

50A DC-DC

Lithium Battery Alternator Charger with MPPT



Features

Advanced MPPT Technology

PowerCatcher MPPT algorithm with >99% tracking efficiency, even in complex environments.

Fast response to maximize solar energy harvest (up to 20% more than PWM controllers).

High-Efficiency Conversion

Up to 96% conversion efficiency.

Buck MPPT for solar input, Buck/Boost for alternator input.

Dual Charging Inputs

Supports simultaneous or independent charging via solar panels and vehicle alternator.

Compatible with both conventional and smart alternators (12V/24V systems).

Smart Protection & Monitoring

Over-temperature/charge/current protection, reverse polarity protection.

Real-time monitoring via Bluetooth or wired connections (CAN, RS485, TTL) with mobile app support.

Wide Battery Compatibility

Supports lead-acid (sealed/gel/flooded), lithium iron phosphate (LFP), and custom battery profiles.

Temperature compensation for lead-acid batteries (-3mV/°C/2V).

Flexible Charging Modes

Solar/alternator priority settings.

Three-stage charging for lead-acid (Bulk/Boost/Float) and two-stage for lithium.

Specifications

Model	RS-MPPT50DC
Max. Solar Input	55V DC / 50A / 800W (recommended)
MPPT Voltage Range	17-36V DC
Alternator Input	12/24V, 65A max
Battery System Voltage	12V (9-16V range)
Rated Charging Current	50A
Efficiency	MPPT: >99%; Conversion: up to 96%
Communication	Bluetooth, TTL, RS485, CAN (RV-C protocol)
Protections	Overcharge/current/temperature, reverse polarity
Operating Temperature	-35°C to +65°C (-31°F to +149°F)
Dimensions (W×D×H)	221 × 175.8 × 92.4 mm (8.70 × 6.92 × 3.64 in)
Weight	2.34 kg (5.16 lb)
IP Rating	IP32