



# SUNSAVER MPPT™

## SOLAR CONTROLLER WITH MAXIMUM POWER POINT TRACKING



Morningstar's **SunSaver MPPT** solar controller with TrakStar Technology™ is an advanced maximum power point tracking (MPPT) battery charger for off-grid photovoltaic (PV) systems. The controller features a smart tracking algorithm that maximizes the energy harvest from the PV and also provides load control to prevent over discharge of the battery.

The SunSaver MPPT is well suited for both professional and consumer PV applications including automatic lighting control. Its charging process has been optimized for long battery life and improved system performance. This product is epoxy encapsulated for environmental protection, may be adjusted by the user via four settings switches or connection to a personal computer, and has an optional remote meter and battery temperature sensor.

### Key Features and Benefits:

#### ■ Maximizes Energy Harvest

Our TrakStar MPPT Technology features:

- peak efficiency of over 97%
- almost no power losses
- recognition of multiple power peaks during shading or mixed PV arrays
- excellent performance at low solar insolation levels

#### ■ Use of High Voltage Modules

Enables the use of high voltage and thin film modules for off-grid battery charging.

#### ■ Converts 36V or 24V PV Arrays

Provides a means to use up to a 36V PV array to charge either a 24V or 12V battery.

#### ■ Lower System Cost

Less expensive than other MPPT controllers and is affordable in smaller PV systems up to 400Wp. Allows system costs to be reduced by down-sizing the PV array, using on-grid or thin film modules and decreasing cable sizes.

#### ■ Automatic Lighting Control

Up to four programmable timer sequences for PV lighting applications.

#### ■ Smaller Size

Mechanical dimensions are less than other MPPT controllers, making it easier to install in equipment enclosures.

#### ■ Highly Reliable

Efficient electronics, a conservative thermal design and tropicalization result in high reliability and long life.

#### ■ Fully Adjustable

User selection via on-board switches or PC connection.

#### ■ Extensive Electronic Protections

Fully protected against most system errors and faults.

#### ■ Longer Battery Life

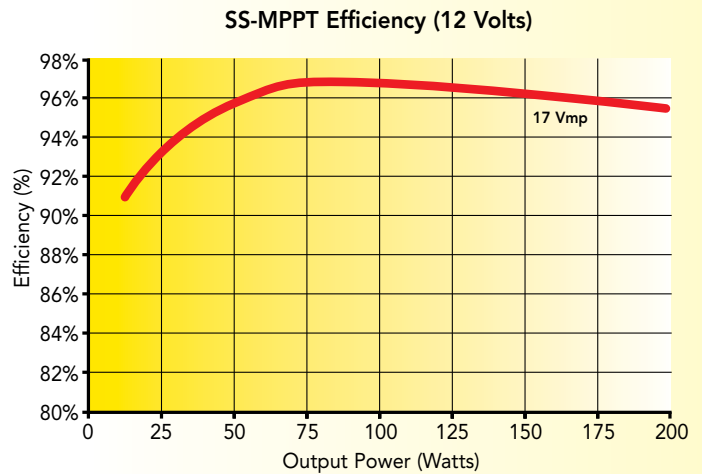
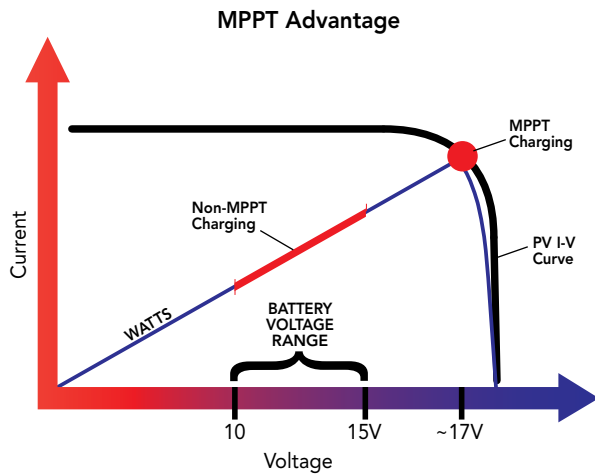
Efficient MPPT tracking and 4-stage charging increases battery life.

#### ■ More Information

The status LED's and optional meter provide extensive controller and system data.

#### ■ Data Logging

Records key operating parameters of the PV system and includes 30 days of data logging.



## TECHNICAL SPECIFICATIONS

### Electrical

- Peak Efficiency 97.5%
- Nominal Battery Voltage 12 or 24 volts
- Max. Battery Current 15 amps
- Battery Voltage Range 7-36 volts
- Max. PV Open Circuit Voltage 75 volts
- Nominal Max. PV Input
  - 12 volt battery 200 Watts
  - 24 volt battery 400 Watts
- Output Rating 15 amps load control
- Self Consumption 35 milliamps
- Transient Surge Protection 4 x 1500 Watts

### Environmental

- Operating Temperature -40°C to +60°C
- Storage Temperature -55°C to +100°C
- Humidity 100% non-condensing
- Tropicalization Epoxy encapsulation  
Conformal coating  
Marine rated terminals

### Electronic Protections

- PV: Overload, Short Circuit, High Voltage
- Load: Overload, Short Circuit
- Reverse Polarity: Battery, PV and Load
- Lightning and Transient Surges
- High Temperature
- Reverse Current at Night

### Battery Charging

- Battery Types Gel, Sealed, AGM, Flooded
- 4 Stage Charging Bulk, absorption, float, equalize (optional)
- Temperature Compensation
  - Coefficient -5mV/°C / cell (25°C ref)
  - Range -30°C to +60°C
  - Set points Absorption, float, equalize

### Mechanical

- Dimensions 16.9 x 6.4 x 7.3 cm  
6.6 x 2.5 x 2.9 inch
- Weight 0.60 kg / 1.3 lbs
- Power Terminal 16 mm<sup>2</sup> / #6 AWG
- Enclosure Die cast aluminum with plastic cover

### Options

- Remote Meter
- Remote Temperature Sensor
- PC MeterBus Adapter
- DIN Rail Mounting Clips

### Certifications

- CE Compliant
- RoHS Compliant
- Manufactured in a certified ISO 9001 facility

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



1098 Washington Crossing Road  
Washington Crossing, PA 18977 USA  
Tel: +1 215-321-4457 Fax: +1 215-321-4458  
E-mail: [info@morningstarcorp.com](mailto:info@morningstarcorp.com)  
Website: [www.morningstarcorp.com](http://www.morningstarcorp.com)

296 Labrosse Avenue, Pointe-Claire, QC, Canada, H9R 5L8  
Tel: (514) 630-5630 Toll Free: 1-866-630-5630 Fax: (514) 426-9123  
[info@matrixenergy.ca](mailto:info@matrixenergy.ca) [www.matrixenergy.ca](http://www.matrixenergy.ca)

