

Model AV1-LED

Audio-Visual LED Light

2561528 Rev A1 0225

Limited Warranty: This product's limited warranty can be found at www.fedsig.com/SSG-Warranty.

SAFETY MESSAGES TO INSTALLERS AND USERS

It is important to follow all instructions shipped with this product. This device is to be installed by trained personnel who are thoroughly familiar with the country electric codes and will follow these guidelines as well as local codes.

The selection of a mounting location for the light, its controls, and wiring routing must be done under the direction of the facilities engineer and the safety engineer. Listed below are some other important safety instructions and precautions you should follow:

- Read and understand all instructions before installing or operating this product.
- To avoid electrical shock, disconnect the light from the power supply before installing the light.
- After installation, test the system to ensure that it is operating properly.
- The product nameplate, which may contain cautionary or other information of importance to maintenance personnel, should not be obscured in any way.
- To be an effective warning device, this product produces bright light that can be hazardous to your eyesight when viewed at close range. Do not stare directly into this lighting product at close range, or permanent damage to your eyesight may occur.

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

OVERVIEW – The Model AV1-LED combination audible/visual signal features a 100% polycarbonate housing that is rated for Type 3R rain-tight applications. The Fresnel lens provides superior visibility in all directions. Available lens colors include amber, blue, clear, green, and red. Jumper settings enable you to select a fast or slow flash rate and whether the buzzer and/or LED operate intermittently or continuously. The AV1-LED design provides three mounting configurations. The black base will accommodate mounting to a 1/2" NPT pipe, a 4" octagonal electrical box, or any flat surface. The surface-



mount gasket serves as a template for preparing a flat surface with appropriate mounting holes.

All Model AV1-LED units feature a unique twist-and-lock lens to enable access to the LED light. The integrated buzzer provides 85 dB output at 10' (95 dB at 1 m). Two voltage variations are available: 24 Vdc and 120 Vac. Each Model AV1-LED is factory-assembled with two color-coded leads for wiring to a junction box. If necessary, installers can remove the leads and connect the power supply to the Model AV1-LED directly to the terminal block located in the base of the unit.

Unpacking the Device – After unpacking the device, examine it for damage and verify the parts. If a part is missing or damaged, do not attempt to install the device. Contact Federal Signal Customer Support.

Mounting the Light

This section describes how to pipe mount and surface mount the light. To mount the light on a vertical surface, use one of the separately purchased wall or corner mounting kits listed in Table 2. For weatherproof installation, the light must be mounted vertically with the lens facing upwards.

Pipe Mounting

To mount the Model AV1-LED on a 1/2" NPT pipe:

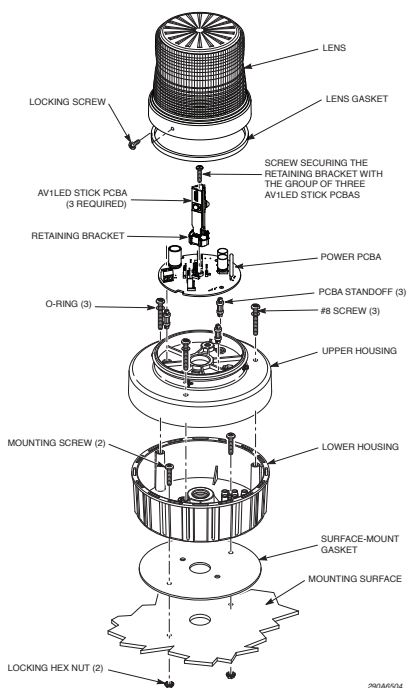
1. Attach the light to the pipe by turning the light clockwise.
2. To make the electrical connections, refer to the "Wiring the Model AV1-LED" section.

Surface Mounting

To mount the Model AV1-LED on a flat mounting surface:

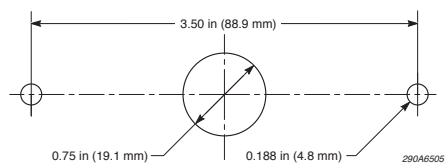
1. Remove and retain the three #8 screws securing the upper housing to the lower housing. Remove the upper housing. See Figure 1.

Figure 1 Exploded view



2. Using the gasket as a template or the dimensions shown in Figure 2, scribe three drill-position marks on the mounting surface.

Figure 2 Mounting hole dimensions (not to scale)



3. Drill a 3/16" (4.8 mm) diameter hole at the two outside drill-position marks for mounting.
4. Drill or punch a 3/4" (19.1 mm) diameter hole at the center drill-position mark for wire entry.
5. Use a small punch or 3/16" (4.8mm) drill to remove the appropriate knockouts in the lower housing.
6. Center the mounting holes in the rubber gasket over the mounting holes in the mounting surface.
7. Center the mounting holes in the lower housing over the mounting holes in the gasket.
8. Secure the light to the mounting surface using the two mounting screws.
9. Refer to the "Wiring the Model AV1-LED" section.

Wiring the Light

The Model AV1-LED comes assembled from the factory with two color-coded leads for wiring to a junction box. To connect the Model AV1-LED directly to a power supply, simply remove the factory leads and make the power connections to the terminal block located in the lower housing.

⚠ WARNING

SHOCK HAZARD—To avoid electrical shock hazards, do not connect or disconnect wires while power is applied. Failure to heed this warning may cause serious injury or death.

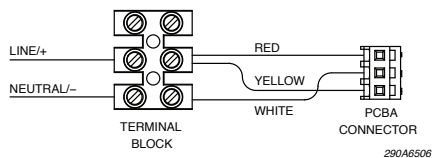
Single Power Supply for Light and Sounder

This type of wiring is required for the installation are supply wires of the appropriate size (12AWG [4.0 mm²] maximum).

To wire the light to a single power supply for the unit:

1. Turn off power to the system.
2. Remove and retain the three #8 screws securing the upper housing to the lower housing. Remove the upper housing.
3. Remove the factory field-wiring leads from the terminal block.
4. Route supply wires of the appropriate gauge into the housing through the conduit entry.
5. Strip a maximum of 1/4" (6.4 mm) of wire insulation from the ends of the power leads.
6. To connect the wires to the terminal block, insert the stripped ends of the wires into the connector as far as they can go, then tighten the clamping screw. The maximum tightening torque is 4.5 in-lb (0.5 Nm). See Figure 3.

Figure 3 Wiring for single power supply



7. Reassemble the Model AV1-LED, restore power, and test the unit for proper operation.

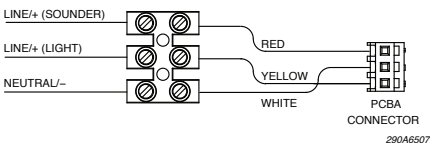
Separate Power Supplies for Light and Sounder

In some applications it may be beneficial to control the light independent of the sounder. If this is the case, separate power supply wiring for each of the devices can be connected to the terminal block. Supply wires of the appropriate size (12AWG [4.0 mm²] maximum) are required for the installation.

To wire the light and sounder to separate power supplies:

1. Turn off power to the system.
2. Remove and retain the three #8 screws securing the upper housing to the lower housing. Remove the upper housing.
3. Remove the factory field-wiring leads from the terminal block.
4. Route separate supply wires of the appropriate gauge for the light and sounder into the housing through the conduit entry.
5. Strip a maximum of 1/4" (6.4 mm) of wire insulation from the ends of the power leads.
6. To connect the wires to the terminal block, insert the stripped ends of the wires into the connector as far as they can go, then tighten the clamping screw. The maximum tightening torque is 4.5 in-lb (0.5 Nm). See Figure 4.

Figure 4 Wiring for separate power supplies



NOTE: If it is necessary to combine two NEUTRAL/- wires, connect them to the same terminal on the terminal block.

7. Reassemble the Model AV1-LED, restore power, and test the unit for proper operation.

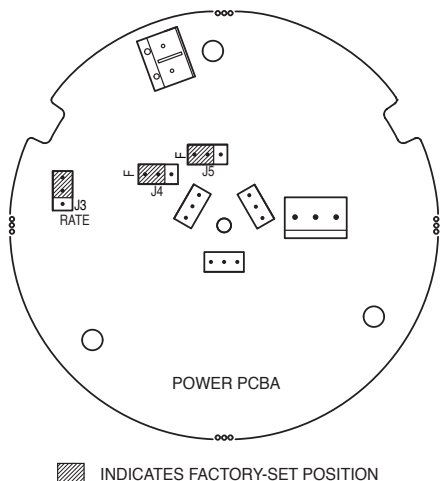
Programming the Light

Jumpers at J3, J4, and J5 on the power PCBA enable you to select how the Model AV1-LED operates. The options are (factory settings in brackets):

- J3 Flash Rate: [fast] or slow
- J4 LED: [intermittent] or continuous
- J5 Sounder: [intermittent] or continuous

Figure 5 shows the locations and factory-set positions of the three jumpers.

Figure 5 Jumpers controlling LED and buzzer



NOTE: The continuous illumination and sound features allow the AV1-LED to be operated with variations in the external flash patterns and duty cycle. However, the AV1-LED is not intended to be powered on continuously for long periods of time. Doing so will significantly shorten the life of the sounder; therefore, continuous operation of the AV1-LED is not recommended.

Maintaining the Light

SAFETY MESSAGE TO MAINTENANCE PERSONNEL 
Listed below are some important safety instructions and precautions you should follow:

- Any maintenance to the system must be performed by a trained electrician in accordance with NEC/CEC guidelines and local codes.
- Read and understand all instructions before operating this system.
- To avoid electrical shock, turn off power to the system before performing any maintenance.
- The circuitry of the Model AV1-LED can be damaged by electrostatic discharge. Follow anti-static procedures when servicing this product.
- Never alter the unit in any manner. Safety may be endangered if additional openings or other alterations are made to the unit.
- To be an effective warning device, this product produces bright light that can be hazardous to your eyesight when viewed at close range. Do not stare directly into this lighting product at close range or permanent damage to your eyesight may occur.

- After performing any maintenance, test the system to ensure that it is operating properly.
- Establish a procedure to routinely check the system for proper activation and operation.

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death.

Replacing the Sounder

Occasionally check for a reduction in the output of the sounder. If the sound pressure is reduced to an ineffective level, replace the sounder.

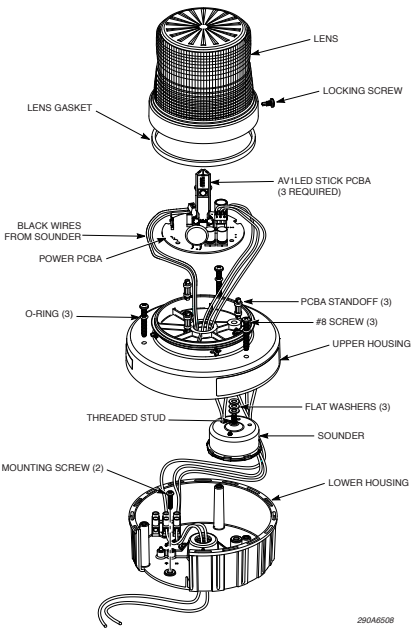
⚠ WARNING

SHOCK HAZARD—To avoid electrical shock hazards, do not connect or disconnect wires while power is applied. Failure to heed this warning may cause serious injury or death.

Accessing the Sounder

The sounder is located on the bottom of the upper housing. See Figure 6.

Figure 6 Exploded view with sounder



To access the sounder:

1. Turn off power to the system.
2. Loosen the lens locking screw and twist the lens counterclockwise one quarter turn. Remove the

lens from the upper housing.

3. Loosen the screws on terminal block J9 on the PCBA and remove the black leads of the sounder.
4. The mounting holes permit only one orientation of the PCBA. Note or mark the orientation.
5. Use a flat-head screwdriver to carefully pry the PCBA from the three nylon standoffs and set the PCBA aside.
6. Remove the three #8 screws securing the upper housing to the lower housing and remove the upper housing.

Replacing the Sounder and Reassembling the Light

1. Unscrew the sounder from the upper housing (Figure 5). Be careful to not lose the three washers that space the sounder from the upper housing.
2. Place the washers on the threaded lug of the new sounder and hand-tighten the sounder.
3. To reconnect the wires to the terminal block, insert the ends of the wires into the J9 connector as far as they can go, and then tighten the clamping screw. The maximum tightening torque is 4.5 in-lb (0.5 Nm).
4. Gently press the PCBA onto the standoffs until it locks in place.
5. Align the pins on the housing with the detents on the lens. Apply downward pressure on the lens while turning it clockwise one quarter turn.
6. Tighten the lens locking screw.
7. Restore power and test the device for proper operation.

Replacing the AV1-LED Stick PCBAs

Although the AV1-LED stick PCBAs are designed to give years of service, replacement parts are available. LED colors and replacement part numbers are shown in Table 2. Because the stick PCBAs are connected in series, you must replace all three.

The stick PCBAs are held by a retaining bracket at 60 degrees to each other. When joined with the bracket, the PCBAs connect to pins at J5, J7, and J8 on the power PCBA. The stick PCBAs are secured to the power PCBA with a Phillips head screw (Figure 1).

⚠ WARNING

SHOCK HAZARD—To avoid electrical shock hazards, do not connect or disconnect wires while power is applied. Failure to heed this warning may cause serious injury or death.

To remove the AV1-LED stick PCBAs:

1. Turn off power to the system.
2. Loosen the lens locking screw and twist the lens counterclockwise one quarter turn. Remove the lens from the upper housing.
3. Remove the Phillips head screw retaining the bracket holding the AV1-LED stick PCBAs.
4. Grasp the group of three AV1-LED stick PCBAs and pull them straight up from the power PCBA.
5. Remove and replace the AV1-LED stick PCBAs on the retaining bracket.
6. Insert the bracket with the stick PCBAs onto the pins on the power PCBA. Secure the assembly with the Phillips head screw.
7. Align the pins on the housing with the detents on the lens. Apply downward pressure on the lens while turning it clockwise one quarter turn.
8. Tighten the lens locking screw.
9. Restore power and test the Model AV1-LED for proper operation.

Maintenance and Service

Technical Assistance: Contact our Technical Support Team at +1 708-587-3587 or signalsupport@fedsig.com.

Repair Service: A return authorization is required. Contact your Authorized Distributor or Federal Signal Customer Support. Defective products under warranty will be repaired or replaced at Federal Signal's discretion.

Product Returns: Returns require authorization from Federal Signal. Contact your Authorized Distributor for more information on our return policy or to request a return.

Ordering Replacement Parts

Consult the product datasheet online for an updated list of replacement parts. If the product requires a part that is not available for purchase, your unit must be repaired or replaced. The product's lens should be regularly inspected for scratches or chips and, if damaged, it must be replaced. A strap wrench (6" capacity) may be used to aid in the lens removal.

Table 1 Replacement parts

Description	Part Number
Lens, clear	K8550292
Lens, blue	K8550292-01
Lens, amber	K8550292-02
Lens, red	K8550292-03
Lens, green	K8550292-04
PCBA, AV1-LED stick, amber (3 required)	K2005633-A
PCBA, AV1-LED stick, blue (3 required)	K2005633-B
PCBA, AV1-LED stick, green (3 required)	K2005633-G
PCBA, AV1-LED stick, red (3 required)	K2005633-R
PCBA, AV1-LED stick, white (3 required)	K2005633-W
Sounder, 120 Vac	K8591002
Sounder, 24 Vdc	K8591002-03

Table 2 Optional accessories

Description	Part Number
Wall Bracket	LWMB2
Corner Bracket	LCMB2
Wall Mounting Kit	LSWB



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