



# ECCO®

# Installation and Operation Instructions



## Safety Director™

The ECCO LED Safety Director™ is a compact high-intensity warning system designed to direct traffic approaching from the rear of a stationary vehicle. The compact light-stick design allows for unobtrusive interior or exterior mounting, either flush to the vehicle or using the provided mounting brackets. Inside the cab a modern, soft touch controller provides fingertip control of the Safety Director's eight built-in flash patterns and features an LED display that mimics the selected pattern in real time.

### **WARNING!**

Failure to install or use this product according to manufacturers recommendations may result in property damage, serious injury, and/or death to those you are seeking to protect!



**Do not install and/or operate this safety product unless you have read and understand the safety information contained**

1. Proper installation combined with operator training in the use, care, and maintenance of emergency warning devices are essential to ensure the safety of you and those you are seeking to protect.
2. Exercise caution when working with live electrical connections.
3. This product must be properly grounded. Inadequate grounding and/or shorting of electrical connections can cause high current arcing, which can cause personal injury and/or severe vehicle damage, including fire.
4. Proper placement and installation are vital to the performance of this warning device. Install this product so that output performance of the system is maximized and the controls are placed within convenient reach of the operator so that s/he can operate the system without losing eye contact with the roadway.
5. Do not install this product or route any wires in the deployment area of an air bag. Equipment mounted or located in an air bag deployment area may reduce the effectiveness of the air bag or become a projectile that could cause serious personal injury or death. Refer to the vehicle owner's manual for the air bag deployment area. It is the responsibility of the user/operator to determine a suitable mounting location ensuring the safety of all passengers inside the vehicle particularly avoiding areas of potential head impact.
6. It is the responsibility of the vehicle operator to ensure during use that all features of this product work correctly. In use, the vehicle operator should ensure the projection of the warning signal is not blocked by vehicle components (i.e., open trunks or compartment doors), people, vehicles or other obstructions.
7. The use of this or any other warning device does not ensure all drivers can or will observe or react to a warning signal. Never take the right-of-way for granted. It is your responsibility to be sure you can proceed safely before entering an intersection, driving against traffic, responding at a high rate of speed, or walking on or around traffic lanes.
8. This equipment is intended for use by authorized personnel only. The user is responsible for understanding and obeying all laws regarding warning signal devices. Therefore, the user should check all applicable city, state, and federal laws and regulations. The manufacturer assumes no liability for any loss resulting from the use of this warning device.

### Specifications:

|                               |              |                    |
|-------------------------------|--------------|--------------------|
| Size:                         | Light stick: | 48" x 4 1/2" x 2"  |
|                               | Control box: | 6" x 3 3/4" x 3/4" |
| Weight:                       | Light stick: | 6 lb.              |
|                               | Control box: | 0.5 lb.            |
| Current draw (12 VDC system): |              | 3A MAX.            |

### Wire the Safety Director:

Wire the safety director into the vehicles's 12V system according to Figure 2. Provide a 5A fuse near the power take off. Use 16AWG wire or larger for the Red and Black wire connections. If the Auxiliary Output is not used, cap the orange wire from the Control Box. Route the lightbar cable from the Stick to the Control Box and plug them together.

### Unpacking:

Carefully remove the unit and place it on a flat surface. Examine the unit for transit damage, etc. If the vehicle has an electrical system other than 12 Volts DC negative ground, contact your local representative or call the manufacturer for instructions.

### Installation & Mounting:

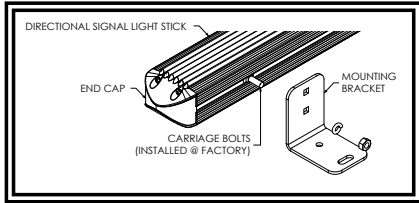
The SAFETY DIRECTOR was designed with a flexible mounting system which allows it to be mounted almost anywhere. For questions concerning a specific application call ECCO customer service.

Prior to mounting, consideration should be given to cable location. The cable should exit the endcap on the left side of the SAFETY DIRECTOR as you face the front of the lightbar. Reversed mounting will result in all of the flash patterns being reversed.

The mounting location should be chosen such that there is maximum visibility to the oncoming traffic.

**Horizontal Surface Mounting:** Refer to Figure 1 for the following instructions.

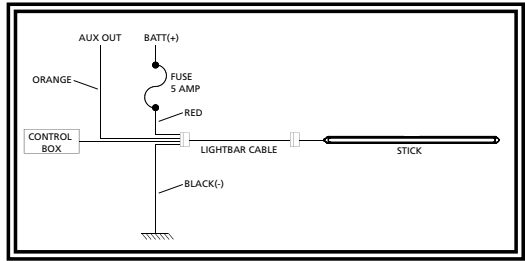
1. Place the lightbar on a flat surface, and install the mounting brackets on the rear of the bar with the supplied hardware as shown. Leave the hardware loose, so that the brackets are movable.
2. Place the lightbar in the selected location, and mark the hole locations. Adjust the mounting brackets as necessary.
3. Drill holes for 1/4" mounting hardware (user supplied).
4. Install the lightbar with the hardware and secure.



**Figure 1**

**Vertical Surface Mounting:** The Directional Signal light stick can be mounted directly to a vertical surface.

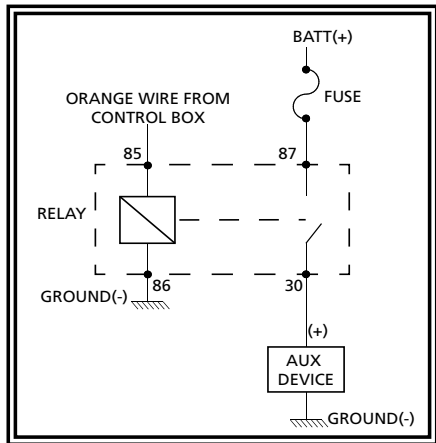
1. Determine the proper height for the lightbar, to ensure good visibility.
2. Drill the holes for the 1/4" carriage bolts, using the mounting bracket as a template for spacing. Make sure the holes are spaced evenly from the ends of the light bar, and at the same height.
3. Mount the light bar with the supplied hardware, and secure.



**Figure 2**

### Wiring for Auxiliary Output:

An auxiliary device, such as a beacon, lightbar, worklamp, etc. can be controlled by the "ALT" button of the control box. This device should not exceed 20A. Wire the relay that is provided into the system as shown in figure 3, making sure that the auxiliary device is properly wired and fused according to the manufacturer's requirements.

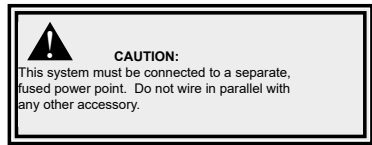
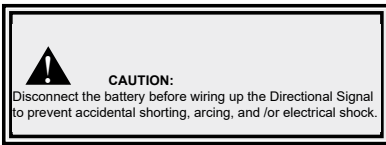


**Figure 3**

### Wiring Instructions:

**Notes:**

1. Larger wires and tight connections will provide longer service life for components. For high current wires it is highly recommended that terminal blocks or soldered connections be used with shrink tubing to protect the connections. Do not use insulation displacement connectors (e.g., 3M Scotchlock type connectors). Route wiring using grommets and sealant when passing through compartment walls. Minimize the number of splices to reduce voltage drop.
2. High ambient temperatures (e.g., under-hood) will significantly reduce the current carrying capacity of wires, fuses, and circuit breakers. All wiring should conform to the minimum wire size and other recommendations of the manufacturer and be protected from moving parts and hot surfaces. Looms, grommets, cable ties, and similar installation hardware should be used to anchor and protect all wiring.
3. Fuses or circuit breakers should be located as close to the power takeoff points as possible and properly sized to protect the wiring and devices.
4. Particular attention should be paid to the location and method of making electrical connections and splices to protect these points from corrosion and loss of conductivity.
5. Ground termination should only be made to substantial chassis components, preferably, directly to the vehicle battery.
6. Circuit breakers are very sensitive to high temperatures and will "false trip" when mounted in hot environments or operated close to their capacity.



### Control Pad Mounting:

To mount the control pad with Velcro, separate the two circular halves, remove the backing and adhere one piece on the vehicle dashboard and adhere the other to the back of the controller. To mount the control pad using the swivel mount, first mount the swivel unit to the dashboard with either the supplied screws (note, the suction cup will not work after drilling screws through the swivel base) or by turning the lever at the base of the swivel unit to engage the suction cup. Push the controller onto swivel slide and press the control pad down onto the slide until it engages the slot in the control pad (see Figure 5). (You may need to turn the controller clockwise once engaged with the slide to tighten it.) Turn the dial on the swivel head to tighten it against the back of the control pad. Finally, loosen the hand screw on the swivel neck to adjust the angle of the control pad. Hold the pad in the desired position while tightening the hand screw on the swivel neck.

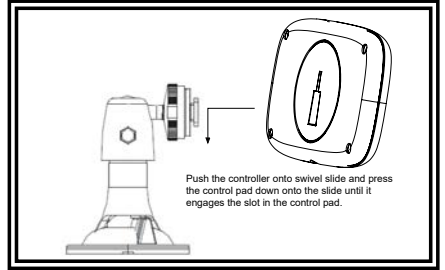


Figure 5

### Operation:

Press the left power button to turn the unit on/off. The left arrow button alternates between left arrow and left continuous arrow flash modes. The mode button alternates between center out, center out solid, wig wag, alternating (SAE J595 Class 1), and alternating quad flash modes. The right arrow button alternates between right arrow and right continuous arrow flash modes. The ALT button is for the auxiliary control on/off. See Figure 4.

### Maintenance:

The Safety Director requires little routine maintenance. Occasional cleaning of the lenses is all that is required to maintain maximum light output. Use plain water and a soft cloth, or lens polish and a very soft paper towel or facial tissue. Since plastic scratches easily, cleaning is recommended only when necessary. Do not use solvents as they may damage the polycarbonate lens material.

If a problem does develop, refer to the Troubleshooting Guide.

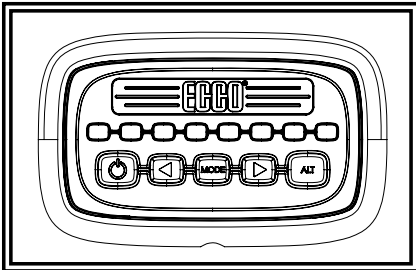
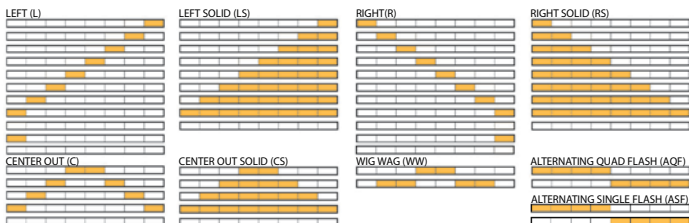


Figure 4

### Troubleshooting Guide:

| Symptom                                    | Possible Cause                                |
|--|---|
| No functionality of Control Box or Stick   | Main power fuse is blown, or poor connection  |
| One Control Box LED blinks continuously    | Poor connection between Control Box and Stick |
| One or more segments of Stick do not light | Stick is defective                            |
| Aux device will not turn on                | Aux fuse is blown, or poor connection         |
| Aux device will not turn off               | Relay is shorted from excessive load current  |

### Flash Patterns



Note: SAE flash patterns are Wig Wag (Class 2) and Alternating Single Flash (Class 1).