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› Mastervolt Mass 24/50-2 Battery Charger User Manual

## Mastervolt 40020506

# Mastervolt Mass 24/50-2 Battery Charger User Manual

Model: 40020506

## 1. INTRODUCTION

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This manual provides essential information for the safe and efficient operation of your Mastervolt Mass 24/50-2 battery charger. The Mass 24/50-2 is a robust 24 V battery charger designed for demanding marine and industrial applications. It delivers up to 50 A of total charging current and features two battery outputs for managing multiple battery banks. The unit incorporates automatic multi-stage charging and comprehensive protection mechanisms to ensure reliable and efficient power support.

## 2. SAFETY INSTRUCTIONS

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Read all safety instructions carefully before installation and operation. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Always disconnect the AC power supply before performing any installation, maintenance, or troubleshooting.
- Ensure proper ventilation around the charger to prevent overheating.
- Do not expose the charger to rain, moisture, or excessive dust.
- Use appropriate personal protective equipment (PPE) when working with batteries and electrical systems.
- Ensure all electrical connections are tight and secure to prevent arcing and overheating.
- This device is designed for use with 24V battery systems only. Do not connect to other voltage systems.
- Keep children and unauthorized personnel away from the charger and battery area.

## 3. PRODUCT OVERVIEW

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The Mastervolt Mass 24/50-2 battery charger features a durable construction suitable for harsh environments. Key components include power terminals, communication ports, and configuration switches.



Figure 1: Connection Panel of the Mastervolt Mass 24/50-2

This image displays the various connection points on the Mastervolt Mass 24/50-2. Visible are the DIP switches labeled '4321' for configuration, RJ45 ports for 'RS485', 'RS232', 'ANALOG', and 'TEMP.SENSOR' communication, and a green terminal block for remote sensing or control labeled '+S', '-S', 'NO', 'C', 'NC'. Additionally, a '+3A' terminal and two large screw terminals for main power connections are shown.

## Key Features:

- 24 V output voltage.
- 50 A total charging current.
- Two independent battery outputs.
- Automatic multi-stage charging for optimal battery health.
- Robust design for marine and industrial use.
- Integrated protections against overvoltage, overcurrent, and short circuits.
- Communication interfaces: RS485, RS232, Analog, Temperature Sensor input.

## 4. SETUP

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## 4.1. Mounting

Mount the charger in a dry, well-ventilated area, away from direct sunlight and heat sources. Ensure sufficient clearance around the unit for airflow. The charger is designed to be waterproof and shakeproof, making it suitable for challenging environments, but proper mounting is still crucial for optimal performance and longevity.

## 4.2. Electrical Connections

1. **Battery Connections:** Connect the main battery bank to the large screw terminals marked with '+' and '-' symbols. Ensure correct polarity. If using the second output, connect the secondary battery bank as per the wiring diagram in the full product manual.
2. **AC Input:** Connect the AC power supply cable to the designated AC input terminals. Ensure the AC supply matches the charger's input voltage requirements.
3. **Temperature Sensor:** Connect the optional temperature sensor to the 'TEMP.SENSOR' port. This allows the charger to adjust charging voltage based on battery temperature, optimizing charging and extending battery life.
4. **Remote Sensing/Control:** Utilize the green terminal block ('+S', '-S', 'NO', 'C', 'NC') for remote voltage sensing or control functions as required by your system setup. Refer to the detailed wiring diagrams for specific applications.
5. **Communication Ports:** Connect RS485 or RS232 communication cables to the respective RJ45 ports for integration with monitoring systems or other Mastervolt devices.
6. **DIP Switches:** The DIP switches labeled '4321' are used for configuring specific charger settings, such as battery type or charging profile. Consult the comprehensive product manual for detailed instructions on DIP switch settings relevant to your battery type and application.

## 5. OPERATING

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The Mastervolt Mass 24/50-2 operates automatically once properly installed and powered. It employs an advanced multi-stage charging process to ensure batteries are charged efficiently and safely.

- **Power On:** After all connections are secure, apply AC power to the charger. The charger will initiate its startup sequence.
- **Charging Stages:** The charger automatically progresses through various charging stages (e.g., bulk, absorption, float) to optimize battery charging.
- **Monitoring:** Monitor the charger's status indicators (if present, refer to the full manual for indicator descriptions) or connected monitoring systems for charging status and battery health.

## 6. MAINTENANCE

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Regular maintenance ensures the longevity and optimal performance of your Mastervolt Mass 24/50-2 charger.

- **Cleaning:** Periodically clean the exterior of the charger with a dry, soft cloth. Do not use abrasive cleaners or solvents. Ensure ventilation openings are free from dust and debris.
- **Connection Checks:** Annually, or more frequently in harsh environments, inspect all electrical connections for tightness and corrosion. Tighten any loose connections.
- **Battery Inspection:** Regularly inspect your batteries for signs of damage, corrosion, or electrolyte leakage. Follow battery manufacturer's maintenance guidelines.

## 7. TROUBLESHOOTING

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If you encounter issues with your Mastervolt Mass 24/50-2, refer to the following basic troubleshooting steps. For complex problems, consult the full product manual or contact Mastervolt support.

- **Charger Not Powering On:** Check the AC power supply, circuit breakers, and all AC input connections.
- **No Charging Output:** Verify battery connections and polarity. Ensure the charger is receiving AC input. Check for any error indicators on the unit.
- **Overheating:** Ensure adequate ventilation around the charger. Clear any obstructions from cooling vents. Reduce load if possible.
- **Unusual Noises or Smells:** Immediately disconnect power and contact qualified service personnel.

## 8. SPECIFICATIONS

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Specification	Value
Brand	Mastervolt
Model Number	40020506
Output Voltage	24 V
Charging Current	50 A
Number of Outputs	2
Material	Plastic
Item Weight	8.4 Pounds (3.8 kg)
Product Dimensions (L x W)	18"L x 14"W (45.7 cm x 35.6 cm)
Special Features	Waterproof, Shakeproof
Mounting Type	Tabletop Mount (can be adapted for other mounts)
UPC	852968002745

## 9. WARRANTY AND SUPPORT

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The Mastervolt Mass 24/50-2 comes with a manufacturer's warranty. For specific warranty terms and conditions, please refer to the warranty documentation included with your product or visit the official Mastervolt website. For technical support, service, or further inquiries, please contact Mastervolt customer service or your authorized dealer.