

Mroinge MBC022

Mroinge MBC022 12V 2A Battery Charger & Maintainer User Manual

Model: MBC022

INTRODUCTION

The Mroinge MBC022 is an automatic trickle battery charger and maintainer designed for 12V lead-acid batteries (SLA, AGM, Gel, Wet) and 12V Lithium (LiFePO₄) batteries. It provides a 2A charging current and is suitable for batteries with capacities between 5-85Ah. This device ensures optimal battery life and performance through its 5-stage smart charging process and multi-level safety protections.

IMPORTANT SAFETY INFORMATION

- Read all instructions before using the charger.
- Use the charger in a well-ventilated area.
- Do not expose the charger to rain or wet conditions.
- Ensure the charger is disconnected from the AC power outlet before making or breaking connections to the battery.
- Always disconnect the battery before changing the charge mode (Lead Acid or Lithium).
- Avoid charging frozen batteries.
- Keep out of reach of children.
- This charger is designed for 12V batteries only. Do not attempt to charge other voltage batteries.
- Wear eye protection and gloves when working with batteries.
- In case of contact with battery acid, flush immediately with water.

PRODUCT COMPONENTS

The Mroinge MBC022 battery charger includes the following components:

- Mroinge MBC022 Smart Battery Charger Unit
- Alligator Clips (2ft cord length)
- O-ring Terminals (2ft cord length)
- SAE Quick Disconnect Harness (10ft DC cord length)



All included components of the Mroinge MBC022 battery charger, including the main unit, alligator clips, O-ring terminals, and SAE quick disconnect harness.

SPECIFICATIONS

Feature	Detail
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Model Number	MBC022
Input Voltage	100-120VAC, 60Hz, 0.6A
Output Voltage	12V DC
Output Current	2A
Battery Types	12V Lead Acid (SLA, AGM, Gel, Wet), 12V Lithium (LiFePO4)
Battery Capacity Range	5-85Ah
Charging Stages	5-stage (Initialization, Trickle Current, Bulk Charge, Absorption Mode, Float Mode)
Safety Protections	Spark proof, reverse polarity, overcharging, short-circuit, over-temperature, dust resistance
Dimensions	2.32"D x 3.78"W x 1.42"H
Item Weight	0.35 Kilograms (12.3 ounces)
Output Cord Length	12 feet (total, including SAE quick disconnect)



Detailed view of the Mroinge MBC022 charger's LED indicators and physical dimensions.

SETUP INSTRUCTIONS

- 1. Identify Battery Type:** Determine if your battery is a 12V Lead Acid (SLA, AGM, Gel, Wet) or a 12V Lithium (LiFePO4) battery.
- 2. Select Charge Mode:** On the charger unit, press the **MODE** button to select the appropriate battery type. The corresponding LED (Lithium or Lead Acid) will illuminate. *Ensure the charger is disconnected from AC power before changing the mode.*
- 3. Connect to Battery:** Choose either the alligator clips or O-ring terminals based on your battery's connection points.

Connect the red (+) clip/terminal to the positive (+) battery terminal and the black (-) clip/terminal to the negative (-) battery terminal. Ensure a secure connection.

4. **Connect to AC Power:** Plug the charger's AC power cord into a standard 100-120VAC wall outlet.
5. **Verify Connection:** The charger's status indicator will light up, indicating the charging process has begun.

Trickle Battery Charger

12V 2000mA

Suitable 12V Normal Lead Acid, (SLA ATV WET AGM GEL CEL)
or 12V Lithium (LiFePO4) Battery Charging.
Between 5-85Ah.



The Mroinge MBC022 battery charger connected to a motorcycle, illustrating a typical charging setup.

Suitable For Most Vehicles Battery Charge



■ Maintenance Only



■ Will Charge



The Mroinge MBC022 charger connected to a 12V car battery, demonstrating the use of alligator clips for charging.

OPERATING INSTRUCTIONS

LED Indicator Lights:

FLASHING RED: Not charging battery (e.g., bad battery, wrong connection).

SOLID RED: Battery is charging.

FLASHING GREEN: Battery is charged greater than 80%.

SOLID GREEN: Battery is fully charged.

Charging Process (5-Stage Smart Charging):

The MBC022 charger utilizes a 5-stage charging process to optimize battery performance and longevity:

1. **Initialization:** Checks battery condition and voltage.

2. **Trickle Current:** Applies a small current to deeply discharged batteries to safely bring them to a recoverable voltage.
3. **Bulk Charge:** Charges the battery at maximum current until it reaches approximately 80% capacity.
4. **Absorption Mode:** Charges at a decreasing current to bring the battery to 100% capacity.
5. **Float Mode:** Maintains the battery at full charge with a low, constant voltage, preventing overcharging and sulfation.



Detailed view of the Mroinge MBC022 charger's LED indicators and their corresponding charging states.

MAINTENANCE

- Keep the charger clean and dry. Wipe with a soft, damp cloth if necessary.

- Inspect cables and connectors regularly for any damage. Do not use if damaged.
- Store the charger in a cool, dry place when not in use.
- For optimal battery life, ensure battery terminals are clean and free of corrosion before connecting the charger.

TROUBLESHOOTING

Problem	Possible Cause	Solution
Charger not turning on / No LED indication	No AC power; Faulty outlet; Damaged charger.	Check AC power connection and outlet. Try a different outlet. Inspect charger for damage.
FLASHING RED LED	Incorrect battery connection (reverse polarity); Battery voltage too low; Bad battery.	Verify correct polarity (+ to +, - to -). Ensure battery voltage is above 2V for Lead Acid or has low voltage activation for LiFePO4. If the issue persists, the battery may be faulty.
Charging takes too long	Deeply discharged battery; Large battery capacity.	Charging time varies with battery state and capacity. Allow sufficient time.
Charger gets warm	Normal operation during charging.	This is normal. Ensure adequate ventilation around the charger. If it becomes excessively hot, disconnect immediately.

PRODUCT VIDEOS

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Video 1: Product Overview (0:49) - This video provides a general overview of the Mroinge MBC022 battery charger and its key features.

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Video 2: Setup and Connection Guide (1:23) - A visual guide demonstrating how to set up and connect the Mroinge MBC022 charger to a battery.

WARRANTY AND SUPPORT

The Mroinge MBC022 battery charger comes with a **2-year warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use.

For technical support, warranty claims, or any questions regarding your Mroinge product, please contact Mroinge customer service through the retailer where the product was purchased or visit the official Mroinge website for contact information.

