



Installation and Operation Instructions

Dual Function Alarm

IMPORTANT! Read all instructions before installing and using. Installer: This manual must be delivered to the end user.



WARNING!

Failure to install or use this product according to manufacturer's 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 understood the safety information contained in this manual.**

1. Proper installation combined with operator training in the use, care, and maintenance of emergency warning devices are essential to ensure the safety of emergency personnel and the public.
2. Emergency warning devices often require high electrical voltages and/or currents. 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 is 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 they 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 daily 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 an emergency warning signal. Never take the right-of-way for granted. It is the vehicle operator's responsibility to be sure they can proceed safely before entering an intersection, drive against traffic, respond at a high rate of speed, or walk 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 emergency warning 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.

Selection and installation of an alarm should meet the requirements of local and regional governing bodies such as ISO, SAE, etc. Install an alarm that will be audible on the noisiest job site the vehicle will be used on. Ground guidance should be provided to clear backing vehicles when the audibility of the alarm is in question. When installing an alarm product, be sure to verify that both sides of the mounting surface are clear of anything that could be damaged. Place the back-up alarm so it will operate properly under adverse conditions. The location must provide protection from impact and poor weather conditions while allowing unobstructed sound projection to the target hazard area. Do **NOT** mount the alarm facing up or down.

Alarms are intended for commercial use. Proper installation of an alarm requires a good understanding of truck and heavy equipment electrical systems and procedures, along with proficiency in the installation and use of warning equipment.

The system must be inspected each work day at the beginning of each shift to ensure that it is audible, operating properly, and securely attached to the vehicle. Inspect more often when: 1) The vehicle is operating in an adverse environment; 2) The vehicle is operating in foul weather conditions; 3) The operator has reason to believe the alarm has been damaged or is not working properly; and/or 4) Increased background noise interferes with the ability of workers to recognize when the alarm is sounding. **Note: Back-up alarms should be used for BACK-UP WARNING applications only. The back-up alarm sound is generally recognized as a warning for reversing vehicles/mobile equipment. Alarm products with different sounds are available for non-reversing applications.**

Important! This unit is a safety device, and it must be connected to its own separate, fused power point to assure its continued operation should any other electrical accessory fail.

Connections:

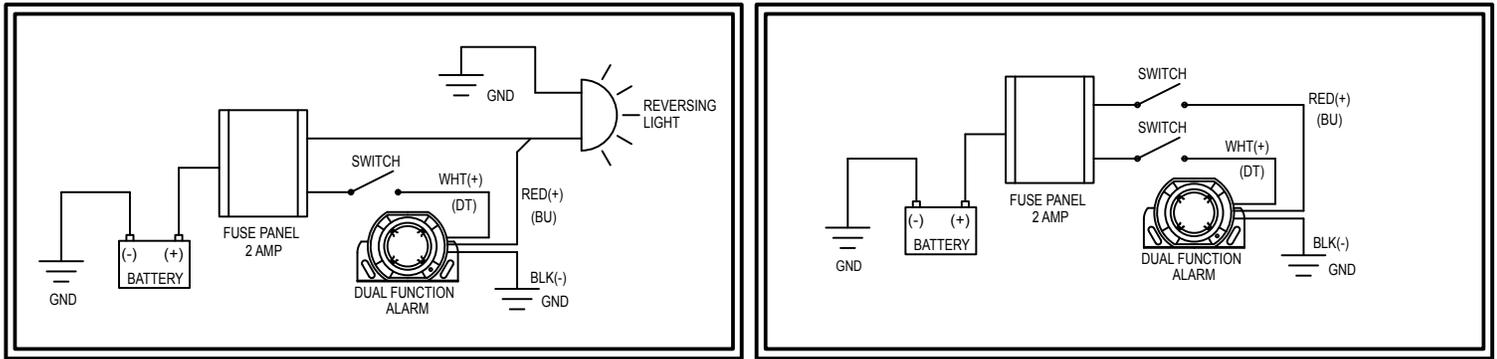
Connect the alarm to power using the illustration below for reference. Be sure alarm circuit is fused. For proper operation please observe correct polarity when hooking up wires. Accessory switches are available from ECCO that can be used in conjunction with various control lever arrangements to facilitate easy mounting. ECCO alarms are reverse polarity protected and no damage will occur if wires are accidentally connected backwards.

NOTE: DO NOT CONNECT DUAL TONE SOUND FOR BACK-UP WARNING APPLICATIONS.

Installation Instructions & Sound Level:

This product is designed to concentrate its audible alarm in the target hazard area. NOTE: This product is a safety device. It must be connected to the vehicle's fused back-up lamp circuit or its own separate fused power point to assure its continued operation. For proper sound dispersion, it must be mounted approximately 4 feet above ground level with the sound opening facing the target hazard area (see SMART-ALARMS below). The label on each alarm describes the sound output level in decibels (dB).

1. Select a mounting location at the rear of the vehicle that will provide protection from flying objects, debris, and foul weather conditions while allowing unobstructed sound projection from the vehicle.
2. Using the alarm's housing as a template, mark location for the mounting holes. Drill holes at location marks.
3. Secure alarm on the vehicle.
4. This unit requires a reliable power and ground connection for operation. Complete the wiring according to the wiring diagram in Figure 1. Use 18 gauge wire (minimum) and observe correct polarity. **WARNING!!** Anytime the back-up alarm is in operation, continuity must be maintained between the positive voltage of the power source and the positive terminal of the back-up alarm as well as between the negative terminal of the back-up alarm and the common ground (the vehicle member to which all wire grounds are connected). During operation the voltage differential between the positive voltage of the power source and the positive terminal (+) of the back-up alarm shall not exceed 500mV. During operation the voltage differential between the common ground and the negative terminal (-) of the alarm shall not exceed 500mV. Route wire in a protected manner in accordance with vehicle manufacturer recommendations. **NOTE:** The back-up alarm will not operate when its power connections are reversed and is protected against reversed polarity up to 400V.



Specifications:

A listing of product specifications is available upon request.

Vehicle Operations:

As the operator of a vehicle, you should always know when the alarm is sounding and when it is not sounding. Should the alarm become inoperative, discontinue vehicle operation and notify your supervisor or team leader. Operating a vehicle with an alarm that is not functioning properly could endanger the lives and/or property of those who depend on the alarm signal for safety.

Back-up alarm testing must be itemized on the daily maintenance log. An alarm on an operating vehicle must be tested prior to the vehicle's use at the beginning of each work shift. Check the daily maintenance log to confirm acceptable results of this testing before operating the vehicle/mobile equipment.

- More frequent testing may be necessary if the vehicle is operating in adverse conditions.

- Ground guidance should be provided to the driver when backing a vehicle in a job environment where the audibility of the alarm is in question.

Maintenance:

Preventive maintenance procedures must specify an alarm safety system inspection. This check should include a thorough examination of the electrical connections and the sound opening. The sound opening must be kept clear of dust, mud, or any other foreign material that may prevent the alarm from sounding properly. Should this inspection reveal an alarm that is not functioning properly, place a "Do Not Use" sign on the equipment and notify your supervisor or team leader.

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