



Instr. No. 2650-785D

# OPERATING INSTRUCTIONS

## BATTERY EXTENDER™

### MODEL BE-112, BE-212, BE-312 12 VOLT

Maintainer/Tester™



**WARNING:** Lead Acid Batteries are Dangerous! During use and charging they may generate EXPLOSIVE Hydrogen Gas. This means YOU MUST carefully read and follow these instructions before each use of your Battery Extender.

**IMPORTANT:** It is normal for case to be Hot to the Touch in Charge Mode. Thermal protective circuitry provides for safe, unattended operation.

DO NOT use on 6 volt batteries.

## GENERAL SAFETY RULES FOR SAFE OPERATION

1. Before operating your Battery Extender, read and follow all instructions, cautions, procedures, and warnings shown or printed on:

- This instruction manual
- Your Battery Extender
- The battery to be charged or maintained
- The Vehicle or unit a battery is used or installed in

Consult Auto Meter if you need more information.

2. Use the Battery Extender only on LEAD ACID AND GELLED ELECTROLYTE (GEL-CELL) BATTERIES that match the voltage printed on the front label of the Battery Extender. DO NOT attempt use on other types of batteries (Dry Cell, Nickel Cadmium, Nickel Metal Hydride, etc.) commonly found in small home appliances. This may cause the batteries to burst, resulting in damage or injury to people and property.

3. DO NOT use your Battery Extender on batteries that are in use. Use it only on batteries or vehicles that are in storage.

4. DO NOT use attachments with your Battery Extender that are not recommended or sold by Auto Meter. Non-recommended attachments may result in injury, electric shock, or fire, and voids the warranty.

5. To connect or disconnect the Battery Extender from a battery, always use the square 2 pin connector. When disconnecting from the battery or unplugging from the wall, use the plug to pull on. Never pull the cord, it may damage the plug or the cord.

6. Place the power cords in a location where they will not be stepped on, tripped over, or subjected to stress or abuse of any kind.

7. Never operate your Battery Extender if any portion of its housing, cords, or attachments appear to be damaged in any way. Have it inspected and serviced by Auto Meter.

8. If your Battery Extender has been dropped, received a sharp blow, or abused in any way, have it inspected and repaired by Auto Meter if necessary.

9. Use of an extension cord is not recommended. An inadequate extension cord could result in fire or electric shock. If you must use one, make sure the following conditions are met:

- A. Use a three prong grounded extension cord.
- B. The cord ends are wired correctly and in good condition.
- C. The cord itself is in good condition.
- D. Insure that all pins on the extension cord are identical in size,

shape and number as the plug on the Battery Extender.

E. Make sure the extension cord is large enough to carry the AC amperage rating of your Battery Extender. See chart below:

Length of cord (feet):	25	50	100	150
AWG size of cord:	18	18	18	16

10. NEVER open the housing of the Battery Extender or attempt to repair it yourself. It must be repaired by Auto Meter. There are no user serviceable parts inside. Any tampering or incorrect assembly may result in fire or electric shock and voids the warranty.

11. To prevent injury during cleaning or maintenance, always:

- Unplug the Battery Extender from the wall outlet first (using the plug).
- Disconnect the Battery Extender from the battery.

12. ALWAYS disconnect the Battery Extender from a stored vehicle or battery before operation.

13. NEVER attempt to charge a frozen battery. Allow the battery to return to room temperature before connection.

14. ALWAYS use the Battery Extender in an open and well ventilated area. The area should be dry and free of trash, debris, and combustibles.

**WARNING:** Explosive Hydrogen gas may be present around batteries.

15. DO NOT use the Battery Extender in direct sunlight or adverse weather conditions such as rain or snow.

16. Never place your Battery Extender above or below the battery. Locate it as far to the side of the battery as the leads permit. This prevents acid drips and spills from landing on the Battery Extender during battery filling or specific gravity testing. This also prevents battery fumes from reaching the Battery Extender.

17. DO NOT place a battery on the Battery Extender.

18. DO NOT touch the charging clips together when the Battery Extender is plugged in.

19. DO NOT attempt to open or modify the unit. DO NOT insert any object into ventilation holes. DONOT cover ventilation holes on unit.

20. NEVER use the Battery Extender in or on any boat or water craft. You must remove the battery from the boat or water craft and charge on dry land. DO NOT use the Battery Extender where it will be exposed to moisture or inclement weather, or around combustibles like trash, flammable liquids, and vapors.

## PERSONAL SAFETY PRECAUTIONS

1. Wear protective goggles or a full face shield.

2. Wear protective clothing. Leave no exposed skin.

3. Have plenty of fresh water and hand soap available for use if acid should contact your eyes, skin or clothing.

4. Have someone close by in the event you need emergency assistance when working with a battery.

5. Remove all metal objects (pens, tools, jewelry etc.) from your body. These items can create a direct short between the battery terminals and can cause serious burns.

6. DO NOT carry tools or metal objects in the vicinity of a battery. These items can fall on the battery terminals creating a high current short. This could result in a fire, burns, explosion, etc.

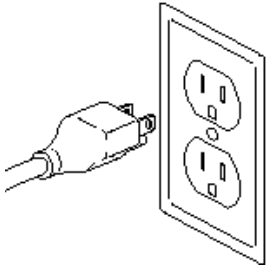
7. DO NOT touch your face, eyes or other body parts with out first washing your hands. Battery acid can burn and irritate eye and skin tissue.

8. DO NOT allow any source of ignition in the area of a battery. Keep all flame and spark producing devices out of the area and NEVER SMOKE near a battery.

9. Use the one hand rule! Keep one hand in your pocket whenever you make an electrical connection. This reduces the risk of electric shock to the user.

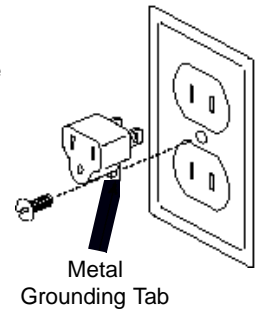
10. DO NOT attempt to open or modify the unit. DO NOT insert any object into ventilation holes. DONOT cover ventilation holes on unit.

## PROPER AC POWER CONNECTIONS



Connect the Battery Extender to a grounded 120 Volt AC power receptacle (left) that is wired in compliance with local electrical code. A grounded receptacle will receive a plug with a round ground pin and two blade terminals.

If your outlet will not receive a plug with a ground pin, you will need a temporary ground adapter (3 prong adapter, shown to the right). Be sure the metal ground tab is securely screwed into the face plate as shown. You may need a longer screw than the screw in the outlet. Use this adapter only as a temporary means of connection. Have a qualified electrician install a proper receptacle as soon as possible.



**WARNING:** Do not alter the plug or cord on your Battery Extender. To do so is a serious safety risk. You must have a proper ground. If you do not know how to test an outlet for ground, have a qualified electrician test it for you.

## BATTERY EXTENDER OPERATING INSTRUCTIONS

Your Battery Extender is equipped with sophisticated circuitry that will safely charge and maintain 12 Volt batteries without overcharging. Make

sure you read and follow the "General Safety Rules for Safe Operation" before proceeding with this operating instruction.

### BATTERY EXTENDER INDICATOR LIGHTS

**No Lights:** Means one of the following:

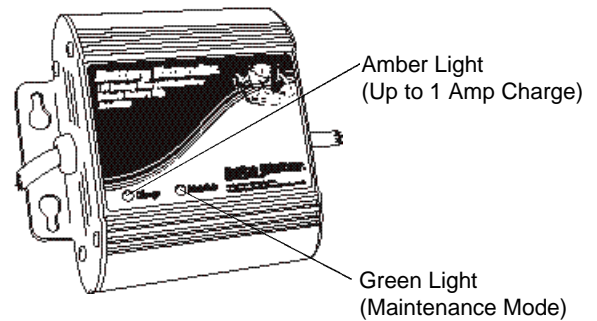
- You reversed the connections by connecting the red spring clip to the negative (-) battery post and the black spring clip to the positive (+) battery post.
- You have a poor connection at the battery.
- There is no AC power.
- The battery voltage is below 5 volts.

**Amber light (Charge):** The Battery Extender is delivering up to a 1 Amp charge.

**Green light (Maintain):** The Battery Extender is safely maintaining your battery at a full charge. Your battery is ready to go when you need it!

**Amber Flashing Light = Defective Battery:** The Battery Extender is designed to detect either sulfated battery or dead cell. Make sure that the battery post and clamp are clean. If the amber light continues to flash the battery should be replaced.

**NOTE:** The Battery Extender may switch back into full charge mode (Amber light ON) as required by your battery, this is normal.

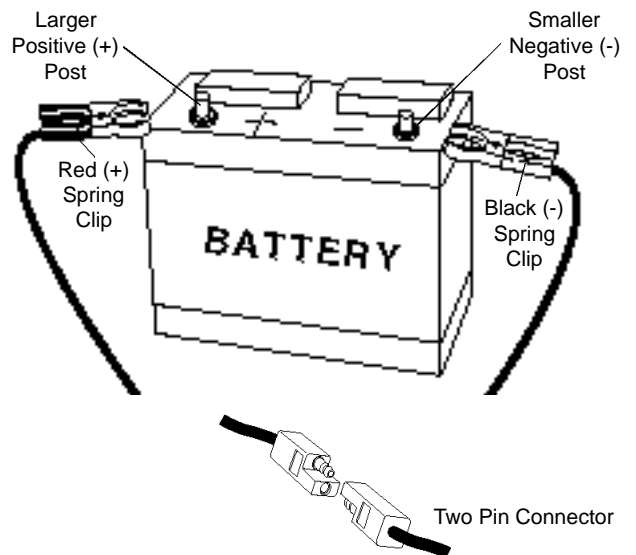


Model BE-112 Shown Here

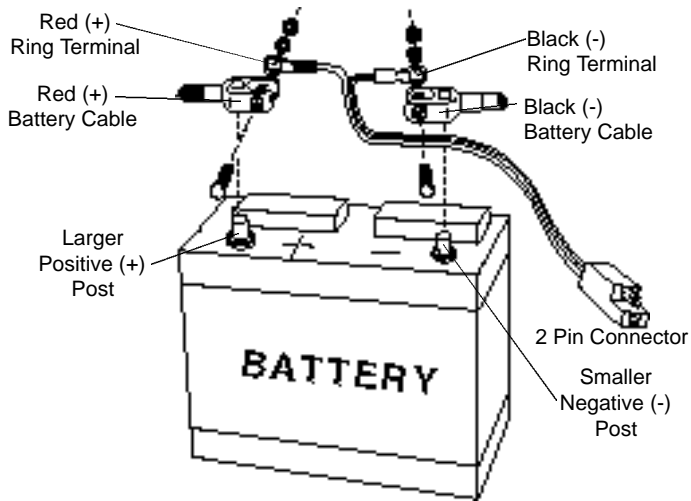
### FOR USE WITH SPRING CLIPS

For uninstalled batteries we have supplied a lead set with spring clips. Follow these steps for connection and operation (see illustration to right):

1. Make sure the Battery Extender is **NOT** plugged in to an AC outlet before connecting the clips to the battery.
2. Locate the positive (+) terminal post of the battery, it is usually larger than the negative (-) terminal post. Connect the RED spring clip to this battery terminal post. It's a good idea to wiggle the clip on the battery post to insure a good connection.
3. Connect the BLACK spring clip to the negative (-) battery terminal post.
4. Double check that the square two pin connector on the lead set is firmly plugged into the square output connector of the Battery Extender.
5. Make sure the Battery Extender is safely located away from the battery and in a non-hazardous location.
6. Plug the AC cord into a grounded outlet.



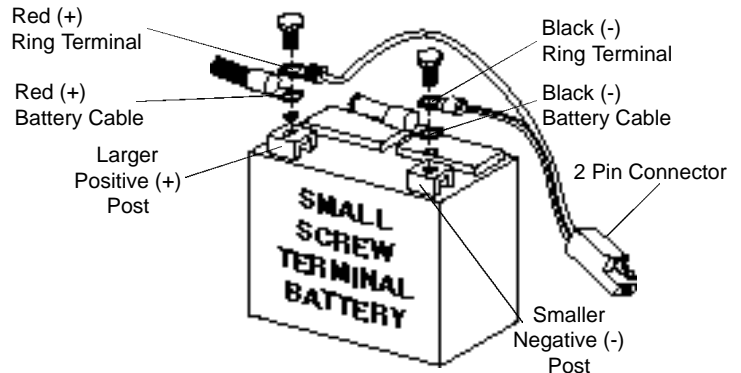
## FOR USE WITH PERMANENT RING TERMINALS



For batteries installed in vehicles or other equipment we have provided a lead set with ring terminals. Since many installed batteries are in space-restricted locations or compartments, these ring terminals (see illustration to left) have been designed to provide a safe and convenient connection. Follow these steps for connection and operation:

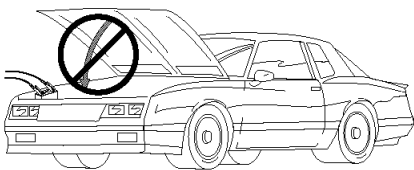
1. Check that the Battery Extender is **NOT** plugged in to an AC outlet before connecting the ring terminals to the battery.
2. Locate the positive (+) terminal post of the battery, it is usually larger than the negative (-) terminal post. Connect the RED (+) ring terminal to this battery terminal.
3. Connect BLACK (-) ring terminal to negative (-) battery terminal.
4. Double check that the square two pin connector on the lead set is firmly plugged into the square output connector of the Battery Extender (see illustration in "FOR USE WITH SPRING CLIPS").
5. Secure the lead set out of the way of fan blades, belts, pulleys, and hot items like exhaust manifolds. Nylon ties work great in this situation.
6. Make sure the Battery Extender is safely located away from the battery and in a nonhazardous location.
7. Plug the AC cord in to a grounded outlet.

**NOTE:** Smaller batteries may have screws for terminals (see illustration to right). You may need to purchase smaller ring terminals for these applications. Do not connect ring terminals to anything but the battery. Other locations are hazardous.



## FOR USE WITH BATTERY CLIPS ON INSTALLED BATTERIES

You may use the spring clip lead set for installed batteries on a temporary basis. However, we do not recommend doing this for long term connections. The clips can accidentally come in contact with compartment covers, hoods, and other items that may cause dangerous high current shorts across the battery terminals. To temporarily connect the spring clips to an installed battery, follow these steps:

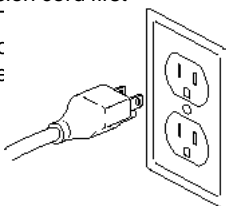


**WARNING:** Do not close hood, doors, or covers when using spring clips on installed batteries. This can cause dangerous high current shorting across the battery terminals.

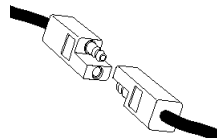
1. Check that the Battery Extender is **NOT** plugged in to an AC outlet before connecting the spring clips to the battery.
2. Locate the positive (+) terminal post of the battery, it is usually larger than the negative (-) terminal post. Connect the RED (+) spring clip to this battery terminal post.
3. Connect the BLACK (-) spring clip to a bolt or screw on the chassis or engine block. These should be heavy steel parts, not sheet metal. Do not connect to fuel lines, carburetor, or moving parts. Make this connection as far from the battery as the leads allow.
4. Plug in the AC cord, and observe the indicator lights for operation.

## PROPER DISCONNECT PROCEDURE

1. Always disconnect the AC extension cord first (if used). Then disconnect the AC power from the Battery Extender.



2. a) Disconnect the square two pin output connector for the ring terminal lead set as shown.



- b) For the spring clip lead set, always disconnect the BLACK (-) spring clip first and the RED (+) spring clip second.



3. If you accidentally disconnect the Battery Extender from the battery while it is in operation it will shut itself off in approximately one second. You must complete the disconnect procedure after this happens by performing steps 1 and 2.

## WHAT TO EXPECT FROM YOUR BATTERY EXTENDER!

### MAXIMIZES BATTERY LIFE

The Battery Extender is designed to maximize the life of a serviceable lead acid battery. A serviceable battery is a battery that is not defective or damaged. This means a vehicle battery will not give the annual dead battery surprise when it comes out of storage!

### PREVENTS PREMATURE BATTERY FAILURE

The Battery Extender keeps your battery at full charge on a continuous basis. Batteries not kept at a full charge become sulfated, which is the main reason for premature battery failure.

### MAINTAINS STORED BATTERIES AT FULL CHARGE

The Battery Extender should be used to charge and maintain all starting and deep cycle batteries in storage or that don't receive daily use. Some examples are: automobiles, boats, race cars, campers, RV's, 4 wheelers, motorcycles, personal water craft, farm machinery (tractors, combines, etc.), heavy equipment, rental equipment (trucks, compressors, portable signs, bulldozers, stationary pumps, etc.), and any equipment that receives occasional use or is in storage. The Battery Extender is also fully compatible with gelled electrolyte (gel-cell) batteries (sometimes used in place of liquid electrolyte batteries in many heavy duty applications). (DO NOT USE WITH DRY CELL, NICKEL CADMIUM, NICKEL METAL HYDRIDE OR SIMILAR BATTERIES. Refer to the enclosed instructions.)

**NOTE:** Never use the Battery Extender in a boat or water craft. Always remove the battery from the boat or water craft and use the Battery Extender on shore.

### VALUABLE PROTECTION

The Battery Extender provides full off-season protection for seasonally used batteries. It keeps your stored batteries ready for their next use. This means a serviceable battery will not give the annual dead battery surprise when it comes out of storage!

### PROTECTION FROM COMPUTER DRAIN

Cars are often equipped with computers that require continuous battery power to maintain data in memory. The Battery Extender's superior circuitry automatically delivers the correct charge to compensate.

### LONG LASTING PERFORMANCE

The Battery Extender has been designed and manufactured in America to provide superior performance from the High Tech housing to the last internal detail. Quality is built in and assured with circuit burn-in, computerized testing and inspection. Care in handling and occasional cleaning of the leads and housing will help keep it looking like new, and give you many years of satisfaction.

### Checks Each Battery's Condition

The Battery Extender will determine the worst batteries that are sulfated and that have bad cells. The battery can be replaced without unnecessary charging.

### Battery Warmer

The Battery Extender will keep a battery warm and ready for full use on cold days.

## OVERLOAD AND PROTECTIVE DEVICES

The Battery Extender is equipped with two overload protectors. In the event of minor overloads, power will be reduced to a safe level to allow continued use in maintenance mode only. The second protector will activate in the event of major overload and completely turn the unit off. The second protector is permanent and must be repaired at the factory.

## MAINTENANCE AND CLEANING

Always keep your Battery Extender clean and looking like new! Unplug the Battery Extender, and use a slightly dampened cloth to clean the housing and lead sets. Use no solvents or soaps.

## HOT TIP !

A clean battery and battery terminals insure proper operation of the Battery Extender and the vehicle charging system. Dirty terminals may put a constant slow drain on the battery. If your battery and terminals have a white or blueish crust on them, your charging system may be having problems. Have the vehicle electrical system checked by a qualified automotive service technician.

## MOUNTING

Mounting key holes are provided on both end caps of the unit. It is recommended that you mount the Battery Extender to a wall or other secure surface. This will keep it out of the way and prevent damage due to accidents. You may leave the screws slightly loose to allow easy removal through the key hole slot.

## ACCESSORIES AND REPLACEMENT PARTS

26 inch lead set with spring clips  
26 inch lead set with ring terminals

6' lead set with spring clips  
6' lead set with ring terminals

## WARRANTY AND SERVICE INFORMATION

Warranty and service claims sent to the Auto Meter service department must be transportation prepaid and accompanied with dated proof of purchase. This warranty applies only to the original retail purchaser and is non-transferable. Damage incurred during return shipments are not covered under this warranty. It is the responsibility of the shipper (the original retail purchaser returning the Battery Extender) to package the tester properly to prevent any damage during return shipment. Repair costs for such damages will be charged back to shipper (original retail purchaser returning Battery Extender). Protect the product and add plenty of packing/cushioning such as crumpled up newspaper.

## LIMITED WARRANTY (36 MONTHS FROM DATE OF PURCHASE)

Auto Meter warrants to the original retail purchaser that this product will be free from defects in material or workmanship for a period of thirty six (36) months from the date of original retail purchase. When Auto Meter determines a product failed due to defects in material or workmanship within this 36 month warranty period, the product will be repaired or replaced for the original retail purchaser only. This warranty is limited to the repair or replacement of parts in the Battery Extender and the necessary labor by Auto Meter to effect the repair or replacement of the Battery Extender. In no event shall Auto Meter be responsible for special, incidental or consequential damages or costs incurred due to the failure of this product. Improper use, accident, water damage, abuse, unauthorized repairs or alterations, but not limited to these acts, voids this warranty. Auto Meter disclaims any liability or consequential damages due to breach of any written or implied warranty on the Battery Extender, or any attempted service done by anyone other than Auto Meter.