

# CHARGE GUARD®

automatic **ON**//////**OFF** timer switch

**Protect Your Battery  
+ Protect Your Peripherals =  
PRODUCTIVITY PROTECTION**

## SPECIFICATIONS (CG.X)

Model Number:	<b>CG.X</b>
Operating Voltage (nominal):	<b>13.8V DC</b>
Low Voltage Disconnect:	<b>11V DC</b>
High Voltage Disconnect:	<b>18V DC</b>
Stand-by Current:	<b>5mA</b>
Operating Current:	<b>80mA</b>
Operating Temperature:	<b>0-70deg C</b>
Load Current Rating:	<b>30A</b>
Minimum Time Delay:	<b>5 sec.</b>
Selectable Time Delay:	<b>5 sec to Infinity</b>
Factory Default Time Setting:	<b>2 hours</b>
3 Year Limited Warranty	
Made in USA	
Rev. 1.1	

## CHARGE GUARD® HOW IT WORKS

- Turns on two-way radio, computer or other equipment when vehicle is started.
- Keeps peripherals on after the engine is turned off
- Turns off peripherals after a pre-set time or if vehicle's battery shows signs of fatigue
- Prevents dead batteries by shutting off peripherals before excessive discharge to ensure there is enough battery left to start vehicle  
\*Applies to typical batteries in good condition.
- Protects peripherals from voltage surges and under/over voltage situations
- Voltage Diagnostic LED display indicates if vehicle voltage is too low or too high

## BENEFITS

- Turns on peripherals when you want them on
- Turns off peripherals when you NEED them off
- Saves battery wear & tear, and extends battery life
- Protects peripherals in the event of electrical system problems
- Reduces maintenance & service calls
- Installs easily with simple set up
- Convenient override/test button for testing and emergencies
- Works with many applications in multiple modes
- Established track record with over 250,000 units installed

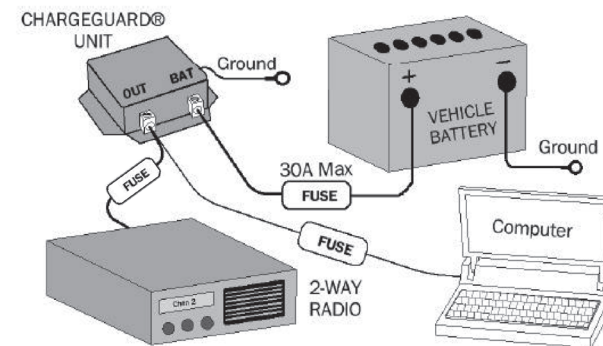
## FEATURES

- Selectable Timeout Delay
- 30 Amp Load Current Rating
- Selectable Switch Modes
- Hi & Low Voltage Disconnect
- Reverse Polarity Protection
- Override/Test Button
- Rugged, durable construction
- Voltage Diagnostic LED

## INSTALLATION NOTES

- **MOUNTING:** the CHARGE GUARD® unit may be mounted in the cabin or trunk of the vehicle. It should be wired through a fuse directly to the battery. Note: mounting the CHARGE GUARD® unit under the hood is not recommended and voids warranty due to the greater risk of heat and water damage.
- **SAFETY WARNING:** Do not expose to direct water or steam. Power is present in the unit at all times unless disconnected from the battery.
- **SAFETY WARNING:** The CHARGE GUARD® unit must be used with an inline fuse (Littlefuse #ATO 30 or equivalent) on input power. Fuses on power output are optional and should be sized appropriately for peripheral.
- **NOTE:** Failure to fuse device properly or use outside of temperature operating range could result in an unsafe condition

## WIRING DIAGRAM



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**CHARGE GUARD, Inc.**

47801 Anchor Ct, Plymouth, MI 48170

800/ 458-3410 [www.chargeguard.com](http://www.chargeguard.com)

U.S. Patents 4,950,913 & 5,272,386 & 5,563,452 & 7,211,907

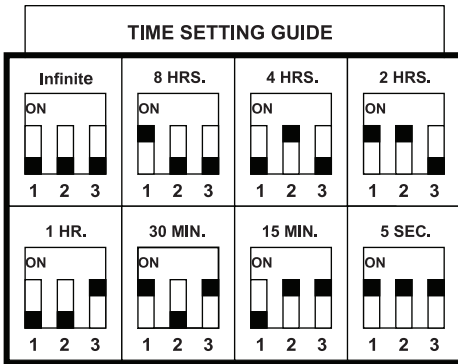
Canadian Patents 2,013,888 & 2,560,825

a LEDCO company [www.LEDCO.net](http://www.LEDCO.net)

# EASY FOUR STEP SET UP

## TECHNICAL NOTES

**1. SET THE TIME:** Choose a time setting at which the unit will turn your devices off automatically. This delay begins the instant the engine is turned off. Time selection is made via dip switch setting. See chart below for available settings.



## 2. CHOOSE A MODE:

**Automatic Detection – AC Sensing (default mode):** For easiest installation, use the original “Normal” mode for which CHARGE GUARD® is famous. This mode senses engine activity and higher voltages associated with running vehicles. To choose this mode, set mode switch to “AC”.

**Battery Sensing – DC Rise:** Responds to the rise and fall of battery voltage only. When you start your car, the alternator raises the car’s voltage and the unit automatically senses this voltage change to turn on/off the peripherals. To select this option, set mode switch to “DC”. Select this mode if using electrically noisy aftermarket converters/inverters, etc.

**Ignition Switch:** Responds to a switched voltage source (min. 2/3 battery voltage, max 19V). This uses a separate wire to measure a power source that is switched on/off by the vehicle’s ignition. As an example, when the key is turned on, many OEM components (radio, lights, etc) in the vehicle turn on; IGN mode should tap into one of these sources. To select this option, set mode switch to “IGN”. Select this mode if the other sensing modes do not function in your specific application.

## 3. HOOK UP THE WIRES (Use UL recognized wiring material):

Minimum wire size between “BAT” terminal and Battery should be 10 gauge regardless of the fuse size, and larger for long runs over 15 feet.

- Connect appropriate size wire based on load and wire length from “OUT” terminal to Peripherals
- Connect 18 gauge wire from “GND” terminal to Vehicle Chassis (Ideal ground connection is made directly back to negative battery terminal)
- OPTIONAL: connect 18 gauge wire from “IGN” terminal to on/off power source

**NOTE:** Use inline fuses in all wire runs and ensure that all wires are completely captured and terminals are fully tightened.

## 4. TEST INSTALLATION:

**Press Emergency Override/Test Button:** Power will be applied to the peripherals for a minimum of 15 minutes (if time delay is set for greater than 15 minutes power will be applied for a period equal to current setting). Power will be turned off when the timer runs out or if the vehicle voltage drops too low. This is a convenient means to turn equipment on and off.

**NOTE:** As added protection, the override function is disabled during high voltage conditions above 18 volts.

**NOTE:** Holding the override button in for 3 seconds will turn the CHARGE GUARD® off. If the engine is still running, or an active signal is still present at the “IGN” terminal this will temporarily disable the unit until button is released.

## DIAGNOSTIC LED REFERENCE GUIDE

- No LED** (Relay De-energized)
- Solid Green** (Relay Energized)
- Blinking Green** (Relay Energized, Timer Counting)
- 4 Blink Red** (High Voltage Condition, > 18V)
- 2 Blink Red** (Low Voltage Condition, < 11V)

- Low voltage** – To prevent a low battery condition, if the battery falls below 11 volts, the CHARGE GUARD® unit automatically turns equipment off in 15 minutes. Below 10 volts, the CHARGE GUARD® unit turns equipment off in 5 minutes. Programmed delay setting is restored when vehicle voltage returns to normal.
- High voltage** – To protect equipment from high voltage conditions commonly caused by an erratic voltage regulator or 24V jump start, the CHARGE GUARD® unit immediately turns equipment off above 18 volts.
- Reverse polarity** – The unit will not operate when the voltage is reversed. Both the equipment and the CHARGE GUARD® unit are protected from damage due to an improper installation or jump-start.
- Surge/Transient** – To protect equipment from voltage surges and spikes common in electrical systems, the CHARGE GUARD® unit has internal transient suppression built in.

## TERMINAL GUIDE (CG.X)

