

SS12/24ADA* Series Strobes and MASS12/24ADA* Series Horn/Strobes for Fire Protective Signaling Systems

*ULC models add suffix "A"; strobes and sounder/strobes available in 24VDC, 15cd only



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Table 1. SS12/24ADA Series electrical ratings:

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	Peak Current (mA) 10.5V/17V	Inrush Current (mA in excess of Peak)	Average Operating Current (mA Arms)	Peak Current (mA) 20Vrms/30Vrms	Peak Current (mA) 10.5Vrms/17Vrms	Inrush Current (Amps in excess of Peak)
SS24110ADA SS24110ADAB	20-30V	210	470/500	-	0	245	400/500	-	.080
SS2475ADA SS2475ADAB	20-30V	170	385/400	-	0	200	320/370	-	.040
SS2415ADA SS2415ADAB	20-30V	75	160/180	-	0	90	275/290	-	.020
SS1215ADA SS1215ADAB	10.5-17V	170	-	360/380	0	200	-	330/380	.020
SS241575ADA SS241575ADAB	20-30V	93	210/220	--	0	120	275/290	--	1.0
SS121575ADA SS121575ADAB	10.5-17V	225	--	510/560	0	270	--	500/530	.020
SS2415ADAA	20-30V	175	360/380	--	0	200	330/380	--	.020

NOTE: Inrush current duration is less than 20 microseconds (.00002 seconds).

General Description

The National Fire Protection Association has published standards and recommended practices for the installation and use of the listed appliances. It is recommended that the installer be familiar with these requirements, local codes, and any special requirements of the local fire authority having jurisdiction.

The Multi-Alert sounder and signaling strobe are intended to be connected to the alarm indicating circuit of a UL-listed fire alarm control panel. Both are compatible with DC line supervision. The electronic sounder can be connected

to either 12 or 24 VDC panels. Models SS2415ADA, SS2475ADA, SS24110ADA, SS241575ADA, and combination models incorporating these strobes, require 24 volt panels. Models SS1215ADA, SS121575ADA, MASS1215ADA, and MASS121575ADA require 12 volt panels. Panels may have full-wave rectified, unfiltered power supplies. The strobes produce one flash per second (nominal) with continuous nominal voltage applied.

The MA12/24D is suitable for outdoor applications (-35° to 66° C) when it is used with a WBB Weatherproof Back Box. The signaling strobe is rated for 0° to 49° C and is NOT

Table 2. Sound Output and Current Ratings for the MA12/24D:

Sound (Hz)	Clips on Tabs (Note 1)	Current (ma) DC Regulated/ FWR Unfiltered			Output (dBA) (Note 3)		UL (dBA) Ratings (Note 4)	
		12V	24V	30V	12V	24V	12V	24V
Slow Whoop	ABC	21/40	38/56	46/72	85	92	79	85
800 Continuous	BC	15/24	28/45	35/55	87	93	79	85
800/1000 Alternating	AC	17/32	34/46	43/58	85	92	79	85
2400 Interrupted	AB	19/23	35/56	43/64	89	90	79	85
2400 Continuous	C	21/31	38/59	46/73	85	94	79	85
1200 Interrupted	B	13/19	23/33	27/41	85	91	75	82
Swept Frequency	A	17/24	34/47	43/60	85	92	79	85
Fast Warble	NONE	15/27	30/47	38/59	85	92	79	85

Note 1: See Figure 2 for tab clip removal & storage.

Note 2: All models can be powered using full wave rectified unfiltered supplies. Under no circumstances can SS24ADA or MASS24ADA series devices input voltage exceed 33 VDC or be less than 16 VDC (16-33Vrms for full-wave rectified, unfiltered supplies). Under no circumstances can the MA12/24D input

voltage exceed 33 VDC or be less than 9.6 VDC. Under no circumstances can a SS12ADA or MASS12ADA series device input voltage exceed 18.7 VDC or be less than 9.6 VDC (9.6 - 18.7Vrms for full-wave rectified, unfiltered supplies).

Note 3: Measured at 10 feet in an anechoic chamber.

Note 4: Measured in a UL reverberant room.

suitable for outdoor use.

The rated light output of the SS2415ADA, SS1215ADA, SS241575ADA, SS121575ADA, MASS2415ADA, MASS241575ADA, MASS1215ADA, and MASS121575ADA is 15 cd (See Figure 1).

The rated light output of the SS2475ADA and MASS2475ADA is 75 cd (See Figure 1).

The rated light output of the SS24110ADA and MASS24110ADA is 110 cd (See Figure 1).

NOTE: The light output at 0° viewing angle for SS12/241575ADA and MASS12/241575ADA models is 75 cd (See Figure 1).

Any one of eight sounds can be selected on the electronic sounder, as indicated in Table 2. The sound selected determines the maximum current and sound power output per device. See Table 1 for these values.

Independent Sounder/Strobe Operation

There may be applications where it is desirable to drive the sounder and strobe as independent devices. The System Sensor MASS12/24ADA series sounder/strobes are easily configured for this capability. The terminal connection for this application is shown in Figure 6. Independent strobe operation in a coded system requires a separate uncoded power supply for the strobe.

Installation

A. General:

Slotted head screws are used to attach each device or combination of devices to the electrical outlet box. Phillips head screws are used to attach accessories to the horn. Refer to Figures 3,4,5, and 6 for wiring methods.

Notes: Do not loop wires under the terminal screw. Wires connecting the device to the panel must be broken

at the device terminal connection in order to maintain electrical supervision. **Strobe and strobe/horn combination are designed for wall mounting ONLY.**

The sounder is 1-1/4" deep. Back boxes must be 4" square by at least 1-1/2" deep – 2-1/8" deep is recommended.

All strobes must be mounted so that the top of the lens is 24 inches (61 cm) below ceilings or as required by the authority having jurisdiction.

B. Sounder mounting:

1. Surface Mount: (See Fig. 7)
2. Semi Flush Mount: (See Fig. 10 and 13)
3. Flush Mount: (See Fig. 12)

C. Sounder/Strobe combination mounting:

1. Surface Mount : (See Fig. 9)
2. Semi Flush Mount: (See Fig. 10 and 13)

Flush mounting requires the use of the deep box (Part # BB-D) or equivalent. Determine which of the two device holes will be used to attach the device to the box. Mount the flush plate to the sounder using the other two holes with two 1-inch phillips head screws and two square nuts.

D. Strobe mounting:

1. Surface Mount: (See Fig. 8)
2. Semi Flush Mount: (See Fig. 11)

Installation procedures must conform to all applicable codes and the requirements of the authority having jurisdiction.

NOTE: The rated output of the sounder is specified at 10 feet. It cannot be assumed that the output will meet the NFPA standard of 15 dB over ambient noise at all locations within a room. Additional sounders may be needed to ensure sound output level complies with NFPA requirements.



The Limitations of Sounder/Strobes

The Sounder and/or Strobe will not work without power. The sounder/strobe gets its power from the fire/security panel monitoring the alarm system. If power is cut off for any reason, the sounder/strobe will not provide the desired audio or visual warning.

The Sounder may not be heard. The loudness of the sounder meets (or exceeds) current Underwriters Laboratories' standards. However, the sounder may not alert a sound sleeper or one who has recently used drugs or has been drinking alcoholic beverages. The Sounder 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 such as traffic, air conditioners, machinery or music appliances that may prevent alert persons from hearing the alarm. **The Sounder 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 x-

non 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 a positive photic response to visual stimuli with seizures, such as epileptics, should avoid prolonged exposure to environments in which strobe signals, including this strobe, are activated.

System Sensor recommends that the Multi-Alert Sounder and Signal Strobe always be used in combination so that the risks from any of the above limitations are minimized.

The signal strobe cannot operate from coded power supplies. Coded power supplies produce interrupted power. The strobe must have an uninterrupted source of dc power in order to operate correctly.

Figure 1. Vertical and horizontal light distribution:

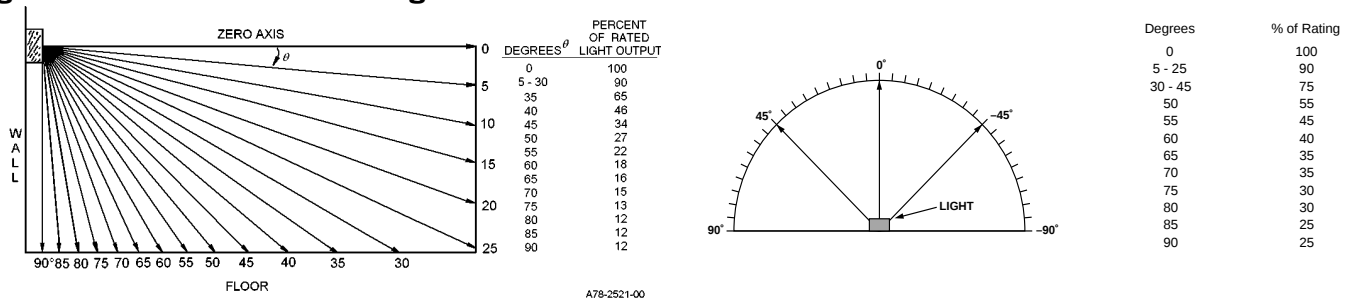


Figure 2:

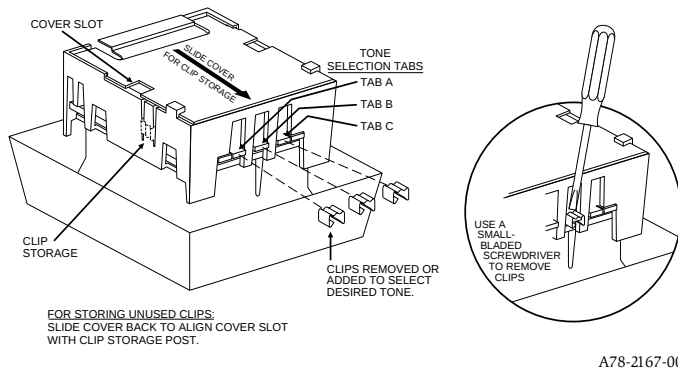


Figure 3. Multi-alert sounder:

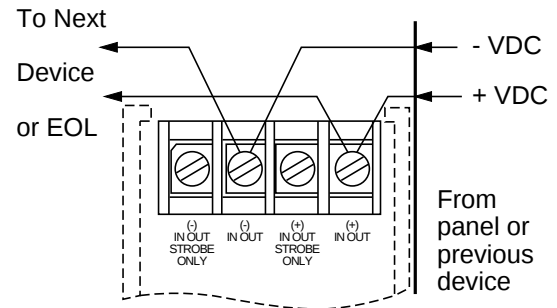


Figure 4. Strobe:

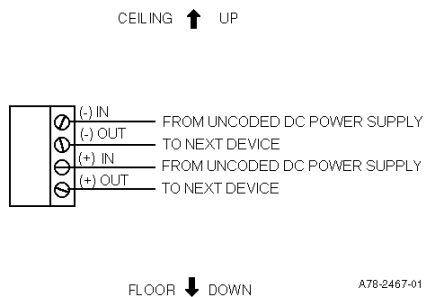


Figure 5. Multi-alert sounder and strobe operating in tandem:

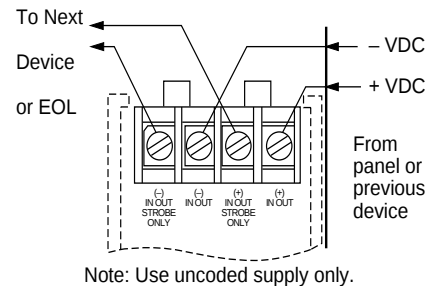
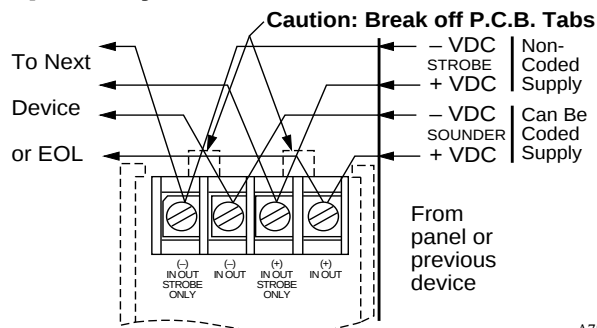


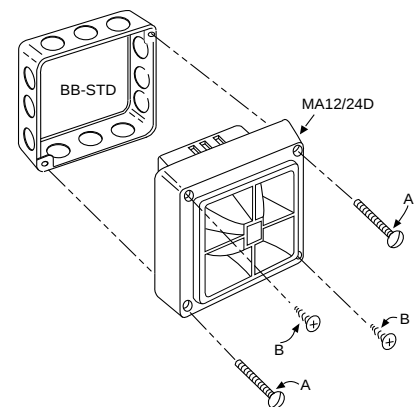
Figure 6. Multi-alert sounder and strobe operating independently:



Screw types used in figure 9 to 15

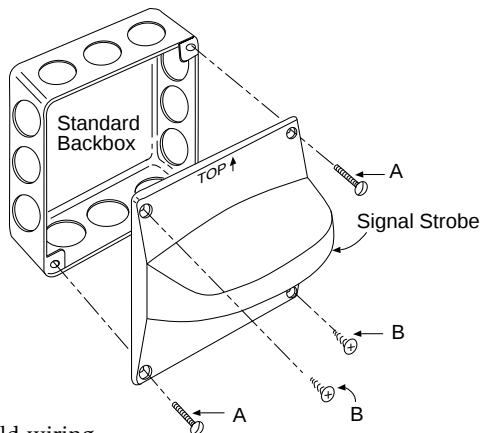
- A = 8-32x1-7/16" Slot
- B = #8 Sheet Metal Phillips
- C = 8-32x1" Phillips
- D = #8 Sq. Nut
- E = 8-32x5/8" Slot
- F = 8-32x2-3/4" Slot
- G = 6-32x5/8" Slot

Figure 7. Sounder surface mount:



1. Complete field wiring. (See Fig. 5)
2. Screw sounder to box with screw A.
3. Fill remaining holes with screw B.

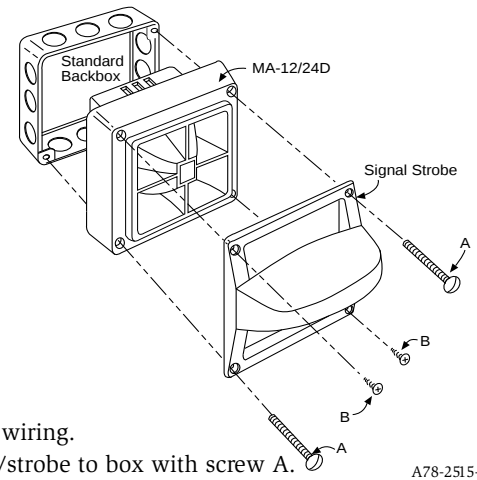
Figure 8. Strobe surface mount:



1. Complete field wiring.
2. Screw strobe to box with screw A.
3. Fill remaining holes with screw B.

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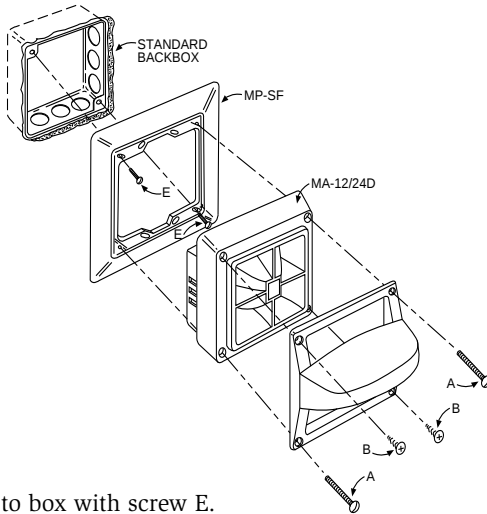
Figure 9. Sounder/strobe surface mount:



1. Complete field wiring.
2. Screw sounder/strobe to box with screw A.
3. Fill remaining screw holes with screw B

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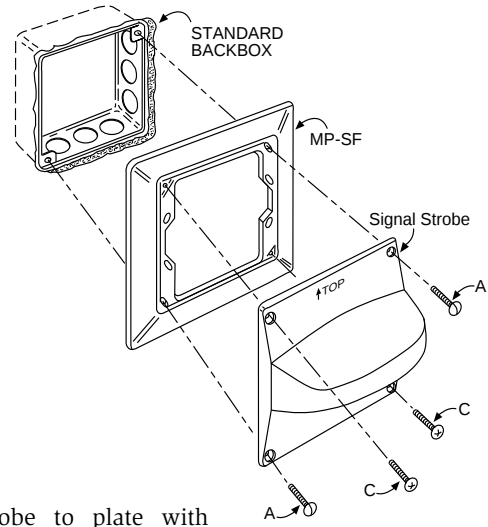
Figure 10. Sounder or sounder/strobe semi-flush mount:



1. Screw plate to box with screw E.
2. Complete field wiring. (See Fig. 3, 4, 5, and 6)
3. Screw sounder or sounder/strobe to plate with screw A.
4. Fill remaining holes with screw B.

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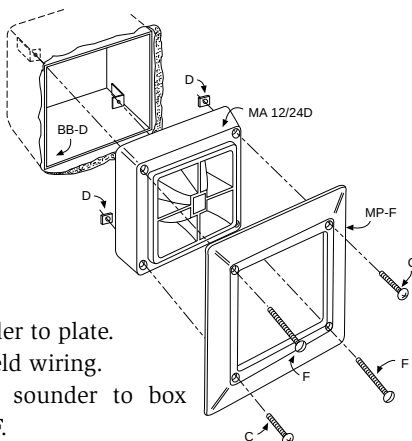
Figure 11. Strobe semi-flush mount:



1. Screw strobe to plate with screw C.
2. Complete field wiring.
3. Screw strobe plate to box with screw A.

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Figure 12. Sounder flush mount (deep box required):

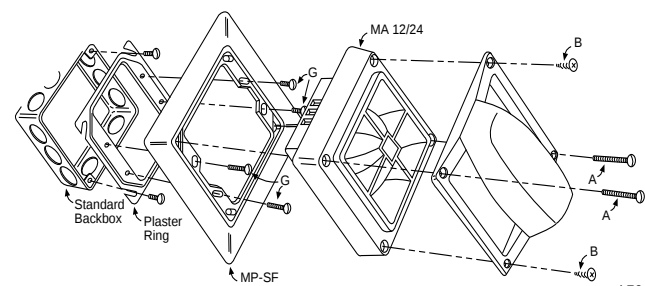


1. Screw sounder to plate.
2. Complete field wiring.
3. Screw plate sounder to box with screw F.

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Figure 13. Sounder or sounder/strobe semi-flush mount with plaster ring:

1. Plaster ring should be properly mounted to electrical box with screws supplied with box.
2. Screw plate to plaster ring with screw G.
3. Complete field wiring.
4. Screw sounder/strobe to plate with screw A.
5. Fill remaining holes with screw B.



A78-1137-11

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 mm ²)
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.

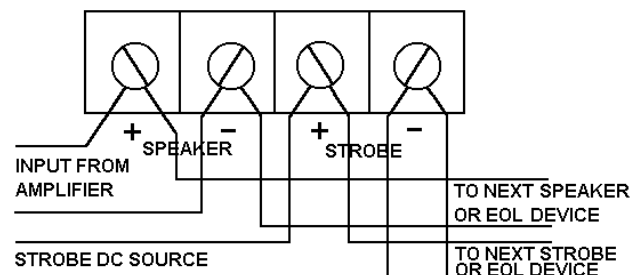
Electrical

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:



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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

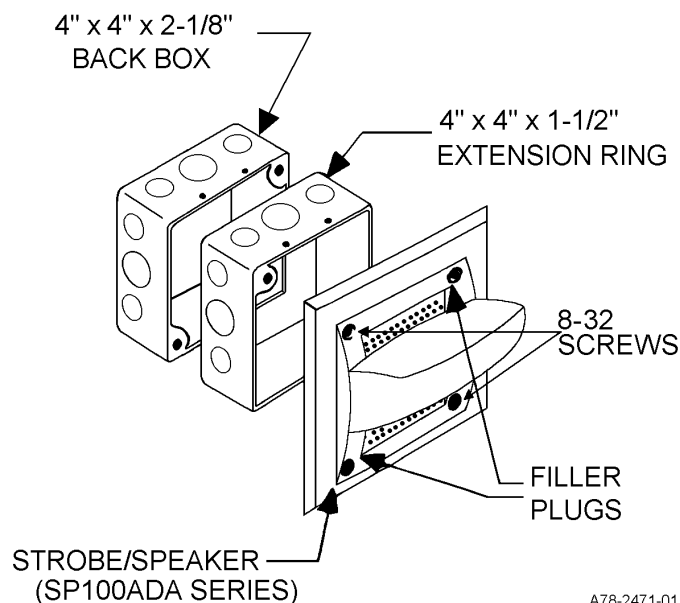
See Figure 2. The speaker can be flush mounted on a 4" X 4" X 2-1/8" back box with a 1-1/2" extension ring, as follows:

- Select the appropriate pair of diagonally opposite mounting holes in the speaker grille.
- Use the two 8-32 X 1-3/4" slotted pan head screws, provided, to attach the speaker/strobe to the back box.
- 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:



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Strobe Light Ratings

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

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

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).

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

R = Red
W = White

Figure 3:

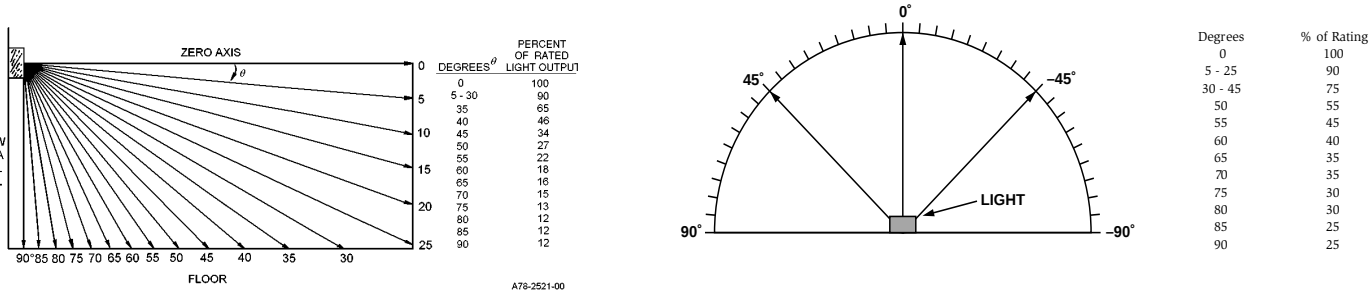


Table 2. Strobe characteristics:

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 (mA rms)	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:

SP100W24MC 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	SP1R2415ADA 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.



A Division of Pittway
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V4R24ADA Series Speaker/Strobes for Fire Protective Signaling Systems

Specifications

Speaker

Frequency Range: 400 Hz to 4000Hz
Supervision: Capacitive input for supervisory DC voltage
Mounting: Standard 4" X 4" electrical box
Surface mount directly to box
Semiflush mount, using model MP-SF or MP-SFB

Input Voltage (Vrms)	Power Tap (Watts)	Minimum Output (dBA)	
		UL Reverberant	Anechoic @ 10 ft.
25 or 70.7	1/4	75	78
25 or 70.7	1/2	78	81
25 or 70.7	1	81	84
25 or 70.7	2	84	87

Strobe

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)
V4R24110ADA	20-30V	210	470/500	0	245	400/500	0.08
V4R2475ADA	20-30V	170	385/400	0	200	320/370	0.04
V4R2415ADA	20-30V	75	160/180	0	90	275/290	0.02
V4R241575ADA	20-30V	93	210/220	0	120	275/290	1.0

NOTE: Inrush current duration is less than 20 microseconds (.00002 seconds).

General

The National Fire Protection Association has published standards and recommended practices for the installation and use of the appliances described in these instructions. It is recommended that the installer become familiar with these standards and practices, local codes, and any special requirements of the authority having jurisdiction.

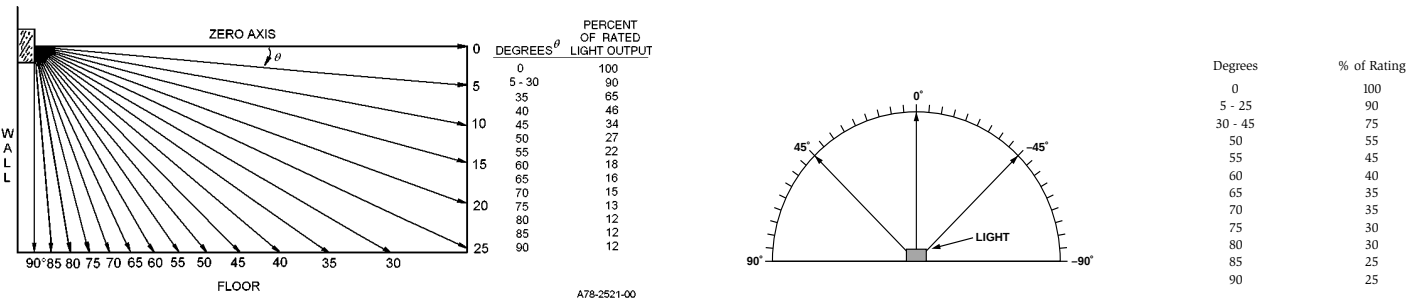
The speakers can operate at any one of four input power levels at either of two input voltages. The system voltage and sound power levels are selected at the time of installation, but can be changed, if necessary.

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

An attached 24 VDC strobe at 110, 75, 15, or 15/75 candela (cd) is also included with the speaker. Although they are assembled into a unit, the strobe and speaker are electrically independent and require separate power sources.

Strobes can be powered by means of a full-wave rectified unfiltered supply.

Figure 1. Vertical and horizontal light distribution:



The light output rating of the Model V4R24110ADA is 110 cd; the V4R2475ADA is 75 cd; the V4R2415ADA is 15 cd.

The light output rating of the Model V4R241575ADA is 15 cd (See Figure 1).

NOTE: The light output at 0° viewing angle for V4R241575ADA is 75 cd (See Figure 1).

Installation - For Strobe Placement See NFPA 72, Chapter 6

NOTE: Installation procedure must comply with all applicable local codes and any special requirements of the authority having jurisdiction.

Electrical

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.

- 1. Connect the speaker and strobe as shown in Figure 2. Keep in mind that even though the speaker and strobe are a single mechanical unit, they are electrically independent - the strobe must be connected to a DC supply and the speaker to a 25V_{rms} or 70.7 V_{rms} amplifier.

Even though V4R24ADA series speakers can be used with 25 V_{rms} or 70.7 V_{rms} amplifiers, permanent damage can result if the speaker is improperly connected. Therefore, be sure to use the COM and 25 terminals when a 25 V_{rms} amplifier is being used. Similarly, use the COM and 70.7 terminals if a 70.7 V_{rms} amplifier is in the system.

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 to ensure electrical supervision.

- 2. See Figure 2. The speaker is equipped with five posts and an associated plug with red and black wires. The center post is COM (common) while the others are labeled 2W, 1/4W, 1/2W, and 1W, respectively.

The installer selects any one of four input power levels by installing the plug onto COM and the appropriate power post. When connecting this plug, make sure the black wire is connected to the COM post and the red wire to the numbered post. Otherwise, permanent speaker damage could result.

CAUTION

If the power option plug is not plugged into one of the 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.

Mounting

A. General

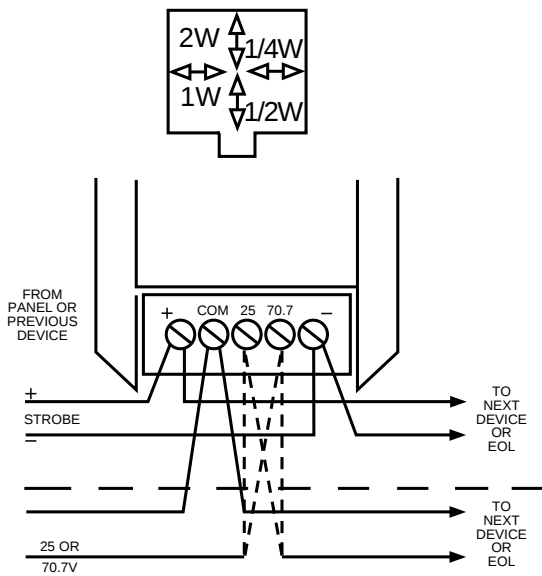
Both slotted head and Phillips head screws are supplied with the speaker/strobe. Use the slotted head screw to mount the device or combination of devices on the electrical box. Use the phillips head screws for attaching accessories to the speaker.

The speaker/strobe must be wall mounted so that the top of the lens is 24 inches below the ceiling.

B. Surface Wall Mount

See Figure 3. Attach the speaker/strobe to a standard 4-inch electrical box, using the two 8-32 X 1-7/16" slotted screws provided. Fill the remaining screws with the short #8 sheet metal screws, provided.

Figure 2:



A78-1792-01

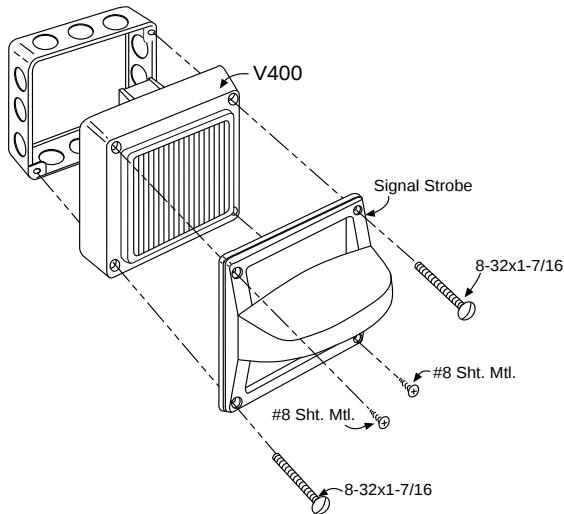
C. Semiflush Wall Mount

- System Sensor semiflush mounting plates are shipped with #8 nuts already installed from the back.
- Attach the semiflush mounting plate to a standard 4-inch square electrical box using the two 8-32 X 5/8" slotted screws, provided, at diagonally opposite corners, as shown in Figure 4.
- Wire the speaker/strobe as described in Electrical and mount it on the plate using the two 8-32 X 1-7/16" slotted screws in diagonally opposite corners. Thread a #8 sheet metal screw into each of the two remaining holes in the speaker/strobe.

D. Plaster Ring Mount

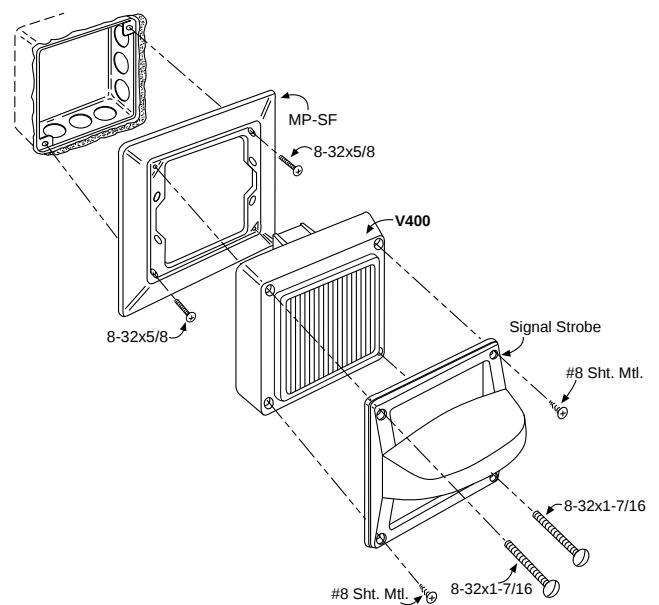
See Figure 5. Follow the **Semiflush Wall Mount** procedure, except attach the semiflush plate to the electrical box, using the two 6-32 X 5/8" screws.

Figure 3. Surface wall mount:



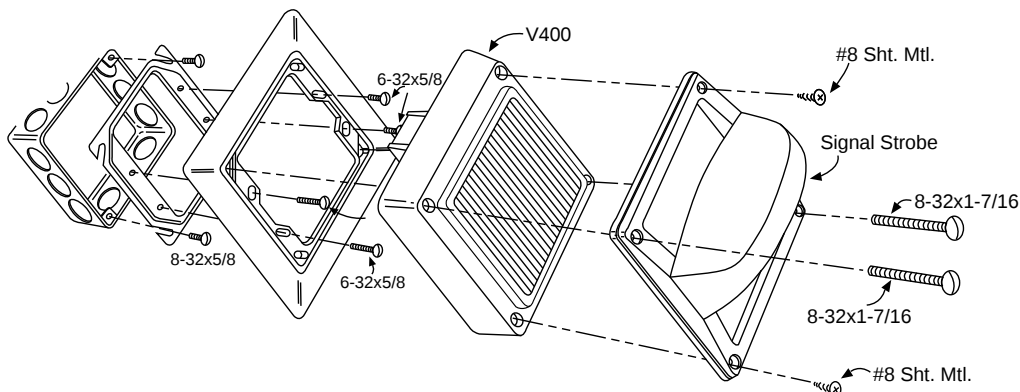
A78-1794-02

Figure 4. Semiflush wall mount:



A78-1796-02

Figure 5. Plaster ring mount:



A78-1799-01



The Limitations of Speakers and Speaker/Strobes

If the power option plug is not plugged into one of the 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, such as traffic, air conditioners, machinery, or music appliances that may prevent 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 and meets the 1971 Underwriters Laboratories standard for the hearing impaired. 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.

The signal strobe cannot operate from coded power supplies. Coded power supplies produce interrupted power. The strobe must have an uninterrupted source of DC 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 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.



RK24ADA Series Retrofit Strobes
for Fire Protective Signaling Systems

A Division of Pittway
3825 Ohio Avenue, St. Charles, Illinois 60174
1-800-SENSOR2, FAX: 630-377-6495

Table 1. RK24ADA Series Electrical Ratings:

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 (mA rms)	Peak Current (mA) 20Vrms/ 30Vrms	Inrush Current (Amps in excess of Peak)
RK24110ADA	20-30V	210	470/500	0	245	400/500	0.08
RK2475ADA	20-30V	170	385/400	0	200	320/370	0.04
RK2415ADA	20-30V	75	160/180	0	90	275/290	0.02
RK241575ADA	20-30V	93	210/220	0	120	275/290	1.0

NOTE: In-rush current duration is less than 20 microseconds (.00002 seconds).

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

General Description

The National Fire Protection Association has published standards and recommended practices for the installation and use of the above appliances. It is recommended that the installer be familiar with these requirements, with local codes, and any special requirements of the local fire authority having jurisdiction.

The signaling strobes are intended to be connected to the alarm indicating circuit of a UL-listed fire alarm control panel and are compatible with DC line supervision. Models RK2415ADA, RK2475ADA, RK24110ADA, and RK241575ADA require 24 volt panels. Panels may have full-wave rectified, unfiltered power supplies. The strobes produce one flash per second (nominal) with continuous

nominal voltage applied.

The MA12/24D is suitable for outdoor applications (-35° to 66° C) when it is used with a WBB Weatherproof Back Box. The signaling strobe is rated for 0° to 49° C and is NOT suitable for outdoor use.

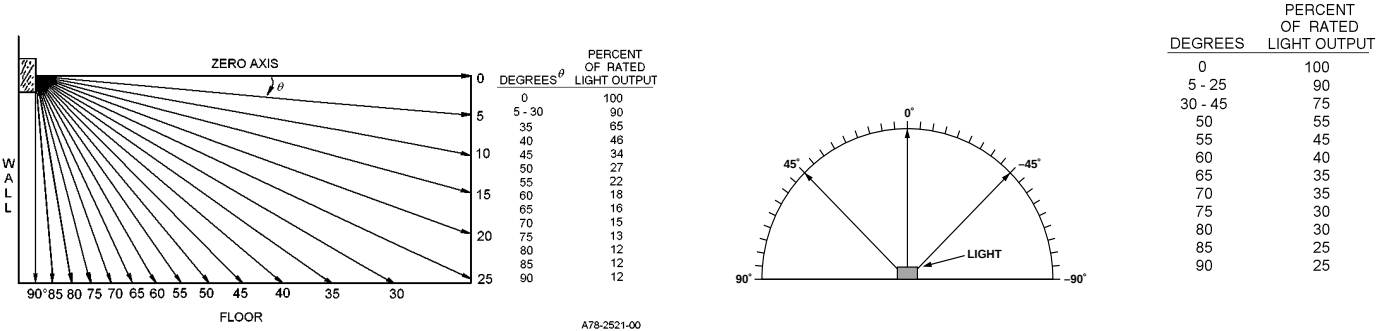
The rated light output of the RK2415ADA and RK241575ADA is 15 cd (see Figure 1).

The rated light output of the RK2475ADA is 75 cd (please see Figure 1).

The rated light output of the RK24110ADA is 110 cd (please see Figure 1).

NOTE: The light output at 0° viewing angle for RK241575ADA is 75 cd (please see Figure 1).

Figure 1. Vertical and horizontal light distribution:



Vertical Dispersion

Horizontal Dispersion

Note : All models can be powered using full wave rectified unfiltered supplies. Under no circumstances can RK24ADA series devices input voltage exceed 33 VDC or be less than 16 VDC (16-33Vrms for full-wave rectified, unfiltered supplies).

There may be applications where it is desirable to drive the sounder and strobe as independent devices. The System Sensor MASS12/24ADA series sounder/strobes are easily configured for this capability. The terminal connection for this application is shown in Figure 2. Independent strobe operation in a coded system requires a separate uncoded power supply for the strobe.

Installation - For Strobe Placement, See NFPA 72, Chapter 6 General

Retrofitting should not be performed when boxes have plaster rings mounted on the front of them.

Notes: Do not loop wires under the terminal screw. Wires connecting the device to the panel must be broken at the device terminal connection in order to maintain electrical supervision.

Strobe and strobe/horn combination are designed for wall mounting ONLY.

The sounder is 1-1/4" deep. Back boxes must be 4" square by at least 1-1/2" deep – 2-1/8" deep is recommended. All strobes must be mounted so that the top of the lens is 24 inches (61 cm) below ceilings or as required by the authority having jurisdiction.

Mounting Location (per NFPA 72)

Sleeping: 110 cd if bottom of appliance is greater than 24" below the ceiling, 177 cd if the bottom of the appliance is less than 24" below the ceiling.

Nonsleeping: Bottom of the strobe not less than 80" above the floor and not more than 96" above the floor.

A. Horn Preparation (Existing Multi-Alert™ Installations Only).

1. Remove the unit from its current mounting.
2. Remove the existing strobe, if it is present. Disconnect the interconnecting wires.
3. On Model MA12/24D (no strobe), use a screwdriver to punch the flashed over slots.

B. Sounder/Strobe combination mounting:

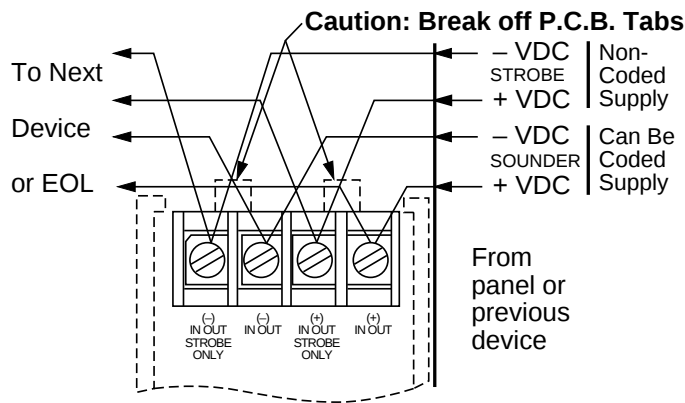
1. a. Surface Mount: (see Figure 4).
b. Semiflush Mount (see Figures 5 and 7).
c. Flush Mount (see Figure 6).
2. Slide one Supervisory PC Board over each terminal lug until it is fully seated.
3. a) See Figure 2 for strobe and sounder operating independently.
b) See Figure 3 for strobe and sounder operating in tandem.

Flush mounting requires the use of the deep box (Part # BB-D) or equivalent. Determine which of the two device holes will be used to attach the device to the box. Mount the flush plate to the sounder using the other two holes with two 1-inch phillips head screws and two square nuts.

Installation procedures must conform to all applicable codes and the requirements of the authority having jurisdiction.

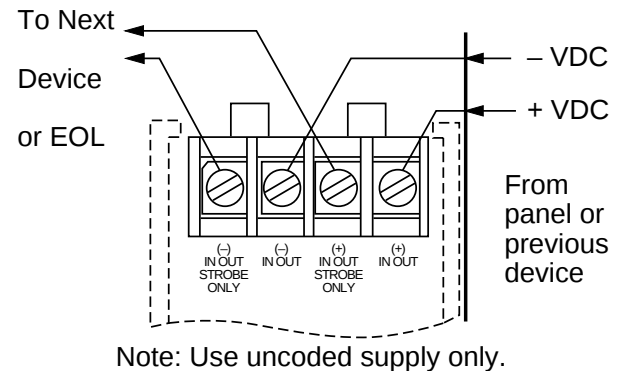
NOTE: The rated output of the sounder is specified at 10 feet. It cannot be assumed that the output will meet the NFPA standard of 15 dB over ambient noise at all locations within a room. Additional sounders may be needed to ensure sound output level complies with NFPA standards.

Figure 2. Sounder and strobe operating independently:



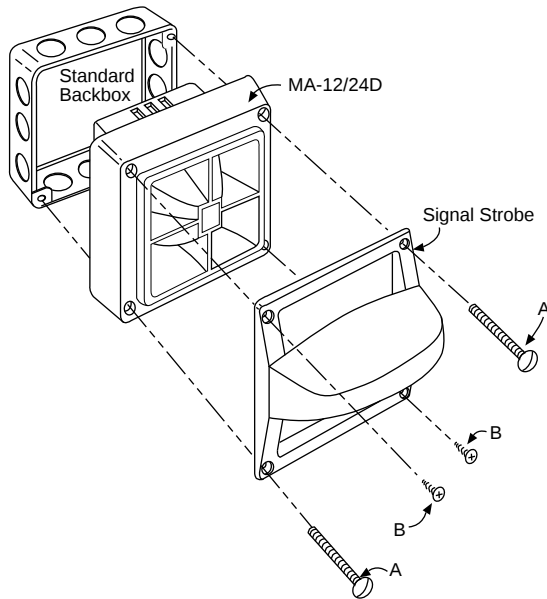
A78-1137-01

Figure 3. Sounder and strobe operating in tandem:



A78-1137-29

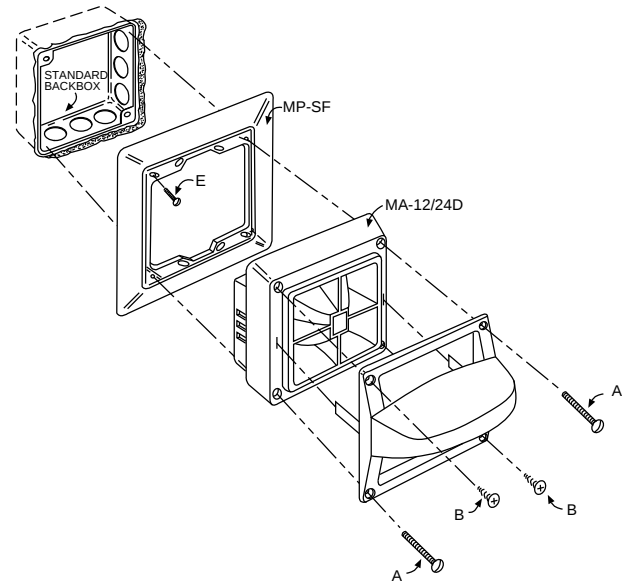
Figure 4. Sounder/strobe surface mount:



1. Screw Sounder/Strobe to Box with A
2. Fill Remaining Screw Holes with Screw B

A78-2515-00

Figure 5. Sounder or sounder/strobe semiflush mount:



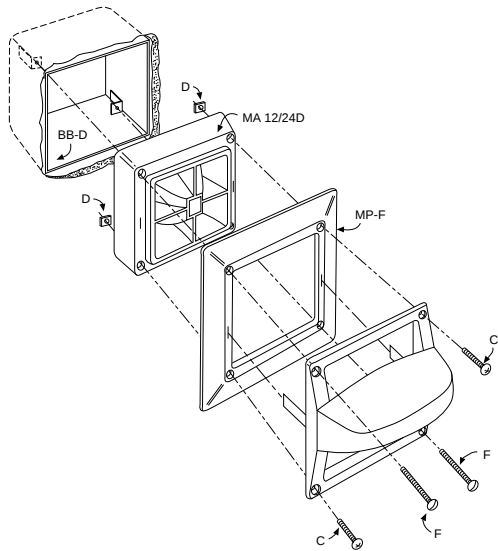
1. Screw Plate to Box with E
2. Complete Wiring (See Fig. 2 and 3)
3. Screw Sounder or Sounder/Strobe to Plate with A
4. Fill Remaining Holes with Screw B

A78-1137-26

Screw Types Used In Figures 4 Through 7

- A = 8-32 x 1-7/16 Slot.
 B = #8 Sht. Mtl. Phil.
 C = 8-32 x 1 Phil.
 D = #8 Sq. Nut.
 E = 8-32 x 5/8 Slot.
 F = 8-32 x 2-3/4 Slot.
 G = 6-32 x 5/8 Slot.

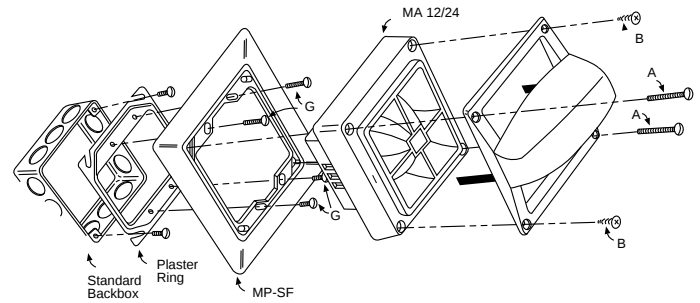
Figure 6. Sounder flush mount (deep box required):



A78-1137-28

1. Attach strobe to sounder with screws C and nuts D
2. Complete Wiring (See Figures 2 and 3)
3. Screw Sounder/Strobe to Box with screws F

Figure 7. Sounder or sounder/strobe semiflush mount with plaster ring:



A78-1137-22

1. Plaster Ring should be properly mounted to Electrical Box with screws supplied w/box
2. Screw Plate to Plaster Ring with screws G
3. Complete Wiring (See Figures 2 and 3)
4. Screw Sounder/Strobe to Plate with A
5. For Sounder Mounting, Fill Remaining Holes with sheet metal screws B

WARNING

The Limitations of Sounder/Strobes

The Sounder and/or Strobe will not work without power. The sounder/strobe gets its power from the fire/security panel monitoring the alarm system. If power is cut off for any reason, the sounder/strobe will not provide the desired audio or visual warning.

The Sounder may not be heard. The loudness of the sounder meets (or exceeds) current Underwriters Laboratories' standards. However, the sounder may not alert a sound sleeper or one who has recently used drugs or has been drinking alcoholic beverages. The Sounder 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 such as traffic, air conditioners, machinery or music appliances that may prevent alert persons from hearing the alarm. **The Sounder 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 a positive photic response to visual stimuli with seizures, such as epileptics, should avoid prolonged exposure to environments in which strobe signals, including this strobe, are activated.

System Sensor recommends that the Multi-Alert Sounder and Signal Strobe always be used in combination so that the risks from any of the above limitations are minimized.

The signal strobe cannot operate from coded power supplies. Coded power supplies produce interrupted power. The strobe must have an uninterrupted source of DC power in order to operate correctly.

PS12/24ADA Series Strobes with Mini-sounder for Fire Protective Signaling Systems



A Division of Pittway
3825 Ohio Avenue, St. Charles, Illinois 60174
1-800-SENSOR2, FAX: 630-377-6495

Table 1. PS12/24ADA Series Electrical Ratings

Model	Supply Voltage Range	Operating Current from Regulated Supply					Operating Current from Full-Wave Rectified Unfiltered Supply				
		Average Operating Current Horn/Strobe*	Average Operating Current Strobe Only	Peak Current (mA) 20/30V	Peak Current (mA) 10.5V/17V	Inrush Current (mA in excess of Peak)	Average Operating Current (mA) Horn/Strobe*	Average Operating Current (mA) Strobe Only	Peak Current (mA) 20Vrms/30Vrms	Peak Current (mA) 10.5Vrms/17Vrms	Inrush Current (Amps in excess of Peak)
PS24110ADA PS24110ADAW	20-30V	225	210	470/500	—	0	260	245	400/500	—	0.08
PS2475ADA PS2475ADAW	20-30V	185	170	385/400	—	0	215	200	320/370	—	0.04
PS2415ADA PS2415ADAW	20-30V	90	75	160/180	—	0	105	90	275/290	—	0.02
PS1215ADA PS1215ADAW	12-17V	182	170	—	360/380	0	212	220	—	330/380	0.02
PS241575ADA PS241575ADAW	20-30V	108	93	210/220	—	0	135	120	275/290	—	1
PS121575ADA PS121575ADAW	12-17V	240	225	—	510/560	0	285	270	—	500/530	0.02

* Horn current is 12mA@12VDC, 15mA@24VDC

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

General Description

The National Fire Protection Association has published standards and recommended practices for the installation and use of the above appliances. It is recommended that the installer be familiar with these requirements, with local codes, and any special requirements of the local fire authority having jurisdiction.

The Piezo electronic sounder and signaling strobe are intended to be connected to the alarm indicating circuit of a UL-listed fire alarm control panel. Both are compatible with DC line supervision. The electronic sounder can be connected to either 12 or 24 VDC panels. Models PS2415ADA, PS2475ADA, PS24110ADA, and PS241575ADA require 24 volt panels. Models PS1215ADA and PS121575ADA require 12 volt panels. Panels may have full-

wave rectified, unfiltered power supplies. The strobes produce one flash per second (nominal) with continuous nominal voltage applied.

The sounder/strobe strobe is rated for 0° to 49° C and is NOT suitable for outdoor use.

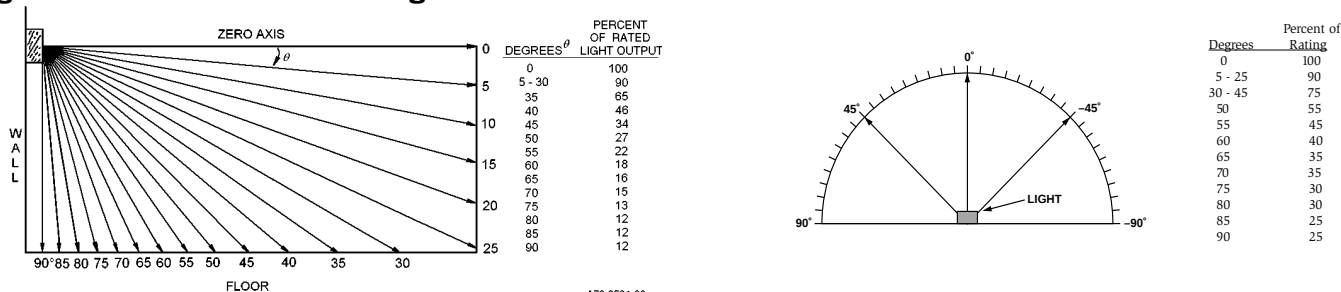
The rated light output of the PS2415ADA, PS1215ADA, PS241575ADA, and PS121575ADA is 15 cd (See Figure 1).

The rated light output of the PS2475ADA is 75 cd (See Figure 1).

The rated light output of the PS24110ADA is 110 cd (See Figure 1).

NOTE: The 15/75 cd strobe has been measured to be 75 cd @ 0° viewing angle.

Figure 1. Vertical and horizontal light distribution:



Greater than 90 dBA measured in anechoic room at 10 feet, 24 volts (see Figure 2 for other voltages); 79 dBA minimum measured in UL reverberant room @ 12V and 82 dBA @ 24V.

NOTE: All models can be powered using full wave rectified unfiltered supplies. Under no circumstances can PS24ADA series devices input voltage exceed 33 VDC or be less than 16 VDC (16-33Vrms for full-wave rectified, unfiltered supplies). Under no circumstances can a PS12ADA series device input voltage exceed 18.7 VDC or be less than 9.6 VDC (9.6 - 18.7Vrms for full-wave rectified, unfiltered supplies).

Installation

A. General:

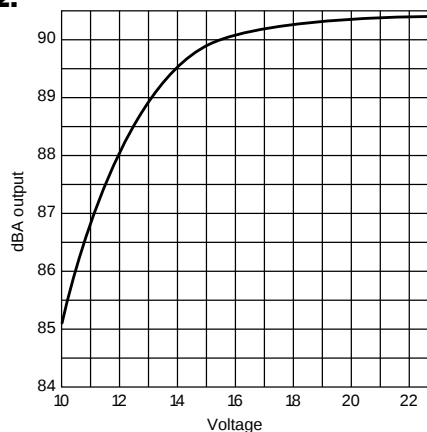
Phillips head screws are used to attach PS12/24ADA to semi-flush plate or the electrical outlet box. Slotted head screws are used to attach semi-flush plate to outlet box. See Figures 3 and 4 for wiring methods.

NOTE: Do not loop wires under the terminal screw. Wires connecting the device to the panel must be broken at the device terminal connection in order to maintain electrical supervision.

The PS12/24ADA is designed for wall mounting ONLY.

It is intended for mounting to a standard 2-1/2" deep single gang box which allows sufficient clearance for conduit entrance.

Figure 2:



All strobes must be mounted so that the top of the lens is 24 inches (61cm) below ceilings or as required by the authority having jurisdiction.

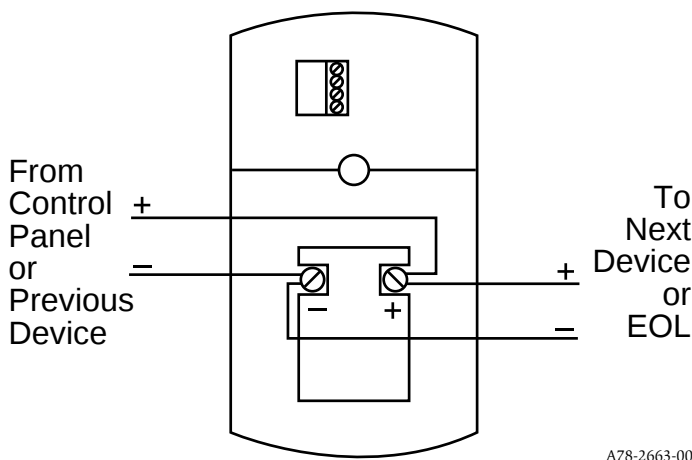
B. Sounder/Strobe combination mounting:

1. Surface Mount: (See Figure 5)
2. Semi-Flush Mount: (See Figures 6 and 7)
3. Semi-Flush Mount with Plaster Ring or Double Gang Box: (See Figure 8)

Installation procedures must conform to all applicable codes and the requirements of the authority having jurisdiction.

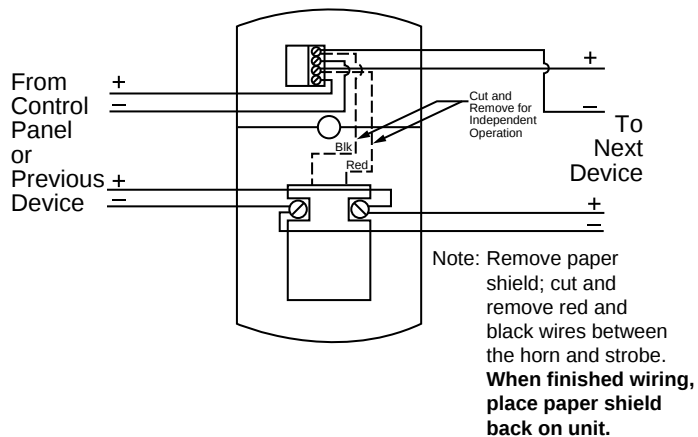
NOTE: The rated output of the sounder is specified at 10 feet. It cannot be assumed that the output will meet the NFPA standard of 15 dB over ambient noise at all locations within a room. Additional sounders may be needed to ensure sound output level complies with NFPA requirements.

Figure 3. Operating horn and strobe in tandem:



Polarity shown in alarm condition. Polarity is reversed in supervisory condition.

Figure 4. Operating horn and strobe independently:



Polarity shown in alarm condition. Polarity is reversed in supervisory condition.

Screw types used in Figures 5 – 8 below:

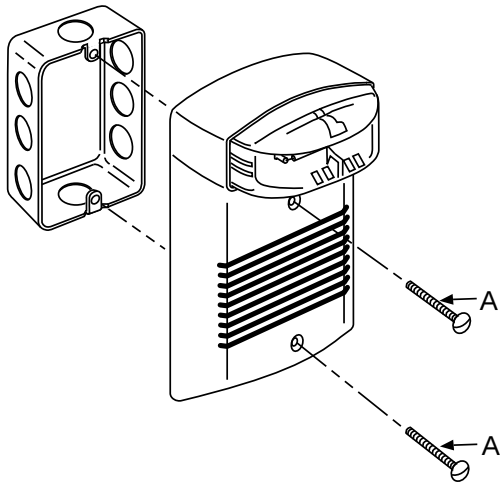
A = #6-32x1-1/2" Phillips Oval Head

B = #8-32x5/8" Slotted Pan Head

C = #6-32x5/8" Slotted Pan Head

D = #8 Phillips Oval Head Sheet Metal

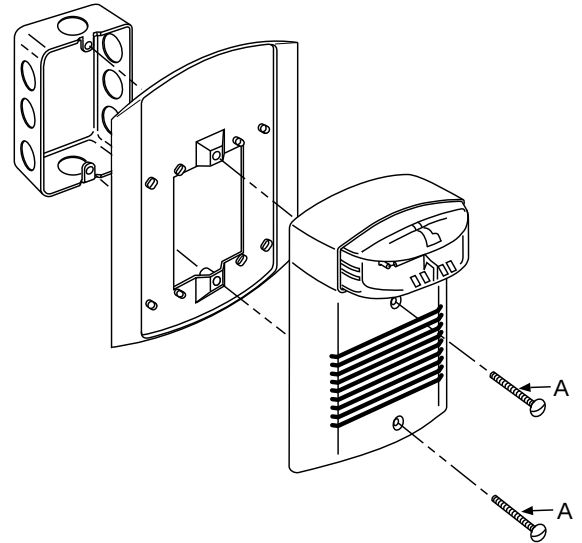
Figure 5. Surface mount to single gang box:



A78-2602-00

- 1) Complete Field Wiring (see Figure 3)
- 2) Screw PS12/24ADA to Outlet Box with A Screws

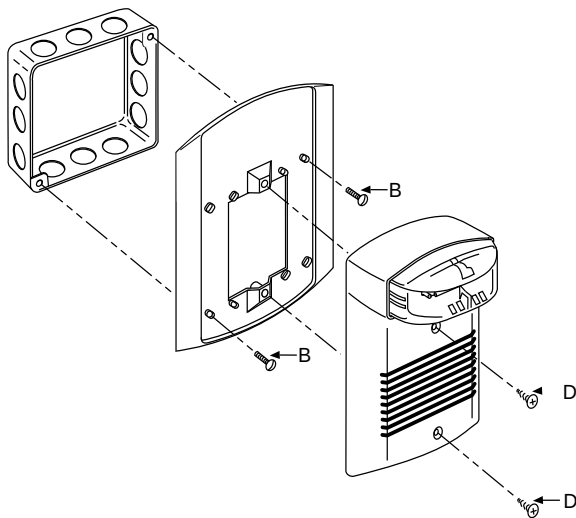
Figure 6. Semi-flush mount to single gang box:



A78-2604-00

1. Complete Field Wiring (See Figure 3)
2. Screw PS12/24ADA to Outlet Box with A Screws

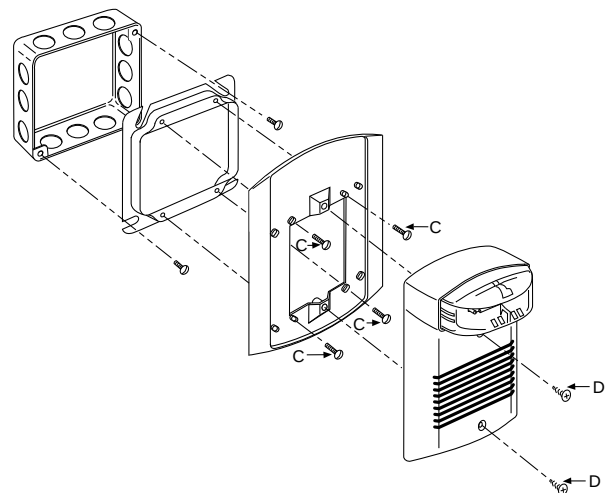
Figure 7. Semi-flush mount to 4" box:



A78-2603-00

1. Screw Semi-Flush Plate to 4" Box with B Screws
2. Complete Field Wiring (See Figure 3)
3. Screw PS12/24ADA to Semi-Flush Plate with D Screws

Figure 8. Semi-flush mount with plaster ring or double gang box:



A78-2605-00

1. Screw Semi-Flush Plate to Box with C Screws
2. Complete Field Wiring (See Figure 3)
3. Screw PS12/24ADA to Semi-Flush Plate with D Screws

⚠WARNING

The Limitations of Sounder/Strobes

The Sounder and/or Strobe will not work without power. The sounder/strobe gets its power from the fire/security panel monitoring the alarm system. If power is cut off for any reason, the sounder/strobe will not provide the desired audio or visual warning.

The Sounder may not be heard. The loudness of the sounder meets (or exceeds) current Underwriters Laboratories' standards. However, the sounder may not alert a sound sleeper or one who has recently used drugs or has been drinking alcoholic beverages. The Sounder 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 such as traffic, air conditioners, machinery or music appliances that may prevent alert persons from hearing the alarm. **The Sounder 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 a positive photic response to visual stimuli with seizures, such as epileptics, should avoid prolonged exposure to environments in which strobe signals, including this strobe, are activated.

System Sensor recommends that the Multi-Alert Sounder and Signal Strobe always be used in combination so that the risks from any of the above limitations are minimized.

The signal strobe cannot operate from coded power supplies. Coded power supplies produce interrupted power. The strobe must have an uninterrupted source of DC power in order to operate correctly.

Three-Year Limited Warranty

System Sensor warrants its sounder/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 sounder/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 sounder/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.

RP12/24ADA Series Retrofit
Strobes for Fire Protective
Signaling Systems

Table 1. RP12/24ADA Series electrical ratings:

Model	Supply Voltage Range	Operating Current from Regulated Supply				Operating Current from Full-Wave Rectified Unfiltered Supply			
		Average Operatin Current	Peak Current (mA) 20/30V	Peak Current (mA) 10.5V/17V	Inrush Current (mA in access of Peak)	Average Operating Current (mArms)	Peak Current (mA) 20Vrms/30Vrms	Peak Current (mA) 10.5Vrms/17Vrms	Inrush Current (Amps in excess of Peak)
RP24110ADA RP24110ADAW	20-30V	210	470/500	-	0	245	400/500	-	0.08
RP2475ADA RP2475ADAW	20-30V	170	385/400	-	0	200	320/370	-	0.04
RP2415ADA RP2415ADAW	20-30V	75	160/180	-	0	90	275/290	-	0.02
RP1215ADA RP1215ADAW	10.5-17V	170	-	360/380	0	200	-	330/380	0.02
RP241575ADA RP241575ADAW	20-30V	93	210/220	--	0	120	275/290	--	1
RP121575ADA RP121575ADAW	10.5-17V	225	--	510/560	0	270	--	500/530	0.02

NOTE: In-rush current duration is less than 20 microseconds (0.00002 seconds).

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

General Description

The National Fire Protection Association has published standards and recommended practices for the installation and use of the listed appliances. It is recommended that the installer be familiar with these requirements, with local codes, and any special requirements of the local fire authority having jurisdiction.

The RP12/24ADA series retroplates are ADA compliant (75 and 110 cd models) signaling devices and designed for use in existing or new installations. They are a low-cost alternative to replacing a sounder with a new sounder/strobe. This signaling strobe is intended to be connected to the alarm indicating circuit of a UL-listed fire alarm control

panel. It is compatible with DC line supervision. Models RP2415ADA, RP2475ADA, RP24110ADA, and RP241575ADA require 24 volt panels. Models RP1215ADA and RP121575ADA require 12 volt panels. Panels may have full-wave rectified, unfiltered power supplies. The strobes produce one flash per second (nominal) with continuous nominal voltage applied.

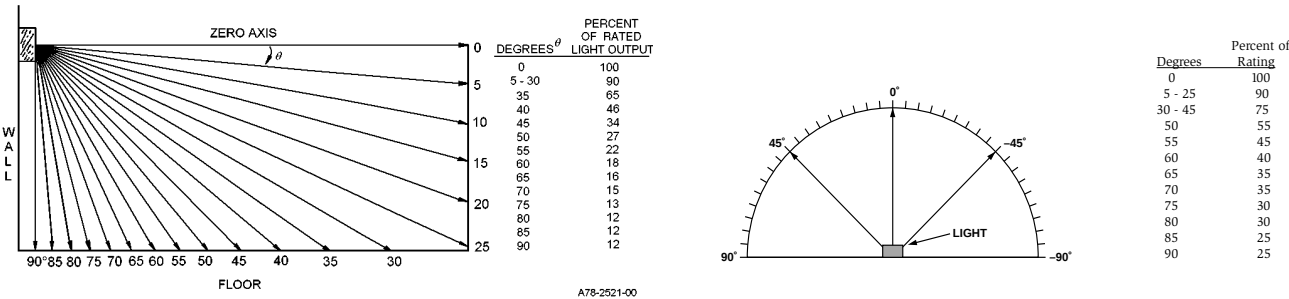
The rated light output of the RP2415ADA, RP1215ADA, RP241575ADA, and RP121575ADA is 15 cd (see Figure 1).

The rated light output of the RP2475ADA is 75 cd (please see Figure 1).

The rated light output of the RP24110ADA is 110 cd (please see Figure 1).

NOTE: The light output at 0° viewing angle for RP12/241575ADA models is 75 cd (see Figure 1).

Figure 1. Vertical and horizontal light distribution:



NOTE: All models can be powered using full wave rectified unfiltered supplies. Under no circumstances can RP24ADA series devices input voltage exceed 33 VDC or be less than 16 VDC (16-33Vrms for full-wave rectified, unfiltered supplies). Under no circumstances can a RP12ADA series device input voltage exceed 18.7 VDC or be less than 8.5 VDC (8.5 - 18.7Vrms for full-wave rectified, unfiltered supplies).

NOTE: The supply voltage rating of the horn must be equal to or within the supply voltage rating of the strobe.

Installation

A. General:

Phillips head screws are used to attach each device or combination of devices to the electrical outlet box. See Figures 2 and 3 for wiring methods.

NOTES: Do not loop wires under the terminal screw. Wires connecting the device to the panel must be broken at the device terminal connection in order to maintain electrical supervision.

WARNING

The Limitations of Sounder/Strobes

The Sounder and/or Strobe will not work without power. The sounder/strobe gets its power from the fire/security panel monitoring the alarm system. If power is cut off for any reason, the sounder/strobe will not provide the desired audio or visual warning.

The Sounder may not be heard. The loudness of the sounder meets (or exceeds) current Underwriters' Laboratories' standards. However, the sounder may not alert a sound sleeper or one who has recently used drugs or has been drinking alcoholic beverages. The Sounder 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 such as traffic, air conditioners, machinery or music appliances that may prevent alert persons from hearing the alarm. **The Sounder 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

The strobe/horn combination is designed for wall mounting ONLY.

Back boxes must be 4" square and at least 1-1/2" deep; 2-1/8" deep is recommended.

All strobes must be mounted so that the top of the lens is 24 inches (61cm) below ceilings or as required by the authority having jurisdiction.

B. Mounting:

- 1. Surface Mount: (See Figure 4)

NOTE: For the strobe to function properly, the horn must not be more than 1.9" deep (see Figure 5).

- 2. In standard installations the strobe is mounted above the horn (see Figures 4 and 5). If the strobe is mounted below the horn, see page 4 for inverted mounting instructions

Installation procedures must conform to all applicable codes and the requirements of the authority having jurisdiction.

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 a positive photic response to visual stimuli with seizures, such as epileptics, should avoid prolonged exposure to environments in which strobe signals, including this strobe, are activated.

System Sensor recommends that the Multi-Alert Sounder and Signal Strobe always be used in combination so that the risks from any of the above limitations are minimized.

The signal strobe cannot operate from coded power supplies. Coded power supplies produce interrupted power. The strobe must have an uninterrupted source of DC power in order to operate correctly.

Three-Year Limited Warranty

System Sensor warrants its enclosed sounder/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 sounder/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 sounder/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.

Figure 2. Independent horn/strobe wiring:

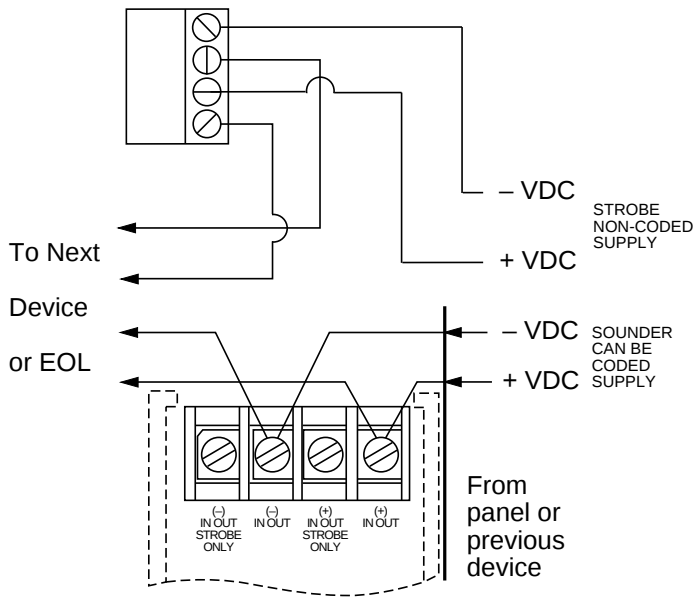
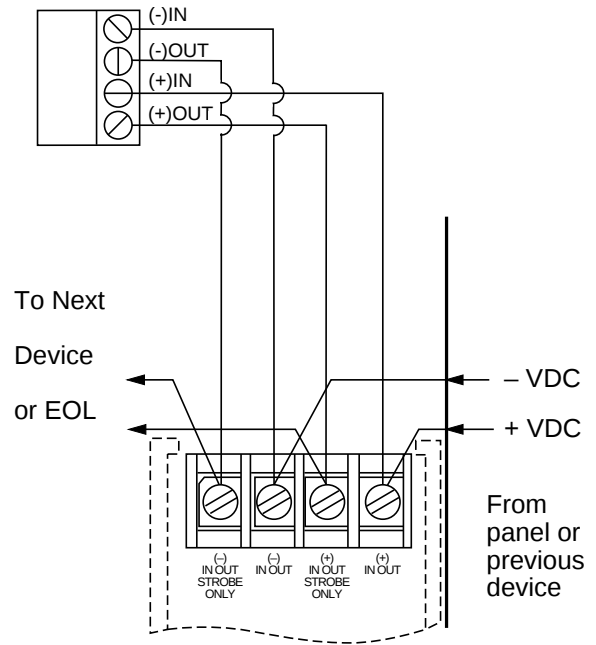


Figure 3. Combination horn/strobe wiring:

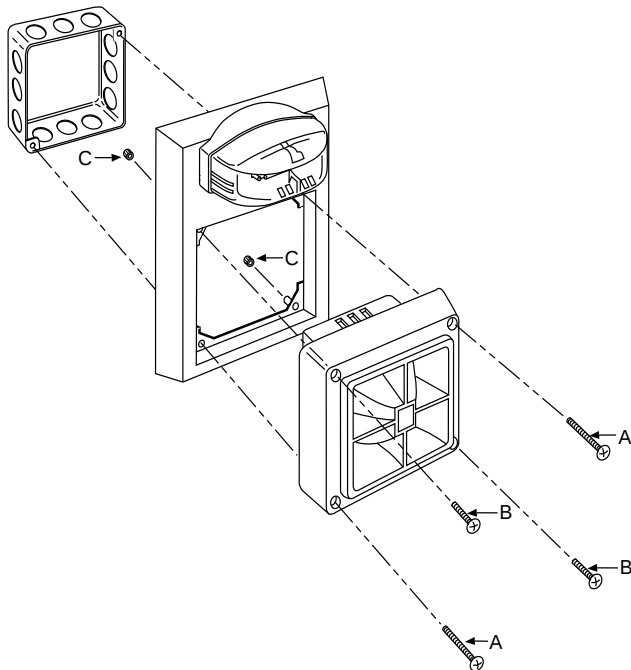


Note: Use uncoded supply only.

Screw Types Used

- A = #8-32 x 3-1/4" Phillips Head
- B = #8-32 x 2" Phillips Head
- C = #8 Pal Nut

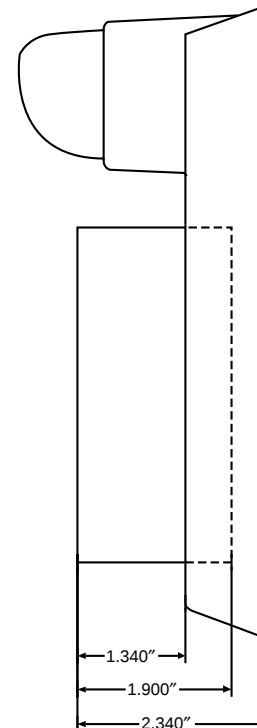
Figure 4. Surface mount:



1. Remove Mounting Screws Holding Horn in Place
2. Slide Horn Through Opening in Retrofit Plate
3. Attach Horn to Retrofit Plate Using Screws B and Nuts C
4. Complete Field Wiring (See Figures 2 and 3)
5. Screw Strobe/Horn Combination to Electrical Box Using Screws A

A78-2601-00

Figure 5. Maximum horn depth allowed:



A78-2615-00

Inverted Installation

1. Remove strobe unit by inserting a screwdriver behind the locking tabs, and gently pry the tabs inward (see Figure 5).
2. Carefully pull the strobe unit out from the back of the backplate.
3. Rotate the backplate 180 degrees with sounder on top (see Figure 6).
4. Snap strobe unit back into place noting the alignment of the text on the back of the strobe unit (see Figure 7).
5. Place new FIRE label over old print using the backplate edge for alignment (see Figure 6).
6. Refer to Figure 4 on page 3 for mounting procedures.

Figure 5. Remove strobe:

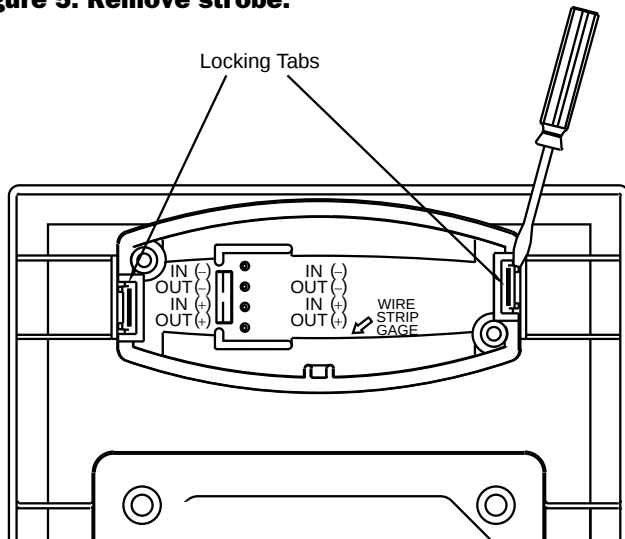
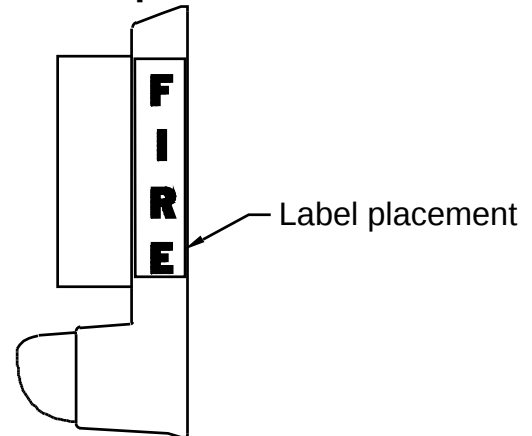


Figure 6. Rotate backplate 180°:



Note: Proper lens orientation.

Figure 7. Snap strobe back into place:

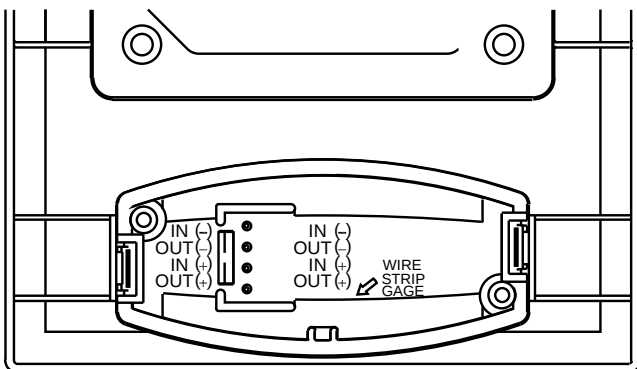
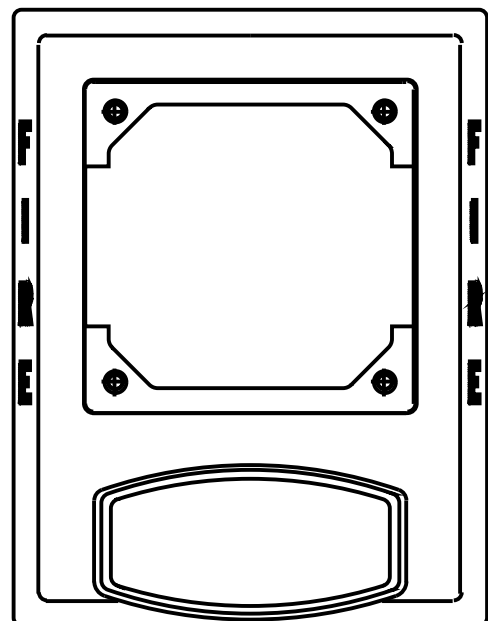


Figure 8. Final inverted unit:



INSTALLATION AND MAINTENANCE INSTRUCTIONS

SS24ADAS Series Strobes and MASS24ADAS Series Synchronized Horn/Strobes for Fire Protective Signaling Systems



A Division of Pittway
3825 Ohio Avenue, St. Charles, Illinois 60174
1-800-SENSOR2, FAX: 630-377-6495

Table 1. SS24ADAS Series Electrical Ratings:

Model	Supply Voltage Range	Operating Current from Regulated Supply			Operating Current from Full-Wave Rectified Unfiltered Supply		
		Average Operating Current (mA)	Peak Current (mA)	Inrush Current (Amps) 20/30 Vrms	Average Operating Current (mA)	Peak Current (mA)	Inrush Current (Amps) 20/30 Vrms
SS2415ADAS	20-30V	106	200	5.0/7.0	125	250	5.0/7.0
SS241575ADAS	20-30V	195	350	5.0/7.0	180	395	5.0/7.0

NOTE: In-rush current duration is less than 20 microseconds (.00002 seconds).

General Description

The National Fire Protection Association has published standards and recommended practices for the installation and use of the listed appliances. It is recommended that the installer be familiar with these requirements, with local codes, and any special requirements of the local fire authority having jurisdiction.

The Multi-Alert sounder and signaling strobe are intended to be connected to the alarm indicating circuit of a UL-listed fire alarm control panel and is compatible with DC line supervision. The electronic sounder can be connected to either 12 or 24 VDC panels. Models SS2415ADAS, SS241575ADAS, and combination models incorporating these strobes, require 24 volt panels. Panels may have full-wave rectified, unfiltered power supplies. The strobes are synchronized and flash at a rate of one flash per second with continuous voltage applied. SS24ADAS, SS24ADA, MASS24ADAS, and MASS24ADA series devices may be combined in the same zone.

The MA12/24D sounder is suitable for outdoor applications (-35° to 66° C) when it is used with a WBB Weather-proof Back Box. The signaling strobe is rated for 0° to 49° C and is NOT suitable for outdoor use.

The UL-rated light output of the SS2415ADAS, SS241575ADAS, MASS2415ADAS, and MASS241575ADAS is 15 cd (See Figure 1).

NOTE: The light output at 0° viewing angle for SS241575ADAS and MASS241575ADAS is 75 cd.

Any one of eight sounds can be selected on the electronic sounder, as indicated in Table 2.

NOTE: SS24ADAS, MASS24ADAS AND MAEH24ADAS SERIES DEVICES OPERATING IN THE SAME ZONE WILL NOT BE SYNCHRONIZED IF ENERGIZED AT DIFFERENT TIMES (I.E., IF MORE THAN ONE CONTROLLER IS CONTROLLING THE SAME ZONE.)

Table 2. Sound output and current ratings for the MA12/24D:

Sound (Hz)	Clips on Tabs (Note 1)	Current (mA) DC Regulated/ FWR Unfiltered			Output (dBA) (Note 3)		UL (dBA) Ratings (Note 4)	
		12V	24V	30V	12V	24V	12V	24V
Slow Whoop	ABC	21/40	38/56	46/72	85	92	79	85
800 Continuous	BC	15/24	28/45	35/55	87	93	79	85
800/1000 Alternating	AC	17/32	34/46	43/58	85	92	79	85
2400 Interrupted	AB	19/23	35/56	43/64	89	90	79	85
2400 Continuous	C	21/31	38/59	46/73	85	94	79	85
1200 Interrupted	B	13/19	23/33	27/41	85	91	75	82
Swept Frequency	A	17/24	34/47	43/60	85	92	79	85
Fast Warble	NONE	15/27	30/47	38/59	85	92	79	85

Note 1: See Figure 2 for tab clip removal & storage.

Note 2: All models can be powered using full wave rectified unfiltered supplies. Under no circumstances can SS24ADAS or MASS24ADAS series devices input voltage exceed 33 VDC or be

less than 16 VDC (18-33Vrms for full-wave rectified, unfiltered supplies).

Note 3: Measured at 10 feet in an anechoic chamber.

Note 4: Measured in a UL reverberant room.

The sound selected determines the maximum current and sound power output per device. See Table 2 for these values.

Independent Sounder/Strobe Operation

There may be applications where it is desirable to drive the sounder and strobe as independent devices. The System Sensor MASS12/24ADA series sounder/strobes are easily configured for this capability. The terminal connection for this application is shown in Figure 6. Independent strobe operation in a coded system requires a separate uncoded power supply for the strobe.

Installation - For Strobe Placement, See NFPA 72, Chapter 6

A. **General:** Slotted head screws are used to attach each device or combination of devices to the electrical outlet box. Phillips head screws are used to attach accessories to the horn. Refer to Figures 3,4,5, and 6 for wiring methods.

NOTES: Do not loop wires under the terminal screw. Wires connecting the device to the panel must be broken at the device terminal connection in order to maintain electrical supervision.

Strobe and strobe/horn combination are designed for wall mounting ONLY.

The sounder is 1-1/4" deep. Back boxes must be 4" square by at least 1-1/2" deep – 2-1/8" deep box is recommended.

All strobes must be mounted so that the top of the lens is 24 inches (61 cm) below ceilings or as required by the authority having jurisdiction.

B. Sounder/Strobe combination mounting:

1. Surface Mount: (See Fig. 10)
2. Semi Flush Mount: (See Fig. 11 and 14)

C. Sounder mounting:

1. Surface Mount : (See Fig. 7)
2. Semi Flush Mount: (See Fig. 11 and 14)
3. Flush Mount (See Fig. 13)

Flush mounting requires the use of the deep box (Part # BB-D) or equivalent. Determine which of the two device holes will be used to attach the device to the box. Mount the flush plate to the sounder using the other two holes with two 1-inch phillips head screws and two square nuts.

D. Strobe mounting:

1. Surface Mount: (See Fig. 9)
2. Semi Flush Mount (See Fig.12)

Installation procedures must conform to all applicable codes and the requirements of the authority having jurisdiction.

NOTE: The rated output of the sounder is specified at 10 feet. It cannot be assumed that the output will meet the NFPA standard of 15 dB over ambient noise at all locations within a room. Additional sounders may be needed to ensure sound output level complies with NFPA requirements.



The Limitations of Sounder/Strobes

The Sounder and/or Strobe will not work without power. The sounder/strobe gets its power from the fire/security panel monitoring the alarm system. If power is cut off for any reason, the sounder/strobe will not provide the desired audio or visual warning.

The Sounder may not be heard. The loudness of the sounder meets (or exceeds) current Underwriters Laboratories' standards. However, the sounder may not alert a sound sleeper or one who has recently used drugs or has been drinking alcoholic beverages. The Sounder 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 such as traffic, air conditioners, machinery or music appliances that may prevent alert persons from hearing the alarm. The Sounder 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 occu-

pants. 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.

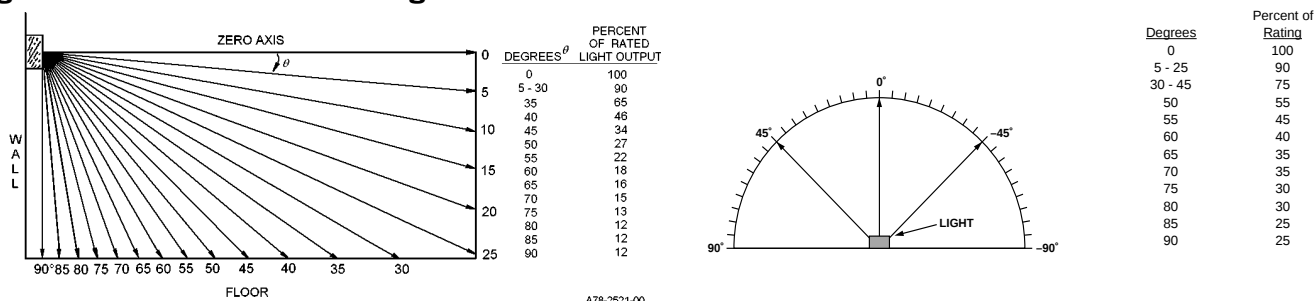
The signal strobe may cause seizures. Individuals who have a positive photic response to visual stimuli with seizures, such as epileptics, should avoid prolonged exposure to environments in which strobe signals, including this strobe, are activated.

System Sensor recommends that the Multi-Alert Sounder and Signal Strobe always be used in combination so that the risks from any of the above limitations are minimized.

The signal strobe cannot operate from coded power supplies. Coded power supplies produce interrupted power. The strobe must have an uninterrupted source of dc power in order to operate correctly.

Synchronized strobes may not prevent photosensitive reactions to signal strobes in alarm condition.

Figure 1. Vertical and horizontal light distribution:



NOTE: ALL STROBES THAT ARE TO BE IN SYNC MUST BE ON THE SAME POWER CIRCUIT.

Figure 2:

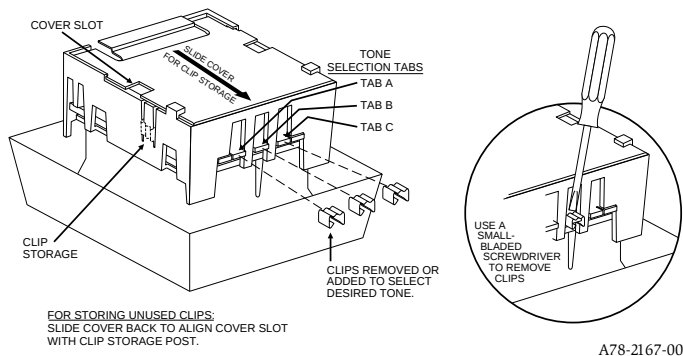


Figure 3. Multi-alert sounder:

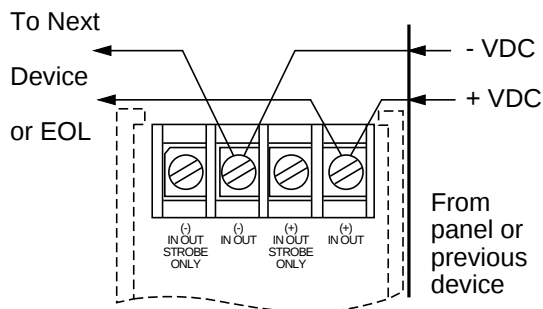
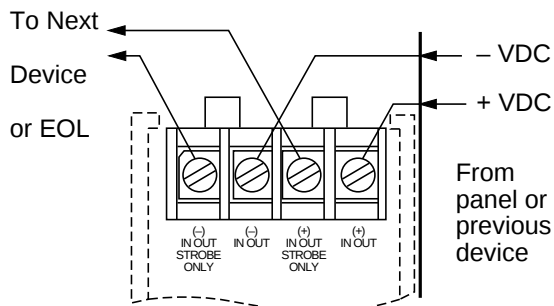


Figure 4. Multi-alert sounder and strobe operating in tandem:



Note: Use uncoded supply only.

Figure 5. Strobe:

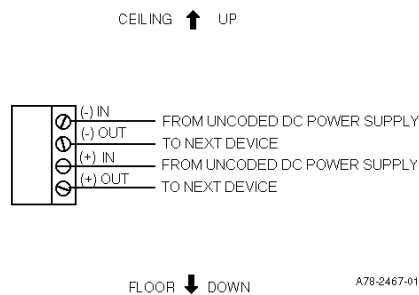


Figure 6. Multi-alert sounder and strobe operating independently:

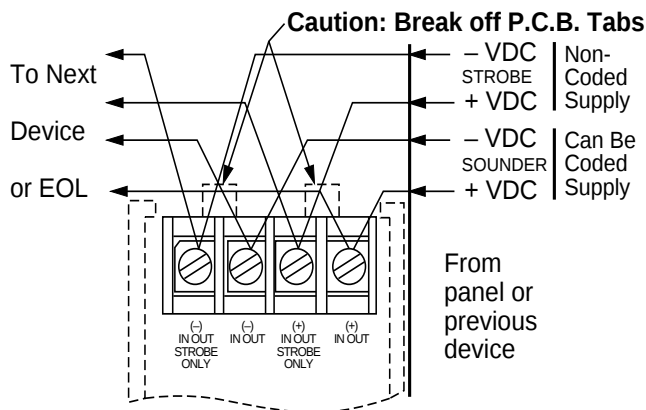
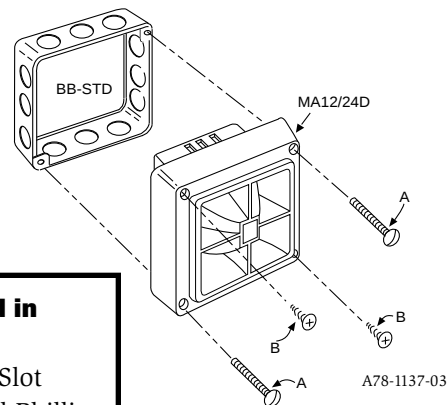


Figure 7. Sounder surface mount:



Screw types used in Figures 9 to 15

- A = 8-32x1-7/16" Slot
- B = #8 Sheet Metal Phillips
- C = 8-32x1" Phillips
- D = #8 Square Nut
- E = 8-32x5/8" Slot
- F = 8-32x2-3/4" Slot
- G = 6-32x5/8" Slot

Figure 9. Strobe surface mount:

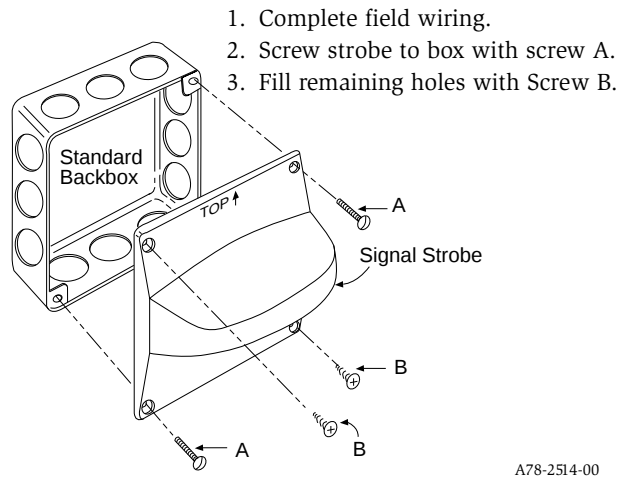


Figure 10. Sounder/strobe surface mount:

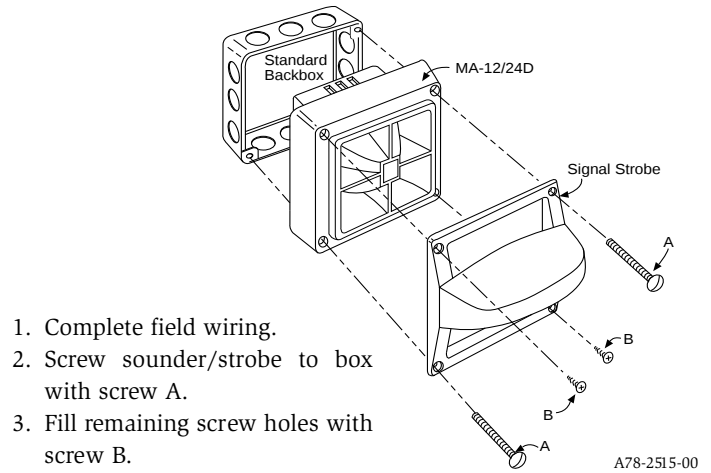


Figure 11. Sounder or sounder/strobe semi-flush mount:

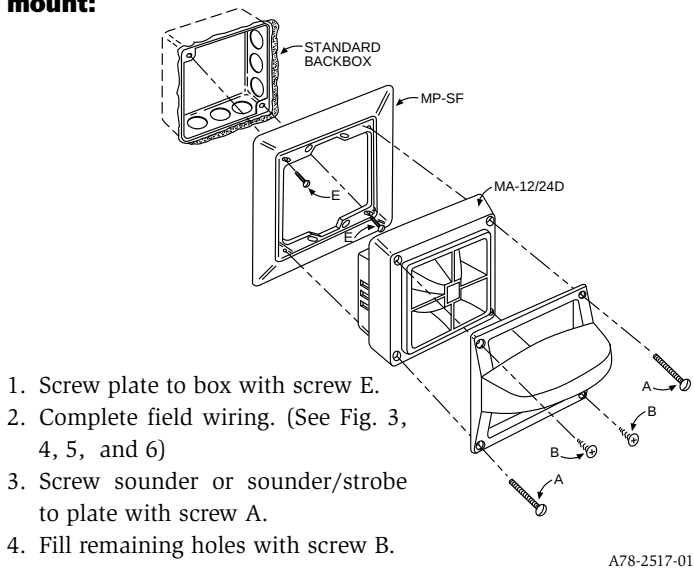


Figure 12. Strobe semi-flush mount:

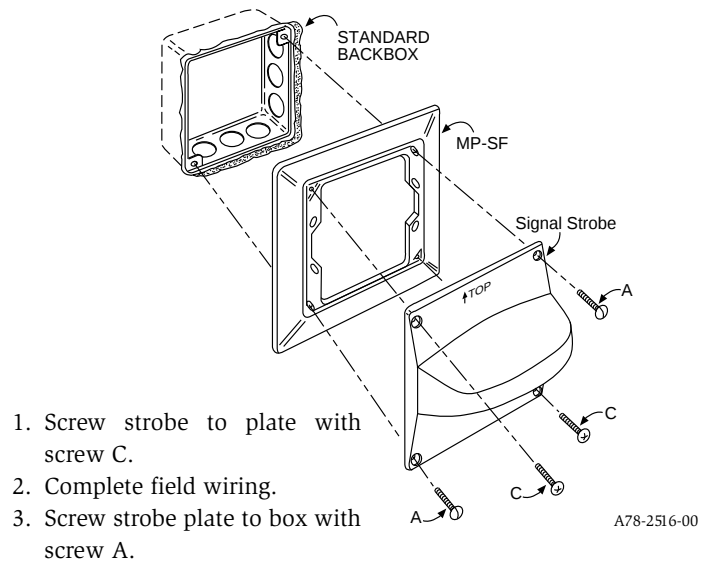


Figure 13. Sounder flush mount (deep box required):

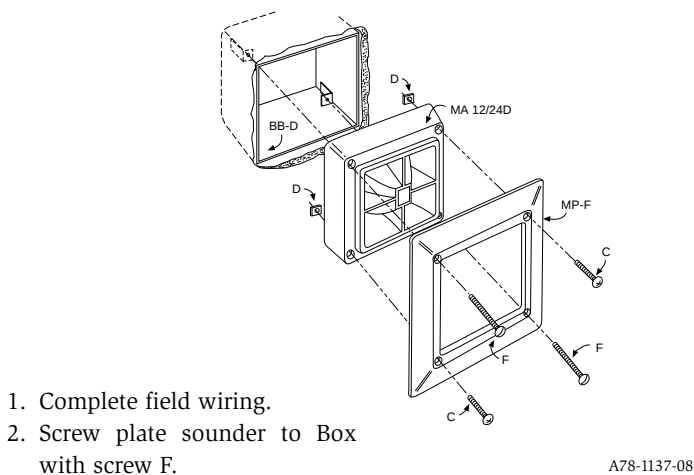
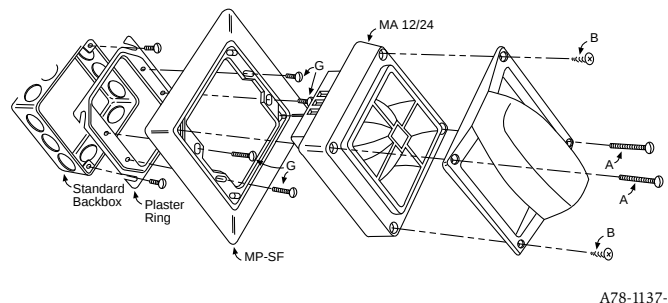


Figure 14. Sounder or sounder/strobe semi-flush mount with plaster ring:

1. Plaster ring should be properly mounted to electrical box with screws supplied with box.
2. Screw plate to plaster ring with screw G.
3. Complete field wiring. (See Fig. 5, 7, and 8)
4. Screw sounder/strobe to plate with A.
5. Fill remaining holes with screw B.



INSTALLATION AND MAINTENANCE INSTRUCTIONS

SS24ADAS Series Strobes and MAEH24ADAS Series Synchronized Electromechanical Horn/Strobes for Fire Protective Signaling Systems



A Division of Pittway
3825 Ohio Avenue, St. Charles, Illinois 60174
1-800-SENSOR2, FAX: 630-377-6495

Table 1. SS24ADAS Series Electrical Ratings:

Model	Supply Voltage Range	Operating Current from Regulated Supply			Operating Current from Full-Wave Rectified Unfiltered Supply		
		Average Operating Current (mA)	Peak Current (mA)	Inrush Current (Amps) 20/30 Vrms	Average Operating Current (mA)	Peak Current (mA)	Inrush Current (Amps) 20/30 Vrms
SS2415ADAS	20-30V	106	200	5.0/7.0	125	250	5.0/7.0
SS241575ADAS	20-30V	195	350	5.0/7.0	180	395	5.0/7.0

NOTE: In-rush current duration is less than 20 microseconds (.00002 seconds).

General Description

The National Fire Protection Association has published standards and recommended practices for the installation and use of the listed appliances. It is recommended that the installer be familiar with these requirements, with local codes, and any special requirements of the local fire authority having jurisdiction.

The Multi-Alert sounder and signaling strobe are intended to be connected to the alarm indicating circuit of a UL-listed fire alarm control panel and is compatible with DC line supervision. The electronic sounder can be connected to either 12 or 24 VDC panels. Models SS2415ADAS, SS241575ADAS, and combination models incorporating these strobes, require 24 volt panels. Panels may have full-wave rectified, unfiltered power supplies. The strobes are synchronized and flash at a rate of one flash per second with continuous voltage applied. SS24ADAS, SS24ADA, MAEH24ADAS, and MAEH24ADA series devices may be combined in the same zone.

The MA12/24EH sounder is suitable for outdoor applications (-35° to 66° C) when it is used with a WBB Weather-proof Back Box. The signaling strobe is rated for 0° to 49° C and is NOT suitable for outdoor use.

The UL-rated light output of the SS2415ADAS, SS241575ADAS, MAEH2415ADAS, and MAEH241575ADAS is 15 cd (See Figure 1).

NOTE: The light output at 0° viewing angle for SS241575ADAS and MAEH241575ADAS is 75 cd.

Any one of eight sounds can be selected on the electronic sounder, as indicated in Table 2.

NOTE: SS24ADAS, MASS24ADAS AND MAEH24ADAS SERIES DEVICES OPERATING IN THE SAME ZONE WILL NOT BE SYNCHRONIZED IF ENERGIZED AT DIFFERENT TIMES (I.E., IF MORE THAN ONE CONTROLLER IS CONTROLLING THE SAME ZONE.)

Table 2. Sound output and current ratings for the MA12/24EH:

Sound (Hz)	Clips on Tabs (Note 1)	Current (mA) DC Regulated/ FWR Unfiltered			Output (dBA) (Note 3)		UL (dBA) Ratings (Note 4)	
		12V	24V	30V	12V	24V	12V	24V
Fast Whoop	ABC	21/40	38/56	46/72	85	92	79	85
800 Continuous	BC	15/24	28/45	35/55	87	93	79	85
800/1000 Alternating	AC	17/32	34/46	43/58	85	92	79	85
Chirp	AB	19/23	35/56	43/64	89	90	79	85
2400 Continuous	C	21/31	38/59	46/73	85	94	79	85
Bell	B	13/19	23/33	27/41	85	91	75	82
Laser	A	17/24	34/47	43/60	85	92	79	85
Electromechanical	NONE	15/27	30/47	38/59	85	92	79	85

Note 1: See Figure 2 for tab clip removal & storage.

Note 2: All models can be powered using full wave rectified unfiltered supplies. Under no circumstances can SS24ADAS or MAEH24ADAS series devices input voltage exceed 33 VDC or be

less than 16 VDC (18-33Vrms for full-wave rectified, unfiltered supplies).

Note 3: Measured at 10 feet in an anechoic chamber.

Note 4: Measured in a UL reverberant room.

The sound selected determines the maximum current and sound power output per device. See Table 2 for these values.

Independent Sounder/Strobe Operation

There may be applications where it is desirable to drive the sounder and strobe as independent devices. The System Sensor MAEH12/24ADA series sounder/strobes are easily configured for this capability. The terminal connection for this application is shown in Figure 6. Independent strobe operation in a coded system requires a separate uncoded power supply for the strobe.

Installation - For Strobe Placement, See NFPA 72, Chapter 6

A. **General:** Slotted head screws are used to attach each device or combination of devices to the electrical outlet box. Phillips head screws are used to attach accessories to the horn. Refer to Figures 3,4,5, and 6 for wiring methods.

NOTES: Do not loop wires under the terminal screw. Wires connecting the device to the panel must be broken at the device terminal connection in order to maintain electrical supervision.

Strobe and strobe/horn combination are designed for wall mounting ONLY.

The sounder is 1-1/4" deep. Back boxes must be 4" square by at least 1-1/2" deep – 2-1/8" deep box is recommended.

All strobes must be mounted so that the top of the lens is 24 inches (61 cm) below ceilings or as required by the authority having jurisdiction.

B. Sounder/Strobe combination mounting:

1. Surface Mount: (See Fig. 10)
2. Semi Flush Mount: (See Fig. 11 and 14)

C. Sounder mounting:

1. Surface Mount : (See Fig. 7)
2. Semi Flush Mount: (See Fig. 11 and 14)
3. Flush Mount (See Fig. 13)

Flush mounting requires the use of the deep box (Part # BB-D) or equivalent. Determine which of the two device holes will be used to attach the device to the box. Mount the flush plate to the sounder using the other two holes with two 1-inch phillips head screws and two square nuts.

D. Strobe mounting:

1. Surface Mount: (See Fig. 9)
2. Semi Flush Mount (See Fig.12)

Installation procedures must conform to all applicable codes and the requirements of the authority having jurisdiction.

NOTE: The rated output of the sounder is specified at 10 feet. It cannot be assumed that the output will meet the NFPA standard of 15 dB over ambient noise at all locations within a room. Additional sounders may be needed to ensure sound output level complies with NFPA requirements.



The Limitations of Sounder/Strobes

The Sounder and/or Strobe will not work without power. The sounder/strobe gets its power from the fire/security panel monitoring the alarm system. If power is cut off for any reason, the sounder/strobe will not provide the desired audio or visual warning.

The Sounder may not be heard. The loudness of the sounder meets (or exceeds) current Underwriters Laboratories' standards. However, the sounder may not alert a sound sleeper or one who has recently used drugs or has been drinking alcoholic beverages. The Sounder 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 such as traffic, air conditioners, machinery or music appliances that may prevent alert persons from hearing the alarm. The Sounder 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 occu-

pants. 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.

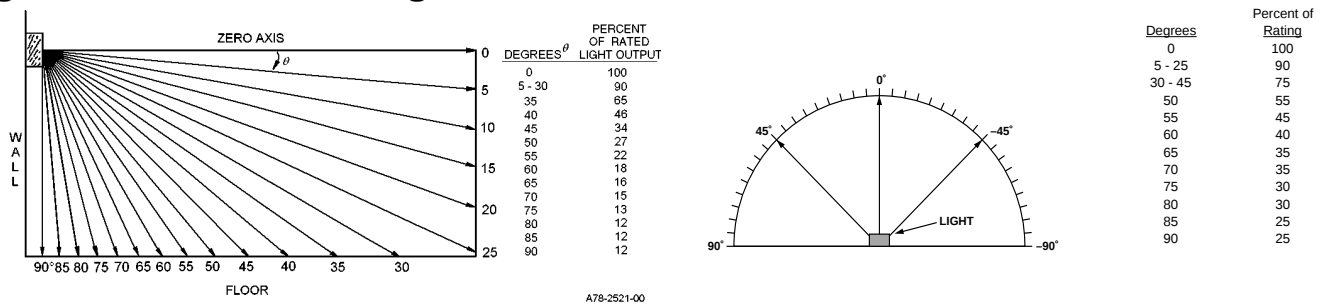
The signal strobe may cause seizures. Individuals who have a positive photic response to visual stimuli with seizures, such as epileptics, should avoid prolonged exposure to environments in which strobe signals, including this strobe, are activated.

System Sensor recommends that the Multi-Alert Sounder and Signal Strobe always be used in combination so that the risks from any of the above limitations are minimized.

The signal strobe cannot operate from coded power supplies. Coded power supplies produce interrupted power. The strobe must have an uninterruptured source of dc power in order to operate correctly.

Synchronized strobes may not prevent photosensitive reactions to signal strobes in alarm condition.

Figure 1. Vertical and horizontal light distribution:



NOTE: ALL STROBES THAT ARE TO BE IN SYNC MUST BE ON THE SAME POWER CIRCUIT.

Figure 2:

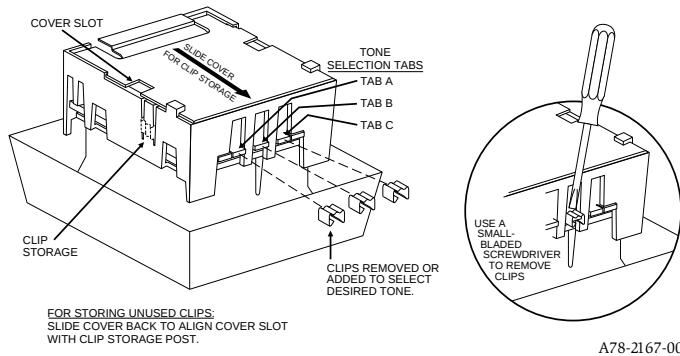


Figure 3. Multi-alert sounder:

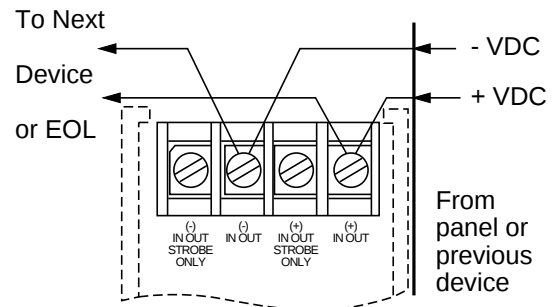
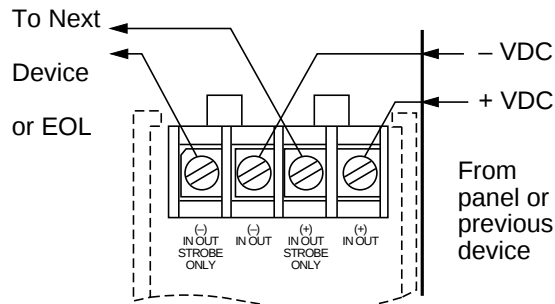


Figure 4. Multi-alert sounder and strobe operating in tandem:



Note: Use uncoded supply only.

Figure 5. Strobe:

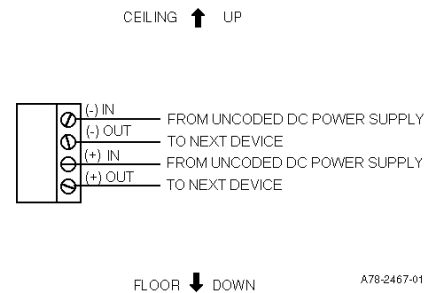


Figure 7. Sounder surface mount:

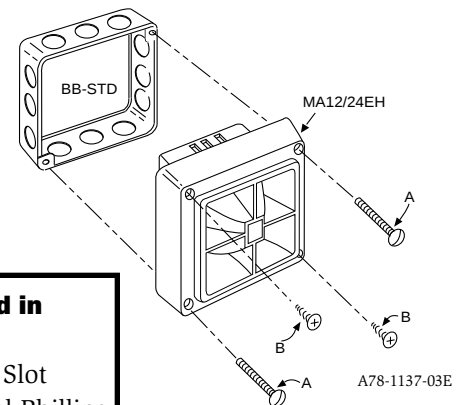
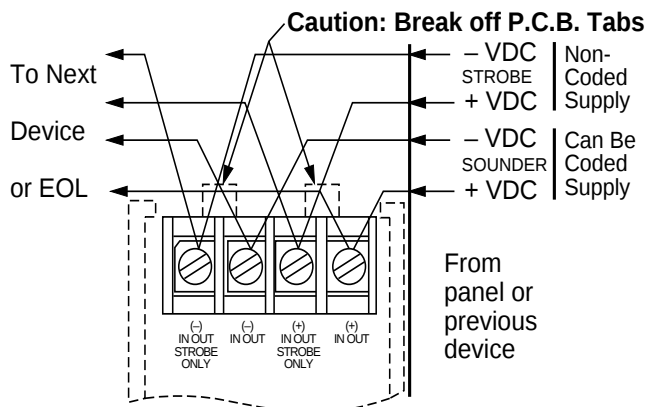


Figure 6. Multi-alert sounder and strobe operating independently:



Screw types used in Figures 9 to 15

- A = 8-32x1-7/16" Slot
- B = #8 Sheet Metal Phillips
- C = 8-32x1" Phillips
- D = #8 Square Nut
- E = 8-32x5/8" Slot
- F = 8-32x2-3/4" Slot
- G = 6-32x5/8" Slot

Figure 9. Strobe surface mount:

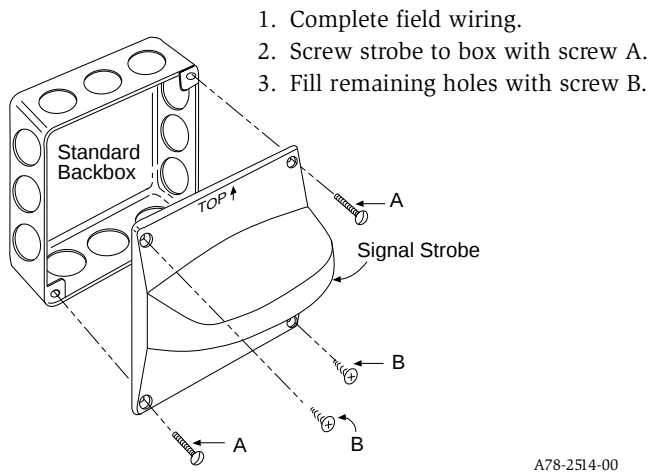


Figure 10. Sounder/strobe surface mount:

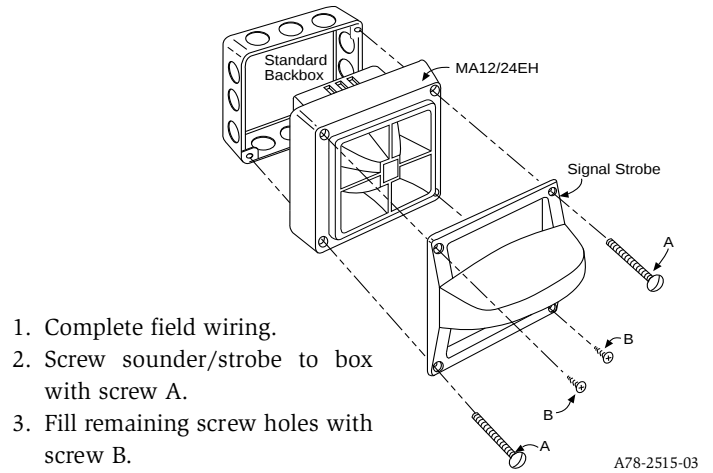


Figure 11. Sounder or sounder/strobe semi-flush mount:

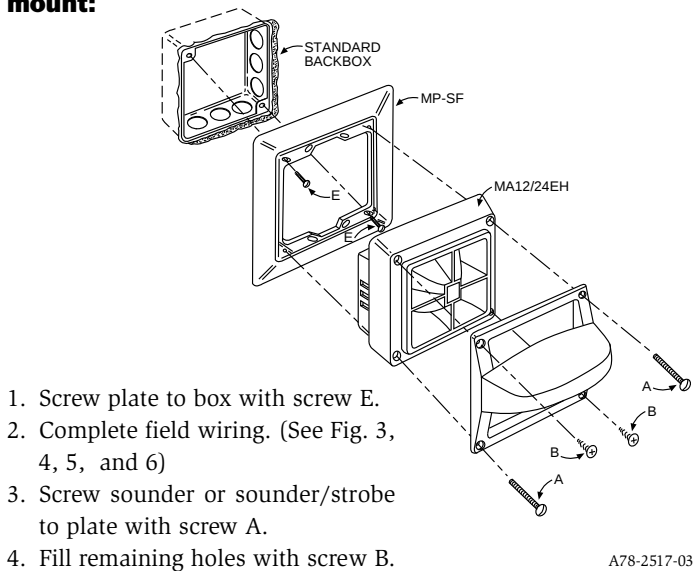


Figure 12. Strobe semi-flush mount:

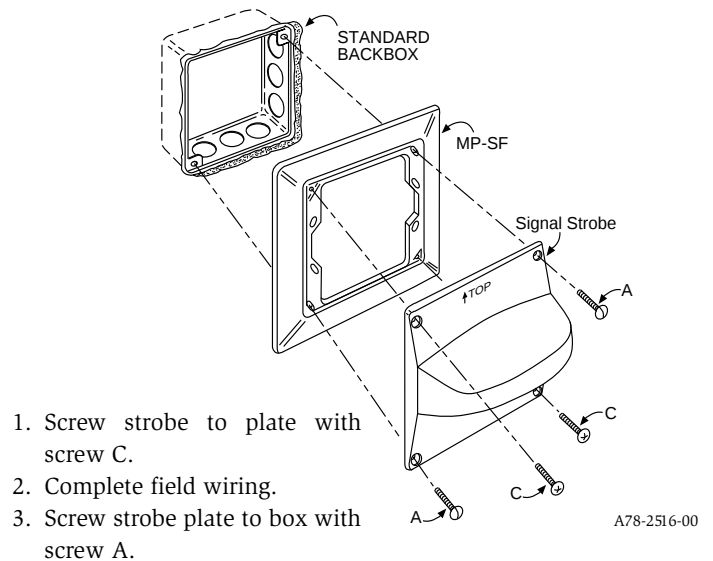


Figure 13. Sounder flush mount (deep box required):

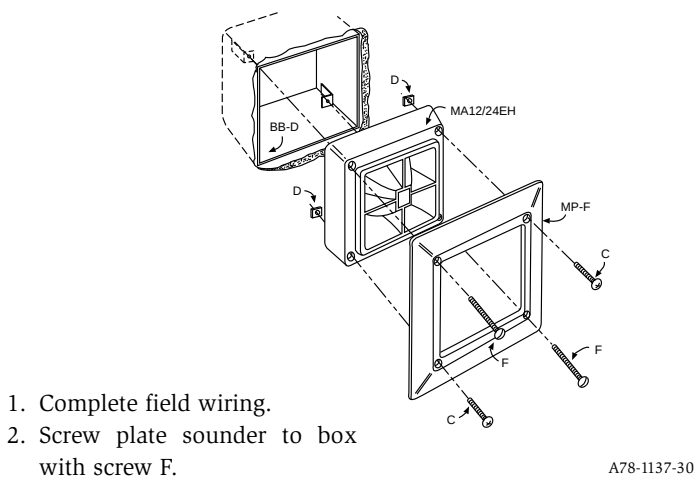
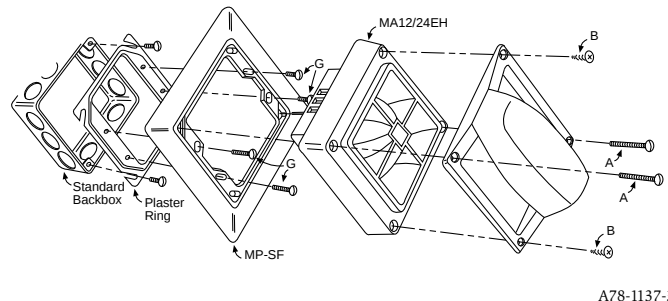


Figure 14. Sounder or sounder/strobe semi-flush mount with plaster ring:

1. Plaster ring should be properly mounted to electrical box with screws supplied with box.
2. Screw plate to plaster ring with screw G.
3. Complete field wiring. (See Fig. 5, 7, and 8)
4. Screw sounder/strobe to plate with screw A.
5. Fill remaining holes with screw B.



INSTALLATION AND MAINTENANCE INSTRUCTIONS

SpectrAlert Horns, Strobes, and Horn/Strobes

For use with the following models:

Horns: 12/24 volt: H12/24*, H12/24W*

Strobes: 12 volt: S1215, S121575, S1215W, S121575W

24 volt: S2415*, S241575*, S2475*, S24110*, S2415W*, S241575W*, S2475W*, S24110W*

Combo: 12 volt: P1215, P121575, P1215W, P121575W

24 volt: P2415*, P241575*, P2475*, P24110*, P2415W*, P241575W*, P2475W*, P24110W*

* ULC models add suffix "A", 24-volt models only



A Division of Pittway
3825 Ohio Avenue, St. Charles, Illinois 60174
1-800-SENSOR2, FAX: 630-377-6495

SPECTRAlert

Specifications

Voltage Range:	DC or Full-Wave Rectified (CAUTION: H12/24(A) and H12/24W(A) will not operate on coded power supplies.) Horn: 10.5 to 30 Volts; H12/24A and H12/24WA (ULC) 20 to 30 volts Strobes & Horn/Strobes: 12-volt models-10.5 to 17 volts; 24-volt models-20 to 30 volts
Flash Rate:	1 Flash Per Second
Operating Temperature:	32° F to 120° F (0° C to 49° C)
Light Output:	Models with 15 only in the model number are listed at 15 candela Models with 1575 are listed at 15 candela per UL 1971 but will provide 75 candela on axis (straight ahead) Models with 75 are listed at 75 candela Models with 110 are listed at 110 candela
Sound Output:	Sound output levels are established at Underwriters Laboratories in their reverberant room. Always use the sound output specified as UL Reverberant Room when comparing products.
Listings:	UL S4011 (Horns and Horn/Strobes), UL S5512 (Strobes) ULC CS548 (Horns), ULC CS549 (Strobes and Horn/Strobes) Factory Mutual

General Description

The SpectrAlert series notification appliances are designed to meet the requirements of most agencies governing these devices, including: NFPA, The National Fire Alarm Code, UL, ULC, FM, CSFM, MEA. Also, check with your local Authority Having Jurisdiction for other codes or standards that may apply.

The SpectrAlert series can be installed in systems using 12- or 24-volt panels having DC or full-wave rectified (FWR) power supplies. The series can also be installed in systems requiring synchronization (module MDL required) or systems that do not require synchronization (no module required).

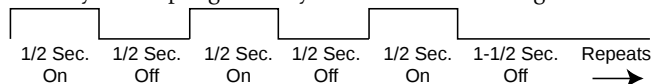
NOTICE: This manual should be left with the owner/user of this equipment.

Fire Alarm System Considerations

Temporal and Non-Temporal Coded Signals:

The American National Standards Institute and the National Fire Alarm Code require that all horns used for building evacuation installed after July 1, 1996, must produce Temporal Coded Signals.

Signals other than those used for evacuation purposes do not have to produce the Temporal Coded Signal. Temporal coding is accomplished by interrupting a steady sound in the following manner:



Power Supply Considerations

Panels typically supply DC filtered voltage or FWR (full-wave rectified) voltage. The system design engineer must calculate the number of units used in a zone based on the type of panel supply. Be certain the sum of all the device currents do not exceed the current capability of the panel. Calculations are based on using the device current found in the subsequent charts and must be the current specified for the type of panel power supply used.

Wire Sizes

The designer must be sure that the last device on the circuit has sufficient voltage to operate the device within its rated voltage. 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 less the voltage drop. Generally, for purposes of determining the wire size necessary for the system, it is best to consider all of the devices as "lumped" on the end of the supply circuit (simulates "worst case").

Typical wire size resistance:

18 AWG solid:	Approximately 8 ohms/1,000 ft.
16 AWG solid:	Approximately 5 ohms/1,000 ft.
14 AWG solid:	Approximately 3 ohms/1,000 ft.
12 AWG solid:	Approximately 2 ohms/1,000 ft.

Example: Assume you have 10 devices on a zone and each requires 50 mA average and 2000 Ft. of 14 AWG wiring (total length = outgoing + return). The voltage at the end of the loop is 0.050 amps per device x 10 devices x 3 ohms/1,000 ft. x 2000 ft = 3 volts drop.

Candela	AVERAGE CURRENT (mA)												PEAK CURRENT (mA)												IN RUSH CURRENT (mA)											
	12V Models						24V Models						12V Models						24V Models						12V Models						24V Models					
	10.5V		12V		17V		20V		24V		30V		10.5V		12V		17V		20V		24V		30V		10.5V		12V		17V		20V		24V		30V	
	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR		
15	133	159	114	157	81	128	59	80	53	80	46	79	460	460	450	460	420	480	150	270	150	270	140	250	80	108	92	124	140	190	170	230	220	280	270	370
15/75	168	182	142	171	99	150	76	92	66	93	58	94	490	520	490	520	460	480	170	270	170	270	160	270	76	104	88	126	160	185	170	230	210	270	270	360
75	NA	NA	NA	NA	NA	NA	145	166	123	149	102	141	NA	NA	NA	NA	NA	NA	350	440	340	460	330	480	NA	NA	NA	NA	NA	NA	190	240	230	280	290	380
110	NA	NA	NA	NA	NA	NA	169	200	140	191	115	174	NA	NA	NA	NA	NA	NA	460	560	450	570	420	620	NA	NA	NA	NA	NA	NA	190	230	220	290	290	370

			AVERAGE CURRENT (mA)																
			12V Models									24V Models							
Tone	High/Low Volume	Temp /Non	10.5V			12V			17V			20V			24V			30V	
			DC	FWR		DC	FWR		DC	FWR		DC	FWR		DC	FWR		DC	FWR
Electro-mech.	High	Temp	10	11	10	10	14	14	19	21	25	18	29	2					
		Non	10	16	10	19	14	25	17	29	23	34	30	4					
	Low	Temp	NA	NA	NA	NA	NA	NA	11	12	13	13	17	1					
3000 Hz Interrupt.	High	Non	NA	NA	NA	NA	NA	NA	12	16	14	19	17	2					
		Temp	11	13	11	11	16	16	24	26	28	23	37	3					
	Low	Non	11	17	11	21	14	28	19	34	27	39	35	4					
		Temp	NA	NA	NA	NA	NA	NA	14	14	17	15	21	1					
		Non	NA	NA	NA	NA	NA	NA	13	18	16	21	22	2					

			AVERAGE CURRENT (mA)											
			12V Models						24V Models					
	High/Low	Temp	10.5V		12V		17V		20V		24V		30V	
Tone	Volume	/Non	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR
Electro-mech.	High	Temp	143	170	124	167	95	142	78	101	78	98	75	105
		Non	143	170	124	167	95	142	69	98	76	100	76	107
	Low	Temp	NA	NA	NA	NA	NA	NA	70	92	66	93	63	94
		Non	NA	NA	NA	NA	NA	NA	71	92	67	93	63	95
3000 Hz Interrupt.	High	Temp	144	172	125	168	97	144	83	106	81	103	83	112
		Non	144	173	125	168	95	146	78	102	80	106	81	115
	Low	Temp	NA	NA	NA	NA	NA	NA	73	94	70	95	67	98
		Non	NA	NA	NA	NA	NA	NA	72	92	69	94	68	100

			AVERAGE CURRENT (mA)											
			12V Models						24V Models					
			10.5V		12V		17V		20V		24V		30V	
Tone	High/Low Volume	Temp /Non	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR
Electro-mech.	High	Temp	NA	NA	NA	NA	NA	NA	164	187	148	167	131	167
		Non	NA	NA	NA	NA	NA	NA	163	184	146	169	132	169
	Low	Temp	NA	NA	NA	NA	NA	NA	156	178	136	162	119	156
		Non	NA	NA	NA	NA	NA	NA	157	178	137	162	119	157
3000 Hz Interrupt.	High	Temp	NA	NA	NA	NA	NA	NA	169	192	151	172	139	174
		Non	NA	NA	NA	NA	NA	NA	164	189	150	175	137	177
	Low	Temp	NA	NA	NA	NA	NA	NA	159	180	140	164	123	160
		Non	NA	NA	NA	NA	NA	NA	158	188	139	163	124	162

			AVERAGE CURRENT (mA)															
			12V Models									24V Models						
			10.5V			12V			17V			20V			24V			30V
Tone	High/Low	Temp /Non	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR
Electro-mech.	High	Temp	178	193	152	181	113	164	95	113	91	111	87	120				
		Non	178	193	152	181	113	164	93	110	89	113	88	122				
	Low	Temp	NA	NA	NA	NA	NA	NA	87	104	79	106	75	109				
Non		NA	NA	NA	NA	NA	NA	88	104	80	106	75	110					
3000 Hz Interrupt.	High	Temp	179	195	152	183	115	166	100	118	94	116	95	127				
		Non	179	196	152	183	113	168	95	114	93	119	93	130				
	Low	Temp	NA	NA	NA	NA	NA	NA	90	106	83	108	79	113				
		Non	NA	NA	NA	NA	NA	NA	89	104	82	107	80	115				

			AVERAGE CURRENT (mA)											
			12V Models						24V Models					
			10.5V		12V		17V		20V		24V		30V	
Tone	High/Low Volume	Temp /Non	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR	DC	FWR
Electro-mech.	High	Temp	NA	NA	NA	NA	NA	NA	188	221	165	209	144	200
		Non	NA	NA	NA	NA	NA	NA	186	218	163	211	145	202
	Low	Temp	NA	NA	NA	NA	NA	NA	180	212	153	204	132	189
3000 Hz Interrupt.	High	Non	NA	NA	NA	NA	NA	NA	181	212	154	204	132	190
		Temp	NA	NA	NA	NA	NA	NA	193	225	168	214	152	207
		Non	NA	NA	NA	NA	NA	NA	188	222	167	217	150	211
	Low	Temp	NA	NA	NA	NA	NA	NA	183	214	157	206	136	193
		Non	NA	NA	NA	NA	NA	NA	182	212	156	205	137	195

			10.5	12	17	20	24	30	10.5	12	17	20	24	30
Temporal	Low Volume	Electromechanical	NA	NA	NA	75	75	79	NA	NA	NA	94	96	98
		3000 Hz Interrupted	NA	NA	NA	75	79	79	NA	NA	NA	94	96	98
	High Volume	Electromechanical	75	75	79	82	82	82	94	95	98	100	101	102
		3000 Hz Interrupted	75	75	79	82	85	85	94	95	98	100	101	102
Non-Temporal	Low Volume	Electromechanical	NA	NA	NA	79	82	85	NA	NA	NA	94	96	98
		3000 Hz Interrupted	NA	NA	NA	82	82	85	NA	NA	NA	94	96	98
	High Volume	Electromechanical	79	79	85	85	88	88	94	95	98	100	101	102
		3000 Hz Interrupted	79	82	85	88	88	90	93	95	98	100	101	102

Consult your panel manufacturer's specifications, as well as SpectrAlert's operating voltage range to determine acceptable voltage drop.

Two tones may be selected using the jumper plugs located on the printed circuit board. With the jumper offset, the tone is the Electromechanical sound. With the jumper in place, the tone is a 3 kHz sound.

Temporal coding or Non-Temporal coding can be selected using the jumper plugs located on the printed circuit board. With the jumper offset, the tone pattern is the Temporal Coded Signal. With the jumper in place, the Non-Temporal code (continuous) tone is active.

High or low volume may be selected using the jumper plugs located on the printed circuit board. With the jumper in place, the sound output level is the high level. With the jumper offset, the sound output level is the low level. The low volume setting must NOT be used when the device is powered from a 12-volt panel.

I56-982-02

System Operation: Non-Synchronized Devices

Figure 1. Any combination of models powered by a 2-wire circuit:

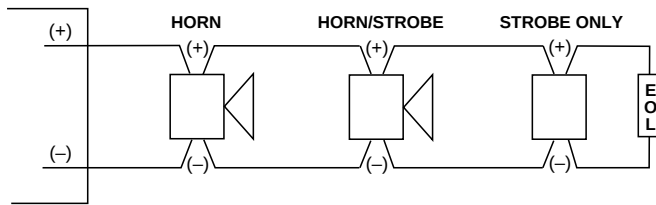


Figure 2. Any combination of models powered by a 4-wire circuit to provide independent horn and strobe operation (Remove factory installed jumpers, see Figure 4):

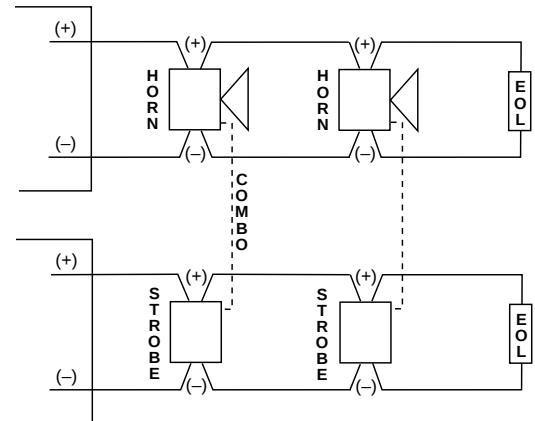


Figure 3: Horns and strobes powered in tandem:

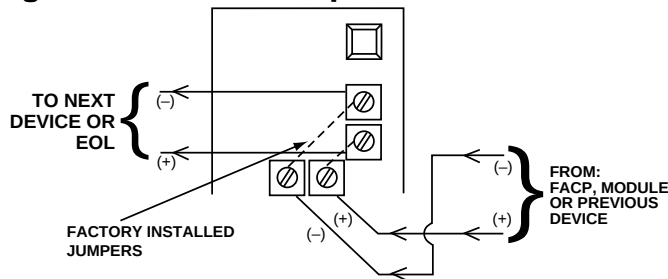
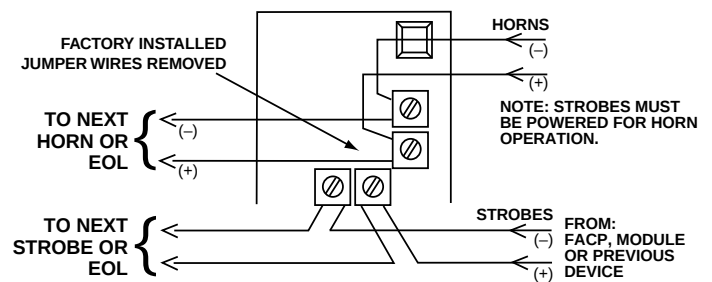


Figure 4: Horns and strobes powered independently:



⚠ WARNING

The Limitations of Horn/Strobes

The horn and/or strobe will not work without power. The horn/strobe gets its power from the fire/security panel monitoring the alarm system. If power is cut off for any reason, the horn/strobe will not provide the desired audio or visual warning.

The horn may not be heard. The loudness of the horn meets (or exceeds) current Underwriters Laboratories' standards. However, the horn may not alert a sound sleeper or one who has recently used drugs or has been drinking alcoholic beverages. The horn 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 such as traffic, air conditioners, machinery or music appliances that may prevent alert persons from hearing the alarm. The horn 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 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.

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 horn 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 horn, strobe, or horn/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 horn, strobe, or horn/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 horn, strobe, or horn/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

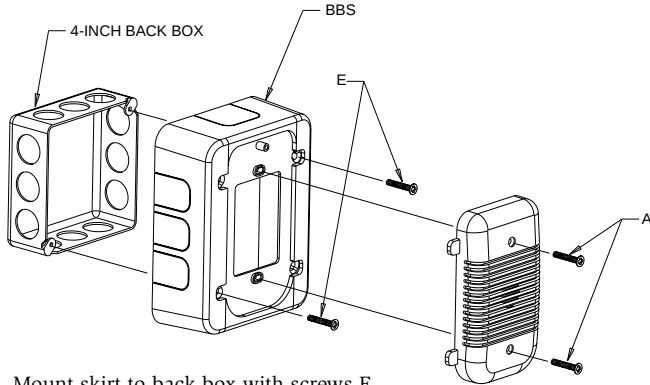
to: System Sensor, Repair Department, RA # _____, 3825 Ohio Avenue, St. Charles, IL 60174. Please include a note describing the malfunction and suspected cause of failure. The Company shall not be obligated to repair or replace units which are found to be defective because of damage, unreasonable use, 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.

Mounting Diagrams:

Screw types used for mounting:

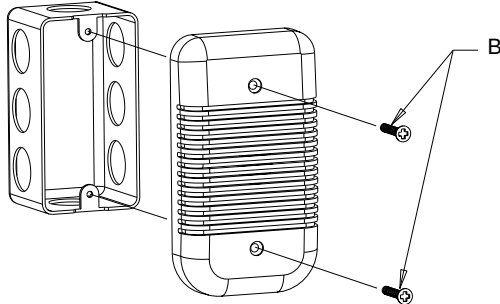
- A = #8 x 1-1/4 plastite
- B = 6-32 x 1-3/8 oval head
- C = 6-32 x 1-5/16 pan head
- D = #6 plastite
- E = 8-32 x 3/4 flat head

Horn surface mount:



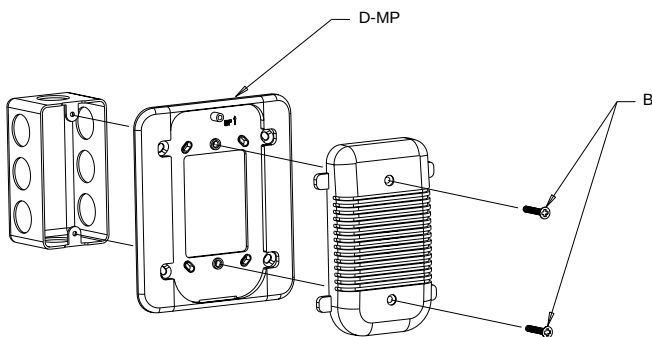
1. Mount skirt to back box with screws E.
 2. Complete field wiring.
 3. Mount unit to skirt with screws A.
- NOTE: Horn and skirt may also mount to a 2-inch box using screws B instead of screws A.

Horn direct mount:



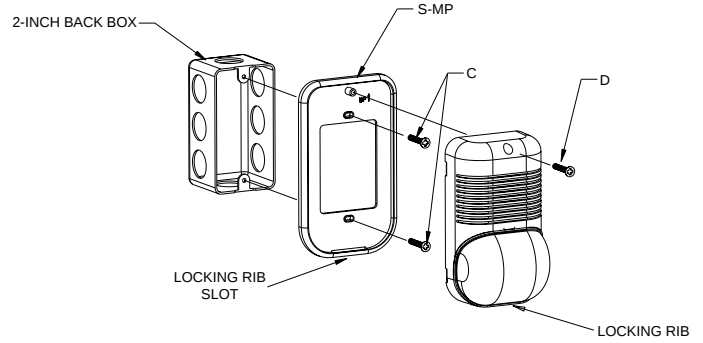
1. Break off four tabs from unit.
2. Complete field wiring.
3. Mount unit to back box with screws B.

Horn with universal mounting plate:



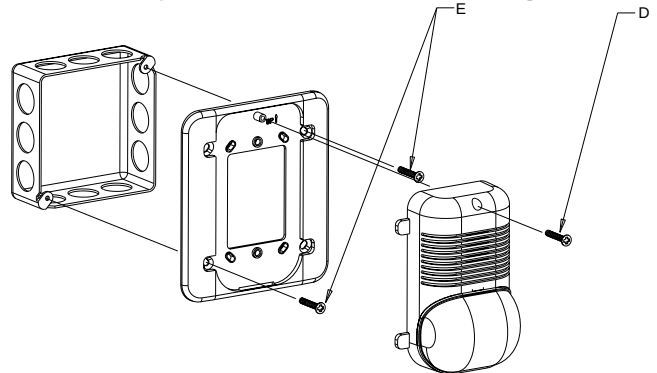
1. Slip wires through plate.
2. Complete field wiring.
3. Mount unit to back box with screws B.

Strobe or Horn/Strobe with small footprint mounting plate:



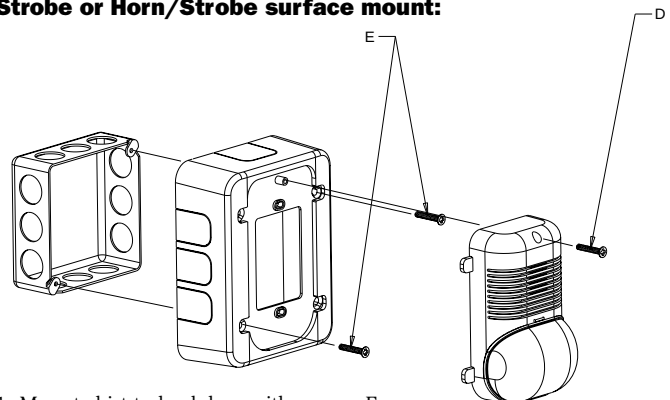
1. Screw plate to back box with screws C.
2. Break off four tabs from unit.
3. Complete field wiring.
4. Insert locking rib on unit into slot on plate.
5. Push into plate.
6. Secure unit to plate with screw D.

Strobe or Horn/Strobe with universal mounting plate:



1. Mount plate to back box with screws E.
2. Complete field wiring.
3. Insert locking rib into slot on plate.
4. Push into plate.
5. Secure unit to plate with screw D.

Strobe or Horn/Strobe surface mount:



1. Mount skirt to back box with screws E.
2. Complete field wiring.
3. Insert locking rib into slot on plate.
4. Push into recessed area.
5. Secure unit to skirt with screw D.