RENOGY
TRUSTED ENERGY SOLUTIONS

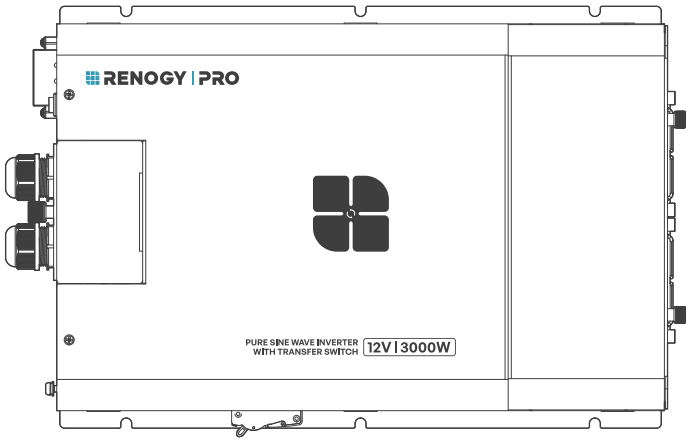
RENOGY

Pure Sine Wave Inverter with Transfer Switch

12V | 3000W

RIV1230PU-235

VERSION A0
June 30, 2026



EN **Renogy Pure Sine Wave Inverter with Transfer Switch**
Quick Guide 01

DE **Renogy Reiner-Sinus-Wechselrichter mit Netzumschalter**
Schnellstartanleitung 27

Before Getting Started

The quick guide provides important operation and maintenance instructions for RENOGY 12V 3000W Pure Sine Wave Inverter with Transfer Switch (hereinafter referred to as inverter).

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, 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 User Maunal

Visit your local Renogy website to view the complete user manual.

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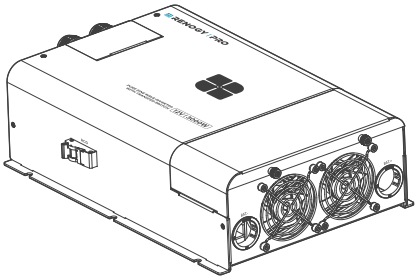
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1. Get to Know RENOGY 12V 3000W Inverter

1.1. What's In the Box?

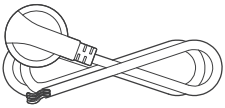
RIV1230PU-235-AU, RIV1230PU-235-UK, RIV1230PU-235-DE, and RIV1230PU-235-SA

RENOGY 12V 3000W
Pure Sine Wave Inverter with Transfer Switch × 1



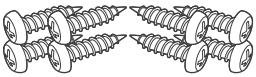


Quick Guide × 1



AC Power Cable
(optional) × 1

ST6.3*1.8*13 mm



Self-tapping Screws x 8
(2 extra)



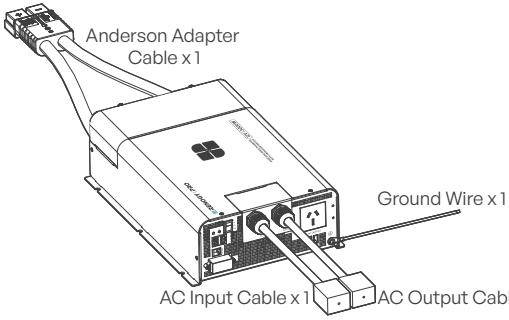
Wired Remote
Control × 1



RJ12 Ethernet
Cable (5m) × 1

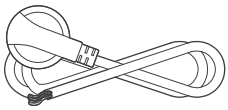
RIV1230PU-235-W-AU

RENOGY 12V 3000W
Pure Sine Wave Inverter with Transfer Switch × 1



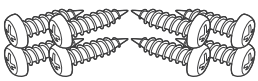


Quick Guide × 1



AC Power Cable
(optional) × 1

ST6.3*1.8*13 mm



Self-tapping Screws x 8
(2 extra)



Wired Remote
Control × 1



RJ12 Ethernet
Cable (5m) × 1

Ensure 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.

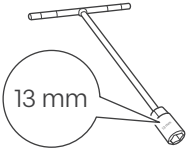
This quick guide utilizes the RIV1230PU-235-AU model as a reference for its illustrations. The product component and functions apply to the RIV1230PU-235-W-AU, RIV1230PU-235-UK, RIV1230PU-235-DE, and RIV1230PU-235-SA models.

1.2. Required Tools

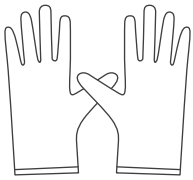
Prior to installing and configuring the inverter, prepare the recommended tools.



Phillips Screwdriver (#1)



Socket Wrench (17/32 in)



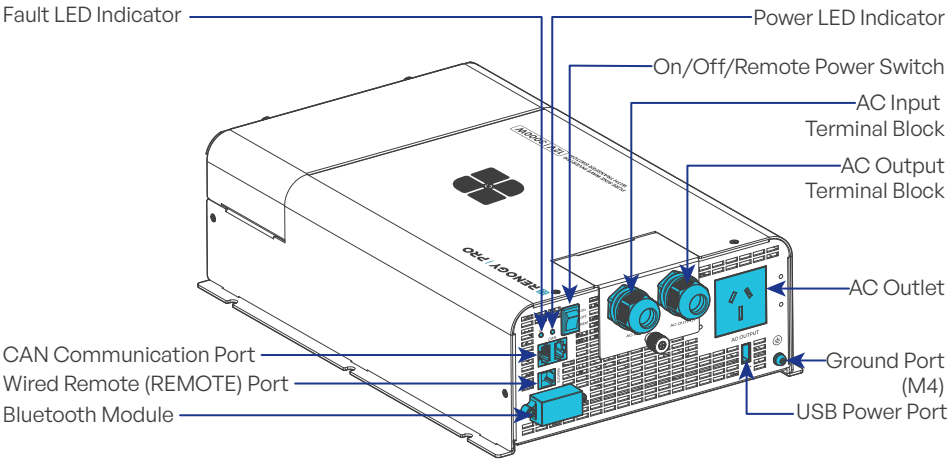
Insulating Gloves



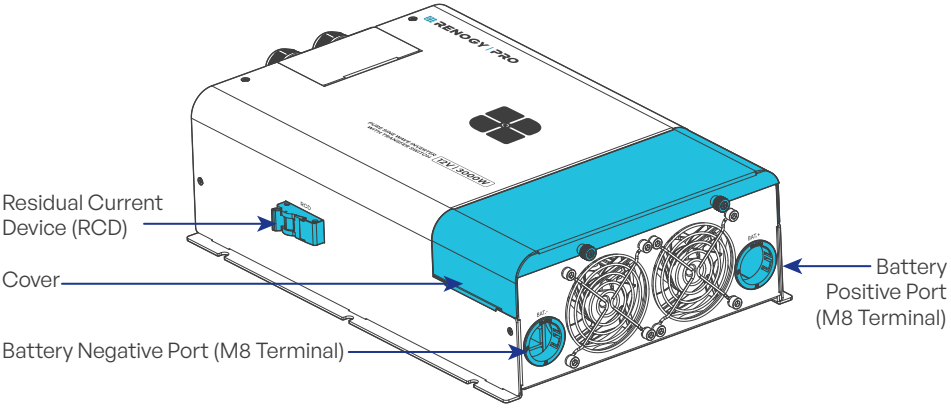
Wire Stripper

1.3. Product Overview

AC Side View

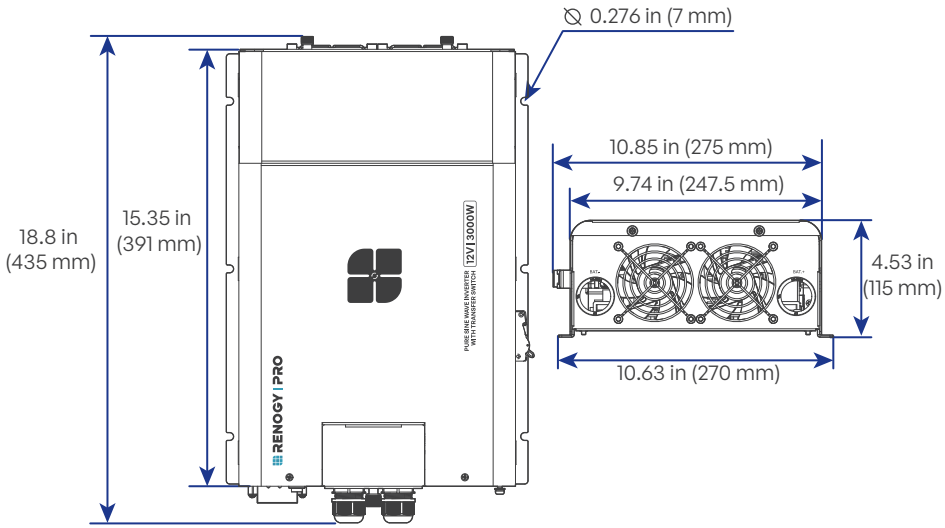


DC Side View



1.4. Dimensions

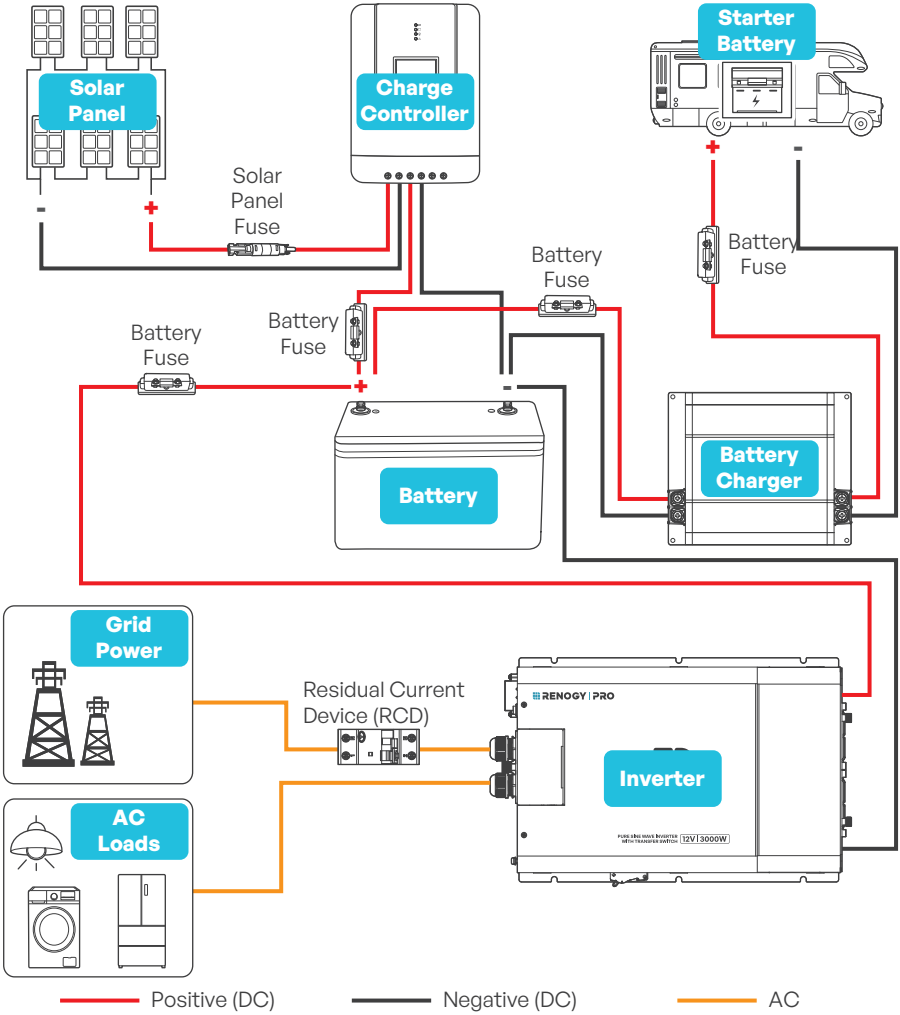
Dimension tolerance: ±0.02 in (0.5 mm)



1.5. Symbols on Product

Symbol	Description	Symbol	Description
	Keep dry		Fragile
	Ventilation		Read and understand the instruction manual before use.
	For indoor use only		Do not dispose of the product together with household waste.
	Materials used are recyclable.	CE	CE mark of conformity EU/EEA Importer
	Regulatory compliance mark	RoHS	Restriction of Hazardous Substances compliant

1.6. System Setup



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.

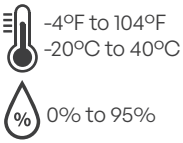
The grid supplies the connected loads only. It does not charge the battery.

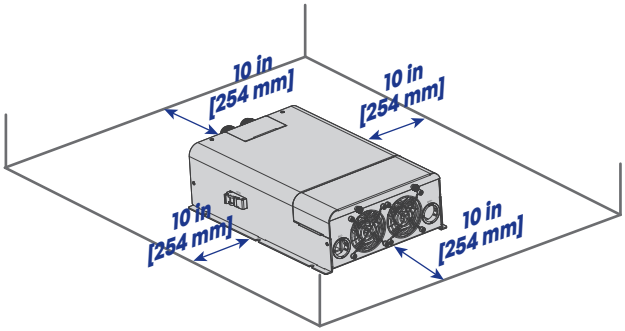
The recommended specifications for the RCD are: AC 230V/240V, C16, 30mA, Type A. Please note that the external RCD should be Type A; using an AC-type RCD may pose safety hazards or lead to incorrect operation.

3. Installation

3.1. Plan a Mounting Site

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

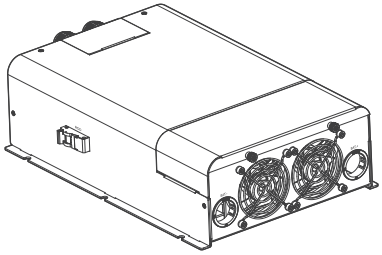


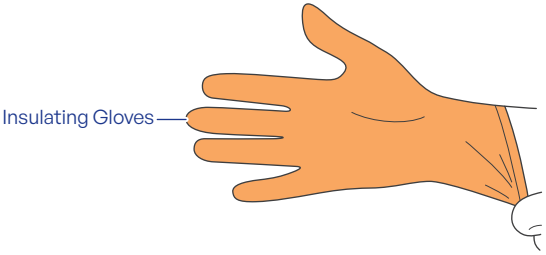




- The inverter should be as close to the battery as possible to avoid voltage drop due to long cables.
- The inverter charger should be installed on a vertical surface protected from direct sunlight.
- The inverter charger can be mounted either on a floor or on a wall.
- Ensure the inverter is firmly 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.

3.2. Wear Insulating Gloves

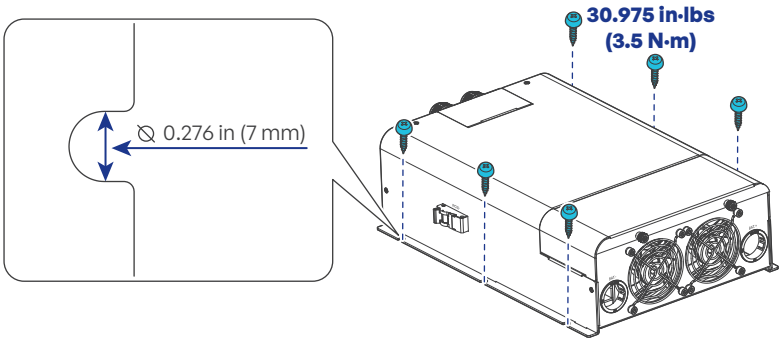




3.3. Mount the Inverter

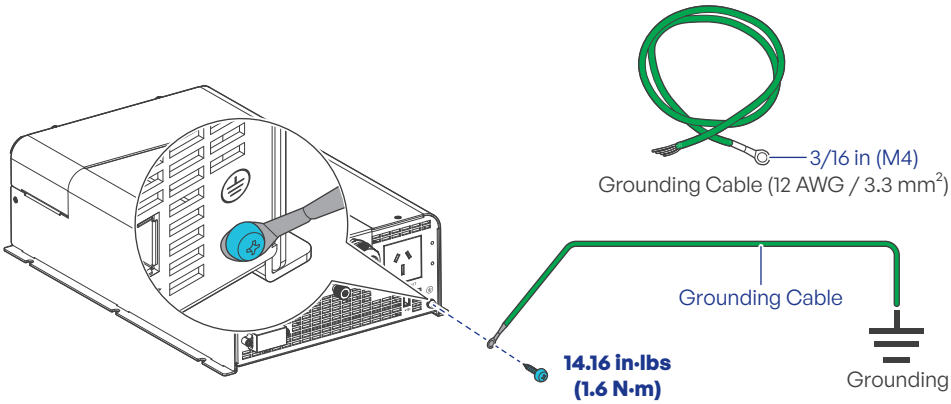
Secure the inverter to the installation site by fixing the included self-tapping screws through the mounting holes.

Please ensure that the inverter is installed securely and level to avoid tilting. Additionally, be sure to tighten the screws to prevent resonance and noise during operation.



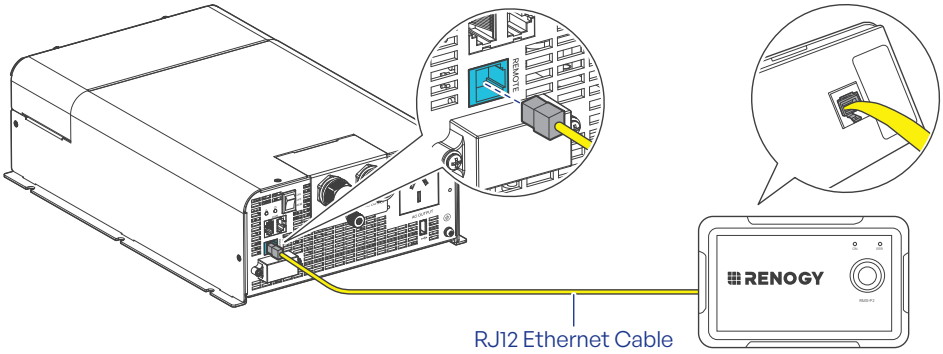
Ensure that the inverter is installed firmly to prevent it from falling off.

3.4. Ground the Inverter

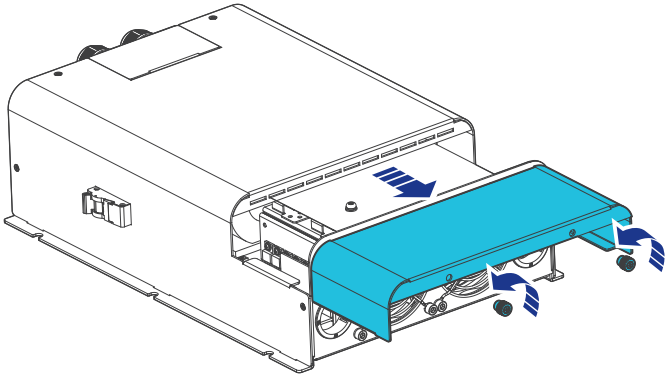


3.5. Install a Wired Remote Control

You can use a Wired Remote Control to power on or off the inverter remotely.

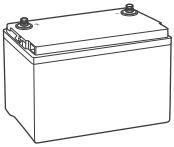


3.6. Remove the Cover

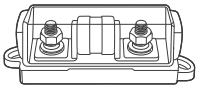


3.7. Connect the Inverter to a Battery

Recommended Components & Accessories

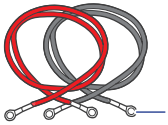


*12V Battery



*400A Class T Fuse

4/0 AWG (107.2 mm²)



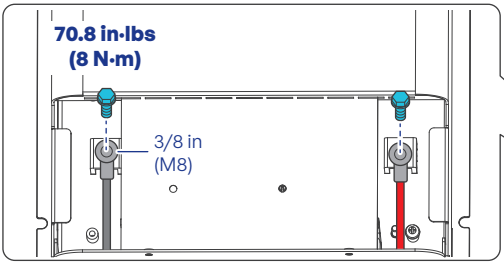
*Battery Adapter Cables × 2

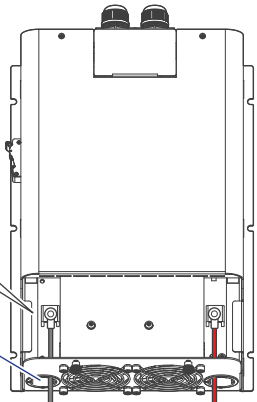
4/0 AWG (107.2 mm²)



*Fuse Cable × 1

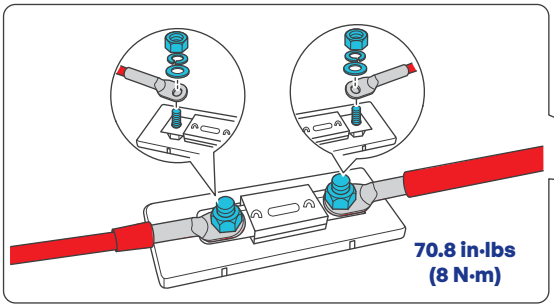
Steps-1 & 2 Install the Cable on the Inverter





Through the grommet of the Battery Positive Port and Battery Negative Port

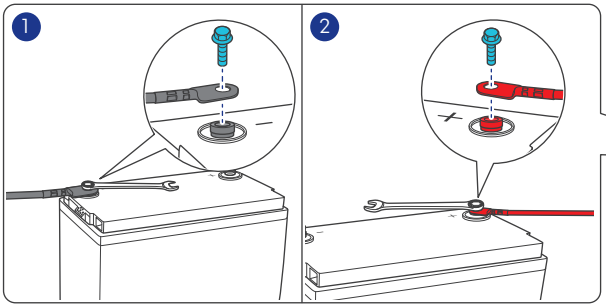
STEP-3 Install an CLass T Fuse



Battery Adapter Cables

400A Class T Fuse

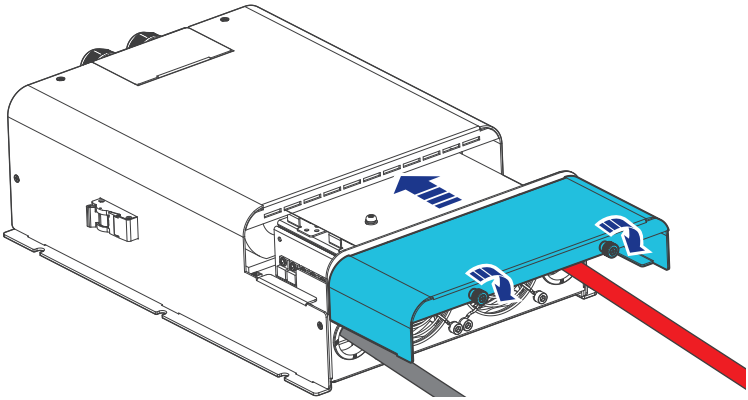
STEP-4 Install the Cables on the Battery



Fuse Cable

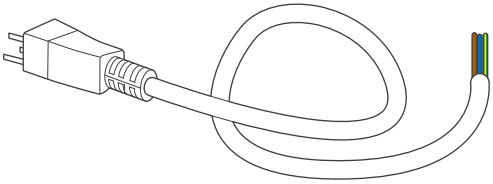
12V Battery

3.8. Install the Cover



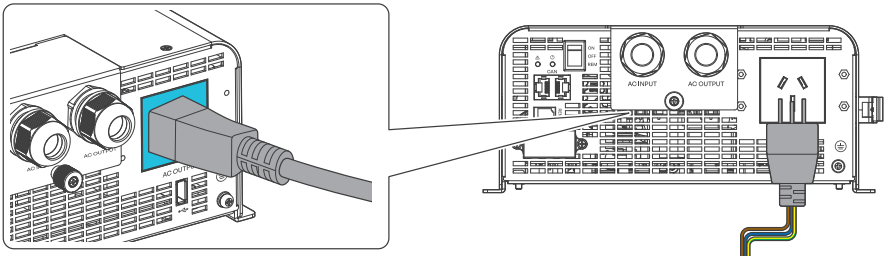
3.9. Connect the Inverter to AC Loads (Appliances)

Recommended Components

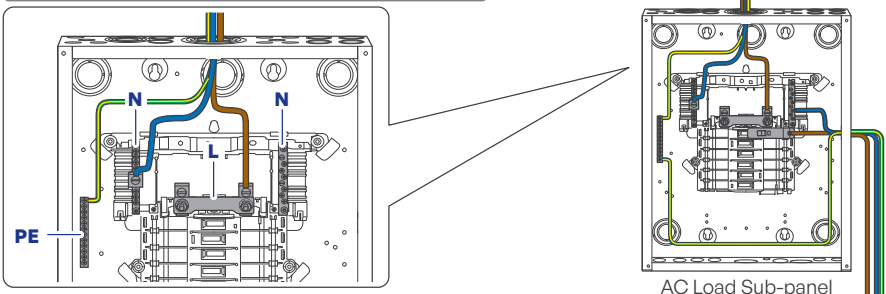


AC Power Cable w/ Bare End

STEP-1 Install the Cable on the Inverter

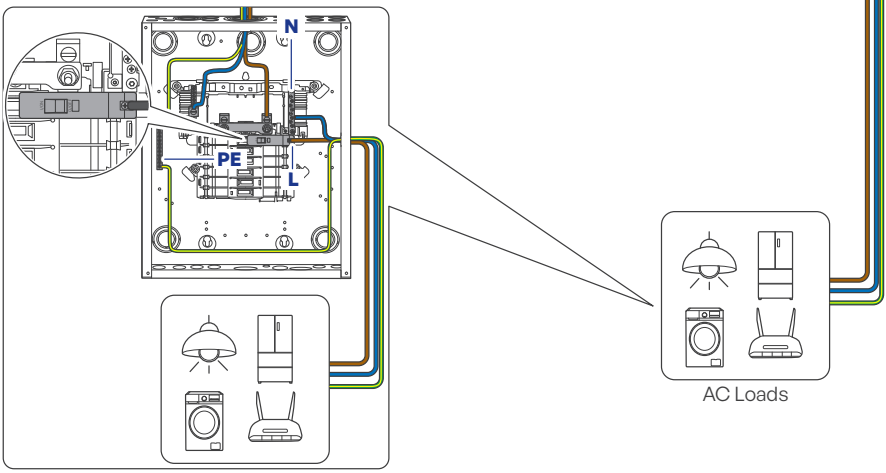


STEP-2 Connect the Bare Ends to an AC Load Sub-panel



AC Load Sub-panel

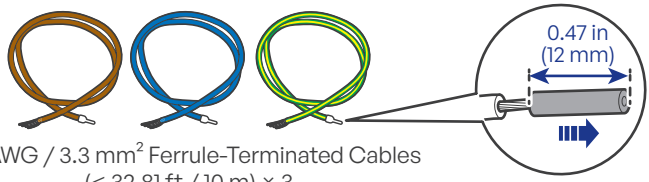
STEP-3 Install Circuit Breakers and AC Loads on Demand



AC Loads

AC Output Terminal Block

Recommended Components & Accessories

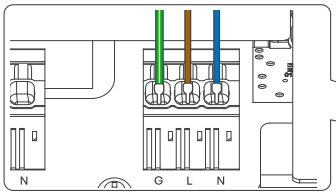


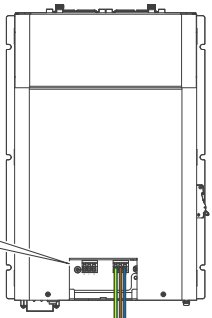
*12 AWG / 3.3 mm^2 Ferrule-Terminated Cables
(< 32.81 ft / 10 m) × 3

When the cables length exceeds 32.81 ft (10 m), a thicker gauge cable is required.

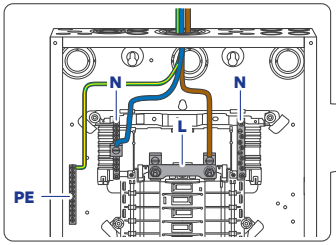
Components and accessories marked with "*" are available on renogy.com.

STEP-1 Insert the Ferrule-Terminated Cables to the Inverter

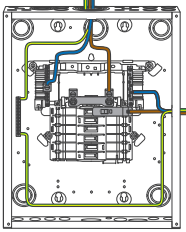




STEP-2 Connect the Bare Ends to an AC Load Sub-panel

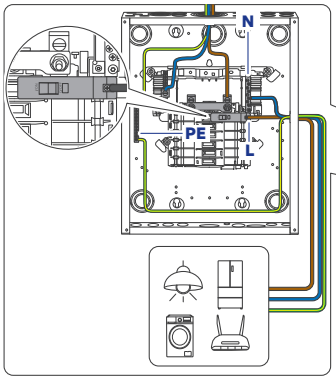


Ferrule-Terminated Cables



AC Load Sub-panel

STEP-3 Install Circuit Breakers and AC Loads on Demand





AC Loads (≤ 3000W)

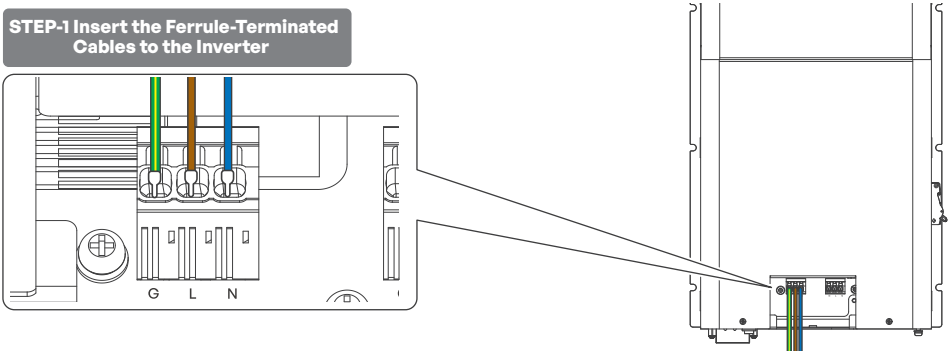
3.10. Connect the Inverter to the Grid (Optional)

Recommended Components & Accessories

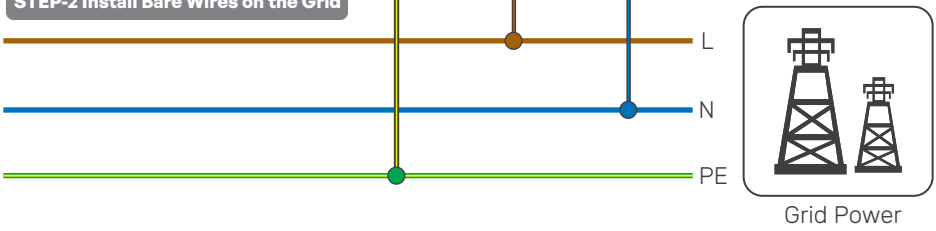


*12 AWG / 3.3 mm^2 Ferrule-Terminated Cables
(< 32.81 ft / 10 m) × 3

STEP-1 Insert the Ferrule-Terminated Cables to the Inverter



STEP-2 Install Bare Wires on the Grid

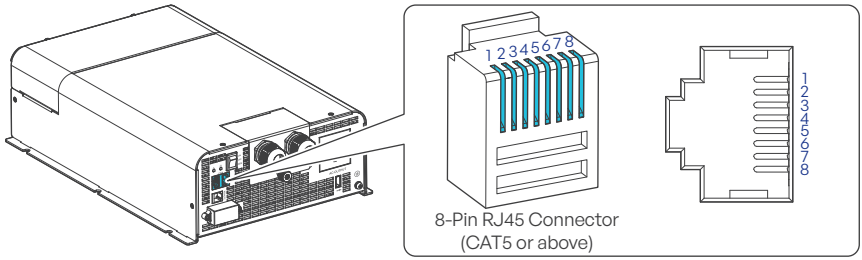


⚠ When the battery voltage is below 10.5V, connecting the AC input is prohibited.

ℹ When the AC input exceeds 13A (UK)/15A (AU)/16A (DE & SA), the inverter may automatically shuts down the AC input to prevent damage caused by excessively high current.

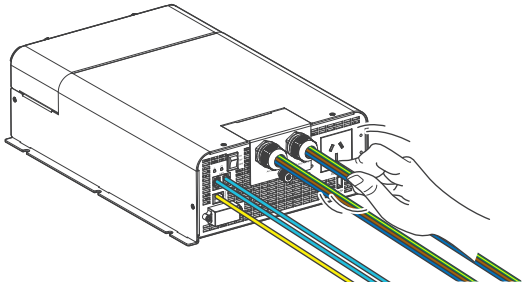
3.11. CAN Communication Wiring (Optional)

RENOGY 12V 3000W Pure Sine Wave Inverter with Transfer Switch can communicate with other Renogy devices supporting CAN communication and monitoring devices through CAN (common area network) bus, also known as RV-C, enabling safe operation, smart control, remote monitoring, and programmable settings. For details, please visit renogy.com/Support/Learning Center/Communication to view the articles "CAN Communication Connections" and "RV-C Communication Connections".



Pinout No.	Definition	Pinout No.	Definition
1	CAN_L	5	CAN_GND
2	N/A	6	N/A
3	CAN_H	7	N/A
4	N/A	8	N/A

3.12. Inspection



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

3.13. RCD (RCBO)

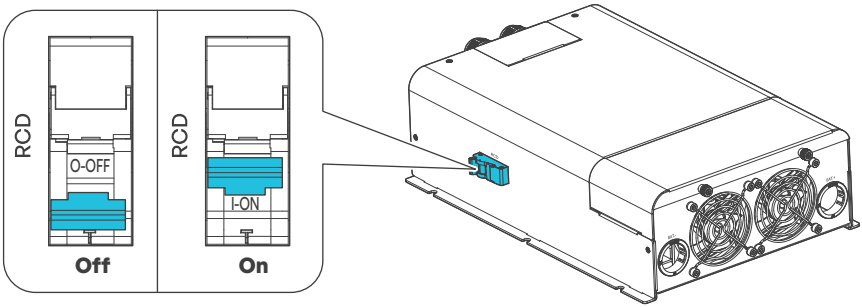
The built-in RCD (RCBO, residual Current Circuit Breaker with overcurrent protection) effectively protects the inverter and connected devices, enhancing the safety of the system. In the event of a ground fault, the RCD will immediately cut off the AC output to prevent circuit damage, fire, and electric shock incidents.

By default, the RCD is set to OFF (with the lever pushed down). Before powering on the inverter or conducting debugging, the following actions must be completed:

1. Ensure that all AC and DC wiring is completed.
2. Verify the continuity of the protective earth (PE).
3. Confirm that the installation complies with local electrical regulations.

After completing the installation checks, set the RCD to the ON (closed) position before the initial startup.

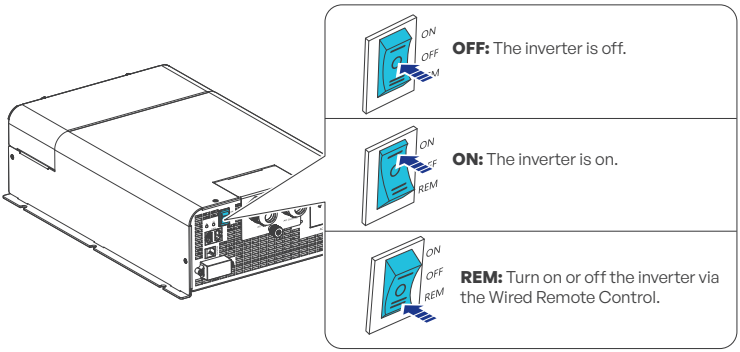
Installation and debugging must be carried out by a licensed or qualified electrician in accordance with national and local regulations.



4. Power On/Off and LED Indicators

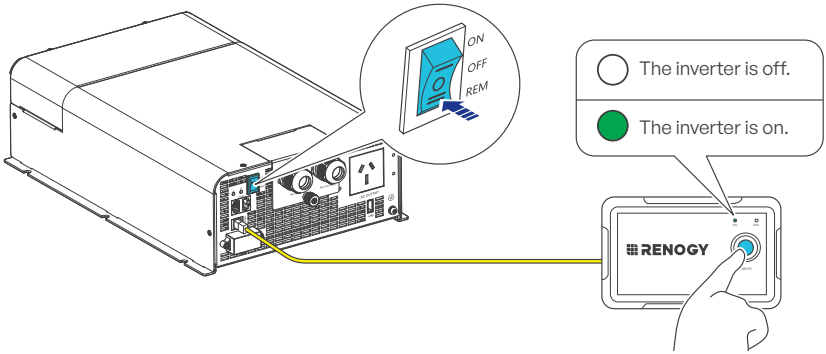
4.1. Power On/Off

Method 1: Through On/Off/Remote Power Switch



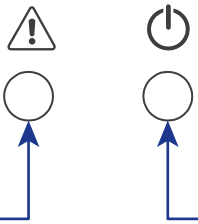
Method 2: Through Wired Remote Control

Rock the ON/OFF Switch to the REM position, and you can power on/off the inverter via the Wired Remote Control.



4.2. LED Indicators

Indicator of the Inverter



Fault LED Indicator

- **Off:** No fault
- **Solid:** System fault
  - Inverter overtemperature protection
  - Battery overvoltage protection
  - Battery undervoltage protection
  - Inverter output voltage protection
  - Inverter overload protection
  - Inverter short circuit protection

Power LED Indicator

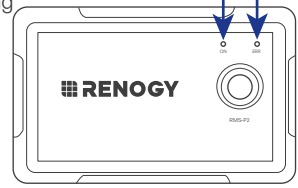
- **Off:** The inverter is off
- **Solid:** The inverter is working
- **Fast flash (0.5s):** DC Input undervoltage warning

Indicator of the Wired Remote Control

You can also check the operating status of the inverter charger on the Wired Remote Control.

ON LED Indicator

- **Off:** The inverter is off
- **Solid:** The inverter is working
- **Fast flash (0.5s):** DC Input undervoltage warning



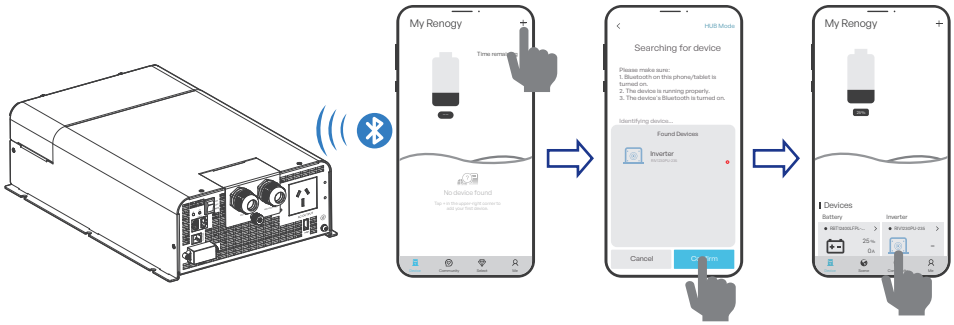
ERR LED Indicator

- **Off:** No fault
- **Solid:** System fault
  - Inverter overtemperature protection
  - Battery overvoltage protection
  - Battery undervoltage protection
  - Inverter output voltage protection
  - Inverter overload protection
  - Inverter short circuit protection

5. Monitor the Inverter

5.1. Short-Range Monitoring via Renogy App

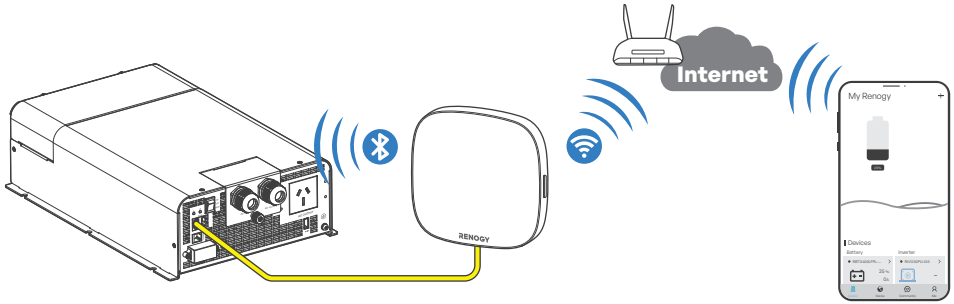
Pair the inverter charger with the Renogy app. Monitor and modify the parameters of the inverter charger via the app.



5.2. Wireless Long-Range Monitoring



You can connect the Renogy ONE Core directly to the inverter's CAN Communication Port using an RJ45 Ethernet cable for wired communication, enhancing communication stability.



5.3. Wired Long-Range Monitoring

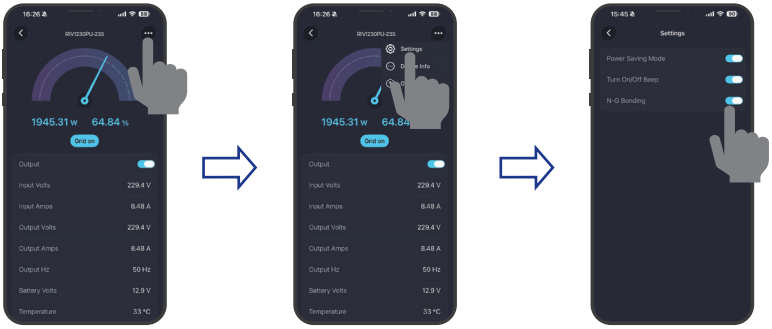
If long-range communication and programming are required, connect the inverter charger to Renogy ONE Core through the CAN communication network ,For details, see 3.11. CAN Communication Wiring (Optional). And then pair the Renogy ONE Core with the Renogy app through Wi-Fi.

6. Configuration

6.1. N-G Bonding Relay

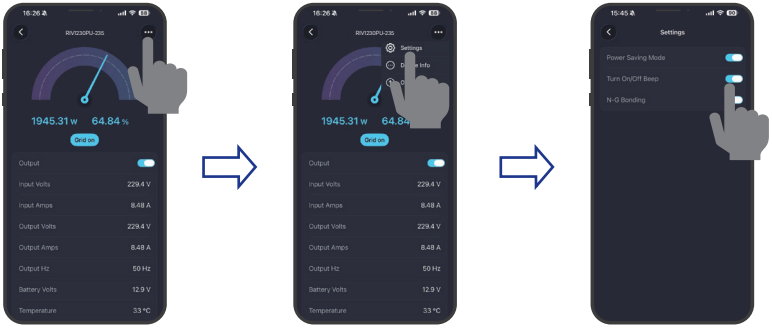
The inverter features a Neutral to Ground (N-G) bonding relay that provides a single grounding point to prevent ground loops and electric shock, minimizing the risk of inverter faults. Additionally, the N-G bonding relay ensures the proper operation of any additional RCDs.

By default, the N-G bonding relay is enabled when the inverter is shipped from the factory. To disable the relay function, go to "**... > Settings > N-G Bonding**" in the Renogy app.



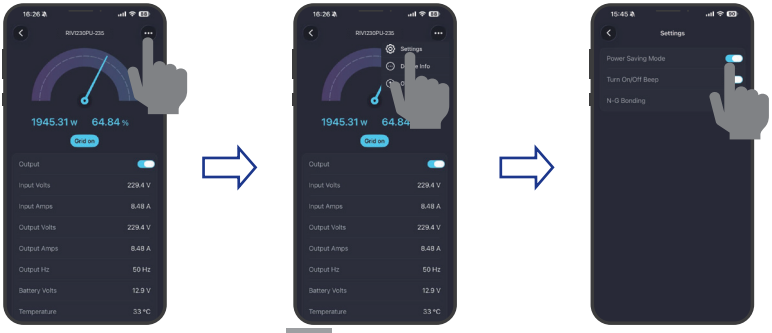
6.2. Turn On/Off Beep

Factory default is beep disabled. You can enable the built-in buzzer to warn you in case of a device error.



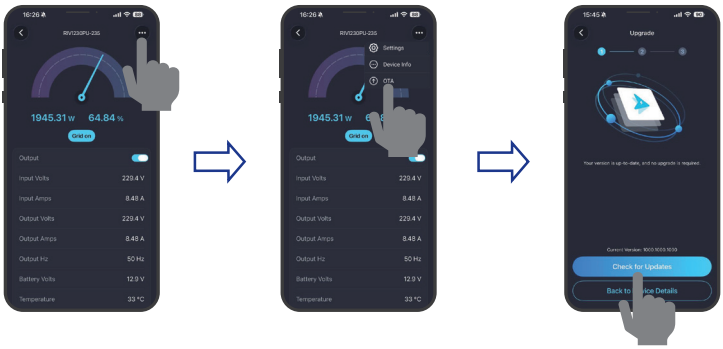
6.3. Power Saving Mode

Factory default is Power Saving Mode disabled. To enable the power saving function, go to "**... > Settings > Power Saving Mode**" in the Renogy app.



6.4. OTA Upgrade

RENOGY 12V 3000W Pure Sine Wave Inverter with Transfer Switch supports OTA firmware upgrades via the Renogy app.



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

7. Specifications

Inverter Specifications	
Model	RIV1230PU-235
Continuous Output Power	3000W
Surge Power (1 second)	6000W
Surge Power (10 seconds)	4500W
Surge Power (60 seconds)	3600W
Nominal Output Voltage RMS	230V AC
Output Frequency	50Hz (±0.1Hz)
Output Wave Form	Pure Sine Wave
Inverter Efficiency	93%, MAX
Full Load Efficiency	87%
Nominal Input Voltage	12V DC
DC Input Voltage Range	Operating Voltage: 10.5V to 15.5V Full load voltage: 11V to 15.5V
AC Input Voltage Range	187V to 264V (40Hz to 70Hz)
Short Circuit Protection	Software Protection & 16A RCD Safety Switch
Total Harmonics Distortion (THD)	< 3% (Resistance load)
No load power Consumption	< 15W (Normal)

ECO Mode Power Loss	10W
Transfer Switch Specifications	
Transfer Time	Max. 20 ms
Transfer Relay Rating	16A Maximum
Continuous Output Current	RIV1230PU-235-AU and RIV1230PU-235-W-AU: Up to 15A. RIV1230PU-235-UK: Up to 13A. RIV1230PU-235-DE and RIV1230PU-235-SA: Up to 16A.
General Specifications	
Battery Types	SLD, AGM, GEL, FLD and LI
Operating Temperature Range	-4°F to 104°F / -20°C to 40°C When the inverter temperature exceeds 104°F (40°C), the output power is reduced linearly by 2% per °C, reaching 1800W at 140°F (60°C). In such case, you need to reduce the connected loads manually to adapt to the power reduction.
Storage Temperature	-40°F to 158°F / -40°C to 70°C Note: Measured at room temperature under rated operating conditions.
Humidity	0% to 95%, RH, No condensation
Protection Rating	IP20
Noise	< 56dB
Dimensions	17.13 x 10.83 x 4.53 in / 435 x 275 x 115 mm
Weight	RIV1230PU-235-UK, RIV1230PU-235-AU, RIV1230PU-235-DE and RIV1230PU-235-SA: 12.79 lbs / 5.8 kg RIV1230PU-235-W-AU: 16.09 lbs / 7.3kg
Warranty	3 years
Wired Remote Control	
Dimensions	2.8 x 4.3 x 1.3 in / 70 x 110 x 31.8 mm
Wire length	Approx. 16.4ft
EMC & Safety	
EMC	EN 61000-6-1, EN 61000-6-3, BS EN 61000-6-1, BS EN 61000-6-3, AS/NZS CISPR 32, E-mark R10
Safety	EN 62477-1, BS EN 62477-1, AS/NZS 4763

8. Important Safety Information

8.1. 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 CO_2 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.

8.2. 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.

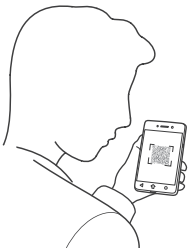
8.3. Battery Safety

- 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:

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:

support@renogy.com

1(909)2877111

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Warranty Statement

For full warranty terms and conditions, visit the warranty page of the RENOGY website at www.renogy.com/warranty.

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Save 300 pounds of CO_2 from being released into the atmosphere



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