



# 30A/50A DC-DC BATTERY CHARGER WITH MPPT



## RENOGY 30A/50A DC-DC BATTERY CHARGER WITH MPPT

Renogy's 30A/50A DC-to-DC MPPT On-Board Battery Charger can charge a service battery in two different ways. The multi-stage charger can utilize connected solar panels or an alternator linked to a starting battery. While your vehicle's alternator prioritizes your starting battery, this unit will allow your solar system to charge your service battery first! It's the smart way to keep yourself fully charged and off-grid longer! With multi-stage charging and multi-chemistry functionality, Renogy's DC-to-DC MPPT Charger has you covered whether you're using Flooded, Gel, AGM, or Lithium batteries.

### KEY FEATURES

- Communicate, monitor, and control settings with the BT-2 Bluetooth Module and Renogy DC Home app
- Designed to charge service batteries from two DC inputs—solar panels and alternator
- Built-in Maximum Power Point Tracking (MPPT) to maximize solar power
- 3-phase charging profile (Bulk, Boost, and Float) ensures your service battery will be accurately charged at the correct voltage levels to 100%
- Built-in Voltage Sensitive Relay (VSR) for easy setup with traditional alternators; compatible with smart alternators
- Isolation of the starting battery and the service battery
- Trickle charges the starting battery via solar panels if the service battery is fully charged
- Temperature and voltage compensation features prolong battery life and improve system performance
- Smart Protection Features: battery isolation, over-voltage protection, battery temperature protection, over-current protection, overheat protection, reverse current protection, solar panel and alternator reverse polarity protection
- Compatible with multiple battery types: AGM, GEL, Flooded, and Lithium
- Compact with a sturdy design; built tough for all conditions



## TECHNICAL SPECIFICATIONS

	RBC30D1S	RBC50D1S
System Voltage	12VDC	
Battery Voltage Range	9~16VDC	
Maximum Charging Current	30A	50A
Battery Type	SLA, GEL, FLD, LI, USER	
Service Battery Charging Mode	MPPT	
Charging Efficiency	Up to 97%	
Maximum Solar Input Voltage	25V	
Maximum Solar Input Power	400W	660W
Alternator Input Voltage	Traditional Alternator: 13.2-16VDC Smart Alternator (Euro 6): 12-16VDC	
Max Alternator Input Power	400W	660W
Temperature Compensation Coefficient	-3mV / °C / 2V	
Self-consumption	60mA	
Operating Temperature Range	-35°C~65°C / -31°F~149°F	
Storage Temperature Range	-40°C~80°C / -40°F~176°F	
Humidity Range	0%~95% (NC)	
Dimensions	234 × 146 × 77 mm / 9.2 × 5.8 × 3.0 in	
Weight	1.42 kg / 3.13 lb	
Terminal Size	M8	
Communication Protocol	RS485; BT-2 (Model: RCM-BT2) + Renogy DC Home App	
Grounding	Common Negative	
Certifications	CE; ROHS; FCC Part 15 Class B	

## BATTERY CHARGING PARAMETERS

	AGM/Sealed	Gel	Flooded	Li (LFP)	USER
Over-voltage Warning	16V	16V	16V	16V	9~17V
Charging Limit Voltage	15.5V	15.5V	15.5V	15.5V	9~17V
Over-voltage Recover	15V	15V	15V	15V	9~17V
Boost Charge Voltage	14.6V	14.2V	14.6V	14.4V	9~17V
Float Charge Voltage	13.8V	13.8V	13.8V	—	9~17V
Equalization Voltage	—	—	14.8V	—	9~17V
Boost Return Voltage	13.2V	13.2V	13.2V	13.2V	9~17V
Under Voltage Warning	12V	12V	12V	12.1V	9~17V
Under Voltage Recover	12.2V	12.2V	12.2V	12.3V	9~17V
Over-discharge Warning	11.1V	11.1V	11.1V	11.1V	9~17V
Over-discharge Recover	12.6V	12.6V	12.6V	12.6V	9~17V
Boost Duration	2 Hours	2 Hours	2 Hours	—	0-120 Minutes
Equalization Interval	—	—	28 Days	—	0-30 Days
Equalization Duration	—	—	2 Hours	—	0-120 Minutes

