84 Carleton Street

Portland, ME

Fire Alarm System
Equipment Submittal
07/01/16

tyco
SimplexGrinnell

30 Thomas Drive
Westbrook, ME 04092-3824

<div align="center">

Project: **84 Carleton**
84 Carleton Street
Portland, ME 04102

Customer: **Corey Electric**
609 Main St. STE 3
Westbrook, ME 04092

Sales Representative: **Christopher Ayres**

FIRE ALARM SYSTEM EQUIPMENT SUBMITTAL

</div>

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

SimplexGrinnell District Contact Information:

District Manager: Allen Paul

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Prepared by:

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Submittal Approval:

Approved By:_____   Date:_____

84 CARLETON
FIRE ALARM SYSTEM EQUIPMENT SUBMITTAL

INSERT 1

Project Bill of Material

Bill Of Material

tyco SimplexGrinnell

Project Number	Project Name
992934001	84 CARLETON

PID	DESCRPTION	Quantities			Notes
		Sold	Required	Difference	
Panel Components					
4007-9201	FIRE ALARM EPS CONTROL PANEL 100 PT ADDR. - RE	1	1	0	
2081-9274	BATTERIES - 10AH (2x)	2	2	0	
4007-9806	SDACT MODULE	1	1	0	
ETHEDROP	NETWORK - ETHERNET COMPATIBLE	1	1	0	
4606-9202	4007ES COLOR LCD ANNUNCIATOR, RED	1	1	0	
2975-9461	ANNUNCIATOR BACK BOX, RED	1	1	0	
7788-F	AES RADIO TRANSMITTER MASTER BOX	1	1	0	
3200	KNOX BOX KEY REPOSITORY BOX	1	1	0	
4009-9201	4009 IDNET NAC EXTENDER, 120 VAC	0	1	-1	
4009-9807	NAC CARD, 4PT, IDNET	0	1	-1	
2081-9272	BATTERIES - 6.2AH (2x)	0	2	-2	
Addressable Initiating / Control Devices & Door Holders					
4099-9004	ADDRESSABLE SINGLE ACTION MANUAL STATION	12	11	1	
4098-9714	TRUEALARM PHOTO SMOKE SENSOR	73	66	7	
4098-9733	TRUEALARM HEAT SENSOR	8	10	-2	
4098-9792	TRUEALARM SENSOR BASE	16	15	1	
4098-9772	520 HZ SOUNDER BASE	31	29	2	
4098-9770	TRUEALARM SENSOR BASE WITH CO MODULE	32	28	4	
4098-9773	520HZ SOUNDER BASE W/CO DETECTOR	2	4	-2	
4090-9002	IDNET RELAY IAM	3	3	0	
4090-9802	COVER-ADDRESS MODULE SURFACE	3	3	0	
DH24120FC	DOOR HOLDER, FLUSH MNT 24/120V	3	3	0	
4905-9835	TEMPORAL CODE 4 MODULE	0	5	-5	
Notification Devices					
49AV-WRF	A/V WALL MT, RED, FIRE LABEL	4	4	0	
49VO-WRF	VO, WALL MT, RED, FIRE LABEL	1	1	0	
4906-9202	ADDRESSABLE CEILING MNT MC V/O, RED	3	3	0	
4906-9228	ADDRESSABLE CEIL MNT MC A/V, RED	7	7	0	

INSERT 2

Control Equipment, Batteries & Accessories Data Sheets

𝚂 Simplex

4007ES Fire Control Panels

Fire Detection and Control with Addressable
Initiation and Addressable Notification

Features

Flexible standard combination of addressable initiation and *addressable notification*

4.3" (109 mm) Diagonal *color touchscreen* display:
- Convenient and intuitive user interface provides detailed system status and individual point information
- *Supports dual language selection*, including unicode character languages
- A custom background display appears when operation is normal (see page 7 for details)

Includes a 3 A IDNAC SLC (signaling line circuit) output power supply that provides *enhanced power delivery* to *addressable* notification appliances:
- A *constant* 29 VDC source voltage is maintained during alarm, even during battery operation, allowing strobes to operate at higher voltage with lower current and ensuring a consistent current draw and voltage drop margin under both primary power and secondary battery standby
- Efficiencies include lower strobe currents, wiring distances up to 2 to 3 times farther than with conventional notification, support for more appliances per IDNAC SLC, and smaller gauge wiring. This provides installation and maintenance savings. with high assurance that appliances will operate as normal during worst case alarm conditions
- IDNAC SLCs are compatible with both TrueAlert ES and TrueAlert addressable notification appliances, and remote 4009 IDNAC Repeaters to extend power and wiring distance even farther and provide for up to 127 addressable notification appliances
- Power supply provides battery backup charging of up to 33 Ah; up to 18 Ah for cabinet mounted batteries and up to 33 Ah batteries for mounting in close-nippled remote battery cabinet

Electrically isolated IDNet+ addressable initiating device SLC:
- Provides built-in short circuit isolation for monitoring and control of TrueAlarm analog sensors and IDNet communications monitoring and control devices; for use with either shielded or unshielded, twisted or untwisted single pair wiring; outputs are Class A or Class B
- Standard panel SLC provides up to 100 addressable points; optional additional loop expansion modules provide an additional isolated loop with short circuit isolation for the IDNet+ channel; each loop expansion module also provides an additional 75 addressable points to the IDNet+ channel capacity for a total of up to 250 addressable points

Software Feature Summary:
- Current and previous panel configuration are both maintained in on-board memory to allow easy selection of desired revision
- An internal Ethernet service port and an internal serial service port are available for service computer connections to perform configuration updates, downloads and uploads; report downloads, and system software updates (Ethernet port only); the serial port provides the connection for the optional TrueInsight Module

4007ES Panel Front View

Software Feature Summary *(Continued)***:**
- An internal USB interface allows a compatible portable memory device (memory stick/thumb drive) to store job revisions, update revised jobs and panel software, and save detailed system reports from the panel without requiring a service computer

Optional modules and connections include:
- Point or Event DACT assembly that is compatible with IP Communicators
- Up to two additional IDNet+ addressable device output loop connections with short circuit fault protection and with 75 additional point capacity each
- Front mounted 48 LED annunciator with custom label inserts provides 24 Yellow LEDs, 20 Red LEDs, and 4 Red/Green LEDs; LEDs are programmable for up to 24 IDC zones of alarm and trouble annunciation or as required for custom annunciation requirements
- Dual Class A IDNAC Isolator (DCAI)
- Remote LED annunciator support via RUI (remote unit interface) communications port for use with unshielded, twisted pair wiring (UTP)
- Eight Point Zone/Relay Modules individually selectable as IDC or relay rated 2 A @ 30 VDC (resistive)
- Alarm relays and auxiliary relays
- City connections, with or without disconnect switch
- 4003EC Voice Control Panels
- 4009 Series IDNAC Repeaters
- Battery brackets for seismic area protection (see page 2)

General Mechanical:
- Compact red or platinum cabinet for convenient surface or semi-flush mounting; rated NEMA 1 and IP30

4007ES Listings reference:
- UL 864, Fire Detection and Control (UOJZ)
- ULC S527, Control Units for Fire Alarm Systems

Introduction

4007ES Series Fire Detection and Control Panels provide extensive installation, operator, and service features with point and module capacities suitable for a wide range of system applications. The convenient and intuitive color touchscreen provides easy access for typical system response actions and for detailed system review or configuration updates with password control to limit user access.

IDNet+ addressable initiation communications and IDNAC addressable notification communications are standard features. (Refer to data sheet S4007-0001 for 4007ES panels providing conventional notification.)

Operator Interface

Convenient Status Information. With the locking door closed, the glass window allows viewing of the display status LEDs. The user interface is a 4.3" diagonal color touchscreen LCD with separate status LEDs as shown below.

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

Operator Interface and Software Features

- Convenient and detailed operator information is easily accessed using a logical, menu-driven touchscreen display with password access control
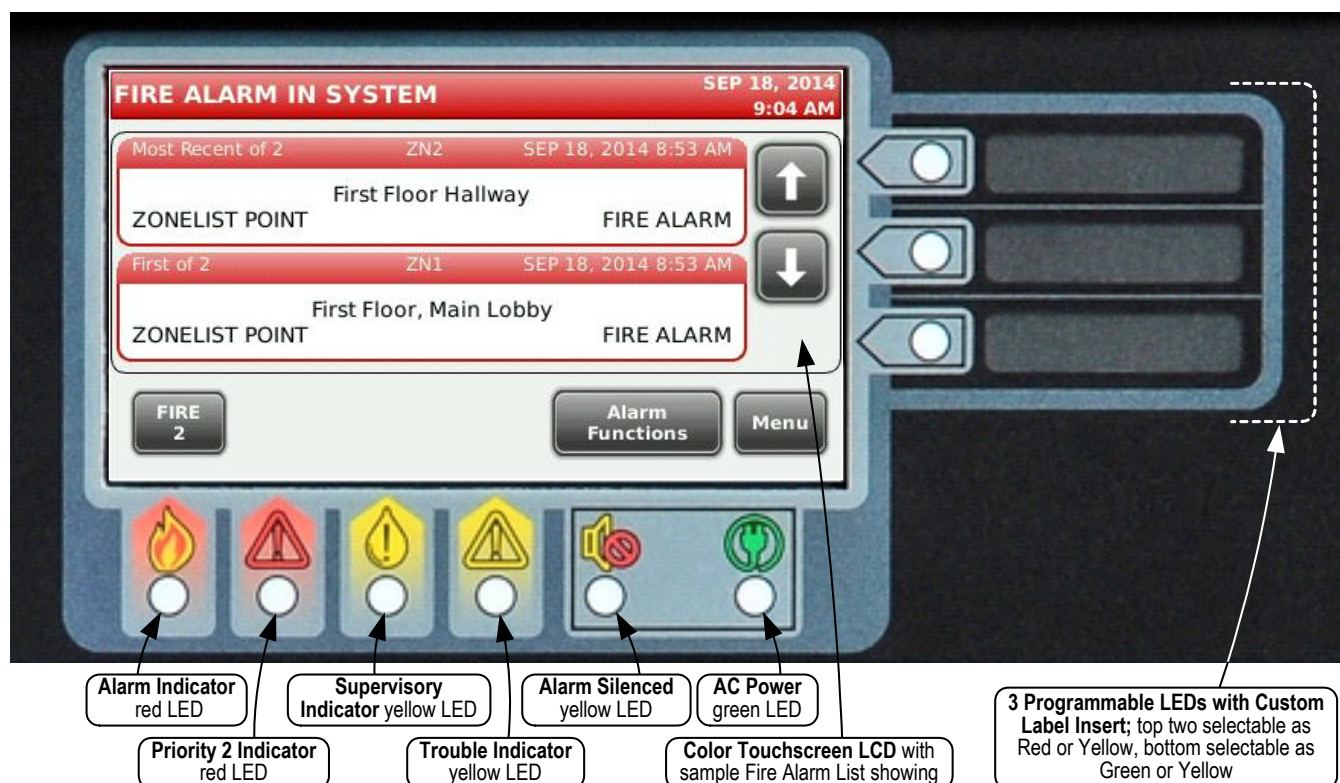- Multiple automatic and manual diagnostics for maintenance reduction

Operator Interface Features *(Continued)*

- Alarm and Trouble History Logs (up to 1000 entries for each, 2000 total events) are available for viewing from the display or to be downloaded to a service computer or to the USB drive
- Module level ground fault searching assists installation and service by locating and isolating modules with grounded wiring
- WALKTEST silent or audible system test performs an automatic self-resetting test cycle and supports up to 8 WALKTEST groups
- **Install Mode** allows grouping of multiple troubles for uninstalled modules and devices into a single trouble condition (typical with future phased expansion); with future equipment and devices grouped into a single trouble, operators can more clearly identify events from the commissioned and occupied areas
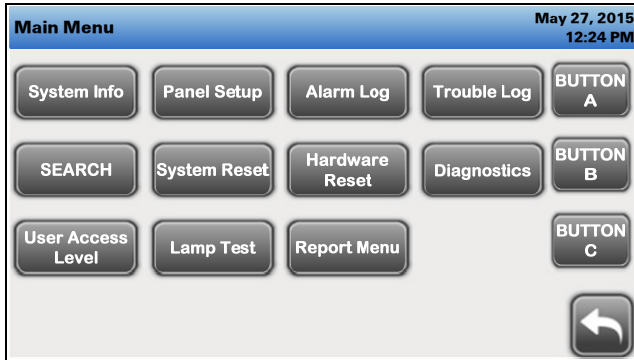
Mechanical Description

- Locking door with polycarbonate window
- Latching front panel assembly swings forward for convenient internal access
- Smooth box surfaces are provided for locally cutting conduit entrance holes exactly where required
- Modules are power-limited (except as noted, such as relay modules)
- Battery compartment (bottom) accepts two batteries, up to 18 Ah, to be mounted within the cabinet without interfering with module space; charger capacity is up to 33 Ah; for batteries greater than 18 Ah, refer to page 7 for external battery cabinet details
- Cabinet assembly design has been seismic tested and is certified to IBC and CBC standards as well as to ASCE 7 categories A through F, requires battery brackets as detailed on data sheet S2081-0019

Touchscreen Display with LED Status Indicators (approximately full size)

Alarm Indicator red LED

Priority 2 Indicator red LED

Supervisory Indicator yellow LED

Trouble Indicator yellow LED

Alarm Silenced yellow LED

AC Power green LED

Color Touchscreen LCD with sample Fire Alarm List showing

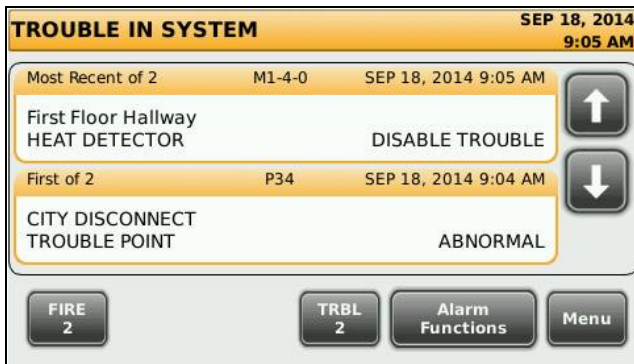**3 Programmable LEDs with Custom Label Insert;** top two selectable as Red or Yellow, bottom selectable as Green or Yellow

Main Menu Screen provides easy navigation to the function required. Buttons A, B, and C have programmable functions.

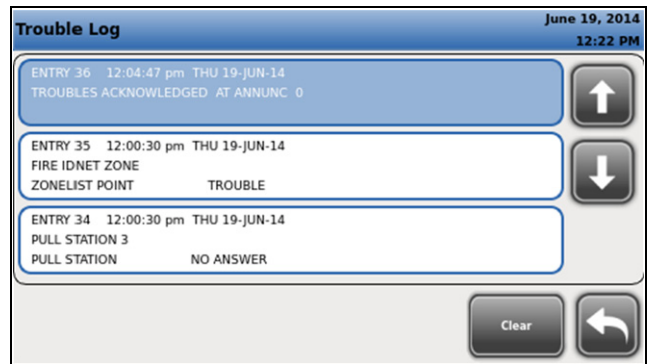| Main Menu				May 27, 2015 12:24 PM
System Info	Panel Setup	Alarm Log	Trouble Log	BUTTON A
SEARCH	System Reset	Hardware Reset	Diagnostics	BUTTON B
User Access Level	Lamp Test	Report Menu		BUTTON C

System Alarm Screen identifies active alarms with custom labels displayed, arrows allow navigation through the list

FIRE ALARM IN SYSTEM — SEP 18, 2014 9:04 AM

Most Recent of 2 — ZN2 — SEP 18, 2014 8:53 AM
First Floor Hallway
ZONELIST POINT — FIRE ALARM

First of 2 — ZN1 — SEP 18, 2014 8:53 AM
First Floor, Main Lobby
ZONELIST POINT — FIRE ALARM

FIRE 2 | Alarm Functions | Menu
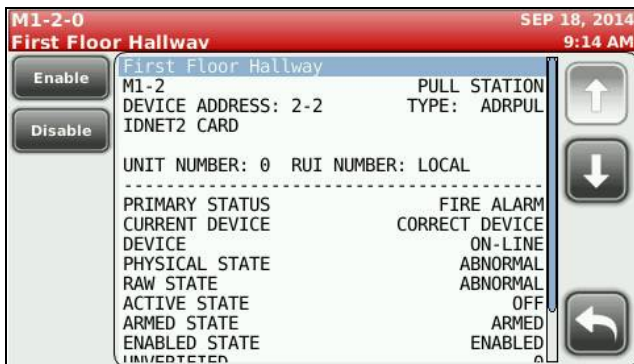
System Trouble Screen identifies active troubles with custom labels displayed, arrows allow navigation through the list

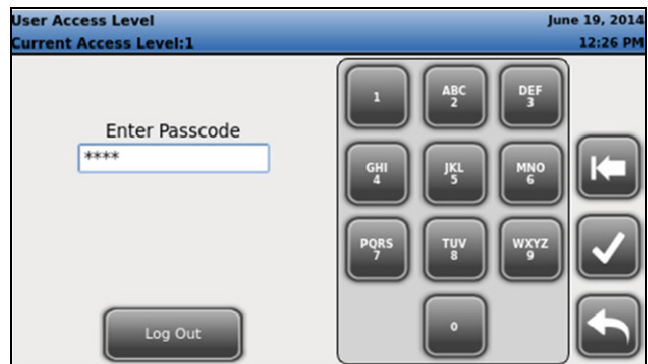TROUBLE IN SYSTEM — SEP 18, 2014 9:05 AM

Most Recent of 2 — M1-4-0 — SEP 18, 2014 9:05 AM
First Floor Hallway
HEAT DETECTOR — DISABLE TROUBLE

First of 2 — P34 — SEP 18, 2014 9:04 AM
CITY DISCONNECT
TROUBLE POINT — ABNORMAL

FIRE 2 | TRBL 2 | Alarm Functions | Menu

Trouble Log Screen allows review of past troubles with time stamp and point details shown.

Trouble Log — June 19, 2014 12:22 PM

ENTRY 36 — 12:04:47 pm THU 19-JUN-14
TROUBLES ACKNOWLEDGED AT ANNUNC 0

ENTRY 35 — 12:00:30 pm THU 19-JUN-14
FIRE IDNET ZONE
ZONELIST POINT — TROUBLE

ENTRY 34 — 12:00:30 pm THU 19-JUN-14
PULL STATION 3
PULL STATION — NO ANSWER

Clear

Point Information Screen allows review of point details, arrows allow navigation through the information.

M1-2-0 — SEP 18, 2014
First Floor Hallway — 9:14 AM

Enable
Disable

First Floor Hallway
M1-2 — PULL STATION
DEVICE ADDRESS: 2-2 — TYPE: ADRPUL
IDNET2 CARD

UNIT NUMBER: 0 RUI NUMBER: LOCAL

PRIMARY STATUS — FIRE ALARM
CURRENT DEVICE — CORRECT DEVICE
DEVICE — ON-LINE
PHYSICAL STATE — ABNORMAL
RAW STATE — ABNORMAL
ACTIVE STATE — OFF
ARMED STATE — ARMED
ENABLED STATE — ENABLED
UNVERTISED

User Access Login Screen controls access to panel operations as determined per panel.

User Access Level — June 19, 2014
Current Access Level:1 — 12:26 PM

Enter Passcode
****

1	ABC 2	DEF 3
GHI 4	JKL 5	MNO 6
PQRS 7	TUV 8	WXYZ 9
	0	

Log Out

## IDNet+ Addressable Device Control

Overview. The 4007ES provides an IDNet+ addressable initiating device Signaling Line Circuit (SLC) that supervises wiring connections and the individual device communications status on the SLC. With 2-wire IDNet+ SLCs, initiation, monitoring, and control devices such as manual fire alarm stations, TrueAlarm sensors, control relays, and sprinkler waterflow switches can communicate their identity and status and receive fire alarm system control. Additional addressable interface modules include circuit isolators, conventional IDC zone adapters, and interface to other system circuits such as fans, dampers, and elevator controls.

IDNet+ Addressable Device Operation

Each addressable device on the IDNet+ communication channel is continuously interrogated for status condition such as: normal, off-normal, alarm, supervisory, or trouble. Both Class B and Class A operation is available. Sophisticated poll and response communication techniques ensure supervision integrity and allow for "T-tapping" of the circuits for Class B operation. Devices with LEDs pulse the LED to indicate receipt of a communications poll and can be turned on steady from the panel. With addressable devices, the location and status of the connected device is monitored, logged, and displayed on the operator interface LCD with each device having its own 40 character custom label for precise identification.

TrueAlarm Addressable Sensor Operation

Addressable initiating device communications include operation of TrueAlarm smoke and temperature sensors. Smoke sensors transmit an output value based on their smoke chamber condition and the CPU maintains a current value, peak value, and an average value for each sensor. Status is determined by comparing the current sensor value to its average value. Tracking this average value as a continuously shifting reference point filters out environmental factors that cause shifts in sensitivity.

TrueAlarm Addressable Sensor Reference

TrueAlarm Photo Sensor with Base

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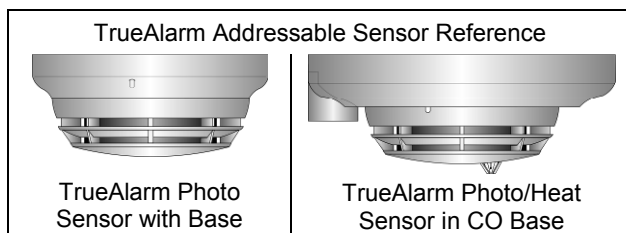
Programmable sensitivity of each sensor can be selected at the control panel for different levels of smoke obscuration (shown directly in percent) or for specific heat detection levels. To evaluate whether the sensitivity should be revised, the peak value is stored in memory and can be easily read (or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

CO sensor bases combine an electrolytic CO sensing module with a TrueAlarm analog sensor to provide a single multiple sensing assembly using one system address. The CO sensor can be enabled/disabled, and can be used in LED/Switch modes and custom control. (refer to data sheet S4098-0052 for details)

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

TrueSense Early Fire Detection. Multi-sensor 4098-9754 provides photoelectric and heat sensor data using a single 40070ES IDNet+ address. The panel evaluates smoke activity, heat activity, ***and their combination***, to provide TrueSense early detection. For more details on this operation, refer to data sheet 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 10 year active life status providing indicators to assist with service planning. Indicators occur at: 1 year, 6 months, and end of life.

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

IDNet+ Device Wiring Reference

IDNet+ Addressable Channel Capacity. The 4007ES provides an isolated output IDNet+ signaling line circuit (SLC) that supports up to 250 addressable monitor and control points intermixed on the same pair of wires. (250 total requires two 4007-9803 IDNet+ Loop Expansion Modules.)

IDNet+ SLC Wiring Specifications

Maximum Distance from Control Panel per Device Load	0 to 125	4000 ft (1219 m); 50 ohms
	126-250	2500 feet (762 m); 35 ohms
Total Wire Length Allowed With "T" Taps for Class B Wiring		Up to 12,500 ft (3.8 km); 0.60 µF
Maximum Capacitance Between IDNet+ Channels		1 µF
Loading per device		0.8 mA supv., 1 mA alarm; 2 mA per activated device LED
Wire Type and Connections		Shielded or unshielded, twisted or untwisted wire*
Connections		Terminal blocks for 18 to 12 AWG

Compatibility includes: IDNet communicating devices and TrueAlarm sensors *including* QuickConnect and QuickConnect2 sensors; see data sheet S4090-0011 for additional reference

* Some applications may require shielded wiring. Review your system with your local Simplex product supplier.

IDNAC SLC Control of TrueAlert and TrueAlert ES Addressable Notification

Addressable notification appliance communications include operation of TrueAlert and TrueAlert ES Visible only (V/O, strobe), Audible only (A/O, horn), Audible/Visible (A/V, horn/strobe), and strobes of Speaker/Visible (S/V) notification appliances. (S/V appliances require separate speaker wiring.) IDNAC SLC addressable communications allow each horn and strobe to be individually controlled using a single two-wire circuit, confirms the wiring connections to the individual notification appliance's electronic circuit, and confirms communications between each appliance and the fire alarm control panel. Addressable communications increases supervision integrity versus conventional notification systems by providing supervision beyond the circuit wiring to each individual appliance and by constantly verifying the ability of each appliance to communicate with the control panel.

Individual Appliance Status and Settings. The fire alarm control panel monitors and records each addressable notification appliance status, type of appliance, and its configured appliance settings. A fault in any individual appliance automatically reports a trouble condition to the control panel.

TrueAlert ES Addressable Appliance Reference

| A/O (horn) | V/O (strobe) | A/V (horn/strobe) |
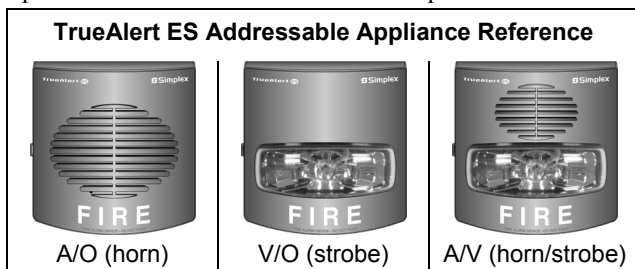
Virtual NACs Provide Control Convenience. For control convenience, IDNAC notification appliances can be grouped into *Virtual NACS* (VNACs) for group control.

Panel Control Convenience. Applicable operation settings for each appliance can be programmed *without having to replace appliances or remove them from the wall or ceiling*. An appliance's VNAC notification zone can be easily changed through programming without having to add additional circuits, conduit, and wiring. Audible and visible appliances for non-Fire Emergency Communications notification can be programmed to operate separately *on the same pair of wires as the fire alarm notification appliances*. The result is lower installation, retrofit, and overall life-cycle cost of ownership compared with traditional conventional notification systems.

Installation, Retrofit, and Life-Cycle Cost Benefits. With each addressable appliance capable of being controlled separately on the same two-wire IDNAC SLC, installation time and expense for both retrofit and new construction can be significantly reduced. When Class B wiring is used, wiring can be "T-tapped" allowing more savings in distance, wire, conduit (size and utilization), and overall installation efficiency.

Location Information, Diagnostics and Troubleshooting. Each addressable notification appliance has its own 40 character custom label to identify the location of the appliance and to aid in troubleshooting fault conditions. In conventional notification systems, conventional appliances are not capable of communicating with the control panel. Fault reporting on a conventional system is limited to the circuit wiring and the entire area (zone) covered by appliances on the notification appliance circuit (NAC) making it much more difficult and costly to locate and correct the source of a

problem. Using the TrueAlert magnet test allows each appliance to individually identify its candela setting and address and to briefly operate if desired, and using the *TrueAlert ES Appliance Self-Test feature provides detailed performance verification per appliance.*

TrueAlert ES Appliance Self-Test Operation

On-Board Test Sensors. TrueAlert ES appliances are equipped with on-board sensors to detect strobe and/or horn output allowing efficient and unobtrusive Self-Testing. When **Automatic Self-Test** is initiated from the control panel, each appliance within the selected VNAC group will briefly operate and then report its Self-Test status to the control panel, all within several seconds. Silent Self-Test can be selected to test only visible appliance if desired. The control panel is in a trouble condition during testing and in the event of an alarm, Self-Test is automatically terminated.

Automatic Self-Test results are communicated to the control panel with a time and date stamp and are stored in memory. Results are viewable at the front panel display and printed reports are available from the panel USB port. (See sample reports on page 10.)

Individual Self-Test is selected from the control panel when individual appliances need to be observed to operate. Each appliance in the selected VNAC group will turn on its LED until individually activated by applying a magnet. After performing the individual test, the appliance LED turns off to indicate completion. Results are recorded the same as during the automatic test.

IDNAC SLC Hardware Reference

The 4007ES provides a 3 A IDNAC SLC for control and power to TrueAlert ES and TrueAlert addressable notification appliances. The power supply incorporates an efficient switching design that provides a regulated output of 29 VDC, even during battery operation. With 29 VDC minimum output at the panel, addressable notification SLCs can support wiring distances 2 to 3 times farther than available with conventional notification, or support more appliances per SLC, or work with smaller gauge wiring, or combinations of these benefits. The result is installation and maintenance savings with high assurance that appliances that operate during normal system testing will operate during worst case alarm conditions.

IDNAC SLC Appliance Wiring Reference

Recommended wire type	UTP, unshielded twisted pair
IDNAC SLC Capacity	Up to 127 addresses and up to 139 unit loads (appliances are typically one unit load, devices such as Isolators may require more than one load, refer to individual device data sheet for specific information)
Maximum wire length allowed with "T-Taps" for Class B wiring, per SLC	10,000 ft (3048 m)
Maximum wire length per SLC to any appliance	4000 ft (1219 m)
Appliance Supervisory Current	1 unit load = 0.8 mA per appliance
Wiring connections	Terminal blocks for 18 to 12 AWG

Power Supply Output and Zone/Relay Module Details

Power Supply Output Details:
- **RUI Communications** controls up to 10 remote devices at up to 2500 ft (762 m) for single run, or 10,000 ft (3048 m) total if wiring is Class B and T-tapped; output is selectable as Class B or Class A
- **Compatible RUI remote equipment** includes: 4606-9202 and 4606-9205 Color Touchscreen Annunciators (up to 6 total), 4100 Series 24 I/O and LED/Switch modules, 4602 Series LED/Switch and I/O Annunciator modules, including 4602-9101 Status Command Units (SCU), and 4602-9102 Remote Command Units (RCU)
- **IDNet+ SLC Output** provides electrically isolated Class B or Class A communication; standard capacity is up to 100 addressable points with expansion for up to 250 points using up to two 4007-9803 IDNet+ Loop Expansion Modules (as described on page 4)
- **Battery Charger** is dual rate, temperature compensated, and charges up to 18 Ah sealed lead-acid batteries in the battery compartment, and charges up to 33 Ah batteries in an external cabinet

Power Supply Output Details *(Continued)***:**
- **Battery and Charger Monitoring** includes battery charger status and low or depleted battery conditions; status information provided to the master controller includes analog values for: battery voltage, charger voltage and current, actual system voltage and current, and IDNAC SLC current
- **Low Battery Voltage Cutout** is selectable when required (required for ULC listing applications)
- **4 A Output Rating.** This includes current for: IDNAC controlled notification appliances; IDNet devices; module currents; and auxiliary output current (battery charging, CPU, and power supply current are not subtracted from the 4 A)
- **2 A Auxiliary Output (AUX/SNAC)** can be selected either as resettable auxiliary power of 2 A @ 24 VDC, or selected to be a simple NAC (SNAC) for sounder base power, 4-wire detector power, or door holder power

Product Selection

Model*	Color	Description	Supv.	Alarm
➤ 4007-9201(BA)	Red	4007ES with a 3 A, Class B, IDNAC SLC for up to 127 addressable notification appliances, and 4 A output power supply/battery charger; includes IDNet+ communications for 100 addressable points		
4007-9202(BA)	Platinum	Note: Add optional module and other currents separately for battery calculations; base panel current does not subtract from the 4 A power available for optional modules and external loads	180 mA	185 mA

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

Module and Accessories Selection Information

Factory Programming Options	Model	Description
	4007-8810	Factory Programming (select)
	4007-0831	Custom Labels and Programming (requires 4007-8810)

Field Installed Optional Modules (refer to diagram on page 8 for module locations)

Model	Description		Supv.	Alarm
4007-9801	**Eight Point Zone/Relay Module**; each point is selectable as an IDC input or Relay output, Class A IDCs require 2 points (one out and one return); select up to 4 maximum; current shown is for 8 Class B IDCs with 4 in alarm, *detector current is added separately* (refer to 4007ES Hybrid data sheet S4007-0001 for additional information)		83 mA max	350 mA max
4007-9802	**25 VDC Regulator Module**; 2 A maximum output; use to power Zone/Relay modules connected to initiating devices requiring nominal 25 VDC voltage; refer to technical publication 579-832, *2-Wire Detector Compatibility Chart* for application details	with 1 module	190 mA	445 mA
		with 2 modules	290 mA	801 mA
		with 3 modules	390 mA	1156 mA
4007-9803	**IDNet+ Loop Expansion Module**; provides an additional isolated loop with short circuit isolation to the existing IDNet+ channel, also provides an additional 75 addressable points to the IDNet+ channel capacity, maximum of two		NA	NA
4007-9804	**Dual Class A IDNAC Isolator (DCAI)**; converts a single Class B IDNAC SLC input to two Class A or two Class B SLC outputs; provides short circuit isolation between each Class A or B output circuit; requires one IDNAC address; the total current remains controlled by the Class B input source SLC at 3 A maximum		8.3 mA	18.5 mA
4007-9805	**Panel Mounted 48 LED Status Annunciator Module**; provides 24 Yellow LEDs, 20 Red LEDs, and 4 Red/Green LEDs that are programmable for up to 24 IDC zones of alarm and trouble annunciation, or as required for custom annunciation requirements	no LEDs on	10 mA	10 mA
		with LEDs on	1.75 mA per LED, 105 mA max	
➤ 4007-9806	**SDACT Module** for Point or Event Reporting; order 2080-9047 connection cables as required (see cable details under accessories)		30 mA	40 mA
4007-9807	**City Circuit Module** with Disconnect Switch		20 mA	36 mA
4007-9808	**City Circuit Module** without Disconnect Switch		20 mA	36 mA
4007-9809	**Relay Module**; relays for Alarm, Supervisory, and Trouble; rated 2 A resistive @ 32 VDC		15 mA	37 mA

Module and Accessories Selection Information *(Continued)*

Field Installed Optional Modules

Model	Description		Supv.	Alarm
4190-8001*	**TrueInsight Remote Service Gateway Module and Programming Selection**	Required Selection	62 mA	73 mA
4190-6106 *	**TrueInsight Remote Service Gateway Module Installation Kit**; includes module and harness; configured for dynamic IP address operation unless ordered with 4190-4016			
4190-4016 *	**TrueInsight Remote Service Gateway Module for fixed IP Addressing**; optional, select if application will use fixed IP address			

* Refer to data sheet S4100-0063 for additional TrueInsight Service Gateway details

Batteries

Model	Capacity	Battery Mounting Details	
2081-9272	6.2 Ah	12 V Batteries for cabinet mounting; select one battery model per system standby requirements; order quantity of two; to be wired in series for 24 VDC	
2081-9274	10 Ah		
2081-9288	12.7 Ah		
2081-9275	18 Ah		
2081-9287	25 Ah	For remote mount in Battery Box 4009-9801	Batteries for remote mounting; see battery cabinet details below
2081-9276	33 Ah	For remote mount in Battery Box 4009-9802	

Battery Accessories

Model	Color	Capacity	Dimensions	Description
4009-9801	Beige	For up to 25 Ah batteries	16 ¼" W x 13 ½" H x 5 ¾" D (413 mm x 343 mm x 146 mm)	External battery cabinet **without** charger, with locking solid door and battery harness; for close-nippled mounting to fire alarm control panel cabinet
4009-9802	Beige	For up to 33 Ah batteries	25 ¾" W x 20 ¾" H x 4 ⅛" D (654 mm x 527 mm x 105 mm)	

Accessories

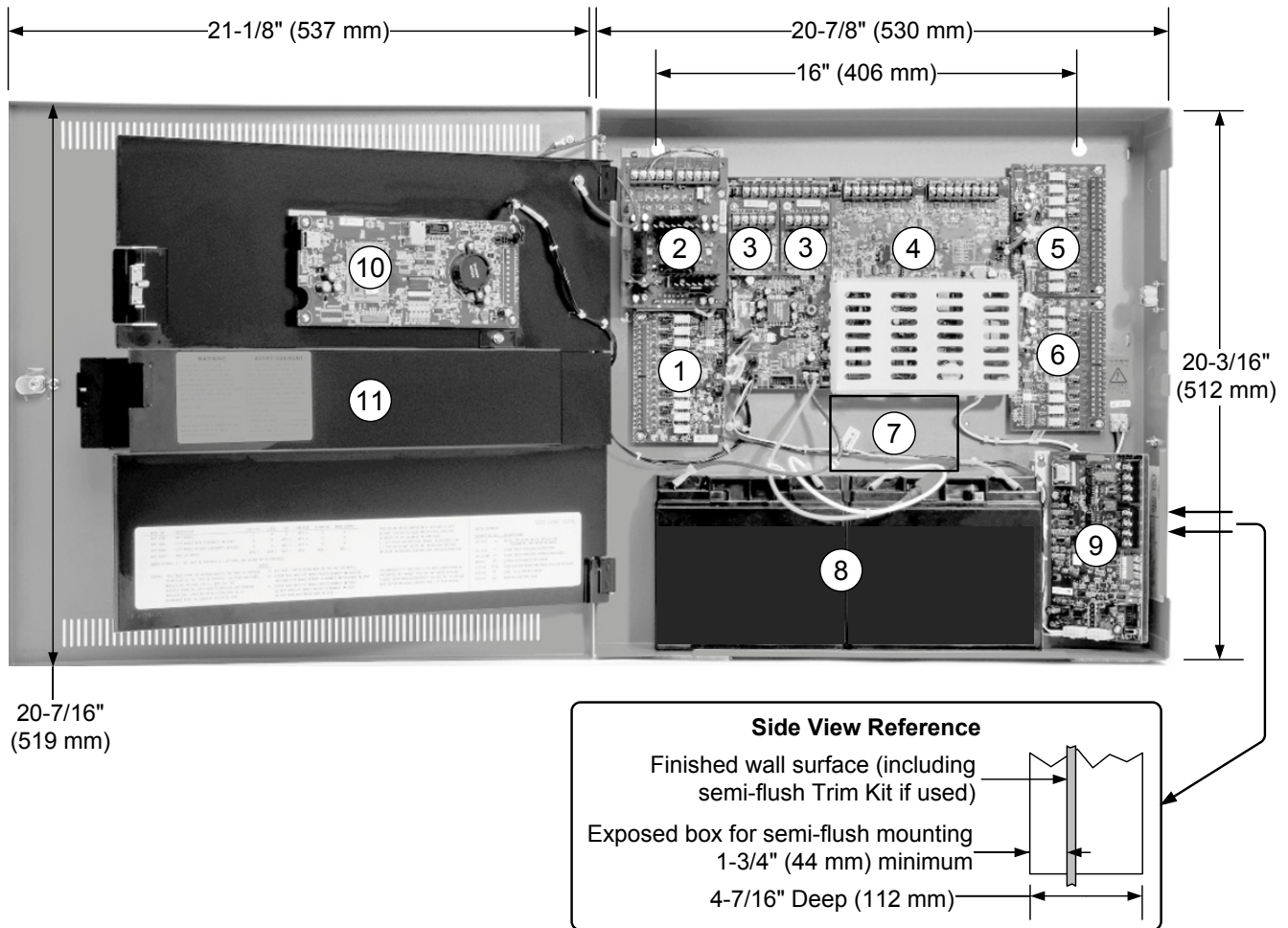| Model	Description
2080-9047	DACT cable, 14 ft (4.3 m) long, RJ45 plug one end, spade lugs on the other; order one per phone line connection required
2975-9812	Red semi-flush box trim; 1 $^7/_{16}$" (37 mm) wide, four corners and trim pieces for top, bottom, and sides
2975-9813	Platinum semi-flush box trim; 1 $^7/_{16}$" (37 mm) wide, four corners and trim pieces for top, bottom, and sides
4081-9018	10 kΩ, 1 W end-of-line resistor harness for Class B non-addressable initiating zones (if 4007-9801 is used)
2081-9031	Series resistor for WSO, non-addressable IDCs (N.O. water flow and tamper on same circuit, wires after water flow and before tamper) 470 Ω, 1 W, encapsulated, two 18 AWG leads (0.82 mm^2), 2 ½" L x 1 ⅜" W x 1" H (64 mm x 35 mm x 25 mm)

General Specifications

Input Power	120 VAC Input	2 A maximum @ 102 to 132 VAC, 50/60 Hz	
	240 VAC Input	1 A maximum @ 204 to 264 VAC, 50/60 Hz	
	Battery	6 A maximum @ 24 VDC (during battery operation)	
4007ES Power Supply Output Ratings	Power Supply Output Rating	4 A output for "Special Application" appliances Note: The 4 A output rating was determined such that optional module currents, and external device and appliance currents can be directly added together, not to exceed 4 A total.	Output switches to battery backup during mains AC failure or brownout conditions
	IDNAC SLC Ratings	3 A, regulated 29 VDC during Alarm, 127 addresses, 139 unit loads; DC-DC converter circuit is >92% efficient over operating range	
	IDNAC SLC Wiring	Output terminals are rated for 18 to 12 AWG with duplicate output terminals rated for two wires each, allowing up to four (4) Class B branch circuit T-taps to be made in the cabinet; additional T-taps may be made in external wiring junction cabinets or boxes	
	Auxiliary Power Tap	2 A maximum, 24 VDC nominal (19.5 to 31.1 VDC)	
Compatible Special Application Appliances		Simplex TrueAlert ES and TrueAlert addressable notification appliances; contact your Simplex product representative for compatible appliances	
Battery Charger Ratings (sealed lead-acid batteries)	Battery capacity range	UL and ULC listed for battery charging of 6.2 Ah up to 33 Ah (batteries larger than 18 Ah require a remote battery 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	
Custom Background Display Details		Supported file types: JPG, BMP, GIF, and PNG Recommended image type is JPG, recommended image size is 480 x 240, and the file size limit is 100 kb	
Environmental	Operating Temperature	32° to 120°F (0° to 49° C)	
	Operating Humidity	Up to 93% RH, non-condensing @ 90° F (32° C) maximum	

Additional Technical Reference

Description	Document	Description	Document
Installation Manual	579-1102	Single Page Operator Instructions	579-1109
Zone/Relay Module Installation Manual	579-1103	4007ES Hybrid Data Sheet	S4007-0001
Detailed Operator's Manual	579-1165		

S4007-0002-6 11/2015

Side View Reference

Finished wall surface (including semi-flush Trim Kit if used)

Exposed box for semi-flush mounting 1-3/4" (44 mm) minimum

4-7/16" Deep (112 mm)

Module Locations:

1. Primary location for 4007-9801 Zone/Relay Module, or 4190-6106 TrueInsight Remote Service Gateway.

2. Location for a 4007-9802, 25 V Regulator Module (shown), a 4007-9804 IDNAC Dual Class A Isolator, or an additional 4007-9801 Zone/Relay Module.

3. 4007-9803 IDNet+ Loop Expansion Modules, maximum of two (two are shown).

4. IDNAC Power Supply Assembly.

5. Location for additional 4007-9801 Zone/Relay Module.

6. Location for additional 4007-9801 Zone/Relay Module.

7. 4007-9807 or 4007-9808 City Circuit Module, or 4007-9809 Relay Module.

8. Battery location for up to 18 Ah batteries. Note: No conduit entry or wiring in this area, 14-7/8" (378 mm) wide.

9. 4007-9806 SDACT location.

10. CPU and User Interface assembly.

11. Location for optional 4007-9805 LED Module.

NOTE: A system ground must be provided for Earth Detection and transient protection devices. This connection shall be made to an approved, dedicated Earth connection per NFPA 70, Article 250, and NFPA 780.
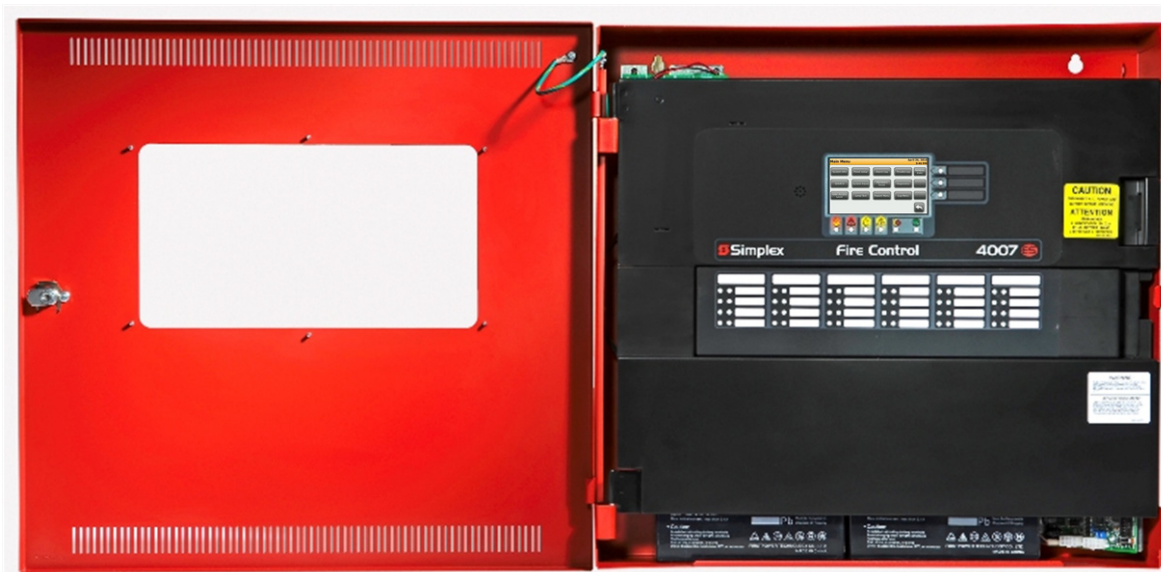
4007ES Additional Reference
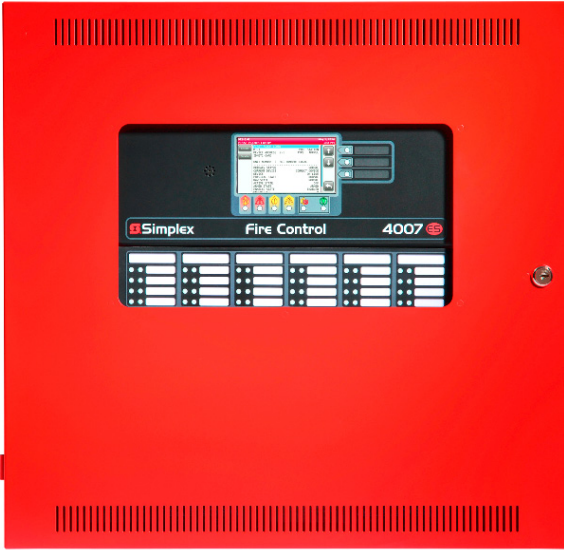
4007ES with IDNAC Notification and optional 48 LED
Annunciator Module (4007-9805)

**4606-9205 (Platinum) Color LCD
Touchscreen Remote Annunciator**

**4606-9202 (Red) Color LCD
Touchscreen Remote Annunciator**

4007ES with IDNAC Notification Operator View with door open

Additional Compatible Equipment and Reference

Subject	Data Sheet	Subject	Data Sheet
4009 IDNet NAC Extender	S4009-0002	Battery and Battery Cabinet Reference	S2081-0006
4003EC Voice Control Panel	S4003-0002	Seismic Battery Brackets Reference	S2081-0019
4606 Series Color LCD Touchscreen Remote Annunciator	S4606-0003	Addressable Device Compatibility, IDNet Communication Sensors and Devices	S4090-0011
Graphic I/O Modules	S4100-0005	Serial DACT (SDACT)	S2080-0009
4602 Series SCU/RCU	S4602-0001	TrueInsight Remote Service	S4100-0063

TrueAlert ES Appliance Self-Test Last Test Results Report Example

```
Service Port                                                            Page 1
REPORT 10   TrueAlertES Self-Test Report              12:34:56pm   MON  01-JUN-15

Point ID    Custom Label                          Date        Visual      Audible

T1-1-1      VO FIRST FLOOR (up to 40 characters)  01-JUN-15   NO OUT        N/A
T1-2-5      AV FIRST FLOOR EAST WING              01-JUN-15   NO OUT      NORMAL
T7-3-55     AO SECOND FLOOR EAST WING             01-JUN-15    N/A        NO OUT
T8-2-45     AV SECOND FLOOR ROOM 29               01-JUN-15   NOT TST       N/A
T8-2-60     AV SECOND FLOOR ROOM 22               01-JUN-15   NORMAL      NORMAL
T1-2-4      AO FIRST FLOOR ROOM 17                01-JUN-15    N/A        UNSUPP
TRUEALERT_ES SELF-TEST REPORT COMPLETED
            Press RETURN for next Screen OR CTRL-X to abort
```

Results Description:

NORMAL = works correctly

NO OUT = No Output, no light or sound was detected

NOT TST = no result; either the appliance did not return a result before the test ended or the test was conducted as silent (strobes only) and audible appliance was not activated

N/A = not applicable (no strobe on audible only, etc.)

UNSUPP = appliance not compatible with Self-Test (TrueAlert addressable appliance not TrueAlert ES addressable appliance)

Note: Additional TrueAlert ES Self-Test information is detailed in Operating Instructions 579-1165 shipped with the panel.

TrueAlert ES Appliance Self-Test All Test Results Report Example

```
Service Port                                                            Page 1
REPORT 10   TrueAlertES Self-Test Report              12:34:56pm   MON  01-JUN-15

Point ID    Custom Label                    Date        Visual      Audible

T1-1-1      VO FIRST FLOOR                  01-JUN-15   NO OUT        N/A
T1-2-5      AV FIRST FLOOR EAST WING        01-JUN-15   NO OUT      NORMAL
T1-2-6      AV FIRST FLOOR NORTH ENTRANCE   12-MAY-15   NO OUT      NORMAL
T7-3-55     AO SECOND FLOOR EAST WING       01-JUN-15    N/A        NO OUT
T8-2-45     AV SECOND FLOOR ROOM 29         01-JUN-15   NOT TST       N/A
T1-1-11     AV FIRST FLOOR SOUTH ENTRANCE   12-MAY-15   NORMAL      NORMAL
T8-2-60     AV SECOND FLOOR ROOM 22         01-JUN-15   NORMAL      NORMAL
T1-2-4      AO FIRST FLOOR ROOM 17          01-JUN-15    N/A        UNSUPP
T1-2-7      AO FIRST FLOOR ROOM 12          12-MAY-15    N/A        UNSUPP
T8-3-43     AV SECOND FLOOR ROOM 25         12-MAY-15   UNSUPP      UNSUPP
TRUEALERT_ES SELF-TEST REPORT COMPLETED
            Press RETURN for next Screen OR CTRL-X to abort
```

TrueAlert ES Appliance Self-Test Individual Appliance Report Example

```
CUSTOM LABEL
4-1-2                                              AV
POINT ADDRESS: 4-1-2                          Type: AV
CARD: 4    CHANNEL: 1   DEVICE: 2
EXTENDED POWER SUPPLY
UNIT NUMBER: 2                        RUI NUMBER: LOCAL

PRIMARY STATUS                               NORMAL
AUDIBLE GROUP CONFIG:                         0 0 0
VISUAL GROUP CONFIG:                          0 0 0
STYLE:                                       INDOOR
OPERATION:                              GENERAL EVAC
CANDELA RATING                                15 CD
COLOR LENS                                      YES
TONE TYPE                                 BROADBAND
CODING TYPE                                TEMPORAL
VOLUME                                         HIGH
LAST TEST TIME:              MON 01-JUN-15 01:00 AM
LAST VISUAL TEST:                            NORMAL
LAST AUDIBLE TEST:                           NORMAL
LAST TEST VOLUME:                            NORMAL
DEVICE TEST TROUBLE:                         NORMAL
```

Simplex

System Accessories, LCD Annunciators

UL, ULC, CSFM Listed;
FM, NYC Fire Dept Approved*

4606 Series *Color Touchscreen* LCD Annunciators
for 4007ES Fire Alarm Control Panels

Features

Remote *Color Touchscreen* LCD annunciators for use with Simplex® model 4007ES fire alarm control panels

4.3" (109 mm) diagonal *color touchscreen* display:
- Provides the display features of the 4007ES fire alarm control panel at a remote location
- Convenient and intuitive user interface provides detailed system status and individual point information
- LED status indicators include Alarm, Priority 2, Supervisory, Trouble, Alarm Silenced, and Status of AC Power at the control panel
- *Supports dual language selection*, including unicode character languages
- Keyswitch is used to enable default access level; additional user access levels are passcode protected; keyswitch and user access levels are configurable
- Tone-alert sounder provides local audible indication
- Three programmable control switches with status LEDs and provisions for custom labeling

Additional features:
- Available with platinum or red trim
- Information is transmitted over a single unshielded twisted pair; separate wiring is required for 24 VDC power
- Mounts flush on RACO 944, 5-gang electrical box (supplied separately)
- Up to 6 Color Touchscreen LCD Annunciators per 4007ES fire alarm control panel

Mounting box options (ordered separately, see page 2 for more details)**:**
- Surface mount boxes in red or platinum
- Semi-flush mount boxes in red or platinum, may be used for legacy annunciator retrofit applications

Description

Local Annunciation and Control. 4606-9200 Series LCD Annunciators allows 4007ES fire alarm control panels to provide information and control switches at convenient locations away from the control panel. The color touchscreen LCD with backlighting displays information in clear and descriptive language. (English is standard, other languages can be programmed.) 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.

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

4606-9205 LCD Annunciator with Platinum Trim

4606-9202 LCD Annunciator with Red Trim

Description *(Continued)*

Indications. Alarm, Priority 2, Supervisory, Trouble, and Alarm Silenced conditions are indicated by dedicated LEDs and a tone-alert audible indication. Each condition will cause the display to present 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.

Custom Background. The 4007ES control panel supports a custom background image that is also displayed on each of the color touchscreen annunciators when status is normal. File types supported are JPG, BMP, GIF, and PNG. Recommended image type is JPG, recommended image size is 480 x 240, and the file size limit is 100 kb.

Operation

Keyswitch Access. Touchscreen display access can be controlled by a keyswitch with a key that is removable only in the disabled position. Access is configurable per annunciator.

Enabled Operations. When the keyswitch is on, system status indications will be displayed as they occur with individual point detail as programmed at the control panel, and soft keys will be displayed to allow user actions.

Screen Backlight. When the display has not been touched, and no new system status has occurred for 60 seconds, the backlight dims to 20% of normal brightness. If there is no activity in the system (System is Normal), the standby screen displays current time and date to verify proper operation. If an event occurs, or with the keyswitch activated, and the screen is touched, the backlight returns to full intensity

Lamp Test. The display menu provides a lamp test feature that when selected, activates the 9 panel LEDs for 5 seconds. Dual-color LEDs will blink alternately.

Product Selection

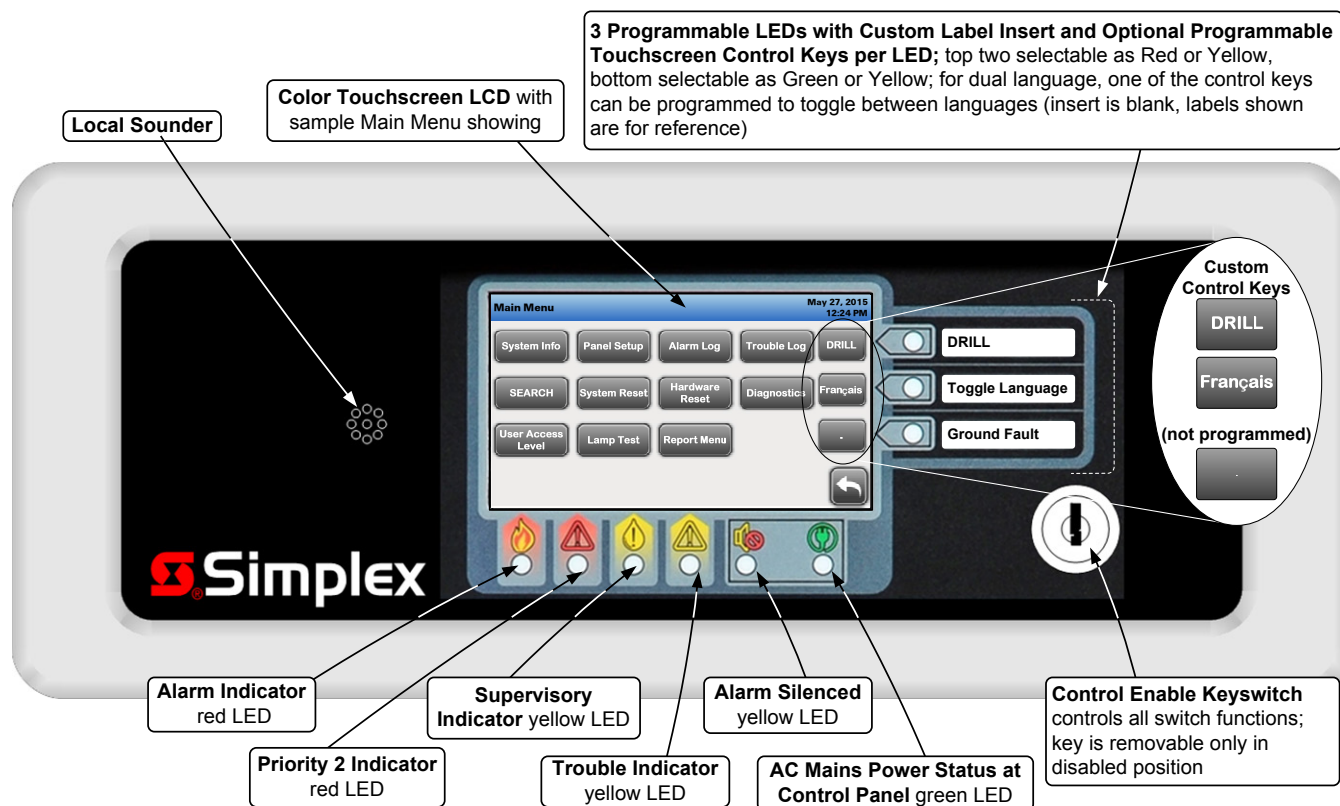| Model*	Color	Description	Dimensions
➡ 4606-9202(BA)	Red	Remote Color Touchscreen LCD Annunciator; for flush mounting in a 5-gang RACO 944 box, or equal, supplied separately	**Annunciator:** 13" W x 5.21" H x 2" D (330 mm x 132 mm x 51 mm)
4606-9205(BA)	Platinum		**RACO 944 Box (reference):** 12 ¼" W x 4 ½" H x 2 ½" D (311 mm x 114 mm x 64 mm)
➡ 2975-9461	Red	Surface mount metal box for above annunciators	12 ¼" W x 4 ½" H x 2 ½" D (311 mm x 114 mm x 64 mm)
2975-9462	Platinum		
2975-9463	Red	Semi-flush mount metal box adapter for above annunciators; use for mounting on existing 2-gang, 4-gang, 6-gang, or 4" (102 mm) square flush mounted boxes	12 ¼" W x 4 ½" H x 1 ¾" D (311 mm x 114 mm x 44 mm)
2975-9464	Platinum		

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

Suppression Products

Note: Suppression is required where annunciator communications and power wiring exits and enters a building

Model	Description	Additional Reference
2081-9044	Overvoltage Protector, rated for up to 200 mA; use for RUI communications	Data Sheet S2081-0016
2081-9028	Isolated Loop Circuit Protector (ILCP), rated for 5 A maximum; use for 24 VDC power wiring when above 200 mA	Data Sheet S2081-0008

Operator Information

3 Programmable LEDs with Custom Label Insert and Optional Programmable Touchscreen Control Keys per LED; top two selectable as Red or Yellow, bottom selectable as Green or Yellow; for dual language, one of the control keys can be programmed to toggle between languages (insert is blank, labels shown are for reference)

Local Sounder

Color Touchscreen LCD with sample Main Menu showing

Custom Control Keys

Alarm Indicator red LED

Priority 2 Indicator red LED

Supervisory Indicator yellow LED

Trouble Indicator yellow LED

Alarm Silenced yellow LED

AC Mains Power Status at Control Panel green LED

Control Enable Keyswitch controls all switch functions; key is removable only in disabled position

S4606-0003 6/2015

Specifications

General Operating Specifications

Voltage		18 to 32 VDC, system supplied	
	Condition	**Current**	**Details**
Current Details	Alarm	124 mA	Backlight at full intensity and tone-alert sounding
	Display Active	70 mA	Backlight at full intensity, occurs when activity is in process
	Standby	45 mA	Backlight dimmed to 20% of full intensity, occurs after 1 minute of no system activity
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 4007ES Panels	Type	RUI (Remote Unit Interface) external annunciator communications line SLC (signaling line circuit)
	Capacity	Up to 6 Color Touchscreen LCD Annunciators

Wiring Requirements

	Standard Wiring Type	Unshielded twisted pair (UTP), 18 AWG (0.82 mm^2) for most applications, see below
	Wiring Characteristics	0.58 µF (580 nF) maximum capacitance between conductors; 35 Ω maximum total line resistance
RUI Data	**Wiring Applications Requiring Shielded, Twisted Pair (STP)**	1. Wiring that leaves the building. RUI wiring also requires 2081-9044 Overvoltage Protectors on each end. 2. Wiring run in 500 ft (152 m) or more of conduit. 3. Wiring closely bundled with standard IDNet communications or TrueAlert addressable communications (not required when run with IDNet+ communications).
	Class B "T-Tap" wiring distance	Up to 10,000 ft (3048 m) total wiring; up to 2500 ft (762 m) to farthest device
	Class X wiring distance	Up to 2500 ft (762 m)
Power Wiring		Terminals for 18 to 12 AWG (0.82 mm^2 to 3.31 mm^2) wires for 24 VDC system power
Earth Wiring		A dedicated earth ground connection to the electrical box is required for proper ESD and EMI protection; wire in accordance with NFPA 70 (*National Electrical Code*) Article 250

Mounting Information

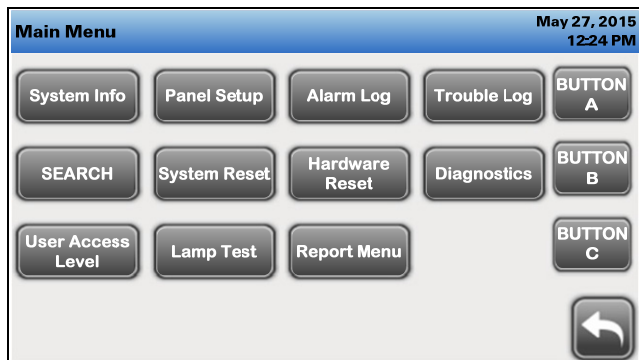|	
Boxes for Flush Mounting (supplied separately)	5-gang masonry box, RACO # 944, 2 ½" (64 mm) deep or equal

Additional Reference

Installation Instructions	579-1172
4007ES Data Sheets	S4007-0001, 4007ES Hybrid
	S4007-0002, 4007ES with IDNAC Notification

Operator Screen Reference (shown approximately full size, refer to page 4 for additional screen reference)

Main Menu Screen provides easy navigation to the function required. Buttons A, B, and C have programmable functions.

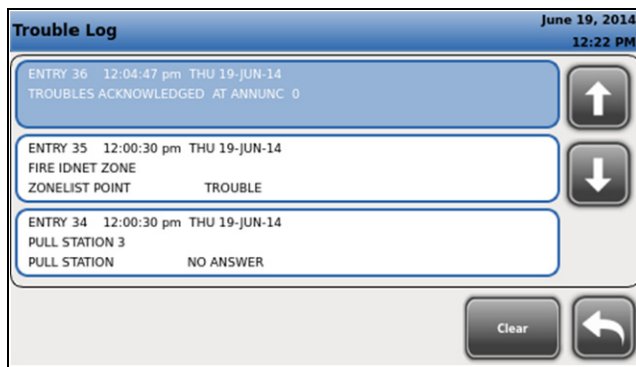**Main Menu**
May 27, 2015
12:24 PM

System Info	Panel Setup	Alarm Log	Trouble Log	BUTTON A
SEARCH	System Reset	Hardware Reset	Diagnostics	BUTTON B
User Access Level	Lamp Test	Report Menu		BUTTON C

System Alarm Screen identifies active alarms with custom labels displayed, arrows allow navigation through the list
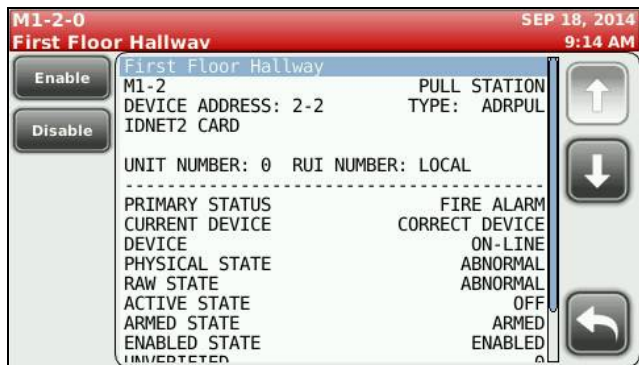
FIRE ALARM IN SYSTEM
SEP 18, 2014
9:04 AM

Most Recent of 2   ZN2   SEP 18, 2014 8:53 AM
First Floor Hallway
ZONELIST POINT   FIRE ALARM

First of 2   ZN1   SEP 18, 2014 8:53 AM
First Floor, Main Lobby
ZONELIST POINT   FIRE ALARM

FIRE 2   Alarm Functions   Menu

System Trouble Screen identifies active troubles with custom labels displayed, arrows allow navigation through the list

TROUBLE IN SYSTEM
SEP 18, 2014
9:05 AM

Most Recent of 2   M1-4-0   SEP 18, 2014 9:05 AM
First Floor Hallway
HEAT DETECTOR   DISABLE TROUBLE

First of 2   P34   SEP 18, 2014 9:04 AM
CITY DISCONNECT
TROUBLE POINT   ABNORMAL

FIRE 2   TRBL 2   Alarm Functions   Menu

Trouble Log Screen allows review of past troubles with time stamp and point details shown.

Trouble Log
June 19, 2014
12:22 PM

ENTRY 36   12:04:47 pm THU 19-JUN-14
TROUBLES ACKNOWLEDGED AT ANNUNC 0

ENTRY 35   12:00:30 pm THU 19-JUN-14
FIRE IDNET ZONE
ZONELIST POINT   TROUBLE

ENTRY 34   12:00:30 pm THU 19-JUN-14
PULL STATION 3
PULL STATION   NO ANSWER

Clear

Point Information Screen allows review of point details, arrows allow navigation through the information.

M1-2-0
First Floor Hallway
SEP 18, 2014
9:14 AM

First Floor Hallway
M1-2   PULL STATION
DEVICE ADDRESS: 2-2   TYPE: ADRPUL
IDNET2 CARD

UNIT NUMBER: 0 RUI NUMBER: LOCAL

PRIMARY STATUS   FIRE ALARM
CURRENT DEVICE   CORRECT DEVICE
DEVICE   ON-LINE
PHYSICAL STATE   ABNORMAL
RAW STATE   ABNORMAL
ACTIVE STATE   OFF
ARMED STATE   ARMED
ENABLED STATE   ENABLED
UNVERIFIED

Enable   Disable

User Access Login Screen controls access to panel operations as determined per panel.

User Access Level
Current Access Level:1
June 19, 2014
12:26 PM

Enter Passcode
****

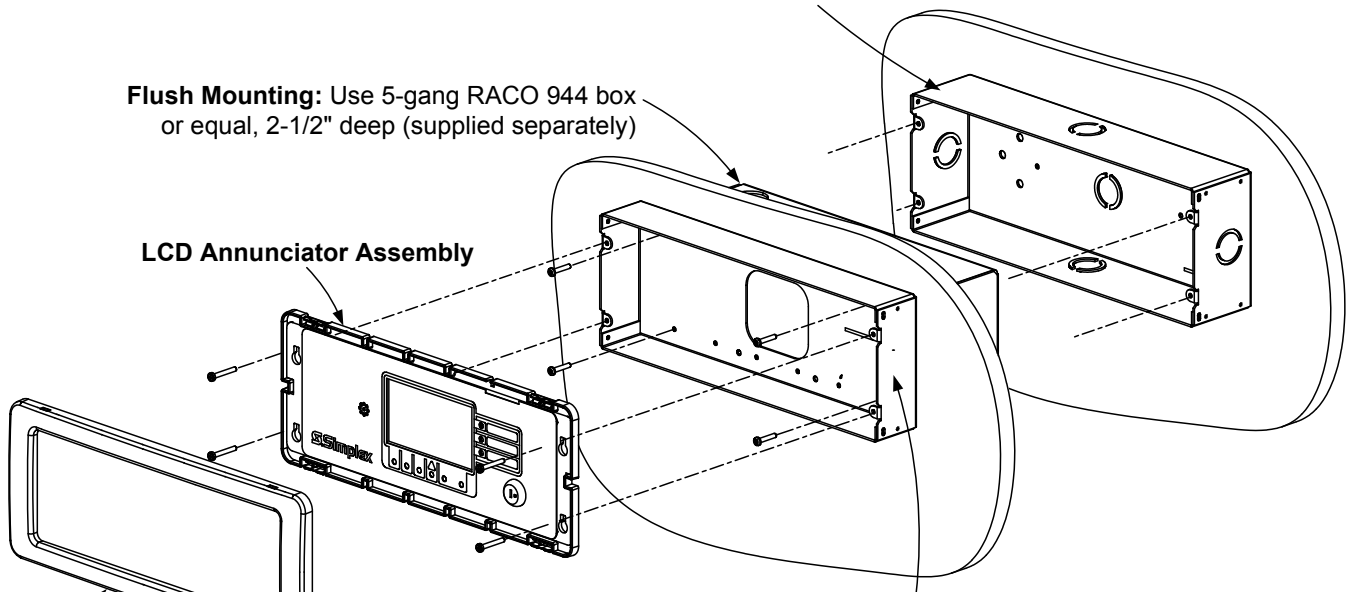| 1 | ABC 2 | DEF 3 |
GHI 4	JKL 5	MNO 6
PQRS 7	TUV 8	WXYZ 9
	0	

Log Out

Mounting Information

Surface Mounting: Use Simplex Surface Mount Box Model 2975-9461 (red) or 2975-9462 (platinum), 2-1/2" deep (64 mm) (ordered separately)

Flush Mounting: Use 5-gang RACO 944 box or equal, 2-1/2" deep (supplied separately)

LCD Annunciator Assembly

Trim Plate (supplied)

Semi-Flush Mounting: Use Simplex Semi-Flush Box Adapter Model 2975-9463 (red) or 2975-9464 (platinum),1-3/4" deep (44 mm) (ordered separately); use for mounting on existing 2-gang, 4-gang, 6-gang, or 4" square flush mounted electrical boxes (supplied separately)

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 579-1172 for additional wiring specifications.

To other RUI devices

4007ES Fire Alarm Control Panel

4606-9202 LCD Annunciators
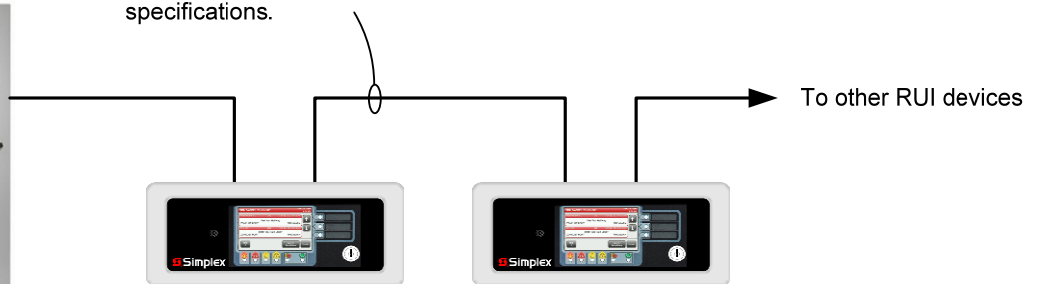
ⓢ Simplex

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

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

Features

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

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

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

IDNet communications control benefits:
- Provides status monitoring and individual NAC control using a single address per 4009 IDNet NAC Extender
- Supports IDNet "Device Level" earth fault location

WALKTEST operation is available with either input choice

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

Optional 4009 IDNet NAC Extender modules:
- IDNet Communications Repeater provides Class B or Class A output
- IDNet Communications Fiber Optic Receiver/Repeater, available as Class B or Class X
- Four additional Class B NACs, rated 1.5 A for Special Application appliances; 1 A for Regulated 24 DC appliance power
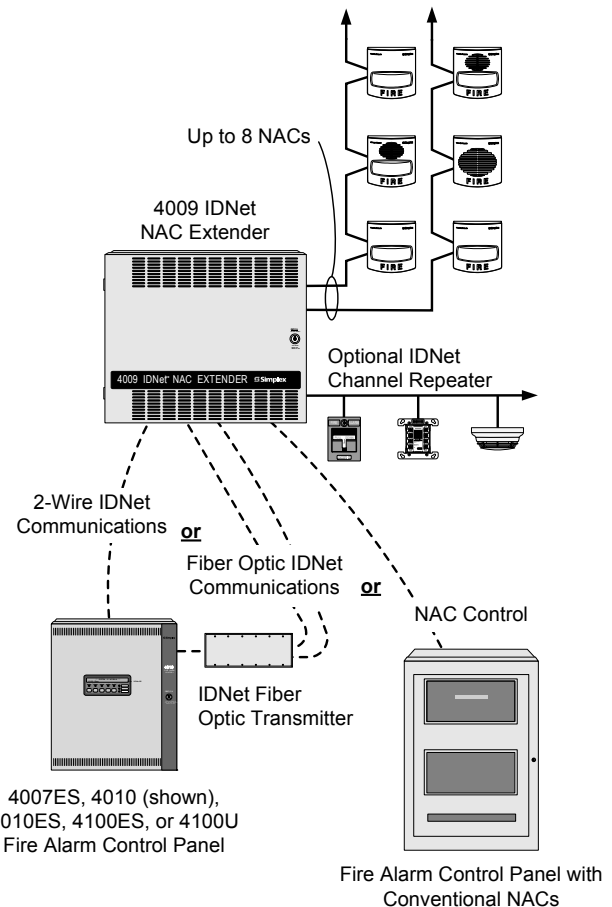- Class A, Two Circuit Adapter Module

UL Listed to Standard 864

External Accessories

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

External battery cabinet for 18 Ah batteries

Up to 8 NACs

4009 IDNet NAC Extender

Optional IDNet Channel Repeater

2-Wire IDNet Communications **or**

Fiber Optic IDNet Communications **or**

NAC Control

IDNet Fiber Optic Transmitter

4007ES, 4010 (shown), 4010ES, 4100ES, or 4100U Fire Alarm Control Panel

Fire Alarm Control Panel with Conventional NACs

4009 IDNet NAC Extender Connection Reference Drawing

Introduction

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

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

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

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*   ULC listed model is 4009-9202CA. This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7300-0026:214 for allowable values and/or conditions concerning material presented in this document. Accepted for use – City of New York Department of Buildings – MEA35-93E. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

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

Application and Operation Information

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

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

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

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

Product Selection

Standard Models

Model	Description	
4009-9201**	120 VAC input	4009 IDNet NAC Extender with 4, Class B NACs and 8 A power supply
4009-9202CA*		
4009-9301	240 VAC input	

* ULC listed model

** 4009-9201 has been seismic tested and is certified to IBC and CBC standards as well as to ASCE 7 categories A through F, requires battery brackets as detailed on data sheet S2081-0019

Optional Modules (for on-site installation)

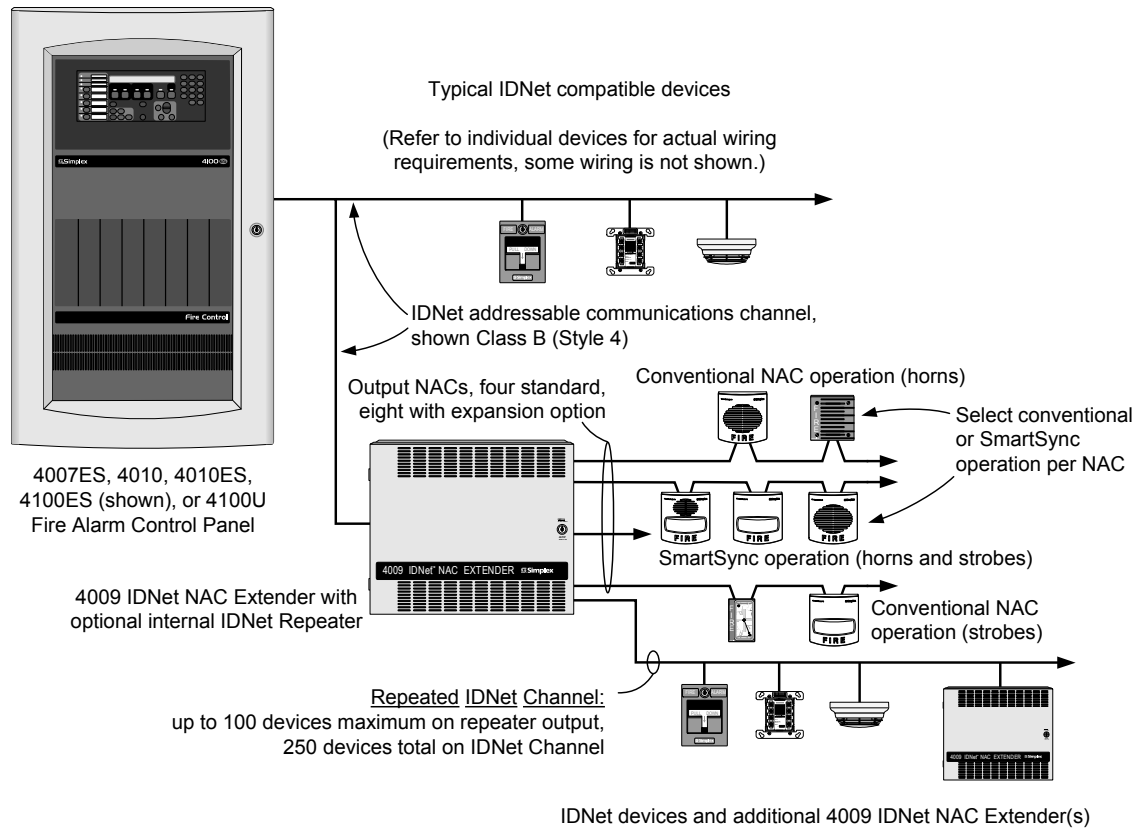| Model	Description		Comments
4009-9807	Additional four point NAC module, rated 1.5 A Special Application appliances; 1 A for Regulated 24 DC appliance power, Class B		One maximum
4009-9808	Dual Class A adapter (for two NAC outputs)		Select as required (4 maximum)
4009-9809	IDNet Repeater, output is Class A or Class B		Select **either** an IDNet Repeater **or** a Fiber Optic Receiver as required; one transmitter can connect to one receiver
4009-9810	Fiber Optic Receiver	Class B	
4009-9811		Class A (IDNet), Class X (fiber)	
4009-9805	Red Appliqué for door		Select if required
2975-9801	Semi-Flush Trim Kit	Beige trim	1-7/16" wide (78 mm), use if required for semi-flush installations
2975-9802		Red trim	

Battery Selection (select battery size per system requirements)

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

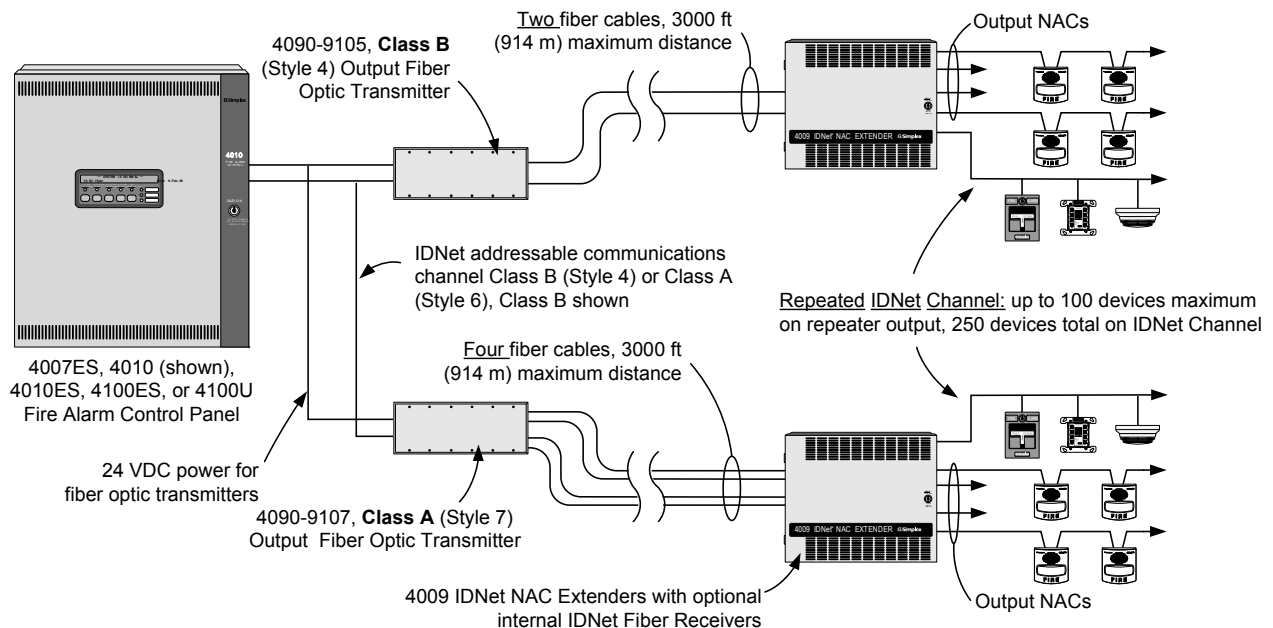### External Accessories (select per system requirements)

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

Typical IDNet Connection Example

Typical IDNet compatible devices

(Refer to individual devices for actual wiring requirements, some wiring is not shown.)

IDNet addressable communications channel, shown Class B (Style 4)

4007ES, 4010, 4010ES, 4100ES (shown), or 4100U Fire Alarm Control Panel

Output NACs, four standard, eight with expansion option

Conventional NAC operation (horns)

Select conventional or SmartSync operation per NAC

SmartSync operation (horns and strobes)

4009 IDNet NAC Extender with optional internal IDNet Repeater

Conventional NAC operation (strobes)

Repeated IDNet Channel: up to 100 devices maximum on repeater output, 250 devices total on IDNet Channel

IDNet devices and additional 4009 IDNet NAC Extender(s)

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

Typical Fiber Optic System Connections

4090-9105, **Class B** (Style 4) Output Fiber Optic Transmitter

Two fiber cables, 3000 ft (914 m) maximum distance

Output NACs

IDNet addressable communications channel Class B (Style 4) or Class A (Style 6), Class B shown

Repeated IDNet Channel: up to 100 devices maximum on repeater output, 250 devices total on IDNet Channel

4007ES, 4010 (shown), 4010ES, 4100ES, or 4100U Fire Alarm Control Panel

24 VDC power for fiber optic transmitters

Four fiber cables, 3000 ft (914 m) maximum distance

4090-9107, **Class A** (Style 7) Output Fiber Optic Transmitter

4009 IDNet NAC Extenders with optional internal IDNet Fiber Receivers

Output NACs

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

Hardwire Control Connection Information

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

- Track input NAC operation **or** to provide a locally generated code, selectable per NAC input

- If selected for local coding, NAC outputs can be either **Temporal Coded** or **60 Beats/min March Time Coded,** one code selection per extender (input NACs must be on continuous with Alarm)

- Additionally, NAC outputs can be selected to provide the Simplex strobe synchronization signal. This signal will synchronize the flashes of synchronized strobes but will be ignored by free-run strobes and audible devices. (Strobes are for operation by noncoded NACs.)

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

Conventional NAC Output Operation Options

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

SmartSync NAC Output Operation

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

SmartSync Notification Appliance Control

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

- TrueAlert non-addressable models with SmartSync operation allow audible notification to be separately controlled over the same wire pair that controls visible notification

- 4009 IDNet NAC Extenders can be selected to provide SmartSync operation whether controlled by IDNet communications or conventional NACs

- IDNet control allows output NACs to be **individually selected** for conventional **or** SmartSync operation

- With NAC input control, **all** output NACs are selected for either conventional **or** SmartSync operation

- Refer to data sheet S4009-0003 for TrueAlert Addressable operation details, contact your local Simplex product supplier for further information on specific TrueAlert notification appliances

Hardwire Control NAC Connection One-Line Reference Diagram

Up to eight (8) output NACs total; hardwire control can be selected to map NAC inputs to different combinations of NAC outputs depending on system requirements

NAC 1 input (see Note 1)

Conventional NACs

Output NACs

With hardwire control, NAC outputs are all conventional or all SmartSync operation

4009 IDNet NAC Extender

SmartSync operation

Fire Alarm Control Panel with Conventional NACs

Class A operation, either mode, requires 4009-9808 Dual Class A Adapter

NAC 2 input (optional, see Note 1)

To additional 4009 IDNet NAC Extenders (up to four (4), 4009 IDNet NAC Extenders per NAC); see Note 2

Notes:

1. For separate audible and visible output NAC control, or SmartSync NAC output operation, two (2) input NACs are required. NAC 1 is "on-until-reset" and NAC 2 is "on-until-silenced."

2. To synchronize strobe flash outputs for up to four (4) 4009 IDNet NAC Extenders, use the synchronized strobe output from a Synchronized Flash Module (4905-9914 for Class B operation, 4905-9922 for Class A operation) or, if available, from a NAC selected to provide synchronized strobe flash output. **NOTE: DO NOT USE a NAC selected for SmartSync operation for this function.**

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

4009 IDNet NAC Extender Specifications

Input Ratings	120 VAC Input (4009-9201)	3A @ 102-132 VAC, 60 Hz
	240 VAC Input (4009-9301)	1.5A @ 204-264 VAC, 50/60 Hz
	Hardwire Control from External NACs, Input Requirements	Conventional reverse polarity operation
		5 mA maximum; 16 to 33 VDC

Output Ratings	Total Rating	8 A, Special Application appliances 6 A, Regulated 24 DC appliance power
	Standard NACs	2 A each, Special Application or Regulated 24 DC appliance power
	Optional NACs (requires 4009-9807)	1.5 A each, Special Application appliances 1 A each, Regulated 24 DC appliance power
	Special Application Appliances	Simplex non-addressable horns, strobes, and combination horn/strobes and speaker/strobes (contact your Simplex product representative for compatible appliances)
	Regulated 24 DC Appliances	Power for other UL listed appliances; use associated external synchronization modules where required
	Strobe Operation	Up to 33 strobes per NAC can be synchronized; output NACs configured for Simplex synchronized strobe operation are synchronized to each other
	Auxiliary Output	500 mA @ 24 VDC nominal

Optional Modules Ratings

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

Fiber Optic Receiver Modules

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

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

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

Fiber Optic Transmitter Specifications

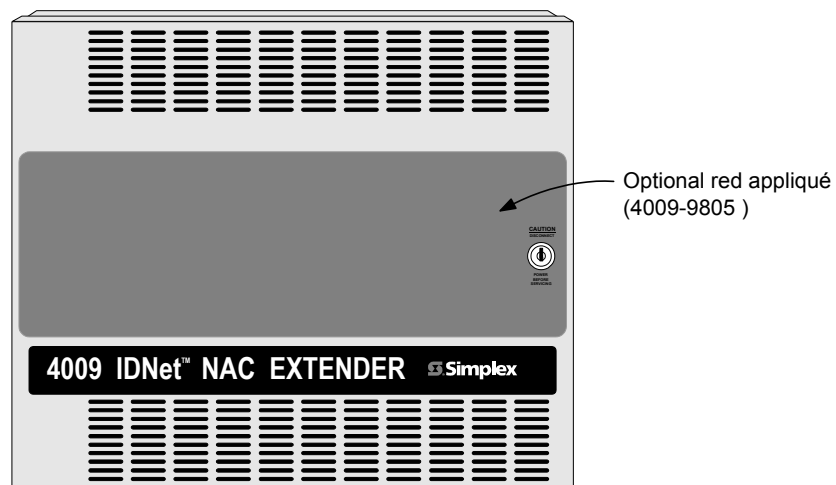| Input Voltage | 18.9-32 VDC from compatible listed fire alarm supply |
Input Current	4090-9105, Class B, 30 mA @ 24 VDC
	4090-9107, Class X, 35 mA @ 24 VDC
Fiber Optic Connections and cable requirements	Multimode, graded index, 50/125µm, 62.5/125 µm, 100/40 µm, or 200 µm
	Type ST connectors
	4090-9105,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

* Metric wire equivalents: 18 AWG = 0.82 mm^2; 12 AWG = 3.31 mm^2

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4009 IDNet NAC Extender Mounting and Module Placement Information

16-1/4" (413 mm)

10-29/32" (277 mm)

Optional Class A adapter modules

4009-9807 Additional Four point module (shown with Class A adapters)

System Module

IDNet repeater or Fiber optic receiver

12" (305 mm)

Battery location, no conduit entry or wiring in this area (12.7 Ah battery outline shown)

Non-power limited wiring area (AC input)

Cabinet depth 4-1/4" (108 mm)

Door, 5/8" (16 mm) thick

13-1/2" (343 mm)

Exposed cabinet dimension for semi-flush mount 1" (25.4 mm), 1-3/8" (35 mm) with semi-flush trim

Knockouts for screw or nail mounting holes

Semi-flush trim option 1-3/16" wide (30 mm), 3/8" (9.5 mm) thick

Wall surface reference for semi-flush mount

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

4009 IDNet NAC Extender Cabinet with Door Detail

Optional red appliqué (4009-9805)

CAUTION

4009 IDNet™ NAC EXTENDER Ⴝ Simplex

Surface mount box:
Simplex model 2975-9217
(ordered separately)

Flush mount masonry box:
use 6-gang box, RACO # 960, 2-1/2" deep
(64 mm), or RACO # 965, 3-1/2" (89 mm)
deep, or equal (supplied by others)

Flush mount ganged boxes:
use 6-gang box, 1-1/2" (38 mm)
minimum depth; six, RACO # 400
or equal, (supplied by others)

IDNet fiber optic transmitter:
4090-9107, Shown, Class A (Style 7) output
4090-9105, Not shown, Class B (Style 4) output

INSTALLATION NOTE:
Fiber optic cable bend radius should be 2" (51 mm)
minimum, or per Manufacturer's specification.

Six-gang blank cover plate Mulberry Metal
Products 97156 or equal (by others)

Service Diagnostic Features

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

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

LED Status Indicators are provided for the following:

- **Each NAC** (standard and optional) has a dedicated yellow LED that:
  - During supervision provides a slow flash to indicate a short circuit condition and a fast flash to indicate an open circuit
  - During an alarm, the LED follows the NAC output (on steady or flashing with coded output)

- **Four, general status yellow LEDs** provide nine separate indications listed in priority of urgency. As a trouble is eliminated, any remaining trouble(s) will then be indicated until the 4009 IDNet NAC Extender is returned to normal operation.

- **AC power status** is indicated by a green LED that is on when AC is normal. During low AC (brownout) conditions or with no AC, the LED is off. Additional power and battery status is indicated by the general status LEDs.

4009 IDNet NAC Extender Current Calculation Chart

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

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

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

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

Model	Description		Supervisory Current	Actual Supervisory	Alarm Current	Actual Alarm
4009-9809	IDNet Repeater	Select one per Extender	70 mA	+_____	70 mA	+_____
4009-9810*	Fiber Optic Receiver, Class B		65 mA		65 mA	
4009-9811*	Fiber Optic Receiver, Class X		80 mA		80 mA	
IDNet Devices (connected to Repeater or Receiver above), 0.7 mA each, maximum of 100			Total devices x 0.7 mA each	+_____	Total devices x 0.7 mA each	+_____
* Note: IDNet Fiber Optic Transmitter current is supplied from the host fire alarm control panel	IDNet Module Supervisory Current		[S2] = ____			
	IDNet Module Alarm Current					= [A3] _____

Step 2. Calculate Available NAC Current

Maximum Available Current	**= 8 A***
Subtract Auxiliary Power Output	- [A1] _____
Subtract IDNet Module Current	- [A3] _____
Available NAC Current	**= [A4] _____**

* 8 A for Special Application Appliances; 6 A for Regulated 24 DC Appliances

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

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

Step 4. Calculate Total Supervisory Current

Total Supervisory Current = Basic Panel Current [S1] + IDNet Module Current [S2] =	_____

Step 5. Calculate Total Alarm Current

Total Alarm Current = Basic Panel Current [A2] + IDNet Module Current [A3] + Actual NAC Current [A5] =	_____

Simplex

Fire Alarm Control Panel Accessories

Listings*

System Batteries, Sealed Lead-Acid; with Applications
Reference for Battery Cabinets, and Battery Cabinets with Charger

Features

Rechargeable, sealed lead-acid batteries:

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

Available in a variety of capacities:

- Batteries for internal mounting range from 6.2 Ah up to 50 Ah, depending on control panel cabinet size
- Larger batteries, up to 110 Ah, mount in external battery cabinets with models available with internal chargers

Battery cabinets with chargers:

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

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-nippled 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.

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

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

Battery Construction Reference

Actual appearance will vary with battery size.
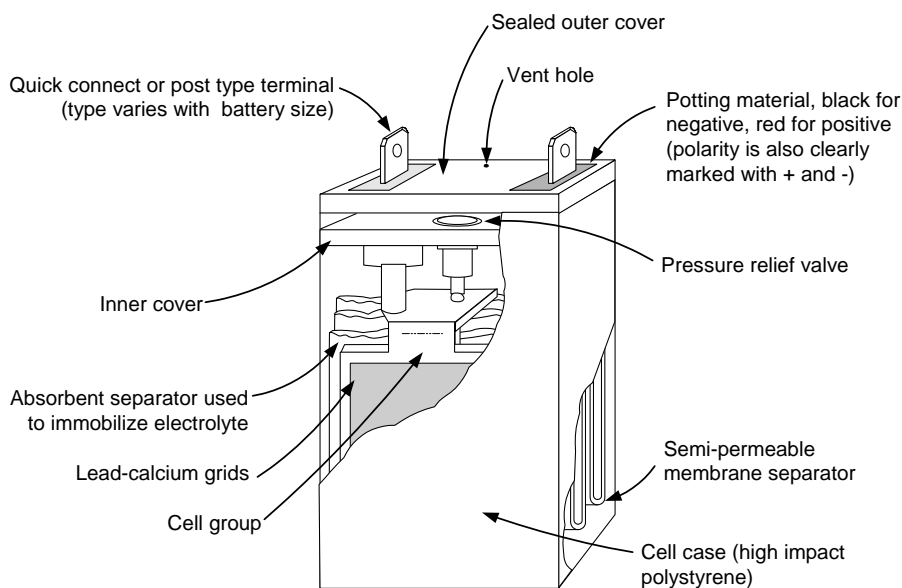
Battery Size Specifications

Battery Model	Capacity @ 20 Hour Discharge Rate	Width*	Depth*	Height with Terminals	Approximate Weight*
➡ 2081-9272	6.2 Ah	6-1/8" (156 mm)	2-5/8" (67 mm)	4" (102 mm)	5.75 lbs (2.6 kg)
2081-9274	10 Ah	6" (153 mm)	4-1/16" (103 mm)	4" (102 mm)	9.2 lbs (4.2 kg)
➡ 2081-9288	12.7 Ah	6" (153 mm)	4" (102 mm)	4" (102 mm)	9 lbs (4.1 kg)
2081-9275	18 Ah	7-1/4" (184 mm)	3-3/8" (86 mm)	6-5/8" (168 mm)	14.3 lbs (6.5 kg)
2081-9287	25 Ah	6-5/8" (168 mm)	5" (127 mm)	7" (178 mm)	19.4 lbs (8.8 kg)
2081-9271 (rectangular case, typically for service)	33 Ah	12-1/2" (318 mm)	3-3/8" (86 mm)	7-1/16" (179 mm)	26.6 lbs (12.1 kg)
2081-9276 ("square" case, use for new)	33 Ah	7-3/4" (197 mm)	5-1/4" (133 mm)	6-3/4" (171 mm)	26.5 lbs (12 kg)
2081-9296	50 Ah	9" (229 mm)	5-1/2" (140 mm)	8-7/8" (225 mm)	41.8 lbs (19 kg)
2081-9279	110 Ah	11-3/16" (284 mm)	10-1/2" (267 mm)	9" (230 mm)	82 Lbs (37 kg)

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

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

General Battery Specifications

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

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Battery Compatibility for Fire Alarm Control Panel Mounting

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

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

✓ **=** Can be placed in the respective equipment cabinet

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

NA = Not applicable/not compatible

NOTES:
1. These batteries meet the requirements of UL, ULC, and Factory Mutual for use with respective equipment battery chargers listed above. Contact your local Simplex product supplier for proper battery selection per system requirements.
2. 4010 Cabinets will accommodate 2081-9275, 18 Ah batteries, but will not allow bottom entry conduit.
3. Use 4081 series companion cabinet and charger, refer to page 4.
4. Some control panel models are listed for battery replacement reference only.
5. For 2 bay international applications only, 50 Ah batteries will fit in the cabinet.

External Battery Cabinet Compatibility Reference

Battery Cabinets _without_ Chargers (connects to charger in panel)

Cabinet	Panel Compatibility	Battery					
		2081-9275 18 Ah*	2081-9287 25 Ah	2081-9271 Rectangular 33 Ah	2081-9276 Square 33 Ah	2081-9296 50 Ah	2081-9279 110 Ah
2081-9280	4100ES, 4010ES, 4100U, and 4100+	**NA**	**NA**	**NA**	**NA**	**NA**	✓
2081-9281 2081-9282	multiple	✓	✓	✓	✓	✓	**NA**
4009-9801	multiple	✓	✓ **	**NA**	**NA**	**NA**	**NA**
4009-9802	multiple	✓	**NA**	✓	**NA**	**NA**	**NA**

Battery Cabinets _with_ Chargers

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

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

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

✓ = Can be placed in the respective equipment cabinet

NA = Not applicable/not compatible

External Battery Cabinet Specification Reference

Battery Cabinets Without Chargers; Shallow Design with Front Door

Model	Color	Listings	Description		Dimensions
2081-9281	Beige	UL and FM	2-Unit, 4100 style cabinet **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				
4003-9860	Beige	Multiple	Intended for use with 4003EC systems, for up to 33 Ah batteries (refer to 4003EC data sheet S4003-0002)		9-1/2" H x 24" W x 9" D (241 mm x 610 mm x 229 mm)
4009-9801*	Beige	UL and FM	For up to 25 Ah batteries*	External battery cabinet **without** charger, with locking solid door and battery harness; for close-nippled 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	For up to 33 Ah batteries		25-3/4" W x 20-3/4" H x 4-1/8" D (654 mm x 527 mm x 105 mm)

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

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

Model	Color	Input Voltage	Description	Dimensions
4081-9301	Beige	120 VAC	Battery cabinet **with** charger for the 4010 and 4004R fire alarm control panel; **for up to 50 Ah batteries**; with front door	22-1/2" W x16-3/4" H x 8-3/8" D (572 mm x 425 mm x 213 mm)
4081-9302	Red		*Listings include: UL, ULC, FM, CSFM, and MEA (NYC), see data sheet for details*	

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 *Listings include: UL and CSFM*	Red	Battery cabinet for 2081-9279, 110 Ah batteries; includes 80 A battery fuse, terminals and battery connection cables; see data sheet for details	4010-9xxx Series	4010ES Main System Supply (MSS)	26-1/2" W x 12" H x 12" D (673 mm x 305 mm x 305 mm)
			4100-9xxx Series	4100ES/4100U System Power Supplies (SPS)	
			4100-5111 4100-5112 4100-5113	4100ES/4100U Additional SPS	
			4100-5125 4100-5126 4100-5127	4100ES/4100U Remote Power Supply (RPS)	
			4100-5120 4100-5121 4100-5122	4100ES/4100U TrueAlert Addressable Power Supply (TPS)	
			4100-0104 4100-0114 4100-0124	4100 Legacy power supplies	

4100ES/4010ES/4100U Compatible Battery Cabinet With Charger for 110 Ah Batteries (for ULC listed systems and for other applications unable to use panel mounted power supply charger; *refer to data sheet S4081-0002*)

Model	Color	Input Voltage	Description	Dimensions
4081-9306	Red	120 VAC	Battery cabinet with charger for up to 110 Ah batteries; **NOTE:** Required for ULC listed charging of 110 Ah batteries*; Listings include: UL, ULC, FM, CSFM, and MEA (NYC), see data sheet for details*	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		
4100-9837			Green LED Power-on Indicator Kit, **required for ULC listing,** mounts above access panel using knockout provided	

7788F/7744F Series

Wireless Fire Alarm Communicators for IntelliNet

AES CORPORATION | **IntelliNet** For Alarm Monitoring

Model 7788F

UL LISTED

Features – All models

- UL Listed commercial fire alarm applications.
- Meets NFPA 72 requirements
- Direct reporting to AES receiver across IntelliNet mesh radio network
- Each Subscriber acts as transmitter/receiver/repeater
- Simple and fast activation on network
- On board status LEDs for easy set up
- 8 programmable zone inputs – 7788F
- 4 programmable zone inputs and 4 reverse polarity inputs – 7744F
- Easy programming via AES handheld programmer or PC
- Rugged metal housing ideal for any commercial fire alarm application
- Narrowband compliant

Models 7788F/7744F-ULP with IntelliPro Fire also includes

- IntelliPro Fire transmits full alarm data from virtually any fire alarm panel digital communicator
- Alarm format support for Contact ID, Pulse, as well as Bosch Modem IIe and Modem IIIa
- Easy installation in AES subscriber
- Operates in applications with or without a phone line

Advanced Wireless Alarm Monitoring

As expensive dedicated landlines, required for UL864 compliance disappear, and the future of GSM for alarm transmission becomes increasingly uncertain, the AES IntelliNet mesh radio network continues to offer unmatched reliability and speed in delivering wireless alarm signals to a central station without any third-party fees or reliance on networks operated by companies outside the alarm industry. The 7788F/7744F Series Subscribers provide the wireless communications link between the fire alarm panel and the central station receiver. Ideal for most commercial fire alarm applications, each 7788F/7744F Series Subscriber is housed in a full-sized, red, locked steel cabinet and supports a range of alarm panel inputs, including EOL fire, EOL supervised, and direct voltage from the panel (non-fire applications).

Supervised Operation

AES Subscribers offer fully-supervised operation that includes monitoring of operating power (both primary AC and battery back-up) and the connection to the mesh radio network. Each subscriber "checks-in" with the AES central station receiver at least once every 24 hours. The supervision check-in time can be set to as often as needed for the application, as appropriate for the network. Because the central station operates the wireless network, there is no additional cost for air time to transmit supervisory signals.

Full Data Reporting from Alarm Panel Digital Dialer

Models 7788F-ULP and 7744F-ULP come equipped with an IntelliPro-Fire Full Data Module (AES-7794) which enables reporting of full alarm data captured from the alarm panel's digital communicator. IntelliPro-Fire supports most alarm communication formats including Contact ID, Pulse, as well as Bosch Modem IIe and Modem IIIa2 (when converted to Contact ID format).

Wireless mesh networking is an innovative technology adopted by many industries with applications that need to communicate data over a large geographicv area with a high level of reliability at a low total cost of ownership.

The advanced design and 2-way communications capability provides easy installation, expansion, and management when compared to alternative communication methods, both wired and wireless.

7744F/7788F Series

AES IntelliNet
CORPORATION | For Alarm Monitoring

Technical Specifications
7788F/7744F Series Subscriber

Dimensions
- 13.25"H x 8.5"W x 4.3"D
  (34cm H x 21.5cm W x 11cm D)

Weight
- Approx. 7 pounds (3.2 kilograms),
  excludes battery.

Radio Frequency
- Standard Frequency Range:
  450-470MHz
  (others available in 400-512MHz range)
- Output Power – 2 Watts

Antenna
- Included 2.5 db tamper resistant antenna
  mounts on enclosure
- Multiple remote antenna options available

Power Input
- 16.5VAC, 40VA transformer (not included)
  (AES 1640, ELK TRG1640, MG Electronics
  MGT1640 – UL Listed for use)

Backup Battery
- Will charge 12V battery up to 7.5 AH. Requires
  12VDC 7.5 AH battery for UL 864.

Alarm Signal Inputs (subscriber)
- 7788F – 8 individually programmable zones
- 7744F – 4 individually programmable zones
  and 4 reverse polarity inputs

UL Standards
- UL 864 Edition 9 – Standard for Control Units
  and Accessories for Fire Alarm Systems
- UL 365 – Standard for Police Station
  Connected Burglar Alarm Units and Systems
- UL 1681 – Standard for Central Station Burglar
  Alarm Units

**Antenna Cut / Communication
Trouble Output**
- Form C relay; fail secure;
  rated for 24 VDC 1A resistive

Reset Button
- Located on main circuit board.

Operating Temperature
- 0° to 50° C (32° to 122°F)

Storage Temperature
- –10° to 60° C (14° to 140°F)

Relative Humidity
- 0 to 85% RHC, Non Condensing

AES-7794 IntelliPro Fire
Packaged with 7744F-ULP and 7788F-ULP

Input / Output Connections
- RJ11 connection to AES subscriber for module
  data and power
- RJ11 connector for Handheld Programmer/PC
  programming
- RJ31X Telco connections - T and R both in
  and out via terminal strip and RJ45
- Alarm Panel digital communicator T and R
  both in and out via termina strip and RJ45
- Trouble output: Form C relay detects if
  Subscriber is off the network

Alarm Formats
- Support for Contact ID and Pulse formats as
  well as Modem IIe and Modem IIIa2 converted
  to CID

Size
- 2.8 x 5.0 inches (7.1cm x 12.7cm)

Power Requirements
- 12 VDC nominal - primary and backup power
  provided by the AES 7788F/7744F or other
  Subscriber

How to Order

Model	Description
7744F	4 Zone Fire Alarm Subscriber with 4 reverse polarity inputs
7744F-ULP	7744F Fire Alarm Subscriber with IntelliPro Fire full data module
7788F	8 Zone Fire Alarm Subscriber
7788F-ULP	7788F Fire Alarm Subscriber with IntelliPro Fire full data module

Optional Accessories

7041E	Subscriber Handheld Programmer
7794	IntelliPro Fire Full Data Module
1640	Plug-in Transformer: 16.5VAC, 40VA

AES-IntelliNet™ is the industry leader in delivering high-quality mesh radio networks to the fire and security industry in commercial, corporate, government, and educational applications with its broad line of products and advanced network management tools. Users of AES-IntelliNet networks have gained significant revenue, communications, and cost advantages while meeting the high standards of reliability required for the fire and security industry. AES-IntelliNet alarm monitoring systems are deployed at hundreds of thousands of locations in over 130 countries.

AES IntelliNet
CORPORATION | For Alarm Monitoring

**For more information
Call 800-AES-NETS (800-237-6387)**

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Tel. +1 978-535-7310 | Fax +1 978-535-7313
Email info@aes-intellinet.com | Web www.aes-intellinet.com

INSERT 3

Addressable Initiating/Control Devices, Door
Holders & Accessories Data Sheets

Simplex

Multi-Application Peripherals

IDNet or MAPNET II Communicating Devices
Addressable Manual Stations

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
- Visible LED indicator that flashes during communications and is on steady when the station has been activated
- 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 4007ES, 4008, 4010, 4010ES, 4100ES, 4100U, 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. 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.

4099-9004
Single action
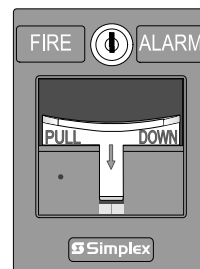
4099-9021
NO GRIP
Single action
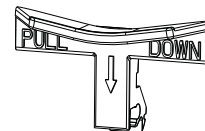
4099-9805
NO GRIP
Retrofit kit
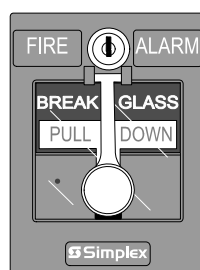
4099-9005
Breakglass

4099-9006
Push

With 2099-9828
Institutional
Cover kit

Operation

Activation of the 4099-9004 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 4099-9021. 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 4099-9021 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
4099-9004	Single Action, English	FIRE ALARM	PULL DOWN	UL, ULC, FM, CSFM
4099-9004CB	Single Action, Bilingual English and French	FEU FIRE	TIREZ PULL	ULC
4099-9004CF	Single Action, French	ALARME FEU	ABAISSEZ	
4099-9004PO	Single Action, Portuguese	FOGO ALARME	PUXE	UL, FM
4099-9004SP	Single Action, Spanish	ALARMA FUEGO	JALE	
4099-9005	Double Action, Breakglass operation, English	FIRE ALARM	PULL DOWN	UL, ULC, FM, CSFM
4099-9005PO	Double Action, Breakglass operation, Portuguese	FOGO ALARME	PUXE	UL, FM
4099-9005SP	Double Action, Breakglass operation, Spanish	ALARMA FUEGO	JALE	
4099-9006	Double Action, Push operation, English	FIRE ALARM	PUSH PULL DOWN	UL, ULC, FM, CSFM
4099-9006PO	Double Action, Push operation, Portuguese	FOGO ALARME	EMPURRE PUXE	UL, FM
4099-9006SP	Double Action, Push operation, Spanish	ALARMA FUEGO	EMPUJE JALE	
4099-9021	Single Action NO GRIP operation, English	FIRE ALARM	PULL DOWN	UL, ULC, FM, CSFM

Accessories (refer to pages 3 and 4 for details)

Model	Description	Model	Description
2975-9022	Cast aluminum surface mount box, red	2099-9803	Replacement breakglass
2975-9178	Surface mount steel box, red	2099-9804	Replacement break-rod
2099-9813	Semi-flush trim plate for double gang switch box, red	2099-9828	Institutional cover kit for field installation on 4099-9004; Note: Covers LED indicator
2099-9819	Flush mount adapter kit, black	2099-9814	Surface trim plate for Wiremold box V5744-2, red
2099-9820	Flush mount adapter kit, beige		
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 579-1135 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 (0.82 mm^2 to 2.08 mm^2)
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 ¾" W x 1" D (127 mm x 95 mm x 25 mm)

Addressable Manual Station Semi-Flush Mounting

Semi-Flush Mount Side View
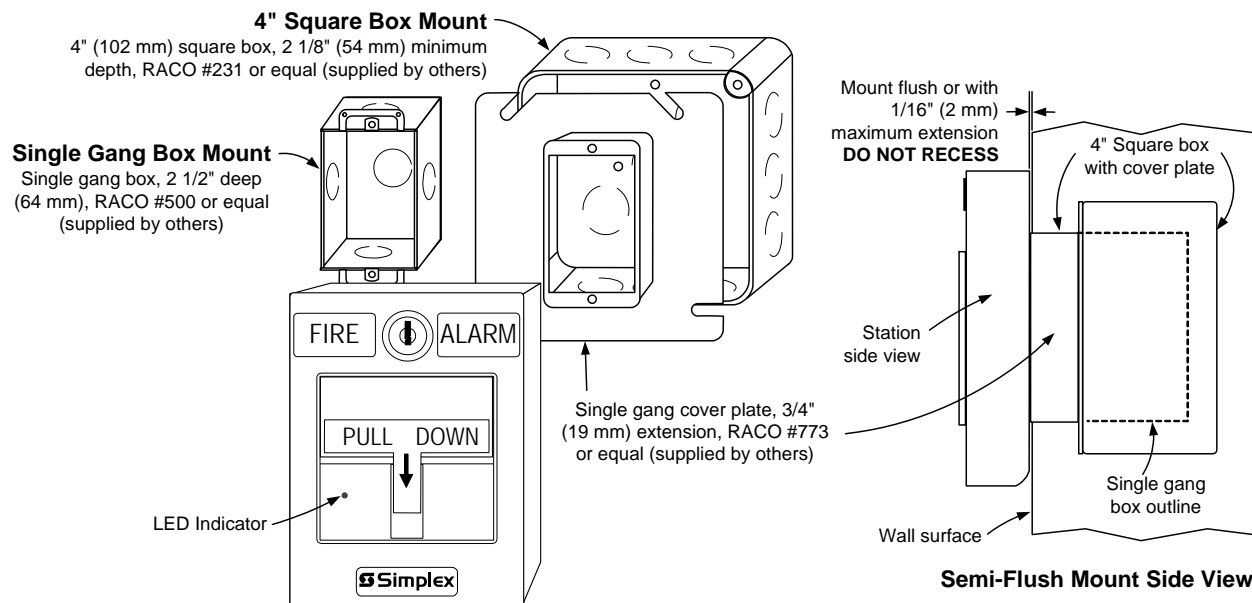
Addressable Manual Stations Surface Mounting

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.

2975-9178 Box
5-3/16" H x 4" W x 2-3/16" D
(132 mm x 102 mm x 56 mm)
(ordered separately)

2975-9022 Cast Box
5" H x 3-7/8" W x 2-3/16" D
(127 mm x 98 mm x 56 mm)
(ordered separately)

Knockouts located top and bottom

FIRE   ALARM

PULL   DOWN

S Simplex

Access for 3/4" threaded conduit located top and bottom

5" (127 mm)

1" (25.4 mm)

3-3/4" (95 mm)

4099 Series Addressable Manual Station
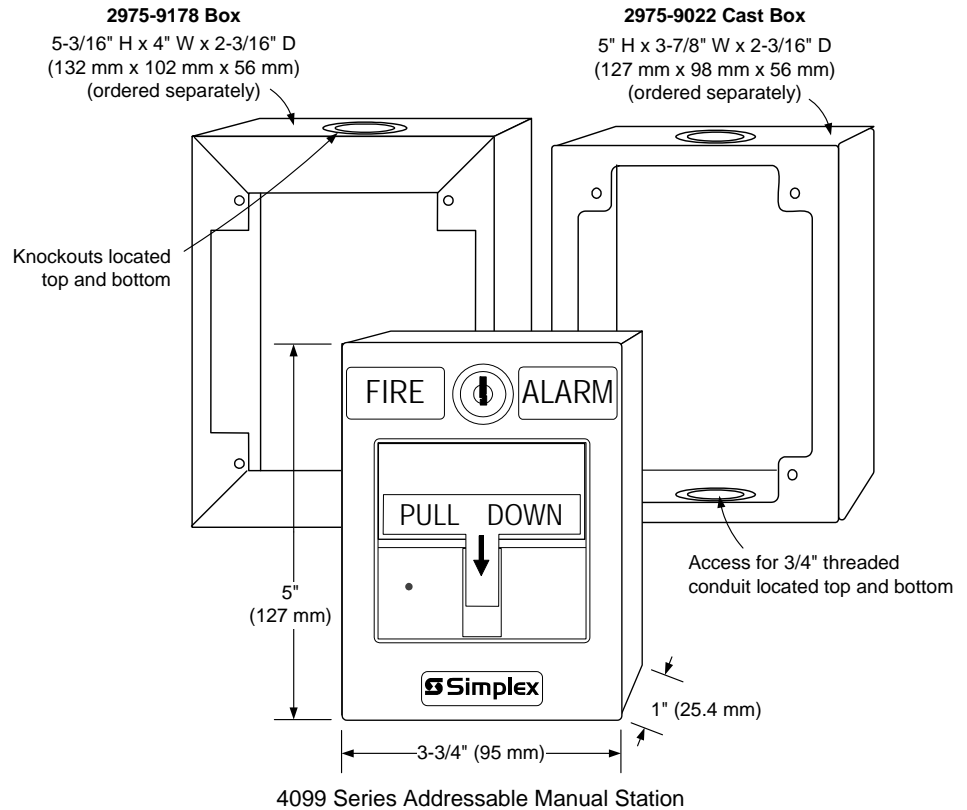
Surface Mount Side View with Internal Detail

1-1/4" (32 mm)

Field wiring (shown for reference)

Simplex 2975-9178 box (shown for reference)

Address setting under resealable label (accessible with cover open)

2-5/8" (67 mm)

Station cover hinges open for installation access

Switch wiring (prewired)
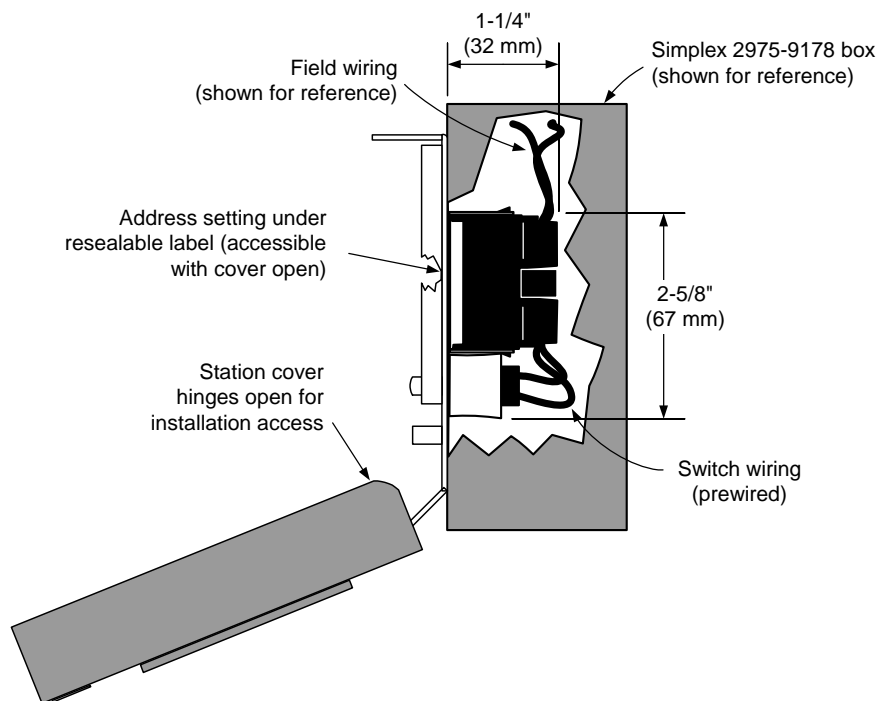
Application Reference

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 42 in (1.07 m) and not more than 48 in (1.22 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.

2099-9814 Surface trim for Wiremold box 5-1/8" H x 5" W (130 mm x 127 mm)

Wiremold receptacle box model V5744-2 (supplied by others)

Two gang switch box, each 3" H x 2" W x 2-3/4" D (76 mm x 51 mm x 70 mm) (supplied by others)

FIRE ALARM

Addressable station

PULL DOWN

S Simplex

2099-9813 Semi-flush trim for 2 gang switch box, 6" H x 4-1/2" W (152 mm x 114 mm)
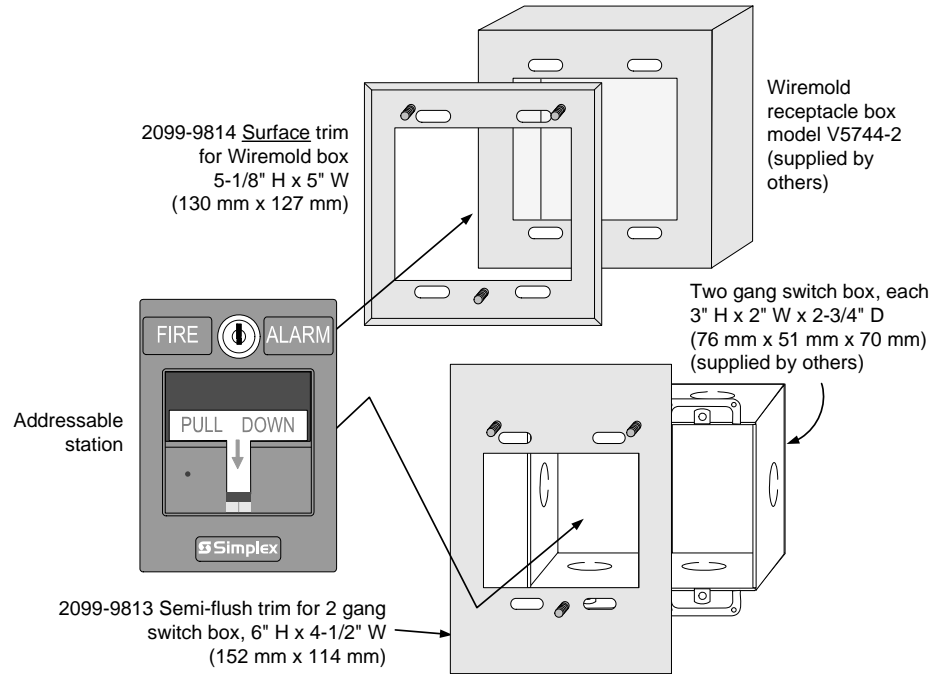
Addressable Manual Station, Flush Mounting Information
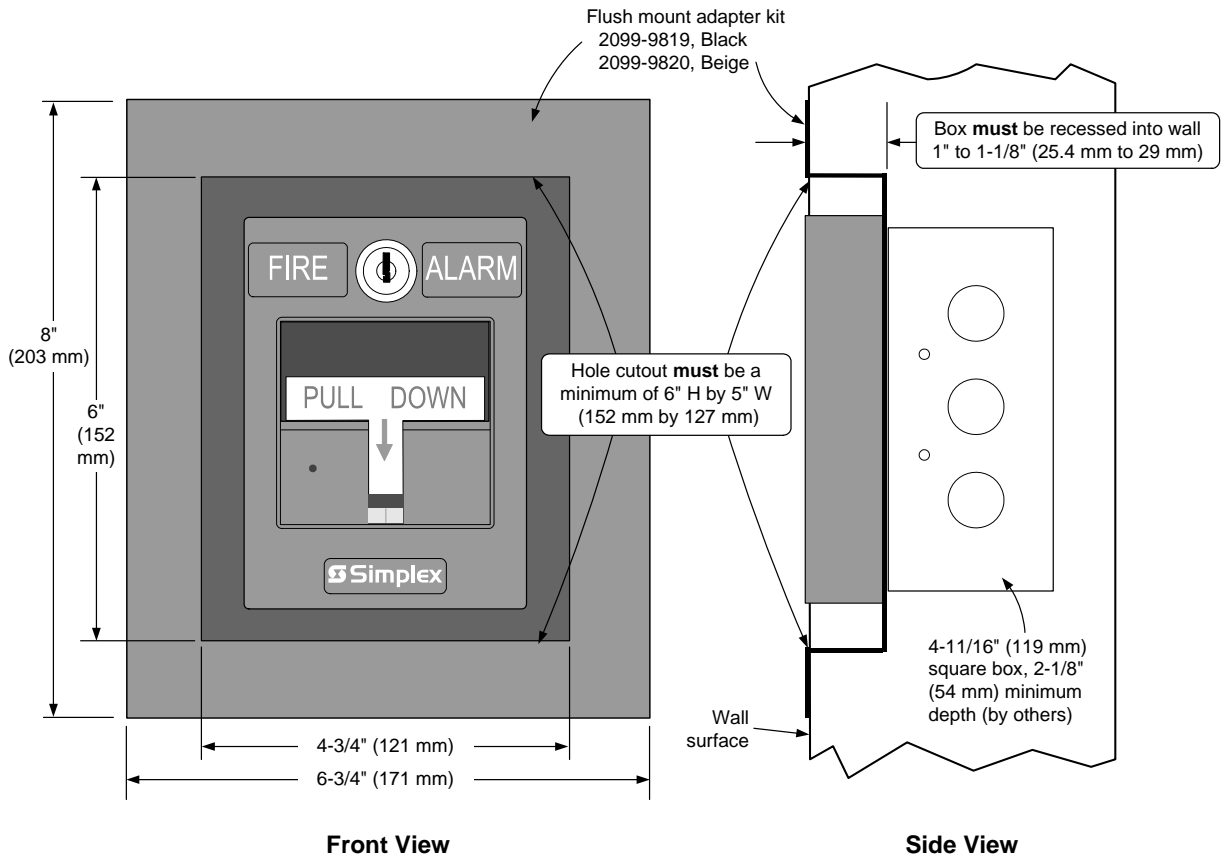
Flush mount adapter kit
2099-9819, Black
2099-9820, Beige

Box **must** be recessed into wall 1" to 1-1/8" (25.4 mm to 29 mm)

FIRE ALARM

PULL DOWN

S Simplex

8" (203 mm)

6" (152 mm)

Hole cutout **must** be a minimum of 6" H by 5" W (152 mm by 127 mm)

4-3/4" (121 mm)

6-3/4" (171 mm)

4-11/16" (119 mm) square box, 2-1/8" (54 mm) minimum depth (by others)

Wall surface

Front View

Side View

S Simplex

⑤Simplex

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

True*Alarm* Analog Sensing

TrueAlarm Analog Sensors – Photoelectric
and Heat; Standard Bases and Accessories

Features

TrueAlarm analog sensing provides:

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

For use with the following Simplex® products:

- 4007ES, 4010, 4010ES, 4100ES, and 4100U Series control panels; and 4008 Series control panels with reduced feature set (refer to data sheet S4008-0001 for details)
- 4020, 4100, and 4120 Series control panels, Universal Transponders, and 2120 TrueAlarm CDTs equipped for MAPNET II operation

Fire alarm control panel provides:

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

Photoelectric smoke sensors provide:

- Seven levels of sensitivity from 0.2% to 3.7% (refer to additional information on page 3)

Heat sensors provide:

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

General features:

- Operation is for ceiling or wall mounting
- Listed to UL 268 and ULC-S529
- Louvered smoke sensor design enhances smoke capture by directing flow to chamber; entrance areas are minimally visible when ceiling mounted
- Designed for EMI compatibility
- Magnetic test feature is provided
- Different bases are available to support a supervised or unsupervised output relay, and/or a remote LED alarm indicator

Additional base reference:

- For isolator bases, refer to data sheet S4098-0025
- For sounder bases, refer to data sheet S4098-0028
- For photo/heat sensors, refer to data sheet S4098-0024 (single address) and S4098-0033 (dual address)
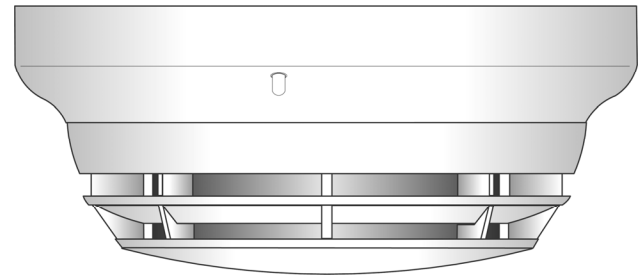
4098-9714 TrueAlarm Photoelectric
Sensor Mounted in Base

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.

True*Alarm* Sensor Bases and Accessories

Base mounted address selection:
- Address remains with its programmed location
- Accessible from front (DIP switch under sensor)

General features:
- Automatic identification provides default sensitivity when substituting sensor types
- Integral red LED for power-on (pulsing), or alarm or trouble (steady on)
- Locking anti-tamper design mounts on standard outlet box
- Magnetically operated functional test

Sensor Bases

4098-9792, Standard Sensor Base

4098-9789, Sensor Base with wired connections for:
- 2098-9808 Remote LED alarm indicator **or** 4098-9822 relay (relay is unsupervised and requires separate 24 VDC)

Supervised Relay Bases (not compatible with 2120 CDT)**:**
- **4098-9791, 4-Wire Sensor Base,** use with remote or locally mounted 2098-9737 relay, requires separate 24 VDC
- **4098-9780, 2-Wire Sensor Base**, use with remote or locally mounted 4098-9860 relay, no separate power required
- Supervised relay operation is programmable and can be manually operated from control panel
- Includes wired connections for remote LED alarm indicator **or** 4098-9822 relay (relay is unsupervised and requires separate 24 VDC)

Sensor Base Options

2098-9737, Remote or local mount supervised relay:
- DPDT contacts for resistive/suppressed loads, power limited rating of 3 A @ 28 VDC; non-power limited rating of 3 A @ 120 VAC (requires external 24 VDC coil power)

4098-9860, Remote or local mount supervised relay:
- SPDT dry contacts, power limited rating of 2 A @ 30 VDC, resistive; non-power limited rating of 0.5 A @ 125 VAC, resistive

4098-9822, LED Annunciation Relay:
- Activates when base LED is on steady, indicating local alarm or trouble
- DPDT contacts for resistive/suppressed loads, power limited rating of 2 A @ 28 VDC; non-power limited rating of 1/2 A @ 120 VAC, (requires external 24 VDC coil power)

4098-9832, Adapter plate:
- Required for surface or semi-flush mounting to 4" square electrical box and for surface mounting to 4" octagonal box
- Can be used for cosmetic retrofitting to existing 6-3/8" diameter base product

2098-9808, Remote red LED Alarm Indicator:
- Mounts on single gang box (shown in illustration to right)

Description

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

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

Mounting Reference

Electrical Box Requirements: (boxes are by others)

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

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

4" (102 mm) Square Box   **4" (102 mm) Octagonal Box**

Surface mount reference

1-1/2" (38 mm) minimum box depth

Flush mount reference, mount even with final surface, or with up to 1/4" (6.4 mm) maximum recess
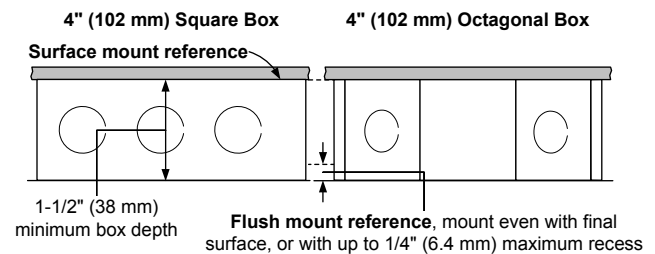
2098-9737 Supervised Relay (mounts in base electrical box or remotely)

4098-9822 Relay (mounts in base electrical box)

Relay Size: 2-1/2" X 1-1/2" X 1" (3.75 in³) (64 mm X 38 mm X 25.4 mm)
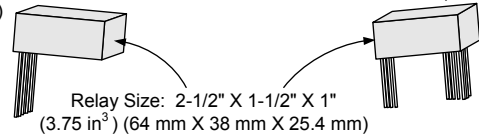
4098-9860 Supervised Relay (mounts in base electrical box or remotely; 2-3/8" X 1-1/4" X 11/32" (1 in³) (60.4 mm X 31.8 mm X 8.6 mm)
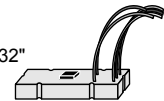
NOTE: Review total wire count, wire size, and accessories being wired to determine required box volume.

6-3/8" (162 mm)

1/4" (6.4 mm)

4098-9832 Adapter Plate, required for mounting to surface mounted boxes and 4" square flush box

4-7/8" (124 mm)

15/16" (24 mm)

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

ALARM

Simplex

S4098-0019-21 3/2016
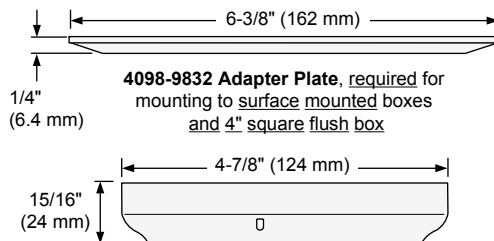
True*Alarm* Sensors

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 technology sensing

- 360° smoke entry for optimum response

- Built-in insect screens

4098-9714 Photoelectric Sensor

True*Alarm* photoelectric sensors use a stable, pulsed infrared LED light source and a silicon photodiode receiver to provide consistent and accurate low power smoke sensing. Seven levels of sensitivity are available for each individual sensor, ranging from 0.2% to 3.7% per foot of smoke obscuration. Sensitivities of 0.2%, 0.5%, and 1% are for special applications in clean areas. Standard sensitivities are 1.5%, 2.0%, 2.5%, 3.0%, and 3.7%. Application type and sensitivity are selected and then monitored at the fire alarm control panel.*

The sensor head design provides 360° smoke entry for optimum response to smoke from any direction. Due to its photoelectric operation, air velocity is not normally a factor, except for impact on area smoke flow.
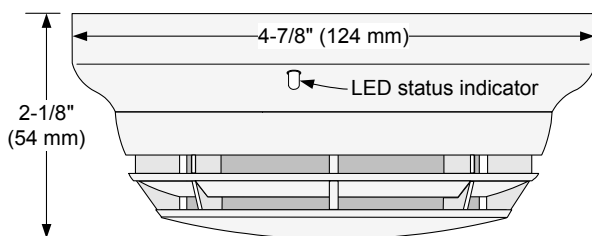
4098-9714 Photoelectric Sensor with Base

4098-9733 Heat Sensor

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

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

TrueAlarm heat sensors can be programmed as a utility device to monitor for temperature extremes in the range from 32° F to 155° F (0° C to 68° C). This feature can provide freeze warnings or alert to HVAC system problems. *Refer to specific panels for availability.*
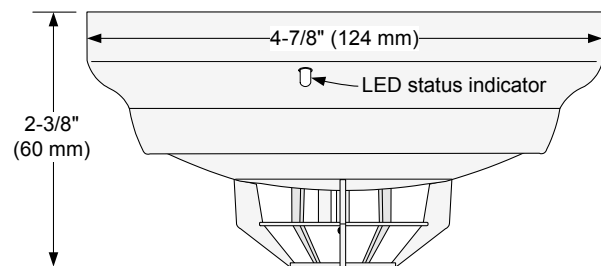
4098-9733 Heat Sensor with Base

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

Application Reference

Sensor locations should be determined only after careful consideration of the physical layout and contents of the area to be protected. Refer to NFPA 72, the *National Fire Alarm and Signaling Code*. On smooth ceilings, smoke sensor spacing of 30 ft (9.1 m) may be used as a guide.*

* For detailed application information including sensitivity selection, refer to Installation Instructions 574-709.

TrueAlarm Analog Sensing Product Selection Chart

TrueAlarm Sensor Bases (for use with Sensors 4098-9714 and 4098-9733)
(Refer to Application Manual 574-709 and Installation Instructions 574-707 for additional information)

Model*	Description	Compatibility	Mounting Requirements
➡ 4098-9792	Standard Sensor Base	No options	4" octagonal or 4" square box, 1-1/2" min. depth; or single gang box, 2" min. depth
4098-9789 4098-9789 IND	Sensor Base with connections for Remote LED Alarm Indicator **or** Unsupervised Relay	2098-9808 Remote Alarm Indicator **or** 4098-9822 Unsupervised Relay	4" octagonal or 4" square box **Note:** Box depth requirements depend on total wire count and wire size, refer to accessories list below for reference. ** **NOTE:** 4098-9791 and 4098-9780 are NOT compatible with the 2120 CDT
4098-9791**	<u>4-Wire</u> Sensor Supervised Relay Base with connections for LED Indicator **or** Unsupervised Relay	2098-9737 Supervised Remote Relay	
		2098-9808 Remote Alarm Indicator **or** 4098-9822 Unsupervised Relay	
4098-9780**	<u>2-Wire</u> Sensor Supervised Relay Base with connections for LED Indicator **or** Unsupervised Relay	4098-9860 Supervised Remote Relay	
		2098-9808 Remote Alarm Indicator **or** 4098-9822 Unsupervised Relay	

TrueAlarm Sensors

Model*	Description	Compatibility	Mounting Requirements
➡ 4098-9714 4098-9714 IND	Photoelectric Smoke Sensor	Bases 4098-9792, 4098-9789, 4098-9791, and 4098-9780	Refer to base requirements
➡ 4098-9733	Heat Sensor		

TrueAlarm Sensor/Base Accessories

Model	Description	Compatibility	Mounting Requirements
2098-9737	Supervised Relay, mounts remote or in base electrical box	For use with 4098-<u>9791</u> base	**Remote Mounting** requires 4" octagonal or 4" square box, 1-1/2" minimum depth
4098-9860	Supervised Relay, mounts remote or in base electrical box	For use with 4098-<u>9780</u> base	**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, 4098-9791, and 4098-9780	Single gang box, 1-1/2" minimum depth
4098-9822	Unsupervised Relay, tracks base LED status; Note: Mounts only in base electrical box	Bases 4098-9789, 4098-9791, and 4098-9780	4" octagonal box, 2-1/8" deep with 1-1/2" extension ring
4098-9832	Adapter Plate	Bases 4098-9792, 4098-9789, 4098-9791, and 4098-9780	**Required** for surface or semi-flush mounted 4" square box and for surface mounted 4" octagonal box

* Note: Model numbers ending in IND are assembled in India.

Specifications

General Operating Specifications

Communications and Sensor Supervisory Power	IDNet or MAPNET II communications, auto-selected, 1 address per base
Communications Connections	Screw terminals for in/out wiring, 18 to 14 AWG (0.82 mm^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 Operating Temperature Range	32° to 100° F (0° to 38° C)
Operating Temperature Range — with 4098-9733 Heat Sensor	32° to 122° F (0° to 50° C)
— with 4098-9714 Smoke Sensor	15° to 122° F (-9° to 50° C)
Storage Temperature Range	0° F to 140° F (-18° C to 60° C)
Humidity Range	10 to 95% RH
4098-9714 Smoke Sensor Air Velocity Rating	0-4000 ft/min (0-1220 m/min)
Housing Color	Frost White

4098-9791 Base With Supervised Remote Relay 2098-9737 (see page 2 for contact ratings)

Externally Supplied Relay Coil Voltage	18-32 VDC (nominal 24 VDC)
Supervisory Current	270 μA, from 24 VDC supply
Alarm Current with 2098-9737 Relay	28 mA, from 24 VDC supply

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

Power	Supplied from communications

4098-9822 Unsupervised Relay, Requirements for Bases 4098-9789. 4098-9791, and 4098-9780 (see page 2 for contact ratings)

Externally Supplied Relay Coil Voltage	18-32 VDC (nominal 24 VDC)
Supervisory Current	Supplied from communications
Alarm Current	13 mA from separate 24 VDC supply

UL, ULC, CSFM Listed;
FM Approved*

TrueAlarm CO Sensor Bases for Smoke, Heat, and
Photo/Heat Sensors using IDNet Communications

Features

TrueAlarm addressable CO sensor bases contain a carbon monoxide (CO) sensing module providing both CO toxic gas monitoring *and* enhanced fire detection:

- For use with 4007ES; and 4010ES or 4100ES fire alarm control panels with software revision 2.01.02 or higher

- For use with 4100U fire alarm control panels with software revision 12.05 or higher

- CO sensor bases support (and require) a TrueAlarm photoelectric, photo/heat or heat sensor (ordered separately)

- Model 4098-9770 provides standard features, model 4098-9771 also provides a piezoelectric sounder

- CO sensor bases are multi-point devices, consume only one IDNet address, and receive both communications and sensor power from the IDNet channel (the sounder base requires separate 24 VDC system power or NAC connection)

- Listed to UL 268, *Smoke Detectors for Fire Alarm Signaling Systems* and UL 2075, *Gas and Vapor Detectors and Sensors*; allowing systems to be listed to Standard 2034, *Single and Multiple Station Carbon Monoxide Alarms*

- Listed by ULC to CSA 6.19-01 *Residential Carbon Monoxide Alarming Devices*

- Three types of CO influenced operation are available; UL 2034 CO alarm detection; UL 2075 CO (OSHA) level monitoring for ventilation control; and multi-criteria fire sensor analysis with algorithms that combines optical and CO gas monitoring information

Operation of a CO sensor base with a photoelectric or a photo/heat sensor allows:

- Independent sensor operation *or* selectable multi-sensor modes of *False Alarm Reduction or Faster Detection*

- **False Alarm Reduction** analyzes CO and photoelectric sensor information together to provide a sophisticated rejection of non-fire conditions normally troublesome as false alarms (steam, dust, aerosols, etc.)

- **Faster Detection** (increased sensitivity) algorithm analyzes CO and photoelectric sensor information to allow the presence of CO to implement an increased photoelectric sensitivity for high value locations (museums, electrical equipment rooms, etc.)

Sounder base operation details:

- When connected to a panel NAC through the 4905-9835 Temporal Code Module, the sounder base can provide temporal code 3 (TC3) for fire, or temporal code 4 (TC4) for toxic carbon monoxide alarms

- 4905-9835 module may also be used to code other (non-fire) dedicated carbon monoxide notification appliances (refer to data sheet S4905-0006)

- Sounder can be manually activated from the panel

- Sounder operation is also listed to UL 464 as an audible notification appliance
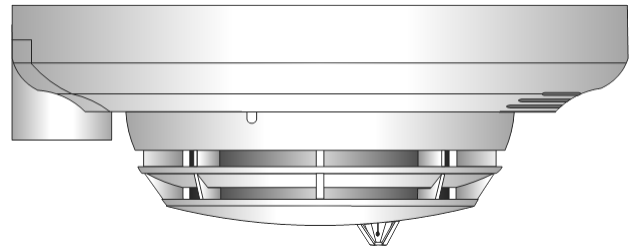
TrueAlarm CO Sensor Base with Sounder
(shown with 4098-9754 Photo/Heat Sensor)

Features *(Continued)*

Panel operation summary:

- CO sensor data is stored and analyzed at the panel; a new CO Service Report provides easy information access (see sample on page 3)

- 4007ES, 4010ES, and 4100ES panels provide ten (10) year end of life status indication with CO sensor expiration notices occurring within 12 months and within 6 months, allowing service replacement planning

- 4100U panels provide five (5) year end of life status indication with the 12 and 6 month replacement notices

- Analog sensor information is digitally transmitted to the host control panel via IDNet communications for processing to evaluate and track status

- Carbon monoxide concentration in ppm (parts per million) is available for viewing from the panel user interface

- For OSHA compliant CO gas sensing, CO condition level may be programmed by concentration (must be above 30 ppm)

- 4100ES Audio Control Panels can provide a CO Relocation Message with Temporal Code 4 tone and Voice Evacuation (reference UCSET1393, see S4100-0034)

General features:

- Sensors may be either wall or ceiling mounted

- Operation of a CO sensor base with heat sensor provides dual independent sensor operation

- New CO test mode allows functional testing of each sensor technology including the CO sensor

- Optional accessories include remote alarm LED, alarm relay, and mounting adapter plate

- Designed for EMI compatibility

- Provides magnetic test

CO sensor element is easily replaced when end of service life is reached:

- Access to CO sensor replacement cartridge (CORC, 4098-9747) requires removal of interchangeable sensor head providing tamper monitoring (sensor removal causes a trouble condition)

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* This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7300-0026:330 for allowable values and/or conditions concerning material presented in this document. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

CO Sensor Base Description

Carbon monoxide (CO) is an odorless, colorless, tasteless gas produced by the incomplete combustion of heating fuels such as wood, coal, heating oil, and natural gas. CO is also a byproduct of many materials experiencing unintentional fire or even incipient fire conditions. Monitoring of CO levels can warn of physically harmful concentrations, however, sensing of CO levels below the harmful level can also provide improved understanding of incipient fire conditions when evaluated in combination with photoelectric fire sensor information from the same location.

Simplex® 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.

CO sensor operation is similar to other TrueAlarm sensors (photoelectric or heat). It provides current analog values, average analog value, "No Answer" troubles, "Wrong Device" troubles, over threshold, concentration in ppm, and monitors for the presence of the CO sensor. Base mounted address selection allows the address to remain with its location when the sensor is removed for service or type change. Address access is from the front, under the removable sensor. An integral red LED indicates power-on by pulsing, or alarm or trouble when steady on, and also provides test mode status (see page 3). Detailed status is available at the fire alarm control panel.

CO Sensing, Detailed Operation

Toxic Gas Sensing, UL 2034/UL 2075. For CO toxic gas detection, the bases provide toxic gas sensing to the UL 2034 and UL 2075 standards. Toxic gas sensing may be selected at the same time as any of the combined CO photo fire detection modes are selected.

Toxic Gas Sensing, OSHA Compliant. For OSHA compliant gas sensing, the desired threshold level (above 30 ppm) is selected at the control panel as required for the application, typically for ventilation control. Refer to page 3 for additional OSHA CO monitoring information.

Enhanced Fire Sensing. Each sensor provides an analog measurement digitally communicated to the control panel for analysis. At the panel, these analog values are used separately, or combined, to evaluate for conditions indicative of fire, incipient fire, excessive heat, and freeze warning. For fire, the addition of a CO sensor provides two new selectable modes of operation: *Nuisance Alarm Reduction Mode* and *Faster Fire Detection*. These two modes were developed using the results of extensive testing of actual fires performed under a wide variety of conditions. (Refer to page 4 for additional operation mode options.)

Nuisance Alarm Reduction Mode allows the host control panel to combine photoelectric sensor input and CO sensor level input to reduce false alarms caused by non-fire conditions. Non-fire conditions can be steam from bathroom showers, particles from dusty environments, aerosols from personal care products, tobacco smoke, cooking smoke, or other similar conditions.

CO Sensing, Detailed Operation *(Continued)*

Nuisance Alarm Reduction Details. For applications of anticipated nuisance alarm conditions, photoelectric sensitivity is normally selected for 3.7%/ft smoke obscuration. However, the addition of CO sensing allows the host control panel to apply software verification similar to the timed alarm verification feature often used with conventional smoke detection.

Faster Fire Detection. For applications where faster response to incipient or slow building fires is desired and environment appropriate, the Faster Fire Detection mode correlates the outputs of the CO sensor and the photoelectric sensor to provide increased sensitivity. This mode provides earlier detection compared to a standard sensitive photoelectric sensor setting, and also provides more false alarm reduction compared to using a sensitive setting in an area not normally considered appropriate.

Faster Fire Detection Details. TrueAlarm photoelectric sensors can be selected to be as sensitive as 0.2%/ft obscuration for applications evaluated as appropriate to that level. However, if the environment is not suitable for that sensitivity level, the Faster Fire Detection mode allows the photoelectric sensor to be selected as a "standard" 2.5%/ft obscuration, but with the presence of a significant level of CO, the combination of CO and photo sensing input can allow an equivalent sensitivity approaching 0.5%/ft obscuration. The host control panel tracks two photoelectric sensitivities, the one selected for photoelectric operation only (typically 2.5%), and the CO correlation sensitivity that it adjusts depending on the amount of CO present.

Control Panel Operations

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

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

Reported CO Sensor troubles are: Disabled, Almost Expired 12 Months, Almost Expired 6 Months, Expired (End of Life), Short, and Sensor Missing/Failed.

Trouble Details. "Almost Expired" is similar to the "Almost Dirty" trouble for a photoelectric sensor. "Expired" trouble is similar to the "Dirty" trouble for a TrueAlarm photoelectric sensor. CO sensor technology does not support automatic sensitivity testing and drift compensation as is available with a photoelectric sensor. End of useful CO sensor life is based upon a set 10 year operational lifetime (5 years for 4100U panels), tracked by date code built into the CO sensor module electronics. Although the CO sensor will continue to function after the expired trouble is indicated, replacement is required to ensure proper detection accuracy.

S4098-0052-4 1/2015

Control Panel Operations *(Continued)*

Panel Test Mode. To facilitate functional testing of the CO sensor, a new test mode is available in the host control panel. In this mode, the CO sensor, and installed heat or smoke sensor can be easily ***functionally*** tested.

Panel Test Mode Details. When in the CO test mode, the internal multiple sensor analysis algorithms are disabled allowing each sensor to be quickly tested either individually or simultaneously, depending on the test equipment used. CO testing can be performed using a Solo Model 332 aerosol dispenser (or equal). (Testing is available through your local authorized Simplex product supplier.) The base LED will display steady ON when individual sensors are activated during test. Refer to the Application Reference section for more information.

OSHA CO monitoring. For OSHA compliant gas sensing, control panel software supports custom programming based upon CO concentration levels. For example, turn on ventilation if the CO level is above X ppm and then turn off ventilation when the level drops below Y ppm (or select either value as a range if desired). This is separate from alarm set points.

Multi-Point Allocation. 4007ES, 4010ES, and 4100ES control panels require only one (1) point at the host panel per CO sensor base. For 4100U control panels, the requirement is three (3) points at the host panel per CO sensor base with the 4098-9754 multi-sensor, and two (2) points for the other sensors. Depending on CO sensor base and sensor choice, up to seven (7) points can be made public to a connected Simplex Fire Alarm Network. Each CO sensor base uses a single address with "sub-points" layered underneath (such as 1-1-0, 1-1-1, 1-1-2, ….1-1-6). (Additional multi-point allocation detail is described in reference data sheet S4090-0011.)

CO Sensor Base Power Requirements. Power for the standard CO sensor base is provided by IDNet communications. *No additional wiring is required for upgrading of existing installed TrueAlarm sensor bases.* CO sensor sounder bases do require system supplied separate 24 VDC (or NAC) wiring, the same as the standard sounder base.

Accessories

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

4098-9822, LED Annunciation Relay activates when base LED is on steady, indicating a local alarm or trouble. Contacts are DPDT, rated 2 A @ 30 VDC; 1/2 A @ 120 VAC for transient suppressed loads (requires external 24 VDC coil power).

Application Reference

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

For fire alarm applications:

- Refer to NFPA 72, the *National Fire Alarm and Signaling Code*
- On smooth ceilings, 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*, Part Number 574-709.

For toxic gas sensor placement and mounting:

- Refer to NFPA 720, *Standard for the Installation of Carbon Monoxide (CO) Warning Equipment in Dwelling Units*
- Per NFPA 720, Section 5.1 (2005 edition):
5.1.1 A carbon monoxide alarm or detector shall be centrally located outside of each separate sleeping area in the immediate vicinity of the bedrooms.
5.1.2 Each alarm or detector shall be located on the wall, ceiling, or other location as specified in the installation instructions that accompany the unit.
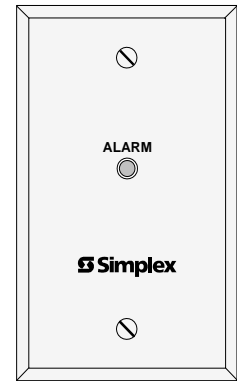
TrueAlarm CO Service Reports

TrueAlarm CO Service Reports (sample below) contain information on the CO sensors programmed in the panel displaying pertinent data such as current concentration value in ppm, End of Life date, and current state. This report allows determination of which sensors will require attention. (Sample shows 10 year life tracking with a 4007ES/4010ES/4100ES.)

```
Service Port                                                              Page 1

REPORT 6 : TrueAlarm CO Report                     12:34:56am     MON    06-JUN-14
------------------------------------------------------------------------------------

Channel 1 (M1)

Zone                                               Current    End of
Name_____CUSTOM LABEL_____Value___Life Date__State_____
M1-1-2     Conference Room 17 CO Toxic Gas          457PPM   30-MAY-24  PRI
M1-2-2     Boiler Room CO Toxic Gas                 0PPM     30-MAY-24  NOR
TRUE ALARM CO REPORT COMPLETED
         Press RETURN for next Screen OR CTRL-X to abort
```

TrueAlarm Analog Sensing Product Selection Chart

TrueAlarm CO Sensor Base

Model	Description	
➤ 4098-9770	CO Base, Standard operation	Select TrueAlarm sensor from list below
4098-9771	CO Base with Sounder	

TrueAlarm Sensors, select one per CO Sensor Base

Model	Description	
4098-9714	Photoelectric Smoke Sensor	Refer to selection table below for available operation modes
4098-9754	Multi-Sensor Photoelectric and Heat Sensing	
4098-9733	Heat Sensor	

CO Base Replacement CO Cartridge and Accessories (ordered separately as required)

Model	Description	
4098-9747	CO Replacement Cartridge (CORC)	
Solo 332	Aerosol Dispenser, suitable for larger diameter detectors; can be used for CO or smoke testing	
Solo C3	CO Aerosol Canister (case of 12)	

Model	Description	Mounting Requirements
4098-9832	Adapter Plate, **required** for surface mounted 4" electrical boxes	Refer to page 6, mounting reference
2098-9808	Choose **one** if required — Remote red LED Alarm Indicator on single gang stainless steel plate	Single gang box, 1-1/2" minimum depth
4098-9822	Relay, tracks base LED status (unsupervised, to be mounted only in base electrical box)	Mounts in base electrical box (requires 1-1/2" extension on 4" square or octagonal box)

CO Sensor Base Operation Options with Sensor Choice

Sensor Choice	Mode	Operational Mode Choices* (✓ = operation selected)							
		False Alarm Reduction	Faster Detection	TrueSense Photo/Heat	Photo Fire	Heat Fire**	Utility Temp.	Ion Fire	CO Toxic Gas†
Photoelectric Smoke Sensor 4098-9714	1	✓	—	—	—	—	—	—	option
	2	—	✓	—	option	—	—	—	option
Photo/Heat Multi-Sensor 4098-9754	3	✓	—	—	—	option	option	—	option
	4	—	✓	—	option	option	option	—	option
	5		—	✓	option	option	option		option
Heat Sensor 4098-9733	6	—	—	—	—	✓	option	—	option
	7	—	—	—	—	option	✓	—	option

* **NOTE:** Duct detection modes are not applicable and are not available. Refer to the Multi-Point Allocation discussion on page 3 for panel point requirement information.

** Heat Fire Mode is 135° F or 155° F, fixed or rate-of-rise.

† CO Toxic Gas operation is selectable as: Supervisory (which is NOT recommended if communicated off-site), Priority 2 (preferred if communicated off-site), or Utility.

TrueAlarm Analog Sensor Features

Sealed against rear air flow entry

Electronics are EMI/RFI shielded

Heat sensing:

- Selectable rate compensated, fixed temperature sensing with or without rate-of-rise operation

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

4098-9714 Photoelectric Sensor

TrueAlarm photoelectric sensors use a stable, pulsed infrared LED light source and a silicon photodiode receiver to provide consistent and accurate low power smoke sensing. Seven levels of sensitivity are available for each individual sensor, ranging from 0.2% to 3.7% per foot of smoke obscuration. Sensitivities of 0.2%, 0.5%, and 1% are for special applications in clean areas. Standard sensitivities are 1.5%, 2.0%, 2.5%, 3.0%, and 3.7%. Application type and sensitivity are selected and then monitored at the fire alarm control panel. (For detailed application information about sensitivity selection, refer to Installation Instructions 574-709.)

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

Dimension and Feature Reference, Photoelectric or Multi-Sensor on CO Sensor Base

4098-9754 Multi-Sensor

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

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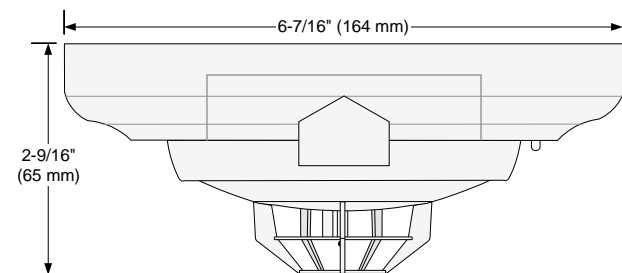- And TrueSense correlation detection

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

4098-9733 Heat Sensor

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

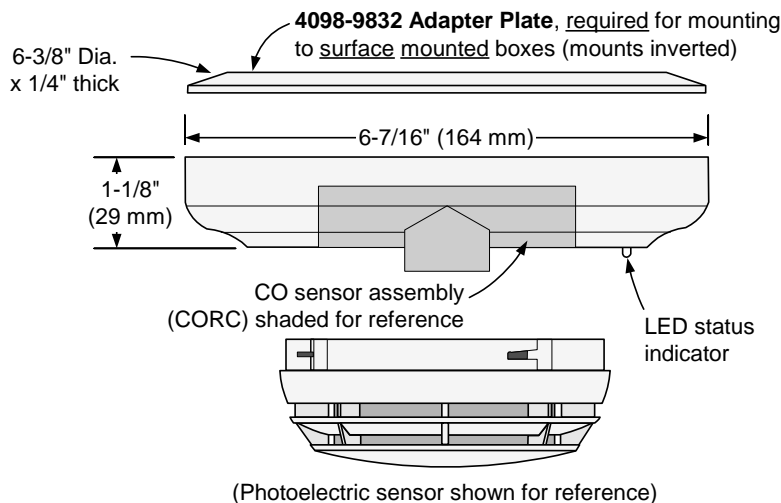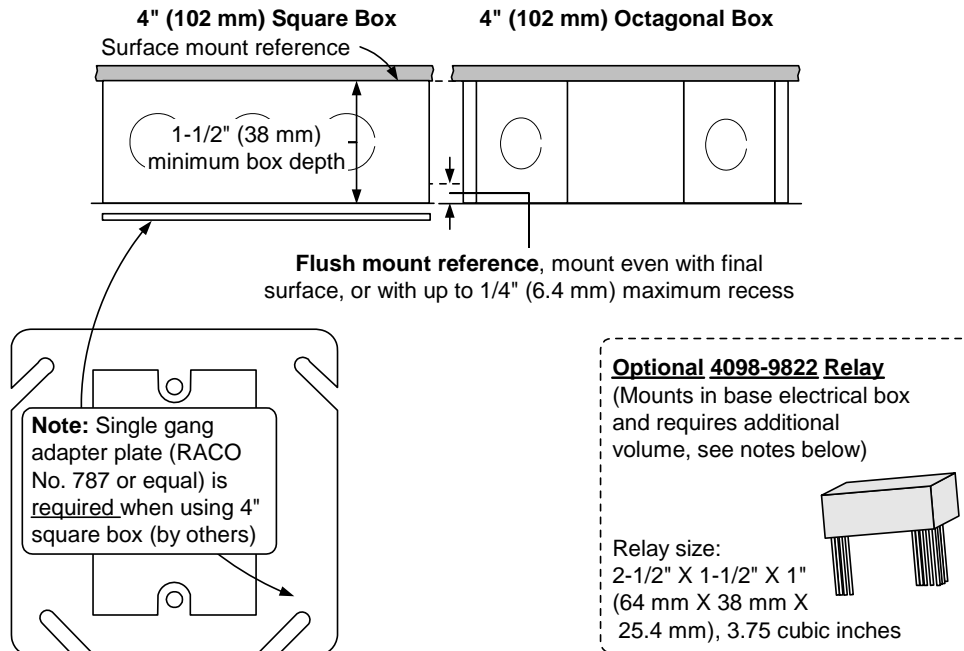4098-9733 Heat Sensor with CO Sensor Base (with CO Sensor Housing facing forward)

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.

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

4" (102 mm) Square Box
Surface mount reference

4" (102 mm) Octagonal Box

1-1/2" (38 mm) minimum box depth

Flush mount reference, mount even with final surface, or with up to 1/4" (6.4 mm) maximum recess

Note: Single gang adapter plate (RACO No. 787 or equal) is required when using 4" square box (by others)

Optional 4098-9822 Relay
(Mounts in base electrical box and requires additional volume, see notes below)

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

4098-9832 Adapter Plate, required for mounting to surface mounted boxes (mounts inverted)

6-3/8" Dia. x 1/4" thick

6-7/16" (164 mm)

1-1/8" (29 mm)

CO sensor assembly (CORC) shaded for reference

LED status indicator

(Photoelectric sensor shown for reference)

NOTES:

1. Review actual wire size, wire count, box type, and whether 4098-9822 relay is used before determining box size.

2. Mounting to flush mounted box also fits single gang handy box, 2-1/8" (51 mm) deep if wiring allows. (Not applicable if 4098-9822 relay is used.)

3. For surface mounted boxes, use 4" square box with single gang adapter plate (RACO No. 787 or equal, by others) or 4" octagonal box, both require 4098-9832 Adapter Plate.

4. When 4098-9822 relay is used, mount relay in electrical box and use 1-1/2" extension ring (by others) on 4" square or octagonal box of 1-1/2" or 2-1/8" depth as required.

5. Refer to sensor base Installation Instructions 574-707 for additional information.

6. Refer to CORC Replacement Instructions 579-791 for CO cartridge installation and replacement.

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Specifications

General Operating Specifications

Communications and Sensor Supervisory Power		IDNet communications, 1 address per base
Communications and Sounder Power 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 supplied from communications, no impact to alarm current
	LED Connections	Color coded wire leads, 18 AWG (0.82 mm^2)
UL Listed Temperature Range		32° F to 100° F (0° C to 38° C)
Operating Temperature Range	with 4098-9733	32° F to 122° F (0° C to 50° C)
	with 4098-9714 or 4098-9754	15° F to 122° F (-9° C to 50° C)
Humidity Range		15 to 95% RH
CO Sensor Base Air Velocity Ratings per Sensor	Photoelectric Sensor 4098-9714 and Multi-Sensor 4098-9754	Air velocity = 0-1000 ft/min (0-305 m/min)
Housing Color		Frost White

Sounder Operation

Sounder Voltage		18 to 32 VDC from steady external source or from NAC
Alarm Current (Sounder On)		17 mA @ 24 VDC, 24 mA maximum @ 32 VDC
Sounder Output		88 dBA minimum @ 10 ft (3 m) per UL Standard 464, *Audible Signaling Appliance*; UL Standard 268, *Smoke Detectors for Fire Protective Signaling Systems* and CSA 6.19-01
Sounder Power Supervision (Selectable)	Supervised	Select for continuous 24 VDC power, loss of power is communicated to panel
	Unsupervised	Select when connected to NAC for sounder power, NAC provides supervision
NAC Powered Operation		When in alarm, will sound when NAC is in alarm, allowing synchronized pattern (Temporal or March Time, etc.) controlled by the NAC control

Reference for CO Monitoring

		Concentration	Alarm Window
Requirements Reference for UL 2034 and CSA 6.19-01	Response Time	70 ±5 ppm	60 to 240 minutes
		150 ±5 ppm	10 to 50 minutes
		400 ±10 ppm	4 to 15 minutes
	False Alarm Resistance	30 ±3 ppm	No Alarm for 30 days
		70 ±5 ppm	No Alarm for 60 minutes
Additional UL 2034 CO Sensor Toxic Gas Monitoring Details		1. For CO levels above 40 ppm, the CO alarm level per sensor is determined by calculations performed at the panel based on the time integrated CO levels measured at the sensor. (Levels below 40 ppm are not tracked.) 2. While tracking levels above 40 ppm, if the concentration dips below 40 ppm for periods of time, the time to alarm is extended accordingly.	
UL 2075 Reference, Commercial OSHA Type Operation; Utility Point Mode		With custom control at the fire alarm control panel, Utility Point operations can be performed at lower CO concentration levels than those of UL 2034. **Example:** Start ventilation after 5 minutes at 25 to 35 ppm and also alarm at a reading higher than that range, but lower than UL 2034 allows	

4098-9822 Unsupervised Relay Option

Externally Supplied Relay Voltage	18-32 VDC, steady source recommended (wires to remote LED leads)
Alarm Current	13 mA from separate 24 VDC supply
Contact Ratings, DPDT contacts for resistive/suppressed loads	Power limited rating: 2 A @ 30 VDC
	Non-power limited rating: 1/2 A @ 120 VAC
Relay Operation	Tracks base LED status, relay is on with trouble or alarm at the base

Additional Information Reference

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

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www.simplex-fire.com

S Simplex

UL, ULC, CSFM Listed;
FM Approved*

TrueAlarm 4098-9773 CO Sensor Base
with 520 Hz Sounder

Features

TrueAlarm addressable CO sensor base with 520 Hz sounder provides CO toxic gas monitoring and enhanced fire detection

- CO sensor bases with 520 Hz tone require a TrueAlarm photoelectric, photo/heat or heat sensor (ordered separately)
- CO sensor bases with 520 Hz tone are multi-point devices, use a single IDNet address, and receive communications and sensor power from the IDNet channel (the sounder base requires separate 24 VDC system power or NAC connection)
- IDNet circuit allows the sounder to be supervised and coded by compatible NACs, allowing synchronized temporal, march time, or other channel coding.
- For use with 4007ES; and 4010ES or 4100ES fire alarm control panels with software revision 2.01.02 or higher
- For use with 4100U fire alarm control panels with software revision 12.05 or higher
- Listed to UL 268, UL 464, UL 2075, ULC-S529 and CSA 6.19-01
- Two types of CO influenced operation are available; UL 2075 CO (OSHA) level monitoring for ventilation control; and multi-criteria fire sensor analysis combining optical and CO gas monitoring information

CO sensor base with photoelectric or photo/heat sensor operation

- Independent sensor operation or selectable multi-sensor modes for false alarm reduction or faster detection
- CO and photoelectric sensors can be analyzed together to reject non-fire conditions that can trigger false alarms (steam, dust, etc)
- An increased sensitivity algorithm analyzes CO and photoelectric sensor information to allow the presence of CO to increase photoelectric sensitivity for high value locations (museums, electrical equipment rooms, etc)

520 Hz Sounder base operation

- Low frequency sound output (520Hz at 85 dBA)
- The base can supervise the sounder drive circuit when an AUX 24V power line is used for sounder power. Alternatively, base supervision can be disabled if a supervised NAC is needed to power the sounder for coded outputs.
- When connected to a panel NAC through the 4905-9835 Temporal Code Module, the sounder base can provide temporal code 3 (TC3) for fire, or temporal code 4 (TC4) for toxic carbon monoxide alarms
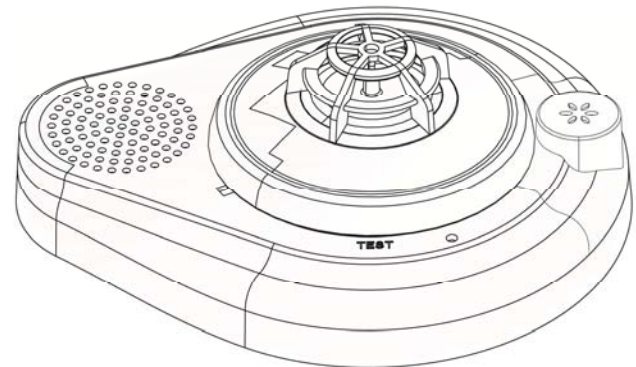
TrueAlarm CO Sensor Base with 520 hz sounder
4098-9773 with CO sensor and Heat Sensor installed

Features *(Continued)*

- 4905-9835 module may also be used to code other (non-fire) dedicated carbon monoxide notification appliances (refer to data sheet S4905-0006)
- Sounder can be manually activated from the panel

Panel operation summary:

- CO sensor data is stored and analyzed at the panel; a new CO Service Report provides easy information access (see sample on page 3)
- 4007ES, 4010ES, and 4100ES panels provide 10 year end of life status indication with CO sensor expiration notices occurring within 12 months and within 6 months, allowing service replacement planning
- 4100U panels provide 5 year end of life status indication with the 12 and 6 month replacement notices
- Analog sensor information is digitally transmitted to the host control panel via IDNet communications for processing to evaluate and track status
- Carbon monoxide concentration in ppm (parts per million) is available for viewing from the panel user interface
- For OSHA compliant CO gas sensing, CO condition level may be programmed by concentration (must be above 30 ppm)

General features:

- Ceiling mount operation
- Operation of a CO sensor base with heat sensor provides dual independent sensor operation
- CO test mode allows functional testing of each sensor technology including the CO sensor
- Optional accessories include remote alarm LED and mounting adapter plate
- Designed for EMI compatibility
- Magnetic test feature
- CO sensor element is easily replaced when end of service life is reached. Access to CO sensor replacement cartridge (CORC, 4098-9747) requires removal of interchangeable sensor head.

CO Sensor Base Description

Carbon monoxide (CO) is an odorless, colorless, tasteless gas produced by the incomplete combustion of heating fuels such as wood, coal, heating oil, and natural gas. CO is also a byproduct of many materials experiencing unintentional fire or even incipient fire conditions. Monitoring of CO levels can warn of physically harmful concentrations, however, sensing of CO levels below the harmful level can also provide improved understanding of incipient fire conditions when evaluated in combination with photoelectric fire sensor information from the same location.

Simplex® 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.

CO sensor operation is similar to other TrueAlarm sensors (photoelectric or heat). It provides current analog values, average analog value, "No Answer" troubles, "Wrong Device" troubles, over threshold, concentration in ppm, and monitors for the presence of the CO sensor. Base mounted address selection allows the address to remain with its location when the sensor is removed for service or type change. Address access is from the front, under the removable sensor. An integral red LED indicates power-on by pulsing, or alarm or trouble when steady on, and also provides test mode status (see page 3). Detailed status is available at the fire alarm control panel.

CO Sensing, Detailed Operation

Toxic Gas Sensing, UL 2075 For CO toxic gas detection, the bases provide toxic gas sensing to the UL 2075 standards. Toxic gas sensing may be selected at the same time as any of the combined CO photo fire detection modes are selected.

Toxic Gas Sensing, OSHA Compliant For OSHA compliant gas sensing, the desired threshold level (above 30 ppm) is selected at the control panel as required for the application, typically for ventilation control. Refer to page 3 for additional OSHA CO monitoring information.

Enhanced Fire Sensing Each sensor provides an analog measurement digitally communicated to the control panel for analysis. At the panel, these analog values are used separately, or combined, to evaluate for conditions indicative of fire, incipient fire, excessive heat, and freeze warning. For fire, the addition of a CO sensor provides two selectable modes of operation: Nuisance Alarm Reduction Mode and Faster Fire Detection. These two modes were developed using the results of extensive testing of actual fires performed under a wide variety of conditions. (Refer to page 4 for additional operation mode options.)

Nuisance Alarm Reduction Mode allows the host control panel to combine photoelectric sensor input and CO sensor level input to reduce false alarms caused by non-fire conditions. Non-fire conditions can be steam from bathroom showers, particles from dusty environments, aerosols from personal care products, tobacco smoke, cooking smoke, or other similar conditions.

CO Sensing, Detailed Operation *(Continued)*

Nuisance Alarm Reduction Details For applications of anticipated nuisance alarm conditions, photoelectric sensitivity is normally selected for 3.7%/ft smoke obscuration. However, the addition of CO sensing allows the host control panel to apply software verification similar to the timed alarm verification feature often used with conventional smoke detection.

Faster Fire Detection For applications where faster response to incipient or slow building fires is desired and environment appropriate, the Faster Fire Detection mode correlates the outputs of the CO sensor and the photoelectric sensor to provide increased sensitivity. This mode provides earlier detection compared to a standard sensitive photoelectric sensor setting, and also provides more false alarm reduction compared to using a sensitive setting in an area not normally considered appropriate.

Faster Fire Detection Details TrueAlarm photoelectric sensors can be selected to be as sensitive as 0.2%/ft obscuration for applications evaluated as appropriate to that level. However, if the environment is not suitable for that sensitivity level, the Faster Fire Detection mode allows the photoelectric sensor to be selected as a "standard" 2.5%/ft obscuration, but with the presence of a significant level of CO, the combination of CO and photo sensing input can allow an equivalent sensitivity approaching 0.5%/ft obscuration. The host control panel tracks two photoelectric sensitivities, the one selected for photoelectric operation only (typically 2.5%), and the CO correlation sensitivity that it adjusts depending on the amount of CO present.

Control Panel Operations

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

Sensor Alarm and Trouble LED Indications
The sensor base LED pulses to indicate communications with the panel. If a sensor is in alarm, or has a trouble condition, the status is annunciated at the control panel and that base LED will turn on steady. During a system alarm, the panel will control LEDs such that a trouble indication will return to pulsing to help identify the sensors in alarm.
Reported CO Sensor troubles are: Disabled, Almost Expired 12 Months, Almost Expired 6 Months, Expired (End of Life), Short, and Sensor Missing/Failed.

Trouble Details
"Almost Expired" is similar to the "Almost Dirty" trouble for a photoelectric sensor. "Expired" trouble is similar to the "Dirty" trouble for a TrueAlarm photoelectric sensor. CO sensor technology does not support automatic sensitivity testing and drift compensation as is available with a photoelectric sensor. End of useful CO sensor life is based upon a set 10 year operational lifetime (5 years for 4100U panels), tracked by date code built into the CO sensor module electronics. Although the CO sensor will continue to function after the expired trouble is indicated, replacement is required to ensure proper detection accuracy.

Control Panel Operations *(Continued)*

Panel Test Mode allows functional testing of the CO sensor. A test mode is available in the host control panel. In this mode, the CO sensor, and installed heat or smoke sensor can be easily functionally tested.

Panel Test Mode When in the CO test mode, the internal multiple sensor analysis algorithms are disabled allowing each sensor to be quickly tested either individually or simultaneously, depending on the test equipment used. CO testing can be performed using a Solo Model 332 aerosol dispenser (or equal). (Testing is available through your local authorized Simplex product supplier.) The base LED will display steady ON when individual sensors are activated during test. Refer to the Application Reference section for more information.

OSHA CO monitoring For OSHA compliant gas sensing, control panel software supports custom programming based upon CO concentration levels. For example, turn on ventilation if the CO level is above X ppm and then turn off ventilation when the level drops below Y ppm (or select either value as a range if desired). This is separate from alarm set points.

Multi-Point Allocation 4007ES, 4010ES, and 4100ES control panels require only one (1) point at the host panel per CO sensor base. Depending on CO sensor base and sensor choice, up to seven (7) points can be made public to a connected Simplex Fire Alarm Network. Each CO sensor base uses a single address with "sub-points" layered underneath (such as 1-1-0, 1-1-1, 1-1-2, ….1-1-6). For 4100U control panels, the requirement is three (3) points at the host panel per CO sensor base with the 4098-9754 multi-sensor, and two (2) points for the other sensors. Additional multi-point allocation detail is described in reference data sheet S4090-0011.

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

Accessories

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

Application Reference

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

For fire alarm applications:
- Refer to NFPA 72, the *National Fire Alarm and Signaling Code*
- On smooth ceilings, 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*, Part Number 574-709.

For toxic gas sensor placement and mounting:
- Refer to NFPA 720, *Standard for the Installation of Carbon Monoxide (CO) Warning Equipment in Dwelling Units*
- Per NFPA 720, Section 5.1 (2005 edition):
5.1.1 A carbon monoxide alarm or detector shall be centrally located outside of each separate sleeping area in the immediate vicinity of the bedrooms.
5.1.2 Each alarm or detector shall be located on the wall, ceiling, or other location as specified in the installation instructions that accompany the unit.

TrueAlarm CO Service Reports

TrueAlarm CO Service Reports (sample below) contain information on the CO sensors programmed in the panel displaying pertinent data such as current concentration value in ppm, End of Life date, and current state. This report allows determination of which sensors will require attention. (Sample shows 10 year life tracking with a 4007ES/4010ES/4100ES.)

```
Service Port                                                      Page 1

REPORT 6 : TrueAlarm CO Report                12:34:56am    MON    06-JUN-14
-----------------------------------------------------------------------------
Channel 1 (M1)

Zone                                          Current    End of
Name       CUSTOM LABEL                        Value    Life Date  State
-----------------------------------------------------------------------------
M1-1-2     Conference Room 17 CO Toxic Gas     457PPM   30-MAY-24  PRI
M1-2-2     Boiler Room CO Toxic Gas            0PPM     30-MAY-24  NOR
TRUE ALARM CO REPORT COMPLETED
        Press RETURN for next Screen OR CTRL-X to abort
```

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Sensors and Accessories Product Selection

TrueAlarm CO Sensor Base

Model	Description
➡ 4098-9773	CO Sensor base with 520 Hz Sounder

TrueAlarm Sensors, select one per CO Sensor Base with 520 Hz Sounder

Model	Description	
4098-9714	Photoelectric Smoke Sensor	Refer to selection table below for available operation modes
4098-9754	Multi-Sensor Photoelectric and Heat Sensing	
4098-9733	Heat Sensor	

CO Base Replacement CO Cartridge and Accessories (ordered separately as required)

Model	Description	
4098-9747	CO Replacement Cartridge (CORC). Refer to CORC Replacement Instructions 579-791 for more information.	
Solo 332	Aerosol Dispenser, suitable for larger diameter detectors; can be used for CO or smoke testing	
Solo C3	CO Aerosol Canister (case of 12)	

Model	Description	Mounting Requirements
4098-9863	Adapter Plate required for surface flush 4" square electrical boxes.	Refer to page 6, mounting reference
2098-9808	Remote red LED Alarm Indicator on single gang stainless steel plate. Refer to Installation Instructions 574-707 and Application Manual 574-709 for additional information.	Single gang box, 1-1/2" minimum depth

CO Sensor Base Operation Options with Sensor Choice

Sensor Choice	Mode	Operational Mode Choices* (✔ = operation selected)							
		False Alarm Reduction	Faster Detection	TrueSense Photo/Heat	Photo Fire	Heat Fire**	Utility Temp.	Ion Fire	CO Toxic Gas†
Photoelectric Smoke Sensor 4098-9714	1	✔	—	—	—	—	—	—	option
	2	—	✔	—	option	—	—	—	option
Photo/Heat Multi-Sensor 4098-9754	3	✔	—	—	—	option	option	—	option
	4	—	✔	—	option	option	option	—	option
	5		—	✔	option	option	option		option
Heat Sensor 4098-9733	6	—	—	—	—	✔	option	—	option
	7	—	—	—	—	option	✔	—	option

* **NOTE:** Duct detection modes are not applicable and are not available. Refer to the Multi-Point Allocation discussion on page 3 for panel point requirement information.

** Heat Fire Mode is 135° F or 155° F, fixed or rate-of-rise.

† CO Toxic Gas operation is selectable as: Supervisory (which is NOT recommended if communicated off-site), Priority 2 (preferred if communicated off-site), or Utility.

TrueAlarm Analog Sensor Features

Sealed against rear air flow entry Electronics are EMI/RFI shielded Heat sensing:

- Selectable rate compensated, fixed temperature sensing with or without rate-of-rise operation
- 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 technology sensing
- 360° smoke entry for optimum response
- Built-in insect screens

4098-9714 Photoelectric Sensor

TrueAlarm photoelectric sensors use a stable, pulsed infrared LED light source and a silicon photodiode receiver to provide consistent and accurate low power smoke sensing. Seven levels of sensitivity are available for each individual sensor, ranging from 0.2% to 3.7% per foot of smoke obscuration. Sensitivities of 0.2%, 0.5%, and 1% are for special applications in clean areas. Standard sensitivities are 1.5%, 2.0%, 2.5%, 3.0%, and 3.7%. Application type and sensitivity are selected and then monitored at the fire alarm control panel. (For detailed application information about sensitivity selection, refer to Installation Instructions 574-709.)

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

4098-9714 Photoelectric Sensor on CO sensor base

4098-9754 Multi-Sensor

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

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

4098-9754 Multi-Sensor *(Continued)*
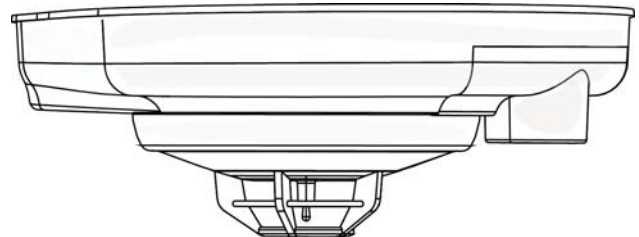

Multi-Sensor on CO Sensor Base

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

4098-9733 Heat Sensor

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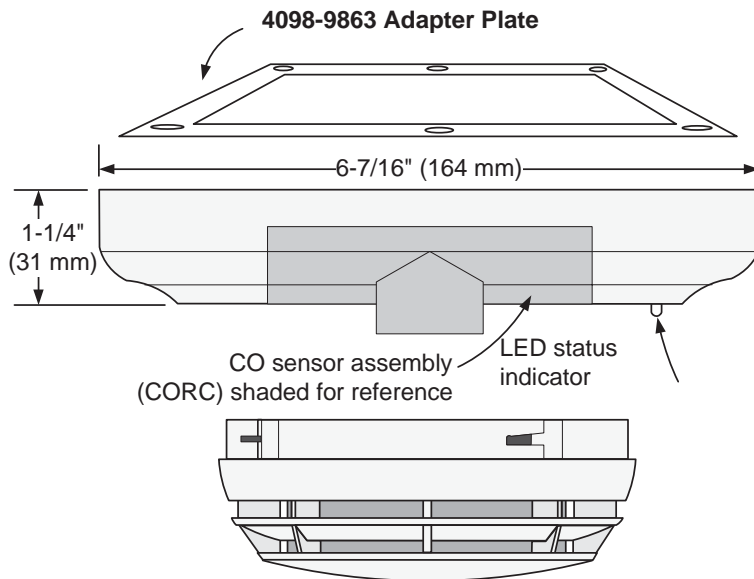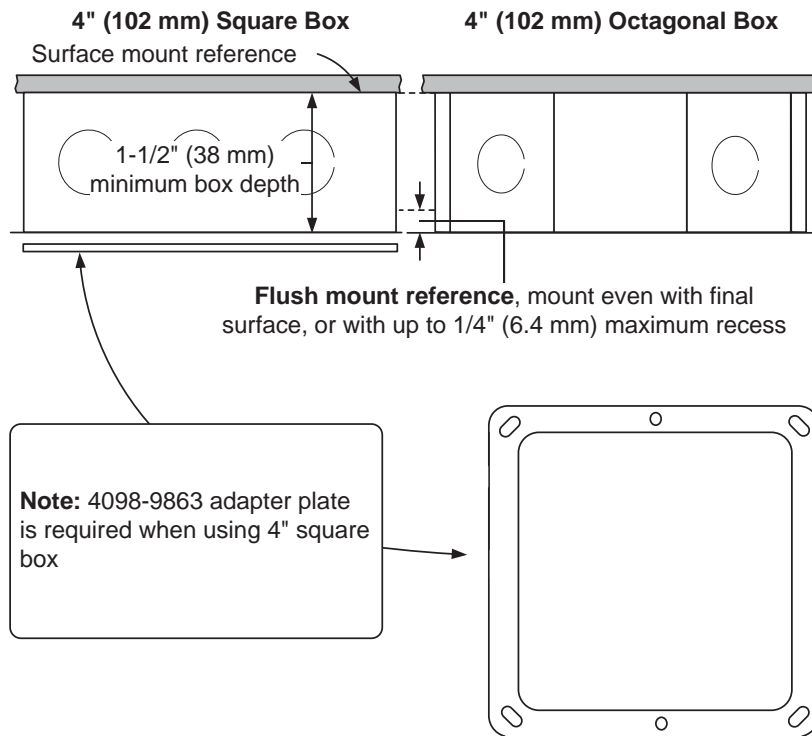

4098-9733 Heat Sensor with CO Sensor Base and CO Sensor

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.

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Electrical Box Requirements:
4" octagonal or 4" square, 1-1/2" deep; single gang, 2-1/8" deep

4" (102 mm) Square Box   **4" (102 mm) Octagonal Box**

Surface mount reference

1-1/2" (38 mm) minimum box depth

Flush mount reference, mount even with final surface, or with up to 1/4" (6.4 mm) maximum recess

Note: 4098-9863 adapter plate is required when using 4" square box

4098-9863 Adapter Plate

6-7/16" (164 mm)

1-1/4" (31 mm)

CO sensor assembly (CORC) shaded for reference

LED status indicator

(Photoelectric sensor shown for reference)

NOTES:

1. Sounder Base 4098-9773 requires flush mounting.
2. Review actual wire size, wire count and box type before determining box size.
3. Mounting to flush mounted box also fits single gang handy box, 2-1/8" (51 mm) deep if wiring allows.
4. Refer to Installation Instructions 574-707 for additional information.
5. Refer to CORC Replacement Instructions 579-791 for CO cartridge installation and replacement.
6. The 4098-9773 Sounder base can be mounted at 90 degrees rotation using a single gang box, consult your local SimplexGrinnell contact for further information.

Specifications

General Operating Specifications

Communications and Sensor Supervisory Power	IDNet communications, 1 address per base
Communications and Sounder Power 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 supplied from communications, no impact to alarm current
Remote LED Alarm Indicator — LED Connections	Color coded wire leads, 18 AWG (0.82 mm^2)
UL Listed Temperature Range	32° F to 100° F (0° C to 38° C)
Operating Temperature Range — with 4098-9733, 4098-9714 or 4098-9754	32° F to 122° F (0° C to 50° C)
Humidity Range	10 to 95% RH
CO Sensor Base Air Velocity Ratings per Sensor — Photoelectric Sensor 4098-9714 and Multi-Sensor 4098-9754	Air velocity = 0-1000 ft/min (0-305 m/min)
Housing Color	Frost White
Installation Instructions	574-707

Sounder Operation

Sounder Voltage		24 VDC nominal, 16 to 32 VDC from NAC
Alarm Current (Sounder On)	520Hz signal	129 mA @ 16 V, 115 mA @ 18 V
	Broadband signal	139 mA @ 16 V, 125 mA @ 18 V
Sounder Output		Minimum sound output @ 10 ft (3 m) per UL Standard 464, *Audible Signaling Appliance*	Minimum sound output @ 10 ft (3 m) per UL Standard 268, *Smoke Detectors for Fire Protective Signaling Systems* and CSA 6.19-01
	520 Hz signal	79.5 dBA	85.5 dBA
	Broadband signal	81 dBA	87 dBA
Base Supervison of Sounder Power Input (Selectable)	Supervised	Select for continuous 24 VDC power, loss of power is communicated to panel
	Unsupervised	Select when connected to NAC for sounder power, NAC provides supervision
NAC Powered Operation		When in alarm, will sound when NAC is in alarm, allowing synchronized pattern (Temporal or March Time, etc.) controlled by the NAC control

Reference for CO Monitoring

		Concentration	Alarm Window
Requirements Reference for CSA 6.19-01	Response Time	70 ±5 ppm	60 to 240 minutes
		150 ±5 ppm	10 to 50 minutes
		400 ±10 ppm	4 to 15 minutes
	False Alarm Resistance	30 ±3 ppm	No Alarm for 30 days
		70 ±5 ppm	No Alarm for 60 minutes
UL 2075 Reference, Commercial OSHA Type Operation; Utility Point Mode		With custom control at the fire alarm control panel, Utility Point operations can be performed at lower CO concentration levels **Example:** Start ventilation after 5 minutes at 25 to 35 ppm and also alarm at a reading higher than that range	

Additional Information Reference

Product	Data Sheet	Product	Data Sheet
Temporal Code 4 Module	S4905-0006	4100ES Control Panels with EPS Power Supplies	S4100-0100
Standard Bases	S4098-0019	4100ES Standard Control Panels	S4100-0031
Isolator Bases	S4098-0025	4100ES Audio Control Reference	S4100-0034
Standard Sounder Base	S4098-0028	4010ES Control Panels	S4010-0004
TrueSense Multi-Sensor	S4098-0024	4007ES Hybrid Control Panels	S4007-0001
TrueAlarm 4098-9772 Sensor Base with 520 Hz Sounder	S4098-0054		

S Simplex

TrueAlarm ES Analog Sensing

UL, ULC, CSFM Listed;
FM Approved*

TrueAlarm 4098-9772 CO Sensor Base
with 520 Hz Sounder

Features

TrueAlarm addressable sensor base with 520 Hz sounder

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

Sensor base with photoelectric or photo/heat sensor operation

- Independent sensor operation or selectable multi-sensor modes for false alarm reduction or faster detection
- Photoelectric, photo/heat, or heat sensors can be analyzed to reject non-fire conditions that can trigger false alarms (steam, dust, etc)
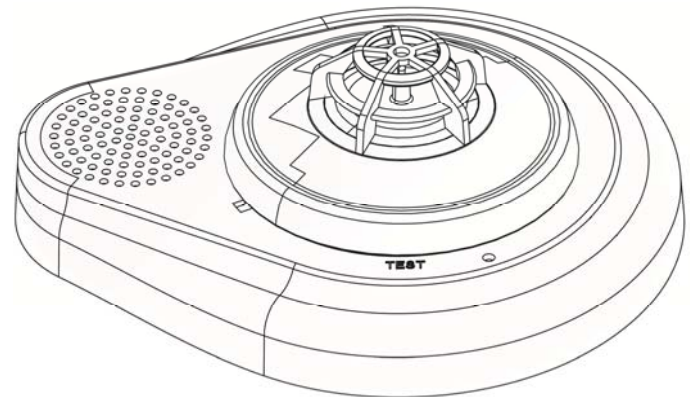
520 Hz Sounder base operation

- Low Frequency sound output (520Hz at 85 dBA)
- The base can supervise the sounder drive circuit when an AUX 24V power line is used for sounder power. Alternatively, base supervision can be disabled if a supervised NAC is needed to power the sounder for coded outputs.
- Sounder can be manually activated from the panel

Panel operation summary

- Analog sensor information is digitally transmitted to the host control panel via IDNet communications for processing to evaluate and track status

General features

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

TrueAlarm Sensor Base with 520 hz sounder
4098-9772 with Heat Sensor installed

520 Hz Sounder Base Features

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

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

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

Application Reference

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

For fire alarm applications:

- Refer to NFPA 72, the *National Fire Alarm and Signaling Code*
- On smooth ceilings, 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*, Part Number 574-709.

Control Panel Operations

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

Sensor Alarm and Trouble LED Indications

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

Multi-Point Allocation 4007ES, 4010ES, and 4100ES control panels require only one (1) point at the host panel per sensor base. Depending on sensor base and sensor choice, up to seven (7) points can be made public to a connected Simplex Fire Alarm Network. Each sensor base uses a single address with "sub-points" layered underneath (such as 1-1-0, 1-1-1, 1-1-2, ….1-1-6).

For 4100U control panels, the requirement is three (3) points at the host panel per sensor base with the 4098-9754 multi-sensor, and two (2) points for the other sensors. Additional multi-point allocation detail is described in reference data sheet S4090-0011.

Control Panel Operations (Continued)

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

Accessories

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

2098-9808 Remote LED Alarm Indicator

TrueAlarm Analog Sensor Features

Sealed against rear air flow entry Electronics are EMI/RFI shielded Heat sensing:

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

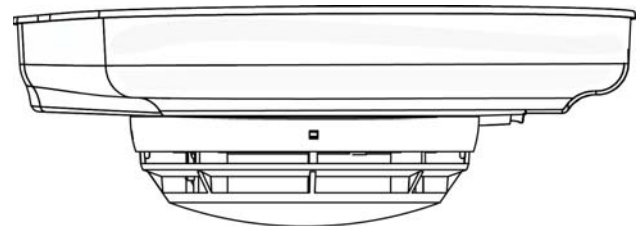| Fixed Temp. Setting	UL& ULC Spacing	FM Spacing, Either Fixed Temperature Setting
135° F (57.2° C)	60 ft x 60 ft (18.3 m)	20 ft x 20 ft (6.1 m) for fixed temperature only; **RTI = Quick**
155° F (68° C)	40 ft x 40 ft (12.2 m)	50 ft x 50 ft (15.2 m) for fixed temperature with either rate-of-rise selection;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

Smoke Sensors:

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

4098-9714 Photoelectric Sensor

TrueAlarm photoelectric sensors use a stable, pulsed infrared LED light source and a silicon photodiode receiver to provide consistent and accurate low power smoke sensing. Seven levels of sensitivity are available for each individual sensor, ranging from 0.2% to 3.7% per foot of smoke obscuration. Sensitivities of 0.2%, 0.5%, and 1% are for special applications in clean areas. Standard sensitivities are 1.5%, 2.0%, 2.5%, 3.0%, and 3.7%. Application type and sensitivity are selected and then monitored at the fire alarm control panel. (For detailed application information about sensitivity selection, refer to Installation Instructions 574-709.)

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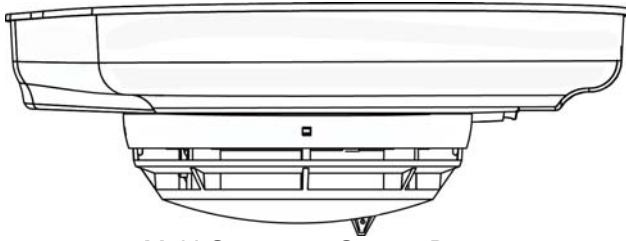

4098-9714 Photoelectric Sensor on sensor base

4098-9754 Multi-Sensor

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

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

S4098-0054-2 06/2016

4098-9754 Multi-Sensor *(Continued)*
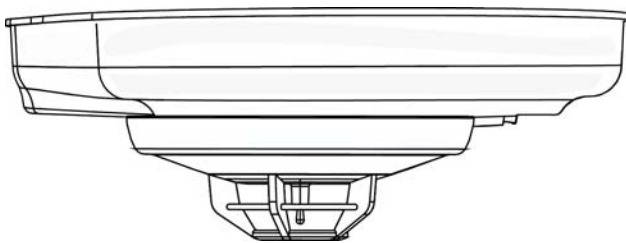

Multi-Sensor on Sensor Base

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

4098-9733 Heat Sensor

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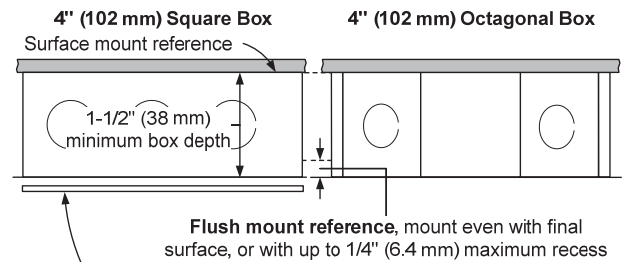

4098-9733 Heat Sensor on Sensor Base

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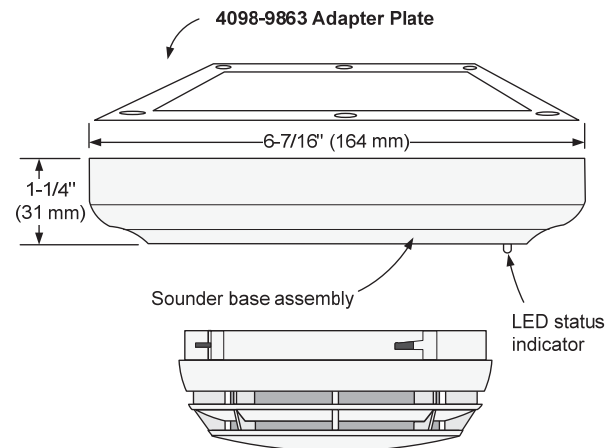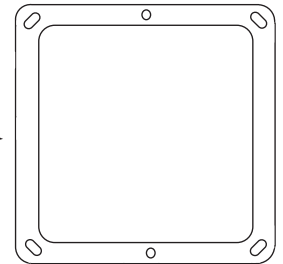
Install Reference

Electrical Box Requirements:
4" octagonal or 4" square, 1-1/2" deep; single gang, 2-1/8" deep

4" (102 mm) Square Box
Surface mount reference

1-1/2" (38 mm) minimum box depth

4" (102 mm) Octagonal Box

Flush mount reference, mount even with final surface, or with up to 1/4" (6.4 mm) maximum recess

Note: 4098-9863 adapter plate is required when using 4" square box

4098-9863 Adapter Plate

6-7/16" (164 mm)

1-1/4" (31 mm)

Sounder base assembly

LED status indicator

(Photoelectric sensor shown for reference)

NOTES:
1. Sounder Base 4098-9772 requires flush mounting.
2. Review actual wire size, wire count and box type before determining box size.
3. Mounting to flush mounted box also fits single gang handy box, 2-1/8" (51 mm) deep if wiring allows.
4. Refer to Installation Instructions 574-707 for additional information.
5. The 4098-9772 Sounder base can be mounted at 90 degrees rotation using a single gang box, consult your local SimplexGrinnell contact for further information.

Sensors and Accessories Product Selection

TrueAlarm Sensor Base

Model	Description
➤ 4098-9772	Sensor base with 520 Hz Sounder

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

Model	Description	
4098-9714	Photoelectric Smoke Sensor	Refer to selection table below for available operation modes
4098-9754	Multi-Sensor Photoelectric and Heat Sensing	
4098-9733	Heat Sensor	

Accessories (ordered separately as required)

Model	Description	Mounting Requirements
4098-9863	Adapter Plate required for surface flush 4" square electrical boxes.	Refer to page 6, mounting reference
2098-9808	Remote red LED Alarm Indicator on single gang stainless steel plate.	Single gang box, 1-1/2" minimum depth

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

Sensor Base Operation Options with Sensor Choice

Sensor Choice	Mode	Operational Mode Choices* (✓ = operation selected)						
		False Alarm Reduction	Faster Detection	TrueSense Photo/Heat	Photo Fire	Heat Fire**	Utility Temp.	Ion Fire
Photoelectric Smoke Sensor 4098-9714	1	✓	—	—	—	—	—	—
	2	—	✓	—	option	—	—	—
Photo/Heat Multi-Sensor 4098-9754	3	✓	—	—	—	option	option	—
	4	—	✓	—	option	option	option	—
	5		—	✓	option	option	option	
Heat Sensor 4098-9733	6	—	—	—	—	✓	option	—
	7	—	—	—	—	option	✓	—

* **NOTE:** Duct detection modes are not applicable and are not available. Refer to the Multi-Point Allocation discussion on page 3 for panel point requirement information.

** Heat Fire Mode is 135° F or 155° F, fixed or rate-of-rise.

Specifications

General Operating Specifications

Communications and Sensor Supervisory Power		IDNet communications, 1 address per base
Communications and Sounder Power 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 supplied from communications, no impact to alarm current
	LED Connections	Color coded wire leads, 18 AWG (0.82 mm^2)
UL Listed Temperature Range		32° F to 100° F (0° C to 38° C)
Operating Temperature Range	with 4098-9733, 4098-9714 or 4098-9754	32° F to 122° F (0° C to 50° C)
Humidity Range		10 to 95% RH
Smoke Sensor Ambient Ratings	4098-9714, Photoelectric Sensor	Air velocity is 0-4000 ft/min (0-1220 m/min)
Housing Color		Frost White
Installation Instructions		574-707

Sounder Operation

Sounder Voltage		24 VDC nominal, 16 to 32 VDC from NAC	
Alarm Current (Sounder On)	520Hz signal	129 mA @ 16 V, 115 mA @ 18 V	
	Broadband signal	139 mA @ 16 V, 125 mA @ 18 V	
Sounder Output		Minimum sound output @ 10 ft (3 m) per UL Standard 464, *Audible Signaling Appliance*	Minimum sound output @ 10 ft (3 m) per UL Standard 268, *Smoke Detectors for Fire Protective Signaling Systems* and CSA 6.19-01
	520 Hz signal	80 dBA	86 dBA
	Broadband signal	81 dBA	87 dBA
Base Supervision of Sounder Power Input (Selectable)	Supervised	Select for continuous 24 VDC power, loss of power is communicated to panel	
	Unsupervised	Select when connected to NAC for sounder power, NAC provides supervision	
NAC Powered Operation		When in alarm, will sound when NAC is in alarm, allowing synchronized pattern (Temporal or March Time, etc.) controlled by the NAC control	

Additional Information Reference

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

ⓢ Simplex

Features

Provides Temporal Code 4 (TC4) NAC (Notification Appliance Circuit) control for Carbon Monoxide (CO) gas warning:

- The TC4 CO gas warning is a repeated sequence of four cycles of 100 msec on with 100 msec off, followed by 5 seconds off per NFPA 720, *Standard for the Installation of Carbon Monoxide (CO) Warning Equipment in Dwelling Units*

- Compatible appliances includes: CO Sounder Bases 4098-9771 and 4098-9798, 4901-9820 Horn (set for free-run), 49CMT Series multi-tone horns (set for free-run horn tones), and 4903 Series 4-wire A/V appliances horn input (*not compatible with SmartSync horn control appliances*)

Compatible Simplex® equipment NAC sources:

- 4007ES Hybrid, 4010ES, 4100ES, and 4100U NAC outputs

- 4009 IDNet NAC Extender NAC outputs

- Each module requires an input NAC that powers the 3A rated output NAC for control of compatible audible notification appliances only (*not for strobes*)

Three selectable operation modes:

- **Synchronized operation** allows a separate and dedicated control NAC to both activate and synchronize the Temporal Code 4 output timing of up to 20, 4905-9835 modules

- **Unsynchronized operation** also allows the separate and dedicated control NAC to activate the Temporal Code 4 output timing of up to 20, 4905-9835 modules, but without synchronization between the modules

- **Stand-Alone operation** allows the input NAC in alarm to activate Temporal Code 4 timing for NACs dedicated for CO gas alarm; no fire alarm signals are available, no control NAC is used

- For both Synchronized and Unsynchronized modes, when the control NAC is off, the module output NACs will follow the fire alarm signals of the input NAC

- **NOTE:** For TC4 output, both the input NACs and the control NACs requires a Steady On signal

Compact, sealed construction:

- Mounts in standard 4" square electrical box

- Compatible with Adapter Plate 4090-9813 to fit 4 $^{11}/_{16}$" (119 mm) square electrical boxes

- Screw terminals for wiring connections

Listed to UL 864 and ULC S527

Description

CO gas alarm warnings are required to be different from fire alarm warnings. In the event of a CO gas alarm, the presence of a Temporal Code 4 audible signal pattern identifies the type of condition to the responders to assist in determining the proper actions to be taken.
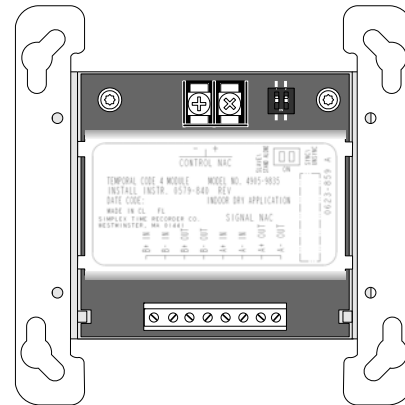
➡ 4905-9835 Temporal Code 4 Module
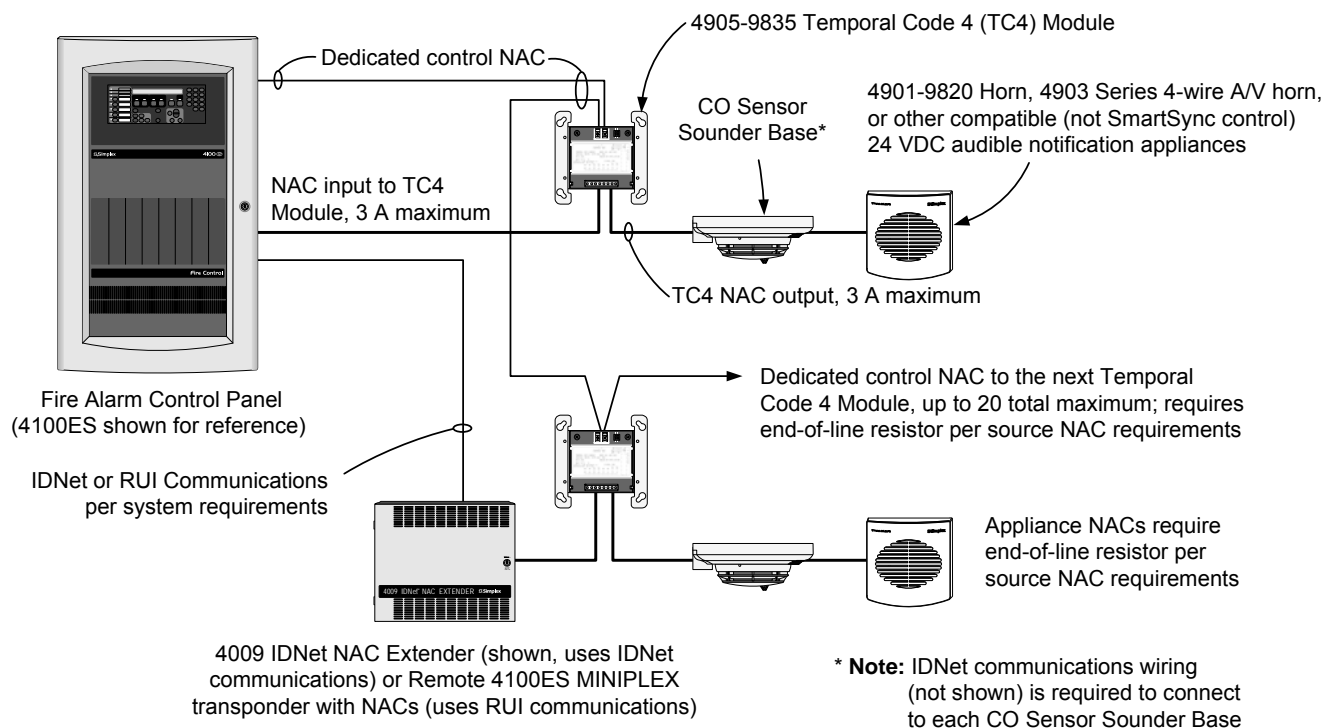(shown approximately 1/2 size)

Description *(Continued)*

CO gas alarm, or fire alarm. Use of the 4905-9835 Temporal Code 4 Module allows the NFPA 720 Temporal Code 4 signal to be generated using a standard Steady On audible appliance NAC input. Under the fire alarm panel's control, the audible notification signal can be selected for a conventional fire pulse pattern for a fire alarm condition, or the Temporal Code 4 pattern can be activated for a CO gas alarm condition.

Specifications

|	
NAC Control	For 24 VDC NACs, up to 3 A maximum, limited by input NAC rating; for control of audible notification appliances compatible with TC4 code pulse duty cycle
Input NAC Current Requirements	Supervisory current = 0.18 mA
	Alarm current = 15 mA
Control NAC Current Requirements	Supervisory current = 0 mA
	Alarm current = 3 mA
Mounting Distance to input NAC Source	Mount close-nippled, 20 ft (6 m) maximum distance
Wire Connections	Screw terminals for in/out wiring, 18 to 12 AWG wire (0.82 to 3.31 mm^2)
Dimensions	4" x 4 ⅛" x 1 ⅜" D (102 mm x 105 mm x 35 mm)
Mounting Plate Material	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)

System Connection Reference

4905-9835 Temporal Code 4 (TC4) Module

Dedicated control NAC

CO Sensor Sounder Base*

4901-9820 Horn, 4903 Series 4-wire A/V horn, or other compatible (not SmartSync control) 24 VDC audible notification appliances

NAC input to TC4 Module, 3 A maximum

TC4 NAC output, 3 A maximum

Fire Alarm Control Panel (4100ES shown for reference)

Dedicated control NAC to the next Temporal Code 4 Module, up to 20 total maximum; requires end-of-line resistor per source NAC requirements

IDNet or RUI Communications per system requirements

Appliance NACs require end-of-line resistor per source NAC requirements

4009 IDNet NAC Extender (shown, uses IDNet communications) or Remote 4100ES MINIPLEX transponder with NACs (uses RUI communications)

* **Note:** IDNet communications wiring (not shown) is required to connect to each CO Sensor Sounder Base

Mounting Reference

Mounting Box (supplied separately), 4" square (102 mm), minimum depth = 2-1/8" (54 mm), RACO 232 or equal

4" square cover plate, RACO 752 or equal (supplied separately)
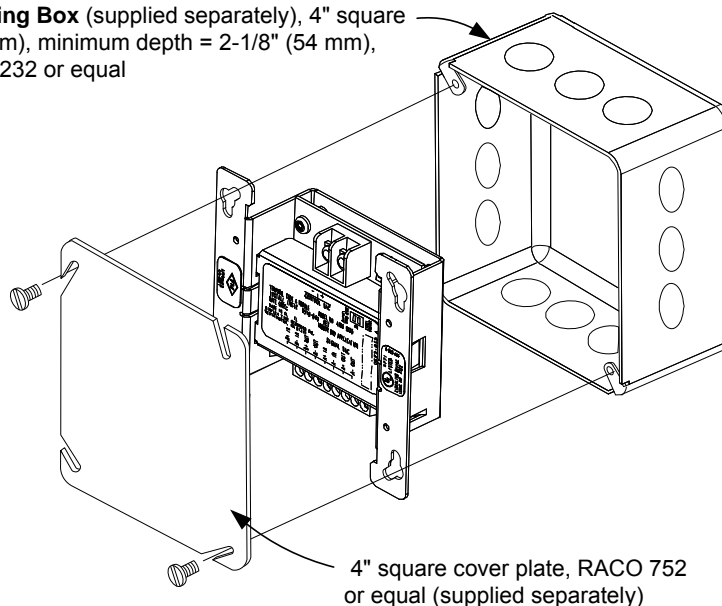
Additional Reference

Document	Description	Document	Description
579-840	Installation Instructions	S4010-0004	4010ES Control Panel
S4098-0052	CO Sensor Base data sheet	S4901-0010	4901-9820 Horns
S4100-0031	4100ES Basic Reference	S4903-0011	4903 Series 4-wire A/Vs
S4007-0001	4007ES Hybrid data sheet	S49CMT-0001	49CMT Series Multi-Tone Horns

INSERT 4

Notification Appliances & Accessories Data Sheets

®Simplex

True*Alert* ⑤ Addressable Notification Appliances

UL, ULC, CSFM Listed;
FM Approved*

Audible/Visible Notification Appliances, Wall Mount
Multi-Candela Horn/Strobe, Model Series 49AV
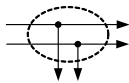
Features

Individually addressed and controlled multi-candela TrueAlert ES A/V (audible/visible) notification appliances provide:

- Multi-candela xenon strobe with synchronized 1 Hz flash rate and with intensity *programmable from the control panel* or jumper selected as 15, 30, 75, 110, 135, or 185 cd
- Advanced addressable notification controlled by *IDNAC SLCs* providing *regulated 29 VDC* allowing strobes to operate with lower current even under battery backup
- Wiring supervision to each appliance allowing "T-tapped" connections for Class B circuits to simplify wiring (Class A circuits require in/out wiring)
- *Self-Test Mode* allows on-board sensors to detect the strobe and horn output and then report their status to the control panel
- *TrueAlert Device Reports* at the control panel detailing appliance point ID, custom label, type, and candela setting (see sample on page 3)
- *Magnet Test diagnostics* to assist checkout and testing of appliances and wiring
- *Electrical test point access* without removing cover
- Compatibility with ADA requirements; (refer to important installation information on page 3)
- Compatibility with legacy TrueAlert addressable systems for upgrade and replacement (see page 4)
- Strobe operation is listed to UL Standard 1971 and ULC Standard S526; Horn operation is listed to UL Standard 464 and ULC Standard S525

LED Indicator and Magnet Test feature:

- Appliance LED can be selected to display each polling cycle to indicate appliance supervision
- When the controller is in diagnostic mode, the Magnet Test pulses the LED to indicate appliance address and can be set to also briefly flash the strobe and sound the horn

Mechanical design features include:

- Rugged, high impact, flame retardant thermoplastic housing in red with white letters or white with red letters, with clear lens, available with FIRE, FEU, ALERT, FEU/FIRE, or blank lettering
- Separate covers are available to change application type on-site or for replacement
- A separate mounting plate allows wiring to be completed before appliance is mounted; use with single gang, double gang, or 4-inch square box, flush or surface mount
- Covers can be easily removed without disturbing the connected housing and avoiding trouble conditions
- In/out wiring terminals for 18 AWG to 12 AWG
- Optional mounting adapters are available to cover surface mounted electrical boxes and to adapt to Simplex 2975-9145 boxes
- Optional red wire guards (see page 2 for details)

TrueAlert ES Addressable A/Vs are Available in Red with White Lettering and White with Red Lettering

Features *(Continued)*

Audible notification appliance (horn):

- Harmonically rich output sound for either coded or steady operation
- Horns sound as Temporal Code 3, March Time pattern, continuous; or Temporal Code 4, controlled separately from visible appliances on the same two-wire circuit
- Selectable March Time rates of 20, 60, or 120 beats per minute
- Output is "high" or "low" (~5 dBA difference) selectable at the appliance or from the controller with FACP mode selected at the appliance

Description

TrueAlert ES addressable A/Vs are individually addressed audible/visible notification appliances that receive power, supervision, and control signals from a Simplex fire alarm control panel providing **IDNAC** Signaling Line Circuits (SLCs). (See compatibility list on page 4.)

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).

TrueAlert ES Operation Advantage

TrueAlert ES addressable appliances on IDNAC SLCs provide separate visible and audible notification using a single two-wire circuit that also *confirms connection to the individual notification appliance's electronic circuit*. This operation increases circuit supervision integrity by providing supervision that extends beyond the appliance wiring connections.

Reduced current allows efficient IDNAC SLC operation. With *IDNAC SLCs*, a *constant* 29 VDC source voltage is maintained, even during battery standby, allowing strobes to operate at higher voltage with lower current and ensuring a consistent current draw and voltage drop margin under both primary power and secondary battery standby. Efficiencies include wiring distances up to 2 to 3 times farther than with conventional notification, or support for more appliances per IDNAC SLC, or use of smaller gauge wiring, or combinations of these benefits, all providing installation and maintenance savings with high assurance that appliances that operate during normal system testing will operate during worst case alarm conditions.

Reducing Installation and Testing Time. With separate controls on the same two-wire SLC, installation time and expense for both retrofit and new construction can be significantly reduced. When Class B wiring is used, *wiring can be "T" tapped*, allowing more savings in distance, wire, conduit (size and utilization), and overall installation efficiency. Use of Self-Test and Magnet Test features improve installation efficiency. TrueAlert device reports conveniently identify information about each connected appliance.

TrueAlert ES Diagnostics

Test Features. When IDNAC SLCs are in diagnostic mode, *Self-Test* and *Magnet Test* features provide individual appliance testing. With the *Self-Test* feature, *appliance operation can be confirmed without leaving the control panel*. Additionally, each appliance's LED can be selected to pulse when it receives a supervision poll during normal operation.

Self-Test **Details.** Selecting Self-Test Mode from the control panel allows on-board sensors, depending on the device type, to detect its own strobe and/or horn output and then report their status to the control panel. Operation is by selected VNAC appliance groups and is either automatic (all briefly simultaneously activated) or individually activated by applying a magnet. (Refer to control panel data sheet for more Self-Test information, see list on page 4.)

Silent Appliance Magnet Test. In this test mode, in response to application of a magnet, the appliance LED pulses sequentially to conveniently indicate the appliance's address.

Operational Appliance Magnet Test. In this test mode, after the address is indicated by pulsing the appliance LED, the strobe will briefly flash and the horn will briefly sound to indicate proper operation.

TrueStart Instrument Two (TSIT). The 2nd generation of the Simplex TrueStart Test Instrument adds testing of IDNAC SLC wiring and TrueAlert ES appliances to its ability to test IDCs, NACs, and IDNet communications *before connection to the control panel*. Please contact your local Simplex representative for additional information.

TrueAlert Addressable Wiring Isolator

Isolator Model 4905-9929 is available for remote mounting on TrueAlert addressable circuits to isolate short circuited wiring from functioning wiring. (See data sheet S4905-0001.)

Product Selection

TrueAlert ES Wall Mount Addressable Audible/Visible Appliances

TrueAlert ES addressable A/V appliances include cover and matching mounting plate except as noted;
Dimensions with Cover = 5 ⅛" H x 5" W x 2 ⅝" D (130 mm x 127 mm x 67 mm)

Model*	Cover Color	Wording	Lens Color	Model*	Cover Color	Wording	Lens Color
49AV-WRF(-BA)	Red	FIRE	Clear	49AV-WRS(-BA)	Red	Blank	Clear
49AV-WWF(-BA)	White			49AV-WWS-BA	White		
49AV-WRQ	Red	FEU		49AV-APPLW	Select cover and mounting plate separately		

Separate Mounting Plate

Model	Color	Model	Color	Note
49MP-AVVOWR	Red	49MP-AVVOWW	White	Mounting Plate **is required** when ordering model 49AV-APPLW

Separate Covers (Required when ordering model 49AV-APPLW)

Model*	Color	Wording	Model*	Color	Wording
49AVC-WRFIRE	Red	FIRE	49AVC-WRFEU	Red	FEU
49AVC-WWFIRE	White		49AVC-WWFEU	White	
49AVC-WRALT	Red	ALERT	49AVC-WRBLNG	Red	FEU/FIRE
49AVC-WWALT	White		49AVC-WWBLNG	White	
49AVC-WRS	Red	Blank	49AVC-WWS	White	Blank

* Note: (-BA) indicates model is available either with or without the -BA suffix. Model numbers ending in -BA, APPLW models, and separate mounting plates are assembled in the USA.

Mounting Adapters and Wire Guard

Model	Color	Description	Dimensions
4905-9937	Red	Surface Mount Adapter Skirt	5 ⅜" H x 5 ¼" W x 1 ⅝" D (136 mm x 133 mm x 41 mm)
4905-9940	White		Total depth with strobe = 4 ⅜" (111 mm)
4905-9931		Red Adapter Plate for mounting to Simplex 2975-9145 Box (typically for retrofit, mount vertical or horizontal)	8 ⁵⁄₁₆" x 5 ¾" x 0.060" Thick (211 mm x 146 mm x 1.5 mm)
2975-9145		Red Mounting Box, requires 4905-9931 Adapter Plate	7 ⅞" x 5 ⅛" x 2 ¾" D (200 mm x 130 mm x 70 mm)
4905-9961		Red wire guard with mounting plate, compatible with semi-flush or surface mount boxes	6 ¹⁄₁₆" H x 6 ¹⁄₁₆" W x 3 ⅛" D (154 mm x 154 mm x 79 mm)

TrueAlert Device Reports Reference

```
Service Port                                                        Page 1
REPORT 5 : TrueAlert Device Report                    12:34:56am  TUE  27-Jan-15
                                                     DEVICE
POINT ID    CUSTOM LABEL                             TYPE     CANDELA
T14-1-1     Location Label . . . up to 40 characters  V/O       15
T14-1-2     Break Room 5                              A/V      110
T14-1-3     Boiler Room                               A/V       75
T14-1-4     Elec. Room 7                              A/V      135
```

Installation Reference

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

Wiring terminals and connection clips

Transparent housing assembly
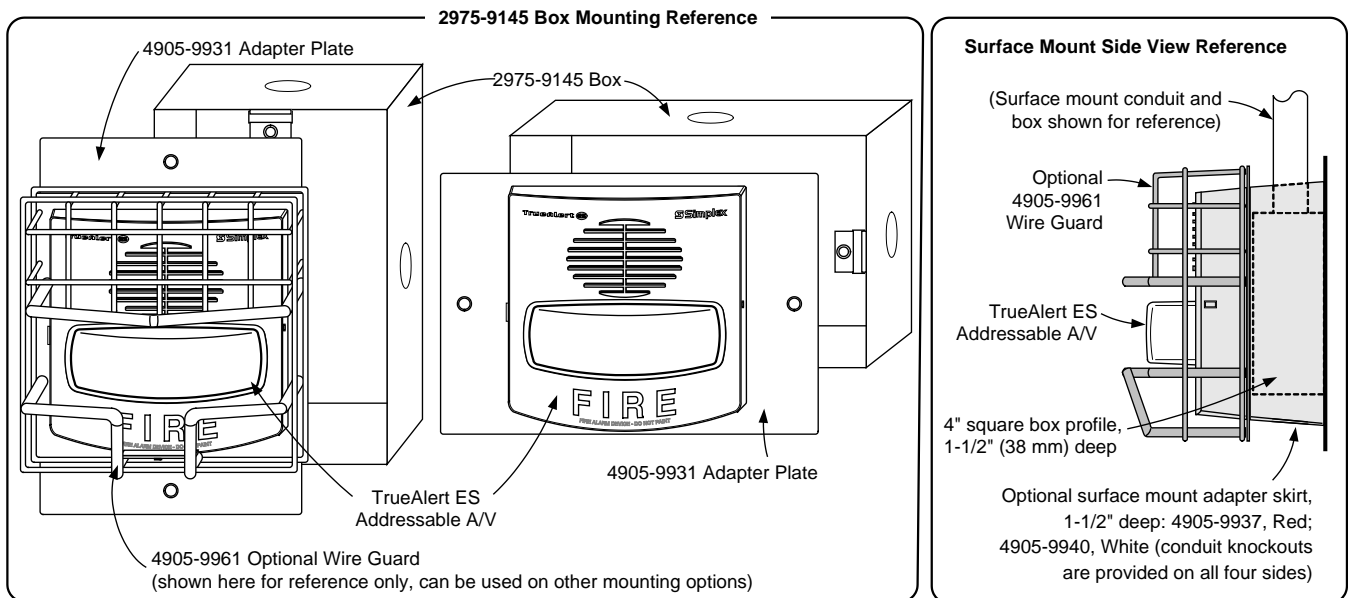
A/V configuration switch

Removable cover (when installed, use flat bladed screwdriver to release latch on left side)

UP ↑

Address setting DIP switch, accessible from rear of housing

LED indicator location

Magnetic test location (bottom of housing)

Wiring access hole

Mounting plate

Mounting Holes:
Single gang (2)
Double gang (4)
4" square (4)

Strobe intensity viewing slot on side of appliance (not to scale)

110
75
30
15
FACP
135
185

Intensity selection plug, accessible from rear of housing; factory setting is FACP, controlled by panel

Electrical test point access holes (on bottom)

IMPORTANT! WALL MOUNT INSTALLATION HEIGHT REFERENCE

Electrical box outline

Bottom of lens is either even with, or slightly above bottom of compatible boxes

80" (2.03 m) minimum

NFPA 72 requires that the entire lens be not less than 80" and not greater than 96" above the finished floor (confirm with your local codes)

Adapter Plate and Surface Mount Installation Reference

2975-9145 Box Mounting Reference

4905-9931 Adapter Plate

2975-9145 Box

4905-9931 Adapter Plate

TrueAlert ES Addressable A/V

4905-9961 Optional Wire Guard (shown here for reference only, can be used on other mounting options)

Surface Mount Side View Reference

(Surface mount conduit and box shown for reference)

Optional 4905-9961 Wire Guard

TrueAlert ES Addressable A/V

4" square box profile, 1-1/2" (38 mm) deep

Optional surface mount adapter skirt, 1-1/2" deep: 4905-9937, Red; 4905-9940, White (conduit knockouts are provided on all four sides)

IDNAC SLC Controller Compatibility Reference

Compatible Controllers	Data Sheet Reference	Controller Output	IDNAC SLC Output Voltage	Appliance Voltage Design Reference
4100ES with EPS+ or EPS Power Supply	S4100-0100	IDNAC SLC	29 VDC (regulated)	23 VDC (with 6 VDC drop)
4009 IDNAC Repeater	S4009-0004			
4007ES with IDNAC Notification	S4007-0002			
4010ES with ESS Enhanced System Supply	S4010-0011			

TrueAlert ES A/V Specifications

Electrical Ratings	Typical Operating Voltage Range	23 VDC to 31 VDC, Special Application (see below for 17 VDC rating)
	Supervisory Requirements	1 unit load (= 0.8 mA control panel current)
	IDNAC SLC Loading	Maximum of 127 addresses per SLC, 139 unit loads

Sound Output Ratings @ 10 ft (3 m) @ 23 VDC (with IDNAC SLCs)

Sound Type/Setting	Steady/High	Steady/Low	Coded/High	Coded/Low
Reverberant Chamber, UL 464 Test	90.1 dBA	83.6 dBA	85.7 dBA	80.1 dBA
Anechoic Chamber, ULC 525 Test	94.1 dBA	88.1 dBA	94.1 dBA	88.1 dBA

Sound Output Dispersion per ULC S541 Anechoic Testing

Horizontal	-3 dBA @ 50°; -6 dBA @ 63°; left and right from center
Vertical	-3 dBA @ 20° above, 48° below; -6 dBA @ 65° above, 60° below; ref. to center

Candela Setting	15 cd	30 cd	75 cd	110 cd	135 cd	185 cd
23 VDC RMS Current Ratings, with horn on continuous at high setting	59 mA	67 mA	107 mA	139 mA	166 mA	215 mA

General Specifications

Sound Characteristics	2400 to 3700 Hz sweep, modulated at 120 Hz rate		
Temperature Range	32° to 122° F (0° to 50° C)	Connections	Terminal blocks on mounting plate for 18 AWG to 12 AWG (0.82 mm^2 to 3.31 mm^2); two wires per terminal for in/out wiring
Humidity Range	10% to 93%, non-condensing @ 104° F (40° C)		
Installation Instructions	579-1031		

IDNAC SLC Wiring Specifications (refer to control panel installation instructions for more information)	UTP, unshielded twisted pair recommended
	Maximum wire length allowed with "T-Taps" for Class B wiring per SLC = 10,000 ft (3048 m)
	Maximum wire length to any appliance = 4000 ft (1219 m)

Note: UL 464 test coded values are typical of the output measured with a Temporal or a March Time pattern and with a sound level meter reading on a "fast" setting. Under the same test conditions, coded horn output "peak" sound level readings are typically 4 dBA higher. Anechoic horn output ratings are typically more representative of actual installed sound output.

TrueAlert ES A/V LEGACY Compatibility Reference

Compatible Controller	Data Sheet Reference	Controller Output	Available Strobe Intensity	Available Horn Control	Appliance Voltage Minimum
4100ES or 4100U with TrueAlert Power Supply	S4100-0031	TrueAlert Addressable SLC	15, 30, 75, and 110 cd	Continuous, Temporal Code 3, and March Time of 60 or 120 bpm	17 VDC
4009 TPS, Remote TrueAlert Power Supply	S4100-0037				
TrueAlert Addressable Controller (4009T)	S4009-0003				

Electrical Ratings Differences for Legacy Applications (refer to above specifications for other ratings)

	Voltage Range	17 VDC to 31 VDC, Special Application		
Sound Output Ratings @ 10 ft (3 m) @ 17 VDC	Sound Type/Setting	Steady/High	Steady/Low	Coded/High	Coded/Low
	Reverberant Chamber, UL 464 Test	87.8 dBA	81.6 dBA	83.4 dBA	77.0 dBA
	Anechoic Chamber, ULC 525 Test	91.7 dBA	85.4 dBA	91.7 dBA	85.4 dBA

Candela Setting	15 cd	30 cd	75 cd	110 cd
17 VDC RMS Current Ratings, with horn on continuous at high setting, use when connected to TrueAlert Addressable SLCs per above	74 mA	85 mA	140 mA	185 mA

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True*Alert* Addressable Notification Appliances

Multi-Candela Visible Only (V/O)
Appliances (Strobes), Ceiling Mount

Features

Individually addressed and controlled multi-candela V/O (visible only) notification appliances provide:

- Multi-candela xenon strobe with synchronized 1 Hz flash rate and with intensity *programmable from the control panel* or jumper selected as 15, 30, 75, or 110 cd

- Advanced addressable notification controlled by *IDNAC SLCs* providing *regulated 29 VDC* allowing strobes to operate with lower current even under battery backup

- Wiring supervision to each strobe allowing "T-tapped" connections for Class B circuits to simplify wiring (Class A circuits require in/out wiring)

- *TrueAlert Device Reports* at the control panel detailing appliance point ID, custom label, type, and candela setting (see sample on page 2)

- *Magnet test diagnostics* to assist checkout and testing of appliances and wiring

- Compatibility with ADA requirements

- Compatibility with legacy TrueAlert addressable systems for upgrade and replacement (see page 3)
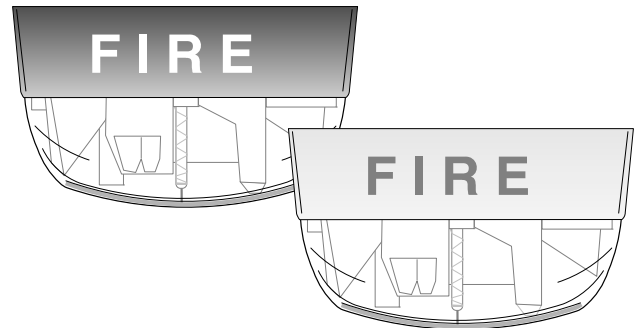
- UL listed to Standard 1971 and ULC-S526*

LED indicator and magnet test feature:

- Appliance LED can be selected to display each polling cycle to indicate appliance supervision

- In diagnostic mode, the magnet test pulses the LED to indicate appliance address *AND pulses to indicate the intensity selection*; a brief output of the strobe is also selectable to confirm operation

Mechanical design features:

- Rugged, high impact, flame retardant ceiling mount thermoplastic housings are available in red or white

- Rear of housing does not extend into box and easily mounts to standard electrical boxes

- Mounting options include red wire guards and adapters for surface mounted electrical boxes

Ceiling Mount Addressable V/Os

Description

Multi-Candela TrueAlert addressable strobes provide convenient installation to standard electrical boxes. The strobe is individually addressed and individually controlled with power, supervision, and control supplied from a Simplex fire alarm control panel providing **IDNAC** Signaling Line Circuits (SLCs). (See compatibility list on page 3.)

Strobe Application Reference

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

IDNAC SLC Operation Advantage

TrueAlert addressable appliances on IDNAC SLCs provide separate visible (and audible) notification using a single two-wire circuit that also *confirms connection to the individual notification appliance's electronic circuit*. This operation increases circuit supervision integrity by providing supervision that extends beyond the appliance wiring connections.

Reduced current allows efficient IDNAC SLC operation. With *IDNAC SLCs*, a *constant* 29 VDC source voltage is maintained, even during battery standby, allowing strobes to operate at higher voltage with lower current and ensuring a consistent current draw and voltage drop margin under both primary power and secondary battery standby. Efficiencies include wiring distances up to 2 to 3 times farther than with conventional notification, or support for more appliances per IDNAC SLC, or use of smaller gauge wiring, or combinations of these benefits, all providing installation and maintenance savings with high assurance that appliances that operate during normal system testing will operate during worst case alarm conditions.

IDNAC SLC Operation Advantage *(Cont'd)*

Reducing Installation and Testing Time. With separate controls on the same two-wire SLC, installation time and expense for both retrofit and new construction can be significantly reduced. When Class B wiring is used, *wiring can be "T" tapped*, allowing more savings in distance, wire, conduit (size and utilization), and overall installation efficiency. Use of the magnet test feature improves installation efficiency. TrueAlert device reports conveniently identify information about each connected appliance.

TrueAlert Addressable Wiring Isolator

Isolator Model 4905-9929 is available for remote mounting on TrueAlert addressable circuits to isolate short circuited wiring from functioning wiring. (Refer to data sheet S4905-0001 for additional information.)

TrueAlert Addressable Diagnostics

Test Features. Controllers can be selected to pulse each appliance's LED when it receives a supervision poll. When the controller is selected for diagnostic mode, the appliance magnet test feature provides a response at the individual appliance being tested.

Silent Appliance Magnet Test. In this test mode, in response to the magnet test, the appliance LED pulses sequentially to conveniently indicate the appliance's address.

Operational Appliance Testing. In this test mode, after the address is indicated by pulsing the appliance LED, the strobe will briefly flash to indicate proper operation.

TrueStart Instrument Two (TSIT). The 2nd generation of the Simplex TrueStart Test Instrument adds testing of IDNAC SLC wiring and TrueAlert (and TrueAlert ES) appliances to its ability to test IDCs, NACs, and IDNet communications *before connection to the control panel*. Please contact your local Simplex representative for additional information.

Product Selection

Multi-Candela Ceiling Mount Addressable Strobe

Model	Housing Color	"FIRE" Lettering	Dimensions	Description
➤ 4906-9202	Red	White	4 ¾" x 2 ⁵⁄₁₆" x 2 ⅝" D (121 mm x 75 mm x 67 mm)	Multi-Candela Addressable Strobe; intensity selectable as: 15, 30, 75, or 110 candela
4906-9204	White	Red		

V/O Adapters (see diagram on page 3)

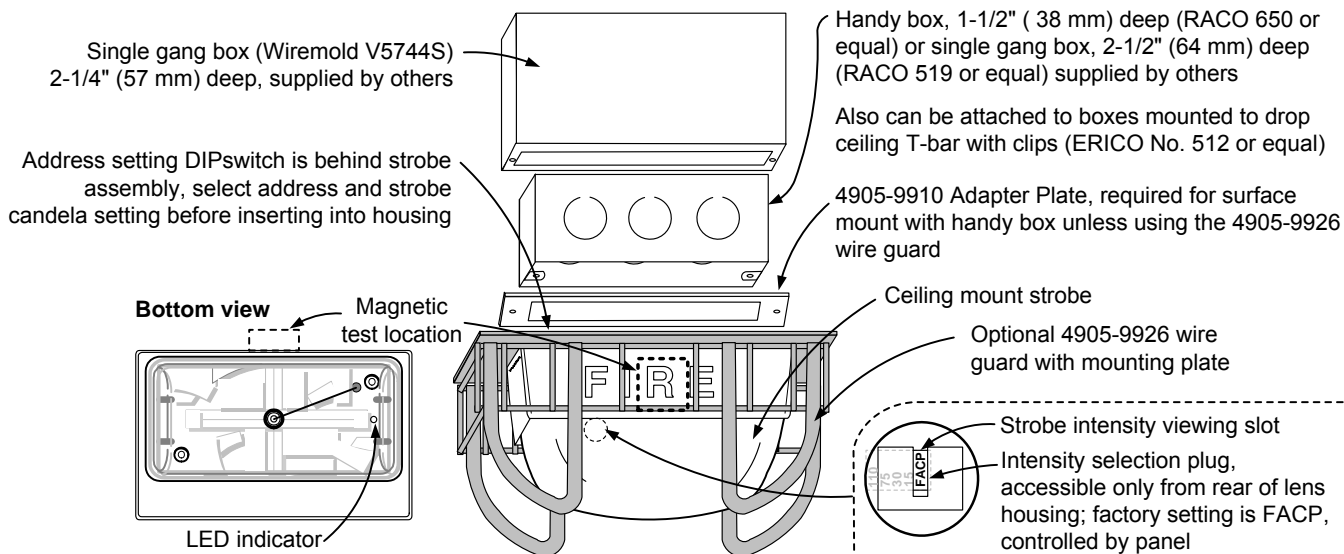| Model	Description	Dimensions
4905-9910	Ceiling Mount, Surface Mount Adapter Plate, zinc plated; **required for ceiling surface mount**	4 ⅞" x 3 ⅛" (124 mm x 79 mm)

Wire Guards (see diagram on page 3)

Model	Description	Dimensions
4905-9926*	Ceiling Mount Red wire guard with mounting plate, compatible with semi-flush or surface mounted boxes	6 ⅛" x 4 ⅜" x 2 ⅞" (156 mm x 111 mm x 73 mm)

* UL listed by Space Age Electronics Inc.

TrueAlert Device Reports Reference

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Service Port                                                                 Page 1
REPORT 5 : TrueAlert Device Report                         12:34:56am  TUE  27-Jan-15
                                                 DEVICE
POINT ID    CUSTOM LABEL                         TYPE       CANDELA
T14-1-1     Location Label . . . up to 40 characters    V/O          15
T14-1-2     Break Room 5                         A/V          110
T14-1-3     Boiler Room                          A/V           75
T14-1-4     Elec. Room 7                         A/V           30
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Ceiling Mount V/O and Guard Installation Reference

Single gang box (Wiremold V5744S) 2-1/4" (57 mm) deep, supplied by others

Handy box, 1-1/2" (38 mm) deep (RACO 650 or equal) or single gang box, 2-1/2" (64 mm) deep (RACO 519 or equal) supplied by others

Also can be attached to boxes mounted to drop ceiling T-bar with clips (ERICO No. 512 or equal)

Address setting DIPswitch is behind strobe assembly, select address and strobe candela setting before inserting into housing

4905-9910 Adapter Plate, required for surface mount with handy box unless using the 4905-9926 wire guard

Ceiling mount strobe

Optional 4905-9926 wire guard with mounting plate

Bottom view

Magnetic test location

LED indicator

Strobe intensity viewing slot

Intensity selection plug, accessible only from rear of lens housing; factory setting is FACP, controlled by panel

IDNAC SLC Controller Compatibility Reference

Compatible Controllers	Data Sheet Reference	Controller Output	IDNAC SLC Output Voltage	Appliance Voltage Design Reference
4100ES with EPS+ or EPS Power Supply	S4100-0100	IDNAC SLC	29 VDC (regulated)	23 VDC (with 6 VDC drop)
4009 IDNAC Repeater	S4009-0004			
4007ES with IDNAC Notification	S4007-0002			
4010ES with ESS Enhanced System Supply	S4010-0011			

Specifications

General Specifications (see page 2 for dimensions)

Environmental	32° to 122° F (0° to 50° C); 10% to 93%, non-condensing at 100° F (38° C)
Connections	Terminal blocks for 18 AWG to 12 AWG (0.82 mm^2 to 3.31 mm^2); two wires per terminal for in/out wiring
Installation Instructions	579-808

Strobe Specifications

Typical Operating Voltage Range	23 VDC to 31 VDC, Special Application (see below for 17 VDC rating)
Supervisory Requirements	1 unit load (= 0.8 mA control panel current)
Flash Rate and Synchronized SLC Loading	1 Hz; with up to 46 synchronized strobes maximum per NAC

Candela Setting	15 cd	30 cd	75 cd	110 cd
23 VDC RMS Current Ratings, for connection to IDNAC Addressable SLCs	60 mA	92 mA	180 mA	240 mA

TrueAlert Strobe LEGACY Compatibility Reference

Compatible Controller	Data Sheet Reference	Controller Output	Available Strobe Intensity	Appliance Voltage Minimum
4100ES or 4100U with TrueAlert Power Supply	S4100-0031	TrueAlert Addressable SLC	15, 30, 75, and 110 cd	17 VDC
4009 TPS, Remote TrueAlert Power Supply	S4100-0037			
TrueAlert Addressable Controller (4009T)	S4009-0003			

Electrical Ratings Difference for Retrofit Applications

Voltage Range	17 VDC to 31 VDC, Special Application			
Candela Setting	**15 cd**	**30 cd**	**75 cd**	**110 cd**
17 VDC RMS Current Ratings, use when connected to TrueAlert Addressable SLCs per above	76 mA	128 mA	242 mA	328 mA

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True*Alert* Addressable Notification Appliances

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

Multi-Candela Audible/Visible
(A/V) Appliances; Ceiling Mount

Features

Individually addressed and controlled multi-candela A/V (audible/visible) notification appliances provide:

- Multi-candela xenon strobe with synchronized 1 Hz flash rate and with intensity *programmable from the control panel* or jumper selected as 15, 30, 75, or 110 cd

- Advanced addressable notification controlled by *IDNAC SLCs* providing *regulated 29 VDC* allowing strobes to operate with lower current even under battery backup

- Wiring supervision to each strobe allowing "T-tapped" connections for Class B circuits to simplify wiring (Class A circuits require in/out wiring)

- *TrueAlert Device Reports* at the control panel detailing appliance point ID, custom label, type, and candela setting (see sample on page 2)

- *Magnet test diagnostics* to assist checkout and testing of appliances and wiring

- Compatibility with ADA requirements

- Compatibility with legacy TrueAlert addressable systems for upgrade and replacement (see page 4)

- Strobe operation listed to UL Standard 1971 and ULC Standard S526

- Horn operation listed to UL Standard 464 and ULC Standard S525

**LED indicator and magnet test feature:**

- Appliance LED can be selected to display each polling cycle to indicate appliance supervision

- In diagnostic mode, the magnet test pulses the LED to indicate appliance address *AND pulses to indicate the intensity selection*; a brief output of the strobe and the horn is also selectable to confirm operation

Mechanical design features:

- Rugged, high impact, flame retardant thermoplastic housings are available in red or white

- Rear of housing does not extend into box and easily mounts to standard electrical boxes

- Mounting options include red wire guards and adapters for surface mount electrical boxes

Audible notification appliance (horn):

- Low current electronic horn with harmonically rich output sound for either coded or steady operation

- Horns sound as Temporal or March Time pattern (60 or 120 BPM), or on continuously, controlled separately from visible appliances on the same two-wire circuit

- Output is "high" or "low" (~5 dBA difference); IDNAC SLC control selects output per device
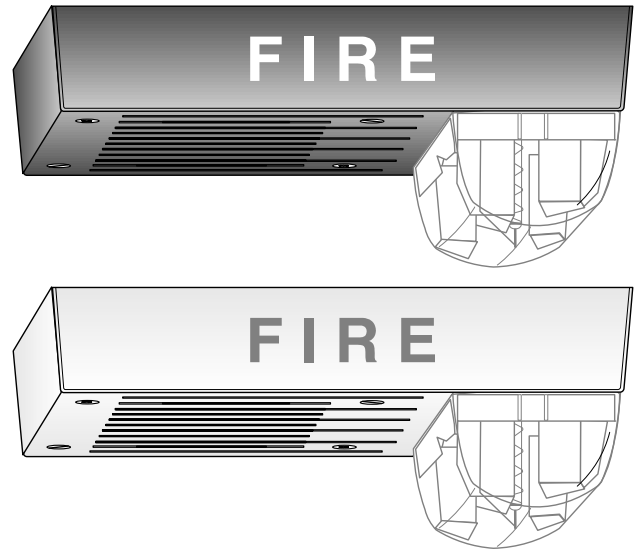
Ceiling Mount Addressable A/Vs

Description

Multi-Candela TrueAlert addressable A/Vs provide convenient installation to standard electrical boxes. Operation is individually addressed and individually controlled with power, supervision, and control supplied from a Simplex fire alarm control panel providing **IDNAC** Signaling Line Circuits (SLCs). (See compatibility list on page 3.)

Strobe Application Reference

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

IDNAC SLC Operation Advantage

TrueAlert A/V Addressable Appliances on IDNAC SLCs provide audible and visible notification using a single two-wire circuit that also *confirms connection to the individual notification appliance's electronic circuit*. This operation increases circuit supervision integrity by providing supervision that extends beyond the appliance wiring connections.

* See page 2 for wire guard listings. This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7125-0026:239 for allowable values and/or conditions concerning material presented in this document. Accepted for use – City of New York Department of Buildings – MEA35-93E. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Safety Products Westminster.

IDNAC SLC Operation Advantage *(Cont'd)*

Reduced current allows efficient IDNAC SLC operation. With *IDNAC SLCs*, a *constant* 29 VDC source voltage is maintained, even during battery standby, allowing strobes to operate at higher voltage with lower current and ensuring a consistent current draw and voltage drop margin under both primary power and secondary battery standby. Efficiencies include wiring distances up to 2 to 3 times farther than with conventional notification, or support for more appliances per IDNAC SLC, or use of smaller gauge wiring, or combinations of these benefits, all providing installation and maintenance savings with high assurance that appliances that operate during normal system testing will operate during worst case alarm conditions.

Reducing Installation and Testing Time. With separate controls on the same two-wire SLC, installation time and expense for both retrofit and new construction can be significantly reduced. When Class B wiring is used, *wiring can be "T" tapped*, allowing more savings in distance, wire, conduit (size and utilization), and overall installation efficiency. Use of the magnet test feature improves installation efficiency. TrueAlert device reports conveniently identify information about each connected appliance.

TrueAlert Addressable Wiring Isolator

Isolator Model 4905-9929 is available for remote mounting on TrueAlert addressable circuits to isolate short circuited wiring from functioning wiring. (Refer to data sheet S4905-0001 for additional information.)

TrueAlert Addressable Diagnostics

Test Features. Controllers can be selected to pulse each appliance's LED when it receives a supervision poll. When the controller is selected for diagnostic mode, the appliance magnet test feature provides a response at the individual appliance being tested.

Silent Appliance Magnet Test. In this test mode, in response to the magnet test, the appliance LED pulses sequentially to conveniently indicate the appliance's address.

Operational Appliance Testing. In this test mode, after the address is indicated by pulsing the appliance LED, the strobe will briefly flash and the horn will briefly sound to indicate proper operation.

TrueStart Instrument Two (TSIT). The 2nd generation of the Simplex TrueStart Test Instrument adds testing of IDNAC SLC wiring and TrueAlert (and TrueAlert ES) appliances to its ability to test IDCs, NACs, and IDNet communications *before connection to the control panel*. Please contact your local Simplex representative for additional information.

Product Selection

Multi-Candela Ceiling Mount Addressable A/Vs

Model	Housing Color	"FIRE" Lettering	Description	Dimensions
➤ 4906-9228	Red	White	Addressable Horn with Multi-Candela Strobe; intensity selectable as: 15, 30, 75, or 110 candela	4 ¾ L" x 6 ⅞" W x 2 ⅝" D (121 mm x 175 mm x 67 mm)
4906-9230	White	Red		

Wire Guards and Ceiling Mount A/V Adapter

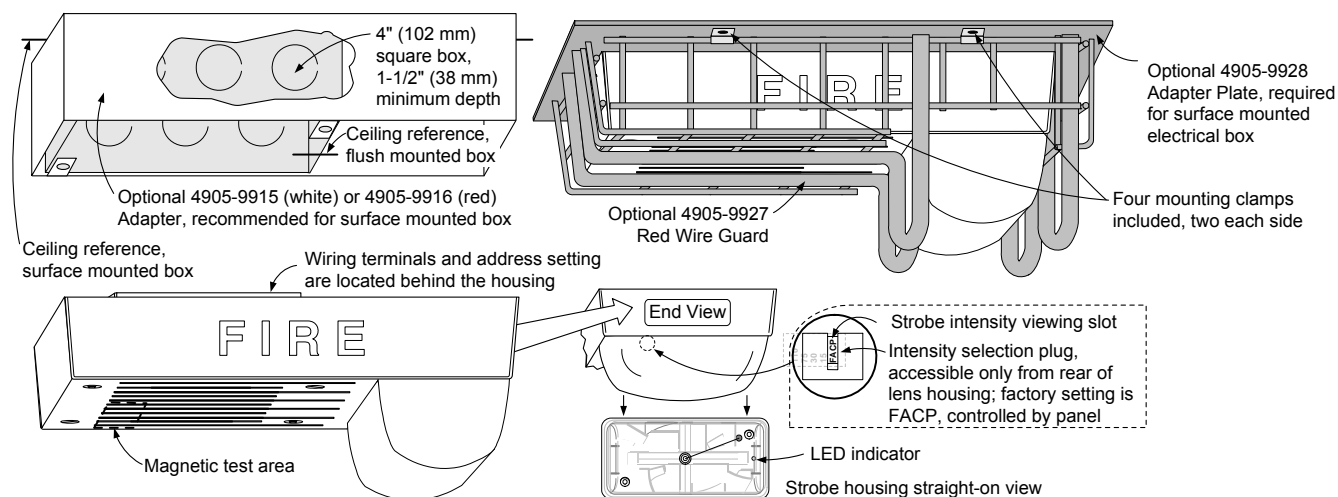| Model	Description	Dimensions
4905-9927*	Red Wire Guard for mounting to flush mounted electrical box	8 ½" x 6 ⅛" x 3" (216 mm x 156 mm x 76 mm)
4905-9928*	Red Adapter Plate, required for surface mount guard	9" x 7" (229 mm x 178 mm)
4905-9915	White	Surface Mount Adapter Box Extension, use to cover 1-1/2" deep surface mounted boxes	4 ¾" x 6 ⅞" x 1 ½" deep, (121 mm x 175 mm x 38 mm)
4905-9916	Red		

* UL listed by Space Age Electronics Inc.

TrueAlert Device Reports Reference

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Service Port                                                              Page 1
REPORT 5 : TrueAlert Device Report                      12:34:56am  TUE  27-Jan-15
                                                  DEVICE
POINT ID     CUSTOM LABEL                         TYPE      CANDELA
T14-1-1      Location Label . . . up to 40 characters   V/O       15
T14-1-2      Break Room 5                         A/V       110
T14-1-3      Boiler Room                          A/V       75
T14-1-4      Elec. Room 7                         A/V       30
```

Ceiling Mount A/V and Guard Installation Reference

4" (102 mm) square box, 1-1/2" (38 mm) minimum depth

Ceiling reference, flush mounted box

Optional 4905-9915 (white) or 4905-9916 (red) Adapter, recommended for surface mounted box

Ceiling reference, surface mounted box

Optional 4905-9928 Adapter Plate, required for surface mounted electrical box

Four mounting clamps included, two each side

Optional 4905-9927 Red Wire Guard

Wiring terminals and address setting are located behind the housing

End View

Magnetic test area

Strobe intensity viewing slot

Intensity selection plug, accessible only from rear of lens housing; factory setting is FACP, controlled by panel

LED indicator

Strobe housing straight-on view

IDNAC SLC Controller Compatibility Reference

Compatible Controllers	Data Sheet Reference	Controller Output	IDNAC SLC Output Voltage	Appliance Voltage Design Reference
4100ES with EPS+ or EPS Power Supply	S4100-0100	IDNAC SLC	29 VDC (regulated)	23 VDC (with 6 VDC drop)
4009 IDNAC Repeater	S4009-0004			
4007ES with IDNAC Notification	S4007-0002			
4010ES with ESS Enhanced System Supply	S4010-0011			

Specifications

General Specifications (see page 2 for dimensions)

Environmental	32° to 122° F (0° to 50° C); 10% to 93%, non-condensing at 100° F (38° C)
Connections	Terminal blocks for 18 AWG to 12 AWG (0.82 mm^2 to 3.31 mm^2); two wires per terminal for in/out wiring
Reference	Installation Instructions 579-808

Electrical Specifications

Typical Operating Voltage Range	23 VDC to 31 VDC, Special Application (see page 4 for 17 VDC rating)							
Supervisory Requirements	1 unit load (= 0.8 mA control panel current)							
Flash Rate and Synchronized SLC Loading	1 Hz; with up to 46 synchronized strobes maximum per NAC							
Candela Setting	**15 cd**		**30 cd**		**75 cd**		**110 cd**	
Horn Output Selection	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**
23 VDC RMS Current Ratings, for connection to IDNAC Addressable SLCs, horn steady on	75 mA	70 m A	110 mA	105 mA	198 mA	193 mA	250 mA	245 mA
Horn Output Characteristics	2400 to 3700 Hz sweep, modulated at 120 Hz rate							

	Sound Type (see Note)	**Steady**		**Coded**	
Horn Output Ratings @ 10 ft (3 m)	Setting	**High**	**Low**	**High**	**Low**
	Reverberant Chamber, UL 464 Test	84.6 dBA	79.1 dBA	80.6 dBA	75.5 dBA
	Anechoic Chamber	90 dBA	84 dBA	86 dBA	80 dBA

Note: Coded horn values are typical of the output measured with a Temporal or March Time pattern and with a sound level meter reading on a "fast" setting. Under the same test conditions, coded horn output "peak" sound level readings are typically 4 dBA higher.

TrueAlert Strobe LEGACY Compatibility Reference

Compatible Controller	Data Sheet Reference	Controller Output	Available Strobe Intensity	Appliance Voltage Minimum
4100ES or 4100U with TrueAlert Power Supply	S4100-0031	TrueAlert Addressable SLC	15, 30, 75, and 110 cd	17 VDC
4009 TPS, Remote TrueAlert Power Supply	S4100-0037			
TrueAlert Addressable Controller (4009T)	S4009-0003			

Electrical Ratings Difference for Retrofit Applications

Voltage Range	17 VDC to 31 VDC, Special Application							
Candela Setting	**15 cd**		**30 cd**		**75 cd**		**110 cd**	
Horn Output Selection	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**
17 VDC RMS Current Ratings, use when connected to TrueAlert Addressable SLCs per above	82 mA	77 mA	135 A	130 mA	249 mA	244 mA	335 mA	330 mA

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True*Alert* ⑤ Addressable Notification Appliances

UL, ULC, CSFM Listed;
FM Approved*

Visible Notification Appliances, Wall Mount
Multi-Candela Strobes, Model Series 49VO
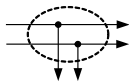
Features

Individually addressed and controlled multi-candela TrueAlert ES V/O (visible only) notification appliances provide:

- Multi-candela xenon strobe with synchronized 1 Hz flash rate and with intensity *programmable from the control panel* or jumper selected as 15, 30, 75, 110, 135, or 185 cd
- Advanced addressable notification controlled by *IDNAC SLCs* providing *regulated 29 VDC* allowing strobes to operate with lower current even under battery backup
- Wiring supervision to each appliance allowing "T-tapped" connections for Class B circuits to simplify wiring (Class A circuits require in/out wiring)
- *Self-Test Mode* allows an on-board sensor to detect the strobe output and then report its status to the control panel
- *TrueAlert Device Reports* at the control panel detailing appliance point ID, custom label, type, and candela setting (see sample on page 3)
- *Magnet Test diagnostics* to assist checkout and testing of appliances and wiring and *Electrical test point access* without removing cover
- Compatibility with ADA requirements; (refer to important installation information on page 3)
- Compatibility with legacy TrueAlert addressable systems for upgrade and replacement (see page 4)
- Listed to UL Standard 1971 and ULC Standard S526

LED Indicator and Magnet Test feature:

- Appliance LED can be selected to display each polling cycle to indicate appliance supervision
- When the controller is in diagnostic mode, the Magnet Test pulses the LED to indicate appliance address and can be set to also briefly flash the strobe

Mechanical design features include:

- Rugged, high impact, flame retardant thermoplastic housing in red with white letters or white with red letters, with clear lens, available with FIRE, ALERT, FEU, FEU/FIRE, or blank lettering
- Separate covers are available to change appliance type on-site or for replacement; covers can be easily removed without disturbing the connected housing and avoiding trouble conditions
- A separate mounting plate allows wiring to be completed before appliance is mounted; use with single gang, double gang, or 4-inch square box, flush or surface mount
- In/out wiring terminals for 18 AWG to 12 AWG
- Optional mounting adapters are available to cover surface mounted electrical boxes and to adapt to Simplex 2975-9145 boxes
- Optional red wire guards (see page 2 for details)

TrueAlert ES Addressable Strobes are Available in Red
with White Lettering and White with Red Lettering

Description

TrueAlert ES addressable strobes are individually addressed visible notification appliances that receive power, supervision, and control signals from a Simplex fire alarm control panel providing **IDNAC** Signaling Line Circuits (SLCs). (See compatibility list on page 4.)

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).

TrueAlert ES Operation Advantage

TrueAlert ES addressable appliances on IDNAC SLCs provide separate visible (and audible) notification using a single two-wire circuit that also *confirms connection to the individual notification appliance's electronic circuit.* This operation increases circuit supervision integrity by providing supervision that extends beyond the appliance wiring connections.

Reduced current allows efficient IDNAC SLC operation. With *IDNAC SLCs*, a *constant* 29 VDC source voltage is maintained, even during battery standby, allowing strobes to operate at higher voltage with lower current and ensuring a consistent current draw and voltage drop margin under both primary power and secondary battery standby. Efficiencies include wiring distances up to 2 to 3 times farther than with conventional notification, or support for more appliances per IDNAC SLC, or use of smaller gauge wiring, or combinations of these benefits, all providing installation and maintenance savings with high assurance that appliances that operate during normal system testing will operate during worst case alarm conditions.

TrueAlert ES Operation Advantage *(Cont'd)*

Reducing Installation and Testing Time. With separate controls on the same two-wire SLC, installation time and expense for both retrofit and new construction can be significantly reduced. When Class B wiring is used, *wiring can be "T" tapped*, allowing more savings in distance, wire, conduit (size and utilization), and overall installation efficiency. Use of Self-Test and Magnet Test features improves installation efficiency. TrueAlert device reports conveniently identify information about each connected appliance.

TrueAlert ES Diagnostics

Test Features. When IDNAC SLCs are in diagnostic mode, *Self-Test* and *Magnet Test* features provide individual appliance testing. With the *Self-Test* feature, *appliance operation can be confirmed without leaving the control panel*. Additionally, each appliance's LED can be selected to pulse when it receives a supervision poll during normal operation.

Self-Test **Details.** Selecting Self-Test Mode from the control panel allows on-board sensors, depending on the device type, to detect its own strobe and/or horn output and then report their status to the control panel.

TrueAlert ES Diagnostics *(Continued)*

Self-Test **Details** *(Continued).* Operation is by selected VNAC appliance groups and is either automatic (all briefly simultaneously activated) or individually activated by applying a magnet. (Refer to control panel data sheet for more Self-Test information, see list on page 4.)

Silent Appliance Magnet Test. In this test mode, in response to application of a magnet, the appliance LED pulses sequentially to conveniently indicate the appliance's address.

Operational Appliance Magnet Test. In this test mode, after the address is indicated by pulsing the appliance LED, the strobe will briefly flash to indicate proper operation.

TrueStart Instrument Two (TSIT). The 2nd generation of the Simplex TrueStart Test Instrument adds testing of IDNAC SLC wiring and TrueAlert ES appliances to its ability to test IDCs, NACs, and IDNet communications *before connection to the control panel*. Please contact your local Simplex representative for additional information.
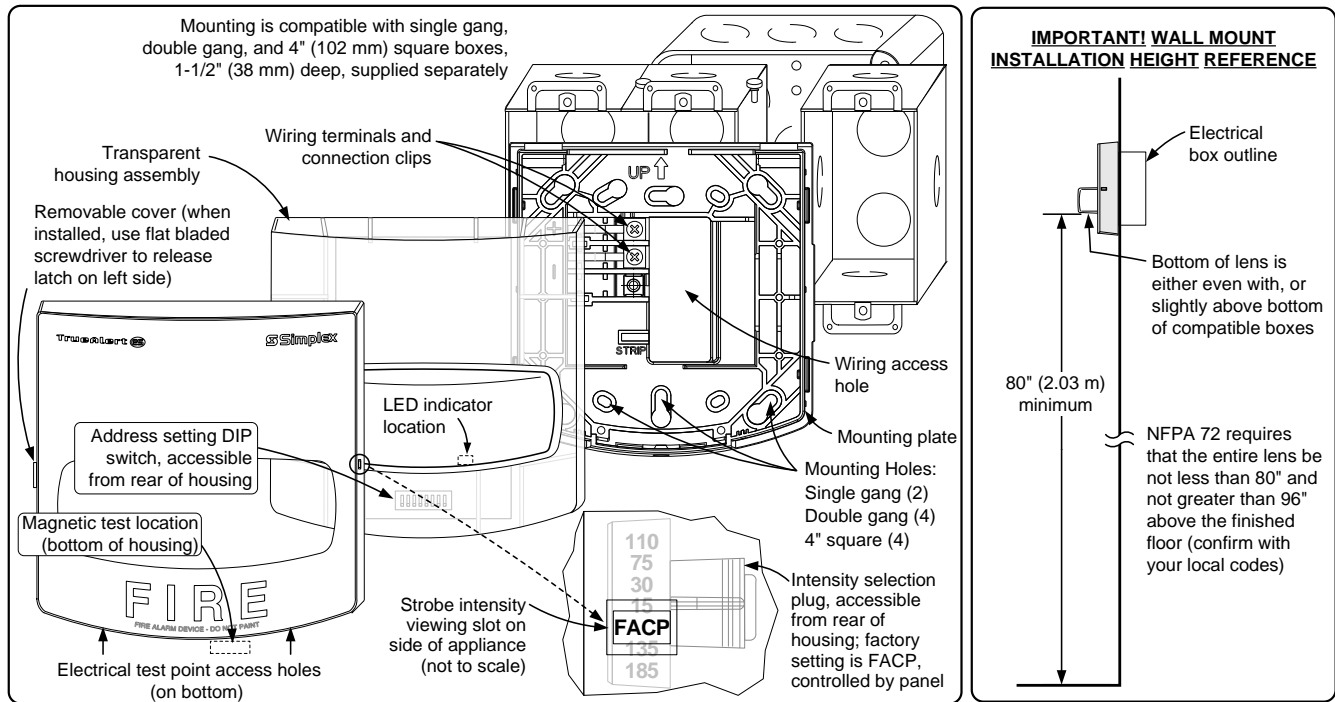
TrueAlert Addressable Wiring Isolator

Isolator Model 4905-9929 is available for remote mounting on TrueAlert addressable circuits to isolate short circuited wiring from functioning wiring. (See data sheet S4905-0001.)
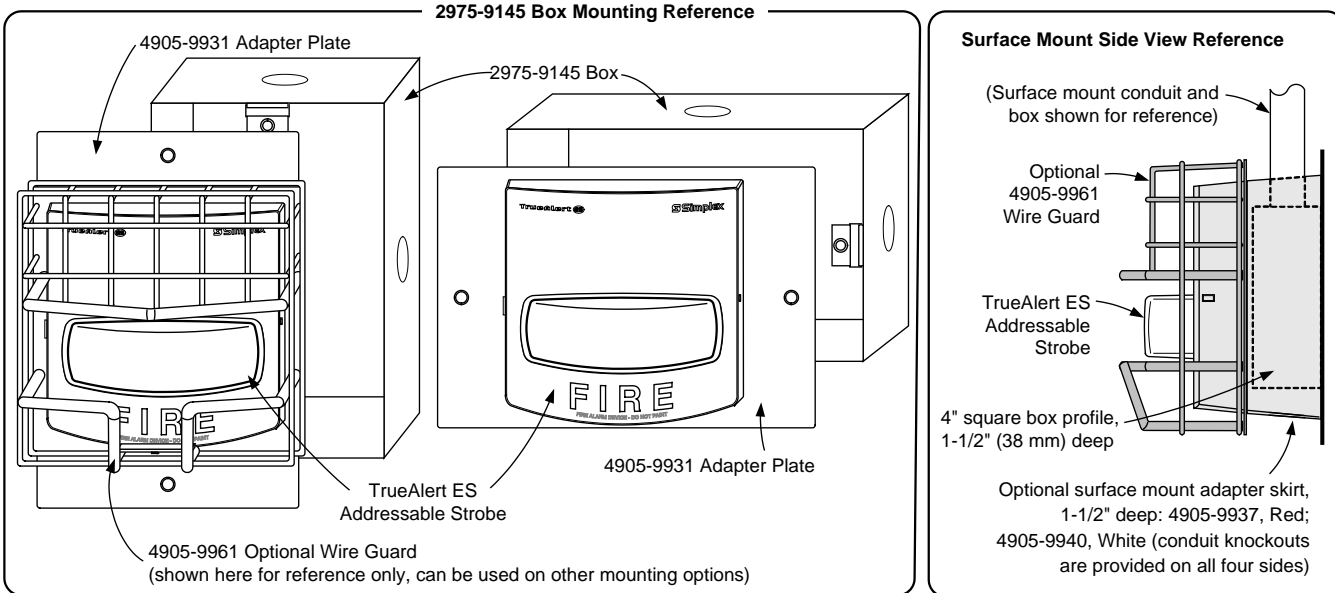
Product Selection

TrueAlert ES Wall Mount Addressable Strobes

TrueAlert ES addressable VO (strobe) appliances include cover and matching mounting plate except as noted;
Dimensions with Cover = 5 ⅛" H x 5" W x 2 ⅝" D (130 mm x 127 mm x 67 mm)

Model*	Cover Color	Wording	Lens Color	Model*	Cover Color	Wording	Lens Color
49VO-WRF(-BA)	Red	FIRE	Clear	49VO-WRQ	Red	FEU	Clear
49VO-WWF(-BA)	White	FIRE	Clear	49VO-WWQ	White	FEU	Clear
49VO-WRA(-BA)	Red	ALERT	Clear	49VO-WRS(-BA)	Red	Blank	Clear
49VO-WWA(-BA)	White	ALERT	Clear	49VO-WWS(-BA)	White	Blank	Clear
49VO-APPLW	Select cover and mounting plate separately						

Separate Mounting Plate

Model	Color	Note
49MP-AVVOWR	Red	Mounting Plate **is required** when ordering model 49VO-APPLW
49MP-AVVOWW	White	

Separate Covers (Required when ordering model 49VO-APPLW)

Model*	Color	Wording	Model*	Color	Wording
49VOC-WRFIRE	Red	FIRE	49VOC-WRFEU	Red	FEU
49VOC-WWFIRE	White	FIRE	49VOC-WWFEU	White	FEU
49VOC-WRALT	Red	ALERT	49VOC-WRBLNG	Red	FEU/FIRE
49VOC-WWALT	White	ALERT	49VOC-WWBLNG	White	FEU/FIRE
49VOC-WRS	Red	Blank	49VOC-WWS	White	Blank

* Note: (-BA) indicates model is available either with or without the -BA suffix. Model numbers ending in -BA, APPLW models, and separate mounting plates are assembled in the USA.

Mounting Adapters and Wire Guard

Model	Color	Description	Dimensions
4905-9937	Red	Surface Mount Adapter Skirt	5 ⅜" H x 5 ¼" W x 1 ⅝" D (136 mm x 133 mm x 41 mm) Total depth with strobe = 4 ⅜" (111 mm)
4905-9940	White		
4905-9931		Red Adapter Plate for mounting to Simplex 2975-9145 Box (typically for retrofit, mount vertical or horizontal)	8 5⁄16" x 5 ¾" x 0.060" Thick (211 mm x 146 mm x 1.5 mm)
2975-9145		Red Mounting Box, requires 4905-9931 Adapter Plate	7 ⅞" x 5 ⅛" x 2 ¾" D (200 mm x 130 mm x 70 mm)
4905-9961		Red wire guard with mounting plate, compatible with semi-flush or surface mount boxes	6 1⁄16" H x 6 1⁄16" W x 3 ⅛" D (154 mm x 154 mm x 79 mm)

TrueAlert Device Reports Reference

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Service Port                                                        Page 1
REPORT 5 : TrueAlert Device Report               12:34:56am  TUE  27-Jan-15
                                                DEVICE
POINT ID     CUSTOM LABEL                        TYPE     CANDELA
T14-1-1      Location Label . . . up to 40 characters    V/O        15
T14-1-2      Break Room 5                        A/V       110
T14-1-3      Boiler Room                         A/V        75
T14-1-4      Elec. Room 7                        A/V       135
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Installation Reference

Adapter Plate and Surface Mount Installation Reference

S49VO-0001-5 6/2015

IDNAC SLC Controller Compatibility Reference

Compatible Controllers	Data Sheet Reference	Controller Output	IDNAC SLC Output Voltage	Appliance Voltage Design Reference
4100ES with EPS+ or EPS Power Supply	S4100-0100	IDNAC SLC	29 VDC (regulated)	23 VDC (with 6 VDC drop)
4009 IDNAC Repeater	S4009-0004			
4007ES with IDNAC Notification	S4007-0002			
4010ES with ESS Enhanced System Supply	S4010-0011			

TrueAlert ES Strobe Specifications

Electrical Ratings

Typical Operating Voltage Range	23 VDC to 31 VDC, Special Application (see below for 17 VDC rating)
Supervisory Requirements	1 unit load (= 0.8 mA control panel current)
IDNAC SLC Loading	Maximum of 127 addresses per SLC, 139 unit loads

Candela Setting	15 cd	30 cd	75 cd	110 cd	135 cd	185 cd
23 VDC RMS Current Ratings, for typical design of IDNAC Addressable SLCs (6 VDC drop)	47 mA	57 mA	100 mA	132 mA	160 mA	208 mA

General Specifications

Temperature Range	32° to 122° F (0° to 50° C)
Humidity Range	10% to 93%, non-condensing @ 104° F (40° C)
IDNAC SLC Wiring Specifications (refer to control panel installation instructions for more information)	UTP, unshielded twisted pair recommended
	Maximum wire length allowed with "T-Taps" for Class B wiring per SLC = 10,000 ft (3048 m)
	Maximum wire length to any appliance = 4000 ft (1219 m)
Connections	Terminal blocks on mounting plate for 18 AWG to 12 AWG (0.82 mm^2 to 3.31 mm^2); two wires per terminal for in/out wiring
Installation Instructions	579-1031

Notes: Refer to compatibility table above for fire alarm control panel and power supply operation type.

TrueAlert ES Strobe LEGACY Compatibility Reference

Compatible Controller	Data Sheet Reference	Controller Output	Available Strobe Intensity	Appliance Voltage Minimum
4100ES or 4100U with TrueAlert Power Supply	S4100-0031	TrueAlert Addressable SLC	15, 30, 75, and 110 cd	17 VDC
4009 TPS, Remote TrueAlert Power Supply	S4100-0037			
TrueAlert Addressable Controller (4009T)	S4009-0003			

Electrical Ratings Reference for Retrofit Applications

Voltage Range	17 VDC to 31 VDC, Special Application			
Candela Setting	15 cd	30 cd	75 cd	110 cd
17 VDC RMS Current Ratings, use when connected to TrueAlert Addressable SLCs per above	62 mA	75 mA	133 mA	178 mA