

POWERTECH

MB3904

8 Step Intelligent Lead Acid and Lithium Battery Charger



Instruction Manual

IMPORTANT SAFETY INSTRUCTIONS:

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE

Charging Modes

The MB3904 has eight (8) modes. The Lithium and Recover charge modes require the mode button to be pressed and held for three (3) seconds to enter the enhanced mode. These "Enhanced" modes require your full attention before selecting.

NEVER USE RECOVER MODE ON LITHIUM IRON PHOSPHATE BATTERIES.

Do not operate the charger until you confirm the appropriate charge mode for your battery.

Below is a brief description:

12V NORM

For charging 12-volt Flooded, Gel, Maintenance-Free batteries.

14.5V	3.8A	12-120Ah Batteries
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12V NORM COLD/AGM

For charging 12-volt batteries in cold temperatures below 50°F (10°C) or AGM batteries. When selected, the LED will illuminate.

14.7V	3.8A	12-120Ah Batteries
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12V SMALL

For charging 12-volt Flooded, Gel, Maintenance-Free batteries. When selected, the LED will illuminate.

14.5V	900mA	1.2-12Ah Batteries
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6V NORM

For charging 6-volt Flooded, Gel, Maintenance-Free batteries. When selected, the LED will illuminate.

7.3V	3.8A	12-120Ah Batteries
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6V COLD/AGM

For charging 6-volt batteries in cold temperatures below 50°F (10°C) or AGM batteries.

7.4V	3.8A	12-120Ah Batteries
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12.8V LITHIUM (Press & Hold Mode)

For charging 12.8-volt lithium iron phosphate batteries. When selected, the LED will illuminate.

14.5V	3A	8-50Ah Batteries
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12V RECOVER (Press & Hold Mode)

For recovering and repairing and storing, old, idle, damaged stratified or sulfated Flooded, Gel, Maintenance-Free Lead Acid batteries. When selected, the LED will illuminate.

NEVER USE RECOVER MODE ON LITHIUM BATTERIES.

14.8V	2A	1.2-120Ah Batteries
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PRODUCT SPECIFICATIONS:

Input:	220-240V AC 50 Hz 0.6A
Output:	12V DC 3.8A / 0.9A
	6V DC 3.8A
	12.8V DC 3.0A

Charges:

1. 6/12V Lead Acid Flooded, Gel, Maintenance-Free, AGM Batteries
 - 12V Small Mode: 1.2Ah-12Ah
 - 6/12V Normal Mode: 12Ah-120Ah
2. 12.8V Lithium Iron Phosphate (LiFePO₄) 8Ah-50Ah

PREPARING TO CHARGE:

- a. If necessary to remove battery from vehicle to charge, always remove grounded terminal from battery first. Make sure all accessories in the vehicle are off, so as not to cause an arc.
- b. Be sure area around battery is well ventilated while battery is being charged.
- c. Clean battery terminals. Be careful to keep corrosion from coming in contact with eyes.
- d. Study all battery manufacturer's specific precautions while charging and recommended rates of charge.
- e. Determine voltage of battery by referring to car owner's manual and make sure that the output voltage selector switch is set at correct voltage. If charger has adjustable charge rate, charge battery initially at lowest rate.

CONNECTING TO BATTERY:

- a. Set any charger switches to "off" position and remove ac cord from electric outlet before connecting or disconnecting DC output clamps or eyelets. Never allow clamps or eyelets to touch each other.
- b. Identify the correct polarity of the battery terminals. The positive battery terminal is typically marked with (POS, P, +). The negative terminal is typically marked with (NEG, N, -).
- c. Position cords and cables to reduce risk of damage by hood, door or moving parts (including fan blades, belts, and pulleys) or other parts that could cause injury to persons.
- d. Do not connect to carburetor, fuel lines, or sheet-metal body parts.
- e. Determine which post of battery is grounded (connected) to the chassis. If negative post is grounded to the chassis (as in most vehicles) see (f). If positive post is grounded to the chassis, see (g).
- f. For Negative-grounded vehicle, connect POSITIVE (RED) clamp from battery charger to POSITIVE (POS, P, +) post of battery. Connect NEGATIVE (BLACK) clamp from battery charger to the NEGATIVE (NEG, N, -) post of battery.
- g. For Positive grounded vehicle, connect NEGATIVE (BLACK) clamp from battery charger to NEGATIVE (NEG, N, -) post of battery. Connect POSITIVE (RED) clamp from battery charger to the POSITIVE (POS, P, +) post of battery.
- h. When disconnecting charger, turn switches to off, disconnect AC cord, remove connectors in reverse sequence from connecting procedure.

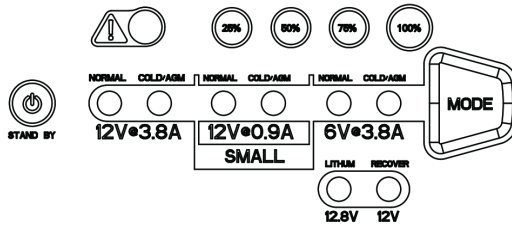
CHARGING:

The battery charger must be connected to the battery according to the instructions mentioned previously.

Starting the charging process:

1. Once you have established that the battery clamps or eyelets have been correctly connected, you can start the charging process. To do so, insert the charger plug into the AC socket.
2. The charger will start in Standby mode, indicated by the STAND BY LED.
3. Press the mode button to select the appropriate charge mode (press and hold for three seconds to enter an enhanced charge mode) for the voltage and chemistry of your battery. The selected charge mode LED will illuminate.

LED DISPLAY:



The state-of-charge (SOC) LED display has four (4) SOC indicators.

LED	Explanation
25% Red LED	The LED will flash when the battery is less than 25% charged. When the battery is 25% charged, the LED will be solid.
50% Orange LED	The LED will flash when the battery is less 50% charged. When the battery is 50% charged, the LED will be solid.
75% Yellow LED	The LED will flash when the battery is less 75% charged. When the battery is 75% charged, the LED will be solid.
100% Green LED	The LED will flash when the battery is less than 100% charged. When the battery is 100% charged, the LED will be solid.

ERROR DIAGNOSTICS:

Error conditions are indicated in the LED display.

Error	Reason/Solution	
Solid Red LED	Standard Charging Mode	The battery is not accepting a charge. Change charge mode to Recovery Mode.
	Recovery Mode	The battery cannot be recovered.
Flashing Yellow LED	Battery capacity is too high for the selected mode. Verify the battery capacity and charge mode.	
Solid Yellow LED	Battery voltage is too high or too low for the selected mode. Verify the battery voltage and charge mode.	
Flashing Red LED	Reverse polarity. Reverse the battery connections.	

WARNINGS:

- 1.** For indoor use ONLY!
- 2.** Do not charge non-rechargeable batteries.
- 3.** Use this charger with 6V or 12V Lead Acid battery only
- 4.** During charging the battery must be placed in well ventilated area.
- 5.** The battery is to be disposed of safely.
- 6.** This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
- 7.** Children should be supervised to ensure that they do not play with the appliance.
- 8.** If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer or its services agent.
- 9.** Disconnect the supply before making or breaking connections to the battery.
- 10.** The battery terminal not connected to the chassis has to be connected first. The other connection is to be made to the chassis, remote from the battery and fuel line. The battery charger is then to be connected to the supply mains.
- 11.** After charging, disconnect the battery charger from the supply mains. Then remove the chassis connection and then the battery connection.
- 12.** The battery charger is not intended for use in electric vehicles.

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