

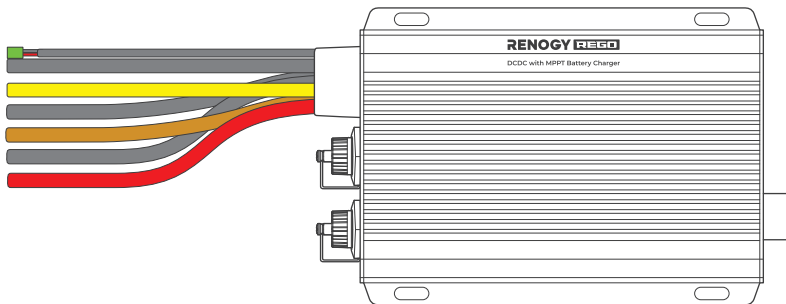
Renogy REGO

Dual Input DC-DC On-Board with MPPT Battery Charger

12V/24V 50A | IP67

RBC2125DS-21W-G3

VERSION A5
April 24, 2025



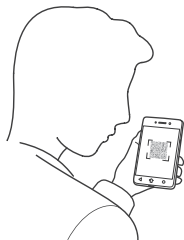
QUICK GUIDE

Before Getting Started

The quick guide provides important operation and maintenance instructions for Renogy REGO 12V/24V 50A IP67 Dual Input DC-DC On-Board with MPPT Battery Charger (hereinafter referred to as battery charger).

Read the quick guide carefully before operation and save it for future reference. Failure to observe the instructions or precautions in the quick guide can result in electrical shock, serious injury, or death, or can damage the battery charger, potentially rendering it inoperable.

Online Manual



Quick Guide



User Manual



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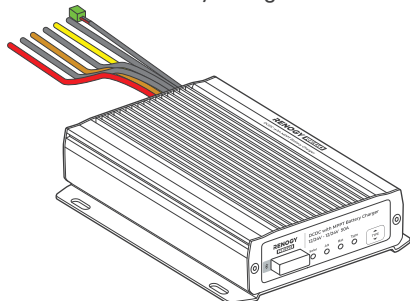
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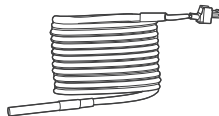
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What's In the Box?

Renogy REGO 12V/24V 50A IP67
Dual Input DC-DC On-Board
with MPPT Battery Charger x 1



Quick Guide x 1



Battery Temperature
Sensor (3 m) x 1

ST4*20 mm



Mounting Screws x 4

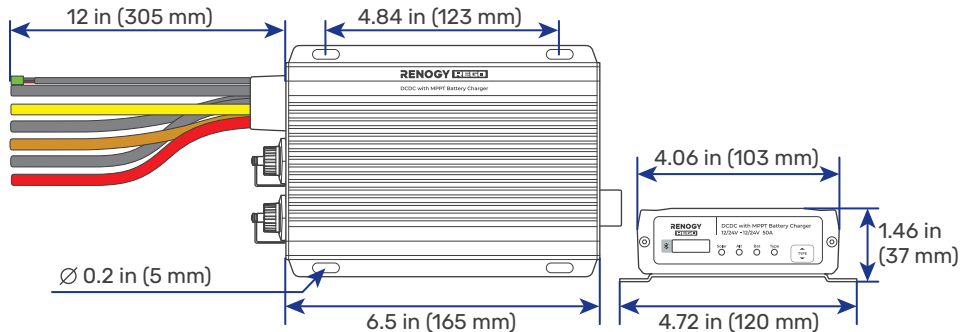


Make sure that all accessories are complete and free of any signs of damage.



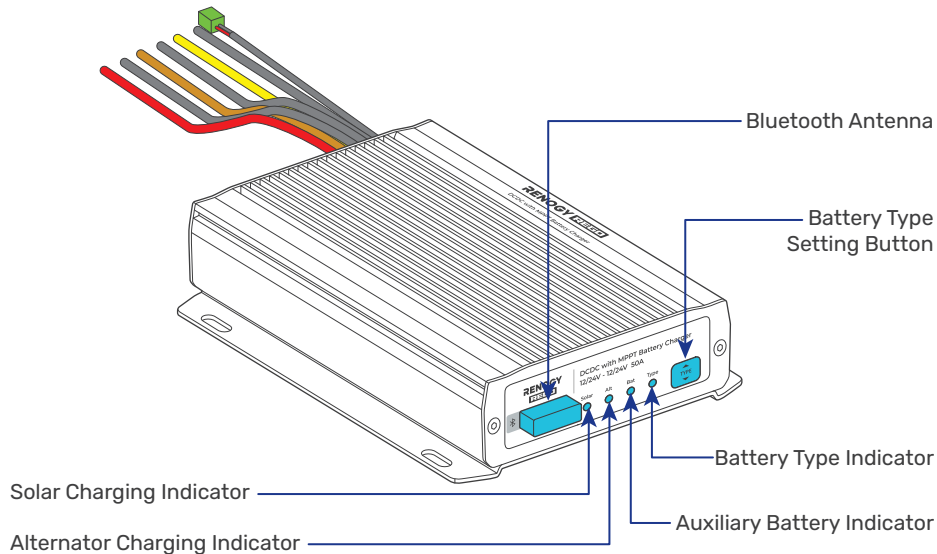
The accessories and product manual listed are crucial for the installation, excluding warranty information and any additional items. Please note that the package contents may vary depending on the specific product model.

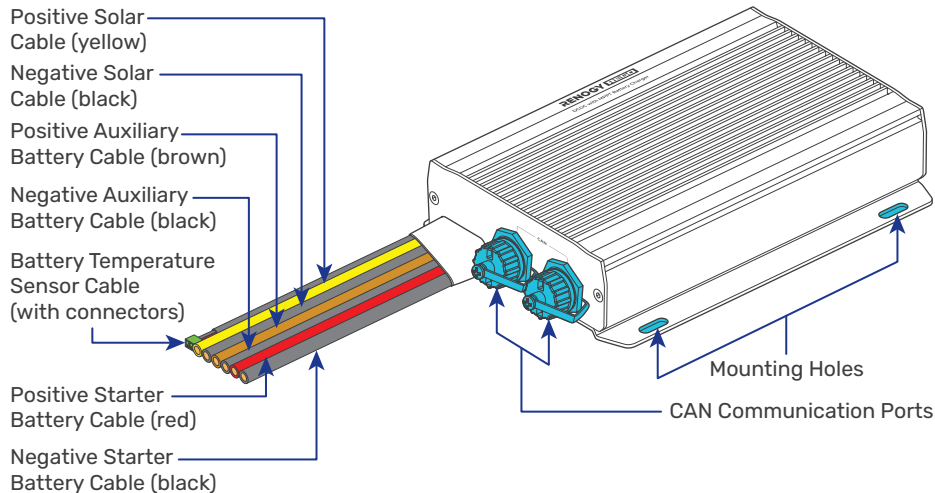
Dimensions



Dimension tolerance: ± 0.2 in (0.5 mm)

Get to Know Renogy Battery Charger



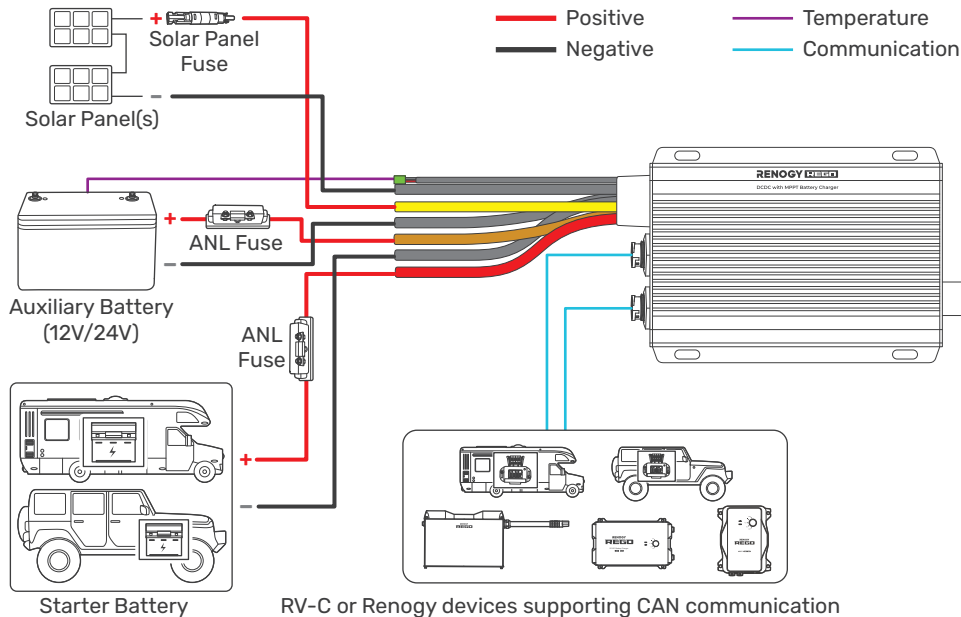


The battery temperature sensor cable can only be used with lead-acid batteries.



For CAN Communication Ports wiring details, refer to the user manual of the battery charger at <https://www.renogy.com/support/downloads>.

System Setup



How to Size Wires?

Select proper adapter cable based on the cable length in your power system. Refer to the table below for recommended gauge sizes.

Cable	Cable Length	Cable Gauge Size
Output (to Auxiliary Battery) or Input (from Starter Battery)	0 ft to 10 ft (0 m to 3 m)	10 AWG (5.25 mm ²)
	11 ft to 20 ft (3 m to 6 m)	8 AWG (8.36 mm ²)
	21 ft to 30 ft (6 m to 9 m)	6 AWG (13.3 mm ²)
Input (from Solar Panel)	0 ft to 10 ft (0 m to 3 m)	12 AWG (3.31 mm ²)
	11 ft to 20 ft (3 m to 6 m)	10 AWG (5.25 mm ²)
	21 ft to 30 ft (6 m to 9 m)	10 AWG (5.25 mm ²)



The cable specifications listed above account for critical, less than 3% voltage drop and may not account for all configurations.

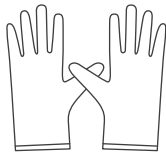


The specification of fuse cable is consistent with the input or output terminal of the battery charger.

Recommended Tools



Phillips
Screwdriver (#1)



Insulating Gloves



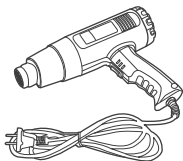
Wire stripper



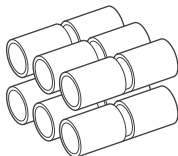
Insulation Tape



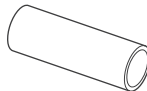
Manual Hydraulic Pliers



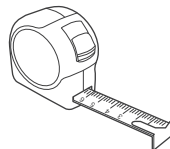
Heat Gun



Butt-Splices



Heat Shrink Tubing



Measuring Tape



Prior to installing and configuring the battery charger, prepare the recommended tools.

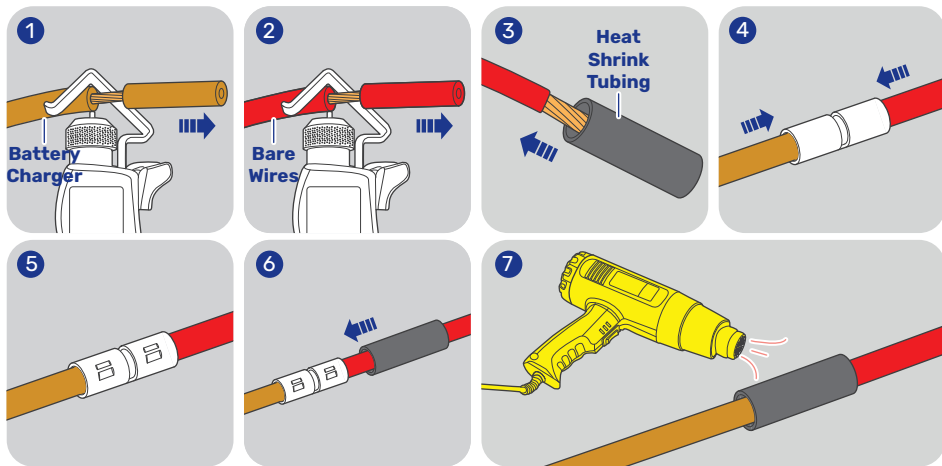


In this manual, the red cable represents the positive cable, and the gray cable represents the negative cable.

How to Install Cables on the Battery Charger?

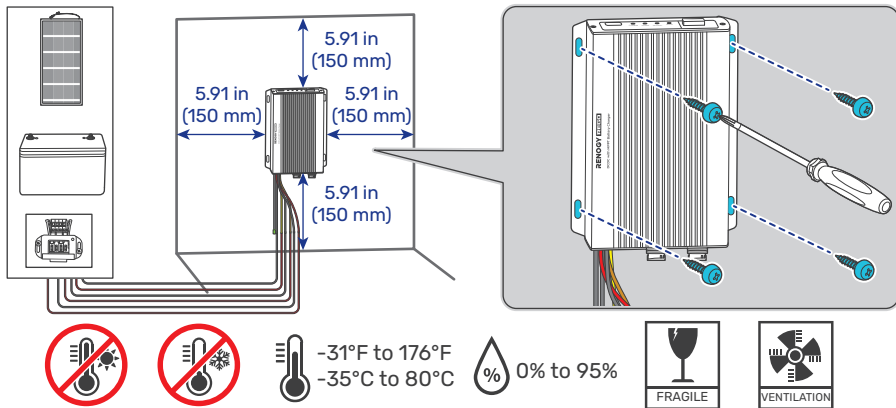
Before connecting the wires, check the stickers on each cable of the battery charger to confirm their polarity. Do not connect the cables to incorrect devices or reverse the connections.

The illustrations are based on the Positive Auxiliary Battery Cable. The butt-splice connectors we use in the manual come in separate butt-splices and heat shrink tubings.



Step 1. Plan a Mounting Site

The battery charger requires adequate clearance for installation, wiring, and ventilation. The minimum clearance is provided below.

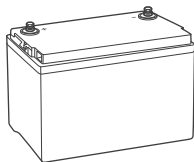


The battery charger should be installed on a flat surface protected from direct sunlight.

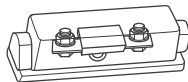
Step 2. Connect the Battery Charger to an Auxiliary Battery

The battery charger can only be connected to 12V or 24V deep-cycle, gel-sealed lead-acid batteries (GEL), flooded lead-acid batteries (FLD), sealed lead-acid batteries (SLD, AGM) or lithium iron phosphate batteries (LI).

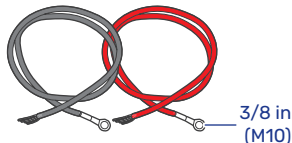
Recommended Components & Accessories



*12V/24V Battery
(11V to 32V)



*ANL Fuse
(60A)



*Battery Adapter Cables × 2



*Fuse Cable × 1



Components and accessories marked with “*” are available on renogy.com.

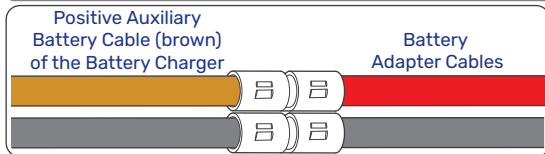


For installation details, see the user manual of the battery in use.

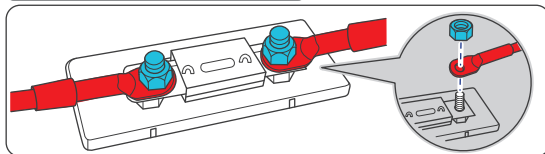


Always connect the battery charger to a battery before connecting it to a solar panel to ensure safe and efficient operation.

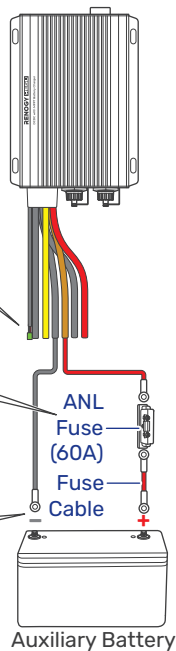
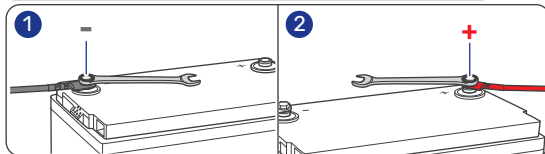
STEP-1 Install battery cables on the battery charger



STEP-2 Install an ANL fuse



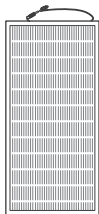
STEP-3 Install battery cables on the battery



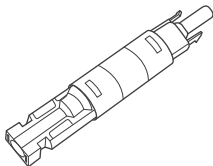
Step 3. Connect the Battery Charger to a Solar Panel

- For 12V batteries, the maximum charging current from solar panels is 50A.
- For 24V batteries, the maximum charging current from solar panels is 25A.

Recommended Components & Accessories



*Solar Panel(s)



*Solar Panel Fuse



*Solar Panel Extension Cables × 2



Components and accessories marked with “*” are available on [renogy.com](https://www.renogy.com).



Connecting the battery charger to a solar panel exceeding 720W ($\leq 50V$) results in damage to the battery charger.

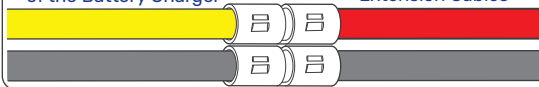


The appropriate current rating for the solar panel fuse should be determined by multiplying the total short current amperage of the solar panel array by 1.56.

STEP-1 Install solar cables on the battery charger

Positive Solar
Cable (yellow)
of the Battery Charger

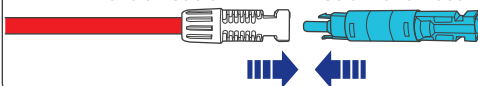
Solar Panel
Extension Cables



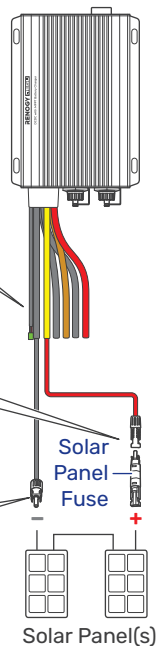
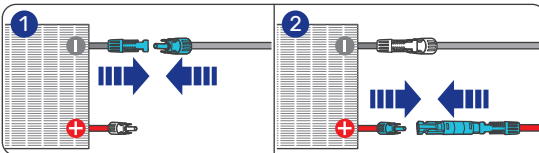
STEP-2 Install a solar panel fuse

Positive Solar Panel
Extension Cable

Solar Panel Fuse



STEP-3 Install solar cables on the solar panel(s)

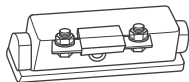


Step 4. Connect the Battery Charger to a Starter Battery

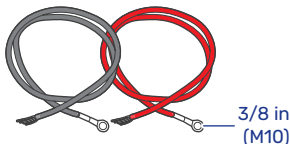
Before installing the charger, consult your vehicle's user manual or contact the vehicle manufacturer to ensure that the output current ranges from 75A to 100A.

The starter battery stops charging the auxiliary battery when the starter battery voltage drops below 12.7V for 12V systems or 25.4V for 24V systems.

Recommended Accessories



*ANL Fuse (70A)



*Battery Adapter Cables × 2



*Fuse Cable × 1



Accessories marked with “*” are available on renogy.com.



The starter battery stops charging the auxiliary battery when the starter battery voltage drops below 12.7V for 12V systems or 25.4V for 24V systems.



The battery charger can be connected separately to the solar panel for charging the auxiliary battery or to the vehicle's starter battery for charging the auxiliary battery.

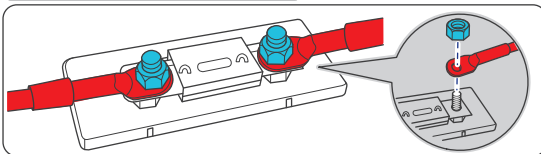
STEP-1 Install battery cables on the battery charger

Positive Starter
Battery Cable (red)
of the Battery Charger

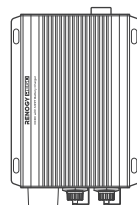
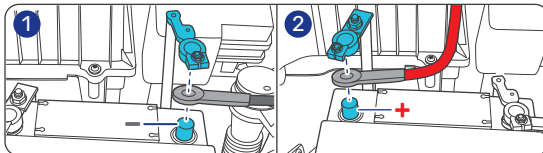
Battery
Adapter Cables



STEP-2 Install an ANL fuse

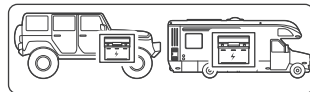


STEP-3 Install battery cables on the RV starter battery



ANL Fuse
(70A)

Fuse Cable



Starter Battery

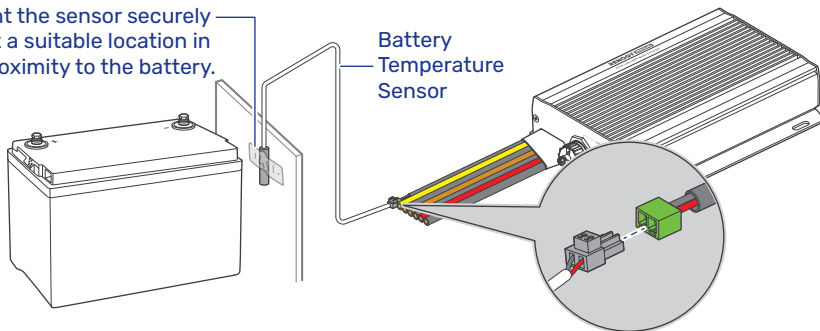
Step 5. Install a Battery Temperature Sensor

The temperature sensor measures the surrounding temperature of the battery and compensates the floating charge voltage when the battery temperature is low.



Do not use the temperature sensor on a LiFePO₄ (LFP) battery which comes with a battery management system (BMS).

Mount the sensor securely
at a suitable location in
close proximity to the battery.



LED Indicators

The battery charger turns on automatically after power on with the LED indicators working in accordance with the relative operating status.

Solar Charging Indicator

- **Off:** Not charging
- **Solid:** MPPT charging
- Slow flash:** Boost charging
- Single flash:** Float charging
- Double flash:** Limited-current charging
- Fast flash:** Equalization charging

Alternator Charging Indicator

- **Off:** Not charging
- **Solid:** The starter battery connected to the alternator is charging the auxiliary battery.
- Slow flash:** The solar panel is charging the starter battery.

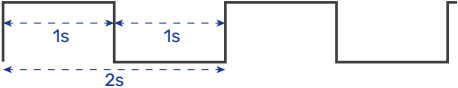
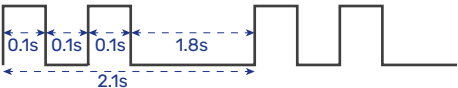
Battery Type Indicator

- **Solid:** FLD
- **Solid:** GEL
- **Solid:** SLD/AGM
- **Solid:** 12V LI
- **Solid:** 24V LI
- **Solid:** User Mode

Auxiliary Battery Indicator

- **Off:** No battery detected
- **Solid:** Full charge
- **Solid:** Normal battery voltage
- **Solid:** Undervoltage warning
- Slow flash:** Overdischarge warning
- Fast flash:** Overtemperature/Overvoltage warning

Check out the graphic indications of ON, OFF, Solid, Slow Flash, Fast Flash, Single Flash, and Double Flash of LEDs in the table below:

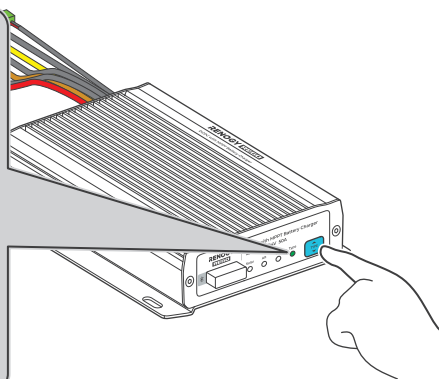
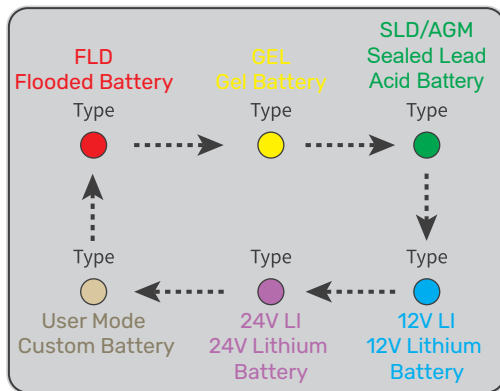
LED ON		LED OFF	
LED Pattern	Graphic Expression		
Solid			
Slow Flash			
Fast Flash			
Single Flash			
Double Flash			

Set a Battery Type

Upon installing the battery charger, set a correct battery type by using the Battery Type Setting Button. For non-lithium batteries, the battery charger can automatically detect their voltage (12V or 24V).

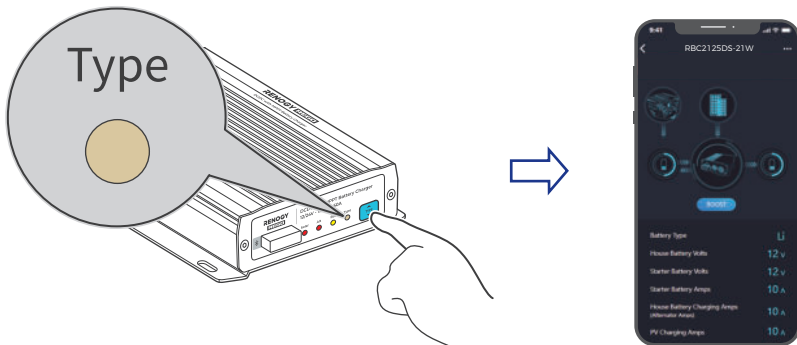


It is essential to ensure that the battery type setting is configured correctly to avoid any potential damage to the battery charger because any damage to the battery charger resulting from an incorrect battery type setting voids the warranty.



USER Mode

Setting the battery type to User Mode allows you to customize your battery parameters. You can modify the parameters in the Renogy app.



When customizing settings, consult the user manual provided by the battery manufacturer. If necessary, contact the manufacturer for further assistance.



For detailed parameter settings, see the user manual of the battery charger at renogy.com/support/downloads.

Monitor the Battery Charger

Download the Renogy app. Login to the app with your account.



Renogy App



GTE IT ON

Google Play



Download on the

App Store



For CAN communication details, see the user manual of the battery charger at renogy.com/support/downloads.



The version of the Renogy app might have been updated. Illustrations in the user manual are for reference only. Follow the instructions based on the current app version.



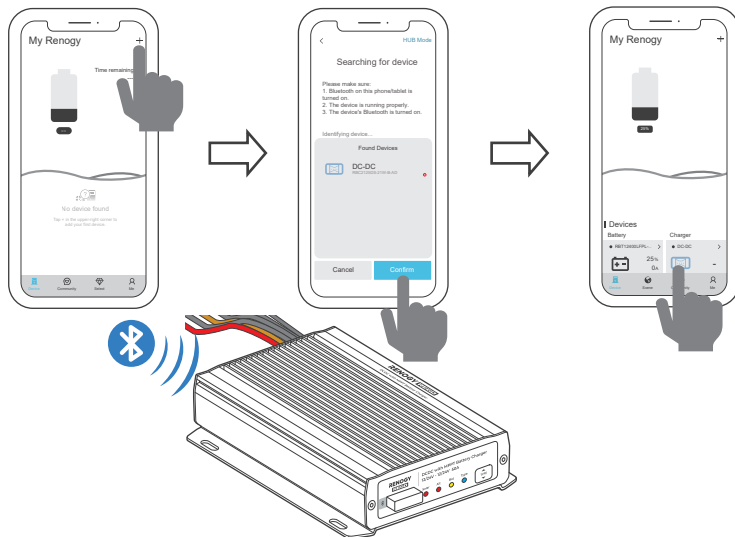
To ensure optimal system performance, keep the phone or RENOGY ONE within 10 feet (3 m) of the battery charger.



You can receive fault alarms on Renogy when the battery charger is faulty. Please login to the Renogy app for troubleshooting details.

Short-Range Monitoring via Renogy App

Pair the battery charger with the Renogy app. Monitor and modify the parameters of the battery charger via the app.

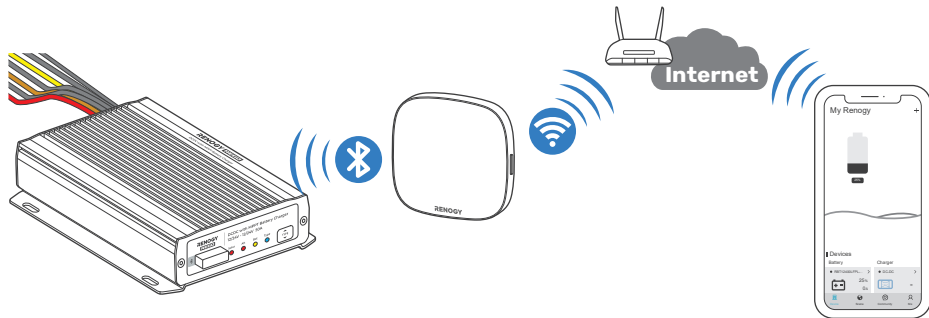


Wireless Long-Range Monitoring

Recommended Components



*RENOGY ONE Core
(Available at Renogy official stores)



Important Safety Instructions

General

- Wear proper protective equipment and use insulated tools during installation and operation. Do not wear jewellery or other metal objects when working on or around the battery charger.
- Keep the battery charger out of the reach of children.
- Do not dispose of the battery charger as household waste. Comply with local, state, and federal laws and regulations and use recycling channels as required.
- In case of fire, put out the fire with a FM-200 or CO₂ fire extinguisher.
- If installing this battery charger in a marine application or boat, please consult your qualified marine electrician prior to installation.
- Do not expose the battery charger to flammable or harsh chemicals or vapors.
- Clean the battery charger regularly.
- Do not puncture, drop, crush, penetrate, shake, strike, or step on the battery charger.
- Do not open, disassemble, repair, tamper with, or modify the battery charger.
- Connect the negative prior to the positive terminal when connecting any device.
- It is recommended that all cables should not exceed 10 meters due to voltage losses.
- The cable specifications listed in the quick guide account for critical, less than 3% voltage drop and may not account for all configurations.

■ **Battery Charger Safety**

- Install the battery charger on a vertical surface – protected from direct sunlight, high temperatures, and water. Make sure there is good ventilation.
- Keep the battery charger away from heating equipment.
- Do not insert foreign objects into the battery charger.
- Confirm the polarities of the devices before connection. A reverse polarity contact can result in damage to the battery charger, thus voiding the warranty.
- Do not touch the connector contacts while the battery charger is in operation.
- Disconnect all connectors from the battery charger before maintenance or cleaning.

■ **Battery Safety**

- Do not use batteries if there is any damage.
- Do not touch the exposed electrolyte or powder if the battery is damaged.
- Risk of explosion! Never install the battery charger in a sealed enclosure with flooded batteries! Do not install the battery charger in a confined area where battery gases can accumulate.
- Prior to installing the battery charger, ensure all battery groups are installed properly.

■ **Solar Panel Safety**

- Do not use the solar panel(s) if there is any damage.
- Prior to connecting the battery charger to the solar panel(s), shade the solar panel(s).
- Always connect the battery charger to the battery first before connecting it to the solar panel. This prevents damage caused by open-circuit voltage from the solar panel.

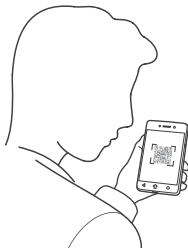
Renogy Support

To discuss inaccuracies or omissions in this quick guide or user manual, visit or contact us at:

 | renogy.com/support/downloads



contentservice@renogy.com



Questionnaire Investigation



To explore more possibilities of solar systems, visit Renogy Learning Center at:

 | renogy.com/learning-center



For technical questions about your product in the U.S., contact the Renogy technical support team through:

 | renogy.com/contact-us



1(909)2877111

For technical support outside the U.S., visit the local website below:

Canada |  | ca.renogy.com

China |  | www.renogy.cn

Australia |  | au.renogy.com

Japan |  | jp.renogy.com

Other Europe |  | eu.renogy.com

Germany |  | de.renogy.com

United Kingdom |  | uk.renogy.com

FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- (1) Reorient or relocate the receiving antenna.
- (2) Increase the separation between the equipment and receiver.
- (3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- (4) Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Disclaimer

Renogy REGO 12V/24V 50A IP67 Dual Input DC-DC On-Board with MPPT Battery Charger Quick Guide
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- Renogy is not responsible or liable for any failure, damage, or injury resulting from repair attempts by unqualified personnel, improper installation, and unsuitable operation.
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Renogy Power PLUS

Renogy Power Plus allows you to stay in the loop with upcoming solar energy innovations, share your experiences with your solar energy journey, and connect with like-minded people who are changing the world in the Renogy Power Plus community.



@Renogy Solar



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