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› [AeternaSol](#) /

› AeternaSol 20A Smart Car Battery Charger & 12V/24V Maintainer User Manual

AeternaSol 20A Smart Car Battery Charger

AeternaSol 20A Smart Car Battery Charger & 12V/24V Maintainer

Model: 20A Smart Car Battery Charger (12V/24V)

INTRODUCTION

Thank you for choosing the AeternaSol 20A Smart Car Battery Charger & 12V/24V Maintainer. This device is designed to efficiently charge and maintain a wide range of 12V and 24V batteries, including Lithium-Ion (NMC), LiFePO₄, AGM, Gel, and Lead-Acid types. It features intelligent voltage detection, multiple charging modes, a 200-second booster function, pulse repair, and temperature compensation for optimal battery care. Please read this manual thoroughly before use to ensure safe and effective operation.

SAFETY INFORMATION

WARNING: Always follow these safety precautions to prevent injury or damage.

- Read all instructions before using the charger.
- Do not charge frozen batteries.
- Ensure proper ventilation during charging, especially for lead-acid batteries, as they can emit explosive gases.
- Avoid sparks or flames near the battery or charger.
- Wear eye protection and gloves when working with batteries.
- Disconnect the AC power before making or breaking connections to the battery.
- Keep out of reach of children.
- Do not expose the charger to rain or excessive moisture.
- If the power cord is damaged, it must be replaced by the manufacturer or a qualified service agent to avoid hazards.

PRODUCT FEATURES

The AeternaSol Smart Car Battery Charger offers advanced features for comprehensive battery management:

- **20A High-Efficiency Charging:** Provides 20A max for 12V systems and 10A for 24V systems.
- **12V/24V Auto-Recognition:** Automatically detects battery voltage.
- **Tri-Chemistry Dedicated Modes:** Supports 12.6V Li-Ion (NMC), 14.6V LiFePO₄, AGM, GEL, SLA, and Wet Lead-Acid batteries.
- **200s Booster Mode:** Provides a targeted quick charge for 12V lead-acid batteries to assist with jump-starting.
- **Advanced Pulse Repair:** Utilizes high/low-frequency pulse technology to restore performance of sulfated lead-acid batteries.

- **Temperature Compensation:** Adjusts charging voltage based on ambient temperature (Winter/Summer Modes).
- **Smart Heat Dissipation:** Equipped with a high-efficiency cooling fan.
- **24/7 Safety Monitoring:** Protection against reverse polarity, short circuit, over-current, and over-heating.
- **Real-time Data Display:** LCD shows voltage, current, temperature, and charge percentage.

20-AMPS HIGH POWER RAPID BATTERY CHARGER

EFFICIENT CHARGING IN LESS TIME



Charging Current
12V20A / 24V10A

Input Power With Load:
Max 300W

Image: The AeternaSol 20A Smart Car Battery Charger connected to a lead-acid battery, illustrating its high-power charging capability and digital display.

CAR BATTERY CHARGER 12V&24V

For all types of 12V/24V Lead-acid automotive, LiFePO4 AGM, marine, and deep-cycle batteries



Image: This charger is compatible with a wide range of 12V and 24V batteries found in motorcycles, cars, motoboats, trucks, golf cars, engineering vehicles, lawn mowers, and RVs.

PACKAGE CONTENTS

Verify that all items are present in your package:

- AeternaSol 20A Smart Car Battery Charger Unit
- Battery Clamps (Red for positive, Black for negative)
- AC Power Cord
- User Manual

SETUP

Follow these steps for initial setup:

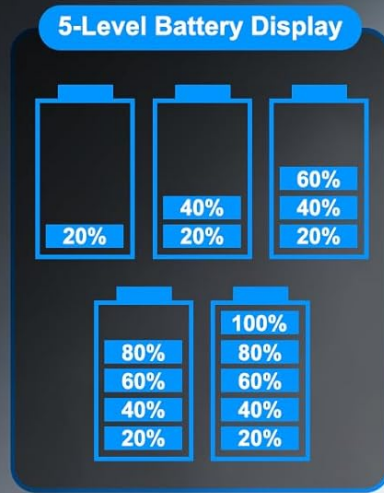
1. **Prepare the Battery:** Ensure the battery terminals are clean and free of corrosion. If charging a lead-acid battery with removable caps, check electrolyte levels and add distilled water if necessary.
2. **Connect Battery Clamps:**
 - Connect the **RED** positive (+) clamp to the positive (+) battery terminal.
 - Connect the **BLACK** negative (-) clamp to the negative (-) battery terminal.
 - Ensure connections are secure.
3. **Connect to AC Power:** Plug the charger's AC power cord into a standard 110V AC wall outlet. The charger will power on and display current battery information.
4. **Select Charging Mode:** Press the 'MODE' button to cycle through the available charging modes (Lithium, Car, AGM, Moto, LiFePO4, Repair, Booster). Select the mode appropriate for your battery type.

OPERATING INSTRUCTIONS

The charger features an intuitive interface and multiple operating modes.

Display Information

VISUAL DISPLAY OF BATTERY INFORMATION



Charging Voltage



Charging Current



Temperature



Complete



Repair Mode



Clip Disconnect Mode

Image: The LCD display provides real-time information including charging voltage, current, temperature, and battery charge level. The LCD screen provides real-time data:

- **Voltage (V):** Current battery voltage.
- **Current (A):** Charging amperage.
- **Temperature (°C):** Ambient temperature, used for compensation.
- **Battery Level Indicator:** Shows estimated charge percentage.
- **Mode Indicator:** Displays the currently selected charging mode.

Charging Modes Selection



Image: The charger's display showing the 7 available mode selections for different battery types and functions. Press the 'MODE' button to cycle through the following options:

- **LITHIUM (12.6V):** For 12.6V Lithium-Ion (NMC) batteries.
- **CAR:** Standard charging for 12V lead-acid car batteries.
- **AGM:** For 12V AGM batteries.
- **MOTO:** For 12V motorcycle batteries (typically smaller lead-acid or AGM).
- **LiFePO4 (14.6V):** For 14.6V LiFePO4 batteries.
- **REPAIR:** For desulfating and reconditioning old or idle lead-acid batteries.
- **BOOSTER:** Emergency jump-start assist for 12V lead-acid batteries.

Charging Process

10-STAGE CHARGING PROCESS

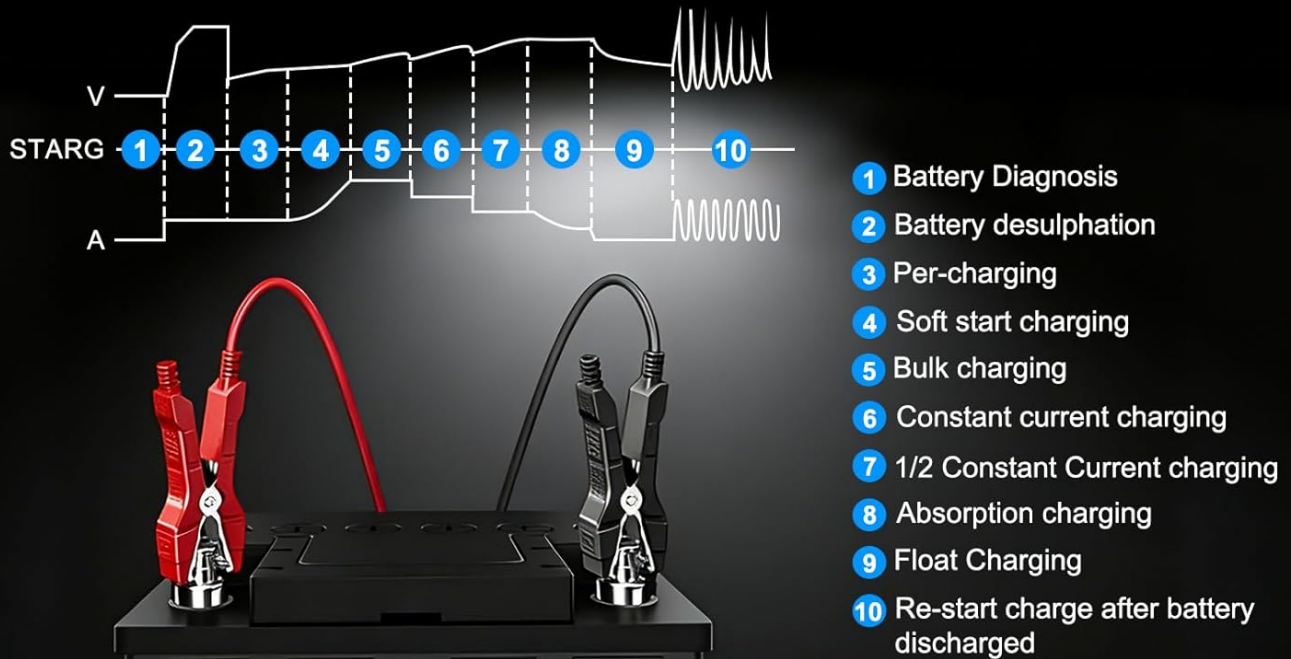


Image: A diagram detailing the 10-stage charging process, from battery diagnosis to float charging. The charger employs a 10-stage charging process for optimal battery health:

1. Battery Diagnosis
2. Battery Desulphation
3. Pre-charging
4. Soft Start Charging
5. Bulk Charging
6. Constant Current Charging
7. 1/2 Constant Current Charging
8. Absorption Charging
9. Float Charging
10. Re-start Charge after Battery Discharged

Booster Mode (Jump Start Assist)

Emergency Booster Mode (Jump Start Assist)

New feature of the upgraded version:
When the "Booster" mode is selected,
the charging current will reach the
maximum value and will last for 200 seconds.



Image: The charger in 'Booster Mode', showing the 200-second countdown for emergency jump-start assist.

The 200-second Booster Mode is designed for 12V lead-acid batteries that require a quick burst of charge to start a vehicle. Select 'BOOSTER' mode, and the charger will deliver maximum current for 200 seconds. Monitor the countdown on the LCD. After the countdown, attempt to start your vehicle.

Repair Mode

REPAIR YOUR BATTERY EFFICIENTLY

Using Low-Frequency Pulse Technology



Image: The charger in 'Repair Mode', indicating its function to address issues like long idle time, low voltage, and battery aging through low-frequency pulse technology.

The Repair Mode uses pulse technology to help restore the capacity of old, idle, or sulfated lead-acid batteries. Select 'REPAIR' mode and allow the charger to complete its cycle. This process can take several hours depending on the battery condition. Note that not all damaged batteries can be fully restored.

Official Product Videos

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Video: An overview of the 20-Amp Car Battery Charger, highlighting its smart features and 12V/24V compatibility. This video demonstrates the charger's capabilities and ease of use.

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Video: A detailed look at the 12V/24V 20 Amp Smart Battery Charger, focusing on its compatibility with Lead-Acid, Lithium, and LiFePO4 battery types. This video explains how to select the correct mode for your battery.

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Video: Demonstrates the 20A Car Battery Charger in action, showcasing its smart automotive charging capabilities. This video provides a

MAINTENANCE

Proper maintenance ensures the longevity and performance of your charger:

- **Cleaning:** Wipe the charger casing with a dry cloth. Do not use solvents or abrasive cleaners.
- **Cable Inspection:** Regularly check the AC power cord and battery cables for any signs of damage, fraying, or exposed wires. Replace if damaged.
- **Storage:** Store the charger in a cool, dry place away from direct sunlight and extreme temperatures. Ensure clamps are clean and stored safely to prevent accidental short circuits.
- **Ventilation:** Keep the charger's ventilation openings clear of dust and debris to ensure proper cooling.

TROUBLESHOOTING

If you encounter issues, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Charger does not power on.	No AC power; faulty power cord.	Check AC outlet and power cord connection. Try a different outlet.
Charger displays error code or 'OFF'.	Reverse polarity; short circuit; battery not connected.	Verify correct clamp connections (+ to +, - to -). Ensure clamps are securely attached to battery terminals.
Battery not charging or charging slowly.	Incorrect mode selected; deeply discharged battery; faulty battery.	Ensure the correct battery type mode is selected. For deeply discharged lead-acid batteries, try Repair Mode. Test battery condition separately.
Charger gets hot during operation.	Normal operation; blocked ventilation.	Some heat is normal. Ensure ventilation openings are not blocked. If overheating persists, discontinue use and contact support.

SPECIFICATIONS

Feature	Detail
Product Dimensions	18.7D x 7W x 9.5H Centimetres
Input Voltage	110 Volts (AC)
Output Voltage	24 Volts (Max)
Amperage	20A (12V), 10A (24V)
Battery Compatibility	12.6V Lithium-Ion (NMC), 14.6V LiFePO4, AGM, GEL, SLA, Wet Lead-Acid
Booster Mode	200 seconds for 12V Lead-Acid batteries
Connector Type	Battery Clamp Connector / AC plug
Number of Ports	1

WARRANTY AND SUPPORT

AeternaSol products are manufactured to high-quality standards. For warranty information or technical support, please refer to the contact details provided with your purchase or visit the official AeternaSol website. Keep your proof of purchase for warranty claims.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question

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