



ECCO[®]

Installation and Operation Instructions Multi-Frequency Back-Up Alarm

Back-Up Alarms are designed to provide a warning sound to signal that a vehicle or mobile equipment is reversing. In order to ensure the correct operation of this critical warning device, it must be installed in conformance with the instructions provided in this guide and it is therefore necessary that installers read, understand and follow these instructions. Multi-Frequency Back-up Alarms provide a solution to potential noise pollution created by back-up alarms in confined or densely populated work areas, maintaining an effective warning signal for those in the danger zone of backing vehicles while minimizing disturbance to work site neighbors. The alarms operate by emitting sound at multiple frequencies within a narrow band attenuated above 4000Hz so that the sound energy is directed more towards the rear of the vehicle and perceived to dissipate more quickly than a conventional tonal alarm. In addition, Smart Alarm models continually sense ambient noise levels and automatically adjust their output to 5dB above (subject to their maximum output level), ensuring that the volume level is audible without unnecessarily contributing to noise pollution.



WARNING!

Failure to install or use this product according to manufacturer recommendations may result in property damage, serious bodily/personal injury, and/or death to you and 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 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 you and those you are trying 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. 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.
5. 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.

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 (see SMART ALARMS[®] below). Do **NOT** mount the alarm opening facing up.

The back-up alarm system must be inspected each workday 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: The back-up alarm should be used for REVERSING WARNING applications only. The alarm sound is generally recognized as a warning for reversing vehicles/mobile equipment. Alarm products with different sound tones are available for non-reversing 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. The label on each alarm describes the sound output level in decibels dB(A).

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. Do **NOT** mount the alarm opening facing up.
2. This unit requires a reliable power and ground connection for operation. Complete the wiring according to the wiring diagram below using 18 gauge wire (minimum). If the vehicle back-up light circuit is used, refer to Figure 1, or Figure 2 if a user installed switch is required, 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.

Important!! DO NOT spray any coating material, e.g. paint, undercoating, etc., over the sound opening. DO NOT install the alarm or its wiring in proximity to ignition wires. Failure to observe these conditions may have an adverse effect on the alarm's performance.

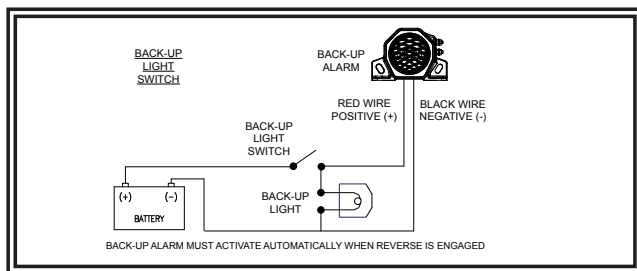


Figure 1

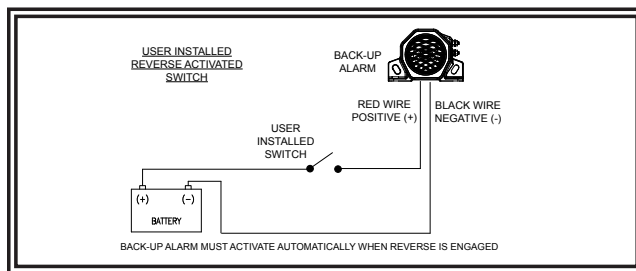


Figure 2

3. Test the alarm for proper operation. If alarm does not sound, review Step 2. After confirming proper operation, affix the provided Warning Label to the dashboard of the vehicle in plain view of the operator. **Do not operate this vehicle if the back-up alarm is not functioning properly.**
4. Add requirement to "test back-up alarm system before operating vehicle" to the daily maintenance log and notify your supervisor or team leader that people operating this vehicle **MUST** confirm proper alarm operation at the beginning of each work shift. **Do not operate this vehicle if the back-up alarm is not functioning properly.**

Smart Alarms® have a self-adjusting feature which automatically changes their sound output level to be a minimum of five decibels above surrounding noise levels within a range of outputs. This sound output adjustment diminishes as surrounding noise levels approach the maximum output of the alarm. NOTE: Smart Alarms® must not be confined in internal compartments or enclosed spaces where echo effects may interfere with the self-adjusting volume mechanism. If this occurs the alarm will automatically adjust to its highest sound output level.

Specifications:

A listing of product specifications is available upon request. Certifications are subject to change without notice.

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.

Manufacturer Limited Warranty and Limitation of Liability:

Manufacturer warrants that on the date of purchase this product will conform to Manufacturer's specifications for this product (which are available from the Manufacturer upon request), and Manufacturer further warrants that this product is free from defects in materials and workmanship. This Limited Warranty extends for the life of the vehicle for models EA6100, EA6110, EA7020, EA7070, EA9070, EA9724 & EA9780, and two (2) years models EA5050, EA5200, EA5820, & EA5920. Other warranties may apply, call Manufacturer for details. Manufacturer will, at its discretion, repair or replace any product found by the Manufacturer to be defective and subject to this Limited Warranty.

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