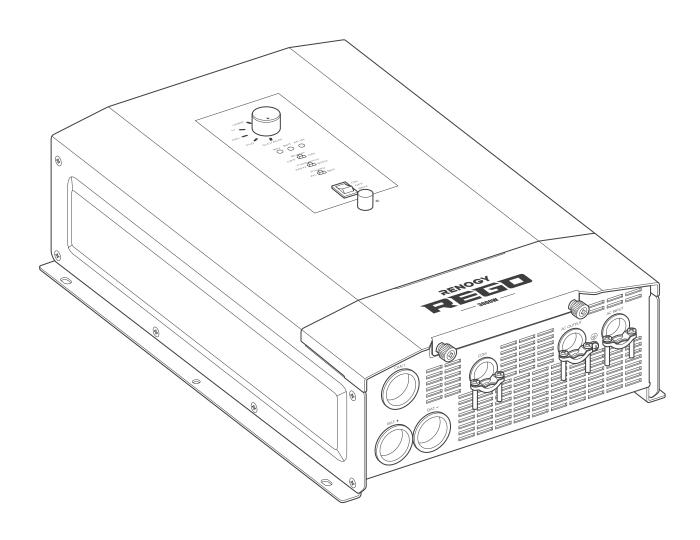
REGO HF Inverter Charger 12V | 3000W RIV1230RCH-SPS



VERSION AO



QUICK GUIDE

Before Getting Started

The quick guide provides important operation and maintenance instructions for REGO 12V 3000W HF Inverter Charger (hereinafter referred to as inverter 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 inverter charger, potentially rendering it inoperable.

- Renogy ensures the accuracy, sufficiency, and the applicability of information in the quick guide at the time of printing due to continual product improvements that may occur.
- Renogy assumes no responsibility or liability for personal and property losses, whether directly and indirectly, caused by the user's failure to install and use the product in compliance with the quick guide.
- Renogy is not responsible or liable for any failure, damage, or injury resulting from repair attempts by unqualified personnel, improper installation, or inappropriate operation.
- The illustrations in the quick guide are for demonstration purposes only. Details may appear slightly different depending on product revision and market region.
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Disclaimer

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Online Manual



Quick Guide



User Manual



DC Home App





Q DC Home App





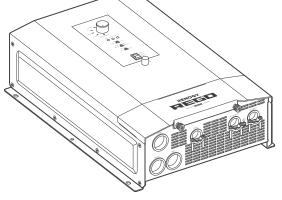
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What's In the Box? REGO 12V 3000W HF Inverter Charger × 1



Quick Guide × 1







Wired Remote Control x 1

RJ12 Cable (5m) x 1



Self-tapping Screws x 8

(2 extra)



Battery Temperature Sensor x 1

Battery Voltage Sensor × 1

Dry Contact Relay Connector × 1

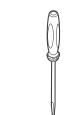


Make sure that all accessories are complete and free of any signs of damage.

Required Tools



Phillips Screwdriver (#2)



Slotted Screwdriver (1 mm)



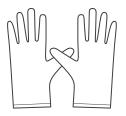
Socket Wrench (17/32 in)



Measuring Tape



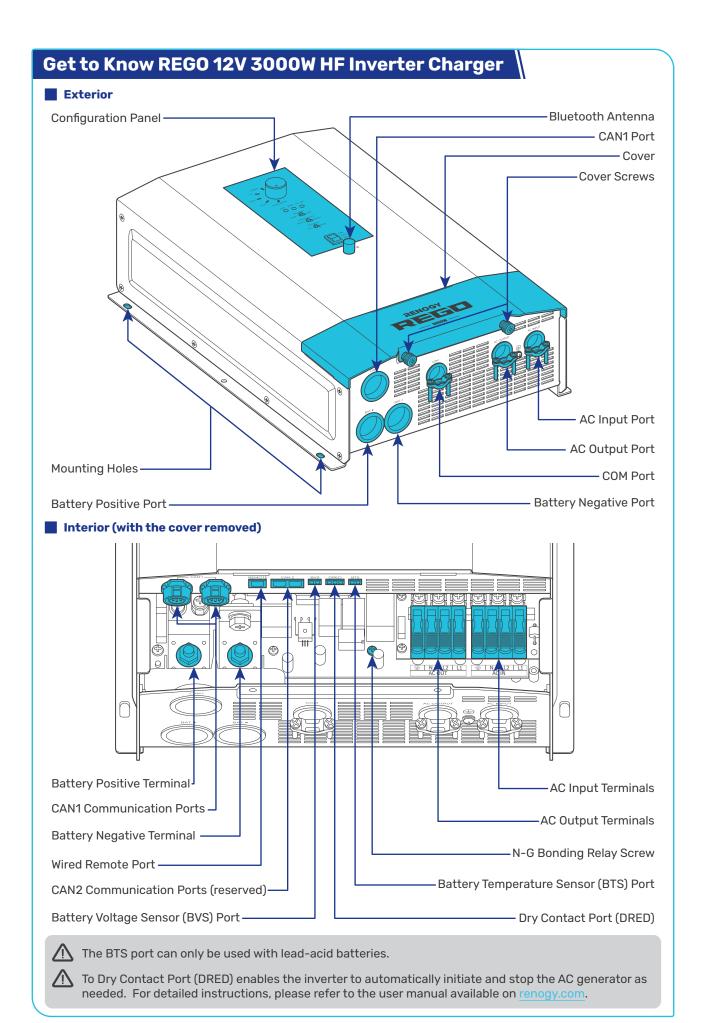
Wire stripper

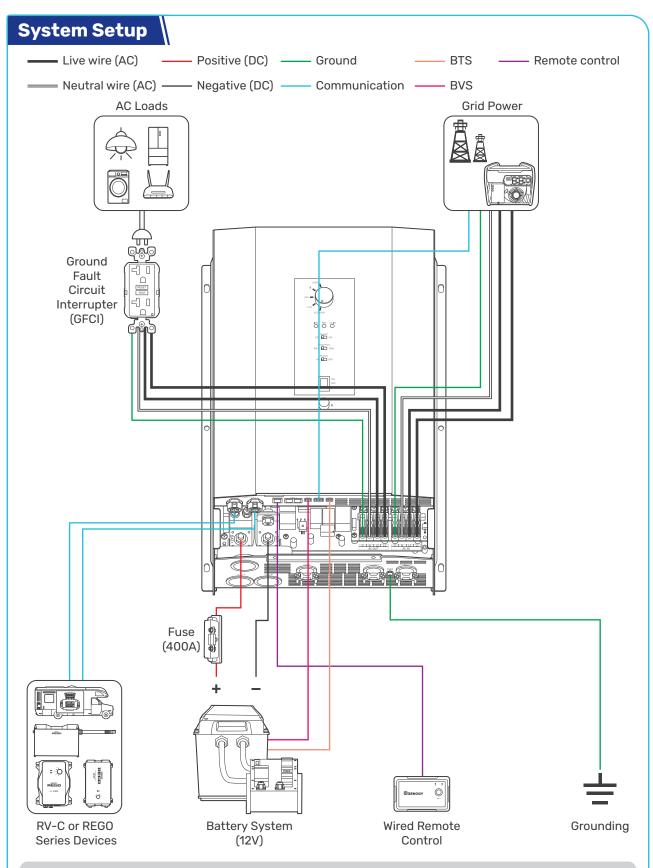


Insulating Gloves



Prior to installing and configuring the inverter charger, prepare the recommended tools, components, and accessories.







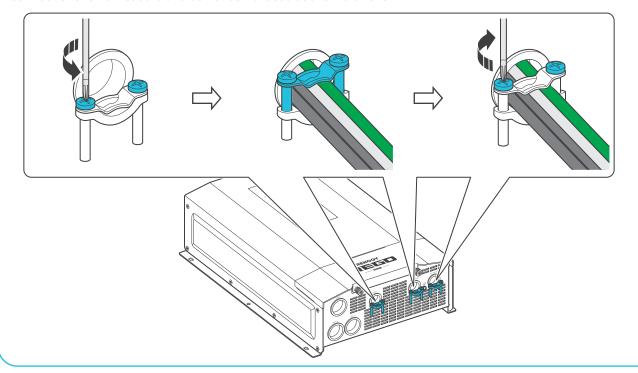
The wiring diagram only shows the key components in a typical DC-coupled off-grid energy storage system for the illustrative purpose. The wiring might be different depending on the system configuration. Additional safety devices, including disconnect switches, emergency stops, and rapid shutdown devices, might be required. Wire the system in accordance with the regulations at the installation site.



The connection of AC IN ports vary depending on the connected grid systems. For single-phase 120V grid systems, only AC IN L1 and N ports are used for the input. For split-phase 120V/240V grid systems, AC IN L1, L2, and N ports are used for the input.

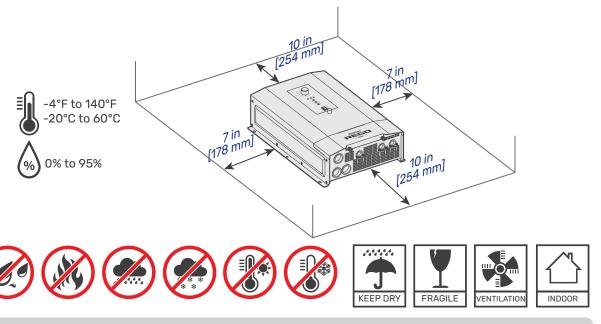
How to Properly Install Cable Clamps?

The AC Input Port, AC Output Port, and COM Port are equipped with cable clamps to ensure that the wiring connections remain secure and do not come loose due to vibrations.



Step 1. Plan a Mounting Site

The inverter charger requires adequate clearance for installation, wiring and ventilation. The minimum clearance is provided below. Ventilation is highly recommended if it is mounted in an enclosure. Select a proper mounting site to ensure the inverter charger can be safely connected to the battery, and grid/AC generator with the relevant cables.





The inverter charger should be installed on a vertical surface protected from direct sunlight.



The inverter charger cannot operate at full load in ambient temperatures above 113°F (45°C).



The inverter charger can be mounted either on a floor or on a wall.

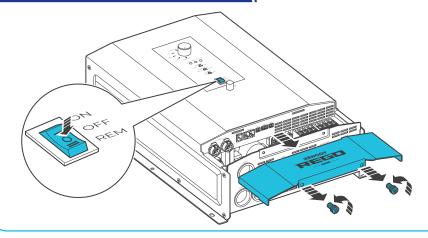
Step 2. Mount the Inverter Charger 0.27in

Secure the inverter charger to the installation site by using self-tapping screws through the mounting holes.

Make sure that the inverter charger is installed firmly to prevent it from falling off.



(7mm)

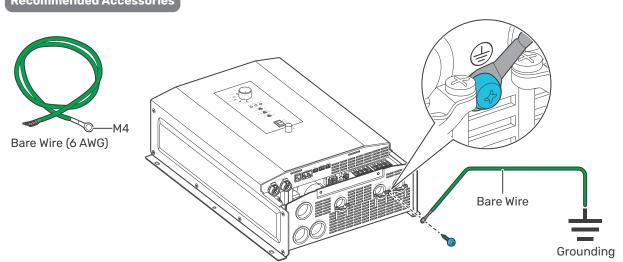


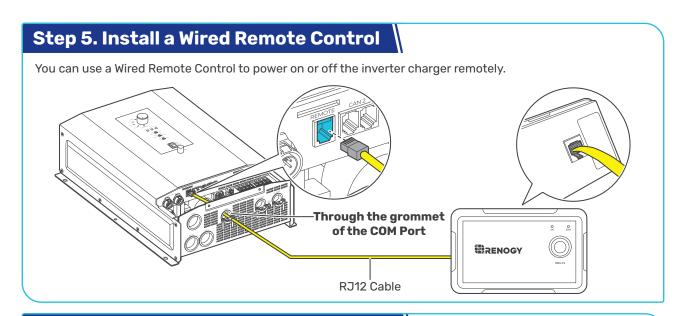
First, ensure the On/Off/Remote Power Switch is in the OFF position.

Second, turn the two Cover Screws counterclockwise either by hand or by using a Phillips screwdriver, and remove the Cover.

Step 4. Ground the Inverter Charger

Recommended Accessories

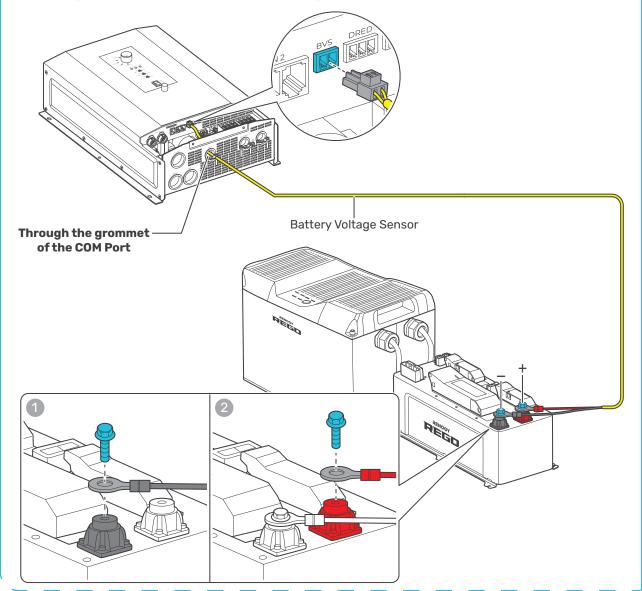


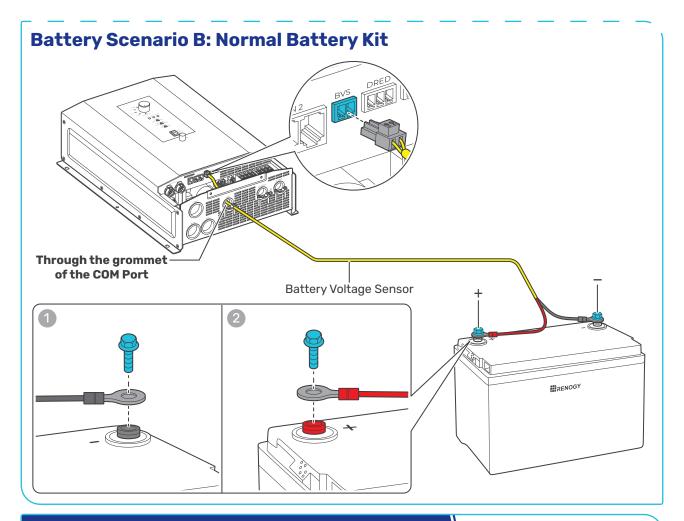


Step 6. Install a Battery Voltage Sensor

The Battery Voltage Sensor measures the battery voltage during discharging and compensates for any voltage drop across the cables at the battery terminal. This helps minimize the impact on the battery's operational voltage.

Battery Scenario A: REGO Battery Kit



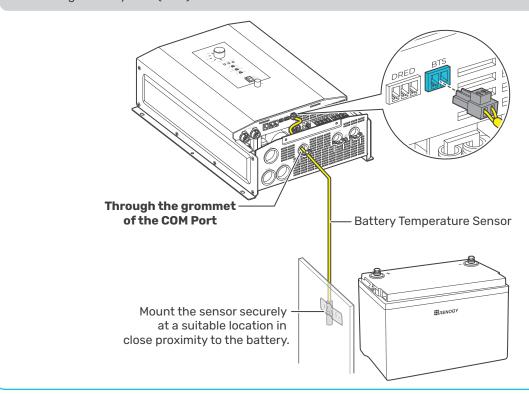


Step 7. Install a Battery Temperature Sensor

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).



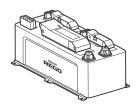
Step 8. Connect the Inverter Charger to a Battery

Battery Scenario A: REGO Battery Kit

Recommended Components & Accessories



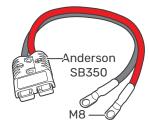
*REGO 12V 400Ah Lithium Iron Phosphate Battery



*REGO 4 Ports 400A System Combiner Box



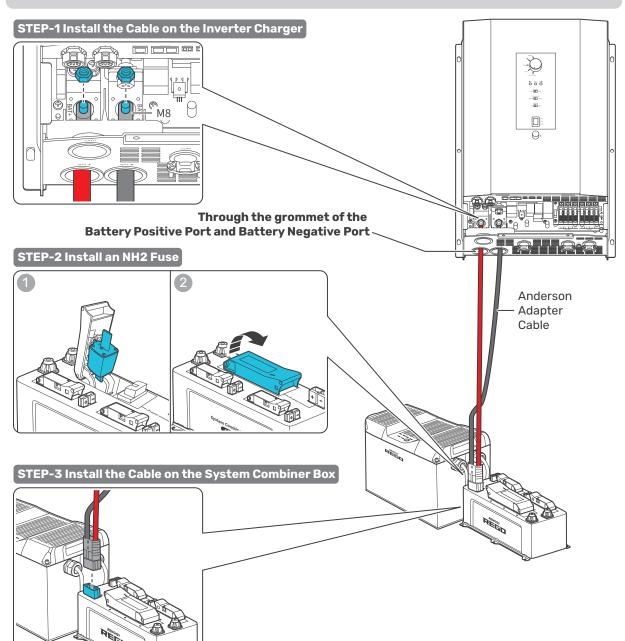
*NH2 Fuse (400A)



*Anderson Adapter Cable (4/0 AWG)



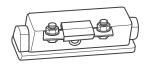
Accessories marked with "*" are available on renogy.com.



Battery Scenario B: Normal Battery Kit

Recommended Components & Accessories









*12V Battery

*ANL Fuse (400A)

Battery Adapter Cables $(4/0 \text{ AWG}) \times 2$

Fuse Cable (4/0 AWG)



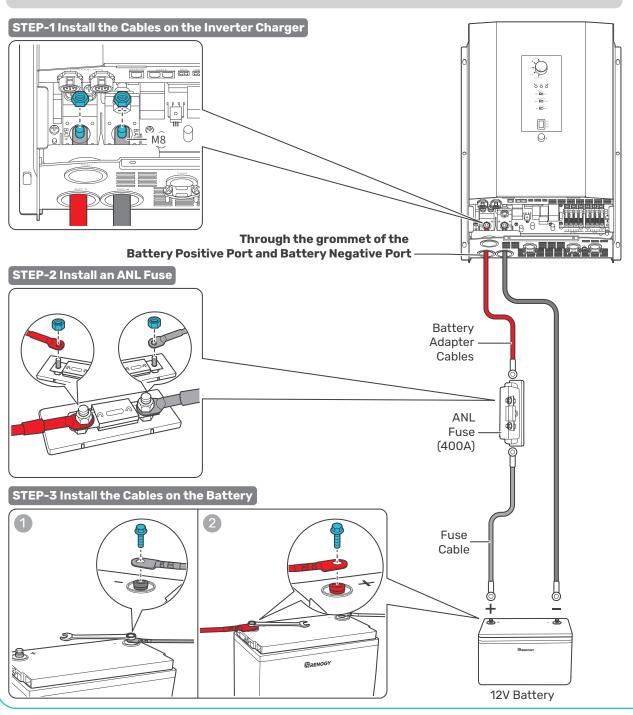
For details on how to connect the inverter charger to the battery, read the user manual of the specific



The inverter charger can only be connected to 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).

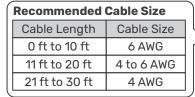


Accessories marked with "*" are available on renogy.com.



Step 9. Connect the Inverter Charger to AC Loads (Appliances)

Recommended Components & Accessories





Bare Wires × 4

Recommended GFCI Spec				
Grid Power	Ratings			
Unavailable	≥25A@120V			
Available	≥50A@120V			
	≥25A@240V			





Total Load Power **Grid Power** Ratings ≤3000W Unavailable @120V ≤6000W Available @120V/240V

Ground Fault Circuit Interrupter

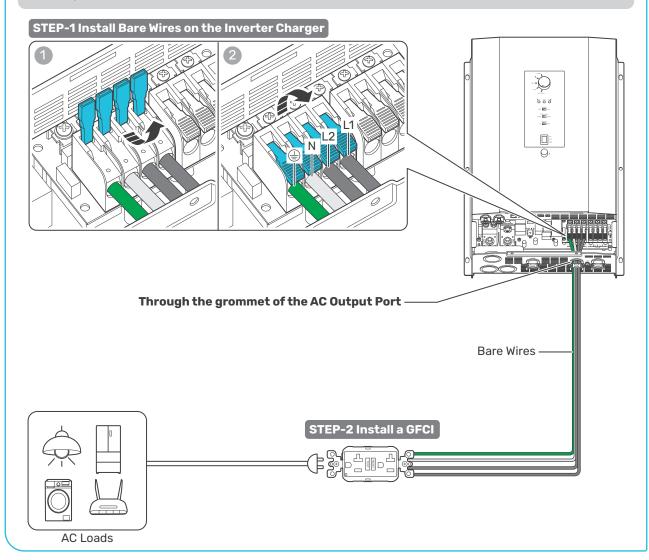
For details on how to connect loads and the inverter charger to the GFCI, read the user manual of the specific GFCI.



For split-phase 120V/240V grid systems where AC IN L1, L2, and N are used:

- When the AC output is connected to L1, L2, and N, the inverter charger outputs 240V.
- When the AC output is connected to L1 and N, the inverter charger outputs 120V.

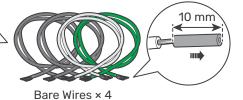
For single-phase 120V grid systems or when there is no available grid power, the inverter charger outputs 120V.

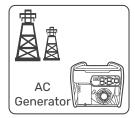


Step 10. Connect the Inverter Charger to the Grid (Optional)

Recommended Components & Accessories

	Recommended Cable Size					
	Cable Length	Cable Size				
	0 ft to 10 ft	6 AWG				
	11 ft to 20 ft	4 to 6 AWG				
	21 ft to 30 ft	4 AWG				
┖						





Grid Power (Single-phase 120V or Split-phase 120V/240V)



Risk of electric shock! Ensure the grid or the AC generator is turned off before connecting them to the inverter charger.



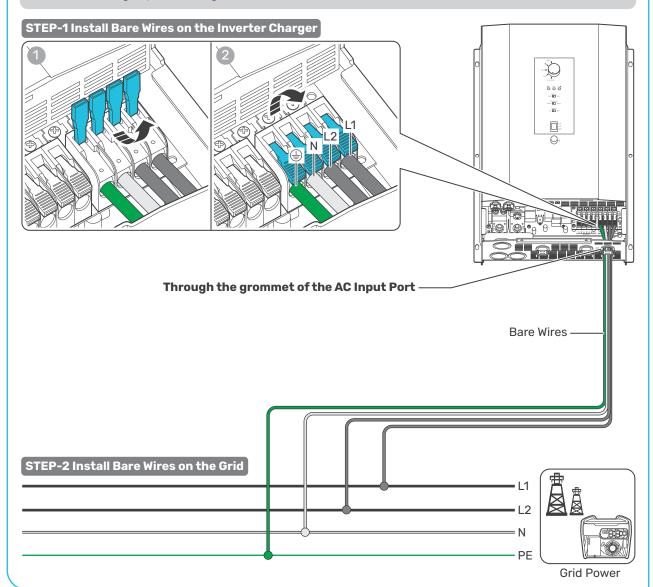
For details on how to connect the AC Generator to the inverter charger, read the user manual of the specific generator.



The connection of AC IN ports vary depending on the connected grid systems. For single-phase 120V grid systems, only AC IN L1 and N ports are used for the input. For split-phase 120V/240V grid systems, AC IN L1, L2, and N ports are used for the input.



⚠ If there is no available grid contact, connect the ground bare wire (one end connecting to 🗐) to the N bare wire as shown in the figure below. Failure to follow this step may result in charging/discharging issues with grid power, along with fault alarms.



Step 11. CAN Communication Wiring (Optional)

You can connect the inverter charger to other REGO devices for real-time inter-device data communication through any of the CAN1 Port.

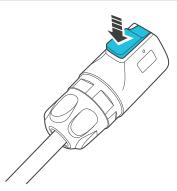
The wiring details vary depending on the wiring schemes. This quick guide elaborates on inter-device wiring in two schemes: backbone and daisy chain.



For technical support from Renogy, please contact us through renogy.com/contact-us/.



For wiring details, refer to the REGO 12V 3000W HF Inverter Charger User Manual at https://www.



To properly connect or disconnect the LP16 Terminal Plug to or from the inverter charger, you should

- 1. Ensure that the plug is oriented vertically toward the CAN1 Communication Port.
- 2. Press and hold the snap until the process is complete.

Shaking while plugging or unplugging is not allowed.

Backbone Network

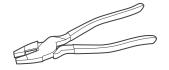
Recommended Tools & Accessories







Drop Plugs



Split Joint Pliers



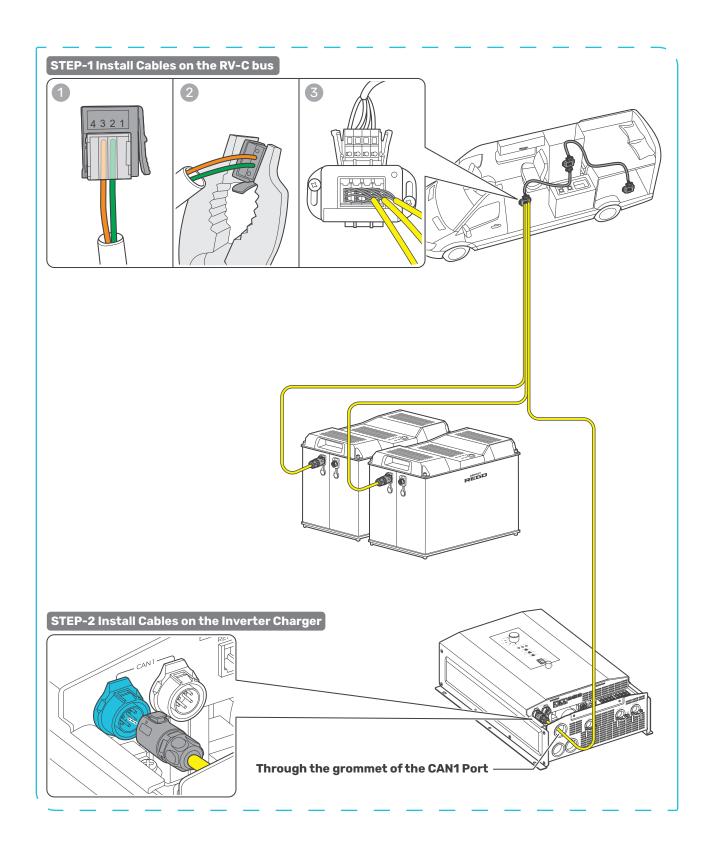
Ensure 120Ω terminating resistors are installed at both ends of the RV-C bus for successful communication with REGO series devices.

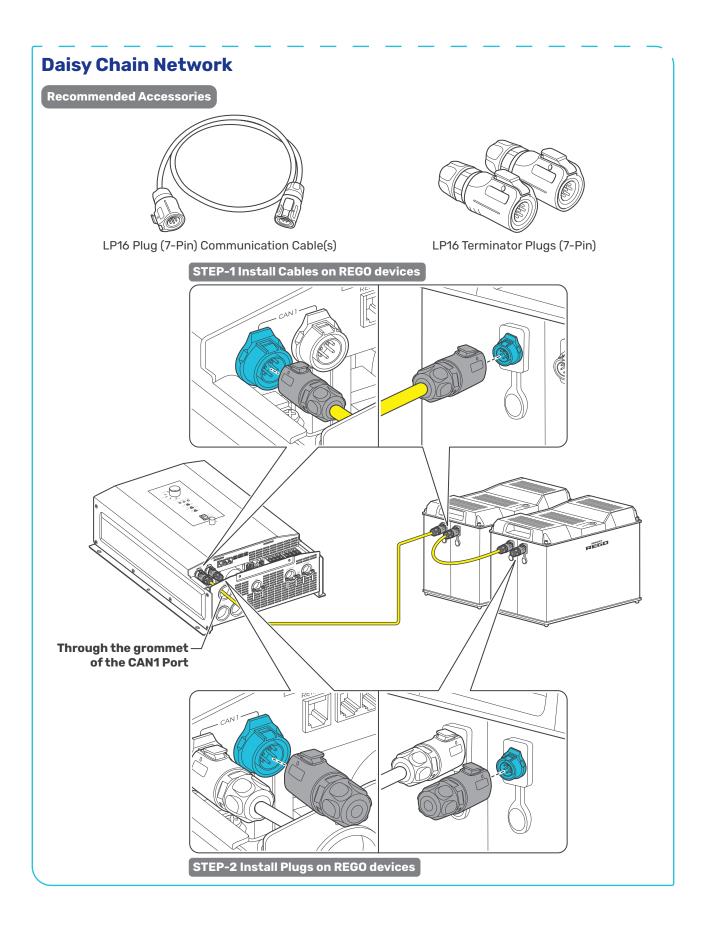


Choose the appropriate drop plugs that are compatible with the drop sockets used on the RV-C bus. Different RV manufacturers may use different types of drop sockets for inter-device communication connections. If you are unsure about the correct drop plug selection, consult with the RV manufacturer. In this quick guide, the Mini-Clamp II plug (4-pin) is used as an example.

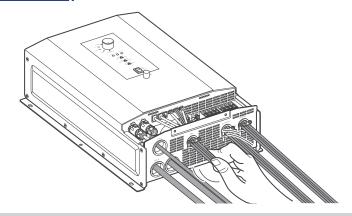


Different Drop Plugs follow different pinouts. Crimp the Drop Plugs on the Drop Cables following the correct pinout. If you are not sure about the Drop Plug pinout, check with the RV manufacturer.



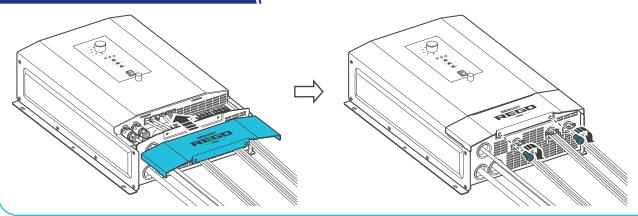


Step 12. Inspection



Check and confirm all wires are firmly fastened to the inverter charger.

Step 13. Install the Cover

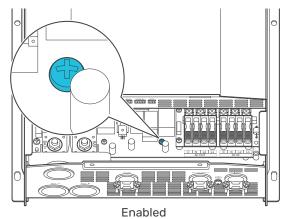


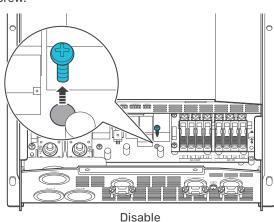
N-G Bonding Relay

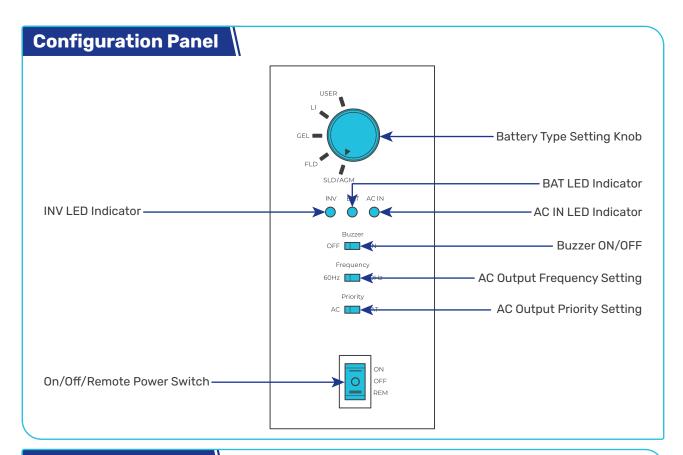
The inverter charger is equipped with a Neutral to Ground bonding relay that ensures that either the neutral in or out contact of the RV is always grounded.

This helps prevent electrical shock caused by contact between the neutral contacts of the RV and external AC power sources.

By default, the Neutral to Ground bonding relay is enabled when the inverter is shipped from the factory. To disable the relay function, remove the N-G bonding relay screw.





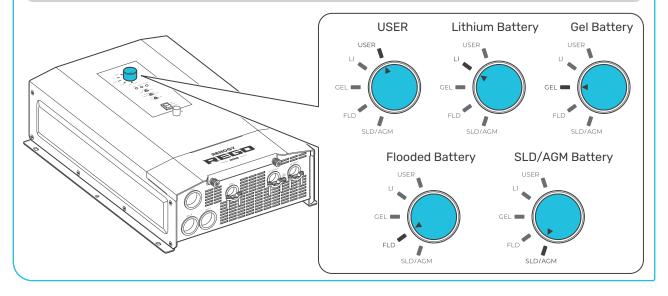


Set a Battery Type

Upon installing the inverter charger, set a correct battery type by using the Battery Type Setting Knob.

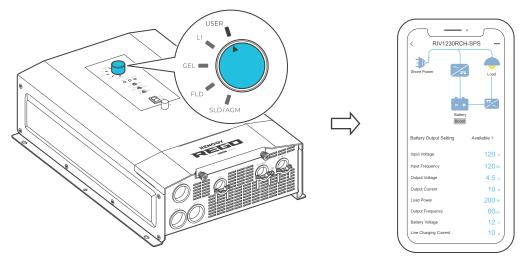


It is essential to ensure that the battery type setting is configured correctly to avoid any potential damage to the inverter charger because any damage to the inverter charger resulting from an incorrect battery type setting voids the warranty.



USER Mode

Setting the battery type to USER allows you to customize your battery parameters. You can modify the parameters in the DC Home app.



The table below illustrates the default and recommended parameters for batteries that can be connected to the inverter charger. The parameters may vary depending on the specific battery you use. Read the user manual of the specific battery or contact the battery manufacturer for help if necessary.

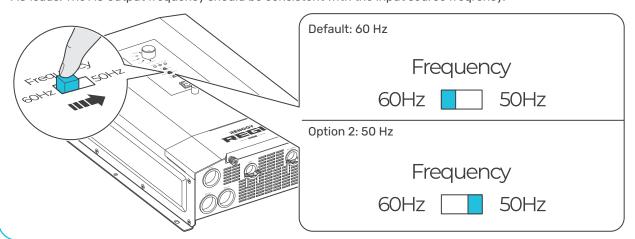
Battery Type Parameters	SLD/AGM	GEL	FLOODED	LI (LFP)	USER (Default)	USER (Recommended)
Overvoltage Shutdowm	15.8V	15.8V	15.8V	15.8V	15.8V	9.0-16.0V
Overvoltage Limt	15.5V	15.5V	15.5V	14.8V	15.5V	9.0-16.0V
Equalization Volatge	_	_	14.8V	_	14.8V	9.0-15.5V
Boost Voltage	14.6V	14.2V	14.6V	14.4V	14.2V	9.0-15.5V
Float Voltage	13.8V	13.8V	13.8V	_	13.8V	9.0-15.5V
Boost Return Voltage	13.2V	13.2V	13.2V	13.6V	13.2V	9.0-15.5V
Low Voltage Reconnect	12.6V	12.6V	12.6V	12.8V	12.6V	9.0-16.0V
Under Voltage Warning	12.0V	12.0V	12.0V	12.0V	12.0V	9.0-15.5V
Low Voltage Shutdown	11.1V	11.1V	11.1V	11.5V	11.1V	9.0-15.5V
Boost Duration	120 min*	120 min*	120 min*	_	120 min*	10-600min
Equalization Duration	_	_	120 min	_	120 min	0-600min
Equalization Interval	0 day**	0 day**	30 days	_	30 days	0-255days

- *For SLD/AGM, GEL, and Flooded batteries, the inverter charger automatically switches to float charging when the charging current drops below the tail current of the battery for 30 seconds.
- **No equalized charging.
- Parameters in grey cannot be configured manually.
- When the battery voltage reaches the Low Voltage Shutdown value, the BAT LED is solid yellow or red.
 Disconnect all loads, and charge the battery immediately.

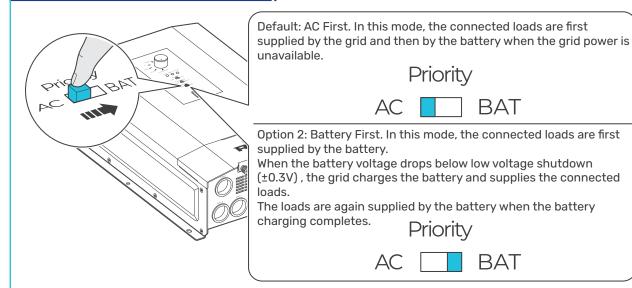
Default: OFF. Buzzer OFF ON The buzzer beeps different patterns specific to system status: Intermittent beeping (0.5s): Warning Continuous beeping: Error Buzzer OFF ON

Set an AC Output Frequency

Configure the AC output frequency of the inverter charger in accordance with the frequency of the connected AC loads. The AC output frequency should be consistent with the input source freqrency.



Set an AC Output Priority



How to check whether a battery charging process completes?

- For non-lithium batteries: The battery charging is considered complete when the battery stays in the float charging stage for 2 hours.
- For lithium batteries: The battery charging is considered complete when the battery stays in the constant voltage charging stage with a charging current less than the battery tail current for 2 hours.

Power On/Off

Method 1: Through On/Off/Remote Power Switch



OFF: The inverter charger is off.

The inverter charger uses grid power to directly power AC loads or appliances without drawing power from the batteries. The grid charges the connected battery at the same time.

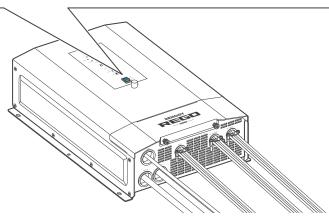


ON: The inverter charger is on.

The inverter charger prioritizes charging the batteries or supplying power to the loads from the grid based on the AC Output Priority. In this mode, the grid and batteries can work together to power loads up to a combined load of 6000W.

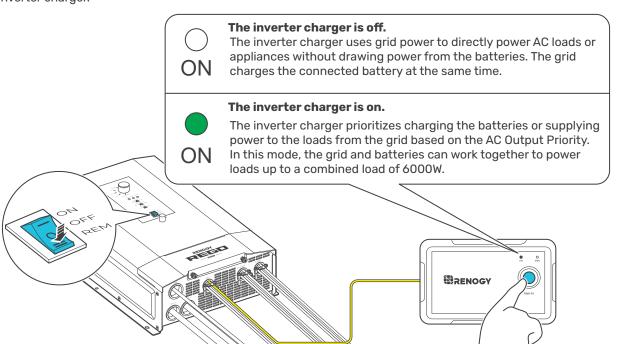


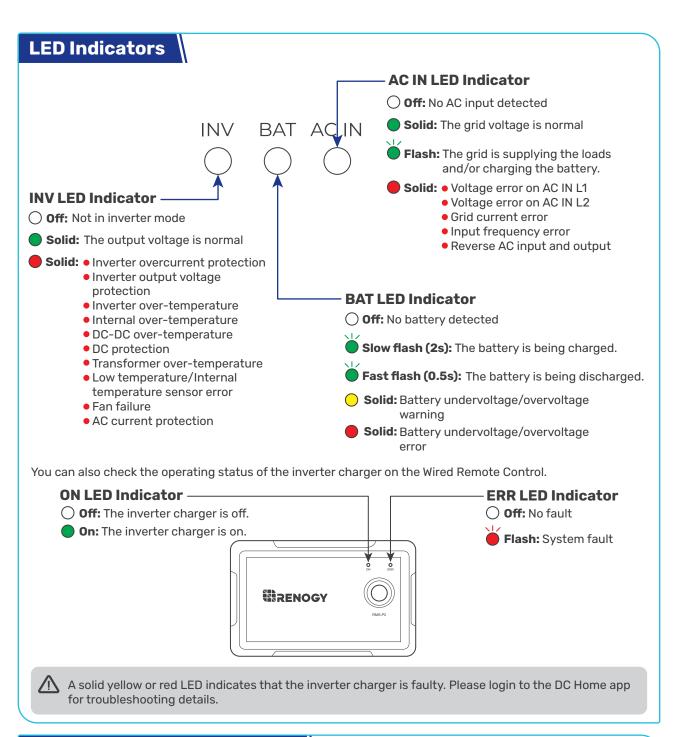
REM: Turn on or off the inverter charger via the Wired Remote Control.



Method 2: Through Wired Remote Control

Push the On/Off/Remote Power Switch to the REM position. Press the RMS-P button to power on or off the inverter charger.

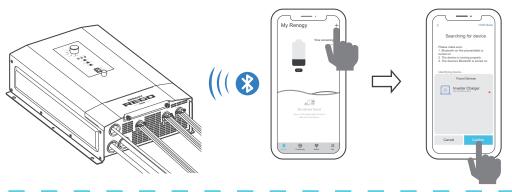


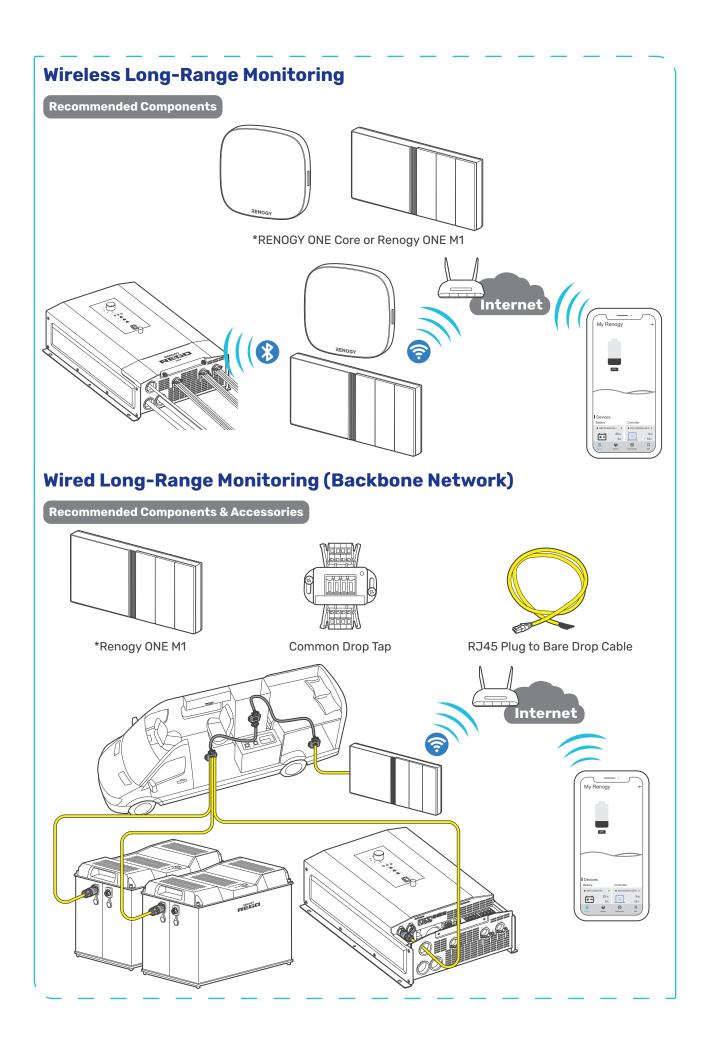


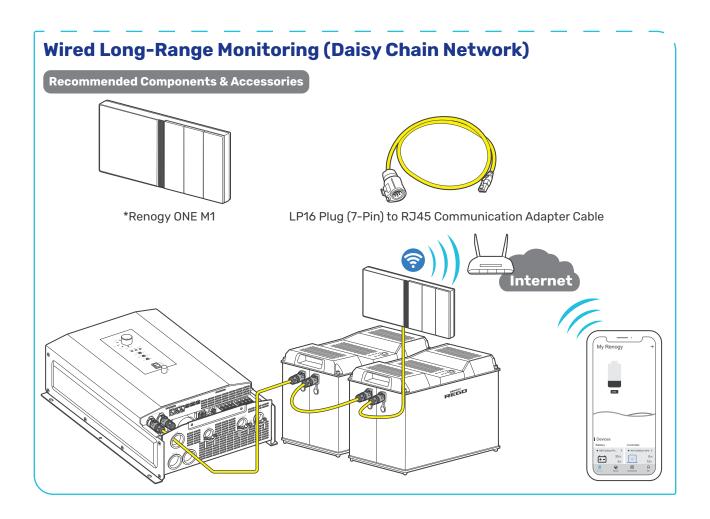
Monitor the Inverter Charger

Short-Range Monitoring via DC Home App

Pair the inverter charger with the DC Home app. Monitor and modify the parameters of the inverter charger via the app.







Important Safety Information

General

- Wear proper protective equipment and use insulated tools during installation and operation. Do not wear
 jewelry or other metal objects when working on or around the inverter charger.
- Keep the inverter charger out of the reach of children.
- Do not dispose of the inverter 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 the inverter charger is installed improperly on a boat, it may cause damage to components of the boat. Have the inverter charger by a qualified electrician.
- Do not expose the inverter charger to flammable or harsh chemicals or vapors.
- Clean the inverter charger regularly to ensure the cooling fans are not blocked.
- It is recommended that all cables (except communication cables) should not exceed 10 meters (32.8 feet) because excessively long cables result in a voltage drop. The communication cables should be shorter than 6 m (19.6 feet).
- The cable specifications listed in the quick guide account for critical, less than 3% voltage drop and may not account for all configurations.

Inverter Charger Safety

- There are no serviceable parts in the inverter charger. Do not open, dismantle, repair, tamper with, or modify the inverter charger.
- Confirm the polarities of the devices before connection. A reverse polarity contact can result in damage to the inverter charger and other connected devices, thus voiding the warranty.
- Ensure the inverter charger is firmly grounded to a building, vehicle, or earth grounded. Keep the inverter away from EMI receptors such as TVs, radios, and other audio/visual electronics to prevent damage / interference to the equipment.
- The inverter charger generates heat when working. To prevent burns, touch the configuration panel only when the inverter charger is working.
- Do not parallel the inverter charger with other AC input sources to avoid damage.

Battery Safety

- Risk of electric shock! Ensure the connected battery is turned off before connecting it to the inverter charger.
- 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 inverter charger in a sealed enclosure with flooded batteries! Do not
 install the inverter charger in a confined area where battery gases can accumulate.
- Prior to installing the inverter charger, ensure all battery groups are installed properly.
- The inverter charger should be as close to the battery as possible to avoid voltage drop due to long cables.
- Ensure the battery voltage is within the normal range (9V to 15.8V) according to its user manual. If the battery voltage is lower than 9V, the inverter charger fails to detect the battery. If the battery voltage is higher than 15.8V, the inverter charger is damaged.

Renogy Support

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



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



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



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

Canada		China	
Australia		Japan	
South Korea		Germany	de.renogy.com
United Kingdom	ı _ uk.renogy.com	Other Europe	

1(909)2877111

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 20 cm between the radiator & your body.



Renogy Empowered

Renogy aims to empower people around the world through education and distribution of DIY-friendly renewable energy solutions.

We intend to be a driving force for sustainable living and energy independence.

In support of this effort, our range of solar products makes it possible for you to minimize your carbon footprint by reducing the need for grid power.



Live Sustainably with Renogy

Did you know? In a given month, a 1kW solar energy system will...



Save 170 pounds of coal from being burned



Save 300 pounds of CO2 from being released into the atmosphere



Save 105 gallons of water from being consumed



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 reserves the right to change the contents of this quick guide without notice.











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