

50A DC-DC MPPT SOLAR CHARGE CONTROLLER



High-Performance MPPT & Power Conversion

Advanced MPPT Technology achieves >99% tracking efficiency and 96% peak DC/DC conversion efficiency for maximum solar harvest.

Wide MPPT Range: 17–36VDC ensures stable and efficient solar charging.

Dual-Source Charging & Battery Compatibility

Supports solar PV and alternator charging, simultaneous or independent, with automatic alternator-type recognition (conventional/smart).

Compatible with Sealed, Gel, Flooded, Lithium, and User-Defined battery types with programmable charge parameters.

Implements 3-stage lead-acid and 2-stage lithium charging, with temperature compensation (lead-acid) and battery temperature sampling for protection.

Intelligent Monitoring, Control & Protection

Built-in Bluetooth with mobile app support, plus TTL, RS485, and CAN (RV-C) communication interfaces.

Voltage-sense compensation, remote switch interface, and automatic thermal derating.

Complete Protection: over-charge, over-current, over-temperature, reverse polarity (PV/Alternator/Battery), and night reverse charging protection.

Rugged Design & User-Friendly Interface

Robust aluminum heatsink ensures efficient thermal dissipation; rated –31°F to 149°F, IP32, suitable for up to 9,843 ft altitude.

Backlit LCD, LED indicators for system status, and tactile button for easy configuration and real-time monitoring.

SPECIFICATIONS

Model	RS-MPPT50DC
Product Name	DC-DC 50A MPPT

SYSTEM PARAMETERS

Nominal System Voltage	12V
Battery Voltage Range	9~16VDC
Rated Charge Current	50A
Recommend PV Input Power	700W

SOLAR CHARGING

Max PV Input Voltage	55VDC
MPPT Voltage Range	17~36VDC
MPPT Tracking Efficiency	>99%
Conversion Efficiency	96%

BATTERY CHARGING

Charging Algorithms	3-Stage (Lead-Acid), 2-Stage (Lithium with BMS)
Battery Types	Sealed, Gel, Flooded/Vented, LFP, Custom
Temperature Compensation	-3mV/°C/2V (Lead-Acid only)
Built-in Protections	Over-Current, Over-Temperature, Over-Charge, Reverse Polarity, Night Reverse Charging

COMMUNICATION & INTERFACE

Protocols	TTL, RS485, CAN (RV-C), Bluetooth
Max Terminal Size	Backup Battery: 13 mm ² / 6 AWG; PV: 13 mm ² / 6 AWG; Alternator: 18 mm ² / 4 AWG

ENVIRONMENTAL & MECHANICAL

Operating Temperature	-31°F to 149°F
IP Rating	IP32
Dimensions	8.7 × 6.9 × 3.6 in
Net Weight	5.2 lbs