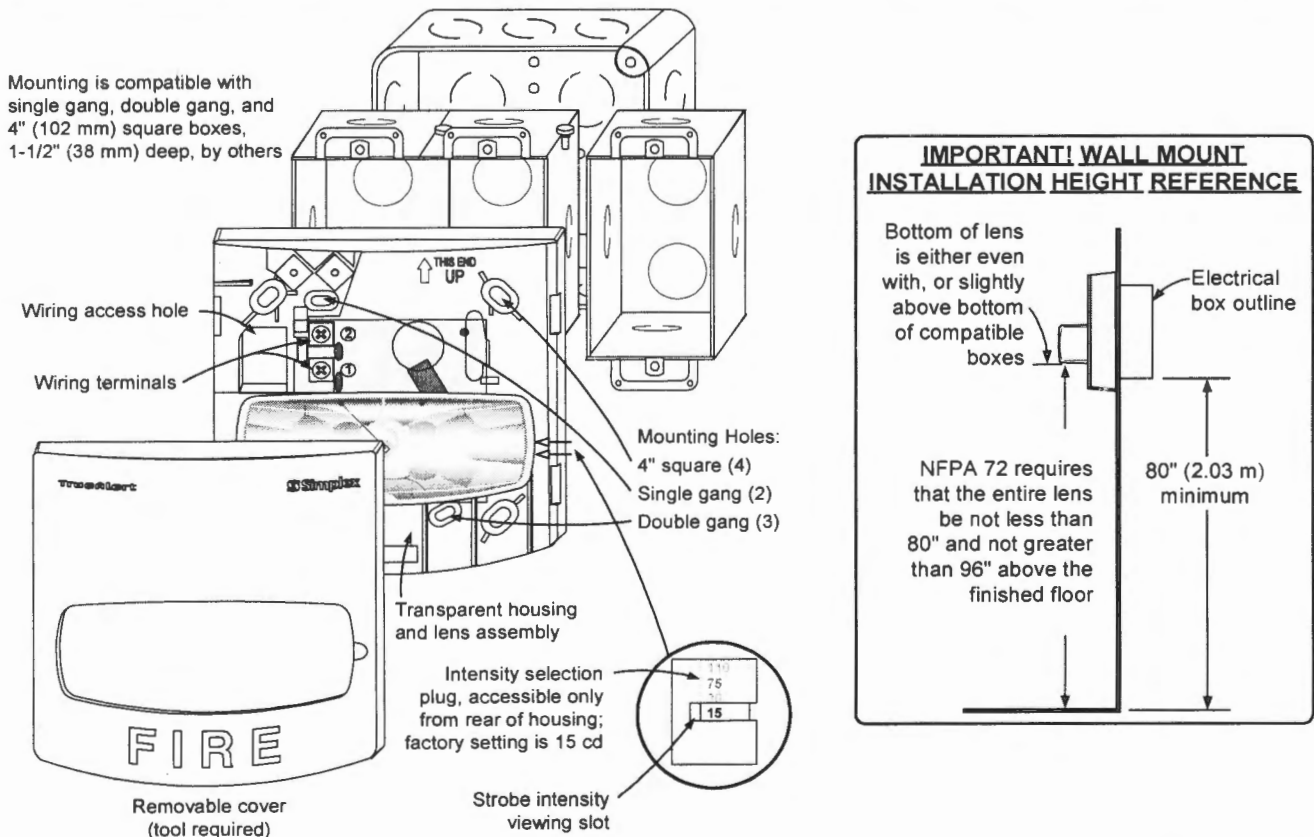
Wall Mount or Ceiling Mount, Common Specifications

Rated Voltage Range	UL Listed Rating	Regulated 24 VDC; see Note 1 below			
	ULC Listed Rating	20 VDC to 30 VDC per ULC S526-M878			
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 ² to 3.31 mm ²); two wires per terminal for in/out wiring			
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 2 below)	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
24 VDC		40 mA	63 mA	124 mA	168 mA
Ceiling Mount	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)	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
24 VDC		50 mA	83 mA	155 mA	211 mA

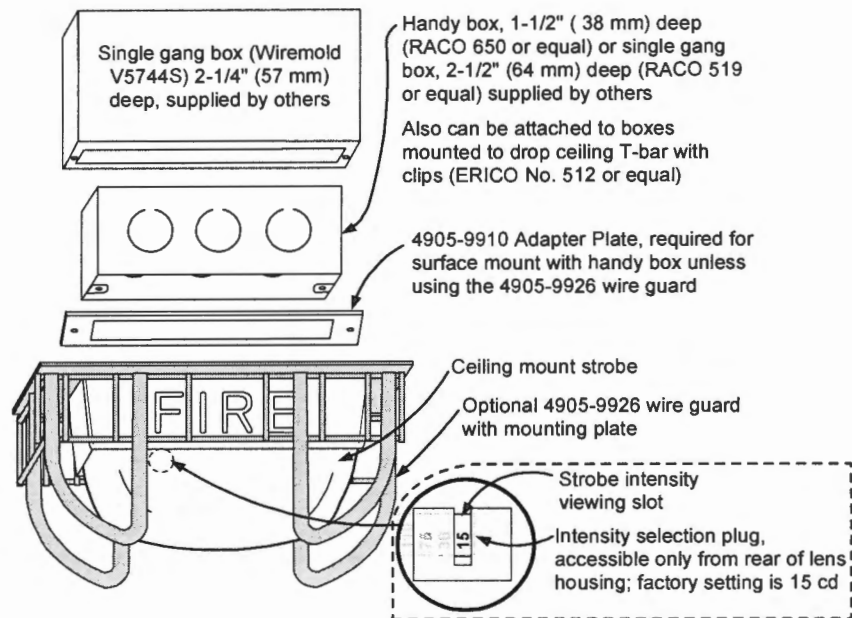
NOTES:

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.)

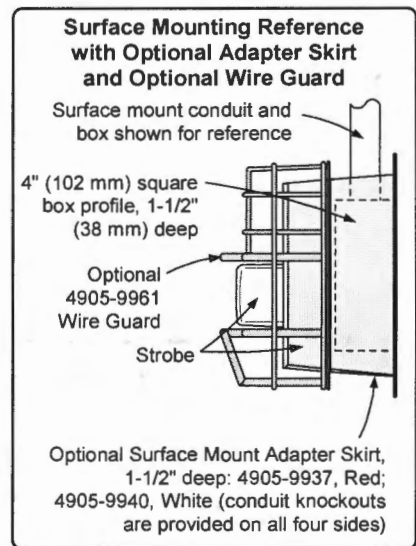
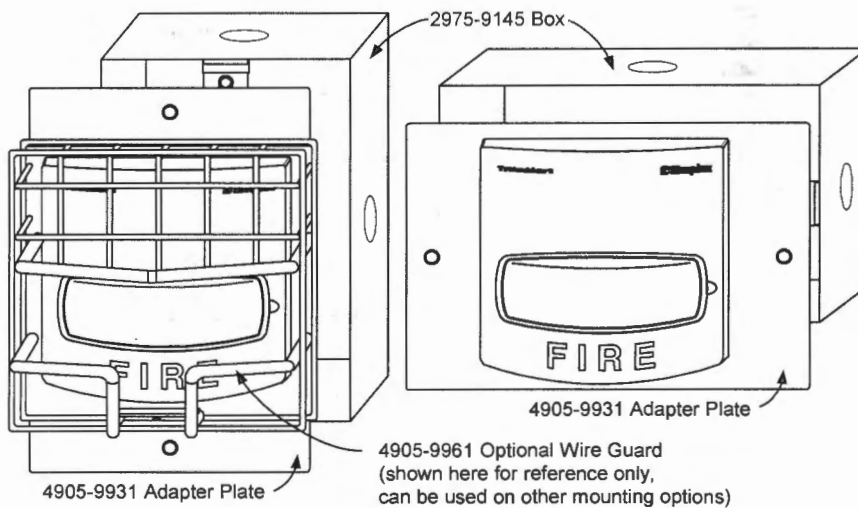
Installation Reference, Surface or Semi-Flush Wall Mounting



Ceiling Mount Strobe Installation Reference



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



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Features

Rechargeable, sealed lead-acid batteries:

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

Available in a variety of capacities:

- Batteries for internal mounting range from 6.2 Ah up to 50 Ah, depending on control panel cabinet size
- Larger batteries, up to 110 Ah, mount in external battery cabinets that are available with internal chargers
- Includes battery chargers with communications compatibility for use with 4010 Series fire alarm control panels and with 4100U Series fire alarm control panels

Description

Simplex® rechargeable sealed-lead acid batteries provide reliable and repeatable discharge and recharge characteristics for use in fire alarm and other systems applications. They are designed with immobilized electrolyte in an absorbent separator, allowing them to provide rated capacity on the first cycle.

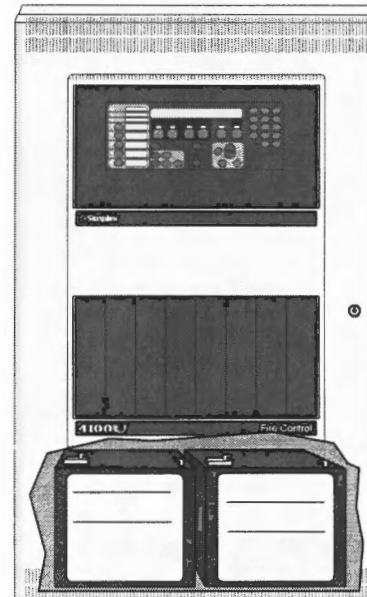
Because of their sealed construction, packaging is allowed within the system electronics enclosure (see illustration on page 2). When this is applicable, the quantity of system cabinets and the battery wiring distances are both minimized. Where required, external battery cabinets can be close-nipped to the control panel to house larger batteries with battery chargers available in some battery cabinet sizes.

Battery Details

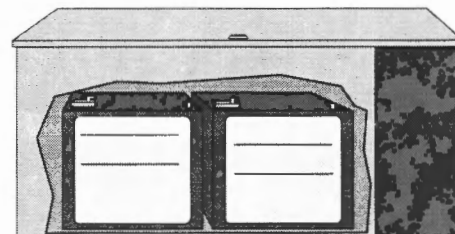
Charging. These batteries are intended to be used with compatible Simplex battery chargers.

Series Connections. These batteries are required to be connected in series to produce 24 V system voltage. Battery sets must be of identical voltage, model number, appearance, and approximately the same date of manufacture for proper operation.

Testing. Battery capacity testing is recommended to be performed by using a sealed lead-acid battery tester designed to withdraw a minimum of battery charge. The preferred tester applies a variety of amplitude and duration controlled test pulses that compares terminal voltage against those predicted for the specific battery size. (Testing is available through your local Simplex product supplier.)



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



Remote Battery Cabinets are Available for Larger Battery Requirements

Battery Details (Continued)

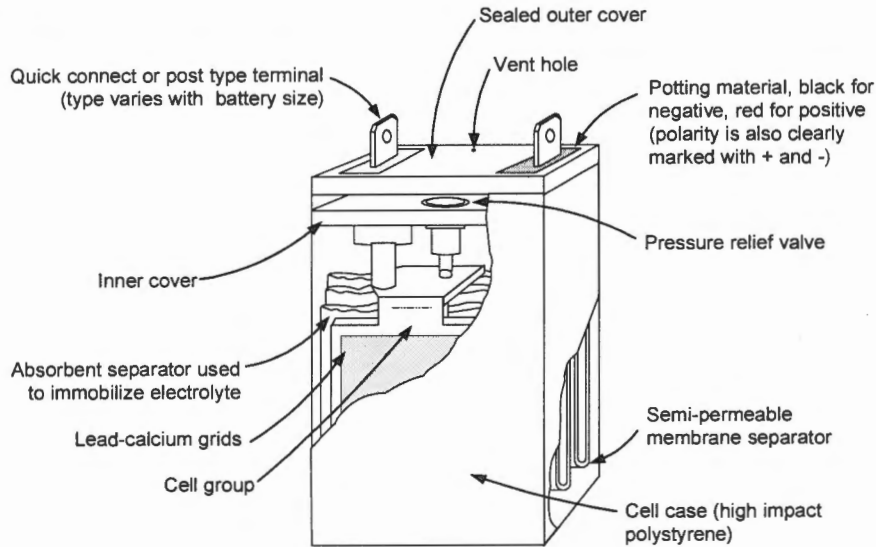
Shipping. Sealed lead-acid batteries are shipped via ground or sea transportation only. They are not shipped via air.

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

* Refer to details on page 4 and to the referenced individual product data sheets for agency listing status of battery cabinets and chargers. The batteries detailed in this document meet the requirements of UL, ULC, and Factory Mutual for use with respective equipment battery chargers as listed on page 3. Contact your local Simplex product supplier for proper battery selection per system requirements. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Safety Products Westminster.

Battery Construction Reference

Actual appearance will vary with battery size.



Battery Size Specifications

Battery Model	Capacity @ 20 Hour Discharge Rate	Width*	Depth*	Height with Terminals	Approximate Weight*
2081-9272	6.2 Ah	6-1/8" (156 mm)	2-5/8" (67 mm)	4" (102 mm)	5.75 lbs (2.6 kg)
2081-9274	10 Ah	6" (153 mm)	4-1/16" (103 mm)	4" (102 mm)	9.2 lbs (4.2 kg)
2081-9288	12.7 Ah	6" (153 mm)	4" (102 mm)	4" (102 mm)	9 lbs (4.1 kg)
2081-9275	18 Ah	7-1/4" (184 mm)	3-3/8" (86 mm)	6-5/8" (168 mm)	14.3 lbs (6.5 kg)
2081-9287	25 Ah	6-5/8" (168 mm)	5" (127 mm)	7" (178 mm)	19.4 lbs (8.8 kg)
2081-9271 (rectangular case, typically for service)	33 Ah	12-1/2" (318 mm)	3-3/8" (86 mm)	7-1/16" (179 mm)	26.6 lbs (12.1 kg)
2081-9276 ("square" case, use for new)	33 Ah	7-3/4" (197 mm)	5-1/4" (133 mm)	6-3/4" (171 mm)	26.5 lbs (12 kg)
2081-9296	50 Ah	9-1/2" (241 mm)	5-1/2" (140 mm)	8-7/8" (225 mm)	41.8 lbs (19 kg)
2081-9279	110 Ah	11-3/16" (284 mm)	10-1/2" (267 mm)	9" (230 mm)	82 Lbs (37 kg)

* Dimensions and weight are per battery and are for reference only. Exact size may vary. Refer to the tables on page 3 mounting compatibility. These batteries are 12 V each and series connected for 24 V system use.

NOTE: When wired in series for 24 V output, these batteries are to be of identical voltage, appearance, model number, and approximately the same date of manufacture.

General Battery Specifications

Nominal Voltage Rating	12 Volts per battery
Discharge Rating	20 Hour Rate
Typical Charge/Discharge Cycles	100 to 150
Preferred Charge Temperature Range	60° F to 90° F (15.6°C to 32.2° C)

Battery Compatibility for Fire Alarm Control Panel Mounting

NOTE: Refer to individual fire alarm control panel product data sheets for additional battery application information

Battery Model	Capacity	Simplex Control Panel Model Series (see legend and notes below)									
		4003	4004	4004R	4005	4006 & 4008	4009 (all models)	4010	4100U	4100 & 4120 (2, 4 or 6-Unit)	4020 (2, 4 or 6-Unit)
2081-9272	6.2 Ah	✓	✓	✓	✓	✓	✓	✓	1, 2, or 3 bay	✓	✓
2081-9274	10 Ah	✓	✓	✓	✓	✓	✓	✓	1, 2, or 3 bay	✓	✓
2081-9288	12.7 Ah	✓	NA	✓	✓	✓	✓	✓	1, 2, or 3 bay	✓	✓
2081-9275	18 Ah	✓	NA	Note 3	✓	Ext	Ext	Note 2	1, 2, or 3 bay	✓	✓
2081-9287	25 Ah	NA	NA	Note 3	Ext	Ext	NA	✓	1, 2, or 3 bay	✓	Ext
2081-9271 (rectangular)	33 Ah	NA	NA	Note 3	Ext	NA	NA	Note 3	1, 2, or 3 bay	Ext	Note 4
2081-9276 ("square")	33 Ah	NA	NA	Note 3	Ext	NA	NA	Note 3	1, 2, or 3 bay	✓	Ext
2081-9296	50 Ah	NA	NA	Note 3	NA	NA	NA	Note 3	2 or 3 bay	Ext	Ext
2081-9279	110 Ah	Requires external battery cabinet									

✓ = Can be placed in the respective equipment cabinet

Ext = External battery cabinet is required, refer to selection chart on page 4

NA = Not applicable/not compatible

NOTES:

- 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.
- 4010 Cabinets will accommodate 2081-9275, 18 Ah batteries, but will not allow bottom entry conduit.
- Use 4081 series companion cabinet and charger, refer to page 4.
- 4020 Cabinets will accommodate 2081-9271, 33 Ah batteries, but will not allow bottom entry conduit.
- Some control panel models are listed for battery replacement reference only.

External Battery Cabinet Compatibility Reference

Battery Cabinets without Chargers (connects to charger in panel)

Cabinet	Panel Compatibility	2081-9275 18 Ah*	2081-9287 25 Ah	2081-9271 Rectangular 33 Ah	2081-9276 Square 33 Ah	2081-9296 50 Ah	2081-9279 110 Ah
2081-9270	multiple	✓	✓	✓	✓	✓	NA
2081-9280	4100U/4100+	NA	NA	NA	NA	NA	✓
2081-9281 2081-9282	multiple	✓	✓	✓	✓	✓	NA
4009-9801	multiple	✓	✓**	NA	NA	NA	NA
4009-9802	multiple	✓	NA	✓	NA	NA	NA

Battery Cabinets with Chargers

Cabinet	Panel Compatibility	2081-9275 18 Ah*	2081-9287 25 Ah	2081-9271 Rectangular 33 Ah	2081-9276 Square 33 Ah	2081-9296 50 Ah	2081-9279 110 Ah
4081-9301 4081-9302	4004R and 4010	✓	✓	✓	✓	✓	NA
4081-9306 4081-9308	4100U	NA	NA	NA	NA	✓	✓

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

** 25 Ah capacity was effective as of 7/2005.

✓ = Can be placed in the respective equipment cabinet

NA = Not applicable/not compatible

External Battery Cabinet Specification Reference

Battery Cabinets Without Chargers; Shallow Design with Front Door

Model	Color	Listings	Description	Dimensions
2081-9281	Beige	UL and FM	2-Unit, 4100 style cabinet without charger; with locking solid door and battery shelf, primarily for use with 50 Ah batteries	25-3/4" W x 20-3/4" H x 6-3/4" D (654 mm x 527 mm x 171 mm)
2081-9282	Red			
4009-9801*	Beige	UL and FM	External battery cabinet without charger, with locking solid door and battery harness; for close-nipped mounting to fire alarm control panel cabinet	16-1/4" W x 13-1/2" H x 5-3/4" D (413 mm x 343 mm x 146 mm)*
4009-9802	Beige	UL		25-3/4" W x 20-3/4" H x 4-1/8" D (654 mm x 527 mm x 105 mm)

* Depth increased for 25 Ah batteries effective 7/2005.

Battery Cabinet Without Charger; Deep Design with Hinged Lid

Model	Color	Listings	Description	Dimensions
2081-9270	Red	Not listed	Battery cabinet without charger; cabinet has vented front, and hinged lid with support rod and lock on top	26-1/2" W x 12" H x 12" D (673 mm x 305 mm x 305 mm)

Chargers for use with 4010 Fire Alarm Control Panels and 4004R Suppression Release Systems (refer to data sheet S4081-0001)

Model	Color	Input Voltage	Description	Dimensions
4081-9301	Beige	120 VAC	Battery cabinet with charger for the 4010 and 4004R fire alarm control panel; for up to 50 Ah batteries; with front door <i>Listings include: UL, ULC, FM, CSFM, and MEA (NYC), see data sheet for details</i>	22-1/2" W x 16-3/4" H x 8-3/8" D (572 mm x 425 mm x 213 mm)
4081-9302	Red			

Battery Cabinet Without Charger for 110 Ah Batteries; for use with compatible panel mounted chargers (refer to data sheet S2081-0012)

Model & Listings	Color	Cabinet Description	Compatible Chargers	Charger Description	Dimensions
2081-9280 <i>Listings include: UL and CSFM</i>	Red	Battery cabinet for 2081-9279, 110 Ah batteries; includes 80 A battery fuse, terminals and battery connection cables; see data sheet for details	4100-9xxx Series	4100U System Power Supplies (SPS)	26-1/2" W x 12" H x 12" D (673 mm x 305 mm x 305 mm)
			4100-5111 4100-5112 4100-5113	4100U Additional SPS	
			4100-5125 4100-5126 4100-5127	4100U Remote Power Supply (RPS)	
			4100-5120 4100-5121 4100-5122	4100U TrueAlert Addressable Power Supply (TPS)	
			4100-0104 4100-0114 4100-0124	4100 Legacy power supplies	

4100U Compatible Battery Cabinet With Charger for 110 Ah Batteries (for ULC listed systems and for other applications unable to use panel mounted power supply charger; refer to data sheet S4081-0002)

Model	Color	Input Voltage	Description	Dimensions
4081-9306	Red	120 VAC	Battery cabinet with charger for up to 110 Ah batteries;	27-7/8" W x 13-1/2" H x 14-5/8" D (708 mm x 343 mm x 371 mm)
4081-9308	Red	220/230/240 VAC, multi-tapped	NOTE: Required for ULC listed charging of 110 Ah batteries; <i>Listings include: UL, ULC, FM, CSFM, and MEA (NYC), see data sheet for details</i>	
4100-9837	Green LED Power-on Indicator Kit, required for ULC listing , mounts above access panel using knockout provided			

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