

## Description

Renogy Rover MPPT Solar Charge Controller is available in 20A and 40A models for off-grid solar applications. The controller utilizes MPPT (Maximum Power Point Tracking) technology with up to 99% tracking accuracy to maximize energy harvest from connected PV modules.

Rover automatically detects 12V and 24V battery systems and supports Gel, Flooded, and Sealed battery types. Set 24V lithium battery systems manually. The unit includes an RS485 communication interface for optional Bluetooth connectivity and remote system monitoring.



## Key Features

### High-Efficiency MPPT Charging

Up to 99% MPPT tracking accuracy and 98% conversion efficiency for improved solar energy utilization.

### Wide Battery Compatibility

Compatible with AGM, SLD, Flooded, Gel, and Lithium batteries, allowing flexible system configuration across different applications.

### Comprehensive System Protection

Built-in electrical protection against reverse polarity, battery overcharge, over-discharge, overload, short circuit, and reverse current.

### Multi-Stage Charging for Efficiency and Safety

4-stage charging (Bulk, Absorption, Float, and EQU) for lead-acid batteries, delivering high charging efficiency and optimizing battery condition for a longer lifespan.

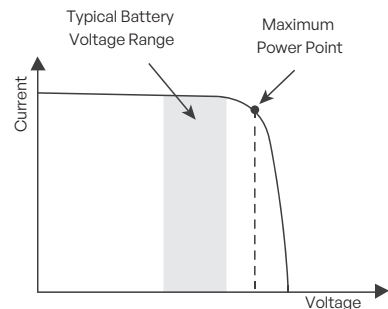
### Temperature Compensation (Lead-Acid Batteries)

External temperature sensor automatically adjusts charging voltage based on battery temperature to prevent insufficient charging in cold weather down to  $-4^{\circ}\text{F}$  /  $-20^{\circ}\text{C}$  and to avoid over-charging in hot weather up to  $176^{\circ}\text{F}$  /  $80^{\circ}\text{C}$ .

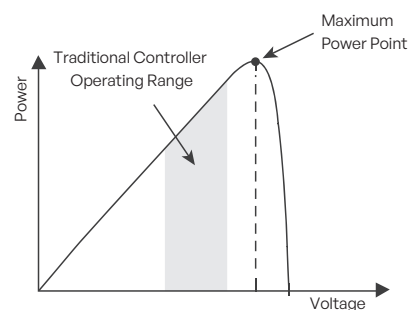
### Remote Monitoring Capability

Wireless monitoring and parameter adjustment via Renogy DC Home App with an optional BT-2 Bluetooth module.

## Maximum Power Point Tracking



**Current-Voltage (I-V) Curve**



**Power-Voltage (P-V) Curve**

## Technical Specifications

### Electrical Specifications

Model	RNG-CTRL-RVR20	RNG-CTRL-RVR40
Nominal System Voltage	12/24V	12/24V
Output Current	20A	40A
Max. Solar Input Voltage at STC	100VDC	100VDC
Battery Type	Sealed (AGM), Gel, Flooded, Lithium	Sealed (AGM), Gel, Flooded, Lithium
Max. Solar Output Power	12V: 260W 24V: 520W	12V: 520W 24V: 1,040W
Other Outputs	20A	20A
MPPT Tracking Efficiency	> 99%	> 99%
Charge Conversion Efficiency	≤ 98%	≤ 98%
Self Consumption	12V: ≤100mA 24V: 58mA	12V: ≤100mA 24V: 58mA
Temperature Compensation	-3mV / °C / 2V	-3mV / °C / 2V
Max. Terminal Size	6 AWG to 8 AWG	6 AWG to 8 AWG
Dimensions	8.27 x 5.95 x 2.69in 210 x 151 x 68mm	9.37 x 6.81 x 3.11in 238 x 173 x 79mm
Weight	3.1 lbs / 1.4kg	4.41 lbs / 2.0kg
Operating Temperature	-22°F to 149°F -30°C to 65°C	-22°F to 149°F -30°C to 65°C
Storage Temperature	-31°F to 167°F -35°C to 75°C	-31°F to 167°F -35°C to 75°C
Humidity Range	≤95% RH (Non-Condensing)	≤95% RH (Non-Condensing)
Enclosure	IP32	IP32
Altitude	<3,000m	<3,000m
Communication	RS485	RS485
Certification	FCC, CE, RoHS, RCM	CE, RoHS, FCC, RCM

### Package Contents

Package Contents	Rover 20A MPPT Charge Controller x1 Quick Guide x1 Renogy Temperature Sensor x1 Mounting Bracket Screw x4 Mounting Bracket x4 Warranty Card x1	Rover 40A MPPT Charge Controller x1 Quick Guide x1 Renogy Temperature Sensor x1 Mounting Bracket Screw x4 Mounting Bracket x4 Warranty Card x1
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### Recommended Accessories

Recommended Accessories	Battery Fuse (25A to 30A) Solar Panel Fuse Fuse Cable Renogy BT-2 Bluetooth Module Renogy DM-1 4G Data Module	Battery Fuse (40A to 50A) Solar Panel Fuse Fuse Cable Renogy BT-2 Bluetooth Module Renogy DM-1 4G Data Module
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