

RENOGY

AC Power Transfer Switch

30A

RTS1230-G1

VERSION A0
February 20, 2025



USER MANUAL

Before Getting Started

The user manual provides important operation and maintenance instructions for Renogy 30A AC Power Transfer Switch (hereinafter referred to as transfer switch).

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

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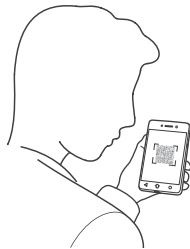
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Online Manual












User Manual



Symbols Used

The following symbols are used throughout the user manual to highlight important information.

-  **WARNING:** Indicates a potentially dangerous condition which could result in injury or death.
-  **CAUTION:** Indicates a critical procedure for safe and proper installation and operation.
-  **NOTE:** Indicates an important step or tip for optimal performance.

-  Risk of electric shock! This transfer switch operates with 120VAC and features multiple inputs. To avoid electric shock, ensure all inputs are fully disconnected before performing any work on the device.
-  Risk of fire or explosion! DO NOT mount or install this transfer switch in compartments intended for storing batteries or flammable liquids. The transfer switch is not ignition-protected and contains components that may produce arcs or sparks.
-  DO NOT install this transfer switch near appliances that generate heat or water, such as water heaters, furnaces, or beneath refrigerators, to prevent damage and ensure safe operation.
-  Ensure the transfer switch is protected from direct contact with water and debris to maintain functionality and safety.
-  Avoid mounting the transfer switch in a zero-clearance compartment to prevent overheating.
-  Use the provided knockouts for wiring to ensure safe installation. DO NOT drill into the metal housing; debris or metal shavings may compromise the transfer switch's operation.

Introduction

Renogy 30A AC Power Transfer Switch is an electrical device designed to work seamlessly with battery inverters or inverter chargers to ensure an uninterrupted power supply. It delivers up to 3000 RMS symmetrical amps and automatically switches between multiple power sources, including the grid, vehicle alternators, home generators, and DC batteries. This device is ideal for systems demanding high reliability and continuous power, making it particularly suitable for use in recreational vehicles (RVs).

Key Features

- **Easy Wiring**
Equipped with terminal connections for AC input and output, enabling straightforward and efficient wiring.
- **Simple Operation**
Fully automated operation eliminates the need for additional manual intervention, providing a hassle-free experience.
- **Stable and Reliable**
Rigorously tested for reliability, the transfer switch delivers consistent performance across various scenarios, including use in vehicles, boats, off-grid homes, and more – even in environments as cold as 113°F (-20°C)

SKU

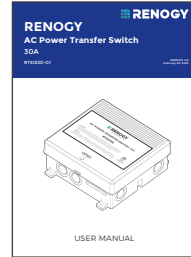
Renogy 30A AC Power Transfer Switch

RTS1230-G1

What's In the Box?



Renogy 30A AC Power Transfer Switch × 1

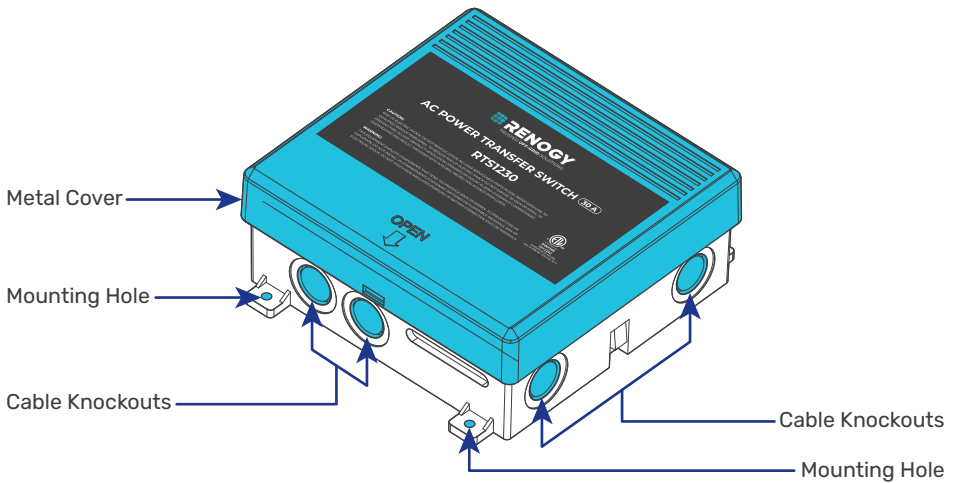


User Manual × 1

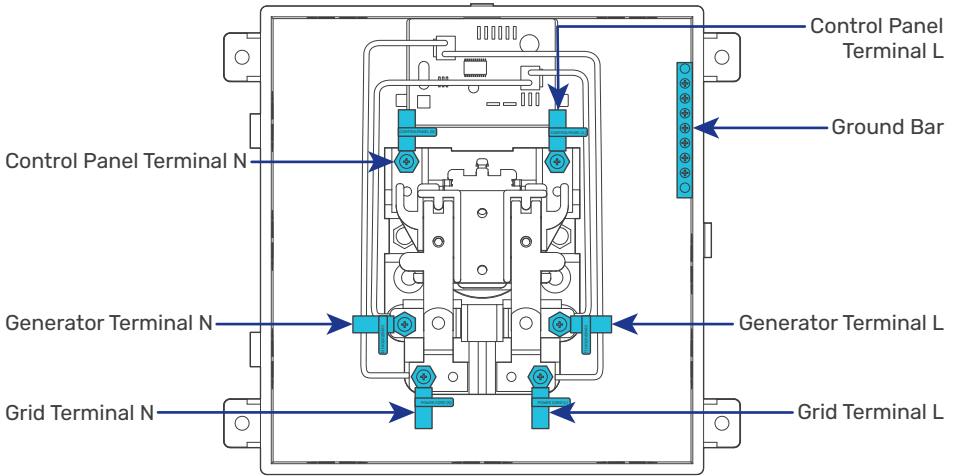
- i** Make sure that the transfer switch is complete and free of any signs of damage. Otherwise, contact Renogy dedicated customer service at <https://www.renogy.com/contact-us>.
- i** The accessories and product manual listed are crucial for the installation, excluding warranty information and any additional items. Please note that the package contents may vary depending on the specific product model.

Get to Know the 30A AC Power Transfer Switch

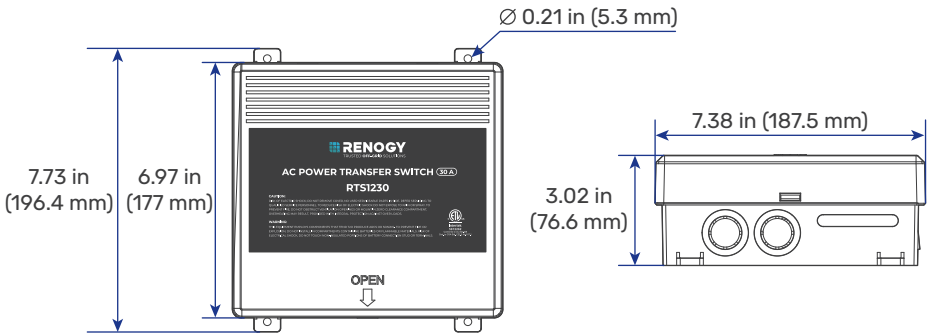
Exterior View



Interior View



Dimensions

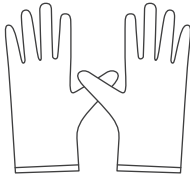


i Dimension tolerance: ± 0.2 in (0.5 mm)

Required Tools & Accessories



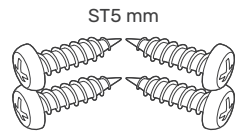
Phillips Screwdriver (#2)



Insulating Gloves



Wire Crimper



Self-tapping Screws x 4

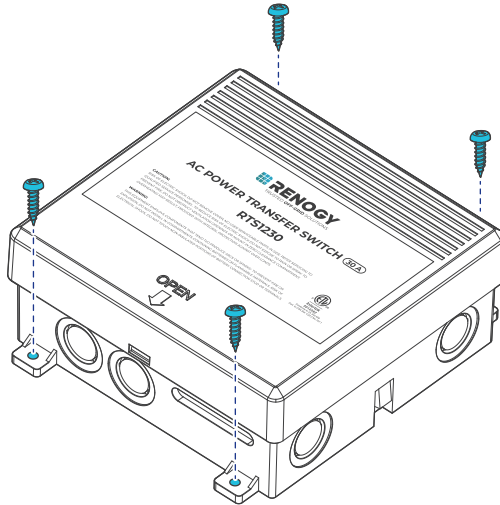
i Prior to installing the transfer switch, prepare the recommended tools, components, and accessories.

- i** Choose proper mounting screws specific to your installation site. This manual takes self-tapping screws for wooden walls as an example.

Installation

Step 1. Mounting

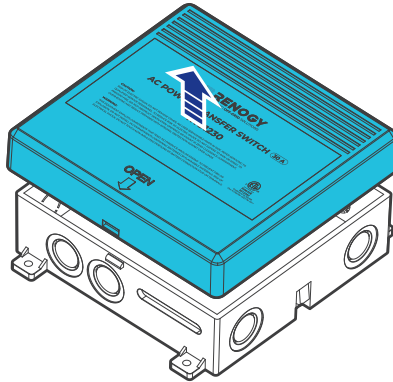
For optimal system performance, it is recommended to install the transfer switch in a clean, cool, and dry location, free from any accumulation of water, oil, or dirt. Accumulation of such materials on the transfer switch can lead to current leakage and even short-circuiting. Ensure that all cables are sufficiently long to connect the transfer switch to related devices, such as the service panel, inverter, and grid, without straining the connections.



- !** Risk of fire or explosion! DO NOT mount or install this transfer switch in compartments intended for storing batteries or flammable liquids. The transfer switch is not ignition-protected and contains components that may produce arcs or sparks.
- !** DO NOT install this transfer switch near appliances that generate heat or water, such as water heaters, furnaces, or beneath refrigerators, to prevent damage and ensure safe operation.
- !** Ensure the transfer switch is protected from direct contact with water and debris to maintain functionality and safety.
- !** Avoid mounting the transfer switch in a zero-clearance compartment to prevent overheating.

Step 2: Remove the Cover

Pry open the latch and remove the cover according to the labeled position (OPEN). Reinstall the cover after complete wiring.



Step 3: Wiring

This section discusses wiring instructions for both power supply and ground terminals on the transfer switch.

- ⚠** Risk of electric shock! Prior to wiring the transfer switch, wear insulating gloves, and power off all power supplies including the grid, a generator/an alternator, and an inverter.
- i** Remove cable knockout covers before wiring. Pass cables through the cable knockouts and connect them to the terminals on the transfer switch.

■ Power Supply Terminals

The power supply terminals, including the Control Panel, Generator, and Grid Terminals, are designed for ring terminal connections. Follow the steps below to wire a power supply terminal.

Step 1: Remove the ring connector from a power supply terminal via a Phillips screwdriver (#2).

Step 2: Size a proper cable based on the actual operating current. The ring terminals support wire sizes from 14 AWG to 6 AWG.

Step 3: Strip the wire insulation of the cable according to the depth of the ring connector using a wire crimper. Insert the stripped cable into the ring connector and crimp it securely with the crimper.

Step 4: Install the ring connector back to the power supply terminal by using a Phillips screwdriver (#2).

■ Ground Terminals

The ground terminals are equipped with cable retainers. Follow the steps below to wire a ground terminal.

Step 1: Open a cable retainer by turning the cable retainer screw counterclockwise via a Phillips screwdriver (#2).

Step 2: Size a proper cable based on the actual operating current. The ring terminals support wire sizes from 14 AWG to 6 AWG.

Step 3: Strip the wire insulation of the cable according to the depth of the cable retainer using a wire crimper. Insert the stripped cable into the retainer and crimp it securely with the crimper.

Working Logic

In general, the transfer switch allows switching between the grid, an inverter, and a generator/alternator as power sources. The grid power remains available (pass-through) when using the transfer switch. When grid power is available, the transfer switch automatically connects to the control panel terminals.

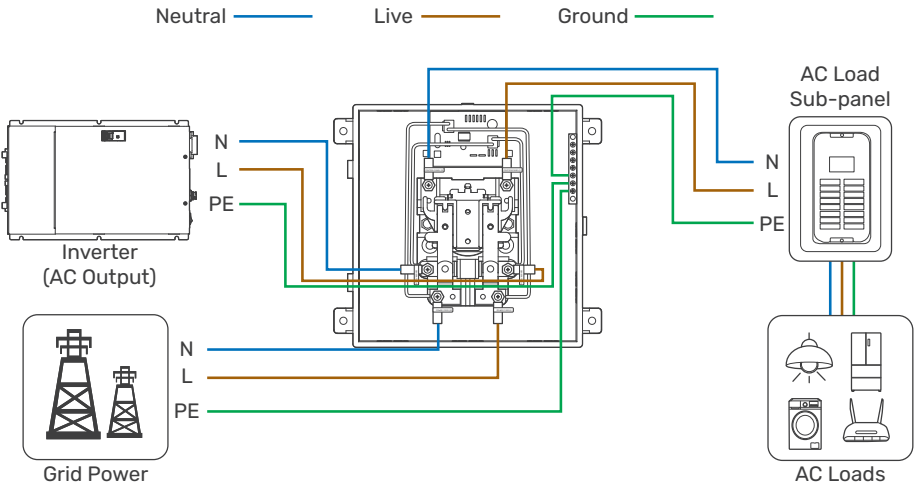
If operating with an onboard vehicle alternators, starting the alternator triggers a 20 to 30-second delay before power transfers from grid power to the alternator, allowing the alternator voltage to stabilize. Once the alternator stops, the transfer switch immediately and automatically reconnects to grid power.

 The transfer switch works seamlessly with 120V AC home generators.

This section outlines three wiring configurations tailored to these source options.

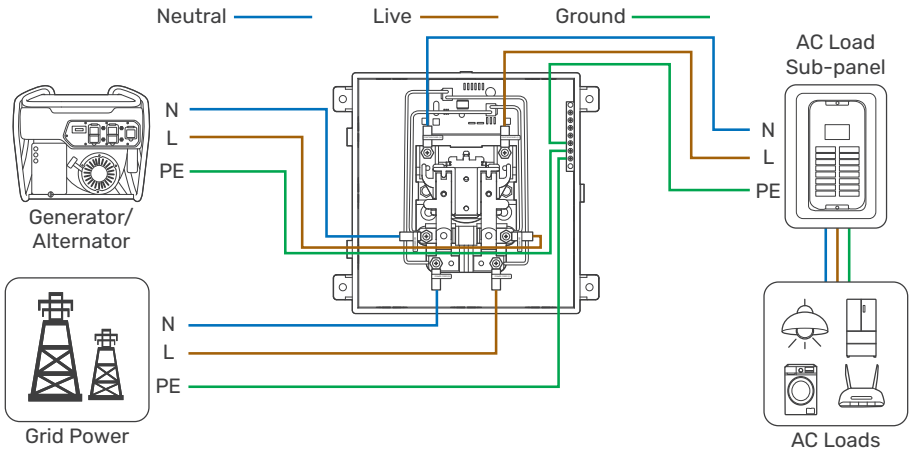
■ Switching Between the Grid and an Inverter

When both the grid and an inverter are connected to the transfer switch, the switch will prioritize grid power to supply loads. In the event of a grid power failure, the inverter will automatically take over and supply power to the loads.



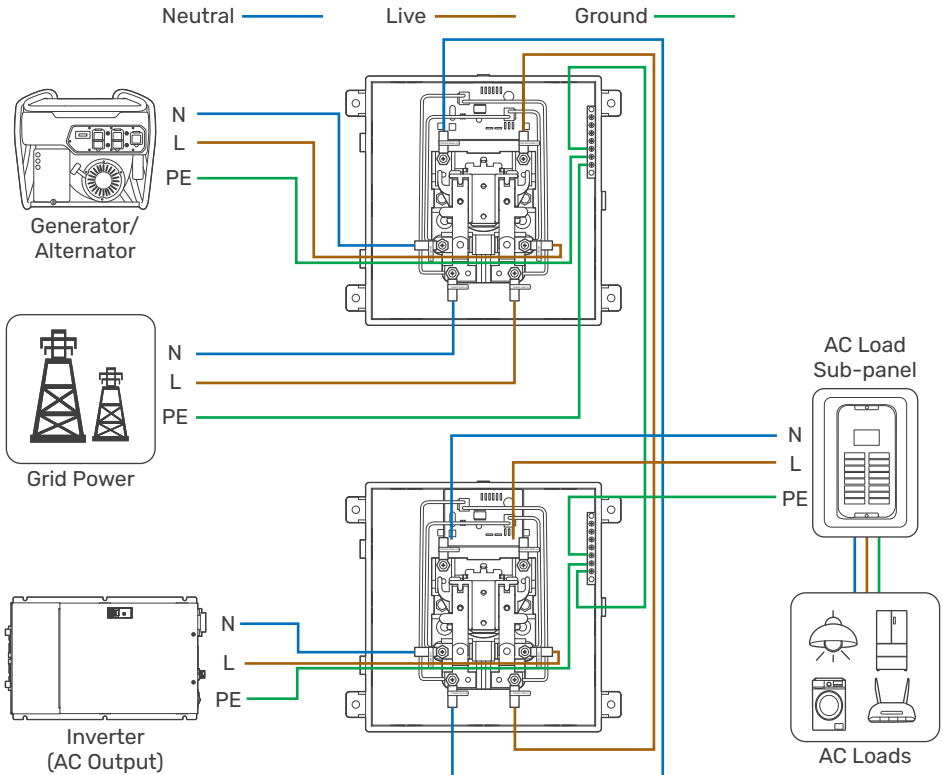
■ Switching Between the Grid and a Generator/an Alternator

When both the grid and a generator/an alternator are connected to the transfer switch, the switch will prioritize grid power to supply loads. In the event of a grid power failure, the generator/alternator will automatically take over and supply power to the loads.



■ Switching Between the Grid, a Generator/an Alternator, and an Inverter

The transfer switch enables seamless switching between the grid, a generator/an alternator, and an inverter when two transfer switches are installed in a system. The first transfer switch connects the grid and a generator/an alternator as two AC power sources, while the second transfer switch links the first transfer switch to the inverter. The system prioritizes grid power supply. When grid power is insufficient, the generator/alternator is selected as the power source. If the generator/alternator shuts down, the inverter supplies power.




Specifications

Model (SKU)	RTS1230-G1
Input Voltage and Frequency	120V AC, 60Hz
Input Current	30A
Output Voltage and Frequency	120V AC, 60Hz
Output Current	30A
Grid Power Input	Supported
Dimensions	7.73 x 7.38 x 3.02 in / 196.4 x 187.5 x 76.6 mm
Weight	3 lbs / 1.36 kg
Knockout Quantity	10
Knockout Dimensions	2 x 7/8 in & 1 x 1.0 in (2 x 22.2 mm & 1 x 25.4 mm)
Transfer Delay	20s to 30s
Bypass Function	Supported
Warranty	2 years
Certification	ETL

Maintenance

Please perform regular inspections following the steps below:

- Examine the external appearance of the transfer switch. The housing and terminals of the transfer switch shall be clean, dry, and free of corrosion.
- Check transfer switch cables and connections. Replace any damaged cables and tighten any loose connections.

 In certain application scenarios, corrosion may occur around the terminals. Corrosion can cause increased resistance and poor contact. It is recommended to regularly apply insulation grease to each terminal. Insulation grease can form a moisture-resistant seal and protect the terminals from corrosion.

Important Safety Instructions

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 or radiation.
- Alterations to the product without express written consent from the manufacturer.

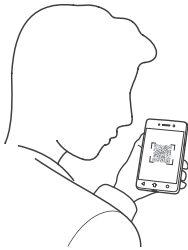
- Wear proper protective equipment and use insulated tools during installation and operation. Do not wear jewelry or other metal objects when working on or around the transfer switch.
- Keep the transfer switch out of the reach of children.
- Do not dispose of the transfer switch as household waste. 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.
- Do not expose the transfer switch to flammable or harsh chemicals or vapors.
- Clean the transfer switch regularly. Before cleaning, turn off all power sources and ensure the transfer switch is completely dry before restoring power. Do not clean the interior of the transfer switch.

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

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Questionnaire Investigation




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

 | renogy.com/contact-us

 1(909)2877111

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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.



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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.



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