

Cautions and Warnings

DO NOT INSTALL ANY SIMPLEX PRODUCT THAT APPEARS DAMAGED. Upon unpacking your Simplex product, inspect the contents of the carton for shipping damage. If damage is apparent, immediately file a claim with the carrier and notify Simplex.



ELECTRICAL HAZARD - Disconnect electrical power when making any internal adjustments or repairs. Servicing should be performed by qualified Simplex Representatives.



STATIC HAZARD - Static electricity can damage components. Therefore, handle as follows:

1. Ground yourself before opening or installing components.
2. Keep uninstalled component wrapped in anti-static material at all times (use the 553-484 Static Control Kit).



RADIO FREQUENCY ENERGY - This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area may cause interference in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

TrueAlert™ S/V Operation

The 4903 TrueAlert Speaker/Visible (S/V) (see Figure 1) is a wall-mounted notification appliance that combines a TrueAlert strobe with a conventional speaker when activated from a TrueAlert-compatible control panel of a UL-listed, Simplex Fire Alarm System. **When the notification appliance emits sound and/or light, it indicates the possibility of an emergency situation that requires immediate attention.**

The strobe portion of the S/V operates only on a TrueAlert-compatible Signaling Line Circuit (SLC). The strobe is supervised via communications with the TrueAlert Addressable Controller (rather than via conventional appliance supervision). Coded messages from the TrueAlert Addressable Controller turn the strobe on and off. The strobe can only be operated through a 4009-9401 TrueAlert Addressable Controller using Simplex TrueAlert Comm Channel communications.

The speaker is a two-wire appliance that operates only on a standard audio NAC channel (4100/4003) to reproduce amplified analog audio signals. The speaker is non-addressable and does not support audio wire T-tapping. The S/V speaker circuit provides a 25Vrms or 70Vrms speaker line connection that can be configured to one of four available audible power wattage levels (¼ W, ½ W, 1 W, 2 W).

Note: The TrueAlert S/V will not operate on a conventional NAC.

TrueAlert S/Vs are available with strobes rated at 15 candela, 75 candela, and 110 candela. Each model is available with a red or white cover. Table 1 lists the available S/V models.

Table 1. Wall-Mount TrueAlert S/V Models

Description	Model	Cover Color
Wall-Mount S/V 15 CANDELA	4903-9350	Red
Wall-Mount S/V 75 CANDELA	4903-9351	
Wall-Mount S/V 110 CANDELA	4903-9352	
Wall-Mount S/V 15 CANDELA	4903-9353	White
Wall-Mount S/V 75 CANDELA	4903-9354	
Wall-Mount S/V 110 CANDELA	4903-9355	

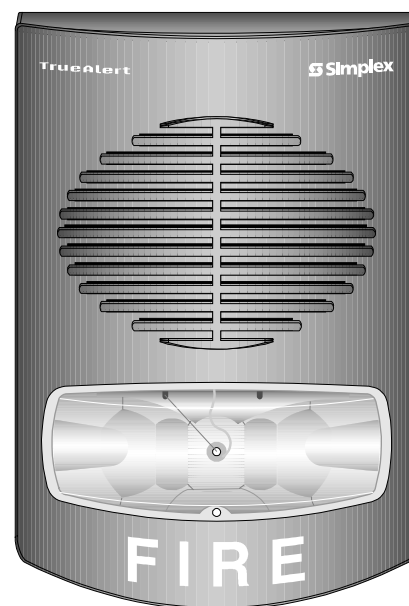


Figure 1. TrueAlert S/V

TrueAlert S/V Wiring

Warning: Make sure that all electrical power is disconnected before starting the installation.

Caution: Connect wiring to terminals as shown. Break wire runs to provide supervision of connections. Do not bring conduit through the rear of the metal electrical box. Strip lead insulation to 3/8" maximum.

- At the metal electrical box, connect contractor wiring to the STROBE + and STROBE - terminals and speaker wires to the SPKR + and SPKR - terminals at the rear of the S/V. **Torque terminal block screws 12-15 in/lbs. to ensure proper continuity.** See Figure 2.
- Ensure that correct polarity is maintained for each S/V.
- Configure the speaker wattage setting using Table 2. Ensure that the RMS value of the connected audio circuit matches the RMS value of the connected speaker. An incorrect tap setting may damage the speaker. The factory default setting for the speaker is J1 to Tap E (25Vrms, 1/2 W).
- TrueAlert SLC and audio NAC wiring must be twisted pair (TWP). If audio NAC wiring is run in the same conduit with high-intensity strobes (110CD), then twisted shielded pair is required.

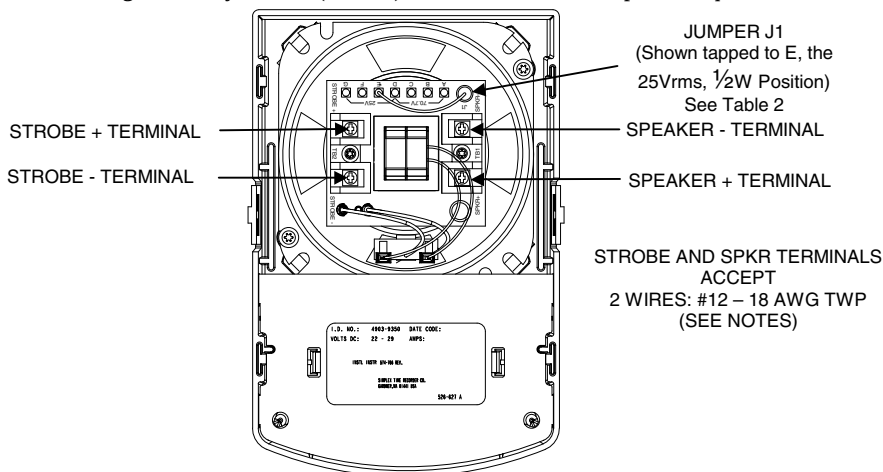
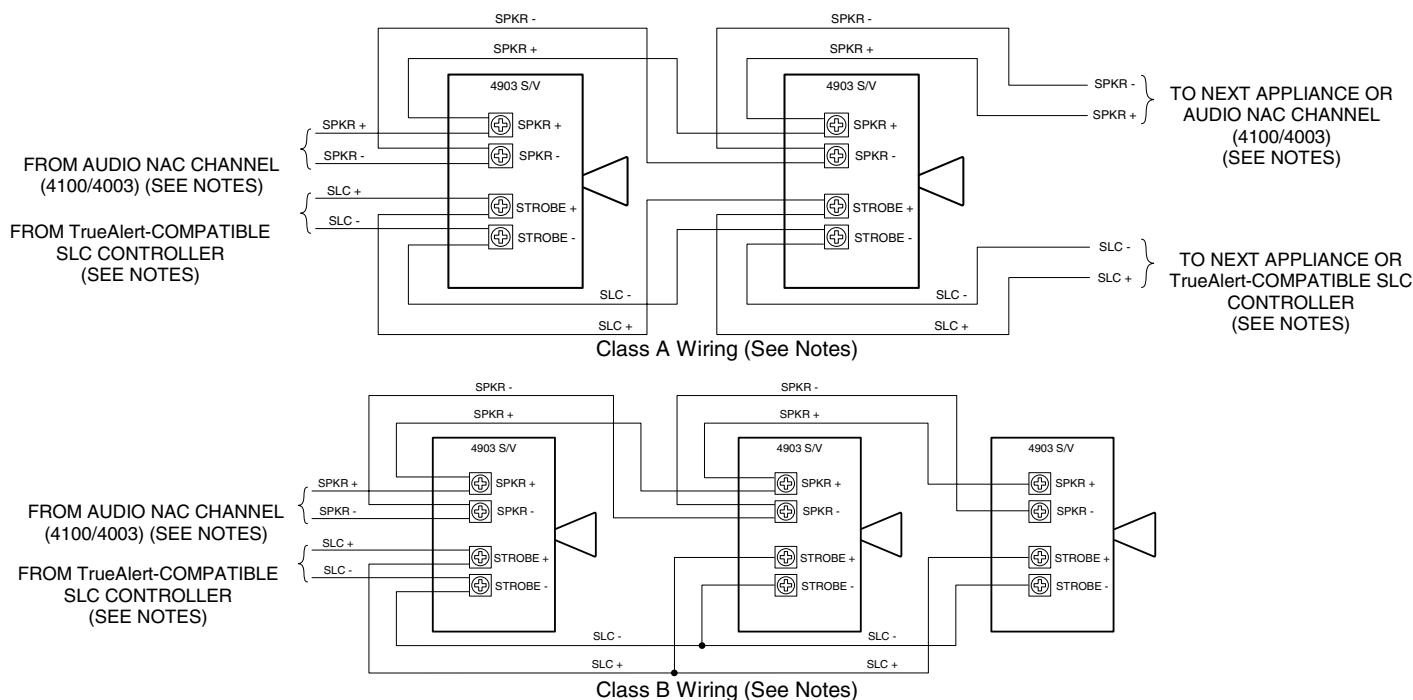


Table 2. TrueAlert Speaker Jumper Settings

Jumper Position	Voltage	Wattage Setting
J1 to Tap A	70.7Vrms	1/4
J1 to Tap B		1/2
J1 to Tap C		1
J1 to Tap D		2
J1 to Tap D	25Vrms	1/4
J1 to Tap E		1/2
J1 to Tap F		1
J1 to Tap G		2



Notes:

- Maximum 43 strobe appliances per circuit. Maximum 30 ohms wire resistance between strobe appliances. Refer to the Field Wiring Diagrams of the driving TrueAlert compatible Fire Alarm Control Panel for further instructions.
- Notification appliances are rated per individual nameplate label.
- Maintain correct polarity on terminal connections. Do not loop wires under terminals.
- All TrueAlert SLC and NAC wiring connections are supervised and power-limited.
- These appliances were only tested to the operating voltage limits of 17V to 31V. Do not operate these appliances outside these limits; doing so may cause appliance to fail to operate as intended, and/or cause permanent damage to this equipment.
- The TrueAlert S/V can only be operated through a compatible TrueAlert Addressable Controller.
- T-tapping is not allowed for Class A wiring.

Figure 2. TrueAlert S/V Wiring

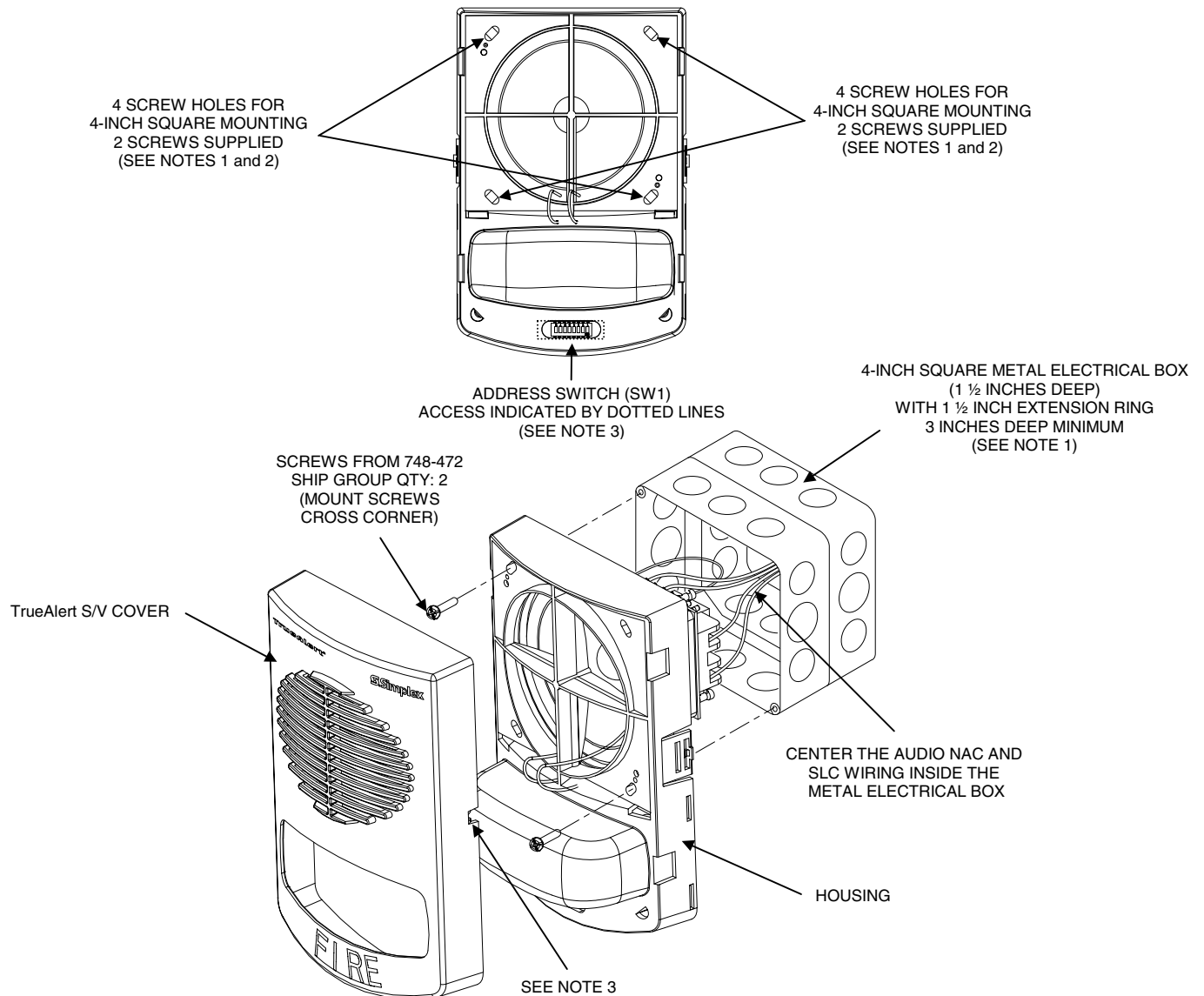
Mounting the TrueAlert S/V

See Figure 3 for wall-mounting the TrueAlert S/V to the metal enclosure box. When surface mounting the S/V, either the 4905-9946 or 4905-9947 TrueAlert Surface Mount Skirt is required. Refer to the *4905 TrueAlert™ Skirt Installation Instructions* (574-790) for this mounting application.

When mounting the S/V to a Simplex 2975-9145 electrical box, the 4905-9903 Adapter Plate is required. Refer to the *4905 TrueAlert™ Adapter Plate Installation Instructions* (574-791) for this mounting application.

Caution: Do not bring conduit through the rear of the metal electrical box.

1. Mount TrueAlert S/V appliance onto metal electrical box, making sure to route the audio NAC and SLC controller wiring into the center of metal electrical box (see Figure 3). Carefully centering the wires in the box will prevent the sharp edges inside the box from scraping the wire insulation.
2. Tighten mounting screws snugly (do not over tighten). **Torque mounting screws 5-7 in/lbs.**
3. For semi-flush mounting, install the metal electrical box either flush with the wall or with a maximum ¼-inch recess.



Notes:

1. The TrueAlert S/V attaches directly to a standard 4-inch square metal electrical box (not supplied), flush mounted or surface mounted.
2. There are four holes for 4-inch square metal electrical box mounting. Secure the housing to the box using two mounting screws. The two mounting screws are placed cross corner (opposite top and bottom holes).
3. To remove the cover, press the snap release in (one at a time) with a flat tip screwdriver while pulling up the cover with the other hand. Address Switch (SW1) is accessible with the cover removed.

Figure 3. TrueAlert S/V Mounting

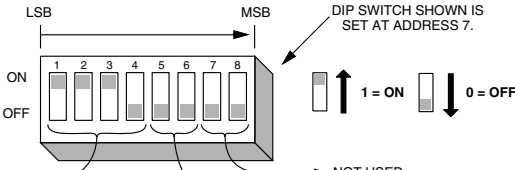
Setting the S/V Address

Each TrueAlert notification appliance has a unique address. Each appliance's address is set via an eight-position DIP switch, as shown in Table 3 (see Figure 3 for the general DIP switch location). DIP switch position 1 is the least significant bit (LSB) and position 6 is the most significant bit (MSB).

Note: DIP Switches 1 through 6 are used to set the possible 63 address codes. DIP Switches 7 and 8 are not used and are set to "OFF."

Use a small screwdriver or pen to set the switches, and then record the address. This information provides an aid in troubleshooting the system.

Table 3. TrueAlert S/V Units – DIP Switch Address Chart



LSB		MSB	
1	2	3	4
0000	0	16	32
1000	1	17	33
0100	2	18	34
1100	3	19	35
0010	4	20	36
1010	5	21	37
0110	6	22	38
1110	7	23	39
0001	8	24	40
1001	9	25	41
0101	10	26	42
1101	11	27	43
0011	12	28	44
1011	13	29	45
0111	14	30	46
1111	15	31	47

RESERVED FOR FUTURE USE: DIP SWITCHES 5 AND 6

DIP SWITCHES 1 THRU 4

S/V Magnetic Test

Note: The TrueAlert Addressable Controller must be configured to support the S/V diagnostic testing.

Position magnet tester 553-810 to the bottom right side of the S/V cover near the LED indicator (see Figure 4). Hold the magnet tester in place for a minimum of two seconds or until the LED begins flashing.

In response to the magnetic test, the S/V LED emits one long flash denoting the test acknowledge signal, and then another long flash denoting the first digit (always zero) of the appliance address. The LED then flashes one to six times to denote the second digit of the address, pauses, and then flashes one to nine times to indicate the third digit of the address. One long flash always indicates a zero. After the S/V LED flashes its address, the S/V goes into alarm (real appliance test) or the LED illuminates (silent appliance test) for 2 to 3 seconds.

Important: Refer to the *TrueAlert Addressable Controller Installation Guide (574-762)* for detailed information on appliance diagnostic testing.

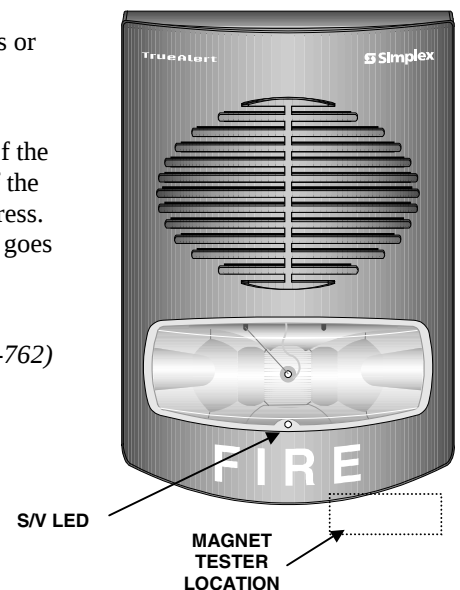


Figure 4. Appliance Magnet Test

S/V Current and Sound Pressure Measurements

Refer to Table 4 for current rating information.

Table 4. TrueAlert S/V Units – Strobe Current Rating Chart

Candela	Device Input Voltage	In-Rush Current (mA)	Peak Current (mA)	Nominal Avg. Current (mA RMS)
15	17Vrms	100	100	72
	24Vrms			53
	31 Vrms			46
75	17Vrms	290	280	194
	24Vrms			127
	31Vrms			101
110	17Vrms	425	390	242
	24Vrms			159
	31 Vrms			123

Supervision Current: 1 TrueAlert Unit Load

Refer to Table 5 for sound pressure measurements for each power tap setting.

Table 5. TrueAlert S/V Units – Sound Pressure Level Measurements

Voltage in Vrms	Jumper J1 to Tap	Tap Setting in Watts	Sound Pressure Level Measurement (dBA) Reverberant Room at Ten Feet Per UL1480 (See Note)
70.7Vrms	A	¼	78
	B	½	81
	C	1	84
	D	2	87
25Vrms	D	¼	78
	E	½	81
	F	1	84
	G	2	87

Notes: Reverberant dBA measurements are a minimum UL rating based on sound power level measurements made in UL's reverberant test chamber.

Frequency Response

Fire Alarm – 400Hz to 4kHz

General Signaling – 125Hz to 8kHz

Limitations, Safety, and Placement of Notification Appliances

Notification appliances, and the fire alarm system itself, have certain limitations and requirements for safety, placement, installation, and test. Since you must know the limitations and adhere to the requirements, **keep** these instructions at a central location for future reference so that all people who use, maintain, and test the fire alarm system have access to this information.

Limitations

Notification appliances do not sense any hazardous conditions such as smoke, fire, explosion, etc.; they are activated by a control panel as part of a system that does sense such conditions.

Notification appliances do not provide their own power. They receive their power from the fire alarm system. If power is not supplied to the notification appliances (for whatever reason), the notification appliances will not provide an audible/visible warning. **THEREFORE, BACK-UP POWER SUPPLIES, OR OTHER BACK-UP POWER SOURCES, ARE REQUIRED FOR THE FIRE ALARM SYSTEM.**

Notification appliances provide a specific rated output level of sound or light. The output level must meet the requirements of the intended protected area(s). Although the 4903 TrueAlert S/V notification appliances meet the current UL standards for sound output and light intensity, the protected area(s) may have walls, doors, carpeting, furniture, insulation, or other obstacles that reduce or even block the sound and/or light. For all applications, the sound and light output must provide enough intensity to alert all occupants of the protected area(s) including those occupants that are sleeping or hearing impaired for whatever reason. If these occupants cannot hear and/or see the effect of the notification appliances within the protected area(s), you must increase the intensity of the sound/light output or add additional notification appliances so that the occupants can hear and/or see the effect of the notification appliances when activated. Refer to National Fire Protection Association (NFPA) National Fire Alarm Code 72, Chapter 4.

Notification appliances are not a substitute for insurance coverage. All users should have adequate levels of life and property insurance.

Safety

Always install, maintain, and test notification appliances within their specifications. **Failure to follow all safety precautions and instructions may result in loss of life and property due to non-functioning notification appliances.**

Some notification appliances use high voltage. To avoid electrical hazards and avoid damage to appliances, make sure that the electrical power for the notification appliance circuit is disconnected at the control panel before installing, repairing, or internally adjusting any notification appliances.

Even with electrical power removed, some notification appliances (such as visible strobes) store a high voltage charge. The high voltage can cause injury resulting in death from electrical shock. **DO NOT TOUCH EXPOSED CIRCUITRY.**

Placement

The placement of notification appliances must conform to:

- Latest NFPA standards and guidelines (Refer to National Fire Alarm Code 72, Chapter 4)
- Sound (Sound Pressure Level) and/or Light Intensity Analysis of Intended Protected Areas
- Local Authority Having Jurisdiction (AHJ) Requirements

Notification appliances are not intended for installation within hazardous locations as defined by the National Electrical Code (NEC) or the NFPA. Contact Simplex for information on explosion-proof notification appliances designed for hazardous environments.