

TrueAlert ES Addressable Multi-Candela Indoor Notification Appliances Installation Instructions

Cautions, Warnings, and Regulatory Information

READ AND SAVE THESE INSTRUCTIONS Follow the instructions in this installation manual. These instructions must be followed to avoid damage to this product and associated equipment. Product operation and reliability depend upon proper installation.

IMPORTANT. When the notification appliance emits light or sound, it indicates the possibility of an emergency situation that requires immediate attention of all occupants.

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 an authorized Simplex product supplier.

LOCATION REFERENCE. Location and quantity of appliances required must conform to the applicable local standards and guidelines (the National Fire Alarm and Signaling Code (NFPA 72); ULC Standard CAN/ULC-S524, Installation of Fire Alarm Systems; the appropriate model building codes, etc.) and specific requirements of the Local Authority Having Jurisdiction (AHJ). These notification appliances are not intended for installation within hazardous locations as defined by the National Electrical Code (NEC) or NFPA.

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.**

Introduction

Table 1: UL listed TrueAlert ES indoor product identification reference



Type	Models
 <p>Wall Mount Audible/Visible (A/V)</p> <p>Colors:</p> <ul style="list-style-type: none"> • Red • White 	<p>Complete Appliances:</p> <p>49AV-WRF 49AV-WRF-BA 49AV-WWF 49AV-WWF-BA 49AV-WRS 49AV-WRQ 49AV-WRQ-BA 49AV-WRS-BA 49AV-WWS-BA</p> <p>Components:</p> <p>49AV-APPLW, 49AV-APPLW-BA</p> <p>Covers:</p> <p>49AVC-WRFEU 49AVC-WRALT 49AVC-WWALT 49AVC-WRS 49AVC-WWFIRE 49AVC-WRFIRE 49AVC-WWFUEU 49AVC-WRBLNG 49AVC-WWBLNG 49AVC-WWS 49AVC-WWC</p> <p>Backplates:</p> <p>49MP-AVOWR 49MP-AVOWW</p>

Table 1: UL listed TrueAlert ES indoor product identification reference

Type	Models
 <p>Wall Mount Visible Only (VO)</p> <p>Colors:</p> <ul style="list-style-type: none"> • Red • White 	<p>Complete Appliances:</p> <p>49VO-WRF 49VO-WRF-BA 49VO-WWF 49VO-WWF-BA 49VO-WRA-BA 49VO-WWA-BA 49VO-WRQ-BA 49VO-WRS-BA 49VO-WWS-BA 49VO-WRS 49VO-WWS 49VO-WWA 49VO-WWQ 49VO-WRA 49VO-WRQ</p> <p>Components:</p> <p>49VO-APPLW 49VO-APPLW-BA</p> <p>Covers:</p> <p>49VOC-WRFIRE 49VOC-WWFIRE 49VOC-WRALT 49VOC-WWALT 49VOC-WRFEU 49VOC-WWFUEU 49VOC-WRBLNG 49VOC-WWBLNG 49VOC-WRS 49VOC-WWS 49VOC-WWC</p> <p>Backplates:</p> <p>49MP-AVOWR 49MP-AVOWW</p>
Operation:	These appliances provide a visible (VO) or an audible/visible (A/V) warning of an alarm condition when activated from the control panel of a compatible UL/ULC Listed, Simplex Fire Alarm System.
Kit contents:	<ul style="list-style-type: none"> • Appliance x 1. • Cover x 1. • Backplate x 1, with 8-32 1 in. mounting screws x 2, and 6-32 1 in. mounting screws x 2.
Not included:	Electrical box: 1-1/2 in. (38.1 mm) minimum depth required: single gang, double gang, or 4 in. (101.6 mm) square.
Compatible:	Colored Lens Kit: 49LENS-AMBER, 49LENS-BLUE, 49LENS-RED, or 49LENS-GREEN.

NOTE: For information about TrueAlert ES appliance testing, see *TrueAlert ES Addressable Appliances Troubleshooting (579-1049)*.

Mounting instructions

1. Select the mounting location and install the electrical box using screws suitable for the mounting surface. Use a torque wrench to tighten the screws to 12-15 inch-pounds. Do not over-tighten the screws.
2. Bring the building wiring through the rectangular opening in the backplate.
3. Connect the building wires to the backplate. See [Wiring instructions](#) on page 2.
4. Secure the backplate to the electrical box using the hardware provided. Install with the writing **Install this side up** at the top.
5. Attach the cover to the appliance.
6. Set the appliance settings, see [Setting the address DIP switch](#) on page 2.
7. Attach the assembled appliance onto the backplate.



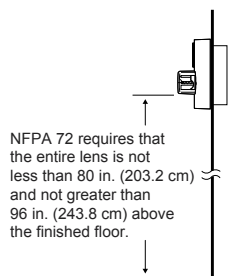
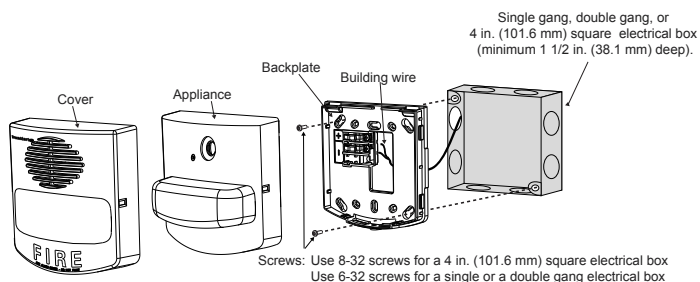


Fig 1: Mounting instructions

Wiring instructions

WARNING: Ensure that all power is disconnected before starting the installation.

1. At the electrical box, connect the building wiring to the CKT + and CKT - terminals on the backplate.
2. To ensure proper continuity, use a torque wrench to tighten the terminal block screws to 12-15 inch-pounds.
3. Ensure that the correct polarity is maintained for each strobe unit.
4. Signaling line circuit (SLC) wiring must be twisted pair (TWP). The CKT terminals accept two wires: 12-18 American Wire Gauge (AWG) TWP.

IMPORTANT: Do not bring the conduit through the rear of the electrical box. Strip the lead insulation to 7/16 inches maximum.

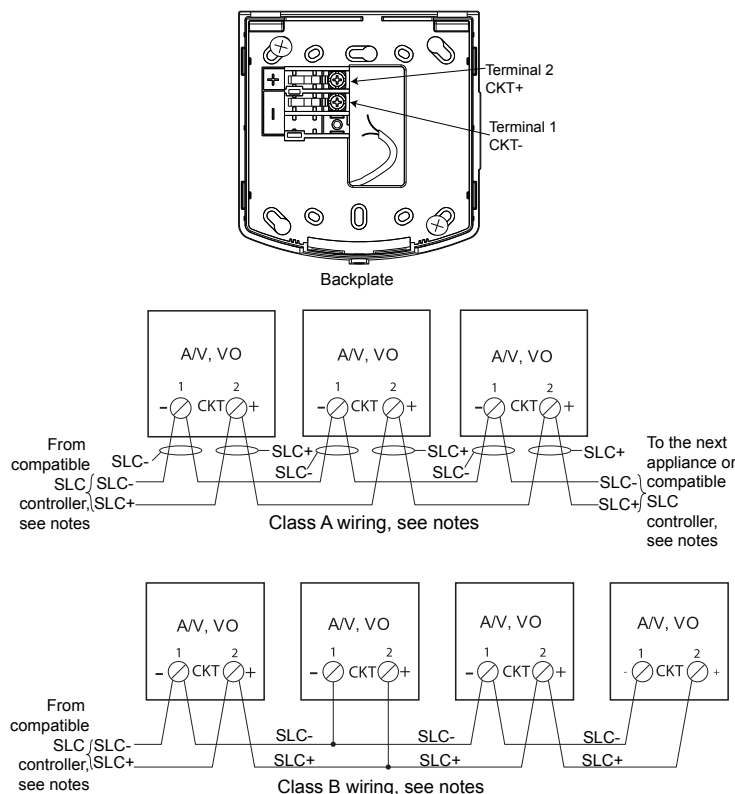


Fig 2: Wiring instructions

Wiring notes

- The maximum number of active appliances on a circuit is 63. The maximum wire resistance between appliances is 26 ohms. See the field wiring diagrams for the driving compatible fire alarm control panel for further instructions.
- Notification appliances are rated using an individual module label.
- Maintain the correct polarity on the terminal connections.
- Terminals 1 and 2 each accommodate two wires, one wire going in and one wire going out to the next appliance.
- These appliances are rated to the operating voltage limits of 17-31 VDC. The appliance may fail to operate as intended, and cause permanent damage to this equipment if it operates outside of these limits.
- Only operate the TrueAlert IDNAC AV and VO using a compatible power supply.
- T-tapping is not permitted on Class A wiring.
- TrueAlert SLC wiring connections are supervised and power-limited.

Setting the address DIP switch

Each addressable TrueAlert IDNAC notification appliance has a unique address that is set using an eight-position DIP switch (ADDR1). Assign a unique SLC address in the range 1 to 127. See the chart in Figure 3: Setting the DIP switch address on page 3. However, the total appliance loading available may be less due to appliance current requirements.

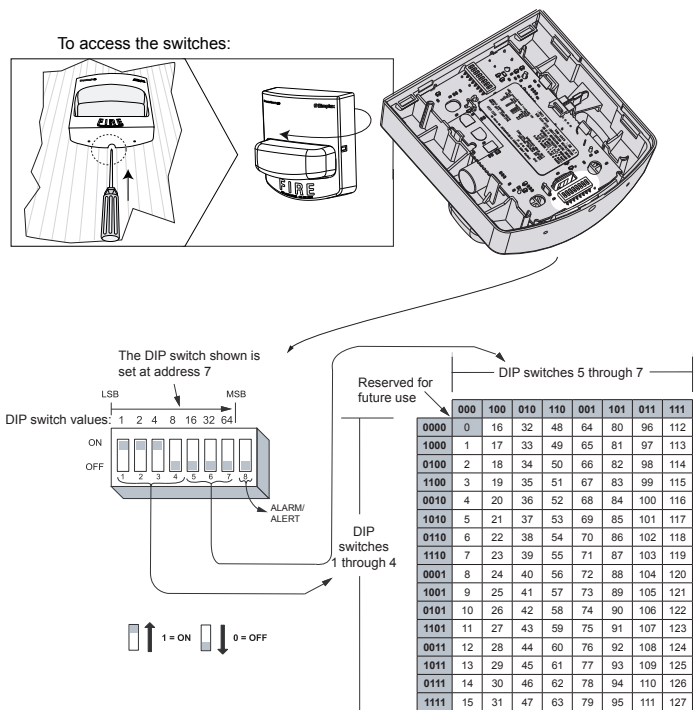


Fig 3: Setting the DIP switch address

To set the address, complete the following steps:

1. Insert a number 2 Phillips screwdriver, or similar sized object into the opening at the bottom of the cover, and unclip the appliance from the backplate. See Figure 3: Setting the DIP switch address on page 3.
2. Use a non-metallic stylus, or the equivalent to set the switches.
3. Record the set address.
4. The position of DIP switch 8 determines whether this appliance is viewed by the system as an 'ALARM' (OFF) or 'ALERT' (ON) type appliance. Confirm the setting for the appliance at this address with the FACP system configuration documentation.

Setting the strobe candela setting

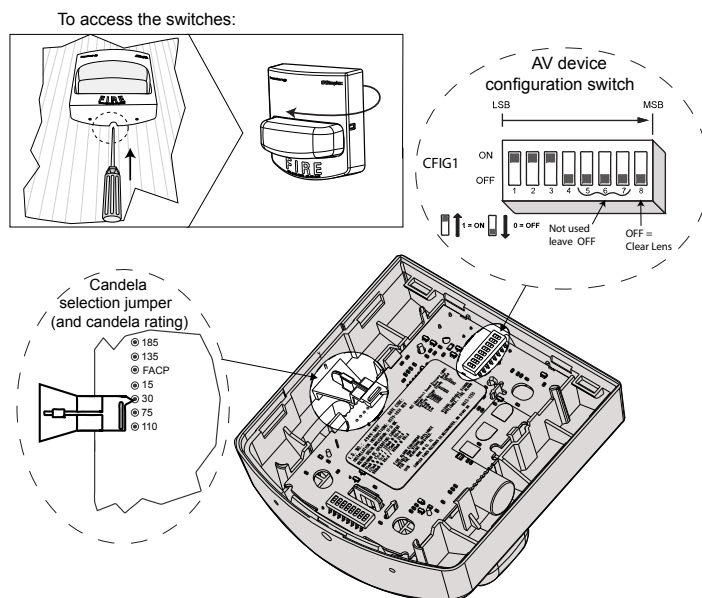


Fig 4: Setting the strobe and appliance configuration

1. The jumpers are factory set as FACP. Use this setting when programming the candela setting at the 4100ES FACP. The candela setting is visible through the slot on the side of the appliance.
2. For manual selection, pull up the candela flag and position the pins to select the desired candela rating:
 - 15, 30, 75, 110, 135, 185 candela, or FACP.

The candela ratings vary when colored lenses are used.

See *TrueAlert ES A/V and VO Colored Lens Kit Installation Instructions* (579-1046) for the specific candela ratings. When the appliance is mounted, the candela rating is visible through the slot on the side of the appliance.

NOTE: To avoid a programming mismatch trouble, an authorized service personnel must program one of the 6 candela outputs for each appliance. To set the candela using the ES Panel Programmer, set it to FACP. For additional information, see the *4100ES Programmer's Manual* (574-849).

Setting the appliance configuration

Use the appliance configuration switch (CFG1) on the back of the appliance to configure certain options for the horn and strobe directly on the appliance. See Figure 4: Setting the strobe and appliance configuration on page 3.

Table 2: Switch configurations

A/V only	
position 1	Configuration Control: OFF to enable Local Audible control (positions 2-7 below) ON for Panel control.
position 2	Audible volume: High (OFF), Low (ON).
position 3	CAN Horn mode: switch must be set to OFF.
position 4	Legacy NAC mode: switch must be set to OFF.
position 5, 6, 7	Unused: switches must be set to OFF.
position 8	Strobe Clear/Color lens: signals colored lens are installed.

V/O configuration only

When using the optional colored lenses connect the VO jumper on the top side of the PCB board. See the *TrueAlert ES A/V and VO Colored Lens Kit Installation Instructions* (579-1046) for more information.

Appliance specifications

Table 3: Environmental specifications

Rated voltage range	Special application 17-31 VRMS
Temperature range	32° F to 120° F (0° C to 49° C)
Humidity range	10% to 93%, non-condensing at 104° F (40° C)
Connections	Terminal for 18 AWG to 12 AWG (0.82 mm ² to 3.31 mm ²)

Table 4: Sound pressure level measurement(dBA)

Reverberant room at 10 feet in accordance with UL464 (See Note 2)	Voltage (Vrms)	Horn Mode Steady	Horn Mode Coded (See Note 1)
High volume setting using Addressable Controller (See Note 3)	17 (Min.)	87.8	83.4
	23	90.1	85.7
	31 (Max.)	91.9	87.9
Low volume setting using Addressable Controller (See Note 3)	17 (Min.)	81.6	77.0
	23	83.6	80.1
	31 (Max.)	86.9	82.1
Anechoic room at 10 feet in accordance with ULC S525, see note 4.			
High volume setting	17 (Min.)	91.7	91.7
	23	94.1	94.1
	31 (Max.)	96.1	96.1
Low volume setting	17 (Min.)	85.4	85.4
	23	88.1	88.1
	31 (Max.)	90.6	90.6

NOTE:

- The coded category covers both Temporal and March time cadences.
- Reverberant dBA measurements are a minimum UL rating based on sound power level measurements made in UL's reverberant test chamber.
- High and low volume settings are configured with DIP Switch (CFG1) on the Controller.
- If you install the 4905-9838 Sound Damper, the anechoic measurements decrease by approximately 9 dBA.

Table 5: ULC directional characteristics for horn

Axis	Angle	dBA
Horizontal	50° left and right	-3dBA
	63° left and right	-6dBA
Vertical	20° above / 48° below	-3dBA
	65° above / 60° below	-6dBA

CAUTION:

- The appliances are available in red and white. Do not paint or otherwise alter the factory finishes in any way.
- Anechoic dBA levels below 85 do not meet ULC requirements for public notification.

Table 6: Maximum RMS operating current

Candela selection†	Appliance type	UL1971/ULCS526 clear/white		UL1638/ULCS526 colored lens	
		23V*	17V**	23V*	17V**
15 cd	VO	47 mA	62 mA	54 mA	67 mA
	A/V	59 mA	74 mA	66 mA	79 mA
30 cd	VO	57 mA	75 mA	78 mA	103 mA
	A/V	67 mA	85 mA	88 mA	113 mA
75 cd	VO	100 mA	133 mA	128 mA	171 mA
	A/V	107 mA	140 mA	137 mA	180 mA
110 cd	VO	132 mA	178 mA	184 mA	250 mA
	A/V	139 mA	185 mA	192 mA	258 mA
135 cd	VO	160 mA	-NA-	211 mA	-NA-
	A/V	166 mA	-NA-	219 mA	-NA-
185 cd	VO	208 mA	-NA-	-NA-	-NA-
	A/V	215 mA	-NA-	-NA-	-NA-

* For connection to IDNAC SLCs

** For connection to TrueAlert Power Supply (TPS), 4009 TPS, and TrueAlert Addressable Controller (4009T) SLCs: 135 cd and 185 cd are not compatible with the Simplex 4009T and TPS.

† The use of optional colored lenses can affect the device's candela output. See *TrueAlert ES A/V and VO Colored Lens Kit installation instructions (579-1046)* to find the candela output for each lens color.

Table 7: Percent of rated light output at any candela setting (room temperature)

Vertical dispersion			Horizontal dispersion		
Y-Plane Angle	UL Req Output	Typical Output	X-Plane Angle	UL Req Output	Typical Output
0	100%	194%	0	100%	194%
5	90%	192%	±5	90%	203%
10	90%	132%	±10	90%	168%
15	90%	129%	±15	90%	155%
20	90%	145%	±20	90%	166%
25	90%	150%	±25	90%	169%
30	90%	112%	±30	75%	164%
35	65%	124%	±35	75%	151%
40	46%	114%	±40	75%	145%
45	34%	90%	±45	75%	121%
50	27%	91%	±50	55%	97%
55	22%	78%	±55	45%	83%
60	18%	72%	±60	40%	79%
65	16%	68%	±65	35%	70%
70	15%	75%	±70	35%	59%
75	13%	74%	±75	30%	50%
80	12%	68%	±80	30%	51%
85	12%	63%	±85	25%	45%
90	12%	45%	±90	25%	41%