FEDERAL SIGNAL
Safety and Security Systems

Installing Model FHL-TAIL Flasher for Tail and Deck Lights

2562579 Rev B1 1125

Safety Message to Installers of Federal Signal Products

⚠ WARNING

People's lives depend on your proper installation of our products. It is important to read, understand, and follow all instructions shipped with this product and the related add-on products. Listed below are some other important safety instructions and precautions you should follow:

- To properly install this equipment, you must have a good understanding of automotive electrical procedures and systems, along with proficiency in the installation and use of safety warning equipment.
- Do not install equipment or route wiring in the deployment path of an airbag.
- If a vehicle seat is removed, verify with the vehicle manufacturer if the seat needs to be recalibrated for proper airbag deployment.
- Do not stare directly into the lights at a close range, or permanent damage to your eyesight may occur.
- When drilling into a vehicle structure, ensure that both sides of the surface are clear of anything that could be damaged. Remove all burrs from drilled holes. To prevent electrical shorts, grommet all drilled holes through which wiring is run.
- Never attempt to install aftermarket equipment that connects to the vehicle wiring without reviewing a vehicle wiring diagram available from the vehicle manufacturer. Ensure that your installation will not affect vehicle operation or mandated safety functions or circuits. Always check the vehicle for proper operation after installation.
- Locate the controls so the VEHICLE and CONTROLS can be operated safely under all driving conditions.
- Inspect the flasher frequently to ensure that it is operating properly and is securely attached to the vehicle.
- File these instructions in a safe place and refer to them when installing and/or reinstalling the product.

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

Overview of the Model FHL-TAIL

The Model FHL-TAIL tail light flasher alternates red and white light, creating an effective rear-warning signal to greatly reduce rear-end collisions. The flasher also provides an additional output for rear deck package tray lights. The flasher is designed for vehicles that have the negative post of the battery connected to the chassis of the vehicle. The 12-wire module has isolating diodes for the reverse wire that is required for many new cars and trucks.

Table 1 Product specifications

Standby Current	Approx. 4.6 A per 55 W halogen lamp
Flash Pattern	Flashback: Alternates lower brake lights against the reverse lights at 2.6 FPS
Dimensions (LxWxH)	4.7 x 2.0 x 0.9 in (11.9 x 5.2 x 1.8 cm)
Material	ABS plastic housing
Mounting	Mounts on 4-inch centers
Harness Wire Length	18 in (45.7 cm)

Testing for the Presence of a Brake Shift Interlock Device

⚠ WARNING

CHECK FOR BRAKE SHIFT INTERLOCK SYSTEM: Determine if your vehicle is equipped with an Ignition or Shift Interlock device before attempting to install any rear flasher that connects to the vehicle brake system. An interlock device prevents the vehicle from being shifted into gear if the brake pedal is not pressed. This information can be found in the vehicle's owner's manual or by performing the test described in this section. Failure to follow this warning may lead to property damage or serious injury.

To perform the test:

1. Set the parking brake according to the instructions in the vehicle's owner's manual and start the engine.
2. Try to shift the transmission out of Park without pressing the brake pedal.
   - If the transmission WILL NOT SHIFT, your vehicle **IS** equipped with an interlock device.
   - If the transmission DOES SHIFT, your vehicle is IS NOT equipped with an interlock device.
3. Install the rear flasher according to the instructions in the next section. If your vehicle IS NOT equipped with an interlock device, the installation is complete. If your vehicle IS equipped with an interlock device, perform the test described in "Testing the Operation of the Brake Shift Interlock Device" on page 6.

Installing the Flasher

The Model FHL-TAIL Flasher is designed to be water resistant. However, to ensure years of trouble-free operation, it should be mounted in a location that is protected from direct water spray and high temperatures. Before installing the flasher, plan all wire routings.

These installer-supplied items are required:

- Mounting hardware
- Activation switch
- 1 A ATO fuse and fuse holder
- 15 A ATO fuse and fuse holder
- 14 AWG wire (minimum) to extend the flasher's red wire to the battery
- 16 AWG wire (minimum) to extend all other wires
- 16 AWG wire (minimum) to extend wires for the package tray lighting option

For requirements for the option of flashing the package tray lights, see Figure 2 on page 5.

To mount the flasher and make the power connections:

1. For vehicles with a trunk, select a location for the flasher as close to the driver's side taillight housing as possible. For vehicles with a tailgate or lift gate, select a location for the flasher as close to the taillight housing on the driver's side. For pickup trucks, remove the driver's side taillight housing and select a location behind the taillight housing.

⚠ WARNING

AIRBAG DEPLOYMENT: Do not install equipment or route wiring in the deployment path of an airbag. Failure to observe this warning will reduce the effectiveness of the airbag or potentially dislodge the equipment, causing serious injury or death.

2. Use the flasher as a template to mark the center of the two mounting holes.

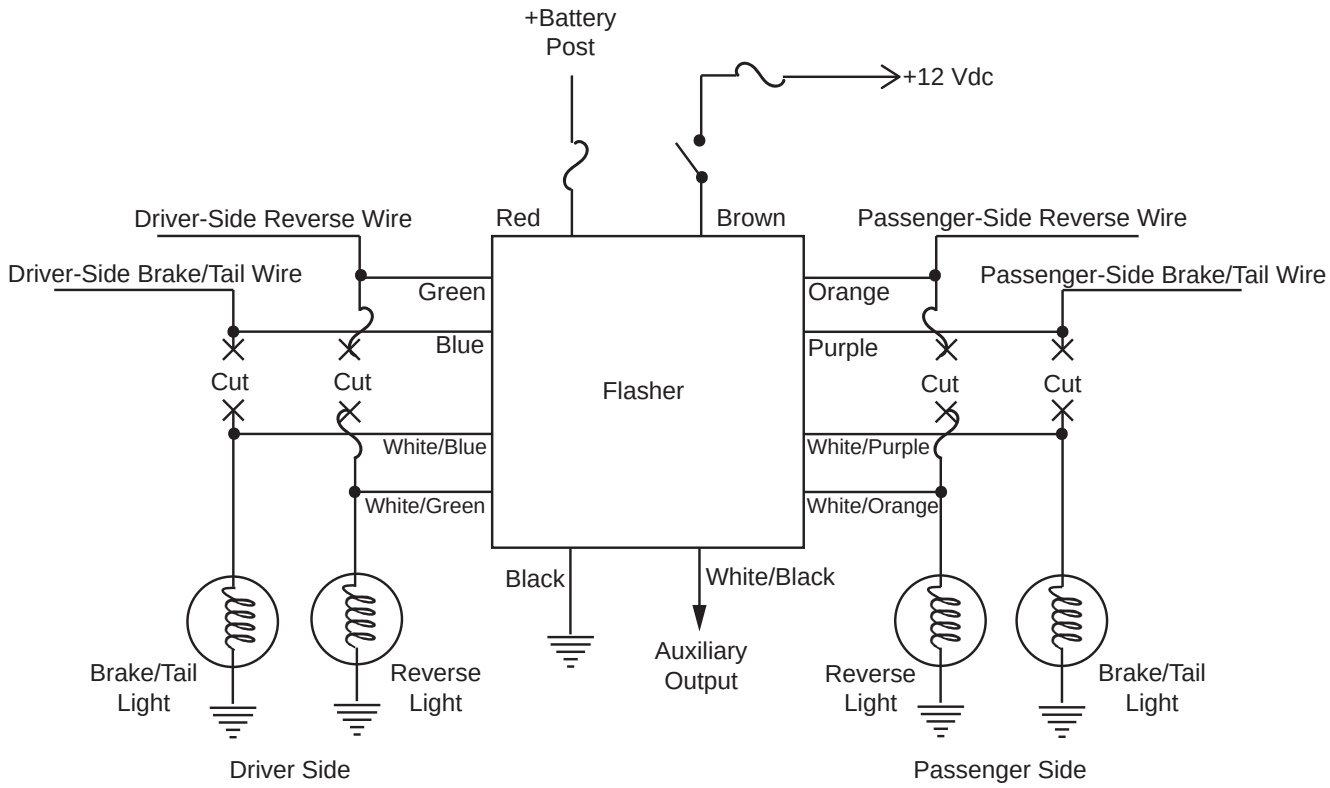
NOTICE

DRILLING PRECAUTIONS: When drilling holes, check the area you are drilling into to ensure that you do not damage vehicle components while drilling. All drilled holes should be deburred, and all sharp edges should be smoothed. All wire routings going through drilled holes should be protected by a grommet or convolute/split loom tubing.

3. Drill the two holes and use the installer-supplied mounting hardware to mount the flasher.

4. Connect the BLACK wire to a convenient reliable ground. See Figure 1.

Figure 1 Wiring Diagram



NOTICE

PRECAUTION FOR EXTENDING RED WIRE: Failure to extend the RED wire to the battery with 14 AWG wire will result in improper operation and may cause damage to the flasher or other devices in the vehicle.

NOTICE

FUSE PRECAUTION: Do not use a circuit breaker, fusible link, or slow-blow fuse. Improper fusing can cause equipment failure and damage.

5. Extend the RED wire with 14 AWG wire from the flasher to the positive post of the battery.

NOTE: Do not install the fuse until all other connections have been made, including driver- and passenger-side connections.

6. Connect a fuse holder to the positive post of the battery. The fuse holder must be rated at 15 A or greater.

7. Connect the 14 AWG extension wire to the fuse holder.

⚠ WARNING

DO NOT CONNECT TO HIGH-MOUNTED STOP LAMP: Do not connect the Model FHL-TAIL flasher to the High-Mounted Stop Lamp (also known as Cyclops, Center Light, and CHMSL). Flashing the High-Mounted Stop Lamp violates Federal Motor Vehicle Safety Standard (FMVSS) No. 108, which requires that the High-Mounted Stop Lamp illuminate only when the brakes are applied. Failure to heed this warning may cause property damage, injury, or death.

Driver-Side Connections

See Figure 1 on page 3 and make these connections:

1. Locate and cut the brake light wire.

2. Connect the WHITE/BLUE wire from the flasher to the end of the wire that goes to the brake light.

3. Connect the BLUE wire from the flasher to the end of the brake light wire that goes to the front of the vehicle.

4. Locate and cut the reverse light wire.

5. Connect the WHITE/GREEN wire from the flasher to the end of the wire that goes to the reverse light.

6. Connect the GREEN wire from the flasher to the end of the reverse light wire that goes to the front of the vehicle.

Passenger-Side Connections

See Figure 1 on page 3 and make these connections:

1. Extend the WHITE/PURPLE, PURPLE, ORANGE, and WHITE/ORANGE wires over to the passenger side of the vehicle.

2. Locate and cut the brake light wire.

3. Connect the WHITE/PURPLE wire from the flasher to the end of the brake light wire that goes to the brake light.

4. Connect the PURPLE wire from the flasher to the end of the brake light wire that goes to the front of the vehicle.
5. Locate and cut the reverse light wire.
6. Connect the WHITE/ORANGE wire from the flasher to the end of the wire that goes to the reverse light.
7. Connect the ORANGE wire from the flasher to the end of the reverse light wire that goes to the front of the vehicle.

NOTE: The WHITE/BLACK wire is the auxiliary output to control the package tray lights. For instructions to wire this feature, see “White/Black Wire” on page 5.

Power Switch Connection

NOTICE

FUSE PRECAUTION: Do not use a circuit breaker, fusible link, or slow-blow fuse. Improper fusing can cause equipment failure and damage.

Extend the BROWN wire from the flasher to an installer-supplied powered switch that will turn the flasher on and off. To protect the wire between the switch and the flasher, install a fuse holder connected to the powered switch with a 1A ATO or smaller fuse.

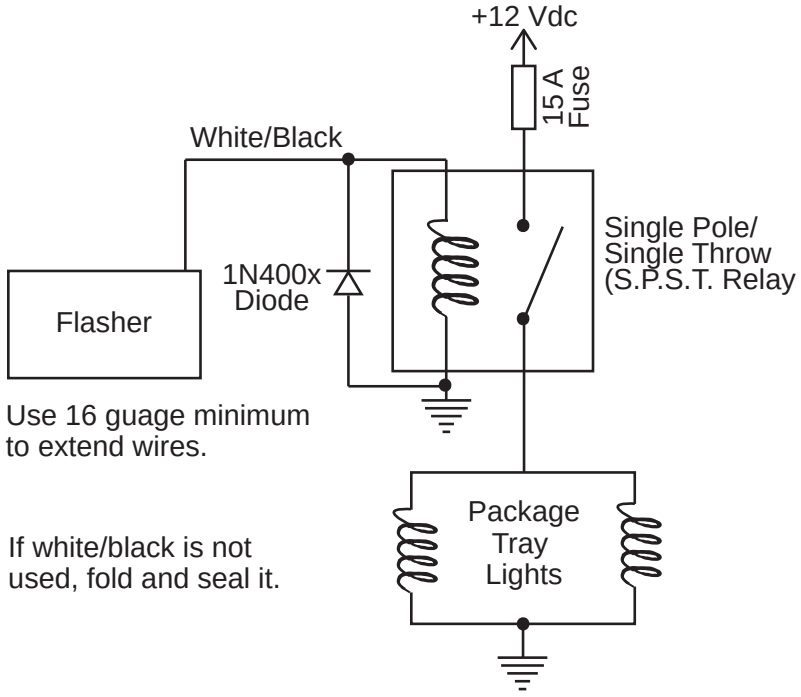
15 A Fuse Installation

After you complete the wiring, install a 15 A fuse in the fuse holder between the 14 AWG RED wire extension and the positive post of the battery.

White/Black Wire

The WHITE/BLACK wire is the auxiliary output that controls the package tray lights. For the wiring instructions, see Figure 2.

Figure 2 Wiring diagram for installation with package tray lighting



Testing the Operation of the Brake Shift Interlock Device

⚠ WARNING

LIGHT HAZARD: To be an effective warning device, an emergency warning system produces a bright light that can be hazardous to your eyesight when viewed at a close range. Do not stare directly into this lighting product at a close range, or permanent damage to your eyesight may occur.

If your vehicle has an interlock device, perform this test after installing the flasher to verify the proper operation of the device.

1. Set the parking brake according to the instructions in the vehicle Owner's Manual and start the engine.
2. With the flasher OFF, try to shift the transmission out of PARK without pressing the brake pedal. **THE TRANSMISSION MUST NOT SHIFT**. If the vehicle shifts from Park, disconnect the flasher, restore the vehicle wiring, and contact the Federal Signal Service Department at 1-800-433-9132 for further instructions.
3. With the flasher ON, try to shift the transmission out of Park without pressing the brake pedal. **THE TRANSMISSION MUST NOT SHIFT**. If the vehicle shifts from Park, disconnect the flasher, restore the vehicle wiring, and contact the Federal Signal Service Department at 1-800-433-9132 for further instructions.
4. Periodically have the operator of the vehicle repeat this test to verify the proper operation of the vehicle safety systems.

Testing the Installation

⚠ WARNING

SOUND HAZARD: All effective sirens and horns produce loud sounds (120 dB) that may cause permanent hearing loss. Always minimize your exposure to siren sounds and wear hearing protection. Do not sound the siren indoors or in enclosed areas where you and others will be exposed to the sound.

⚠ WARNING

LIGHT HAZARD: To be an effective warning device, an emergency warning system produces a bright light that can be hazardous to your eyesight when viewed at a close range. Do not stare directly into this lighting product at a close range, or permanent damage to your eyesight may occur.

After testing the flasher, test the emergency warning system to ensure that it is operating properly. Test all vehicle functions, including horn operation, vehicle safety functions, and vehicle lighting systems to ensure proper operation. Ensure that the installation has not affected the vehicle operation or changed any vehicle safety functions or circuits. After testing is complete, provide a copy of these instructions to the instructional staff and all operating personnel.

Do not test the sound and light system of the vehicle while driving. Operating the vehicle warning systems may pose a hazard to the operator and other drivers if the systems do not function as expected. Test the vehicle only in a controlled environment.

Getting Technical Support

For technical support, please contact:

Federal Signal Corporation
Service Department
Phone: 1-800-433-9132
Email: empserviceinfo@fedsig.com

Getting Repair Service

The Federal Signal factory provides technical assistance with any problems that cannot be handled locally. Any product returned to Federal Signal for service, inspection, or repair must be accompanied by a Return Material Authorization (RMA). Obtain an RMA from a local Distributor or Manufacturer's Representative. Provide a brief explanation of the service requested or the nature of the malfunction.

Address all communications and shipments to the following:

Federal Signal Corporation
Service Department
2645 Federal Signal Dr.
University Park, IL 60484-3167

Ordering Replacement Parts

To order replacement parts, call Customer Support at 1-800-264-3578, 7 a.m. to 5 p.m., Monday through Friday (CT), or contact your nearest distributor.

Limited Warranty

This product is subject to and covered by a limited warranty, a copy of which can be found at www.fedsig.com/SSG-Warranty. A copy of this limited warranty can also be obtained by written request to Federal Signal Corporation, 2645 Federal Signal Drive, University Park, IL 60484, email to info@fedsig.com or call +1 708-534-3400.

This limited warranty is in lieu of all other warranties, express or implied, contractual or statutory, including, but not limited to, the warranty of merchantability, warranty of fitness for a particular purpose and any warranty against failure of its essential purpose.

FEDERAL SIGNAL
Safety and Security Systems

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