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## Selectable Output Amber Lens Speaker/Strobe

For use with model SPSW-ALERT



**SPECIFICATIONS**

Operating Temperature:	32°F to 120°F (0°C to 49°C)
Humidity Range:	10% to 93% Non-condensing
Nominal Voltage: (speakers)	25 Volts or 70.7 Volts (nominal)
Max. Supervisory Voltage: (speakers and strobes)	50 VDC
Strobe Flash Rate:	1 flash per second
Nominal Voltage: (strobes)	Regulated 12VDC or FWR or regulated 24VDC or FWR
Speaker Frequency Range:	400 to 4000 Hz
Power Settings: (Speakers)	1/4, 1/2, 1, 2 watts
Operating Voltage Range:	8 to 17.5V (12V nominal) or 16 to 33V (24V nominal)
(includes fire alarm panels with built in sync)	
Operating Voltage with MDL Sync Module:	9 to 17.5V (12V nominal) or 17 to 33V (24V nominal)
Input Terminal Wire Gauge:	12-18 AWG

**NOTE: Strobes will operate at 12 V nominal for 15 & 15/75 candela settings only. Switching between ranges is automatic.**

**Dimensions for Speaker/Strobes and Accessories**

Wall Product	Length	Width	Depth
SPS Speaker/Strobe	6.0"	5.0"	4.7" (including lens and speaker)
Surface Mount Skirt	6.5"	5.0"	2.7"*

\*Depth above finished surface of wall or ceiling.

WARNING: Not to be used as a visual public mode alarm notification appliance.

NOTICE: This manual shall be left with the owner/user of this equipment.

**GENERAL DESCRIPTION**

The SpectrAlert Advance amber lens strobe products offer an amber colored strobe with the word "ALERT" printed on the white housing to comply with the latest standard for mass notification systems. They are designed to be used in 12 or 24 volt, DC or FWR (full wave rectified) systems. Amber lens strobes are UL Listed under 1638 (Visual Signaling Appliances) for Private Mode General Utility Signaling. Device may be mounted to either wall or ceiling. All SpectrAlert Advance products are suitable for use in synchronized systems. The System Sensor MDL module may be used to provide synchronization. The speaker portion can be operated with distribution amplifiers having an output voltage of either 25 or 70.7 volts. With its low total harmonic distortion, the SpectrAlert Advance SP series offers high fidelity sound output. The speakers operate at any one of four input power levels. These products are electrically backward compatible with the previous generation of SpectrAlert notification appliances.

**FIRE ALARM SYSTEM CONSIDERATIONS**

All wiring must be installed in compliance with the National Electrical Code (NEC) and applicable local codes. System Sensor recommends installing fire alarm speakers in compliance with NFPA 72, ANSI/UL1480 and NEC 760.

**LOOP DESIGN AND WIRING**

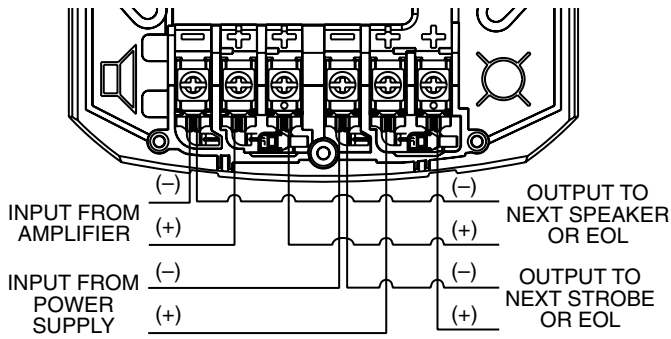
The system designer must make sure that the total current drawn by the devices on the loop does not exceed the current capability of the panel supply, and that the last device on the circuit is operated within its rated voltage. The current draw information for making these calculations can be found in the tables within this manual. For convenience and accuracy, use the voltage drop calculator on the System Sensor website (www.systemsensor.com) or CD-ROM.

When calculating the voltage available to the last device, it is necessary to consider the voltage drop due to the resistance of the wire. The thicker the wire, the smaller the voltage drop. Wire resistance tables can be obtained from electrical handbooks. Note that if Class A wiring is installed, the wire length may be up to twice as long as it would be for circuits that are not fault tolerant.

NOTE: For 24 volt applications, the total number of strobes on a single NAC must not exceed 40, with a maximum loop resistance of 120 ohms. For 12 volt applications, the total number of strobes must not exceed 12, with a maximum loop resistance of 30 ohms.

NOTE: Supply power for strobe must be continuous for proper operation.

**FIGURE 1. WIRING DIAGRAM:**



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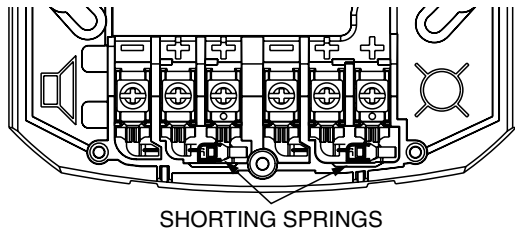
**ELECTRICAL WIRING**

1. Connect the speaker as shown in Figure 1.  
 NOTE: Do not loop electrical wiring under terminal screws. Wires connecting the device to the control panel must be broken at the device terminal connection in order to maintain electrical supervision.
2. There are two rotary switches on the back of the product. The first switch is used to select either 25 or 70.7 volts input for the speaker portion. The second switch is used to select the input power of 1/4, 1/2, 1 or 2 watts. See diagram.

**SHORTING SPRING**

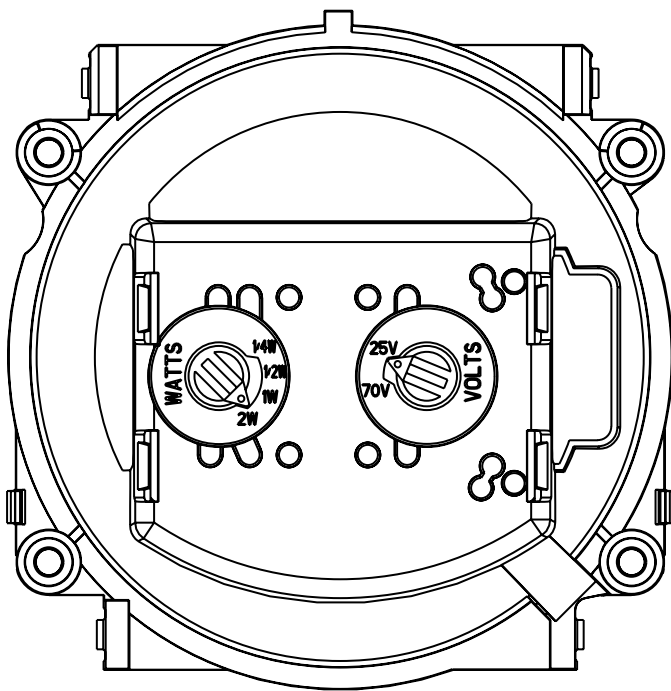
NOTE: Shorting springs are provided between terminals 2 and 3 and between terminals 5 and 6 of the mounting plate to enable wiring checks after the system has been wired, but prior to installation of the final product. These springs will automatically disengage when the product is installed, to enable supervision of the final system.

**FIGURE 2. SHORTING SPRING**



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**FIGURE 3. SPEAKER WATTAGE AND VOLTAGE SETTINGS:**



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**TABLE 1. SOUND LEVELS FOR EACH TRANSFORMER POWER TAP:**

UL Reverberant (dBA @ 10 ft.)	
2W	85
1W	82
1/2W	79
1/4W	76

UL Anechoic (dBA @ 10 ft.)	
2W	88
1W	86
1/2W	83
1/4W	80

**CAUTION**

Signal levels exceeding 130% rated signal voltage can damage the speaker. Consequently, an incorrect tap connection may cause speaker damage. This means that if a 25V tap is selected when a 70.7V amplifier is being used, speaker damage may result. Therefore, be sure to select the proper taps for the amplifier voltage/input power level combination being used.

**CANDELA SELECTION**

Adjust the slide switch on the rear of the product to position the desired candela setting in the small window on the front of the unit. For amber lensed strobes used for full profile measurement, listed candela ratings must be reduced in accordance with Table 3. Use Table 2 to determine the current draw for each candela setting.

NOTE: SpectrAlert products set at 15 and 15/75 candela automatically work on either 12V or 24V power supplies. The products are not listed for 12V operating voltages when set to any other candela settings.

**TABLE 2. STROBE CURRENT DRAW MEASUREMENTS:**

Strobe Current Draw(mA)					
	Candela	8-17.5 Volts		16-33 Volts	
		DC	FWR	DC	FWR
Standard Candela Range	15	123	128	66	71
	15/75	142	148	77	81
	30	NA	NA	94	96
	75	NA	NA	158	153
	95	NA	NA	181	176
	110	NA	NA	202	195
	115	NA	NA	210	205

**TABLE 3. CANDELA DERATING:**

Cd Switch Setting	On-Axis Rating (UL 1638)	Equivalent Cd Rating for UL1971 Profile
15	15	12
15/75	15/75	15/75
30	30	24
75	75	60
95	95	75
110	110	85
115	115	90

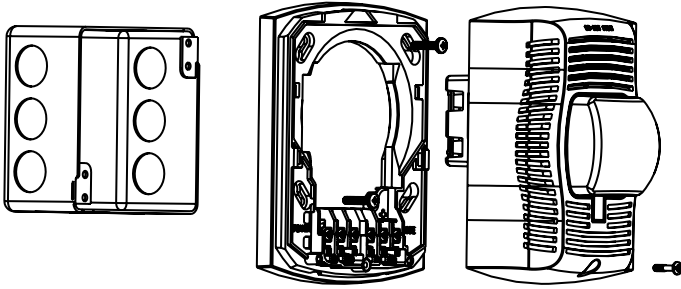
NOTE: UL1971 is not applicable to mass notification devices, but these readings were obtained using the measurement procedure specified under UL1971.

**MOUNTING**

1. Attach mounting plate to junction box as shown in Figure 4. The mounting plate is compatible 4" x 4" x 2 1/8" junction boxes. If using a back box skirt or trim ring, attach the mounting plate to the skirt or trim ring and then attach the entire assembly to the junction box (see Figures 4 and 5).
2. Connect field wiring to terminals, as shown in Figure 1.
3. If the product is not to be installed at this point, use the paint cover to prevent contamination of the mounting plate.
4. To attach product to mounting plate, remove the paint cover, then hook tabs on the product housing into the grooves on mounting plate.

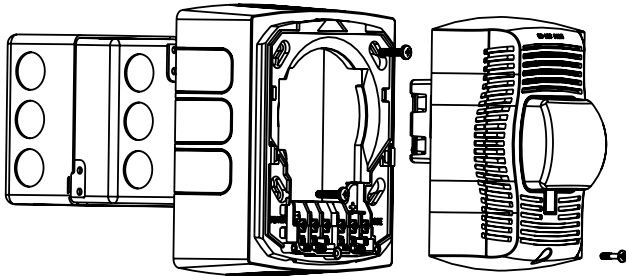
- Then, swing product into position to engage the pins on the product with the terminals on the mounting plate. Make sure that the tabs on the back of the product housing fully engage with the mounting plate.
- Secure product by tightening the single mounting screw in the front of the product housing.** For tamper resistance, the standard captivated mounting screw may be replaced with the enclosed Torx screw.

**FIGURE 4: WALL MOUNT PRODUCT WITH TRIM RING:**



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**FIGURE 5: WALL MOUNT PRODUCT WITH BACK BOX SKIRT:**



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## Please refer to insert for the Limitations of Fire Alarm Systems



### THE LIMITATIONS OF SPEAKER/STROBES

**The speaker and/or strobe will not work without power.** The speaker/strobe gets its power from the fire/security panel monitoring the alarm system. If power is cut off for any reason, the speaker/strobe will not provide the desired audio or visual warning. Always make sure that the individual speakers are tested after installation per NFPA regulations.

**The speaker may not be heard.** The loudness of the speaker meets (or exceeds) the current Underwriters Laboratories' standards. However, the speaker may not attract the attention of a sound sleeper or one who has recently used drugs or has been drinking alcoholic beverages. The speaker may not be heard if it is placed on a different floor from the person in hazard or if placed too far away to be heard over the ambient noise. Traffic, air conditioners, machinery, or music appliances may prevent even alert persons from hearing the alarm. The speaker may not be heard by persons who are hearing impaired.

**The signal strobe may not be seen.** The electronic visual warning signal uses an extremely reliable xenon flash tube. It flashes at least once every second. The strobe must not be installed in direct sunlight or areas of high light intensity (over 60 foot candles) where the visual flash might be disregarded or not seen. The strobe may not be seen by the visually impaired.

**The signal strobe may cause seizures.** Individuals who have positive photoic response to visual stimuli with seizures, such as persons with epilepsy, should avoid prolonged exposure to environments in which strobe signals, including this strobe, are activated.

**The signal strobe cannot operate from coded power supplies.** Coded power supplies produce interrupted power. The strobe must have an uninterrupted source of power in order to operate correctly. System Sensor recommends that the speaker and signal strobe always be used in combination so that the risks from any of the above limitations are minimized.

### THREE-YEAR LIMITED WARRANTY

System Sensor warrants its enclosed product to be free from defects in materials and workmanship under normal use and service for a period of three years from date of manufacture. System Sensor makes no other express warranty for this product. No agent, representative, dealer, or employee of the Company has the authority to increase or alter the obligations or limitations of this Warranty. The Company's obligation of this Warranty shall be limited to the replacement of any part of the product which is found to be defective in materials or workmanship under normal use and service during the three year period commencing with the date of manufacture. After phoning System Sensor's toll free number 800-SENSOR2 (736-7672) for a Return Authorization number, send defective units postage prepaid to: System Sensor, Returns Department, RA # \_\_\_\_\_, 3825

Ohio Avenue, St. Charles, IL 60174. Please include a note describing the malfunction and suspected cause of failure. The Company shall not be obligated to replace units which are found to be defective because of damage, unreasonable use, modifications, or alterations occurring after the date of manufacture. In no case shall the Company be liable for any consequential or incidental damages for breach of this or any other Warranty, expressed or implied whatsoever, even if the loss or damage is caused by the Company's negligence or fault. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

### FCC STATEMENT

SpectraAlert Speaker/Strobes have been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate

radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.