MORNINGSTAR corporation

SunSaver Duo™

TWO BATTERY SOLAR CONTROLLER WITH REMOTE METER

Product shown with optional meter.

Morningstar's ***SunSaver Duo*** is an advanced PWM two battery controller for RV's, caravans, boats and cottages. This product will charge two separate and isolated batteries at the same time, such as a "house" and an engine battery, based on user selectable priorities.

The SunSaver Duo employs Morningstar's legendary SunSaver controller technology, whose long-term track record for high reliability and improved battery charging is well-recognized in the solar industry. This controller also includes a backlit remote meter which may be mounted in or on a wall, and displays digital and pictorial status information about the solar power system.

The SunSaver Duo is epoxy encapsulated for environmental protection, is user adjustable via DIP switch or connection to a personal computer, and has an optional remote temperature sensor.

Key Features and Benefits:

Two Battery Charging
Solar charge current is shared between the two batteries based on a user selectable priority. When one battery is fully charged, all of the charge current flows to the other battery.

Provides Useful Information
The remote meter and LED's display system status data and any system errors. Custom icons and back lighting make the meter easy to read and understand.

Lower Cost
Two battery charging eliminates the added cost of two separate solar charging systems and the need for isolation between the batteries.

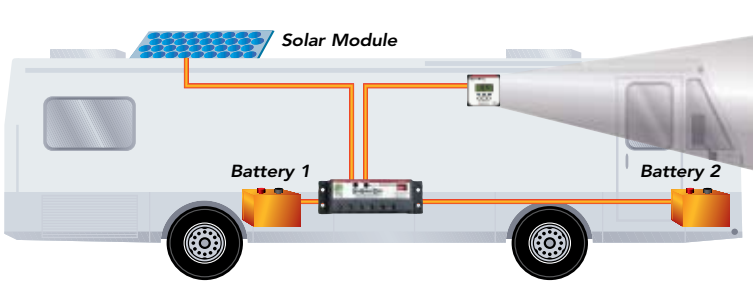
Easy to Install
The controller is installed near the batteries using the clearly labeled large wire terminals. The remote meter may be mounted in the wall or on the wall using the included frame. Also includes the meter wiring with RJ-11 connector.

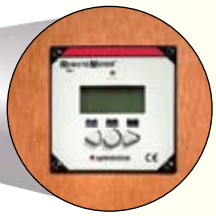
Longer Battery Life
Four stage series PWM pulse charging and temperature compensation increases the useful life of the batteries.

Extensive Electronic Protections
The controller will not be damaged by wiring mistakes during installation. There are no fuses to replace, and the controller will automatically re-set after a wiring mistake.

Highly Reliable
Epoxy encapsulation protects the controller against dust and high humidity. Efficient electronics and a conservative thermal design allow the controller to operate reliably at high temperatures. Five year warranty and estimated 15 year life.

SunSaver Duo™ Solar Controller





In Wall Mount

Frame Mount

Back

TECHNICAL SPECIFICATIONS

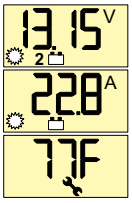
Electrical

- **Rated Solar Input** 25 amps
- **Rated Load Output** Not applicable
- **Battery Voltage** 12 volts
- **Min. Battery Voltage** 1 volt
- **Max. Battery Voltage** 15 volts
- **Max. Solar Voltage** 30 volts
- **Self Consumption**
  - Controller: 6 to 10 milliamps
  - Remote meter: 6 to 15 milliamps

Environmental

- **Operating Ambient Temperature**
  - Controller: –40°C to +45°C / –40°F to +113°F
  - Meter: –20°C to +60°C / –4°F to +140°F
- **Humidity** 100% non-condensing
- **Tropicalization**
  - Controller: Epoxy encapsulation
Anodized aluminum case
Corrosion resistant terminals
  - Meter: Conformal coated printed circuit board

Meter Displays



- **Backlighting** Push button activated
- **LED's** Charging status
Errors
Battery level
- **Displays** Battery #1 & #2 voltage
Battery charge priority
Minimum / maximum voltages
Solar charging amps / amp-hours
Temperature
Errors

Electronic Protections

- Solar Short Circuit
- Solar Over Current
- Reverse Polarity
- High Temperature
- Lightning
- Reverse Current at Night

Battery Charging

- **Regulation Voltage**
  - Sealed Battery: 14.1 volts (at 25°C, 77°F)
  - Flooded Battery: 14.4 volts (at 25°C, 77°F)
- **Float Voltage** 13.7 volts
- **Equalization Voltage*** 14.8 volts
- **Temp. Compensation** –30 millivolts per °C (25°C reference)
- **Type of Charging** Series PWM
4 stage: bulk, PWM, float, and equalize*
**used on flooded battery only*
- **Battery Charging Priority** 90% / 10%
50% / 50%
Customize via PC connection

Mechanical

- **Controller** 17.0 x 5.6 x 4.1 cm / 6.7 x 2.2 x 1.6 in.
- **Meter** 9.7 x 9.7 x 3.1 cm / 3.8 x 3.8 x 1.2 in.
- **Meter back** 7.4 cm / 2.9 in. diameter
2.8 cm / 1.1 in. deep
Fits 7.6 cm / 3 in. round hole
- **Weight**
  - Controller: 260 g / 0.57 lb
  - Meter: 135 g / 0.30 lb
- **Largest wire** 16 mm^2 (#6 AWG)
- **Meter wire** 10 m / 33 ft

Options

- **Remote Temperature Sensor** — Measures temperature at battery for improved battery charging

Certifications

- CE Compliant
- Manufactured in a certified ISO 9001 facility

WARRANTY: Five year warranty period. Contact Morningstar or your authorized distributor for complete terms.

AUTHORIZED MORNINGSTAR DISTRIBUTOR:

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CE

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