

SP100ADA Series Dual-transformer Speaker/Strobes for Fire Protective Signaling Systems



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Specifications

Mechanical

Input Terminals: 12 to 18 AWG (3.31 to 0.82 mm²)
 Speaker Size: 4 inches (101 mm)
 Grille Size: 5" (127 mm) square

Electrical (Speaker)

Voltage Input: 25 volts or 70.7 volts (nominal)
 Frequency Range: 400 - 4000 Hz
 Operating Temperature Range: 32° to 120° F (0° to 49°C)

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

General Description

The National Fire Protection Association (NFPA) has published standards and recommended practices for the speakers described in this manual. As a result, the installer must be familiar with these requirements as well as all local codes and special requirements of the authority having jurisdiction.

SP100ADA series speaker/strobes can be operated with distribution amplifiers having an output voltage of either 25 volts or 70.7 volts.

The speakers operate at any one of six input power levels. The output sound level is selected at the time of installation, but can be changed, if necessary.

The speaker is also equipped with a capacitive input to allow for DC supervision.

The SP100ADA Series Speaker/Strobe is equipped with an attached 15, 15/75, 75, or 110 candela (cd), UL 1971 listed strobe. Although they are shipped as a unit, the strobe and speaker are electrically independent and require separate power sources. Strobes can be powered by means of a 24V regulated or full-wave rectified unfiltered supply.

Installation - For Strobe Replacement See NFPA 72, Chapter 6

All wiring must be installed in compliance with the National Electrical Code and all applicable local codes as well as any special requirements of the authority having jurisdiction, using the proper wire size. This also includes all applicable NFPA Standards, ANSI/UL 1480, and NEC 760.

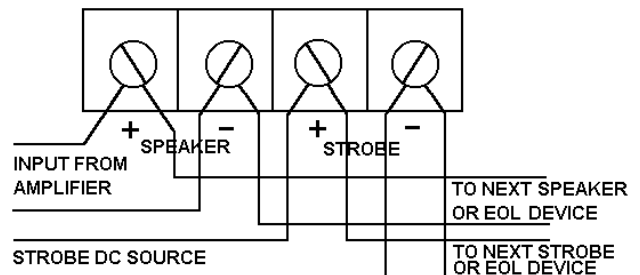
Electrical

1. Connect the speaker/strobe as shown in Figure 1. Keep in mind that even though the speaker and strobe are a single mechanical unit, they are electrically independent and require separate power sources.

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. Notice that the speaker circuit board is equipped with two sets of posts and associated electrical jumper wires. One set of posts is numbered 1 through 6 while the other is labeled **A** and **B**. Both electrical leads are fitted with a barrel connector. These two sets of posts and leads enable the installer to select any one of six sound pressure levels with either a 25 volt or 70.7 volt amplifier.

Figure 1. Electrical connections:



A78-2472-00

For example, Table 1 shows that to select a 1/4 Watt input when a 25 volt amplifier is being used, slide the blue lead onto post **3** and slide the yellow lead onto post **B**. Similarly, to select a 4 Watt input with a 70.7 volt amplifier, slide the blue and yellow leads onto posts **2** and **A**, respectively.

Table 1 also lists the UL reverberant and anechoic output sound levels for each transformer power tap on the SP100ADA Series Speaker/Strobes.

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.

NEVER connect the yellow jumper to the posts numbered 1 through 6 or the blue jumper to lettered posts A or B.

Mechanical

Slotted head screws are included for attaching the speaker to the electrical junction box. Insert the decorative filler plugs supplied into the remaining two holes in the grille.

Mounting

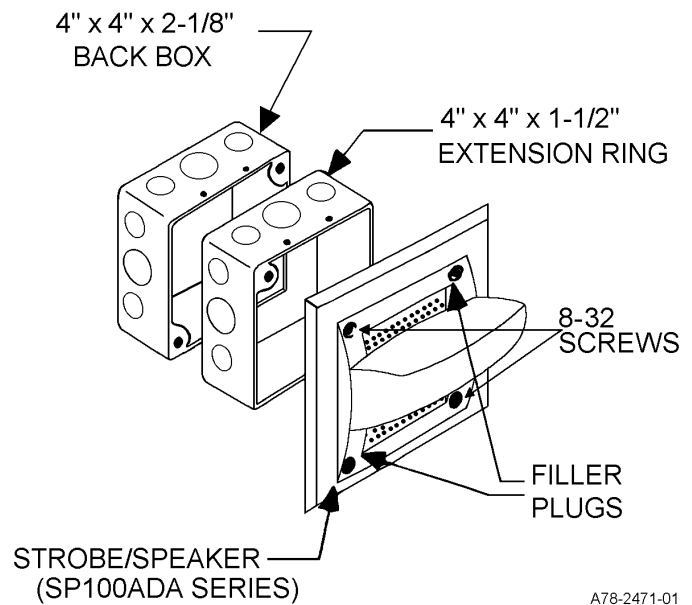
See Figure 2. The speaker can be flush mounted on a 4" X 4" X 2-1/8" back box with a 1-1/2" extension ring, as follows:

- A. Select the appropriate pair of diagonally opposite mounting holes in the speaker grille.
- B. Use the two 8-32 X 1-3/4" slotted pan head screws, provided, to attach the speaker/strobe to the back box.
- C. Insert the decorative filler plugs (supplied) into the remaining two speaker mounting holes.

Table 1:

	4W	2W	1W	1/2 W	1/4 W	1/8 W
25 V	1B	1A	2B	2A	3B	4B
70.7 V	2A	3B	4B	5B	6B	6A
UL Reverberant (dBA @ 10 ft.)	90	87	84	81	78	75
Anechoic (dBA @ 10 ft.)	93	90	87	84	81	78

Figure 2:



A78-2471-01

Strobe Light Ratings

The signaling strobe is rated for 0° to 49° C and is not suitable for outdoor use.

NOTE: The light output at 0° viewing angle for SP1*241575ADA is 75 cd (See Figure 3).

The rated light output of the SP1*2415ADA and SP1*241575ADA is 15 cd (See Figure 3).

R = Red
W = White

The rated light output of the SP1*2475ADA is 75 cd (See Figure 3).

The rated light output of the SP1*24110ADA is 110 cd (See Figure 3).

Figure 3:

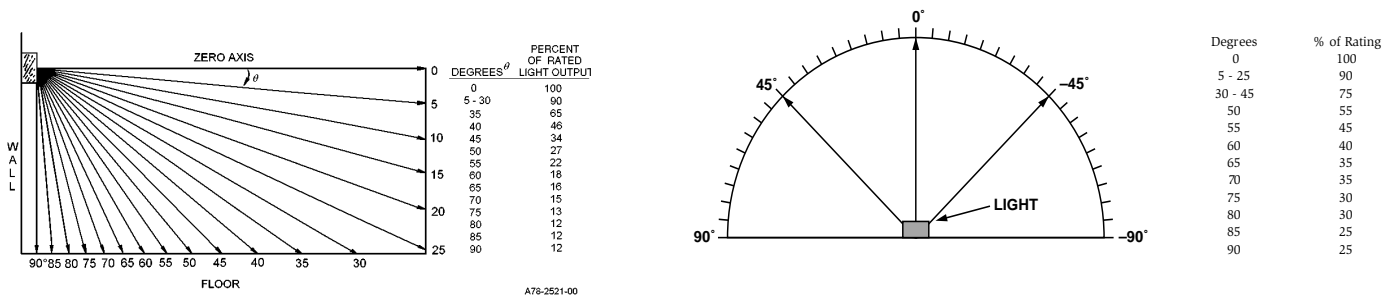


Table 2. Strobe characteristics:

Model	Supply Voltage Range	Operating Current from Regulated Supply			Operating Current from Full-Wave Rectified Unfiltered Supply		
		Average Operating Current	Peak Current (mA) 20/30V	Inrush Current (mA in excess of Peak)	Average Operating Current (mArms)	Peak Current (mA) 20Vrms/30Vrms	Inrush Current (Amps in excess of Peak)
SP1R24110ADA SP1W24110ADA	20-30V	210	470/500	0	245	400/500	0.08
SP1R2475ADA SP1W2475ADA	20-30V	170	385/400	0	200	320/370	0.04
SP1R2415ADA SP1W2415ADAB	20-30V	75	160/180	0	90	275/290	0.02
SP1R241575ADA SP1W241575ADA	20-30V	93	210/220	0	120	275/290	1.0

Note: Inrush current lasts on the order of microseconds

Table 3:

<p>SP100W24MC</p> <ul style="list-style-type: none"> C = Ceiling mount LO = 1.5 cd UL 1638 Strobe M = 15 cd UL 1638 Strobe 24 = 24 VDC Strobe SP100W = Round Grille, White Speaker SP101W = Square Grille, White Speaker SP101R = Square Grille, Red Speaker 	<p>SP1R2415ADA</p> <ul style="list-style-type: none"> 15 = 15 cd, UL 1971 Strobe 1575 = 15 cd UL 1971 Strobe 75 = 75 cd, UL 1971 Strobe 110 = 110 cd, UL 1971 Strobe 24 = 24 VDC Strobe SP1R = Square Grille, Red Speaker SP1W = Square Grille, White Speaker V4R = V400 Square, Red Speaker
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The Limitations of Speaker/Strobes

If either of the power option jumper wires is not plugged into one of the appropriate option positions, the speaker will not sound and there will be no trouble indication at the panel. 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 that flashes at least once every three seconds meets or exceeds current

Underwriters Laboratories' standard 1971 and uses an extremely reliable xenon flash tube. The visual warning signal is suitable for direct viewing and must be installed within an area where it can be seen by building occupants. 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 photic 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.

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 speaker/strobe 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 speaker/strobe. 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 repair or replacement of any part of the speaker/strobe 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, Repair Depart-

ment, 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 repair or 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.