

OPERATION INSTRUCTIONS

CHARGING A BATTERY:

Plug the 9950 into an AC outlet, set the battery voltage and type by holding down the **GREEN** button for 2 seconds and selecting any of the 4 choices. Next, connect the battery to the charger.

LA-12v - Lead Acid 12 Volt all types*

LA-16v - Lead Acid 16 Volt all types

LI-12v - Lithium 12 volt LiFePO4

LI-16v - Lithium 16 volt LiFePO4
* factory setting



CLEAN A BATTERY:

When pressed quickly, the **GREEN** button turns the CLEAN mode on or off. CLEAN is designed to help remove sulphation from old or weak batteries. It works with all types of Lead Acid batteries and should be left on for 3 or 4 days. This mode uses the PULSE technology to speed up the desulphation process. Should be used every 6 months on batteries that are stored for long periods of time or have been left unattended for extended periods.

MAINTAIN A BATTERY:

The 9950 automatically switches from Charge to (Long Term) Maintenance when the battery is FULL. The Microprocessor then goes into a routine that monitors the voltage and condition of the battery. It performs a variety of steps that condition and exercise the battery which extends the battery life by keeping it desulphated.

ALARM MONITORING:

The **RED** button turns the ALARM Monitoring on or off. This audible system beeps if something goes wrong. If the voltage is too low, the alarm will sound until it has been reset. Since batteries can go bad while being stored, the 9950 will warn of a low voltage condition right away. Additionally, if the AC Power goes out for a long period of time, causing the battery's voltage to drop too low, it will also sound the alarm and give you the ability to find out why the AC power is missing.

FAULT AND ERROR CODES:

When there is a fault or error, the 9950 reports this with the following codes:

- E1** - Cable Polarity is Reversed
- E2** - Cable is Shorted
- E3** - Battery Error
- E4** - Battery is Aging
- E5** - Battery needs Replacing

TESTING A BATTERY:

Alligator, Test Probes or Cigarette Lighter Cables can be used for battery or charging system testing. The 9950 does not have to be plugged into an AC outlet to test. It gets its testing power directly from the battery. When the vehicle is running, no more than 14.4v - 14.6v should be coming out of an alternator or generator. Higher voltages will hurt the battery. See chart below for battery voltage and percentages of life left.

12 volt battery	16 volt battery
13.0v = 100%	17.2v = 100%
12.8v = 90%	16.9v = 90%
12.6 = 80%	16.6 = 80%
12.4 = 70%	16.3 = 70%
12.2 = 60%	16.0 = 60%
12.0 = 50%	15.7 = 50%
11.8 = 40%	15.4 = 40%
11.6 = 30%	15.1 = 30%
11.4 = 20%	14.9 = 20%

The 9950 has a built-in load that is used to dissipate the surface voltage and report the true voltage of the battery.

When the FULL screen appears, unplug the 9950 from the AC Power and allow the unit to go into Test Mode, this removes the surface voltage. When the voltage reading stops going down (usually 5 to 10 minutes) the reading on the display can be checked against the above chart to measure the condition of the battery.

READ FIRST! ... Batteries give off Hydrogen - it's Explosive!

When dealing with any lead acid battery, eye protection should be worn. Batteries are dangerous, they give off Hydrogen gas. If their posts are shorted or spark, a fire or explosion can occur. They should be treated with a lot of respect. If you are not experienced, please ask for advice before connecting our charger / maintainer... and before removing the battery.

WARNING - Good ventilation is advised. If you are working with a battery that is still mounted on or in the vehicle, make sure you place the charger away from the battery itself. Do not expose the charger or maintainer to rain, snow or high heat. If used outside, it should be in a dry cool location. If the battery is removed from the vehicle, find a safe, ventilated, non-flammable location such as a metal work bench. Never have flammable materials, matches, lighters, cigarettes or other ignitable sources near the battery and charger.

WARNING - Sparks, fire or an explosion can occur if the battery terminals are shorted. When removing a battery from a vehicle extra care should be taken when disconnecting the terminals. Most 12 volt vehicles are negative (-) ground. The negative terminal should be removed first. This helps prevent a short between your wrench and the positive terminal. If the wrench accidentally touches any metal, a direct short can be catastrophic. By disconnecting the negative (-) or ground lead. First, this eliminates the potential of a direct short from your wrench. Use extra caution when moving a battery, should the battery drop, it can rupture and emit sulphuric acid, which is extremely dangerous. Make sure all accessories are turned off to prevent a spark when removing the terminals.

WARNING - Use the Battery Saver™ Charger / Maintainer ONLY with 12 or 16 volt Lithium, Lead Acid, VRLA, AGM or Gel type batteries designed for automotive type uses. Connect the AC power first then connect the battery connection. Monitor the RED Fault LED on the unit and should it come on, disconnect the battery immediately. Battery or batteries size should be between 15Ah and 400Ah total. Up to 6 batteries can be connected in parallel or banks of batteries in a vehicle can be connected.

WARNING - Do not cover the battery or Battery Saver™ Charger / Maintainer. Covering either can result in a fire or damage the charger. Both the battery and the charger need to be well ventilated.

WARNING - Make sure the battery terminals are clean. If necessary, use a battery post cleaner tool to remove corrosion and oxidation before connecting the charger's clip-on terminals. Bad connections can create heat, sparks and prevent the battery from getting charged properly. Loose connections can also fall off, leaving the battery uncharged.

WARNING - Do not disassemble the Charger / Maintainer for any reason. If the charger has been dropped or if the case has been cracked, send it back for repair or replacement. If the cord gets damaged or cut, do not use the charger, replacement cords are available at www.batterysaver.com.