



**FEDERAL SIGNAL**

## **Model 400 Series Lights**



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### ***Installation Instructions***

256A424G  
REV. A 610  
Printed in U.S.A.



**Warranty** – Seller warrants all goods for five years on parts and 2-1/2 years on labor, under the following conditions and exceptions: Seller warrants that all goods of Seller's manufacture will conform to any descriptions thereof for specifications which are expressly made a part of this sales contract and at the time of sale by Seller such goods shall be commercially free from defects in material or workmanship. Seller reserves the right at the Seller's discretion to "Repair and Return" or "Replace" any item deemed defective during the warranty period. This warranty does not cover travel expenses, the cost of specialized equipment for gaining access to the product, or labor charges for removal and reinstallation of the product. This warranty shall be ineffective and shall not apply to goods that have been subjected to misuse, neglect, accident, damage, improper maintenance, or to goods altered or repaired by anyone other than Seller or its authorized representative, or if five years have elapsed from the date of shipment of the goods by Seller with the following exceptions: lamps and strobe tubes are not covered under this warranty. Outdoor warning sirens and controllers manufactured by Federal Warning Systems are warranted for two years on parts and one year on labor. No agent, employee, representative or distributor of Seller has any authority to bind the Seller to any representation, affirmation, or warranty concerning the goods and any such representation, affirmation or warranty shall not be deemed to have become a part of the basics of the sales contract and shall be unenforceable. THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES OR MERCHANTABILITY, FITNESS FOR PURPOSE AND OF ANY OTHER TYPE, WHETHER EXPRESS OR IMPLIED. These warranties shall not apply unless Seller shall be given reasonable opportunity to investigate all claims for allegedly defective goods. Upon Seller's instruction a sample only of allegedly defective goods shall be returned to Seller for its inspection and approval. The basis of all claims for alleged defects in the goods not discoverable upon reasonable inspection thereof pursuant to paragraph 8 hereof must be fully explained in writing and received by Seller within thirty days after Buyer learns of the defect or such claim shall be deemed waived.

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Keps is a registered trademark of ITW Shakeproof

## Safety Messages to Installers, Users, and Maintenance Personnel

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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 mounting location for the device, its controls, and wiring routing must be done under the direction of the facilities engineer and the safety engineer. In addition, listed below are some other important safety instructions and precautions you should follow:

- Read and understand all instructions before installing or operating this equipment.
- Disconnect the light from the power supply before installing or maintaining the light.
- After installation, test the light system to ensure that it is operating properly.
- After testing is complete, provide a copy of this instruction sheet to all operating personnel.
- The product nameplate, which may contain cautionary or other information of importance to maintenance personnel, should not be obscured in any way.
- Establish a procedure to routinely check the light system for proper activation and operation.

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

**Note:** A Model 350 Vibratone® Horn can be installed in the lower housing of a Model 400 Series Light. It is usually more convenient to install the audible device in the light before attaching the light to the mounting surface. Therefore, it is recommended that the audible device be installed (if applicable) before proceeding.

# Unpacking the Light

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After unpacking the light, examine it for damage that may have occurred in transit. If the equipment has been damaged, do not attempt to install or operate it. File a claim immediately with the carrier stating the extent of the damage. Carefully check all envelopes, shipping labels and tags before removing or destroying them. Ensure that the parts listed in the KIT CONTENTS LIST are included in the packing carton. If any parts are missing, please call Federal Signal **Customer Support** at 708-534-4756.

**Table 1** Kit contents

Qty.	Description
2	Hex. Head Mach. Screw, 1/4-20
2	Allen Head Set Screws, Cone Point
2	6-32 x 3/16" Hex Screws, Taptite
2	Nut, Keps®, 1/4-20
1	Cover Plate, Mounting Adapter
1	Cover, Self-Adhesive
1	Plate, Mounting Adapter
1	Bracket, Wall/Ceiling Mounting
1	Grommet

## Installation

There are three mounting methods for installing the Model 400 Series Lights:

- **Flat Surface (External Conduit) Mount:** Installer-supplied mounting hardware, 1/2" conduit fitting, and a conduit box are required.
- **Electrical Box Mount:** Installer-supplied mounting hardware, a 4" x 4" electrical box, conduit, and wiring are required.
- **Ceiling Mount:** An installer-supplied 4" x 4" electrical box is an option.

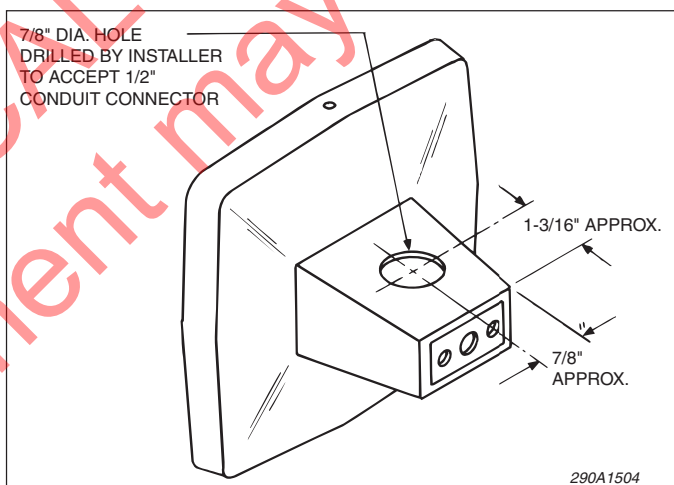
The next sections describe how to install the light using each mounting method.

### ***Flat Surface (External Conduit) Mount***

To install the light on a flat surface:

1. See Figure 1. Drill a 7/8" hole in the wall/ceiling mounting bracket. Use caution to avoid damaging the bracket.

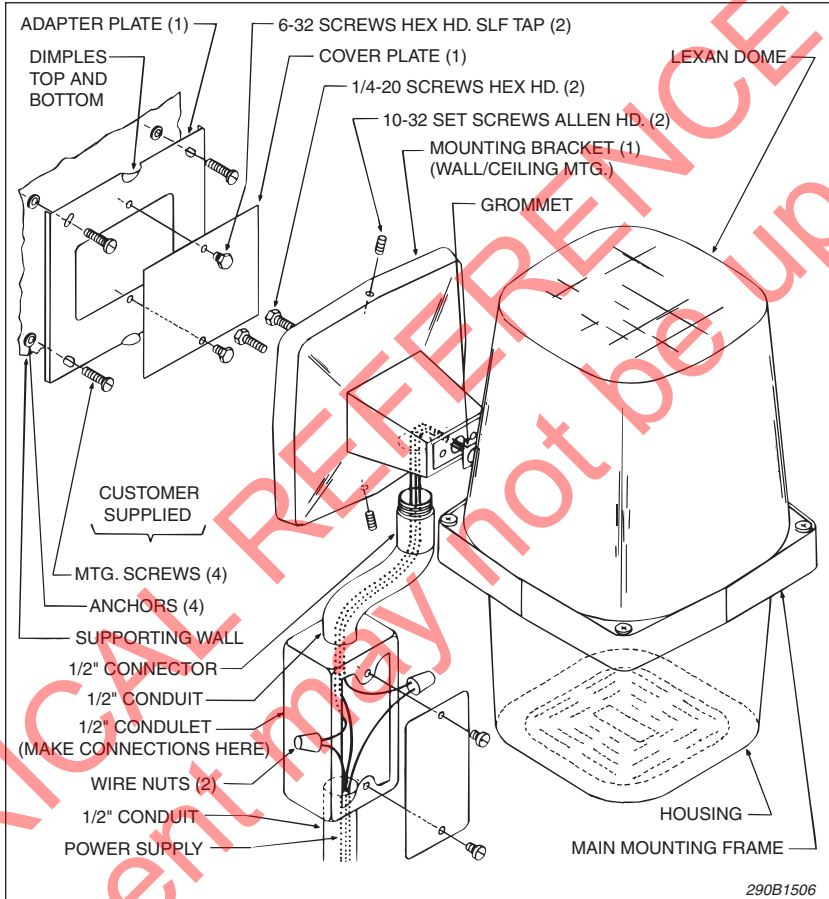
**Figure 1** 7/8" drilled hole in bracket



## Installation: Flat Surface (External Conduit) Mount

2. Install an installer-supplied 1/2" conduit fitting into the hole.
3. Insert the nylon grommet in the large center hole in the side of main frame casting of the light assembly (Figure 2).

**Figure 2** Grommet in 7/8" drilled hole in bracket

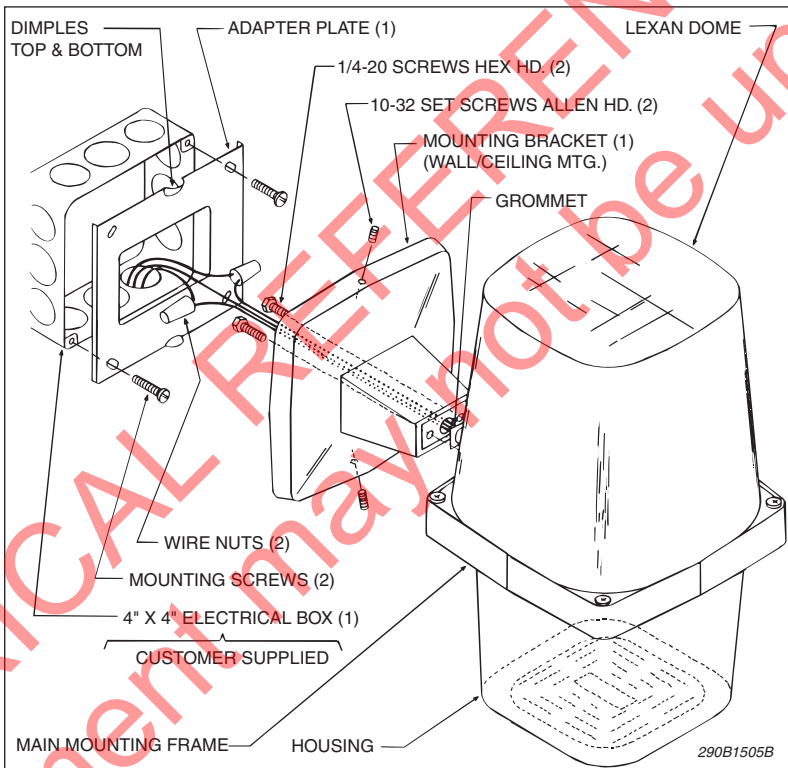


4. Attach the wall/ceiling mounting bracket to the main frame casting using two 1/4"-20 x 1/2" hex-head machine screws. Ensure that all wiring from the interior of the light passes through the large center hole in the end of the bracket. Route the wiring through the conduit fitting that was installed in step 2.



5. Start the 10-32 x 3/4" cone-point set screws in the threaded holes in the upper and lower edges of the wall/ceiling mounting bracket.
6. Attach the cover plate to the adapter plate using the two 6-32 x 3/16" self-tapping screws.
7. See Figure 3. Attach the adapter plate to the mounting surface using the appropriate installer-supplied hardware.

**Figure 3** Adapter plate attached



8. Place the light/mounting bracket assembly over the adapter plate and tighten the two cone point set screws. Ensure that the screws engage the two dimples in the adapter plate.

9. Using the wires extending through the conduit fitting as a guide, determine the length of the conduit necessary for the installation as shown in Figure 3 on page 9.

**⚠ WARNING**

***SHOCK HAZARD—DO NOT connect wires when power is applied. Failure to follow this warning could cause serious injury or death.***

**Note:** DO NOT make electrical splices within the wall/ceiling mounting bracket.

10. Install conduit and a conduit box (both Installer-supplied), as indicated. Splice the leads from the light to the power leads in the conduit box. Connect the green lead (ground) from the light to the conduit box by the most convenient means. Insulate all splices.

### ***Electrical Box Mount***

To install the light in an electrical box:

1. Install a 4" x 4" electrical box, conduit and wiring as necessary (all Installer-supplied).
2. See Figure 2 on page 8. Insert the nylon grommet in the large center hole in the side of the light assembly main frame casting.
3. See Figure 3 on page 9. Attach the wall/ceiling mounting bracket to the main frame casting, using the two 1/4"-20 x 1/2" hex head screws. Make sure that all wiring from the interior of the light passes through the large center hole in the end of the bracket.
4. Install the adapter plate (supplied) on the 4" x 4" electrical box, using the appropriate user-supplied hardware.
5. Start the two 10-32 x 3/4" cone point set screws in the threaded holes in the upper and lower edges of the wall/ceiling mounting bracket.

**⚠ WARNING**

***SHOCK HAZARD—DO NOT connect wires when power is applied. Failure to follow this warning could cause serious injury or death.***

6. Connect the green wire (ground) to the 4" x 4" electrical box.

**Note:** DO NOT make electrical splices within the wall/ceiling mounting bracket.

7. Splice the light wires and audible device wires (if applicable) to the electrical supply wires in the electrical box.
8. Place the assembled light and mounting bracket over the adapter plate and tighten the two cone point set screws. Make sure that the screws engage the two dimples in the adapter plate.

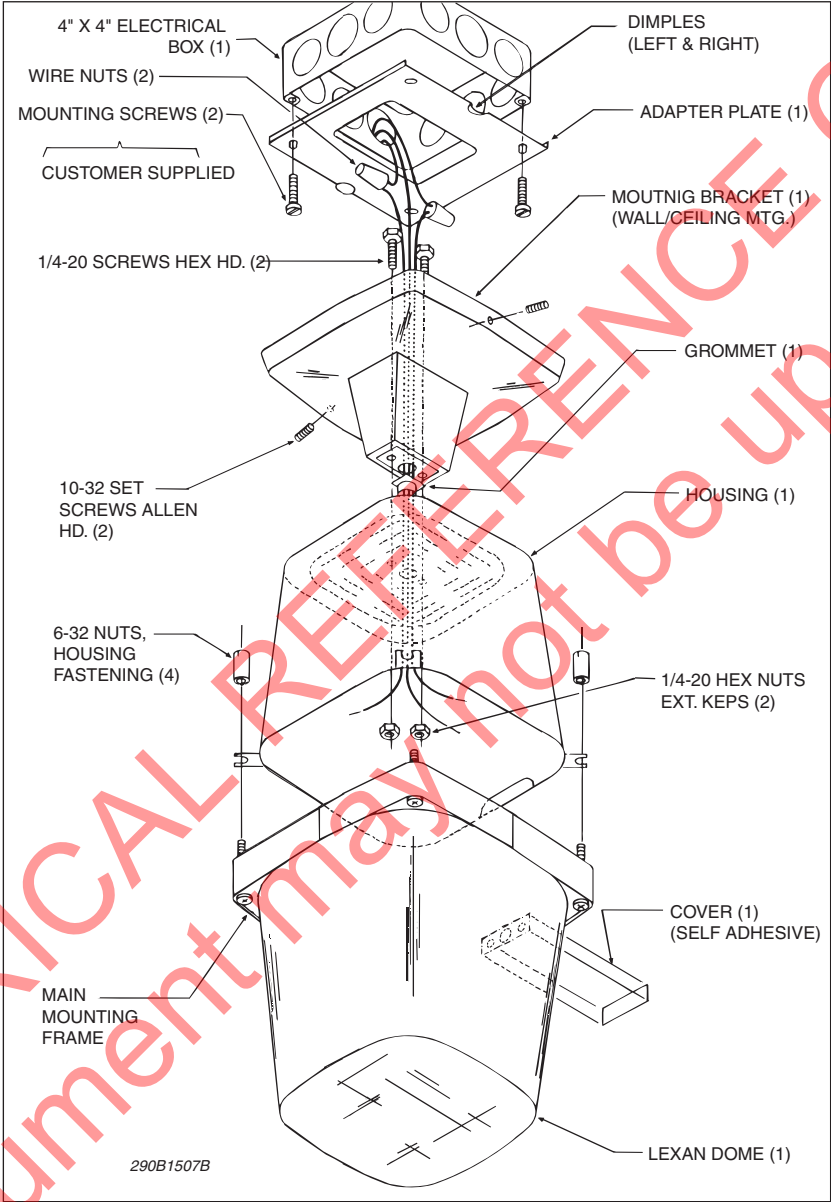
### ***Ceiling Mount***

Model 400 Series Light can be mounted flat on a ceiling or on a 4" x 4" electrical box. Both of these mounting methods are variations on those methods already described. However, the wall/ceiling mounting bracket must be attached to the lower housing of the light. If an audible device was installed, the mounting bracket should be attached to the lower housing of the light.

If the bracket is already attached, disregard the instructions in this section and refer to the Flat Surface Mount instructions on page 7 or the Electrical Box Mount instructions on page 10. However, if it is necessary to attach the bracket to the light, see Figure 4 on page 12 and follow these steps:

1. Remove the four slotted housing fastening nuts and lift the lower housing from the light assembly.
2. Remove the grille cover plate from the bottom of the housing by removing the four 6-32 Keps nuts and washers at the bottom of the housing.

Figure 4 Ceiling mount



3. Install the nylon grommet in the center hole in the bottom of the lower housing.
4. Route the light supply wires through the grommet that was installed in step 3.
5. Attach the wall/ceiling mounting bracket to the lower housing using two 1/4-20 x 1/2" hex head machine screws and KEPS nuts (supplied).
6. Apply the self-adhesive cover over the holes on the side of the main frame casting.
7. Reassemble the light following steps 1 and 2 in reverse order.
8. Install the light on the ceiling following the Flat Surface Mount instructions on page 7 or the Electrical Box Mount instructions on page 10.

# Obtaining Service, Assistance, and Parts

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Products returned for repair require a Return Authorization form. To obtain service for the product, please contact the Federal Signal Service Department at 708-534-4858.

For technical assistance, please call Federal Signal Technical Support at 708-534-3424, extension 5823.

To order replacement parts, please call Federal Signal **Customer Support** at 708-534-4756.

**Table 2** Replacement parts

Description	Part Number
Dome, Lexan, Red	K8547C001-01
Dome, Lexan, Blue	K8547C001-02
Dome, Lexan, Green	K8547C001-03
Dome, Lexan, Amber	K8547C001-04
Dome, Lexan, Clear	K8547C001-05
Lamp (400R)	K8107181
Interior Fresnel Lens, Clear (400ST)	K8248C004-04
Tube, Strobe (400ST)	K8107178
PC Board Assembly (400ST)	K200D825

For instructions on how to service the Model 400ST Strobe Light, see document no. 256A470 available at:

<http://www.federal-signal-indust.com>

## Replacing the Strobe Tube (400ST)

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### **⚠ WARNING**

**SHOCK HAZARD**—Strobe and HID light systems generate high voltages. Disconnect power and wait 5 minutes before opening the unit. Do not apply power to the unit while the unit is open.

*Failure to follow this warning could result in serious injury or death.*

### **⚠ CAUTION**

**HANDLE STROBE LAMPS CAREFULLY**—Strobe lamps get hot enough to burn you. Always allow these lamps to cool before handling them. Strobe lamps are also pressurized and if broken can result in flying glass. Always wear gloves and eye protection when handling the lamps.

*Failure to follow this caution may result in personal injury.*

### **NOTICE**

**DO NOT TOUCH STROBE LAMPS WITH BARE HANDS**—Oil deposits on the glass portion of the strobe lamp can cause the glass to fracture during use. If you are unsure if the glass has been handled without gloves, clean the glass using a soft cloth and isopropyl alcohol before installing the lamp.

As strobe lights are used, strobe tubes begin to darken causing the light output to decrease. This darkening is characteristic of strobe tubes and can be viewed through the top of the dome. It will begin near the base of the tube and progress upward. Also, as strobe tubes age, they may have a tendency to misfire (not fire periodically).

After extended operation, occasionally check for strobe tube degradation. Should the tube misfire, have a noticeable decrease in light output, glow continuously, or darken to a point beyond that as shown in Figure 5 on page 16, replace the tube. Not replacing the strobe tube when any of the above conditions exist could cause a breakdown of other components on the printed circuit board.

To replace the strobe tube:

1. Remove the four screws and chrome load bearing plates which secure the dome to the housing assembly. Remove the dome.
2. Remove the three 8-32 nuts and dome mounting plate that secure the Fresnel lens to the mounting plate. Lift the lens away from the housing assembly.
3. Grasp the strobe tube by its base and pull it out of the socket, using a gentle rocking motion. Install a new strobe tube and reassemble the light.

**Figure 5** Strobe tube degradation

