

Safety Message to Installers of Sound/Light Equipment

⚠ WARNING

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

- To properly install this light, you must have a good understanding of automotive electrical procedures and systems, along with proficiency in the installation and use of safety warning equipment.
- When drilling into a vehicle structure, ensure that both sides of the surface are clear of anything that could be damaged. All drilled holes should be deburred and all sharp edges should be smoothed. All wires going through drilled holes should be protected by a grommet or convolute/split-loom tubing. Additionally, all exterior drilled holes must be sealed with Motorcraft seam sealer T-A-2-B or equivalent to prevent the potential exposure to carbon monoxide or other potentially harmful fumes. Failure to observe this warning could cause serious injury or death.
- In order for the light to function properly, a good ground connection must be made. At a minimum, it must be attached to a solid metal body or chassis part that will provide an effective ground path as long as the light system is to be used.
- Locate light control so the VEHICLE and CONTROL can be operated safely under all driving conditions.
- Do not attempt to activate or deactivate light control while driving in a hazardous situation.
- Frequently inspect the light to ensure that it is operating properly and that it is securely attached to the vehicle.
- File these instructions in a safe place and refer to them when maintaining and/or reinstalling the product.

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

Overview

The SignalMaster® SMC14 is an economical, low profile, solid state, directional light control that is designed to operate with two Federal Signal four-lamp directional light assemblies (Model SML4-30). The unit is reversed polarity protected to avoid damage if the positive and negative power connections are connected incorrectly.

This model provides three distinctive directional signals: left arrow, right arrow, and center out. In addition, an alternating flash pattern produces a warning signal for use when a directional signal may not be appropriate. When a directional signal is selected, the lamps are individually illuminated in a sequential sweeping motion until all eight lamps are illuminated.

Table 1 Specifications

Input Voltage	11 Vdc to 16 Vdc
Polarity	Negative ground only
Operating Temperature Range	-30°C to +65°C (-22°F to 149°F)
Standby Current	0 A
+BAT Fuse	25 A
+IGN/BAT Fuse	1 A
Output Drive Capacity (Total)	Eight 27 W lamps

Table 2 Flash Rate

Directional	35 patterns/min
Warn	60 patterns/min

Table 3 Dimensions

Height	1-1/2 inches
Width	6-1/8 inches
Depth	5 inches
Shipping Weight	2.0 pounds

Installing the Unit

⚠ WARNING

These lights are intended for secondary warning only. They are not intended for use as a primary warning system.

SignalMaster® Light Assembly (Model SML4-30)

Install the light assembly as described in the instructions packed with the mounting kit. Route the cable near the eventual location of the control unit.

Control Unit

⚠ 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 to you or others.*

⚠ CAUTION

Install the control unit in an adequately ventilated area. Never install near heater ducts.

The supplied mounting bracket allows the control unit to be mounted in a variety of positions. When selecting a mounting location for the control unit, it is necessary to keep in mind that the cable is 30 feet long. Plan wiring and cable routing before installation.

To install the control unit:

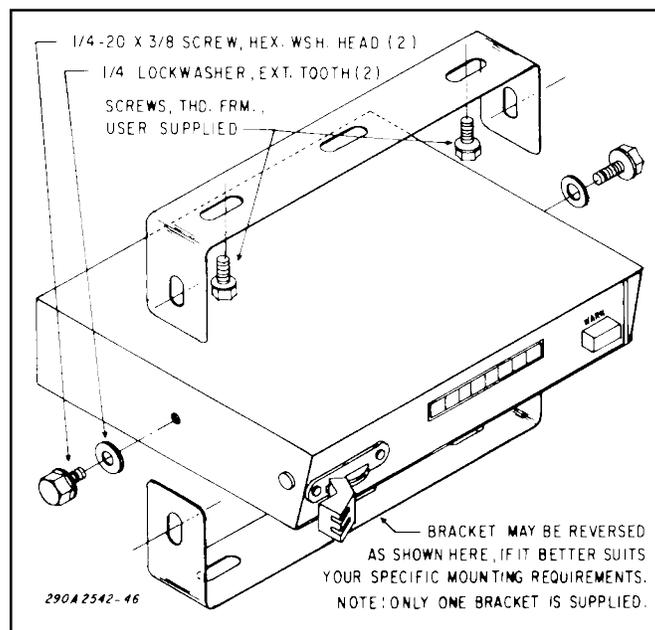
1. Select a mounting location for the control unit that allows the vehicle and controls to be operated safely at all times.
2. Use the mounting bracket as a template and scribe two drill position marks at the selected mounting location.

NOTICE

DRILLING PRECAUTIONS: Before drilling holes, check the area into which you are drilling to ensure that you do not damage vehicle components while drilling. All wire routings going through drilled holes should be protected by a grommet or convoluted/split loom tubing.

3. Drill two holes at the previously scribed position marks.
4. Secure the mounting bracket to the mounting surface with two user-supplied, thread-forming, 1/4-20 screws.

Figure 1 Securing the mounting bracket



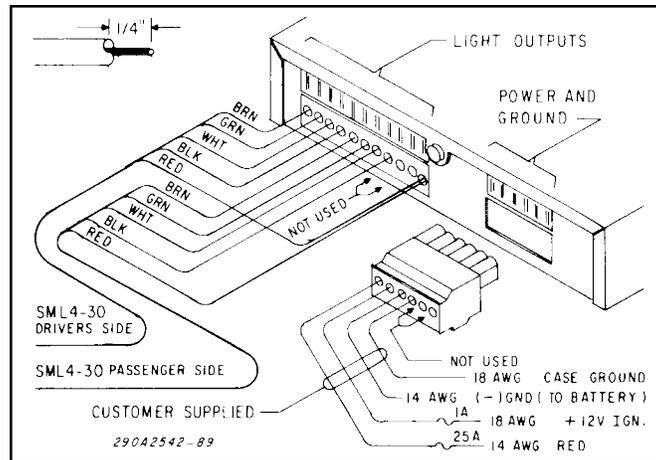
Making the Electrical Connections

⚠ WARNING

HIGH CURRENT ARCING: Do not connect this system to the vehicle battery until ALL other electrical connections are made and you have verified that no shorts exist. High current conductors can cause hazardous sparks or burning wire resulting in electrical fires.

The control unit is supplied with a six-position connector and a eleven-position terminal block to perform the electrical installation. User-supplied, 14-gauge red and black wires are required for the (+) BAT and (-) GND connections on the six-position connector. User-supplied, 18 AWG red and green wires are required for the (+) BAT/IGN and CASE GROUND connections on the six-position connector. Using Figure 2 as a guide, complete this portion of the installation.

Figure 2 Connections



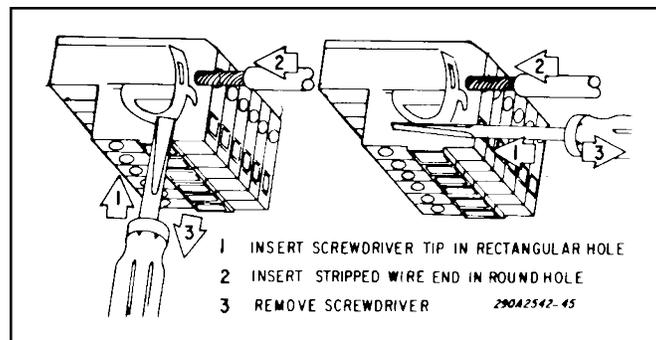
Power Connections

NOTICE

To avoid damage and ensure proper operation, the red and black wires **MUST** be installed in the six-position connector as shown in Figure 3.

1. Strip 1/4 inch of insulation off each wire. See Figure 3. Use a small blade screwdriver to depress the spring in the connector. Insert the proper wire and remove the screwdriver to release the spring.
2. Connect the red and black 14 AWG wires to the connector as shown in Figure 3.

Figure 3 Connecting the wires



3. Route the red and black 14 AWG wires through the firewall and toward the battery. Connect the black wire to a good frame ground near the battery. In most vehicles, a wire from the negative terminal of the battery is routed and attached to the body/frame at the fender. This is a convenient point to connect the 14 AWG black wire. Do not connect the red wire to the (+) positive terminal at this time.
4. Connect the 18 AWG red and green wires to the connector as shown in Figure 3.

IMPORTANT: The 18 AWG red wire’s termination point determines when the directional signal can be activated. When the wire is attached to a vehicle fuse that is powered when the ignition switch is in the run or start position, the vehicle’s ignition switch must be in the run or start position to operate the directional signal. When the wire is attached to the vehicle battery, the directional signal can be operated at any time. Note that the unit draws no current when in the “off” position.

5. Select the desired termination point. As applicable, route the 18 AWG red wire toward the vehicle fuse block or through the firewall toward the battery. Install a user-supplied, 1 A, in-line fuse in the 18 AWG red wire as close to the power source as possible and terminate as required.

6. Route the 18 AWG green wire to a known good chassis ground near the SMC14 control. To provide a good ground connection, scrape any painted surface to bare metal and terminate as required.
7. Ensure that positions 5 and 6 of the six-position connector are not used. See Figure 2.
8. Plug the six-position connector into the mating connector on the control unit and apply pressure until it locks into place.

SignalMaster® Cable Connections

1. Route the SignalMaster cable towards the control unit, while being careful not to scrape the wires on any sharp edges.
2. If necessary, cut the cable to the appropriate length.
3. Connect the both sets of SML4 wires to the terminal block as shown in Figure 2. Positions 9 and 10 are not used. Ensure that the driver and passenger wire sets are connected to the terminal block EXACTLY as shown in Figure 2.

Inspection and Final Installation

1. Ensure that there are no loose wire strands or other bare wires that may cause a short circuit. All wires must be protected from any sharp edges that could eventually cut through the insulation.
2. Connect the remaining end of 14 AWG red wire from the six position connector to the (+) positive terminal of the battery with an in-line, user-supplied fuseholder and 25 A fuse. Locate the fuse as near the battery as possible to protect the entire length of wire.
3. Test for proper operation of all functions.
4. Secure the mounting bracket to the control unit with the 1/4-20 hex head, thread forming screws and 1/4-inch external tooth lock washers. See Figure 1.

Safety Message To Operators

⚠ WARNING

Peoples' lives depend on your safe use of our products. Listed below are some important safety instructions and precautions you should follow:

- Although your warning system is operating properly, it may not be completely effective. People may not see or heed your warning signal. You must recognize this fact and continue to drive cautiously.
- Situations may occur that obstruct your warning signal when natural or man-made objects are between your vehicle and others, such as raising your hood or trunk lid. If these situations occur, be especially careful.
- At the start of your shift, ensure that the light is securely attached and all lamps are operating properly. The LED display on the control only simulates the operation of the lamps.
- If a selected function does not perform properly or if any of the lamps remain illuminated when the control is off, disconnect the power connector from the control unit and contact the nearest service center.

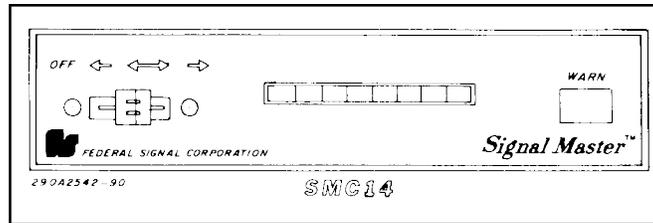
Failure to follow these safety precautions may result in property damage, serious injury, or death to you, to passengers, or to others.

Retain and refer to these messages.

Operating the Unit

All controls utilized during normal operation of the SignalMaster® directional light are located on the front panel of the control unit. The LED display simulates the light pattern being executed by the directional light. See Figure 4.

Figure 4 SignalMaster LED display



Slide Switch.

- LEFT (Position 1): In this position, the driver side unit produces a left arrow flashing pattern, instructing traffic to move left.
- CENTER OUT (Position 2): In this position, a center out flashing pattern is produced on both the driver and passenger side units, instructing traffic to move around either side of the vehicle.
- RIGHT (Position 3): In this position, the passenger side unit produces a right arrow flashing pattern, instructing traffic to move right.

WARN switch

When this switch is pressed, an alternating pattern is produced. The driver side unit activates alternately with the passenger side unit. This pattern will override any of the slide switch functions.

Maintaining the Unit

Cleaning the Lens

⚠ WARNING

CRAZING/CRACKING *Crazing (fine cracks) of lenses causes reduced effectiveness of the light. Do not use cleaning agents (which cause crazing) such as strong detergents, solvents, or petroleum products. If crazing of the lenses does occur, the reliability of light for emergency signaling purposes may be reduced until the lenses are replaced.*

NOTICE

CLEANING the POLYCARBONATE LENSES: *To extend the life of this device, periodic cleaning is necessary. Clean the lens with a mild, non-abrasive, neutral-pH cleaning agent and a soft, clean cloth. Rinse the device thoroughly to ensure that no cleaning agent residue remains. To avoid water spots, dry the device with a soft clean cloth. Failure to follow this precaution can cause crazing or cracking of the lens/dome and voids the warranty claims for the light.*

Use a mild, non-abrasive, neutral-pH cleaning agent and a soft, clean cloth when cleaning the lighting system. The use of strong, non-neutral-pH cleaners voids the warranty. Should fine scratches or a haze appear on a lens, they can ordinarily be removed with a non-abrasive, high quality, one-step, automotive paste cleaner/wax and a soft cloth.

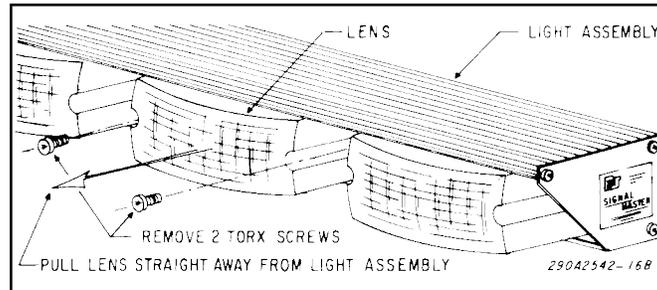
Replacing the Lamp

NOTICE

Use of higher wattage lamps can result in damage to the colored lenses.

Remove and retain the two screws which secure the lens. Carefully pull the lens straight away from the light assembly. See Figure 5.

Figure 5 Parts



NOTICE

Service life of lamp will be shortened if glass is touched. If glass has been handled, clean with a grease solvent.

1. Carefully pull the defective lamp out of the socket. To install the new lamp, align the pins on the lamp base with the holes in the socket, and carefully push the lamp into the socket.
2. Replace the lens using the previously removed screws.

Getting Technical Support

For technical support, please contact:

Federal Signal Corporation
Service Department
Phone: 1-800-433-9132
Email: emp-serviceinfo@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 a 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

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.

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.

Table 4 Replacement Parts

Description	Part Number
Printed Circuit Board Assembly	2001135
Knob, Pushbutton	8573065
Knob, Slide Switch	8536C1041
Bezel, Slide Switch	8573060
Connector, Female, 6-Position	140325-04
Bracket, Mounting	8573070
Screw, Hex Head, Mounting	7011164B-08
Lockwasher, 1/4 inch	7075078
Chassis	8573068
Cover	8573066
Microprocessor	SM144100
Lamp, G.E. GH-22, 27-watt	8573007
Lens, Amber	8573001-02



FEDERAL SIGNAL Safety and Security Systems

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Customer Support

Police/Fire-EMS: 800-264-3578 • +1 708 534-3400

Work Truck: 800-824-0254 • +1 708 534-3400

Technical Support: 800-433-9132 • +1 708 534-3400

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