

RoyPow C45

RoyPow C45 12V 3A LiFePO4 Battery Charger and Maintainer User Manual

Model: C45 | Brand: RoyPow

1. PRODUCT OVERVIEW

The RoyPow C45 12V 3A LiFePO4 Battery Charger is an automatic trickle charger designed for optimal battery maintenance. It is compatible with various 12V battery types, including LiFePO4, lead-acid, flooded, AGM, gel cell, and deep cycle batteries. This compact charger features multiple safety protections and an auto-repair function to activate deeply discharged batteries.



Figure 1: RoyPow C45 12V 3A LiFePO4 Battery Charger with included accessories.

2. WHAT'S IN THE BOX

Upon opening the package, you will find the following components:

- RoyPow C45 12V 3A Battery Charger Unit
- Battery Clamps (Alligator Clips)
- M6 Ring Terminals
- User Manual



Figure 2: All components included in the RoyPow C45 package.

3. SAFETY INFORMATION

Always prioritize safety when operating battery chargers. This device incorporates several built-in protections to ensure safe operation:

- **Short Circuit Protection:** Prevents damage from accidental short circuits.
- **Overload Protection:** Safeguards against excessive current draw.
- **Over-current Protection:** Limits current to safe levels.
- **Over-voltage Protection:** Protects against voltage spikes.
- **Over-temperature Protection:** Prevents overheating of the unit.
- **Reverse Connection Protection:** Alerts and prevents damage from incorrect polarity connection.

Important Safety Precautions:

- Ensure adequate ventilation during charging, especially for lead-acid batteries, as they can emit gases.
- Avoid creating sparks near the battery during connection or disconnection.
- Do not charge damaged, frozen, or non-rechargeable batteries.

- Keep the charger away from children and pets.



Figure 3: Overview of the multi-protection features integrated into the charger.

4. SETUP AND CONNECTION

The RoyPow C45 charger is designed for simple, step-by-step connection. It comes with two types of connectors for versatility:

- **Alligator Clamps:** For temporary connections to battery terminals.
- **Ring Terminals (M6):** For more permanent attachment to battery posts.

Connection Steps:

1. Ensure the charger is unplugged from the AC power outlet.
2. Connect the appropriate battery connector (alligator clamps or ring terminals) to the charger's output cable.
3. Connect the **red (positive)** connector to the positive (+) battery terminal.
4. Connect the **black (negative)** connector to the negative (-) battery terminal.
5. Plug the charger into a standard AC power outlet. The charger will automatically detect the battery type

and begin charging.

Disconnection Steps:

1. Unplug the charger from the AC power outlet.
2. Disconnect the **black (negative)** connector from the negative (-) battery terminal.
3. Disconnect the **red (positive)** connector from the positive (+) battery terminal.

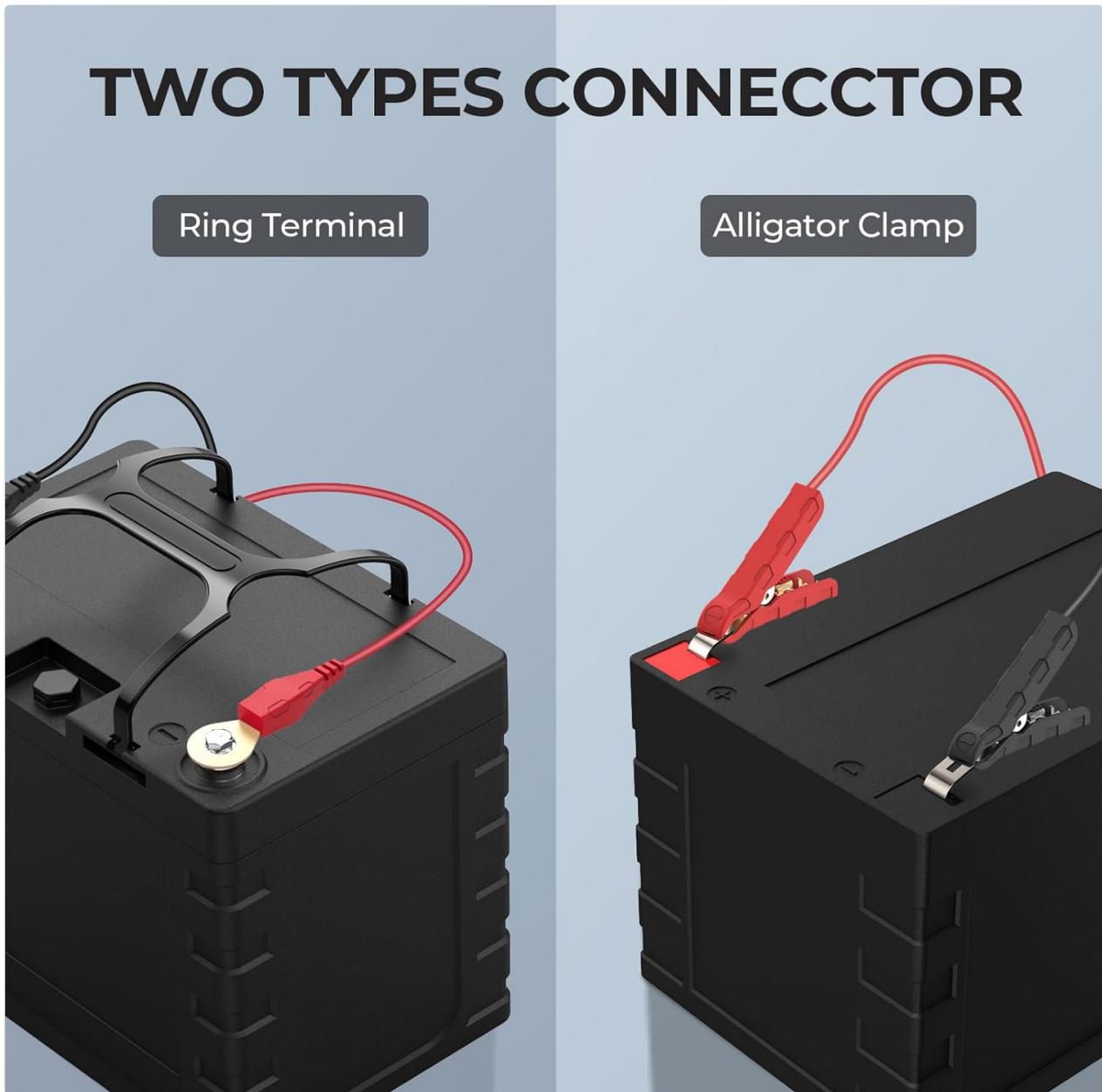


Figure 4: The two types of connectors provided with the charger.

5. OPERATING INSTRUCTIONS

The RoyPow C45 is an automatic charger. Once connected to a battery and plugged into power, it will automatically begin the charging process.

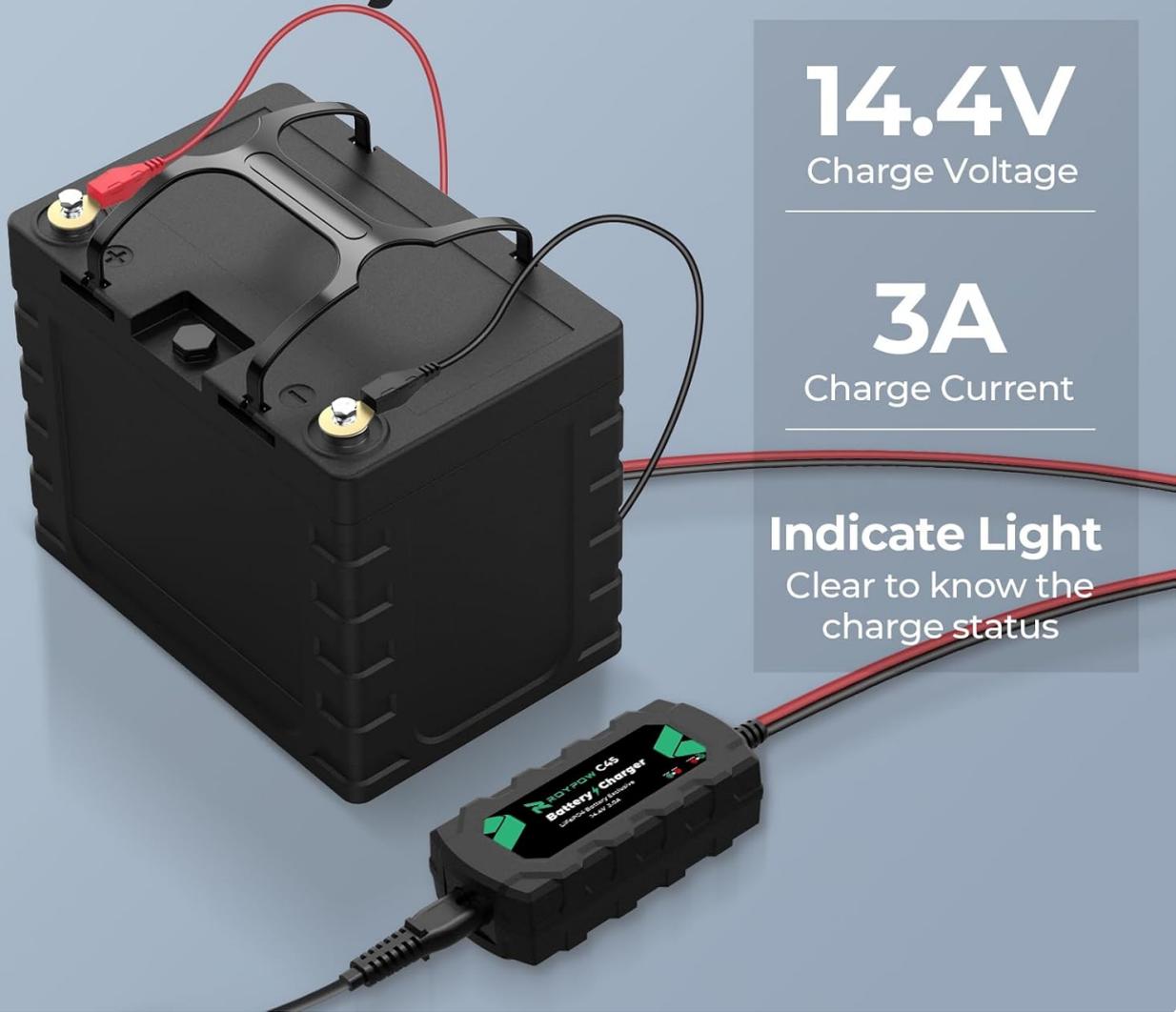
- **Automatic Charging:** The microprocessor-controlled program will detect the battery's state and apply the appropriate charging current (14.4V, 3A).
- **Smart Indicator:** A smart indicator light will illuminate green when charging is complete.
- **Battery Compatibility:** This charger is suitable for all types of 12V lithium batteries (LiFePO4), as well as 12V lead-acid, flooded, AGM, gel cell, and deep cycle batteries.

- **Dead Battery Activation:** The charger features an open circuit voltage function that can activate batteries that are over-discharged, even down to 1 volt. This auto-repair function helps to revive and extend the life of sleep batteries.



Figure 5: The charger's capability to activate dead batteries.

Provide Strong Power to Battery



14.4V

Charge Voltage

3A

Charge Current

Indicate Light

Clear to know the
charge status

Figure 6: Display of charge voltage and current during operation.

Trickle Battery Charger

12V

Lithium Battery

12V

AGM Battery

12V

SLA Battery

12V

Gel Battery

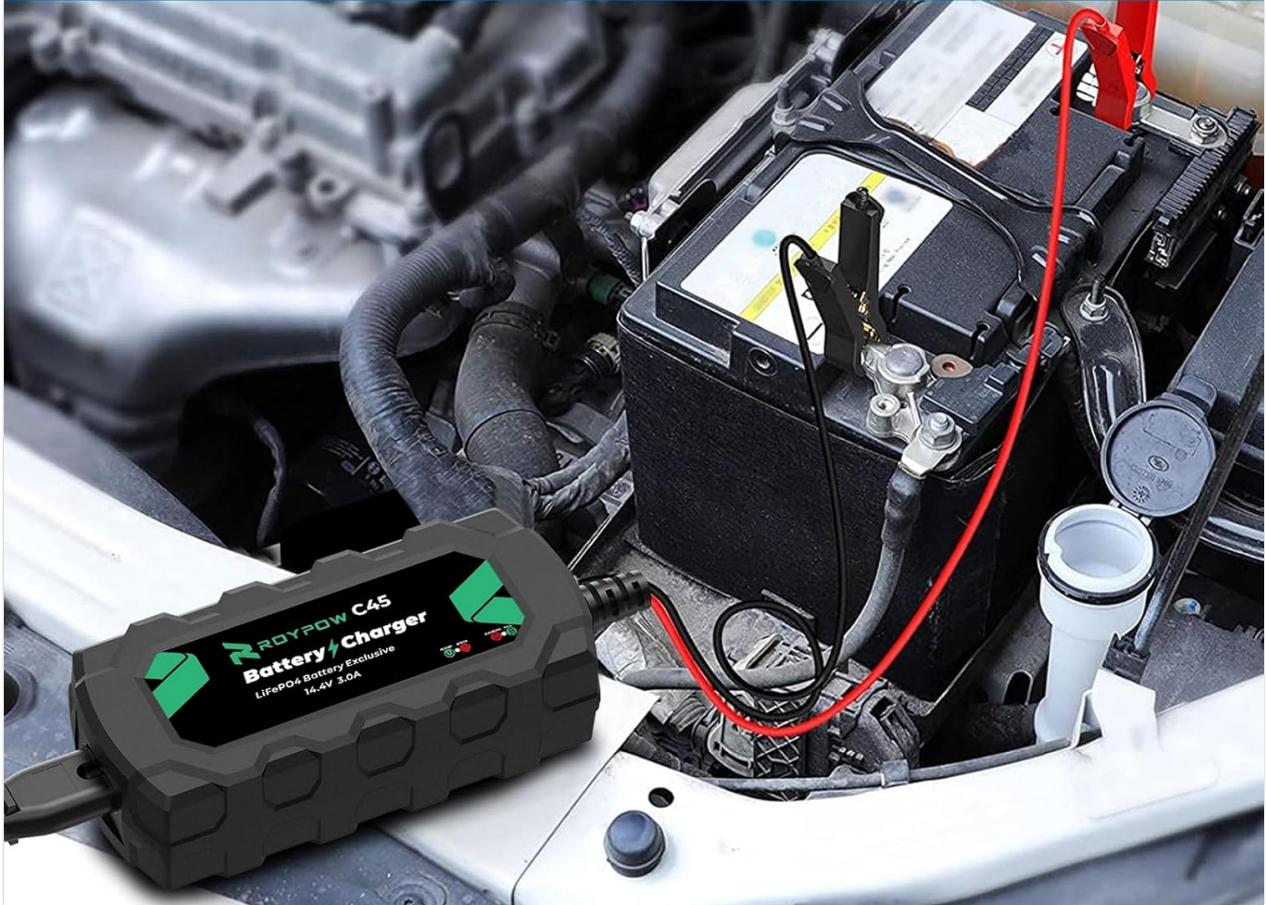


Figure 7: Compatibility with various 12V battery types.

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Video 1: Demonstrates the automatic charging process and battery compatibility of a 3 Amp battery charger.

6. MAINTENANCE

The RoyPow C45 functions as a battery maintainer, making it ideal for long-term battery care. Once a battery is fully charged, the unit will automatically switch to a maintenance mode, providing a trickle charge to keep the battery at optimal levels without overcharging. This feature is beneficial for vehicles or equipment stored for extended periods, such as automotive, motorcycle, marine, RV, Powersport, and lawn & garden equipment.

Easy to carrying & Storage

Total 2m long cord and compact design make it easy to take

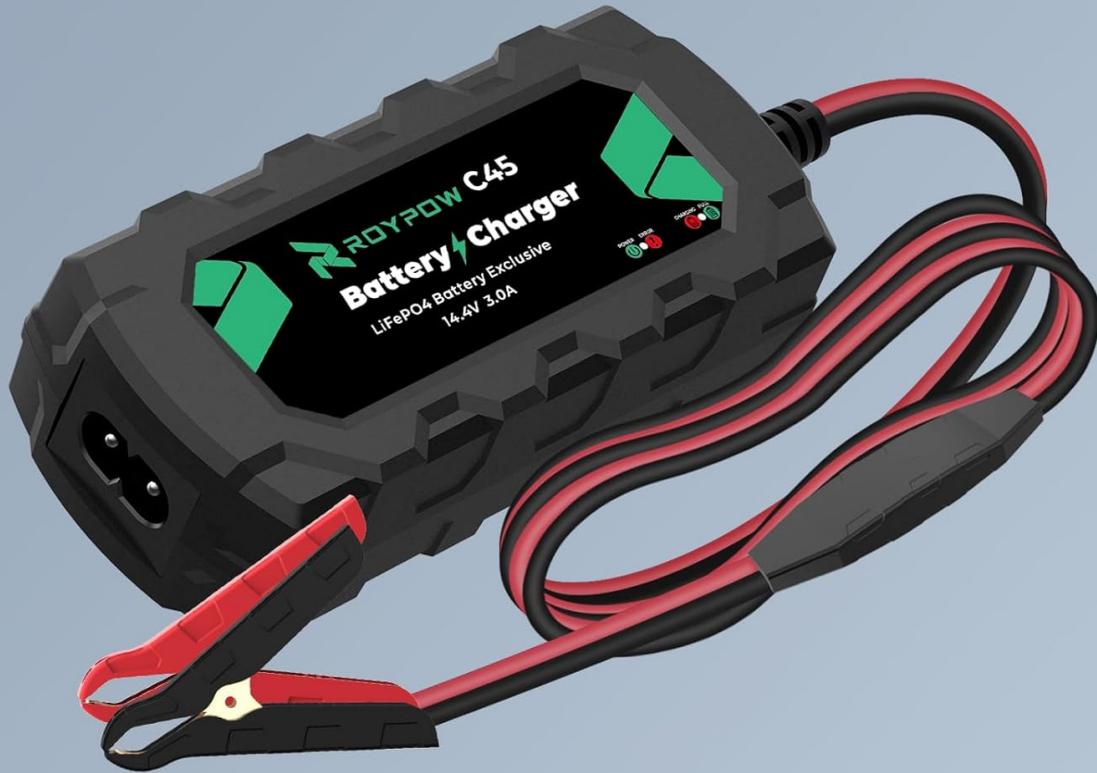


Figure 8: Compact design for easy carrying and storage, facilitating regular maintenance.

7. TROUBLESHOOTING

If you encounter issues with your RoyPow C45 charger, consider the following:

- **Charger Not Starting:** Ensure all connections are secure and correctly polarized (red to positive, black to negative). Verify the AC power outlet is functional.
- **Unit Gets Warm:** It is normal for the charger to become warm during extended use. Ensure it is placed in a well-ventilated area to prevent excessive heat buildup.
- **Indicator Light Issues:** If the smart indicator does not turn green after an appropriate charging period, check the battery's condition. The auto-repair function may be active for deeply discharged batteries, which can take longer.
- **Battery Not Charging:** Confirm the battery is a compatible 12V type. If the battery is severely damaged or has internal faults, the charger's safety features may prevent charging.

8. SPECIFICATIONS

Feature	Specification
Brand	RoyPow
Model	C45
Input Voltage	110 Volts
Output Voltage	12 Volts
Current Rating	3 Amps
Charging Time	6 Hours (for typical batteries)
Battery Cell Composition	Lithium-Phosphate (LiFePO4) and Lead-Acid (Flooded, AGM, Gel Cell, Deep Cycle)
Product Dimensions	3.2 x 4.92 x 10.65 cm
Item Weight	150 g
Color	Green
UPC	708191970002

9. WARRANTY AND SUPPORT

The RoyPow C45 Battery Charger comes with a **2-year warranty**. RoyPow also offers **lifetime technical support** for its products. For any inquiries or assistance, please refer to the contact information provided in the included user manual or visit the official RoyPow website.