Simplex

UL, ULC, CSFM Listed, FM Approved

Datasheet

TrueAlert Addressable Notification Appliances

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

Features

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

- Multi-candela xenon strobe with synchronized 1 Hz flash rate and with intensity programmable from the fire alarm control unit (FACU) or jumper selected as 15 cd, 30 cd, 75 cd, 110 cd, 135 cd, 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 FACU
- TrueAlert Device Reports are available at the FACU detailing appliance point ID, custom label, type, and candela setting
- Magnet Test diagnostics assist checkout and testing of appliances and wiring.
- Electrical test point access: access the electrical test point without removing cover
- Compatibility with ADA requirements; see Installation reference
- Compatibility with legacy TrueAlert addressable systems for upgrade and replacement, see TrueAlert ES A/V LEGACY compatibility reference
- 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

- 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

- 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 a 4 in. 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 Product selection for details

Figure 1: TrueAlert ES Addressable A/Vs are available in red with white lettering and white with red lettering

Audible notification appliance (horn)

- Harmonically rich output sound for either synchronized 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 a minute
- Output is "high" or "low" (~5 dBA difference) selectable at the appliance or from the controller with FACU 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 FACU providing IDNAC Signaling Line Circuits (SLCs). See TrueAlert ES A/V LEGACY compatibility reference for more detail.

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).

These products have been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7125-0026:0373 for allowable values and/or conditions concerning material presented in this document. Additional listings may be applicable; contact your local product supplier for the latest status.

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. This enables 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 two to three 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 FACU. 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 FACU allows on-board sensors, depending on the device type, to detect its own strobe or horn output and then report their status to the FACU. Operation is by selected VNAC appliance groups and is either automatic (all briefly simultaneously activated) or individually activated by applying a magnet. Refer to FACU data sheet for more Self-Test information, see TrueAlert ES A/V LEGACY compatibility reference.

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 FACU. 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 datasheet ***TrueAlert Addressable Isolator+ Module, Model 4905-9929 S4905-0001*** for information.

Product selection

Table 1: TrueAlert ES Wall Mount Addressable Audible/Visible appliances

Model, see note	Cover color	Wording	Lens color
49AV-WRF 49AV-WRF-BA	Red	FIRE	Clear
49AV-WWF 49AV-WWF-BA	White		
49AV-WRQ	Red	FEU	
49AV-WRS 49AV-WRS-BA	Red	Simplex logo only	
49AV-WWS-BA	White		
49AV-APPLW 49AV-APPLW-BA	Select cover and mounting plate separately		
Note: TrueAlert ES addressable A/V appliances include cover and matching mounting plate except as noted; dimensions with cover = 5 1/8 in. H x 5 in. W x 2 5/8 in. D (130 mm x 127 mm x 67 mm)			

Table 2: Separate mounting plate

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

Table 3: Separate covers, required when ordering model 49AV-APPLW(-BA)

Model, see note	Color	Wording
49AVC-WRFIRE	Red	FIRE
49AVC-WWFIRE	White	
49AVC-WRALT	Red	ALERT
49AVC-WWALT	White	
49AVC-WRFBL	Red	FUEGO/FOGO
49AVC-WRFEU	Red	FEU
49AVC-WWFEU	White	
49AVC-WRBLNG	Red	FEU/FIRE
49AVC-WWBLNG	White	
49AVC-WRS	Red	Simplex logo only
49AVC-WWS	White	
Note: Model numbers ending in -BA, APPLW models, and separate mounting plates are assembled in the USA.		

Table 4: Mounting adapters and wire guard

Model	Color	Description	Dimensions
4905-9937	Red	Surface Mount Adapter Skirt	5 3/8 in. H x 5 1/4 in. W x 1 5/8 in. D (136 mm x 133 mm x 41 mm) Total depth with strobe = 4 3/8 in. (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 in. H x 5 3/4 in W. x 0.060 in. D (211 mm x 146 mm x 1.5 mm)
2975-9145	Red Mounting Box, requires 4905-9931 Adapter Plate		7 7/8 in. H x 5 1/8 in. W x 2 3/4 in. 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 in. H x 6 1/16 in. W x 3 1/8 in. D (154 mm x 154 mm x 79 mm)

Installation reference

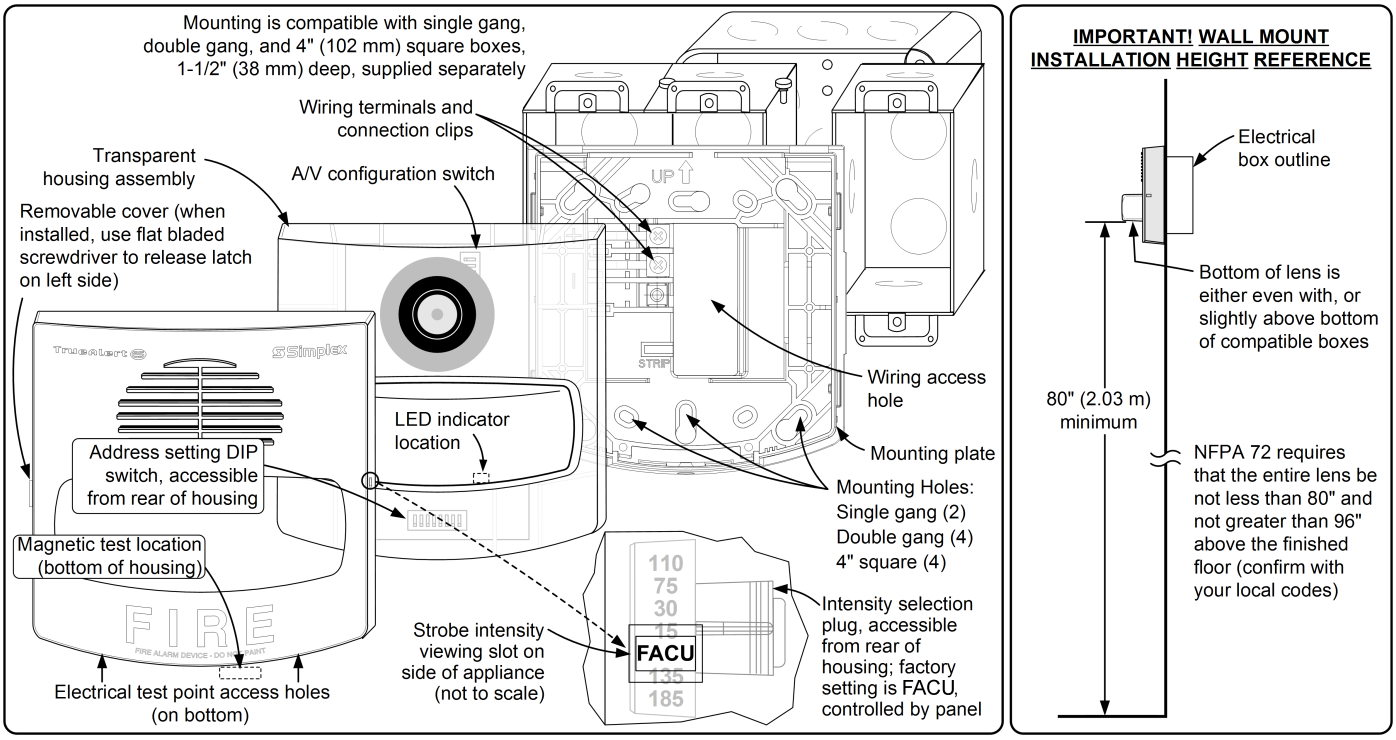

Figure 2: Installation reference

Adapter plate and surface mount installation reference

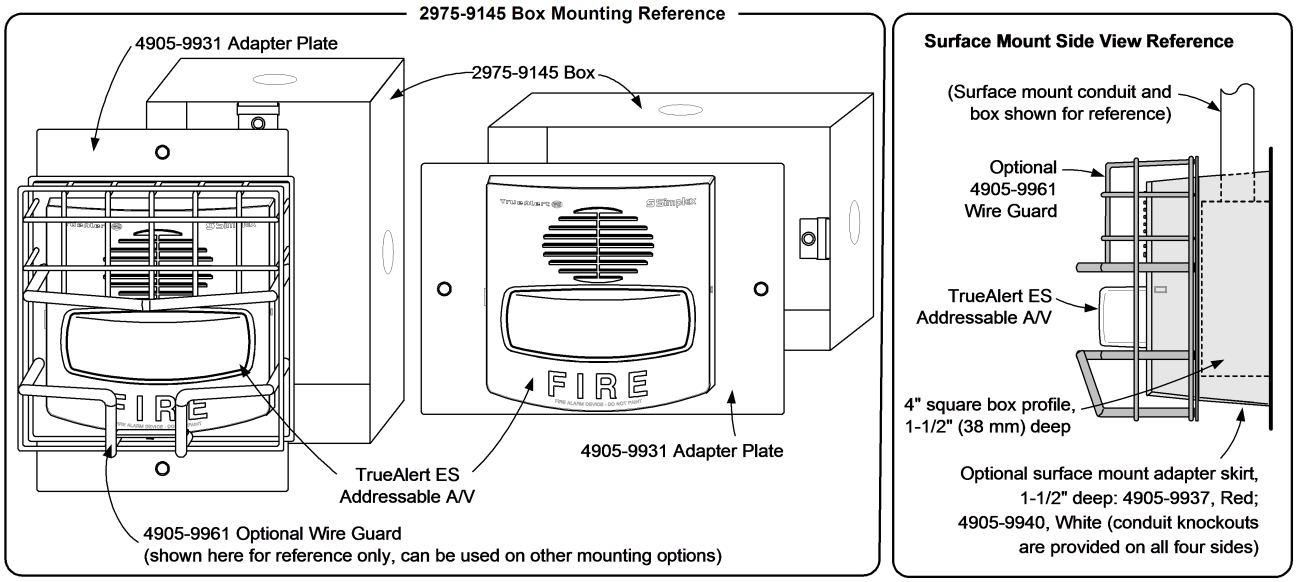

Figure 3: Adapter plate and surface mount installation reference

IDNAC SLC Controller compatibility reference

Table 5: Compatiblity reference

Compatible controllers	Datasheet 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

Table 6: Electrical ratings

Specification	Rating
Typical operating voltage range	23 VDC to 31 VDC, Special Application; for 17 VDC rating see TrueAlert ES A/V LEGACY compatibility reference
Supervisory requirements	1 unit load = 0.8 mA FACU current
IDNAC SLC loading	Maximum of 127 addresses per SLC, 139 unit loads

Table 7: Sound output ratings at 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

Table 8: Sound output dispersion per ULC S541 Anechoic Testing

Alignment	Rating
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

Table 9: Candela setting

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

Table 10: General specifications

Specification	Rating
Sound characteristics	2400 Hz to 3700 Hz sweep, modulated at 120 Hz rate
Temperature range	32°F to 122°F (0°C to 50°C)
Humidity range	10% to 93%, non-condensing @ 104°F (40°C)
Installation instructions	579-1031
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

Table 11: IDNAC SLC wiring specifications

IDNAC SLC wiring specifications	UTP, unshielded twisted pair recommended
Refer to the FACU installation instructions for more information	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

Table 12: Compatibility reference

Compatible controller	Datasheet 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*				

Table 13: Electrical ratings differences for legacy applications; for 29 VDC ratings refer to IDNAC SLC Controller compatibility reference

Specification	Rating
Voltage range	17 VDC to 31 VDC, special application

Table 14: Sound output ratings at 10 ft (3 m) at 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

Table 15: Candela setting

Specification	Rating			
Candela setting	15 cd	30 cd	75 cd	110 cd

Table 16: 17 VDC RMS current ratings

Specification	Rating			
17 VDC RMS current ratings, with horn on continuous at high setting, use when connected to TrueAlert Addressable SLCs, see Table 12	74 mA	85 mA	140 mA	185 mA