# ⑤ Simplex

# True*Alert*® Addressable Notification Appliances

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

Multi-Candela Audible/Visible (A/V) Appliances
with TrueNAC™ Voltage Drop Diagnostics

## Features

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

- High intensity multi-candela xenon strobe with intensity *programmable from a Simplex® 4100U fire alarm control panel with TrueAlert Addressable Power Supply (TPS)* or jumper selected as 15, 30, 75, or 110 cd
- Synchronized 1 Hz strobe flash rate
- Wiring supervision to each appliance allowing "T-tapped" connections for Class B circuits to simplify wiring (Class A circuits require in/out wiring)
- Backwards compatibility with fixed candela TrueAlert addressable strobes on the same Signaling Line Circuit (SLC) allowing convenient expansion and replacement
- Compatibility with ADA requirements; (refer to important installation information on page 4)
- Strobe operation is UL listed to Standard 1971; Horn operation is UL listed to Standard 464

**Compatible TrueAlert Addressable Host Controls:**

- *4100U TrueAlert Addressable Power Supply (TPS)* mounted in the control panel or in a remote cabinet
- *TrueAlert Addressable Controller (4009T)* interface panel

**With multi-candela appliances and 4100U fire alarm control panels with TPS, TrueNAC™ voltage drop diagnostics provide:**

- *Individual appliance voltage drop analysis* using appliance intensity selection, measured appliance voltage, and SLC output voltage and current\*\*
- *Device Reports* that detail type, candela rating, and location of addressable appliances on the SLC *(also available with TrueAlert Addressable Controller connected to 4100U using RUI communications)*
- *Status Reports* that list the diagnostic results per appliance on the SLC (see details on page 2)
- Requires 4100U Software Revision 12.04 or higher and compatible TPS version

**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 for flush or surface, wall or ceiling mount
- Rear of housing does not extend into box and easily mounts to standard electrical boxes
- Access to wall mount in/out wiring terminals (18 AWG to 12 AWG) from front of housing assists installation, inspection, and testing
- Mounting options include electrical box adapters, separate covers to convert color, and red wire guards
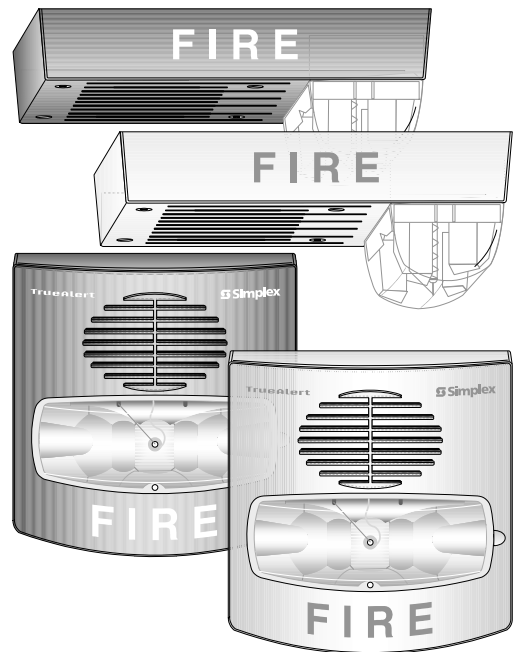


Wall and Ceiling Mount Addressable A/Vs

## Features *(Continued)*

**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); 4100U TrueAlert Addressable Power Supply selects per device, TrueAlert Addressable Controller selects per SLC

## Description

**TrueAlert Addressable Multi-Candela A/Vs** are individually addressed and individually controlled with power, supervision, and control supplied from a TrueAlert Addressable SLC.

**4100U Additional Features.** When controlled from a Simplex 4100U control panel with TPS, additional features are available such as software selection of strobe intensity, detailed reports of actual appliance intensity selection (see sample reports on page 2), TrueNAC voltage drop diagnostics, and additional setup and test diagnostics (further detailed on page 2).

\*  See page 3 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. It is subject to re-examination, revision, and possible cancellation. Accepted for use – City of New York Department of Buildings – MEA35-93E. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Safety Products Westminster.

\*\* TrueAlert addressable notification is protected under U.S. Patent Nos. 6,313,744; 6,426,697; 6,693,532; 7,006,003; and 7,091,847. TrueNAC diagnostics are protected under U.S. patent No. 7,333,010.

## Strobe Intensity Selection

**Selectable at Appliance or Remotely Selected.** During installation, a plug at the back of the housing (visible after installation) is inserted to select strobe output as 15, 30, 75, or 110 cd; *or FACP. Selecting FACP allows a 4100U control panel with TPS to program the output intensity.*

**FACP Selection Advantages.** When intensity is selected in software from a 4100U fire alarm panel, it can be easily changed if renovations or other usage conditions are revised and intensity selection errors at installation are effectively eliminated.

## 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 Addressable Advantage

**TrueAlert Addressable Operation** provides separate audible and visible appliance control functions 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 beyond the appliance wiring connections.

**Opportunities for Reducing Installation and Testing Time.** Separate controls carried on the same two-wire SLC can significantly reduce installation time and expense for both retrofit and new construction. When Class B (Style 4) wiring is used, *wiring can be T- tapped*, allowing even more savings in distance, wire, junction boxes, and overall installation efficiency. The extensive diagnostics features available provide improved installation efficiency.

## TrueAlert Addressable Diagnostics

**Appliance Type and Intensity Check.** The TrueAlert Addressable Host Control is programmed with address, location, device type, and intensity selection. An incorrect appliance replacement or substitution will produce a location specific trouble allowing easy correction.

**LED Communications Indicator.** The host control can be selected to pulse each appliance's LED when it receives a supervision poll. This feature can be left on continuously, or activated for system testing.

**Silent Mode Appliance Magnet Testing.** In this test mode, the local magnet test activates the appliance LED to pulse sequentially to indicate the appliance's address *and* to indicate the appliance's strobe intensity selection.

**Operational (non-silent mode) Appliance Magnet Test.** When this test mode is selected at the host control, after the address and intensity selection is indicated, the strobe will flash once and the horn will briefly sound.

## 4100U TrueNAC Diagnostic Operation

**Individual Appliance Performance Analysis.** With appliances on the SLC activated, each measures its terminal voltage and reports it to the 4100U TPS where the address and appliance type is stored in memory. The 4100U TPS measures its output voltage and current and then iteratively analyzes all of this information against known appliance power requirements to determine equivalent impedance to each appliance. TrueNAC diagnostics then analyze each appliance's wiring connection for performance under worst case conditions and identifies problems by appliance address. **TrueAlert Device Reports** detail type, candela rating, and location per appliance (first sample below). Fixed candela appliances will also report, but are not compatible with TrueNAC voltage drop diagnostics. **TrueNAC Status Reports** detail the diagnostic results as shown in the second report example below.

## TrueAlert Device and Device Status Reports

```
Service Port                                                                    Page 1
REPORT 5 : TrueAlert Device Report                              12:34:56am  WED  2-Jan-08
                                                        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
```

```
Service Port                                                                    Page 1
REPORT 6 : TrueNAC Status Report                                12:34:56am  WED  2-Jan-08

TPS AT ADDRESS 3
SLC    1

POINT ID       CUSTOM LABEL                             TEST RESULT
T14-1-1        Location Label . . . up to 40 characters  PASSED
T14-1-3        West Hall South End                       PASSED
T14-1-5        Classroom 2                               PASSED
T14-1-6        Classroom 3                               FAILED           -0.6

NOMINAL CURRENT (A) :                          1.34
WORST CASE CURRENT (A) :                       1.97
WORST CASE VOLTAGE ABOVE/BELOW THRESHOLD (V) : -0.6

SLC HAS NOT PASSED UNLESS ALL DEVICES ARE MARKED AS PASSED
```

## Addressable Product Reference

| Product | Data Sheet | Product | Data Sheet | Product | Data Sheet |
|---|---|---|---|---|---|
| V/O (strobe) | S4906-0004 | TrueAlert Addressable Horn | S4901-0012 | 4100U Fire Alarm Panels | S4100-0031 |
| S/V (speaker/strobe) | S4906-0006 | Amber Lens Strobes (Mass Notification) | S4906-0007 | | |
| TrueAlert Isolator | S4905-0001 | TrueAlert Addressable Controller (4009T) | S4009-0003 | | |

## Product Selection

### Multi-Candela Addressable A/Vs

| Model | Mounting | Housing Color | "FIRE" Lettering | Dimensions | Description |
|---|---|---|---|---|---|
| 4906-9227 | Wall | Red | White | 5-1/8" H x 5" W x 2-3/4" D (130 mm x 127 mm x 70 mm) | Addressable Horn with Multi-Candela Strobe; intensity selectable as: 15, 30, 75, or 110 candela |
| 4906-9229 | | White | Red | | |
| 4906-9228 | Ceiling | Red | White | 4-3/4" L" x 6-7/8" W x 2-5/8" D (121 mm x 175 mm x 67 mm) | |
| 4906-9230 | | White | Red | | |

### Wall Mount A/V Adapters

| Model | Description | | Dimensions |
|---|---|---|---|
| 4905-9937 | Red | Surface Mount Adapter Skirt; use to cover 1-1/2" (38 mm) deep surface mounted boxes; depth with A/V = 4-3/8" (111 mm) | 5-3/8" H x 5-1/4" W x 1-5/8" D (136 mm x 133 mm x 41 mm) |
| 4905-9940 | White | | |
| 4905-9931 | Red Adapter Plate for mounting to Simplex 2975-9145 box (typically for retrofit, may be mounted vertical or horizontal) | | 8-5/16" x 5-3/4" x 0.060" Thick (211 mm x 146 mm x 1.5 mm) |
| 2975-9145 | Red Mounting Box, requires Adapter Plate 4905-9931 | | 7-7/8" x 5-1/8" x 2-3/4" D (200 mm x 130 mm x 70 mm) |

### Replacement Covers for Wall Mount A/Vs

| Model | Housing | "FIRE" | Model | Housing | "FIRE" | Dimensions |
|---|---|---|---|---|---|---|
| 4905-9994 | Red | White | 4905-9995 | White | Red | 5-1/8" H x 5" W x 1-1/2" D (130 mm x 127 mm x 38 mm) |

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

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

\* UL listed by Space Age Electronics Inc.

## Addressable A/V Specifications

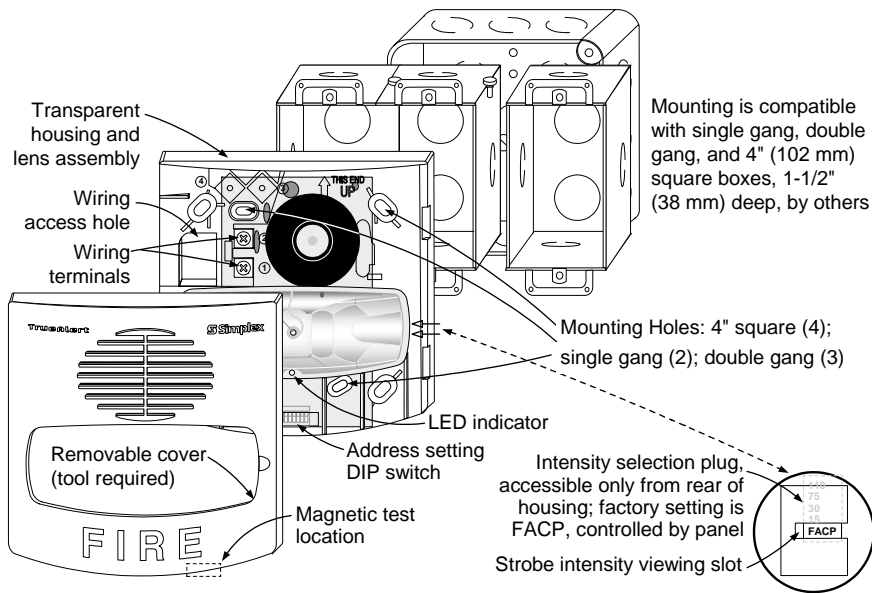### Wall Mount or Ceiling Mount, Common Specifications

| Rated Voltage Range | UL Listed Rating | Special Application, 17 to 31 VRMS, see Note 1 below |
|---|---|---|
| | ULC Listed Rating | 21.25 to 28.2 VRMS |
| Supervisory Requirements | | 1 unit load |
| Strobe Flash Rate and Synchronized SLC Loading | | 1 Hz; with up to 46 synchronized addressable strobes maximum per SLC |
| Environmental; Temperature and Humidity | | 32° to 122° F (0° to 50° C); 10% to 93%, non-condensing at 100° F (38° C) |
| Terminal Block Connections | | 18 AWG to 12 AWG (0.82 mm$^2$ to 3.31 mm$^2$); 2 wires per terminal for in/out wiring |
| Horn Output Characteristics | | 2400 to 3700 Hz sweep, modulated at 120 Hz rate |

| Horn Output Ratings; dBA @ 10 ft (3 m) | Voltage | 17 VRMS | | | | 24 VRMS | | | | 31 VRMS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sound Type (see Note 2) | Steady | | Coded | | Steady | | Coded | | Steady | | Coded | |
| | Setting | High | Low | High | Low | High | Low | High | Low | High | Low | High | Low |
| | Reverberant Chamber, UL 464 Test | 84.6 | 79.1 | 80.6 | 75.5 | 86.3 | 81.5 | 82.4 | 77.2 | 88.4 | 84.3 | 84.5 | 79.2 |
| | Anechoic Chamber | 90 | 84 | 86 | 80 | 93 | 87 | 90 | 83 | 94 | 90 | 90 | 86 |

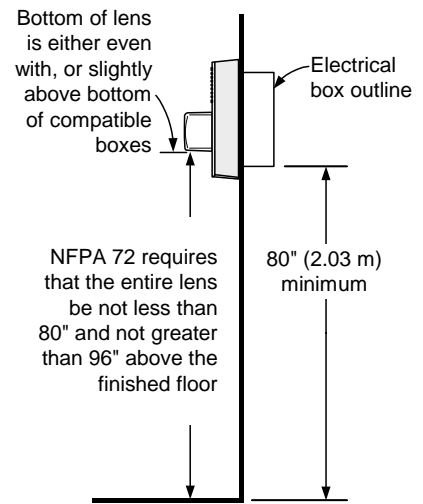| Wall Mount Current | Maximum RMS Current Rating per Strobe Setting (see Note 2 below) | | 15 cd | 30 cd | 75 cd | 110 cd |
|---|---|---|---|---|---|---|
| | | | 73 mA | 108 mA | 195 mA | 259 mA |
| | Reference RMS Currents at other voltages | 18 VRMS | 69 mA | 102 mA | 184 mA | 245 mA |
| | | 24 VRMS | 52 mA | 77 mA | 138 mA | 183 mA |
| Ceiling Mount Current | Maximum RMS Current Rating per Strobe Setting (see Note 2 below) | | 15 cd | 30 cd | 75 cd | 110 cd |
| | | | 82 mA | 135 mA | 249 mA | 335 mA |
| | Reference RMS Currents at other voltages | 18 VRMS | 77 mA | 128 mA | 235 mA | 316 mA |
| | | 24 VRMS | 58 mA | 96 mA | 176 mA | 237 mA |

**NOTES:**

1. "Special Application" refers to the operating category under UL Standard 1971, *Signaling Devices for the Hearing Impaired*. The rated voltage range listed is the absolute operating range. Operation outside of this range may cause permanent damage to the appliance. Please note that 17 VRMS is the lowest operating voltage that is allowed at the last appliance on the TrueAlert signaling line circuit under worst case conditions. "Low" horn setting draws approximately 5 mA less current at each voltage listed.

2. Currents are with horn on steady. The maximum RMS current listed is the device nameplate rating. Strobe designs are constant wattage and the maximum RMS current rating occurs at the lowest allowable operating voltage. 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.
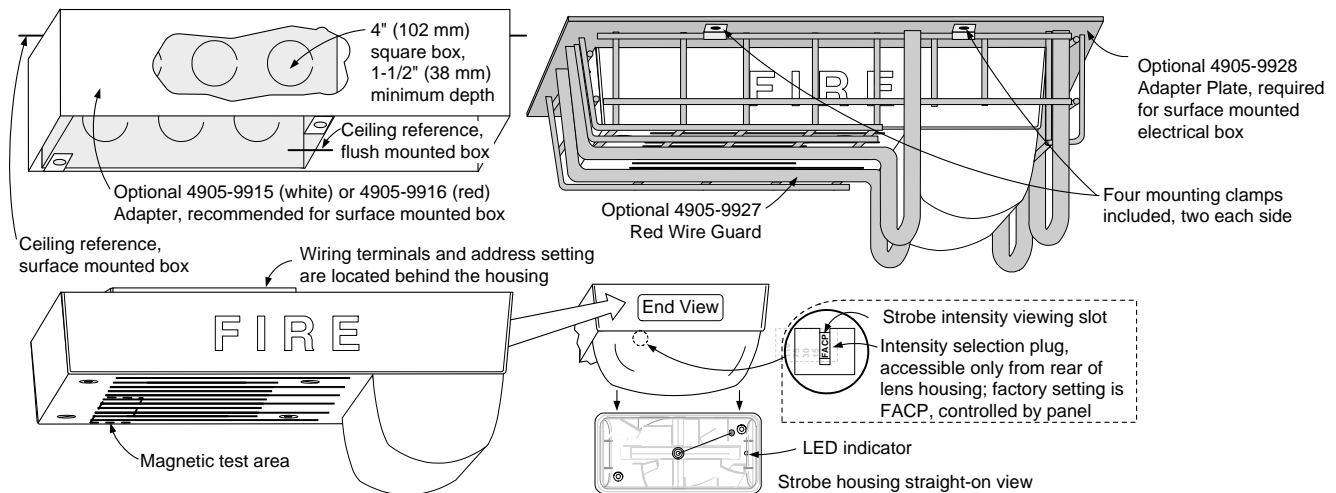
S4906-0005-2  3/2008

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

Transparent housing and lens assembly

Wiring access hole

Wiring terminals

Removable cover (tool required)

FIRE

Magnetic test location

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

THIS END UP

Mounting Holes: 4" square (4); single gang (2); double gang (3)

LED indicator

Address setting DIP switch

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

Strobe intensity viewing slot

FACP

### IMPORTANT! WALL MOUNT INSTALLATION HEIGHT REFERENCE

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

Electrical box outline

NFPA 72 requires that the entire lens be not less than 80" and not greater than 96" above the finished floor

80" (2.03 m) minimum

## 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

FIRE

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

Optional 4905-9927 Red Wire Guard

Four mounting clamps included, two each side

Wiring terminals and address setting are located behind the housing

FIRE

End View

Magnetic test area

Strobe intensity viewing slot

FACP

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

LED indicator

Strobe housing straight-on view

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

4905-9931 Adapter Plate

2975-9145 Box

FIRE

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

4905-9931 Adapter Plate

FIRE
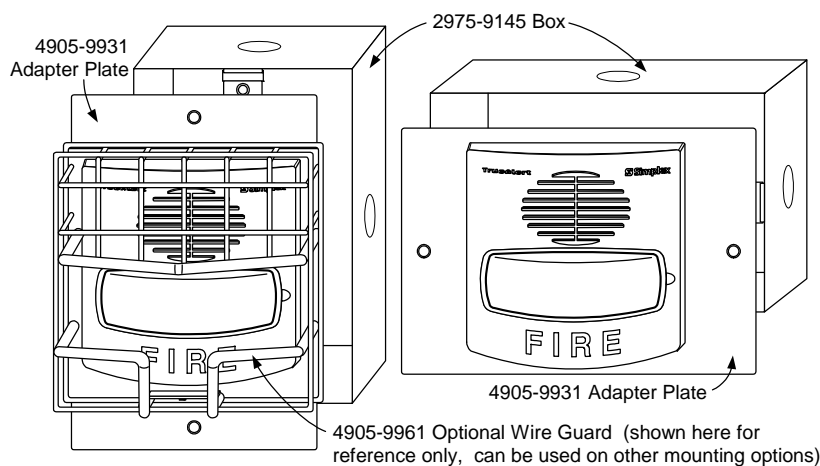
### Surface Mounting Reference with Optional Adapter Skirt and Optional Wire Guard

Surface mount conduit and box shown for reference

4" (102 mm) square box profile, 1-1/2" (38 mm) deep

Optional 4905-9961 Wire Guard

A/V

Optional Surface Mount Adapter Skirt, 1-1/2" deep: 4905-9937, Red; 4905-9940, White (conduit knockouts are provided on all four sides)

**S Simplex**