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### Tecmate TM-381

# OptiMate 6 12V/24V High Performance Battery Charger & Maintainer User Manual

Brand: Tecmate | Model: TM-381

## INTRODUCTION

The OptiMate 6 12V/24V is a smart, fully automatic battery charger and maintainer designed to optimize performance and extend the life of 12V and 24V deep cycle batteries in RVs, marine crafts, and also suitable for starter batteries in cars, pickup trucks, ATVs, or motorcycles. It features Ampmatic charge control with built-in temperature compensation, ensuring an optimal charge every time. The automatic 8-step program can save deeply discharged batteries and maintain them long-term.

## WHAT'S IN THE BOX

- OptiMate 6 Battery Charger
- Battery Clips
- Battery Lead



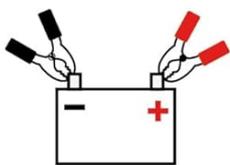
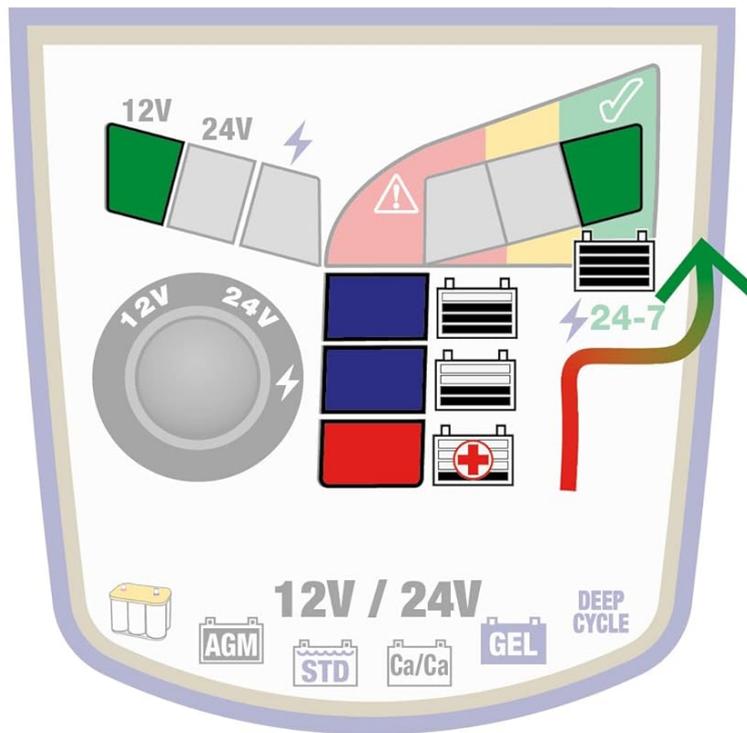
Image: The OptiMate 6 charger unit shown with its included battery clips and permanent battery lead accessories.

## SETUP AND CONNECTION

Before connecting, ensure the charger is unplugged from the AC power outlet. Connect the battery clips or permanent battery lead to your battery terminals. The red clip/connector goes to the positive (+) terminal, and the black clip/connector goes to the negative (-) terminal. Once connected, plug the charger into a suitable AC power outlet.

# AUTOMATICALLY CHARGES FROM 0% to 100%

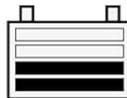
and tests the battery's state of health



0%



50%



75%



100%



Diagram: Connection methods for the OptiMATE 6, illustrating both battery clip and ring terminal connections to a battery.

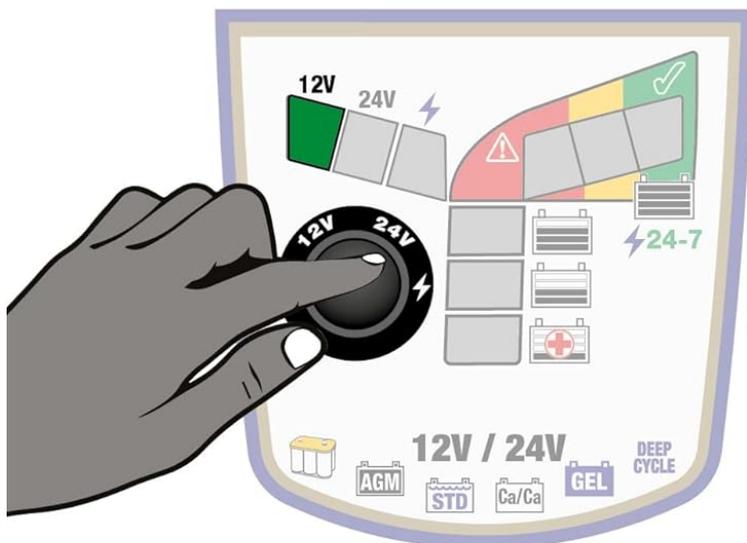
## OPERATING INSTRUCTIONS

### Automatic Charging and Maintenance

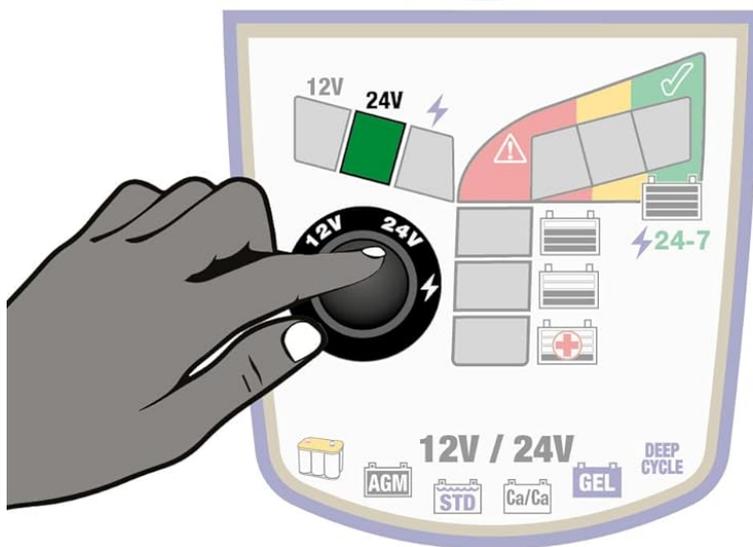
The OptiMATE 6 is a smart, fully automatic battery charger. It is designed for 24/7 use and can be left connected to the battery without fear of overcharging. The Ampmatic program automatically adjusts the charge current to match the battery size and condition. A larger battery receives more current, while a smaller battery receives less.

## VOLTAGE SELECTION

multiple selections to best charge your battery



### 12V



### 24V



Diagram: The Ampmatic system dynamically adjusts charging current based on the battery's size and condition.

### Temperature Compensation

Charging is also adjusted based on ambient temperature. When hot, the charge voltage is lowered. When cold, the voltage is adjusted higher to help the battery perform better.

# RECOVERS ALL DEEP DISCHARGED BATTERIES

smart recover retests after charge

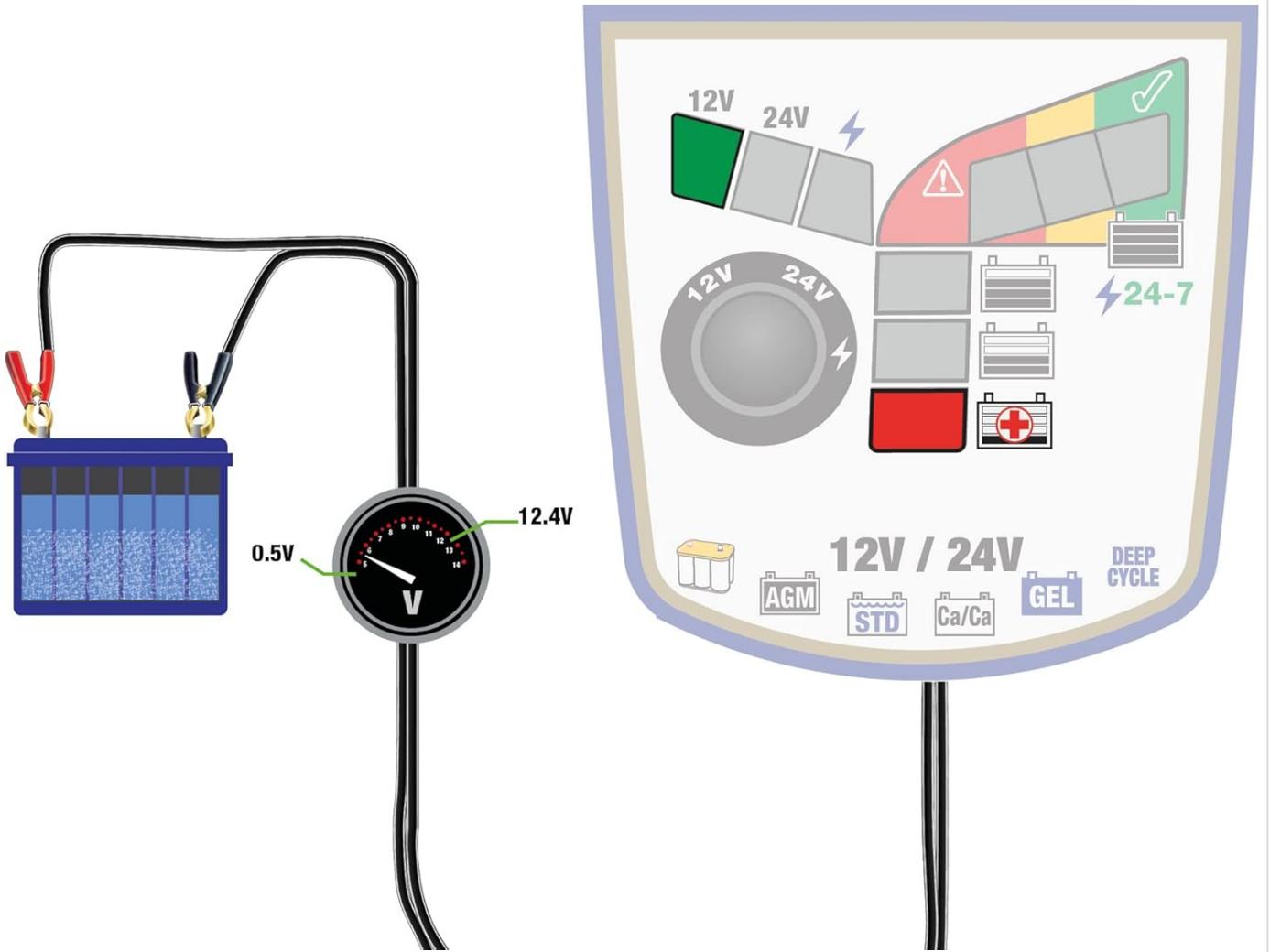


Diagram: The charger adjusts its voltage output based on ambient temperature to optimize charging performance.

## Voltage Selection

Two charge voltage selections are available for 12V and 24V lead-acid batteries. The default safe charge voltage is 14.4V for most 12V batteries or 28.8V for most 24V batteries. High-performance AGM or deep cycle batteries may require a higher charge voltage of 14.7V (for 12V) or 29.4V (for 24V). The selected mode remains in memory until a new selection is made.

# Optimate 6

12V 6A / 24V 3A

## ACCURATELY CHARGES LEAD-ACID BATTERIES

in performance vehicles with 12V & 24V systems



MEDICAL



SPORTS CAR



RV



BULLDOZER



MARINE



LIGHT AIRCRAFT

Diagram: The voltage selection dial allows users to choose between 12V and 24V charging modes.

## RECOMMENDED FOR DEEP CYCLE BATTERIES

that need to be charged specifically



### 12V Pb



### 24V Pb



Diagram: Recommended battery types for the OptiMate 6, including standard, AGM, GEL, Calcium-Calcium, and deep cycle batteries.

### Charge Progress Indication

The LED panel indicates charge progress. Charging always starts at the 25% or 50% level. A battery with more charge will progress quicker.

# DELIVERS MAINTENANCE CHARGE

safe to leave connected 24-7

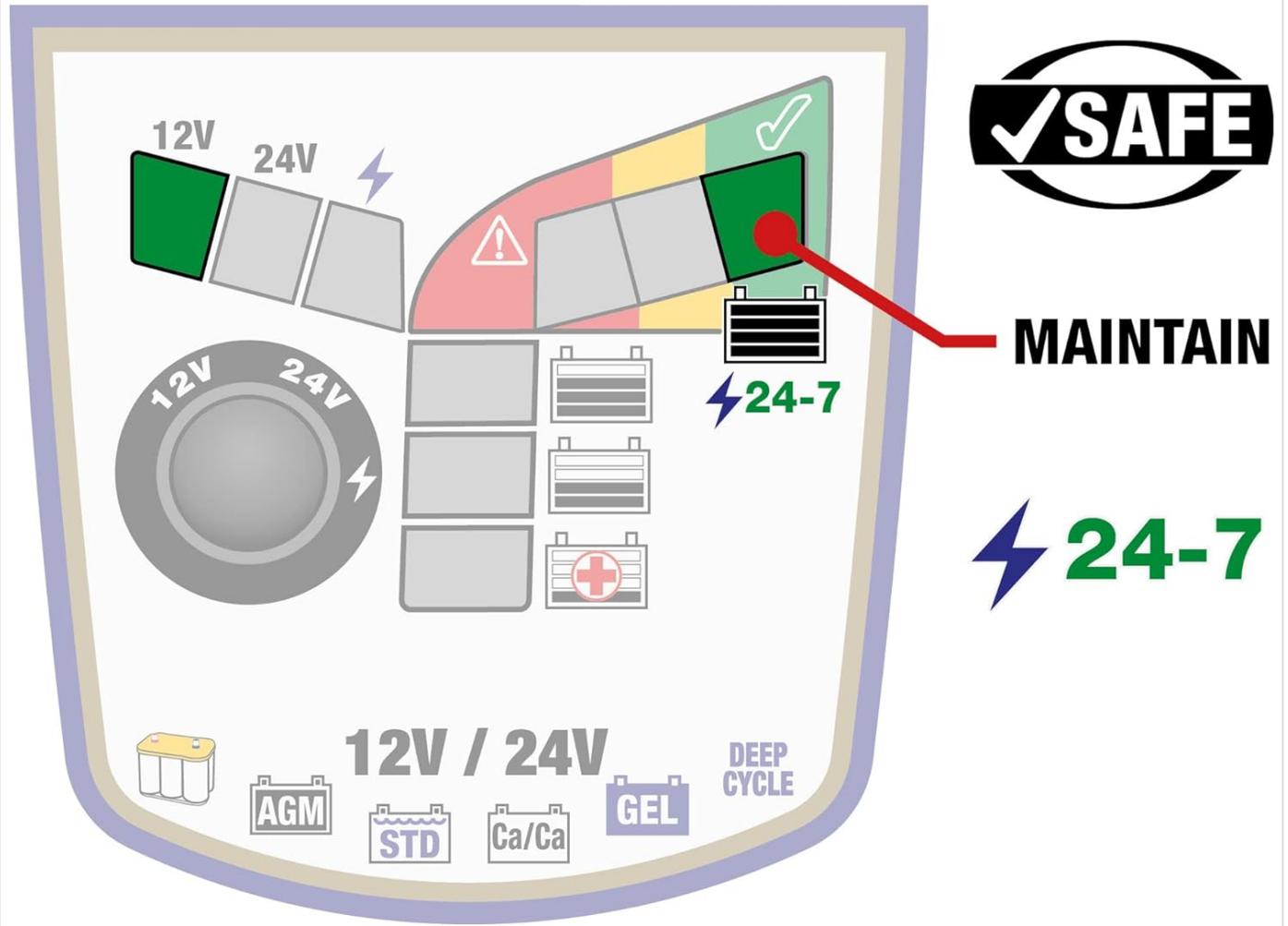


Diagram: The LED indicators on the charger display the current charging progress, from 0% to 100%.

## Battery Recovery

The automatic 8-step program saves deeply discharged batteries from as low as 0.5 Volts.

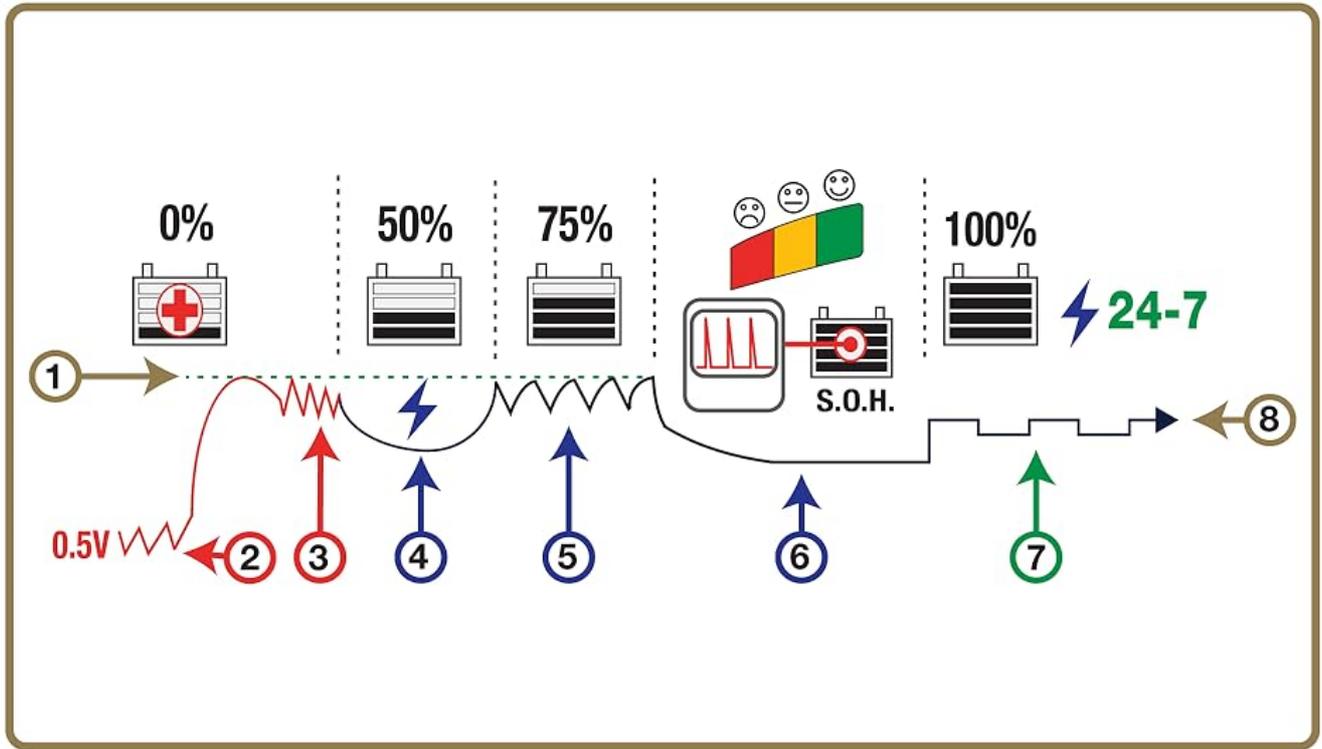


Diagram: The 8-step charging process, showing how the charger recovers deeply discharged batteries and optimizes their charge.

## MAINTENANCE

Once charging reaches 100%, the OptiMate stops and tests the battery's ability to retain charge. The automatic 24/7 maintenance program monitors the charge hourly, delivering charge only when necessary. This procedure helps eliminate electrolyte loss through gassing, ensuring the battery is always at its optimal charge level.

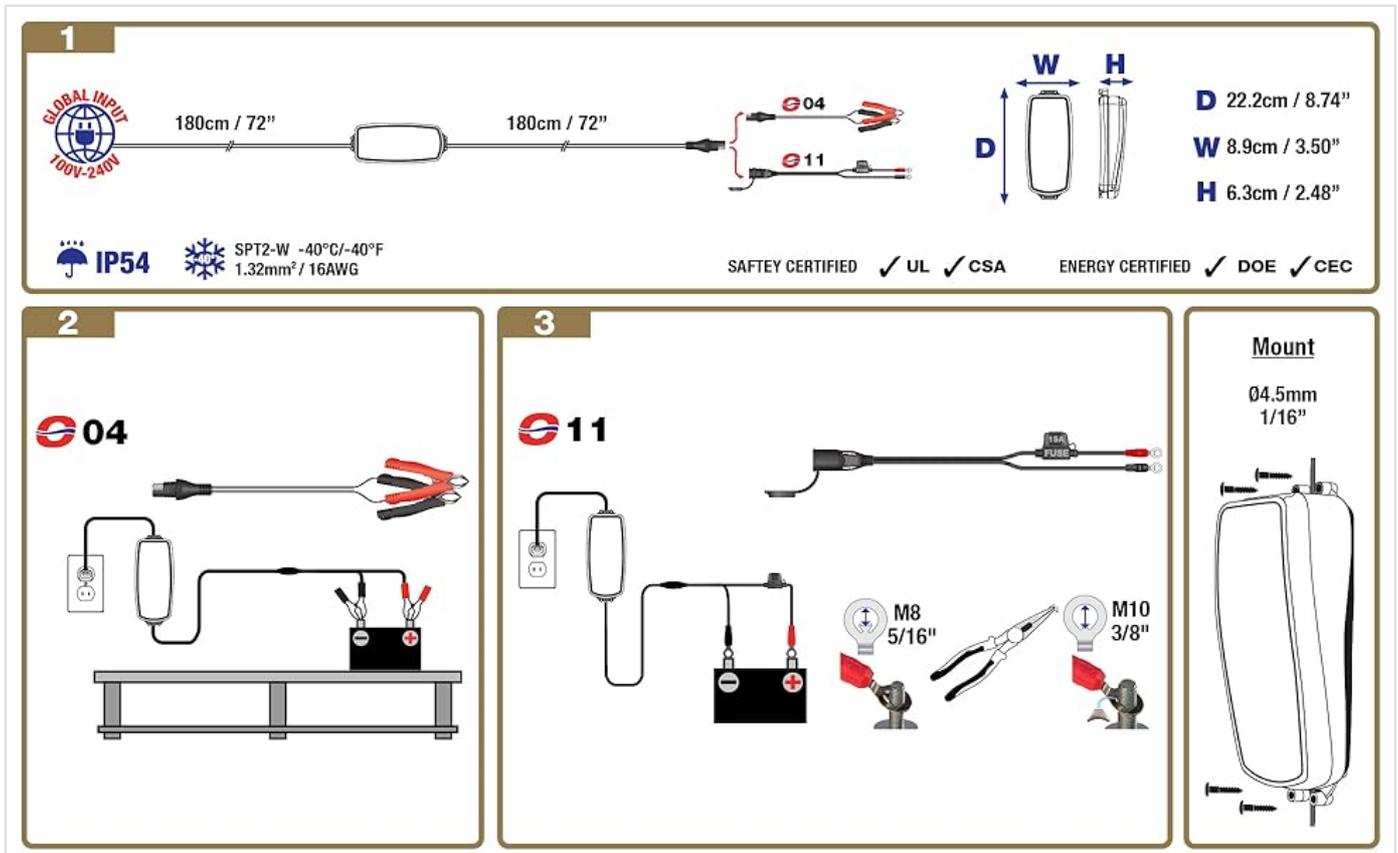


Diagram: The 24/7 maintenance mode ensures the battery remains optimally charged without overcharging.

## TROUBLESHOOTING

If the battery is unable to hold sufficient voltage after charging, it may need to be replaced. However, there might be other reasons for a poor test result, such as a parasitic drain from connected circuitry in a vehicle or craft. In such cases, remove the battery from the vehicle and try charging and testing again.

The LED indicators provide feedback on battery health:

- **Red LED:** Indicates a battery voltage between 0.5V and 12.4V (for 12V batteries) or 24.8V (for 24V batteries), suggesting a deeply discharged or problematic battery.
- **Yellow LED:** Indicates a battery voltage between 12.4V and 12.7V (for 12V batteries) or 24.8V and 29.0V (for 24V batteries), suggesting a partially charged or aging battery.
- **Green LED:** Indicates a battery voltage above 12.7V (for 12V batteries) or 29.0V (for 24V batteries), indicating a healthy, fully charged battery.



Diagram: Visual representation of battery voltage ranges and their corresponding health indicators (red, yellow, green LEDs).

## SPECIFICATIONS

Feature	Detail
Brand	Tecmate
Model	OptiMATE 6 12V/ 24V (TM-381)
Item Weight	2.72 pounds
Product Dimensions	8.74 x 3.5 x 2.48 inches
Output Voltage	24 Volts (DC)
Safety Certifications	CSA, UL, DOE

## WARRANTY AND SUPPORT

For warranty information and technical support, please visit the official Tecmate website or refer to the documentation included with your product. You can also visit the [Tecmate Store on Amazon](#) for additional resources.

Protection plans are available for purchase separately to extend coverage beyond the manufacturer's warranty.

## Related Documents - TM-381

	<p><a href="#">OptiMate 6 12V/24V TM380 - Instrukcja Obsługi i Funkcje Ładowarki Akumulatorów</a></p> <p>Szczegółowa instrukcja obsługi ładowarki akumulatorów OptiMate 6 12V/24V (model TM380) firmy Micronix. Opisuje funkcje, etapy ładowania, bezpieczeństwo i gwarancję dla akumulatorów kwasowo-ołowiowych 12V i 24V.</p>
	<p><a href="#">WattCycle 12V LiFePO4 Deep Cycle Battery User Manual</a></p> <p>Comprehensive user manual for WattCycle 12V LiFePO4 deep cycle batteries, covering features, specifications, installation, charging, BMS functions, warranty, and troubleshooting. Includes detailed product information and best practices.</p>
	<p><a href="#">LiTime 24V 50Ah TM Bluetooth Lithium Iron Phosphate Ion Battery User Manual</a></p> <p>Comprehensive user manual for the LiTime 24V 50Ah TM Bluetooth Lithium Iron Phosphate Ion Battery, covering specifications, features, operation, and safety instructions.</p>
	<p><a href="#">Garmin Transducer Selection Guide: Choose the Right Sonar Technology</a></p> <p>Comprehensive guide to selecting the optimal Garmin transducer for your marine electronics. Explore sonar technologies like LiveScope, Panoptix, CHIRP, and UHD, along with mounting options and detailed product specifications.</p>
	<p><a href="#">Epson DM-D500 Klantendisplay Installatiegids</a></p> <p>Deze installatiegids biedt gedetailleerde instructies voor het veilig en effectief installeren van de Epson DM-D500 klantendisplay, inclusief aansluiting op diverse Epson TM-printers en standalone configuraties. Bevat veiligheidsmaatregelen, benodigde onderdelen, assemblageprocedures, DIP-schakelaarinstellingen en specificaties.</p>
	<p><a href="#">Epson JavaPOS ADK for Windows OS - Version 1.14.38W</a></p> <p>This document provides information about the Epson JavaPOS ADK (Application Development Kit) for Windows OS, version 1.14.38W. It details the installation process, supported operating systems, required components, and a list of supported Epson products.</p>