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› Leaptrend DC-DC 60A 12V Battery Charger User Manual for LiFePO4, AGM, and Lead-Acid Batteries

leaptrend LP-EU-CHG-12V-60A

Leaptrend DC-DC 60A 12V Battery Charger User Manual

Model: LP-EU-CHG-12V-60A

1. INTRODUCTION

The Leaptrend DC-DC 60A 12V Battery Charger is designed to efficiently charge your auxiliary (house) batteries from your vehicle's starter battery. This compact and robust charger is suitable for various applications, including RVs, utility vehicles, marine vessels, and off-grid setups. It supports multiple battery chemistries, ensuring optimal charging and extended battery life.



Figure 1: The Leaptrend DC-DC 60A Battery Charger is suitable for a wide range of applications, including RVs, cars, boats, and other off-grid systems.

2. SAFETY INSTRUCTIONS

Please read and understand all safety instructions before installing or operating the charger. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Always wear appropriate personal protective equipment, including eye protection, when working with batteries.
- Ensure the charger is installed in a well-ventilated area, away from flammable materials.
- Do not expose the charger to rain, moisture, or excessive heat.
- Verify all connections are secure and correctly polarized before powering on the unit.
- Do not attempt to open or modify the charger. Refer all servicing to qualified personnel.
- Keep out of reach of children.

Integrated Safety Protections:

The Leaptrend DC-DC charger includes several built-in safety features:

- **Over-Voltage Protection:** Prevents damage from excessive input voltage.
- **Over-Temperature Protection:** Shuts down the unit if internal temperatures become too high.
- **Reverse Polarity Protection:** Protects against incorrect wiring of battery terminals.
- **Input/Output Isolation:** Prevents voltage transmission errors and interference.



Figure 2: The charger features over-temperature, reverse polarity, and over-voltage protection for safe operation.

3. PRODUCT FEATURES

The Leaptrend DC-DC 60A Battery Charger offers advanced features for reliable and efficient battery management:

- **Multi-Battery Compatibility:** Supports Lithium (LiFePO4), AGM, Gel, Flood, and STD (Lead-Acid) batteries.
- **Smart 3-Stage Charging:** Utilizes Bulk, Absorption, and Float stages for optimal and automatic 100% charging.

- **Intelligent Generator Detection:** Prevents over-discharge of the starter battery and protects the generator.
- **Compact and Robust Design:** Suitable for installation in various environments.
- **Certifications:** CE and UKCA certified for safety and quality.

Smart 3-Stage Charging

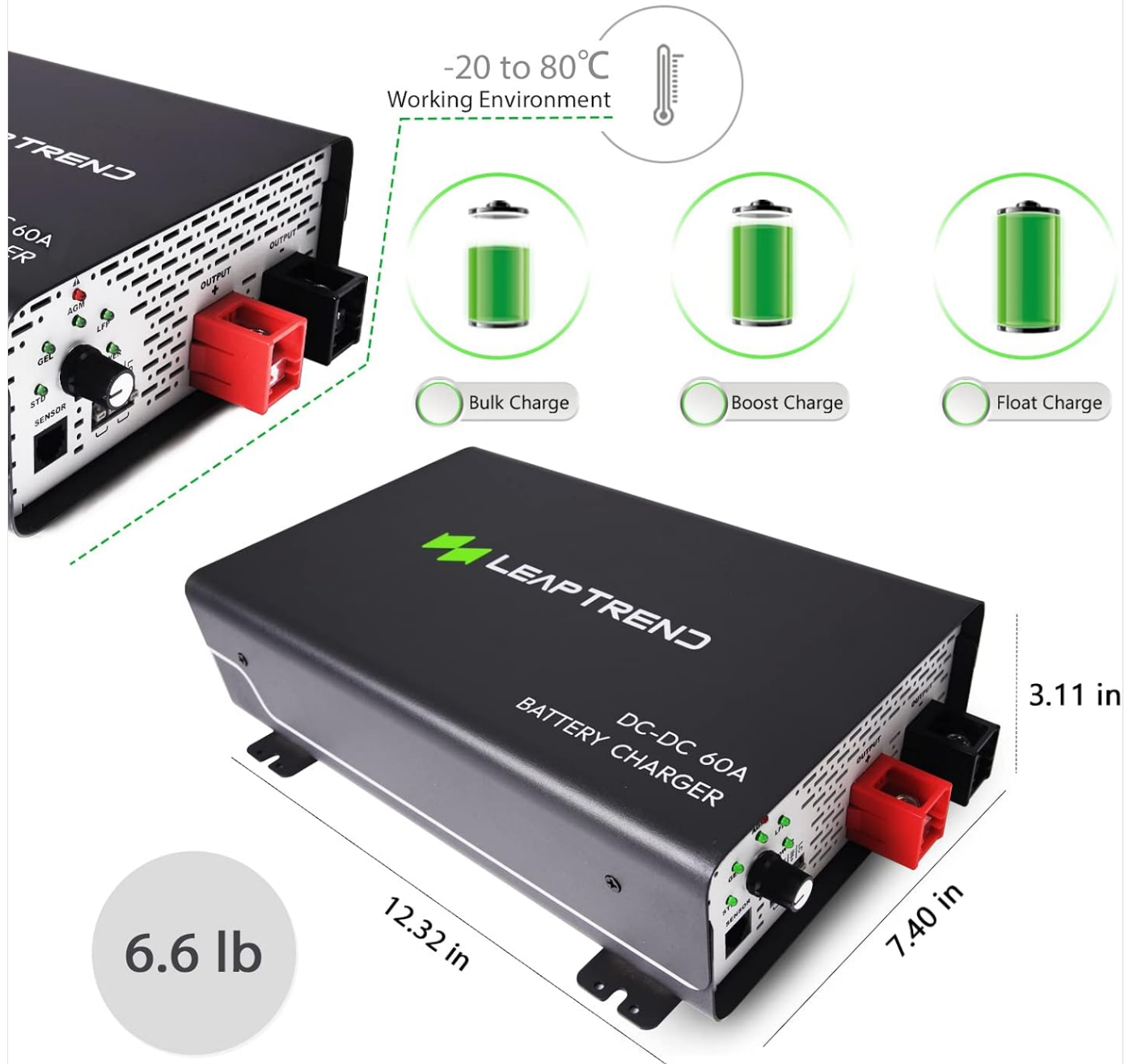


Figure 3: The charger employs a smart 3-stage charging process (Bulk, Boost, Float) and has compact dimensions for easy integration.

4. SETUP AND INSTALLATION

Proper installation is crucial for the safe and efficient operation of your DC-DC charger. Ensure the vehicle's ignition is off and disconnect the starter battery before beginning installation.

General Installation Guidelines:

1. Choose a mounting location that is dry, well-ventilated, and protected from direct sunlight and excessive heat.
2. Ensure there is sufficient space around the charger for air circulation.

3. Mount the charger securely using appropriate fasteners.
4. Use appropriately sized wiring for all connections to prevent voltage drop and overheating. Refer to local electrical codes and standards.

Wiring Diagrams:

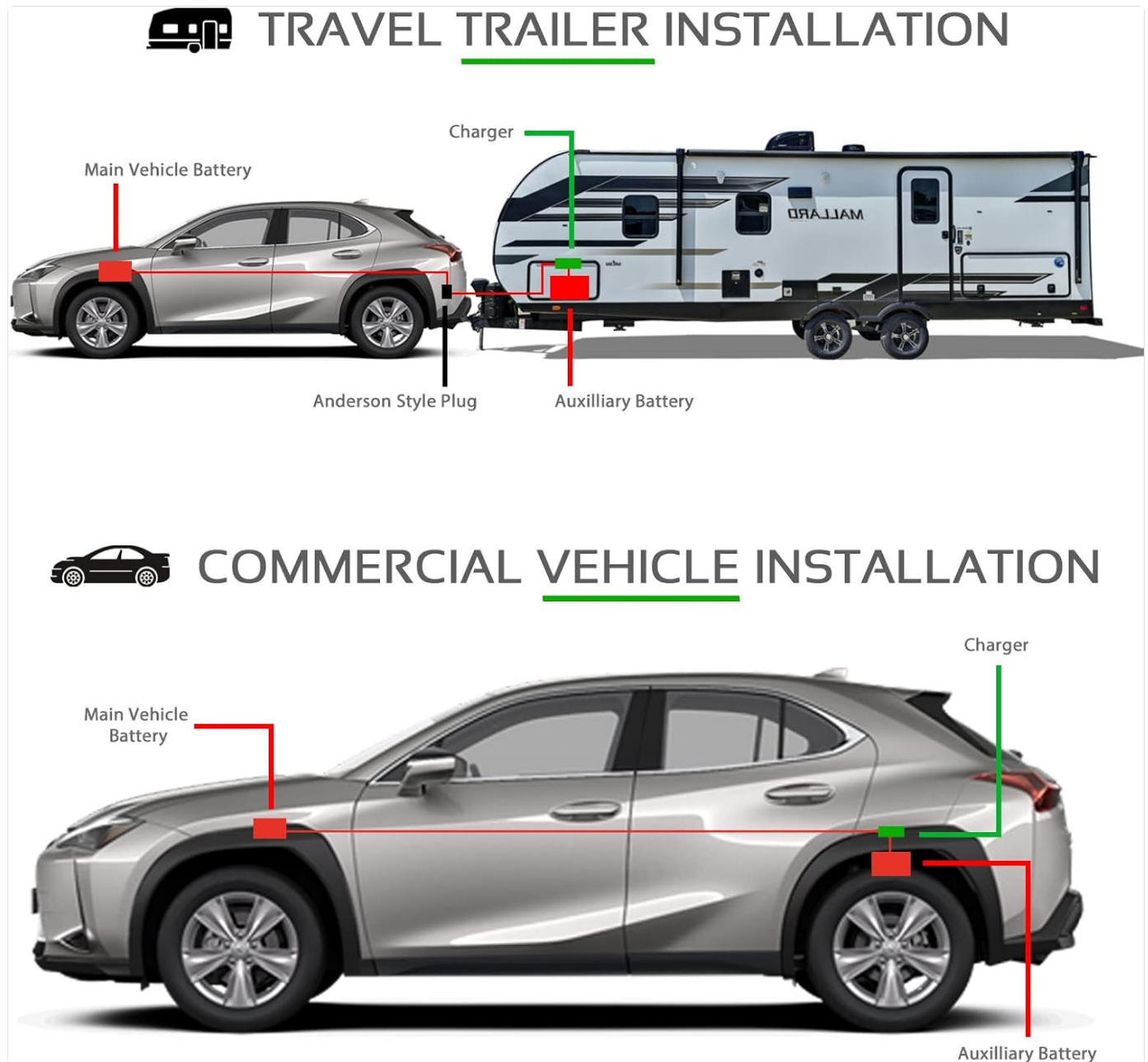


Figure 4: Wiring diagrams for travel trailer and commercial vehicle installations.

Travel Trailer Installation:

1. Connect the charger's input (positive and negative) to the main vehicle battery.
2. Connect the charger's output (positive and negative) to the auxiliary battery in the travel trailer.
3. Ensure proper grounding for both the main vehicle and the trailer.
4. An Anderson-style plug or similar heavy-duty connector can be used for the connection between the vehicle and trailer.

Commercial Vehicle Installation:

1. Connect the charger's input (positive and negative) to the main vehicle battery.

2. Connect the charger's output (positive and negative) to the auxiliary battery within the commercial vehicle.
3. Ensure all connections are fused appropriately according to wire gauge and current draw.

5. OPERATION

The Leaptrend DC-DC charger operates automatically once correctly installed and powered. It intelligently manages the charging process to ensure your auxiliary battery is optimally charged.

Charging Process:

The charger employs a 3-stage charging algorithm:

- **Bulk Charge:** Delivers maximum current to rapidly charge the battery until it reaches approximately 80% of its capacity.
- **Absorption Charge:** Charges at a constant voltage, gradually reducing current as the battery approaches full capacity. This stage ensures the battery is fully charged without overcharging.
- **Float Charge:** Maintains the battery at a safe voltage level, compensating for self-discharge and keeping the battery fully charged and ready for use.

The charger also features intelligent detection to ensure the vehicle's alternator is running before initiating charging, preventing the starter battery from being drained.

6. BATTERY TYPE SELECTION

The Leaptrend DC-DC charger is compatible with multiple battery types. It is essential to select the correct battery type setting to ensure proper charging and to prevent damage to your battery.

How to Select Battery Type:

1. Locate the battery type selector switch on the charger unit.
2. Rotate the switch to align with your battery's chemistry. The available settings typically include:
 - **LFP:** Lithium Iron Phosphate (LiFePO4)
 - **GEL:** Gel Batteries
 - **STD:** Standard Lead-Acid (Flooded) Batteries
 - **AGM:** Absorbed Glass Mat Batteries
 - **DEEP CYCLE:** (May be combined with other settings or a specific setting for deep cycle lead-acid)
3. Once selected, the charger will adjust its charging parameters accordingly.

Fit for Multiple Battery Types

Unlimited Your Battery Choice

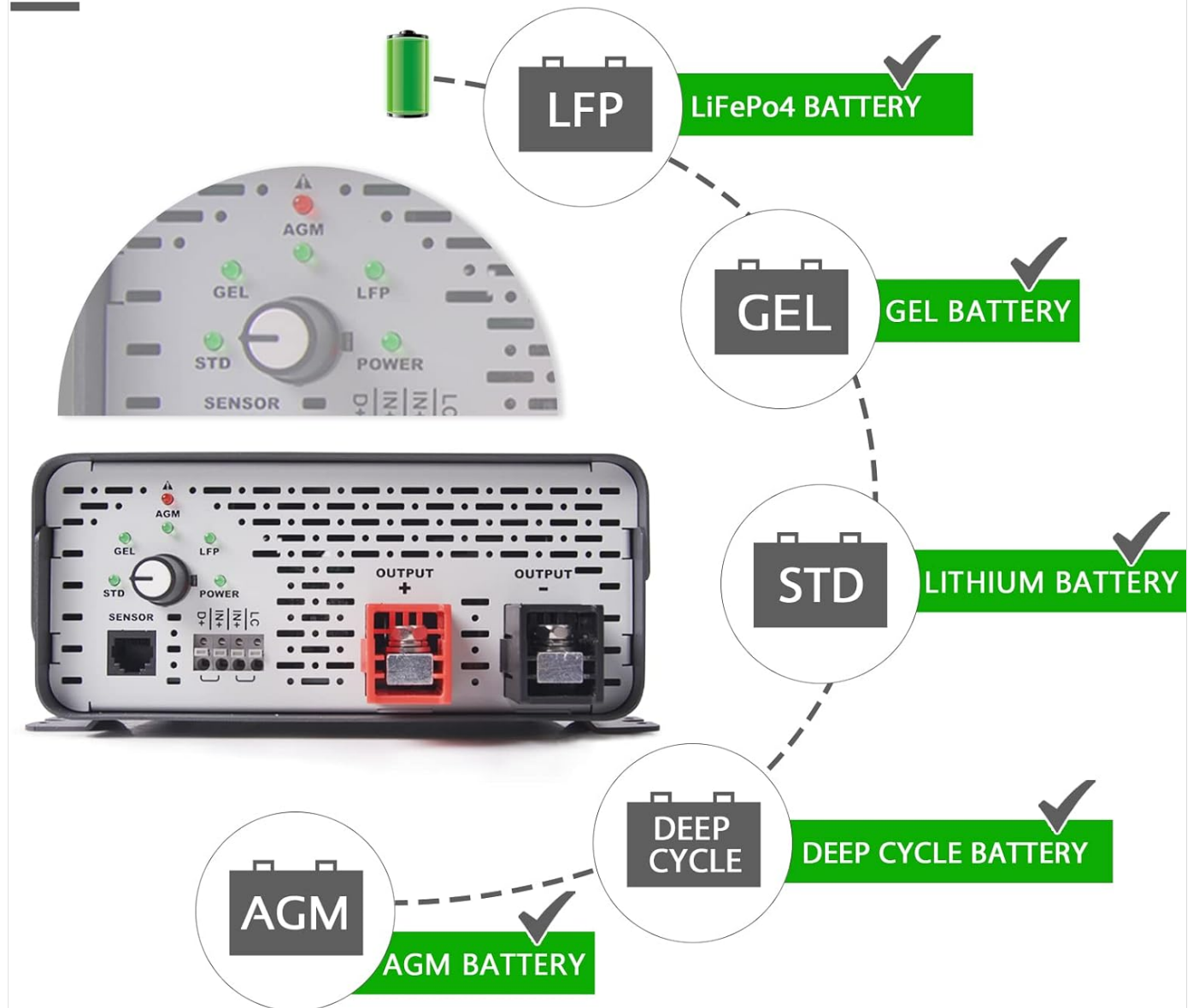


Figure 5: The battery type selector switch allows compatibility with LiFePO4, Gel, STD, AGM, and Deep Cycle batteries.

7. MAINTENANCE

The Leaptrend DC-DC charger is designed for minimal maintenance. However, periodic checks can help ensure its longevity and optimal performance.

- **Cleanliness:** Keep the charger free from dust, dirt, and debris. Use a dry, soft cloth to wipe the exterior. Do not use solvents or abrasive cleaners.
- **Connections:** Periodically inspect all wiring connections to ensure they are tight and free from corrosion. Loose connections can cause overheating and poor performance.
- **Ventilation:** Ensure that the ventilation openings on the charger are not blocked to allow for proper heat dissipation.
- **Environmental Conditions:** Ensure the charger remains within its specified operating temperature range (-20°C to 80°C) and is not exposed to excessive moisture.

8. TROUBLESHOOTING

If you encounter issues with your Leaptrend DC-DC charger, refer to the following basic troubleshooting steps:

Problem	Possible Cause	Solution
Charger not operating / No output	No input power; Loose connections; Blown fuse; Over-temperature shutdown.	Check input voltage from starter battery; Verify all wiring connections; Check and replace fuses if necessary; Allow unit to cool down.
Auxiliary battery not fully charging	Incorrect battery type selected; Undersized wiring; Faulty auxiliary battery.	Ensure correct battery type is selected; Verify wire gauge is adequate for current; Test auxiliary battery condition.
Over-temperature indicator active	Insufficient ventilation; High ambient temperature; Overload.	Ensure clear airflow around the unit; Reduce load if possible; Relocate to a cooler area.
Charger not turning on with vehicle ignition	Generator detection not triggered; Low starter battery voltage.	Ensure vehicle engine is running and alternator is active; Check starter battery voltage.

If the problem persists after performing these steps, please contact customer support.

9. SPECIFICATIONS

Feature	Specification
Brand	Leaptrend
Model Number	LP-EU-CHG-12V-60A
Input Voltage	12V DC (from starter battery)
Output Voltage	12V DC (to auxiliary battery)
Max Output Current	60A
Supported Battery Types	LiFePO4, AGM, Gel, Flood, STD (Lead-Acid)
Charging Stages	3-Stage (Bulk, Absorption, Float)
Operating Temperature	-20°C to 80°C
Protections	Over-Voltage, Over-Temperature, Reverse Polarity
Certifications	CE, UKCA
ASIN	B0C4L6GWYS

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