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Tecmate TM-181

TECMATE OptiMATE 6 Ampmatic Battery Charger Instruction Manual

Model: TM-181 Brand: Tecmate

INTRODUCTION

The OptiMATE 6 Ampmatic is a sophisticated 9-step 12V 5A sealed battery saving charger and maintainer designed to optimize the performance and lifespan of various 12V lead-acid batteries, including AGM, GEL, and STD types. This microprocessor-controlled device automatically diagnoses, recovers, charges, tests, and maintains your battery, ensuring it remains in optimal condition.

It is engineered to save deeply discharged batteries, provide continuous charging tailored to battery size, and offer 24/7 protection against discharge, making it suitable for motorcycles, cars, trucks, marine craft, and RVs.

SAFETY INFORMATION

Always read and understand all safety warnings and instructions before using the OptiMATE 6 Ampmatic charger. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Use the charger only for 12V lead-acid batteries (AGM, GEL, STD, Starter, Deep Cycle). Do not use for lithium batteries.
- Ensure proper ventilation during charging. Do not operate in a confined area or restrict ventilation.
- · Avoid open flames or sparks near the battery. Batteries can produce explosive gases.
- Wear eye protection and protective clothing when working with batteries.
- Disconnect the AC power before making or breaking the connections to the battery.
- Do not expose the charger to rain or excessive moisture. The unit is fully sealed but not designed for submersion.
- Keep out of reach of children.
- If the battery is frozen, do not charge it. Allow it to thaw first.

WHAT'S IN THE BOX

Upon opening the package, verify that all components are present:

- OptiMATE 6 Ampmatic Battery Charger Unit
- Battery Lead (with SAE connector)
- Battery Clips (alligator clamps)
- Eyelet Terminal Connector (for permanent connection)



Image: The OptiMATE 6 Ampmatic charger shown with its standard accessories, including the main unit, power cord, battery clip leads, and permanent eyelet terminal leads.

SETUP

Before connecting the charger, ensure the battery is clean and free of corrosion. If necessary, clean the battery terminals.

1. Choose Connection Method:

- **Battery Clips:** For temporary connections. Connect the red clip to the positive (+) battery terminal and the black clip to the negative (-) battery terminal.
- **Eyelet Terminal Connector:** For permanent connection to the battery, ideal for long-term maintenance. Secure the red eyelet to the positive (+) terminal and the black eyelet to the negative (-) terminal.

2. Connect to Battery:

Ensure the charger is NOT plugged into AC power during this step.



Image: The OptiMATE 6 Ampmatic connected to a small 12V battery using the provided battery clips, demonstrating a typical setup.

For in-vehicle batteries, connect the positive (+) lead first, then the negative (-) lead to the battery or a chassis ground point away from the battery. If disconnecting, reverse the order.

3. **Connect to AC Power:** Plug the charger's AC cord into a standard wall outlet. The charger will automatically begin its diagnostic and charging process.

OPERATING INSTRUCTIONS

The OptiMATE 6 Ampmatic operates through a fully automatic 9-step program. The LEDs on the unit indicate the current stage of the charging process.



Image: A detailed view of the OptiMATE 6 Ampmatic's top panel, showing the various LED indicators for Test, Save, Charge, and Maintain stages, along with battery type selection.

Charging Process (9 Steps)

- 1. Pre-qualification: Checks battery voltage and polarity.
- 2. Save (0.5V+): Recovers severely discharged batteries from as low as 0.5V.
- 3. Ampmatic Charge: Delivers current based on battery size and condition, up to 5A.
- 4. **Absorption:** Brings the battery to full charge.
- 5. Voltage Retention Test: Monitors battery voltage without charging to detect internal issues.
- 6. Charge Retention Test: Checks battery's ability to hold charge.
- 7. Maintain (Float): Provides a constant, low-current charge to keep the battery topped off.
- 8. **Pulse Maintenance:** Delivers small pulses of charge to prevent self-discharge during long-term connection.
- 9. Battery Health Test: Periodically re-tests the battery to ensure it remains healthy.

LED Indicators

LED Indicator	Meaning	
Green (Test)	Battery is undergoing initial testing or voltage retention test.	
Red (Save)	Battery is deeply discharged and undergoing recovery.	
Yellow (Charge)	Battery is actively charging.	
Green (Maintain)	Battery is fully charged and in maintenance mode.	
Red/Yellow/Green (Test/Maintain)	Indicates battery health during maintenance. Green is excellent, Yellow is good, Red indicates a weaker battery.	
Reverse Polarity / Fault	Indicates incorrect connection or a severe battery fault.	

The charger will automatically proceed through these steps. Once the green "Maintain" LED is solid, the battery is fully charged and can be left connected for long-term maintenance.

MAINTENANCE

The OptiMATE 6 Ampmatic is designed for minimal maintenance. However, proper care will ensure its longevity and optimal performance.

- Cleaning: Disconnect the charger from AC power and the battery before cleaning. Wipe the unit with a dry or slightly damp cloth. Do not use harsh chemicals or abrasive cleaners.
- Storage: Store the charger in a cool, dry place when not in use. Keep cables neatly coiled to prevent damage.
- Cable Inspection: Periodically inspect the AC cord, battery leads, and connectors for any signs of damage, fraying, or corrosion. Do not use the charger if any part is damaged.

Troubleshooting

If you encounter issues with your OptiMATE 6 Ampmatic, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No LEDs light up.	No AC power; faulty connection.	Check AC outlet and ensure charger is securely plugged in. Verify battery connections.
Reverse polarity LED (if present) or fault indicator lights up.	Incorrect battery connection (positive to negative, etc.).	Disconnect from AC power, then correct the battery connections (red to +, black to -). Reconnect AC power.
Charger stays in "Save" mode for a long time.	Battery is deeply discharged or heavily sulfated.	This is normal for very flat batteries. Allow the charger to continue. If it doesn't progress after 24 hours, the battery may be beyond recovery.
Charger does not reach "Maintain" (Green) LED.	Battery may have an internal fault or short circuit.	The charger's test function may indicate a faulty battery. Consider having the battery professionally tested or replaced.
Charger gets warm during operation.	Normal operation.	This is normal, especially during the bulk charging phase. Ensure adequate ventilation around the unit.

If problems persist after attempting these solutions, contact Tecmate customer support or refer to the full user manual available

SPECIFICATIONS

Feature	Detail
Model	TM-181
Input Voltage	100-240V AC, 50-60Hz
Output Voltage	12 Volts DC
Charging Current	5 Amps (Ampmatic)
Battery Types	12V Lead-Acid (STD, AGM, GEL, Deep Cycle)
Battery Capacity Range	3Ah to 240Ah
Recovery Voltage	Starts from 0.5V
Dimensions (Unit)	Approx. 12.28 x 7.05 x 3.35 inches
Item Weight	Approx. 3 pounds
Enclosure Rating	Fully sealed case (splash-proof)
Safety Compliance	CE certified

WARRANTY AND SUPPORT

For warranty information, technical support, or further assistance, please refer to the official Tecmate website or the full user guide provided with your product.

You can also find the official user guide PDF here.

For additional product information and support, visit the Tecmate Store on Amazon.

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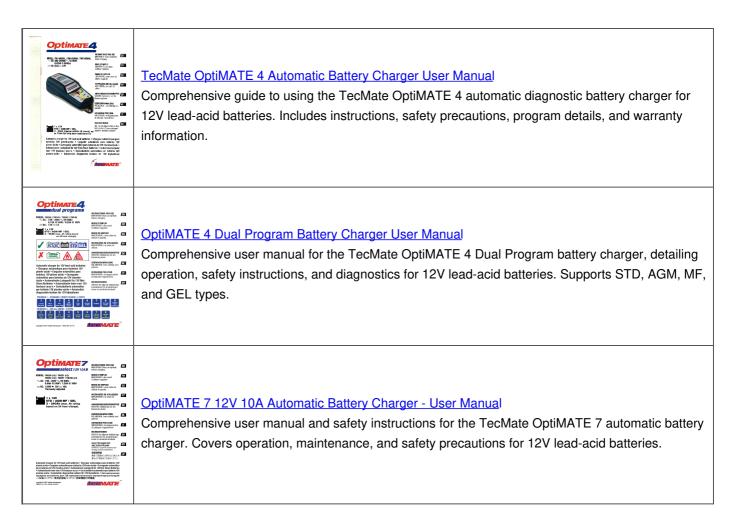
This manual is for informational purposes only. Specifications are subject to change without notice.

Related Documents



OptiMate 6 TM180 Automatic Battery Charger: User Manual and Instructions

Comprehensive user manual for the TecMate OptiMate 6 TM180 automatic 12V battery charger. Learn about safe operation, charging procedures, diagnostics, maintenance, and troubleshooting for lead-acid batteries.



Documents - Tecmate - TM-181



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