

# TrueAlert ES Addressable US/Weather Proof Wall Mount Speaker Notification Appliances Installation Instructions

## Cautions, warnings, and regulatory information

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



**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 unit 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.**

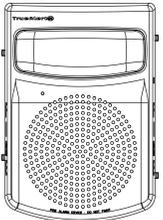
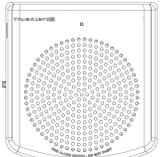


**LOCATION REFERENCE:** Location and quantity of appliances required must conform to the applicable local standards and guidelines (the National Fire Alarm and Signaling Code (NFPA 72); ULC Standard CAN/ULC-S524, Installation of Fire Alarm Systems; the appropriate model building codes) and specific requirements 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.

## Introduction

These appliances provide a speaker only (SO) or speaker/visible (S/V) warning of an alarm condition when activated from the control unit of a compatible UL/ULC Listed, Autocall Fire Alarm System. Consult Autocall Fire Alarm unit documentation for compatibility information. The speakers can be turned ON or OFF individually under compatible unit control.

**Table 1: Products**

Type	Cover colors	Models			
Wall Mount Speaker/Visible (S/V) with cover  	- Red - White	<b>Components:</b> A49SV-APPLW-O A49SV-APPLW-O-BA	<b>Covers:</b> A49SVC-WRFEU-O A49SVC-WRFIRE-O A49SVC-WRS-O A49SVC-WWALT-O A49SVC-WWBA-O A49SVC-WWS-O A49SVC-WWFIRE-O	A49SVC-WRBF-O A49SVC-WRBC-O A49SVC-WRBA-O A49SVC-WRALT-O A49SVC-WWBC-O A49SVC-WWBF-O A49SVC-WWFEU-O	<b>Backplates:</b> A49MP-SVWR A49MP-SVWW  <b>Back boxes:</b> A49WPBB-SVWR A49WPBB-SVWW
Wall Mount Speaker Only (SO) with cover  	- Red - White	<b>Components:</b> A49SO-APPLW-O 49SO-APPLW-O-BA	<b>Covers:</b> A49SOC-WRFIRE-O A49SOC-WRFEU-O A49SOC-WRBF-O A49SOC-WRBC-O A49SOC-WRBA-O A49SOC-WWS-O A49SOC-WWFIRE-O A49SOC-WRBLANK-O	A49SOC-WRS-O A49SOC-WWBA-O A49SOC-WWBC-O A49SOC-WWBF-O A49SOC-WWFEU-O A49SOC-WWBLANK-O A49SOC-WWALT-O A49SOC-WRALT-O	<b>Backplates:</b> A49MP-SOWR A49MP-SOWW  <b>Back boxes:</b> A49WPBB-SOWR A49WPBB-SOWW
<b>Kit contents:</b>	Appliance x 1 #8-16 one in. thread forming screws x 4				
<b>Not included:</b>	Order a backplate separately for each appliance. Order a back box, listed above, to mount the appliance assembly to the wall. Order a cover, listed above, separately for each appliance.				
<b>Note:</b> For information about TrueAlert ES appliance testing, see <i>TrueAlert ES Addressable Appliances Testing and Application Guide (579-1049AC)</i> .					

## Strobe operation levels

The 49 S/V appliances have multiple strobe intensity levels. Levels W15, W75, W110, and W185 are rated for UL outdoor private mode applications. Levels 15 and 75 are rated for UL indoor and uncontrolled wet Public Mode applications.

## Back box mounting instructions

1. Select the mounting location and install the back box, see the back box installation instructions or for more information.
2. Bring the building wiring through the rectangular opening in the backplate.
3. Connect the building wires to the backplate, see [Wiring instructions](#).



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4. Secure the backplate to the electrical box using the provided hardware. Install the backplate so that the contacts are above the opening for the wiring.
5. Set the appliance settings. See [Setting the address DIP switch](#).
6. To attach the cover to the appliance, carefully move the cover over the housing. Move the cover down over the housing and press it until it snaps onto the housing.
7. Attach the assembled appliance to the backplate.

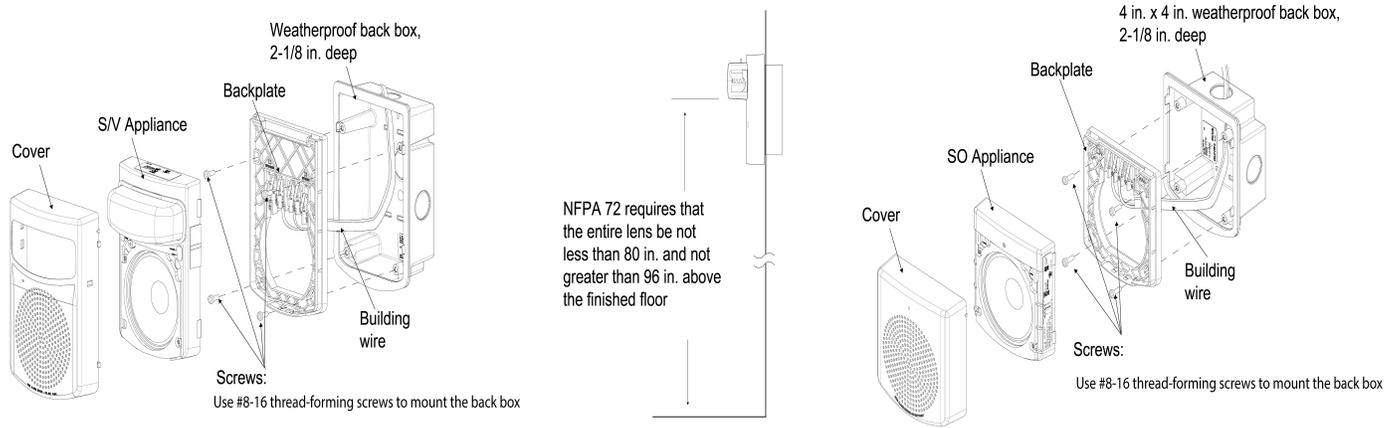


Figure 1: Back box mounting instructions

## Unit removal or disassembly

1. Use a blade screwdriver to catch the latches on the left side of the cover, angling the head out from the appliance and then lifting. Repeat this on each latch in turn, until the cover rotates away.
2. Insert a blade screwdriver into the gap between the housing and backplate at the bottom of the assembled appliance. Angle the head towards the appliance and lift. When the housing moves toward you, lift and pull the appliance away with your hand.

**Important:** Ensure you do not compromise the gaskets when you disassemble the unit.

## Wiring instructions

**WARNING: Make sure 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 to 15 lb-in.
3. Ensure that the correct polarity is maintained for each strobe unit.
4. SLC wiring must be twisted pair (TWP). CKT Terminals accept 2 Wires: 12 to 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 in. maximum.**

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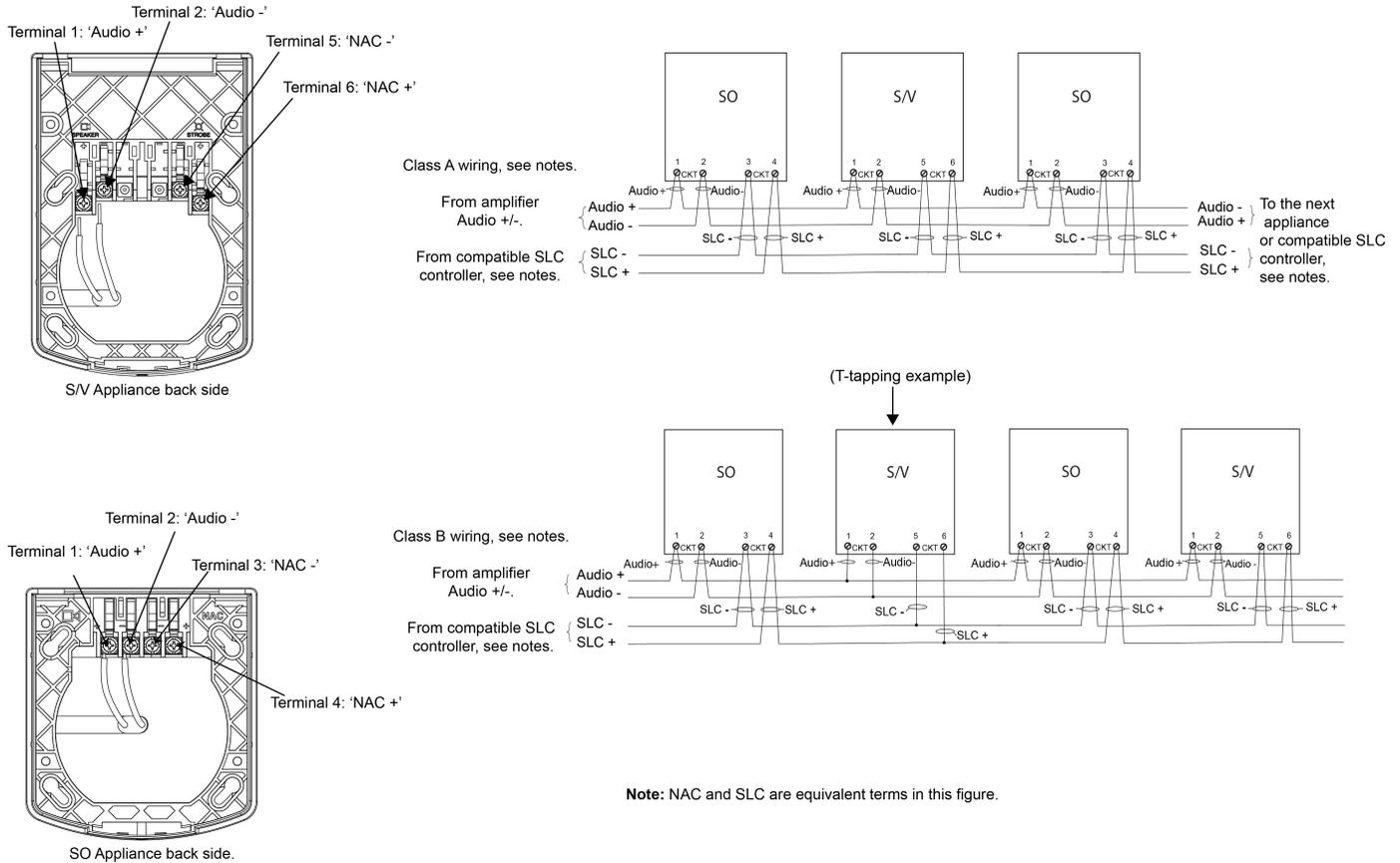


Figure 2: Wiring instructions

## Note: Wiring notes

- Assign a maximum of 127 active appliances to a circuit. Assign a maximum of 63 active strobe appliances to a powered circuit. The maximum wire resistance between appliances is 29 ohms. Refer to the field wiring diagrams of the driving compatible fire alarm control unit for further instructions.
- Notification appliances are rated using an individual module label.
- Maintain the correct polarity on the terminal connections.
- Terminals 1 through 6 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 23 VDC to 30 VDC. The appliance can fail to operate as intended, and can cause permanent damage to this equipment if it operates outside of these limits.
- Only operate the TrueAlert IDNAC S/V and SO using a compatible power supply and amplifier.
- T-tapping is not permitted for 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 up to 127 unique addresses an signaling line circuit (SLC), however, the total appliance loading available may be less due to appliance current requirements. To set the address, complete the following steps:

- Complete the steps to disassemble the unit, see [Unit removal or disassembly](#).
- Use a non-metallic stylus, or the equivalent to set the switches.
- Record the set address.
- DIP switch position 8 determines whether this appliance is viewed by the system as an 'ALARM' (OFF) or 'ALERT' (ON) type of appliance. Confirm the setting for the appliance at this address with the FACU system configuration documentation. DIP position 9 is not used (set to OFF).

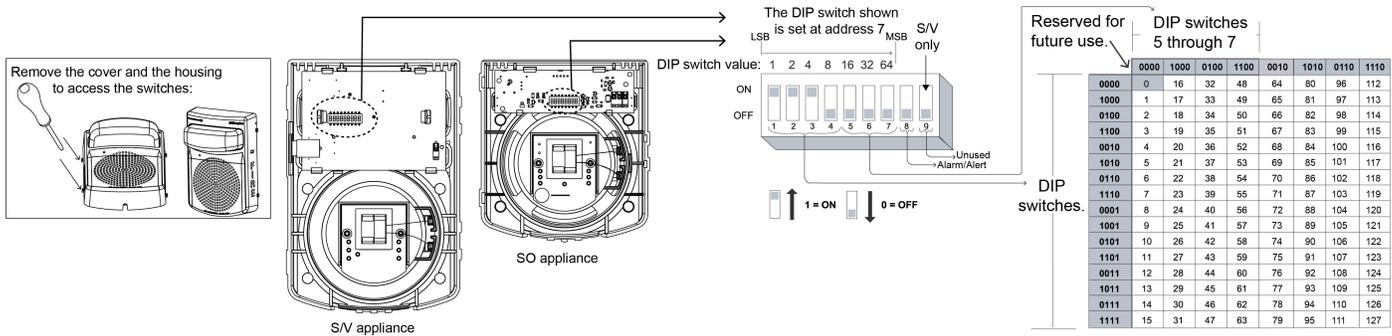


Figure 3: Setting the DIP switch address

## Setting the strobe candela setting

1. The jumpers are factory set to FACU. Use this setting when programming the candela level at the 4100ES FACU. The candela setting is visible through the slot on the side of the appliance.
2. For manual selection, remove the cover and slide the candela flag to the required setting. The candela setting is visible through the slot on the side of the appliance. The settings are 15, W15,75, W75, W110, W185 candela, or FACU.

**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 through the Programmer, set it to FACU. For additional information refer to the *ES unit Programmer's Manual* (574-849AC).

## Audio circuit configuration for S/V and SO appliances

Move the wire harness position to the correct terminal post for audio circuit voltage and power tap selection. See Figure 4 and Table 4.

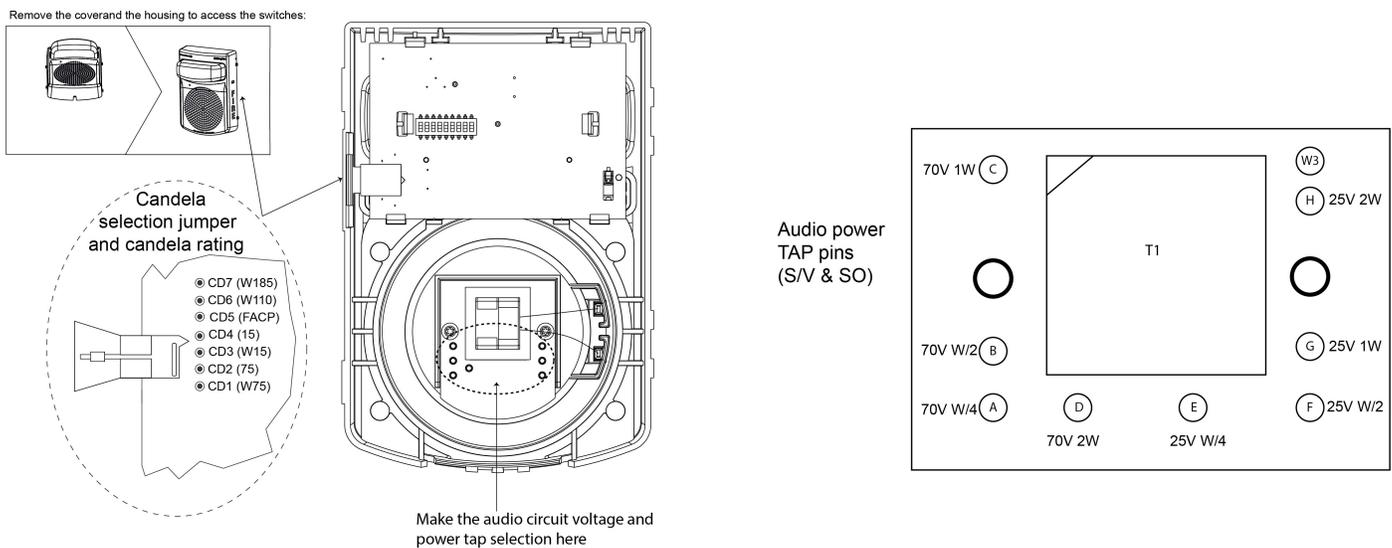


Figure 4: Setting the strobe and appliance configuration

## Appliance specifications

Table 2: Environmental specifications

Specification	Rating
Rated DC Control/Strobe Voltage Range	SPECIAL APPLICATION 23 VDC to 30 VDC
UL/ULC temperature rating	Outdoor private: -40°F to 150.8°F (-40°C to 66°C) Indoor and uncontrolled wet Public Mode: 32°F to 122°F (0°C to 50°C)
FM temperature rating	-40°F to 120°F (-40°C to 49°C)
UL/ULC humidity range	95 %, non-condensing at 140°F (60°C)

**Table 2: Environmental specifications**

Specification	Rating
Connections	Terminal for 18 AWG to 12 AWG (0.82 mm <sup>2</sup> to 3.31 mm <sup>2</sup> )
<b>CAUTION: The appliance enclosures are available in red and white. Do not paint or otherwise alter the factory finishes in any way.</b>	

**Table 3: Maximum RMS operating current**

Candela selection	Appliance type	23V*
(CD4) 15 cd	S/V	47 mA
(CD3) WP15 cd	S/V	81 mA
(CD2) 75 cd	S/V	100 mA
(CD1) WP75 cd	S/V	187 mA
(CD6) WP110 cd	S/V	230 mA
(CD7) WP185 cd	S/V	298 mA
Speaker Only	SO	15 mA

\* For connection to IDNAC SLCs

**Table 4: Wall speaker specifications**

Specification	Rating
Input voltage	25 VRMS or 70.7 VRMS - Speakers are for connection to compatible fire alarm audio circuits.
Power taps through jumper J1	1/4 W, 1/2 W, 1 W and 2 W
Frequency response	Fire alarm 400 Hz to 4000 Hz

**Table 5: TrueAlert addressable wall mount S/V and SO units - speaker jumper setting and output ratings (25 V or 70 V audio)**

Voltage	Jumper J1 to Tap	Tap setting in Watts	UL1480 reverberant at 10 ft SV/SO models	ULC-S541 anechoic at 3 m SV/SO models
25V	E	1/4	78	80
	F	1/2	81	83
	G	1	84	86
	H	2	87	89
70.7 V	A	1/4	76	79
	B	1/2	80	83
	C	1	84	86
	D	2	87	89

- Note:**
- **Reverberant** dBA measurements are a minimum UL rating based on sound level measurements made in UL's reverberant test chamber.
  - **Anechoic** dBA measurements are a minimum ULC rating based on sound pressure level measurements made in ULC's anechoic test chamber.
  - The sound pressure level decreases by 3 dB at an angular displacement of 25° from the line perpendicular to the speaker's center. The SPL decreases by 6 dB at an angle of 35° from that line.

**Table 6: Outdoor private mode Candela (CD) rating for W15/W75/W110/W185**

Candela	Straight out from unit		Vertical below unit		Left/right horizontal	
	0°		45°	90°	45°	90°
WP15 Typical CD at 77°F (25°C)	69		25	18	32	12
WP75 Typical CD at 77°F (25°C)	240		100	60	119	47
WP110 Typical CD at 77°F (25°C)	300		118	74	160	58
WP185 Typical CD at 77°F (25°C)	445		169	105	228	75

**Table 7: Percent of rated light output at 15 and 75 candela setting (Public Mode - 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 %

**Table 7: Percent of rated light output at 15 and 75 candela setting (Public Mode - room temperature)**

	Vertical dispersion		Horizontal dispersion		
	15 %	75 %	±	15 %	75 %
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 %