



O P E R A T I N G I N S T R U C T I O N S

MB, MBXU Programmable Multi Bank Battery Chargers

INTRODUCTION:

These chargers are designed to charge multiple batteries independently. Each bank attaches to each battery, they are polarity protected, current limited, and programmable to charge deep cycle wet cells, starting batteries, gels, AGM's or lithium Ion.

SOME APPLICATIONS:

Battery Specialists, Electric Vehicles, Warehouses, Distributors, Fleet operators.

IMPORTANT: DO NOT USE THIS CHARGER UNTIL YOU HAVE READ ALL THE INSTRUCTIONS.

INITIAL INSTALLATION:

Before making AC connections, refer to the AC requirements labeled on the charger. If your charger is not equipped with an AC plug (*a 220 volt model*) have a qualified electrician install one.

▲ CAUTION: To reduce the risk of fire, use this charger only on circuits provided with a maximum of 25 ampere branch circuit protection (circuit breaker or fuse), in accordance with the National Electric Code, ANSI/NFPA 70, and all local codes and ordinances.

GROUNDING INSTRUCTIONS:

This battery charger must be grounded to reduce the risk of electric shock. If the charger is equipped with a grounding type plug, it must be plugged into a nominal 115 volt, 60 Hertz circuit. If the charger is supplied with no plug, have a qualified service person install one.

▲ WARNING: Improper connection of the equipment grounding conductor can result in risk of an electric shock. **DO NOT USE THIS CHARGER ON A TWO POLE UNGROUNDED OUTLET OR ATTEMPT TO BREAK OFF THE GROUND PRONG FOR USE ON A RECEPTACLE OR EXTENSION CORD NOT HAVING A GROUND.**

The use of an extension cord with this charger should be avoided. The use of an improper extension cord result in a risk of a fire or electric shock. If an extension cord must be used, make sure it is in good condition. Use a three conductor cord no smaller than 14 AWG. And keep it as short as possible. Locate all cords so that they will not be stepped on, tripped over, or otherwise subjected to damage or stress.

Do not operate this charger if it shows any signs of physical damage.

PROPER CARE AND USE OF BATTERIES:

⚠ CAUTION: Always wear protective eye shields and clothing when working with batteries. Batteries contain acids which can cause bodily harm. Do not put wrenches or other metal objects across the battery terminal or battery top. Arcing or explosion of the battery can result. Do not wear jewelry when working around batteries. Arcing can cause severe burns.

New deep cycle batteries will not deliver their full performance until after several cycles.

The tops of the batteries and battery hold downs must be kept clean and dry at all times to prevent excessive self discharge and flow of current between the battery post and frame.

Maintain the proper electrolyte level by adding water when necessary. Never allow the electrolyte level to fall below the top of the battery plates. Electrolyte levels fall during discharge and rise during charging. Therefore, to prevent the overflow of electrolyte when charging, add water ONLY AFTER the batteries have been fully charged DO NOT OVERFILL. Old batteries require more frequent additions of water than do new batteries.

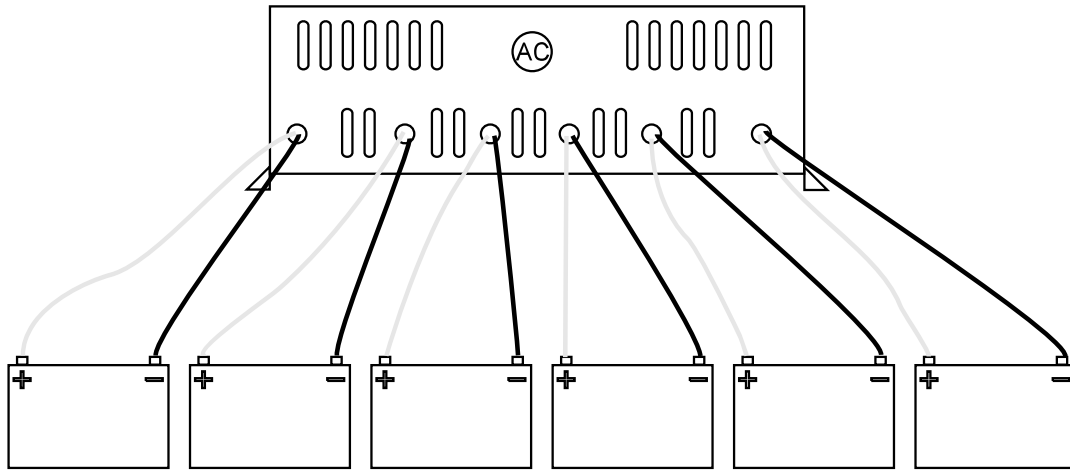
Do not over discharge the batteries. Excessive discharge can cause polarity reversal of individual cells resulting in complete battery failure.

⚠ WARNING: Chargers can ignite flammable materials and vapors. Do not use near fuels, grain, dust, solvents, or other flammable's.

⚠ CAUTION: Before connecting the charger to the batteries, make sure the battery pack is of the same voltage rating of the charger. If you are unsure, count the number of cells on the battery pack and multiply by two. This figure should be the same as the DC voltage rating of the charger. (*see ratings label on charger*).

Mount the charger in a space not subject to water or moisture. Provide adequate ventilation for the batteries and charger.

⚠ WARNING: Charger will become hot during charging especially the mounting plate. Do not obstruct the flow of cooling air around the charger. Provide at least 3" of space around charger. Do not allow clothing, blankets or other material to cover the charger. In cases where installation is in tight quarters such as a EV, a small muffin fan may be installed at the end of the charger to push air through it and help dissipate the heat. Connect the charger as shown below, connect one set of leads to each battery. White is positive, black is negative.



⚠ WARNING: Make sure the DC output leads, clamps, or connector are all in good working condition.

DO NOT USE THIS CHARGER IF:

The DC output clamps, or connector is loose, worn or does not make good contact; The leads are cut or have exposed wires; The DC output leads or connector/clamps feel hot when used.

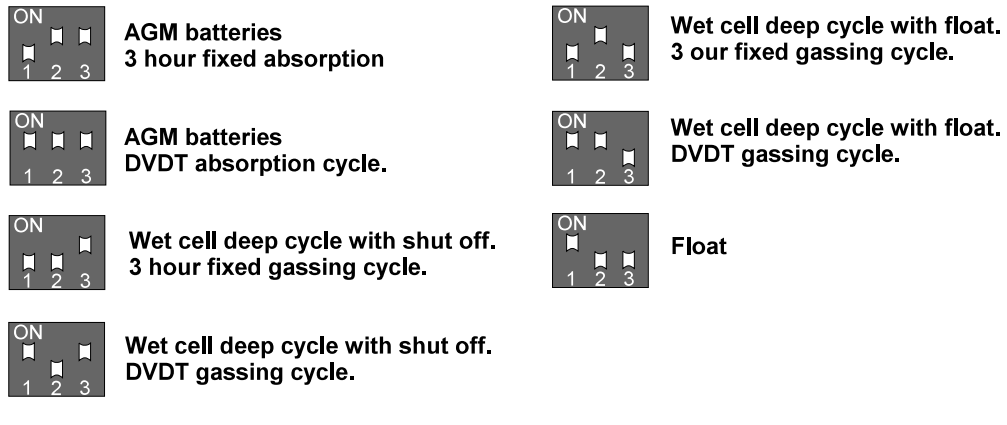
Using this charger with any of the above symptoms could result in a fire, property damage, or personal injury. Have a qualified service person make the necessary repairs. Repairs should not be made by people who are not qualified.

PRE CHARGE INFORMATION:

Your charger has been pre set at the factory. The setting is identified by a tag on the AC cord. If your batteries match this setting, then proceed to the NORMAL OPERATION section. If they are different, follow the next paragraph.

This charger uses an internal dip switch on each circuit board for programming different profiles for different battery types. It is important that the switch setting match the battery type you are charging, or damage to the battery could occur. Unplug and disconnect all power to the charger, remove cover and check switch setting before proceeding. The switch settings and their meanings are shown below.

LEFT TO RIGHT FACING BOARD



AGM batteries, Fixed absorption cycle: Batteries bulk charge up to 2.3 volts per cell where the absorption cycle initiates for 3 hours, the limit is 2.45 vpc. After 3 hours, the batteries drop into a an indefinite low float mode of 2.26 volts per cell.

AGM batteries, Proportional absorption cycle: Batteries bulk charge up to 2.3 volts per cell where the absorption cycle is initiated, it is 50% of the time it took to reach 2.3vpc; for example, if it took 5 hours to reach 2.3, absorption will be 2.5 hours. If it takes only a few minutes, the charger will shut off quickly indicating that the batteries are already fully charged Voltage is limited to 2.45 vpc during absorption, followed by an indefinite low float mode of 2.26 vpc.

Wet cell deep cycle with shut off. Fixed gassing cycle: Batteries bulk charge up to 2.3 volts per cell where the gassing cycle initiates for 3 hours, the limit is 2.55 vpc. After 3 hours, the charger shuts off.

Wet cell deep cycle with shut off. Proportional gassing cycle: Batteries bulk charge up to 2.3 volts per cell where the gassing cycle is initiated, it is 50% of the time it took to reach 2.3vpc; for example, if it took 5 hours to reach 2.3, gassing will be 2.5 hours. If it takes only a few minutes, the charger will shut off quickly indicating that the batteries are already fully charged Voltage is limited to 2.55 vpc during gassing, followed by an indefinite low float mode of 2.26 vpc.

Wet cell deep cycle with float. Fixed gassing cycle: Batteries bulk charge up to 2.3 volts per cell where the gassing cycle initiates for 3 hours, the limit is 2.55 vpc. After 3 hours, the batteries drop into a an indefinite low float mode of 2.26 volts per cell.

Wet cell deep cycle with float. Proportional gassing cycle: Batteries bulk charge up to 2.3 volts per cell where the gassing cycle is initiated, it is 50% of the time it took to reach 2.3vpc; for example, if it took 5 hours to reach 2.3, gassing will be 2.5 hours. If it takes only a few minutes, the charger will shut off quickly indicating that the batteries are already fully charged Voltage is limited to 2.55 vpc during gassing, followed by an indefinite low float mode of 2.26 vpc.

Whether you use a fixed, or proportional gas/absorption cycle is discretionary, either will work fine. The proportional mode allows the charger to use it's logic to sense if the battery is 80% charged or better, and refuse the charge cycle.

NORMAL OPERATION:

- 1). Plug the charger into AC power having the same ratings of charger.
- 3). For 5 seconds the LED's will flash red.
- 4). After each circuit starts, the LED will stay on steady red indicating the battery is below 80% charge. At 80% charged, the LED's will turn yellow. When the battery is fully charged, the LED will turn green. If the profile is set to one with a float mode the green LED will flicker, If set to shut off mode it will be steady.

Recycling: If the charger is left connected, and is set to “*wet cell deep cycle with shut off*”, once a week, and every week, the charger will test the battery. If the volts per cell is 2.10 or lower, The charger will turn on and run a cycle.

- 5). To discontinue charging, unplug AC power.

TROUBLE SHOOTING:

⚠ CAUTION: Do not disassemble charger without prior instruction from the factory. Incorrect assembly may result in a risk of electric shock or fire.

⚠ DANGER: To reduce the risk of electric shock, always disconnect both the AC power supply cord and the output leads or connector before attempting any maintenance cleaning.

1). SOME CIRCUITS DON'T COME ON:

Each circuit is internally fused, one may have blown, remove cover to inspect.

Each circuit is modular in design and is designed to be field replaceable. If the fuse checks good, the transformer, circuit board assembly may be removed and a new one installed.

2). NO POWER IS PRESENT ACROSS THE DC LEADS WHEN A VOLT METER IS CONNECTED

Good. The charger will not turn on until the clamps are connected to the battery.

3). BATTERIES DON'T RECEIVE FULL CHARGE

a.) The battery you are charging may be too large for the charger.

b) If you have the charger plugged into a long extension cord that is too small, a voltage drop will cause a decrease in charger output, extending charge times.

c) Wrong profile selected

4). THE LED FLASHES ALTERNATING GREEN RED, AND NO OUTPUT

The charger is connected reverse polarity to battery, or not connected to battery. Check connections.

5). THE LED FLASHES ALTERNATING YELLOW RED, AND NO OUTPUT

The battery voltage is too low to turn the charger on. Connect a fully charged battery to the dead battery to increase it's terminal voltage, once the charger comes on, the jumper battery may be disconnected.

QUICK CHARGE MB Battery Chargers
“LIMITED WARRANTY”

Quick Charge corporation warrants the MB line of chargers for three (3) years from the date of purchase.

After the warranty period, chargers returned to the factory for repair will be charged a minimum rate of \$25.00. Charger will be returned, freight and repair charges, C.O.D. unless other arrangements have been made

This warranty covers all defects in manufacture and performance, provided the unit is operated in compliance with manufacture's operating instructions.

For repairs to be made at the Quick Charge factory, a charger and/or component(s) should be sent, freight prepaid to Quick Charge at::

Quick Charge Corp.
1032 S.W . 22nd St.
Oklahoma City, OK. 73109

Quick Charge, will at it's option, repair or replace the charger or component in question. The repaired item will then be returned, freight prepaid by Quick Charge. This warranty is void if the charger or component have been altered, changed, or repaired by anyone not authorized by Quick Charge, or if the charger or component, have been subjected to misuse, negligence, or harsh environmental conditions. (Except those chargers designed for such conditions)

If returning the charger to the factory is not practical, replacement parts may be shipped to the customer for field repair at no charge. On parts such as circuit boards, the customer will be required to return the board suspected to be defective to Quick Charge, freight prepaid. If such defective parts are not returned, the customer will be invoiced for the repair parts.

Field repairs are made at the user's own risk. "Authorization" by Quick Charge to repair refers to maintaining the warranty only. Quick Charge assumes no responsibility or liability for field servicing, and shall not be responsible for incurred travel or labor charges.

Quick Charge corporation shall not in any event be liable for the cost of any special, indirect or consequential damages to anyone, product or thing.

This warranty is in lieu of all other warranties expressed or implied. Quick Charge neither assumes nor authorizes any representative or other person to assume for us any liability in connection with the sale of this product.