MORNINGSTAR
PROFESSIONAL SERIES
World's Leading Solar Controllers & Inverters

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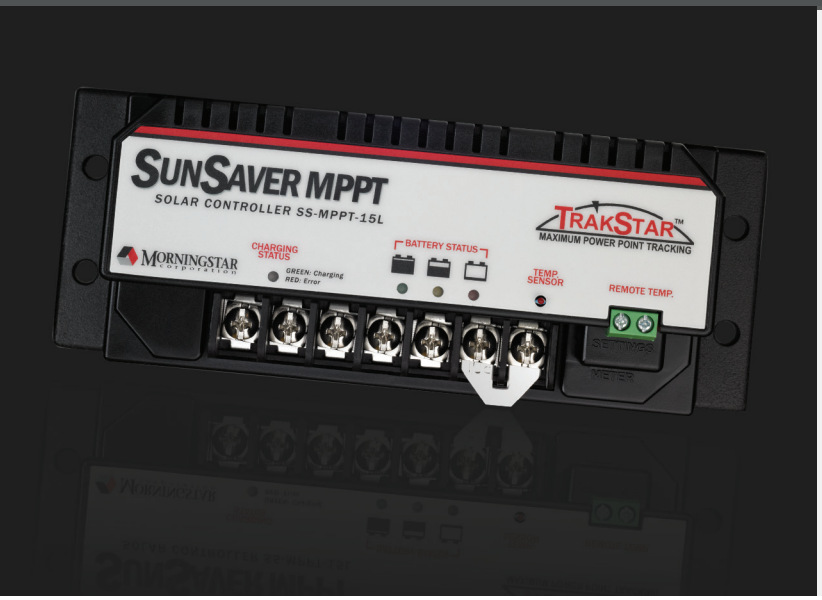

SUNSAVER MPPT™ SOLAR CONTROLLER

WITH MAXIMUM POWER POINT TRACKING

- Maximizes Energy Harvest
- Use of High Voltage Modules
- Lower System Cost
- Personal Computer Connectivity

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.

Higher Voltage PV Arrays

Provides a means to use a higher voltage PV array to charge either a 12V or 24V 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.

Load Control

Automatically disconnects loads when the battery has been discharged to a low state of charge.

Personal Computer Connectivity

- USB MeterBus Adapter for laptop compatibility
- PC MeterBus Adapter for RS-232
- Fully adjustable user selection via on-board preset switches or customized with PC connection
- Advanced automatic custom programmable lighting control with a PC connection
- Extensive controller and system data is provided by the status LED's and optional meter. Monitoring is also available with a personal computer
- 30 days of internal data logging of key PV system operating parameters

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.

Extensive Electronic Protections

Fully protected against most system errors and faults.

Longer Battery Life

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

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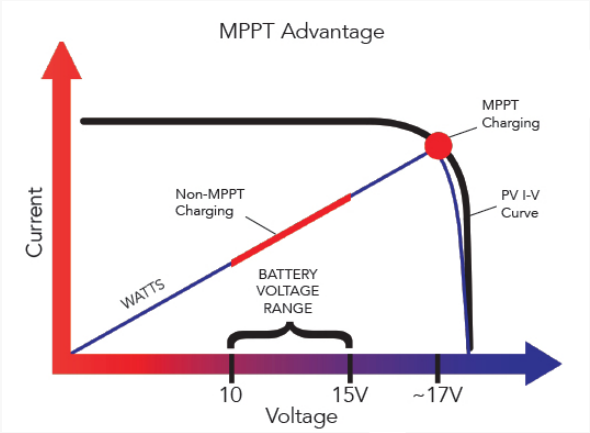
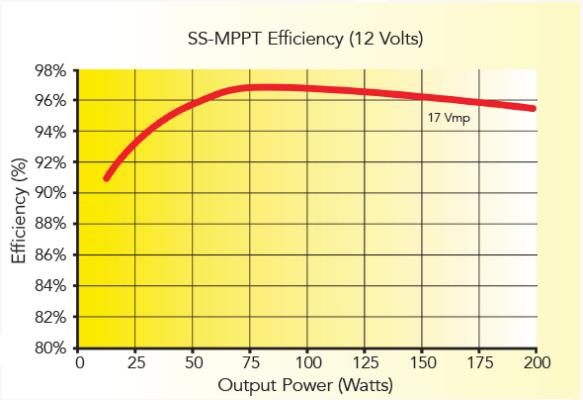
Technical Specifications

Electrical	
Peak efficiency	97.5%
Nominal battery voltage	12 or 24 volts
Max. battery charging current	15 amps
Battery voltage range	7-36 volts
Nominal Max. Operating Power*	
12 volt battery	200 watts
24 volt battery	400 watts
Max. PV open circuit voltage**	60 volts
Rated load current	15 amps
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
Mechanical	
Dimensions	16.9h x 6.4w x 7.3d cm 6.6h x 2.5w x 2.9d in
Weight	0.60 kg / 1.3 lbs
Power terminal	16 mm2 / #6 AWG
Enclosure	Die cast aluminum with plastic cover
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

TRAKSTAR™
MAXIMUM POWER POINT TRACKING





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

Options

- Remote Meter
- Remote Temperature Sensor
- USB MeterBus Adapter (UMC-1)
- PC MeterBus Adapter for RS-232
- DIN Rail Mounting Clips
- Ethernet MeterBus Converter for IP connectivity (including SNMP)

Certifications

- CE Compliant
- RoHS Compliant
- UL 1741 / CSA 107.1-01 recognized component
- Manufactured in a Certified ISO 9001 Facility

Simple Network Management Protocol
SNMP COMPATIBLE

WARRANTY: Five year warranty period. Contact Morningstar or your authorized distributor for complete terms.
*Input power can exceed Nominal Maximum Operating Power, but controller will limit and provide its rated continuous maximum output current into batteries. This will not harm the controller (reminder: do not exceed Voc).
**Exceeding Maximum PV Open Circuit Voltage may damage the controller.

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