



# SUNSAVER DUO™

## TWO BATTERY SOLAR CONTROLLER WITH REMOTE 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.

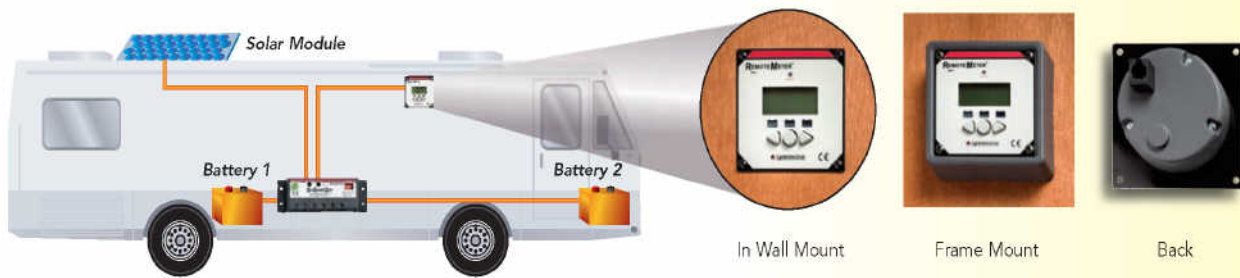
#### ■ Extensive Electronic Protections

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.

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## 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

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- 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 340 g / 0.75 lb
  - Meter 135 g / 0.30 lb
- Largest wire 16 mm<sup>2</sup> (#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:**

Available From



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