

# **Portable LFP Battery Charger**

## **Quick Guide**

**SKU: RBC10A2P**

**VERSION A1**

## Important Safety Instructions

### WARNING

Indicates a potentially dangerous condition. Use extreme caution when performing this task.

### CAUTION

Indicates a critical procedure for the safe and proper installation and operation of the battery.

### NOTE

Indicates a procedure or function that is important to the safe and proper operation of the battery.

## Disclaimer

The manufacturer accepts no liability for any damage caused by:

- Force majeure including fire, typhoon, flood, earthquake, war, and terrorism.
- Intentional or accidental misuse, abuse, neglect or improper maintenance, and use under abnormal conditions.
- Improper installation, improper operation, and malfunction of a peripheral device.
- Contamination with hazardous substances, diseases, vermin, or radiation.
- Alterations to the product without expressed written consent from the manufacturer.

## General Safety Information

- Please keep the battery away from water, heat sources, sparks, and hazardous chemicals.
- DO NOT puncture, drop, crush, burn, penetrate, shake, or strike the battery.
- DO NOT open, dismantle, or modify the battery.
- DO NOT touch any terminals or connectors.

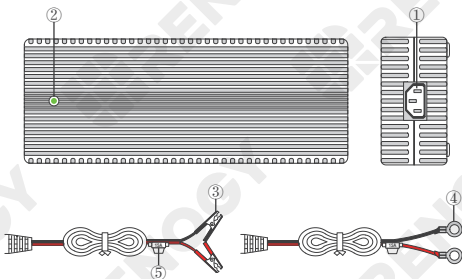
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- Any uncovered battery material, such as electrolyte or powder, that has contacted skin or the eyes must be flushed out with plenty of clean water immediately. Seek medical attention afterwards. Spills on clothing should be rinsed out with water.
  - DO NOT touch the exposed electrolyte or powder if the battery casing is damaged.
  - Please make sure any battery charger(s) or charge controller(s) are disconnected when working on the battery.
  - DO NOT connect or disconnect terminals to/from the battery without first disconnecting loads.
  - Do not expose charger to rain or snow.
  - Use of an attachment not recommended or sold by the battery charger manufacturer may result in a risk of fire, electric shock, or injury to persons.
  - To reduce risk of damage to electric plug and cord, pull by plug rather than cord when disconnecting charger.
  - Do not operate charger with damaged cord or plug – replace the cord or plug immediately.
  - Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way.
  - Do not disassemble charger.
  - To reduce risk of electric shock, unplug charger from outlet before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.
  - The charger outputs 10A and is intended for the use of charging 25.6V Lithium-iron phosphate (LFP,  $\text{LiFePO}_4$ ) batteries that can handle the charge current.
  - Ensure that the  $\text{LiFePO}_4$  batteries include a PCM/BMS when using this charger.

## General Information

Renogy 10A AC to DC Charger (RBC10A2P) is an automatic and portable charger intended for 24V LFP batteries. This charger includes 14AWG alligator clips and outputs power based on the power, voltage, and current condition of the battery. The charger has an LED status indicator for providing a visual means to determine the operating mode and condition of the battery connected to the charger. The AC-DC portable charger will automatically monitor and maintain the battery at full charge.

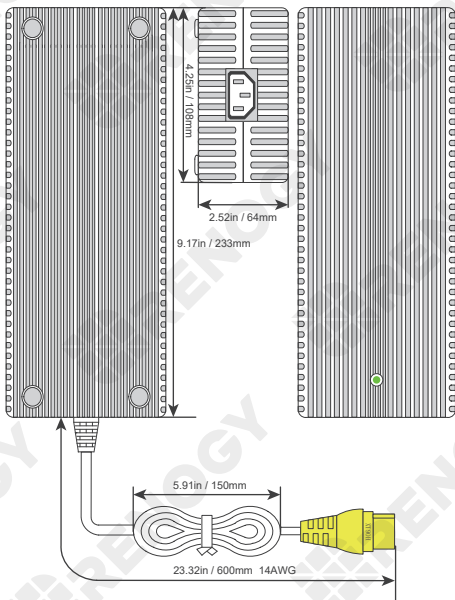
## Product Overview

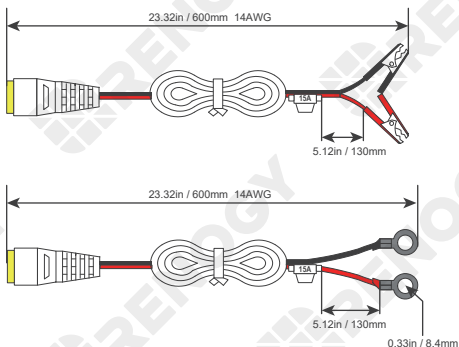
### Identification of Parts



- 1. AC Port
- 2. LED Status Indicator
- 3. Alligator Clips
- 4. Ring terminal
- 5. Blade Fuse (15A)

## Dimensions





## Operation

There are two ways to make the charger work normally.

### ■ Alligator Clips



1. The black alligator clip represents the negative pole, and the red clip represents the positive pole.

2. Connect the negative alligator clip to the negative terminal on the LFP battery, and then do the same for the positive terminal.

## ■ Ring Terminal



1. The black ring terminal represents the negative pole, and the red ring terminal represents the positive pole.
2. Connect the negative ring terminal to the negative terminal on the LFP battery, and then do the same for the positive terminal.

## LED Status

| LED Status | Description                                                                                                                                                                                                                                                                                                                                                    |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Solid Red  | Indicates that the 24V LFP battery is being charged with a charging current range between 1A and 10A.                                                                                                                                                                                                                                                          |
| Green      | There are two statuses:<br>1. The charger is not connected to the battery.<br>2. The battery is fully charged.<br>The specific status is subject to actual conditions.                                                                                                                                                                                         |
| OFF        | The LED indicator immediately goes out when the charger triggers one of the following protection mechanisms: <ul style="list-style-type: none"><li>• Over-current protection</li><li>• Over-voltage protection</li><li>• Under-voltage protection</li><li>• Short-circuit protection</li></ul> In this case, please follow the steps in Troubleshooting below. |

## Troubleshooting

| Condition                   | Steps to Take                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Short Circuit Protection    | <ol style="list-style-type: none"> <li>1. When there is a short circuit between the two poles of the ring terminals in the battery charger, the Short Circuit Protection will be triggered. The charger stops working immediately, and the LED indicator goes out.</li> <li>2. Disconnect the connecting wire of the AC terminal immediately. When the short circuit between the live wire and the neutral wire is resolved, wait for 10 seconds, and then reconnect the AC terminal wire, and the charger will restart.</li> </ol> |
| Over-temperature Protection | <ol style="list-style-type: none"> <li>1. When the internal temperature of the AC charger is greater than <math>85(\pm 5)^{\circ}\text{C}</math>, the charger's Over-temperature Protection will be triggered.</li> <li>2. After the Over-temperature Protection is triggered, the indicator light of the charger will go out and the charging current of the charger will immediately drop below 6A.</li> </ol>                                                                                                                    |
| Undervoltage Protection     | <ol style="list-style-type: none"> <li>1. When the battery voltage is between 13V and 15V, the Undervoltage Protection of the charger will be triggered.</li> <li>2. The 24V battery has almost reached its end of lifespan when its voltage drops to a range of 13V to 15V. Please contact the battery manufacturer for further support.</li> </ol>                                                                                                                                                                                |

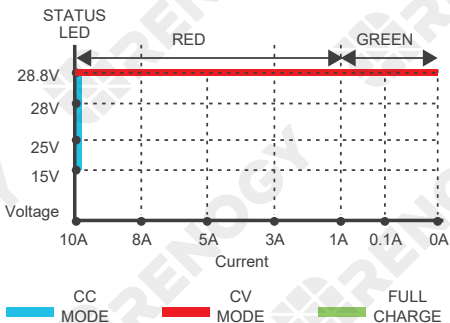
| Condition                     | Steps to Take                                                                                                                                                                                                                                                                                                                         |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Overvoltage Protection        | <ol style="list-style-type: none"> <li>1. When the voltage at the output terminal of the charger is greater than 32V, the Overvoltage Protection will be triggered. At this time, the indicator light will go out and the charger will stop working.</li> <li>2. Disconnect the battery immediately and check the charger.</li> </ol> |
| Reverse Connection Protection | <ol style="list-style-type: none"> <li>1. When the charger triggers the Reverse Connection Protection, the external fuse on the connection line will blow, the charger will not work normally.</li> <li>2. Replace the fuse on the connection line immediately. The specification of the fuse is 250V 15A.</li> </ol>                 |

## Technical Specifications

| Model                      | RBC10A2P                                  |
|----------------------------|-------------------------------------------|
| Input Voltage              | 100V to 240V AC, 50 Hz/60 Hz              |
| Input Amps                 | 5A Max                                    |
| Output Voltage             | 28.8 ( $\pm 0.2$ )V DC                    |
| Output Amps                | 10 ( $\pm 0.5$ )A                         |
| Minimum Battery Voltage    | 13V to 15V DC                             |
| Efficiency                 | 110VAC 90% Min<br>230VAC 92% Min          |
| Room Operating Temperature | -29°C to 45.5°C / -20°F to 113.9°F        |
| Storage Temperature        | -40°C to 75°C / -40°F to 167°F            |
| Self-Consumption           | 50mA Max                                  |
| Current Protection         | 250V 10A Fuse built in                    |
| Dimensions                 | 9.17 x 4.25 x 2.52 in / 233 x 108 x 64 mm |
| Weight                     | 3.8 lbs / 1.7 kg                          |
| Cable Length               | approx. 47.2 in / 1200 mm                 |

\*\*LFP batteries should not be charged below 0°C/32°F. Otherwise, the BMS cuts off the charging.

## Charge Curve



**Manufacturer: RENOGY New Energy Co.,Ltd.**

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Follow proper safety practices. If in doubt, consult a professional RV technician.