

# CHARGE GUARD™

automatic on/off switch for 2-way radios

- fast, easy installation
- rugged, durable construction
- completely self-contained
- saves on battery wear & tear
- made in the USA



U.S. Patent 4,950,913  
Canadian Patent 2,013,888

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Rev. 5/96

## — SAFETY —

**Warning:** Do not expose to direct water or steam. Power is present in the unit at all times unless disconnected from the battery.

1. Do not connect directly to the battery without a fuse in series as shown on page 8 of the installation section.
2. Do not use a lead pencil or other conductive pointed object that is likely to break off when setting the dip switches.

\* CHARGE GUARD® is a registered trademark of

**ChargeGuard, Inc.**

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— TABLE OF CONTENTS —

— FEATURES —

— BENEFITS —

— EMERGENCY OVERRIDE —

Safety Precautions ..... 1B

Features ..... 2B

Benefits ..... 3A

Specifications ..... 3A

Emergency Override ..... 3B

Product Description ..... 4

Time Delay Setting ..... 6

Installation Instructions ..... 7

Installation Diagrams ..... 8

24 Volt Model ..... 10A

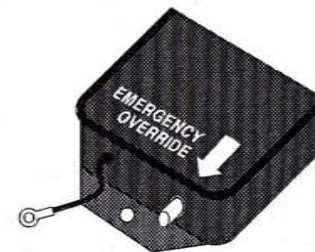
Warranty ..... 10B

- Easy, In-line Installation
- Completely Self-contained
- 30 Amp Load Current Rating
- Reverse Polarity Protection
- Overvoltage Disconnect
- Selectable Time-out Delay
- Emergency Bypass with Auto Reset
- Available in 12 or 24 Volt Models
- Patented and made in USA

1. Extend battery life.
2. Reduce maintenance problems.
3. Warn of electrical system problems.
4. Reduce equipment installation time.
5. Two-Way radio is always on when you want it to be on.

**SPECIFICATIONS 12V / 24V**

Operating Voltage ..... 13.6V / 27.2V  
 Low Voltage Disconnect .... 12V / 20V  
 High Voltage Disconnect .... 18V / 34V  
 Stand-by Current ..... 15MA / 25MA  
 Operating Current ..... 80MA / 95MA  
 Load Current Rating ..... 30 Amps.  
 Minimum Time Delay ..... 15 Min.  
 Emergency Bypass Time ..... 15 Min.  
 Selectable Time Delay ..... 1-15 Hrs.



Depressing the indicated push-button will provide fifteen minutes of power to your mobile radio when the motor will not start, or the electrical system is malfunctioning. After which, the unit will then automatically reset to the stand-by mode. If the problem is related to an overvoltage condition in the vehicles electrical system, it is necessary to turn the motor off before using. Only the low voltage priority shutdown is disabled while the emergency override is in operation.

2A

2B

3A

3B

— DESCRIPTION —

The CHARGE GUARD®\* unit provides protection for the battery against excessive discharge, the convenience of having your two-way radio on when you want it on, and yet requires no ignition switch connection.

With built in sensors, it automatically turns your mobile radio on when you start the motor. Likewise, when you turn the motor off, the radio stays on 15 minutes or until the end of your selected delay of one to fifteen hours. Additional features are built in for the protection of both the battery and the connected equipment.

**1** The **First** feature is the ability to select up to fifteen hours of delay before the unit will turn your radio off automatically. This delay begins the instant the motor is turned off. Selection is made via a DIP switch in one hour increments as indicated on page 6 of this manual.

**2** The **Second** feature is a low voltage detector (11 volts) that takes priority over the delay timer and turns the output off within 15 minutes. This protects a poorly charged battery from excessive discharge regardless of the remaining delay before normal dropout. At 10 volts, a second detector turns the CHARGE GUARD® unit itself off to further protect the battery. Both conditions are restored when the engine is started.

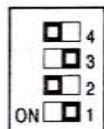
**3** The **Third** feature is a high voltage detector (18 volts) that helps protect the radio equipment from an erratic voltage regulator in your vehicle. Its purpose is to disconnect your electronic equipment before catastrophic failure might occur due to an excessively high voltage or an improper jump-start.

**4** The **Fourth** feature provides a convenient means to turn your radio on long enough to get help when the motor won't start, or the alternator is inoperative. Simply push the button on the end of the unit, as indicated, to restore power to the radio for approximately fifteen minutes. Refer to pg. 3B for additional information.

**5** The **Fifth** feature is another detector that prevents the unit from operating in reverse polarity. It helps protect the radio equipment components from reverse voltage damage. Occasionally, an inexperienced installer is unaware that a vehicle has positive ground until an attempt is made to operate the radio, resulting in damage or blown fuses.

## — TIME DELAY —

This feature determines the approximate length of time the radio equipment will remain on after the motor is turned off.



Switches 1 thru 4 select the desired time delay.

**Binary coded**  
All switches off = 15 hrs.  
All switches on = 15 min.

Example 1+4 hrs. = 5 hrs.

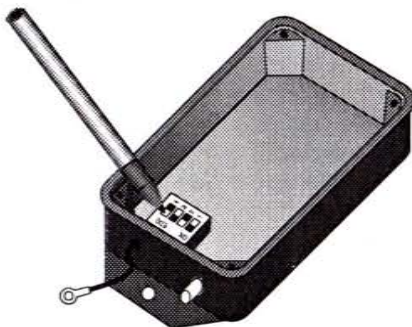
■ Indicates location of Switch Handle

Numbers in parenthesis (hrs.) indicate the actual amount of time delay that is selected by each switch. While the unit comes from the factory set at five hours, it may be desirable to change the delay for many reasons. Generally, the shortest practical time for your application should be used.

NOTE: A time increment is activated when a switch is turned OFF.

TIME SELECTION TABLE

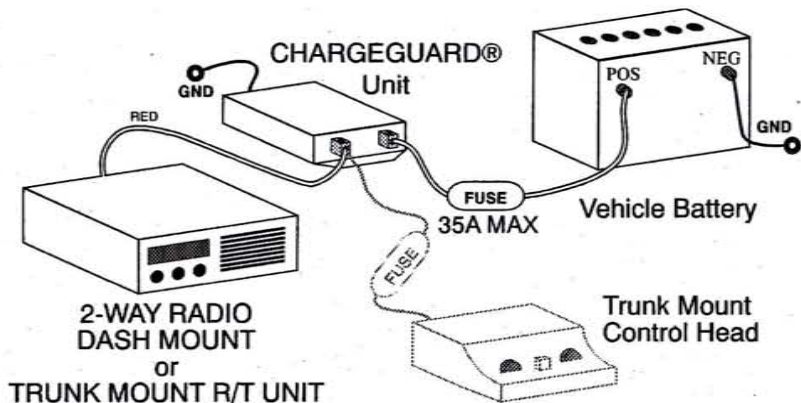
APPROX TIME (HR)	SW-1	SW-2	SW-3	SW-4
1/4	ON	ON	ON	ON
1	OFF	ON	ON	ON
2	ON	OFF	ON	ON
3	OFF	OFF	ON	ON
4	ON	ON	OFF	ON
5	OFF	ON	OFF	ON
6	ON	OFF	OFF	ON
7	OFF	OFF	OFF	ON
8	ON	ON	ON	OFF
9	OFF	ON	ON	OFF
10	ON	OFF	ON	OFF
11	OFF	OFF	ON	OFF
12	ON	ON	OFF	OFF
13	OFF	ON	OFF	OFF
14	ON	OFF	OFF	OFF
15	OFF	OFF	OFF	OFF



6

## DASH / TRUNK-MOUNT

Carefully read instructions on page 8 before proceeding.



Locate the CHARGE GUARD® unit near the radio power wire. Cut the power wire of the radio, leaving the fuse in the lead going to the battery. Remove 3/8" of insulation from both leads and insert the fused end in the lug marked BAT. Insert the end from the radio in the lug marked OUT. For a trunk-mount installation, add the fused lead(s) from the control head to the lug marked OUT.

8

## — GENERAL INSTALLATION INSTRUCTIONS —

**Mounting the Unit:** The CHARGE GUARD® unit may be mounted anywhere inside the vehicle but must be wired directly to the battery. However, it is always better to install the unit in the operator's compartment where more moderate conditions exist. When the CHARGE GUARD® unit is mounted under the hood, select a reasonably cool and dry location making sure that water cannot migrate down the leads. Be sure to avoid water hoses, engine components, or the radiator framework. Secure unit with the supplied screws or cable ties as desired.

**NOTE:** It is not recommended to mount the CHARGE GUARD® unit under the hood.

**Grounding:** It is essential that the ground lead is firmly attached for proper operation of the unit. Fasten the terminal to the metal with a sheet metal screw, placing the tooth lock washer between the terminal and the metal.

**Filters:** When installing alternator and/or ignition filters, place them in the CHARGE GUARD® output lead only.

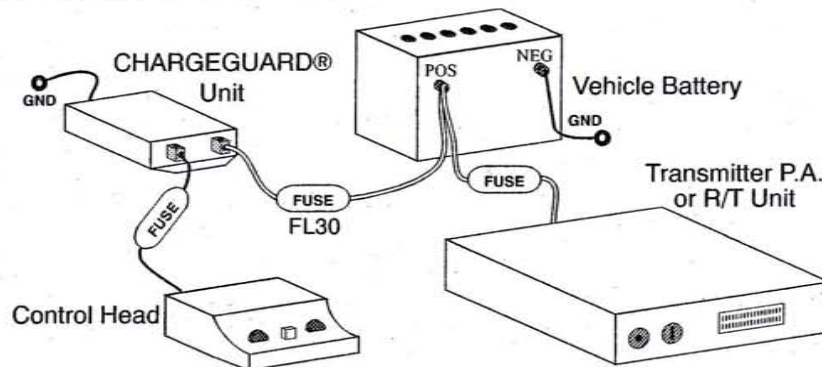
**Caution:** Only the Leads Attached to the Output Connector of CHARGE GUARD® Are Protected by the Electrical Fault Detectors Contained Within.

**Combining Components:** Several different pieces of equipment may be operated through a CHARGE GUARD® unit. Each component must be fused separately with the recommended value for that particular equipment. The sum of the fuses should not exceed the 30 AMP output rating.

7

## TRUNK-MOUNT - Alternate

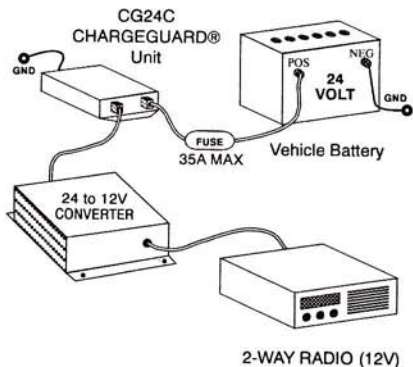
Several systems may be stacked by connecting the high current components directly to the battery with the control head and its accessories to the CHARGE GUARD®. For synthesized radios with volatile memory, it may be necessary to connect only the ignition sense lead to the CHARGE GUARD® unit.



Locate the CHARGE GUARD® unit as instructed on page 8. Route the fused lead(s) from the control head to the lug marked OUT. Install a fused wire (Max 35 Amp) from the lug marked BAT to the positive battery terminal. The large power lead from the trunk mounted transmitter should be routed directly to the battery.

9

# 24 VOLT MODEL



Install the same as described on page 8 except the 24 to 12 volt converter is inserted between the CHARGE GUARD® and the 12 volt radio.

## — LIMITED WARRANTY —

Chargeguard, Inc., manufacturer of the CHARGE GUARD® unit, warrants this product against defects in material and workmanship under normal use and service for a period of one year from the date of purchase.

ChargeGuard, Inc., at its option, will at no charge either repair, replace, or refund the purchase price of this product during the warranty period provided that the **Warranty Registration Card** has been completed and mailed within the terms indicated on this card. This limited warranty is extended by ChargeGuard, Inc. to the original end user or purchaser only and is not assignable or transferrable to any other party. Local and State laws may provide other warranty benefits.

To receive warranty service, return the product to the dealer or send directly to ChargeGuard, Inc.