AIMS Power SCC60AMPPT

AIMS Power SCC60AMPPT 60 Amp MPPT Solar Charge Controller Instruction Manual

1. Introduction and Overview

The AIMS Power SCC60AMPPT is a 60 Amp Maximum Power Point Tracking (MPPT) solar charge controller designed for 12V, 24V, 36V, and 48V solar systems. It features a smart tracking algorithm to maximize energy harvest from solar panels, operating with high efficiency. This controller includes a 4-stage charging process and adjusts settings based on battery type, including lithium. Integrated protections ensure safe and reliable operation.

Figure 1: Front view of the AIMS Power SCC60AMPPT solar charge controller, showing the LCD display and control buttons.

2. Key Features

- **Efficient MPPT Technology:** Utilizes a smart tracking algorithm for maximum power harvest from solar panels, achieving 97.5-99% efficiency.
- **Multi-Voltage System Compatibility:** Supports 12V, 24V, 36V, and 48V solar systems.
- **4-Stage Charging:** Provides optimal charging for 8 different battery types, including lithium, with adjustable voltage and user-defined options.
- **Comprehensive Protections:** Includes overload, short circuit, high voltage, high temperature, low voltage, and over-discharge protections with automatic recovery.
- **Temperature Compensation:** Features a battery temperature sensor for accurate charging based on ambient conditions.
- **Informative Display:** LCD screen displays battery voltage, solar panel voltage, solar panel charging current, and charge mode. LED indicators show charging status and faults.
- **Configurable Parameters:** Users can revise and set default parameters according to system design.

- **Stackable Design:** Allows stacking up to 10 units of the same amperage for larger solar arrays.
- **Communication Port:** RS485 connection block for computer monitoring of all charge controller functions.
- **Certifications:** CE, ETL to UL1741, and RoHS compliant.

3. Setup and Installation

Proper installation is crucial for the safe and efficient operation of your solar charge controller. Ensure all connections are secure and follow local electrical codes.

3.1 Physical Installation

The controller features mounting holes on its sides for easy installation. Choose a dry, well-ventilated location away from direct sunlight and heat sources. Ensure adequate clearance around the unit for proper airflow.

Figure 2: Side view of the controller, highlighting the cooling fins for heat dissipation.

3.2 Wiring Connections

The bottom of the charge controller provides connection points for PV input, battery output, and DC load. There are also ports for the battery temperature sensor (BTS) and RS485 communication.

Figure 3: Internal view of the connection terminals.

1. **Battery Connection:** Connect the battery cables to the designated BATTERY terminals. Ensure correct polarity (positive to positive, negative to negative).
2. **Solar Panel Connection:** Connect the solar panel cables to the PV INPUT terminals. Verify correct polarity.
3. **DC Load Connection:** If using, connect your DC load to the DC LOAD terminals.
4. **Battery Temperature Sensor (BTS):** Connect the included BTS to the BTS port. Place the sensor near the battery for accurate temperature readings.
5. **RS485 Communication:** Connect your RS485 cable to the RS485 port for computer monitoring.

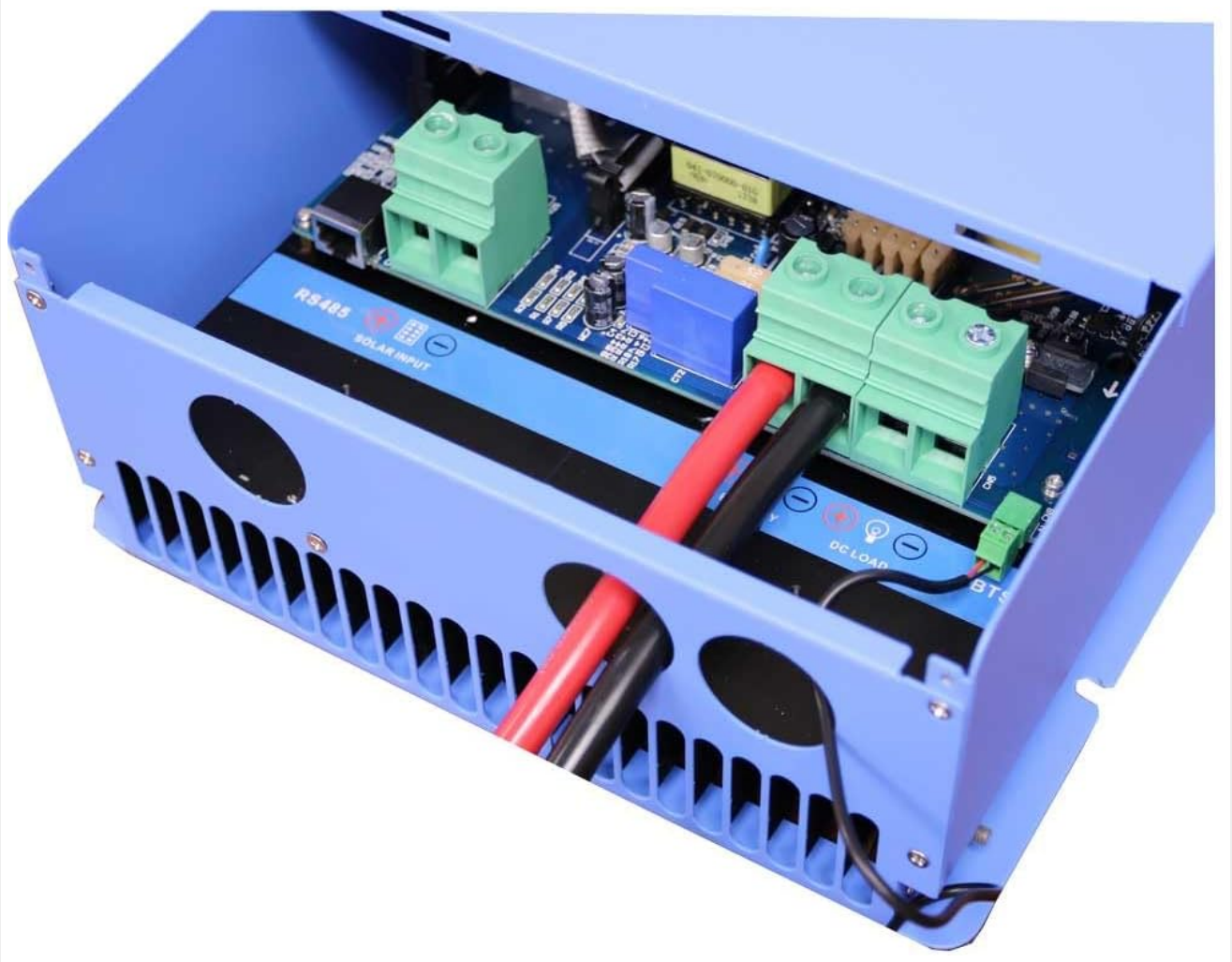

Figure 4: Example of internal wiring connections.

3.3 Installation Video

For a visual guide on the AIMS Power SCC60AMPPT, please refer to the following video:

Video 1: Overview of the AIMS Power SCC60AMPPT 60 Amp Solar Charge Controller. This video provides a general look at the product's features and connection points.

4. Operating Instructions

The controller's LCD display and setting switches allow for monitoring and configuration.

4.1 LCD Display and Indicators

The LCD displays real-time system information, including:

- Battery Voltage
- Solar Panel Voltage
- Solar Panel Charging Current
- Charge Mode

LED indicators provide visual status updates for alarm, charge, and load conditions.

4.2 Setting Parameters

Users can adjust various charging parameters to match specific battery types and system requirements. Refer to the detailed user manual (typically provided with the product) for specific navigation and adjustment procedures

using the setting switches.

5. Maintenance

Regular maintenance ensures the longevity and optimal performance of your solar charge controller.

- **Inspect Connections:** Periodically check all wiring connections for tightness and corrosion. Loose connections can lead to overheating and reduced performance.
- **Clean Unit:** Keep the controller clean and free of dust and debris. Ensure the cooling vents are unobstructed.
- **Monitor Performance:** Regularly check the LCD display for normal operation and any fault indicators. Use the RS485 connection for detailed monitoring if available.
- **Battery Health:** Ensure your batteries are well-maintained according to their manufacturer's guidelines.

6. Troubleshooting

If you encounter issues with your SCC60AMPPT, consider the following common troubleshooting steps:

- **No Display/Power:** Check battery connections and ensure sufficient battery voltage. Verify all fuses and circuit breakers are intact.
- **No Charging:** Confirm solar panel connections and ensure panels are receiving adequate sunlight. Check solar panel voltage at the controller input.
- **Fault Indicators:** Refer to the specific fault codes or LED patterns in the full user manual to diagnose the issue. Common faults include over-voltage, short circuit, or high temperature.
- **Incorrect Readings:** Ensure the battery temperature sensor is properly connected and positioned.

For persistent issues, consult the comprehensive user manual or contact AIMS Power technical support.

7. Specifications

Feature	Specification
Model Number	SCC60AMPPT
Brand	AIMS Power
Current Rating	60 Amp
System Voltage	12V, 24V, 36V, 48V (DC)
Charging Technology	MPPT (Maximum Power Point Tracking)
Charging Stages	4-Stage
Battery Types Supported	8 types, including Lithium, plus user-defined
Display Type	LCD
Operating Temperature	Up to 60 Degrees Celsius
Product Dimensions	14.63 x 10.63 x 4.63 inches (14.5"L x 10.5"W x 4.5"H)

Feature	Specification
Item Weight	17 pounds
Color	BLUE
UPC	840271004341

8. Safety Information

The AIMS Power SCC60AMPPT is equipped with multiple safety features to protect your system:

- Overload Protection
- Short Circuit Protection
- High Voltage Protection
- Low Voltage Protection
- Over Temperature Protection
- Over Discharge Protection

Proposition 65 Warning: This product may contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

9. Warranty and Support

The AIMS Power SCC60AMPPT Solar Charge Controller is backed by a**2-year warranty**.

For technical support, warranty claims, or further assistance, please contact AIMS Power directly. Refer to the official AIMS Power website or the product packaging for the most current contact information.