

SIEMENS



SA-LFS-CR-N



SA-LFSS-CR-F



SA-LFS-CW-N



SA-LFSS-CW-F

Siemens Acend™ Intelligent Series

**SA-LFS-CR-N, SA-LFSS-CR-F, SA-LFS-CW-N,
SA-LFSS-CW-F**

Installation

1 GENERAL INFORMATION

⚠ WARNING! Read this instruction manual carefully before using the product. Failure to comply with any of the following instructions, cautions and warnings could result in improper application, candela/wattage setting, installation and/or operation of these products in an emergency, which could result in property damage and serious injury or death to you and/or others.

This document pertains to Siemens Acend™ Intelligent sounder-only and sounder/strobe dual-type audible and/or visual notification appliances for ceiling mount applications. The included products are:

Sounder-only Appliances	Sounder/strobe Dual-type Appliances
SA-LFS-CR-N	SA-LFSS-CR-F
SA-LFS-CW-N	SA-LFSS-CW-F

The Acend™ Intelligent notification appliances conform to the UL requirements of a UL864 listed system. Each appliance has its own logical address which allows for configuration of appliance attributes including candela level, tone pattern, tone volume and many other configuration options. Additionally, the logical address allows for various groupings of appliances to respond to different input criteria from the system such as changing tone patterns based on detector inputs or activating specific logical groupings based on different alarm and supervisory causing inputs.

All appliances are equipped with an LED indicator that communicates the appliance status such as alarm activation and trouble conditions.

Configuration of various appliance attributes is available through the system configuration tool and via an optional cloud connected interface. Appliance status is communicated through the on-board LED indicator, via the Person Machine Interface (PMI) of the system, and through the optional cloud connected interface.

Lens-based sounder/strobe dual-type appliances synchronize by default when the connected Fire Alarm Control Unit (FACU) incorporates the Siemens sync protocol. They each have six candela settings. All appliances meet the NFPA72 20 millisecond light pulse duration code requirements.

All appliances are rated as low frequency devices per UL464, suitable for sleeping areas per NFPA 72. In addition, all appliances are UL/ULC listed as "Special Application 16 to 32VDC" and compliant with applicable clauses of FCC Part 15. They are intended to be used with compatible FACUs (Compatibility charts can be found either in the FACU installation instructions or in the compatibility document listed in the table below).

General Specifications

Compliant Standards	<ul style="list-style-type: none"> UL 1971, UL 1638, UL 464 ULC 525, ULC 526 FCC Part 15
Compatible Fire Alarm Control Units (FACU)	See document ID A6V14373881 for all compatible FACUs.
Environmental Specifications	<ul style="list-style-type: none"> Operating Values: Indoor dry environment only; 32 to 122 °F (0 to 50 °C); 95% R.H. The product's environmental declaration contains data on environmentally-friendly product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).
Tone Sound Output	High, Low (Configurable)
Tone Pattern	5 Patterns (Configurable). See Section 2 [→ 4] for more details.
Strobe Candela	6 Candela Levels (Configurable). See Section 3 [→ 5] for more details.
Input Power	16 to 32VDC
Flash Rate	1Hz

Table 1: General Specifications

Items	Sounder/strobe Appliances	Sounder-only Appliances
Max. Initial Peak (mA)	443	264
Max. Initial RMS (mA)	379	211
Max. Repetitive Peak (mA)	423	264
Max. Repetitive RMS (mA)	376	173
Surge Current Time Frame (ms)	16.7	16.7

Table 2: Manufacturer Defined Surge Current

Description	Parameter	Value
Maximum Line Voltage	V _{MAX}	32V
Minimum Line Voltage	V _{MIN}	16V
Maximum Rated Continuous Current with Isolator Closed	I _{C MAX}	1.5A
Maximum Rated Switching Current (short circuit condition)	I _{S MAX}	2A
Maximum Voltage at which Device Isolates (isolator opens)	V _{SO MAX}	10.5V
Minimum Voltage at which Device Isolates (isolator opens)	V _{SO MIN}	7.5V

Table 3: Isolation Ratings

2 TONE PATTERN SETTINGS

Tone Pattern Overview

Tone Pattern	Description	Remarks
Continuous	Continuous	UL Listed for Fire
Temporal Code 3	ANSI S3.41 Temporal Pattern	UL Listed for Fire
Temporal Code 4	Temporal 4 for carbon monoxide notification, switching to the low power mode after 4 mins	UL Listed for CO
March Time 120	Horn (0.2375 Sec. ON/0.2375 Sec. OFF/Repeat)	-
Canadian March Time 30	Canadian March Time 30 (0.2 Sec ON/1.8 Sec OFF/Repeat)	-

Tone Pattern Selection

Select tone patterns for appliances in the configuration tool of the fire alarm control panel.

2.1 Sound Output Values

Tone Pattern	Volume	Sound Output (dBA) within a Voltage Range of 16 to 32V		
		16V	24V	32V
Continuous	High	80	80	80
	Low	77	77	77
T3 (temporal 3 for fire evacuation)	High	80	80	80
	Low	77	77	77
T4, low power	High	80	80	80
	Low	77	77	77
March Time 120	High	80	80	80
	Low	77	77	77
Canadian March Time 30	High	80	80	80
	Low	77	77	77

Table 4: Reverberant dBA Per UL 464 within a Voltage Range of 16 to 32V

-0.9dB	+90 degrees horizontal
-0.9dB	-90 degrees horizontal
-1.1dB	+90 degrees vertical
-1.1dB	-90 degrees vertical

Table 5: Directional Characteristics

3 CANDELA LEVEL SETTINGS

The intelligent sounder/strobe appliances containing a strobe element support the following settings. Six candela levels are selectable via the system configuration tool: 15cd (default), 30cd, 75cd, 110cd, 135cd, and 185cd.

3.1 Light Output

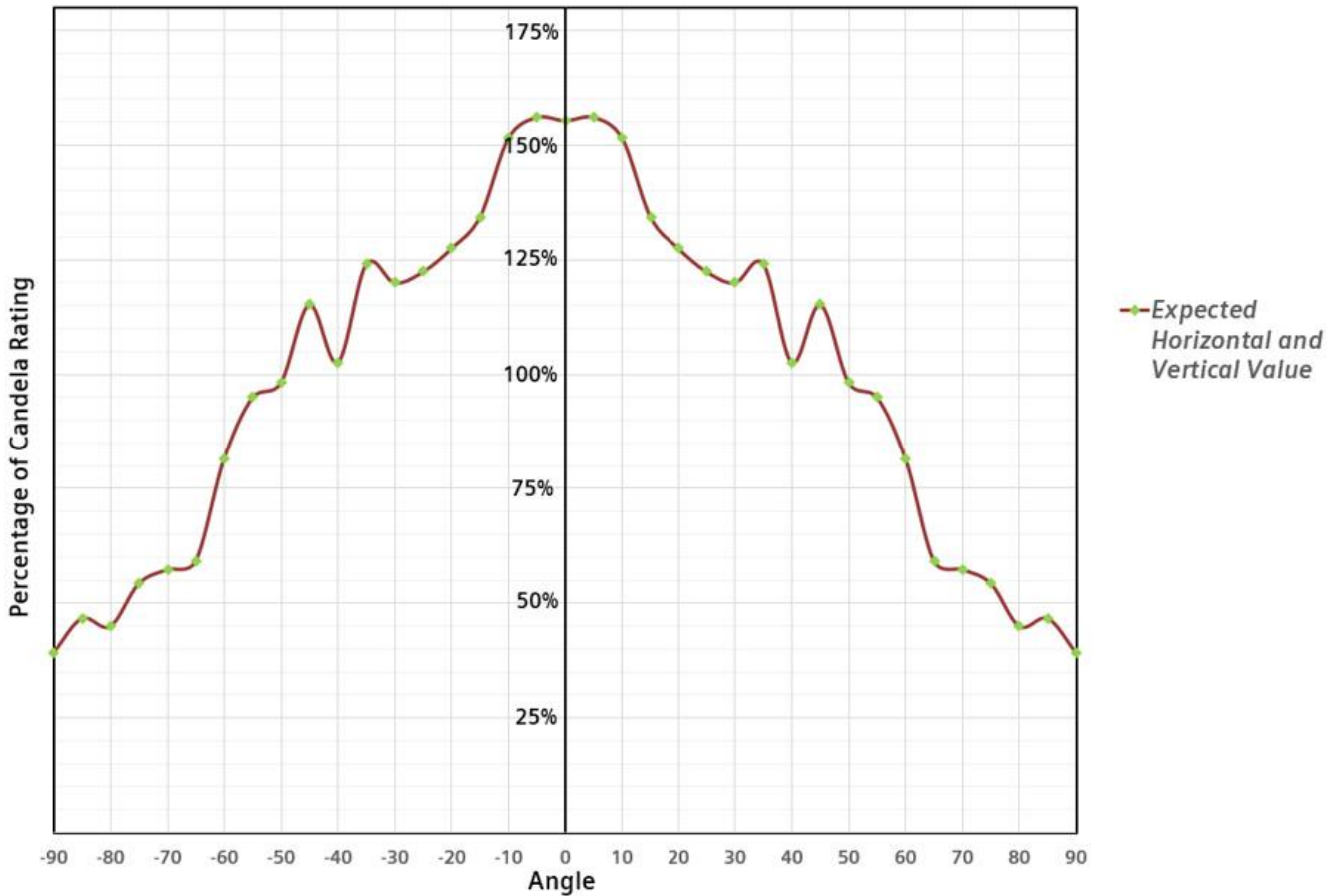


Fig. 1: SA-LFSS-CR-F and SA-LFSS-CW-F Expected Light Output

4 CURRENT DRAW INFORMATION

Type	Supervisory Current Average (mA)
SA-LFS-CR-N	0.25
SA-LFS-CW-N	0.25
SA-LFSS-CR-F	1.13
SA-LFSS-CW-F	1.13


Table 6: Supervisory Current Average (mA)

Tone	Volume	Current Draw (mA) at Different Strobe Candela Settings					
		15cd	30cd	75cd	110cd	135cd	185cd
Continuous	High	106	114	136	160	193	256
	Low	49	57	82	110	142	212
T3 (temporal 3 for fire evacuation)	High	77	81	102	126	153	212
	Low	35	42	67	95	126	196
T4, low power	High	77	81	102	126	153	212
	Low	35	42	67	95	126	196
March Time 120	High	77	81	102	126	153	212
	Low	35	42	67	95	126	196
Canadian March Time 30	High	35	40	58	81	112	180
	Low	18	26	49	78	110	178

Table 7: Sounder/strobe Current Draw (mA) at Different Candela Settings within a Voltage Range of 16 to 32V

Tone	Volume	Current Draw (mA)
Continuous	High	92
	Low	33
T3 (temporal 3 for fire evacuation)	High	54
	Low	25
T4, low power	High	54
	Low	25
March Time 120	High	54
	Low	25
Canadian March Time 30	High	26
	Low	11

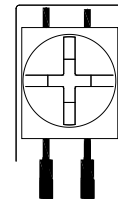
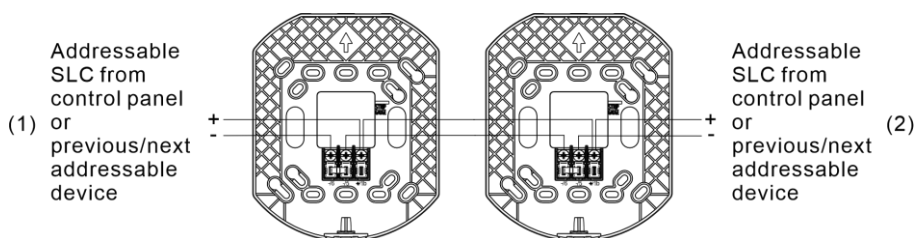
Table 8: Tone Current Draw (mA) within a Voltage Range of 16 to 32V

⚠ WARNING	
	Overloading power sources or exceeding ratings could result in loss of power and failure to alert occupants during an emergency, which could result in property damage and serious injury or death to you and/or others.

5 WIRING

- All appliances have three in-out wiring terminals (-/6, -/5 and +/1b) that accept two #12 to #18 American Wire Gauge (AWG) solid and stranded wires at each screw terminal. Strip leads 3/8 inches and connect them to screw terminals. A strip gauge is available on the mounting plate to guide in wire stripping.
- Do not fully back out terminal screws.
- A continuity jumper is factory installed between terminals 5 and 6 to allow wiring continuity testing before installation of appliance electronics. Remove the jumper before mounting the appliance to the base.
- Wiring shall be done in accordance with:
 - In the United States, the National Electrical Code, NFPA 70, and the National Fire Alarm and Signaling Code, NFPA 72.
 - In Canada, CSA C22.1, Canadian Electrical Code, Part 1, Safety Standard for Electrical Installations, Section 32.
 - In Canada, CAN/ULC-S524, Standard for Installation of Fire Alarm Systems

Wiring Diagram



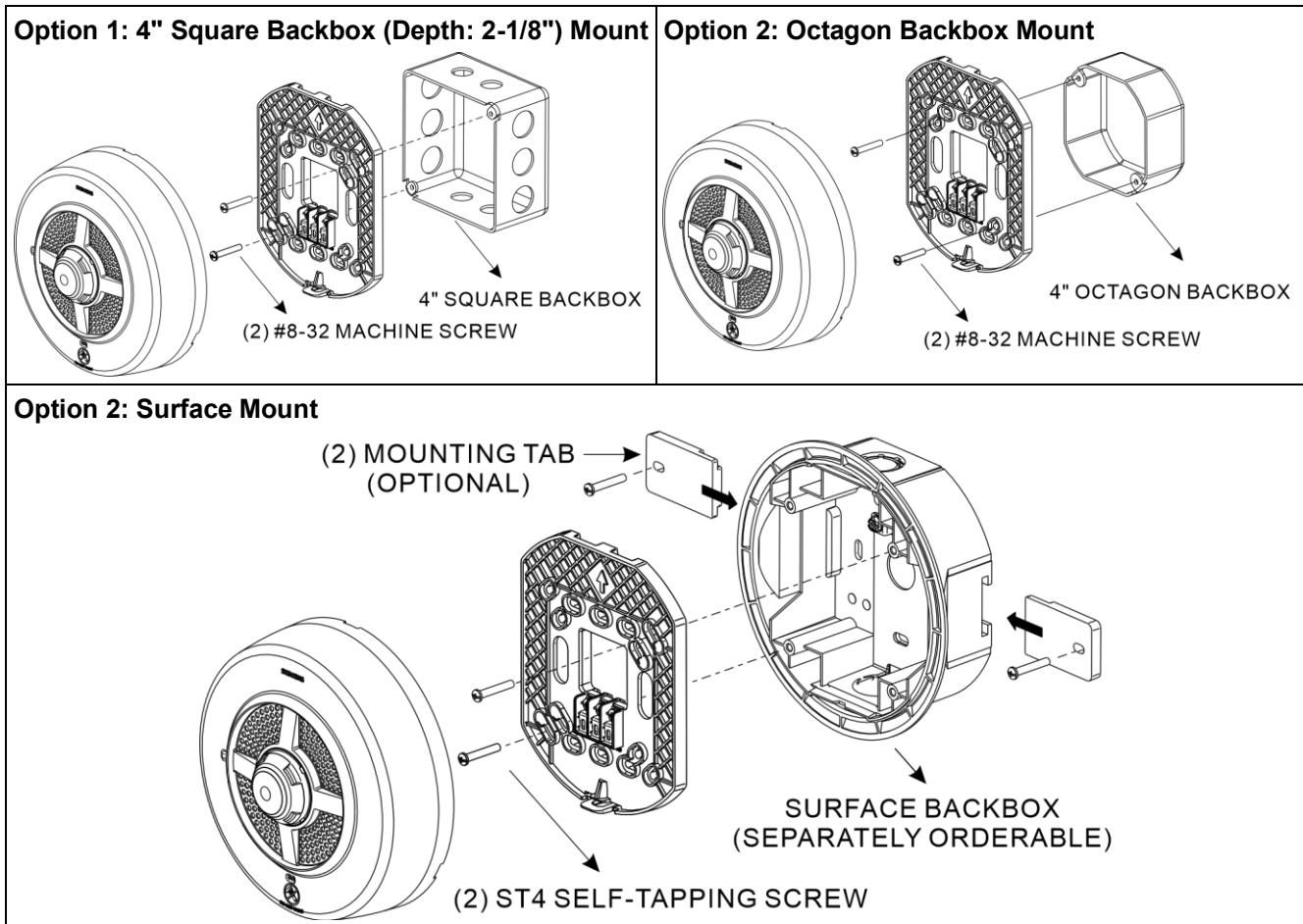
Note: Break all in-out wire runs on supervised circuits to ensure integrity of circuit supervision.

(1) To next appliance

(2) From preceding appliance or FACU

6 MOUNTING

6.1 MOUNTING OPTIONS

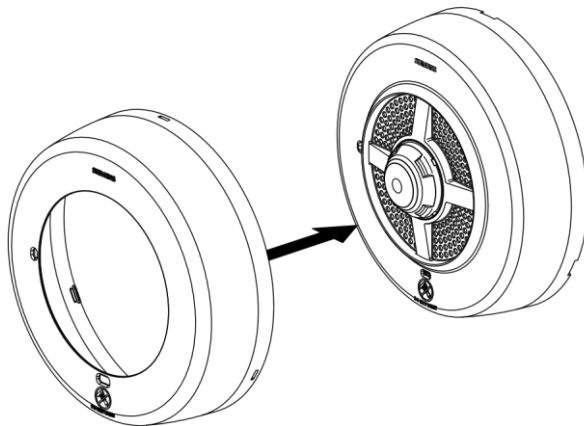


6.2 MOUNTING PROCEDURE

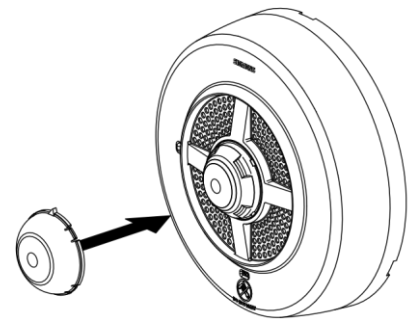
1. Ensure there is enough clearance and wiring room before installing backboxes and conduit, especially if sheathed multiconductor cable or 3/4-inch conduit fittings are used.
2. Select a mounting option (see MOUNTING OPTIONS [→ 8]) and install the backbox. Supported backboxes include octagon and 4" backboxes. If surface mounting is needed, install a separately orderable surface backbox from Siemens.
NOTICE! Conduit entrances to the backbox should be selected to provide sufficient wiring clearance for the installed product. Do not pass additional wires (used for anything other than the signaling appliance) through the backbox; doing so could result in insufficient wiring space for the signaling appliance.
3. Install the mounting plate on the backbox. Use 8-32 screws for 4" square or octagon backboxes, and ST4 self-tapping screws for surface backboxes.
NOTICE! 1) Do not over tighten mounting screws. Excessive torque can distort the mounting plate and may affect operability; 2) when using power tools to tighten mounting screws, ensure the torque is set to the lowest setting available.
4. Connect field wires to terminals on the mounting plate (see WIRING [→ 7]). Use care and proper techniques to position the field wires in the backbox so that they use minimum space and produce minimum stress on the product. This is especially important for stiff, heavy gauge wires and wires with thick insulation or

sheathing. When terminating field wires, do not use more lead length than required. Excess lead length could result in insufficient wiring space for the signaling appliance.

5. Check wire continuity at the FACU with the continuity jumper between terminals 5 and 6.
NOTICE! Remove the continuity jumper after wire continuity test is completed.
6. Snap the appliance over the mounting plate.
7. Install the LK-11 separately orderable locking screw (optional) to secure the appliance in place on the mounting plate and reduce risk of tampering.
8. If needed, snap separately orderable accessories (alternate cover and colored lens, optional) onto the appliance as demonstrated in the following graphics.



Snap Alternate Cover onto The Appliance



Snap Colored Lens onto Low Frequency Sounder/strobe Dual-type Appliance

⚠ WARNING! Do not paint this device.

NOTICE! Final acceptance is subject to Authorities Having Jurisdiction.

⚠ WARNING! When installing strobes in an open office or other areas containing partitions or other viewing obstructions, special attention should be given to the location of the strobes so that their operating effect can be seen by all intended viewers, with the intensity, number, and type of strobes being sufficient to make sure that the intended viewer is alerted by proper illumination, regardless of the viewer's orientation.

⚠ WARNING! A small possibility exists that the use of multiple strobes within a person's field of view, under certain circumstances, might induce a photo-sensitive response in persons with epilepsy. Strobe reflections in a glass or mirrored surface might also induce such a response. To minimize this possible hazard, Siemens strongly recommends that the strobes installed should not present a composite flash rate in the field of view which exceeds five (5) hz at the operating voltage of the strobes. Siemens also strongly recommends that the intensity and composite flash rate of installed strobes comply with levels established by applicable laws, standards, regulations, codes and guidelines.

⚠ WARNING! Colored lenses must only be used with devices that are not fire printed. Colored lens strobes are UL Listed under UL 1638 (Visual Signaling Appliances) for Private Mode Signaling; this includes Emergency Warning Signaling (not for Fire Evacuation). See table below for candela deratings of strobe devices.

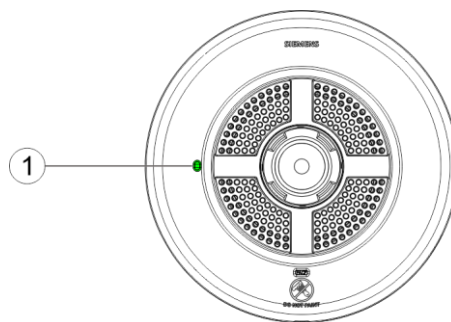
Lens Color	Candela De-Rating on-axis (straight on)
Amber	0%
Green	0%
Blue	-30%
Red	-40%

6.3 MOUNTING MATRIX

Accessories	Notification Appliances			
	SA-LFS-CR-N	SA-LFS-CW-N	SA-LFSS-CR-F	SA-LFSS-CW-F
SCVR-SS-CR-EMG	x		x	
SCVR-SS-CW-EMG		x		x
SCVR-SS-CR-ALR	x		x	
SCVR-SS-CW-ALR		x		x
SCVR-SS-CR-AGT	x		x	
SCVR-SS-CW-AGT		x		x
SCVR-SS-CR-HOF	x		x	
SCVR-SS-CW-HOF		x		x
SCVR-SS-CR-BNK	x		x	
SCVR-SS-CW-BNK		x		x
SMB-SS-CR	x		x	
SMB-SS-CW		x		x
STLENS-R			x	x
STLENS-A			x	x
STLENS-B			x	x
STLENS-G			x	x

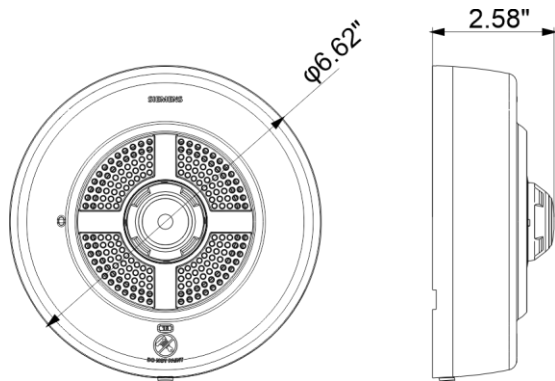
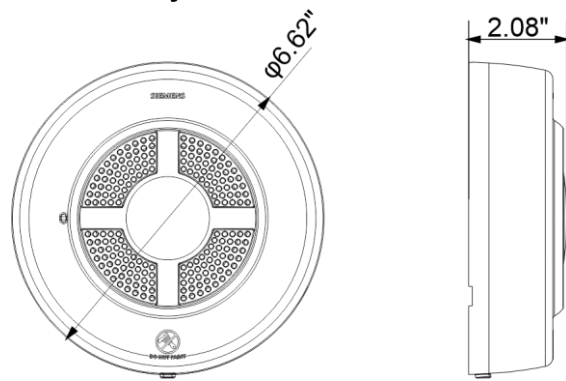
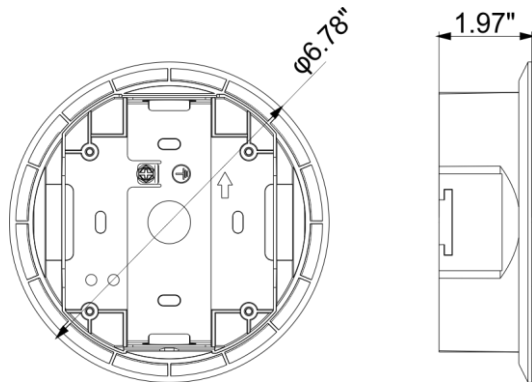
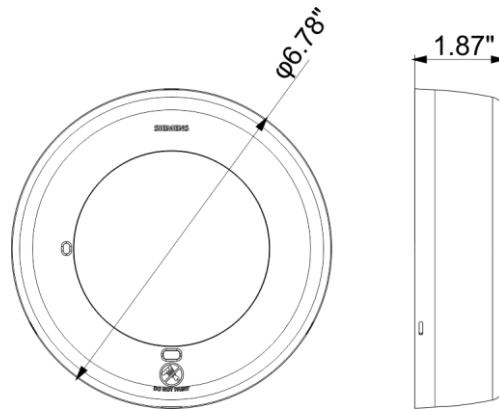
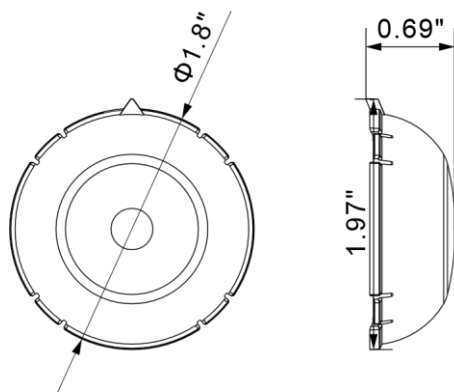
7 LED INDICATOR

There is one LED used as an internal alarm indicator (1) on all appliances. It can indicate the following statuses:



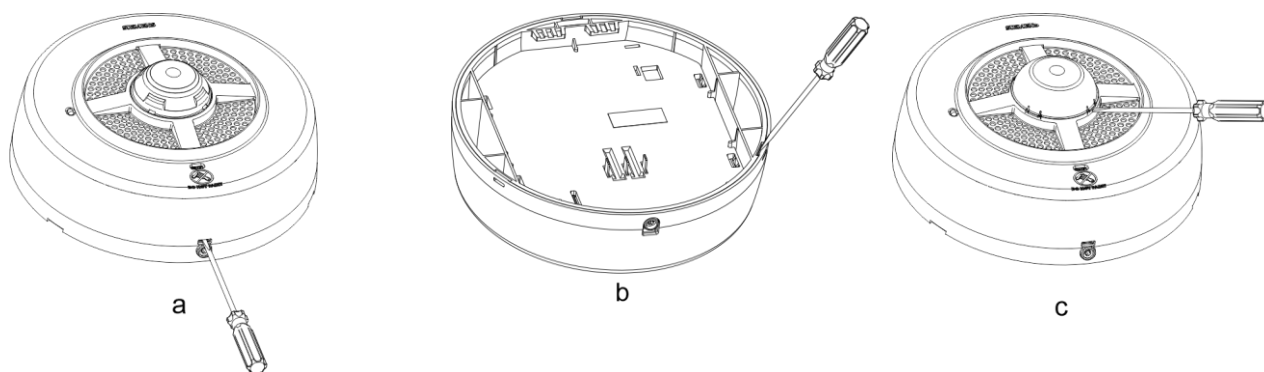
Status	Color	Flashing Pattern	Description
Alarm	Red	1× per 10s	Indicates that fire alarm and signaling is activated.
Trouble	Yellow	1× per 4s	Indicates that the appliance has unresolved reported troubles.
Normal	Green	1× per 10s	Indicates that the appliance works in the normal mode.

8 DIMENSIONS

Sounder/strobe**Sounder-only****Surface Mounting Box****Alternate Cover****Colored Lens**


9 DISASSEMBLY

First, remove the LK-11 locking screw (if used). Then, insert a small flat blade screwdriver (e.g., 1/4 inch) into the slots as shown in the following illustrations. Push in to release and lift up to disassemble the appliance (a), then remove alternate cover (b) and colored lens (c) if installed. **Note:** Alternate covers can only be removed after the appliance is disassembled.



10 REGULATORY COMPLIANCE INFORMATION

FCC Statement

⚠ WARNING	
	<p>Installation and usage of equipment not in accordance with instructions manual may result in:</p> <p>Radiation of radio frequency energy Interference to radio communications</p> <ul style="list-style-type: none">• Install and use equipment in accordance with installation instructions manual• Read the following information

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions 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 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 is likely to 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.

IN NO CASE WILL SELLER'S LIABILITY EXCEED THE PURCHASE PRICE PAID FOR A PRODUCT.

11 ORDERING INFORMATION

Model Number	Part Number	Description
SA-LFS-CR-N	S54362-F15-A1	Low Frequency Sounder (ceiling, red)
SA-LFS-CW-N	S54362-F15-A2	Low Frequency Sounder (ceiling, white)
SA-LFSS-CR-F	S54362-F21-A1	Low Frequency Sounder-Strobe (ceiling, red, Fire)
SA-LFSS-CW-F	S54362-F21-A2	Low Frequency Sounder-Strobe (ceiling, white, Fire)

11.1 ACCESSORIES

Model Number	Part Number	Description
SCVR-SS-CR-EMG	S54370-F41-A1	Alternate Cover (ceiling, red, Emergency)
SCVR-SS-CW-EMG	S54370-F42-A1	Alternate Cover (ceiling, white, Emergency)
SCVR-SS-CR-ALR	S54370-F45-A1	Alternate Cover (ceiling, red, Alert)
SCVR-SS-CW-ALR	S54370-F46-A1	Alternate Cover (ceiling, white, Alert)
SCVR-SS-CR-AGT	S54370-F49-A1	Alternate Cover (ceiling, red, Agent)
SCVR-SS-CW-AGT	S54370-F50-A1	Alternate Cover (ceiling, white, Agent)
SCVR-SS-CR-HOF	S54370-F53-A1	Alternate Cover (ceiling, red, HOF) (L ₁)
SCVR-SS-CW-HOF	S54370-F62-A1	Alternate Cover (ceiling, white, HOF) (L ₁)
SCVR-SS-CR-BNK	S54370-F56-A1	Alternate Cover (ceiling, red, Blank)
SCVR-SS-CW-BNK	S54370-F57-A1	Alternate Cover (ceiling, white, Blank)
SMB-SS-CR	S54370-F60-A1	Surface Mount Box (ceiling, red)
SMB-SS-CW	S54370-F61-A1	Surface Mount Box (ceiling, white)
STLENS-R	S54370-F17-A1	Colored Lens Red
STLENS-A	S54370-F17-A2	Colored Lens Amber
STLENS-B	S54370-F18-A1	Colored Lens Blue
STLENS-G	S54370-F18-A2	Colored Lens Green

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