MORNINGSTAR
ESSENTIAL SERIES
World's Leading Solar Controllers & Inverters



EcoBoost MPPT™ Solar Charge Controller

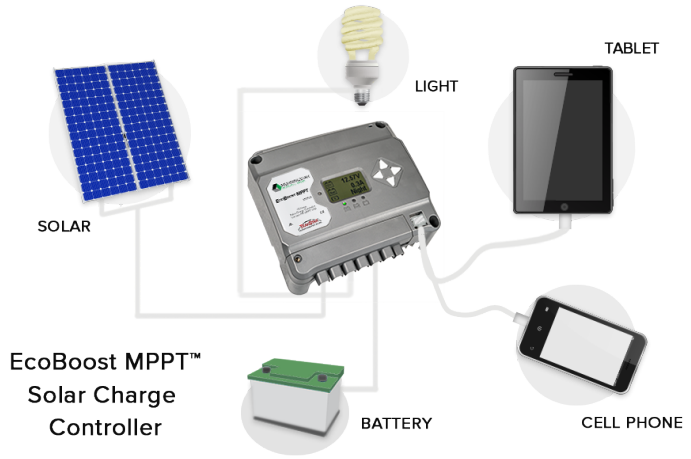
WITH MAXIMUM POWER POINT TRACKING

- Integrated USB Device Charging
- High Reliability and Efficiency
- Maximizes Energy Harvest
- Ideal for Residential and Rural Applications

The EcoBoost MPPT™ solar charge controller brings Morningstar's proprietary TrakStar Technology™ to our new line of Essentials controllers and accessories. The EcoBoost controllers automatically detect 12 or 24 V system configuration. They are highly efficient and accurate controllers designed to ensure that batteries attain a complete state of charge.

They are also sophisticated load controllers. Using this feature to manage DC power consumption protects the batteries from over discharge and helps ensure long term system reliability. Small DC loads can be powered directly from the EcoBoost by way of two USB charging ports.

Morningstar EcoBoost controllers act as the central brain of PV powered DC electrical systems up to 1,120 watts and offer outstanding value, performance and dependability.



KEY FEATURES AND BENEFITS

- **Rugged, Maintenance-free Design**
  Conformally coated circuit board and corrosion resistant terminals.
- **Maximizes Energy Harvest**
  Using TrakStar MPPT technology to determine and adjust to the true maximum power point as solar insolation changes throughout the day.
- **High Efficiency**
  At low, medium, and high power levels.
- **Optional Meter**
  Provides access to system operational information including current and historical performance data. All EcoBoost "M" controllers include the meter.
- **USB Charging**
  Two USB ports with 3 amps of shared charging capacity to charge today's modern mobile devices.
- **Self Diagnostics**
  Continuous monitoring and reporting of any errors through its status LED's, or its optional display.
- **Lighting Controller**
  Uses PV array to switch at dusk and dawn.
- **Load Controller**
  Connect DC loads directly to the controller. Programmable load disconnect to protect batteries.
- **PV Array Flexibility**
  Enables 2 modules in series to charge a 12V or 24V battery system.

The EcoBoost has not been certified to comply with USA & Canada electrical codes.

TRAKSTAR™
MAXIMUM POWER POINT TRACKING

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Technical Specifications

Versions	EB-MPPT-20 (M)	EB-MPPT-30 (M)	EB-MPPT-40 (M)
Electrical			
Max Battery Current	20 Amps	30 Amps	40 Amps
Load Current Rating	20 Amps	30 Amps	30 Amps
Max PV Open Circuit Voltage (VOC) *	120 Volts		
Nominal Battery Voltage	12 or 24 Volt Automatic Sensing and Setting		
Nominal Max Operation Power **			
12 volt battery	300 W @ 40C	400 W @ 40C	560 W @ 40C
24 volt battery	600 W @ 40C	800 W @ 40C	1,120 W @ 40C
Peak Efficiency	98%		
Battery Voltage Range	10 - 35 V		
Self Consumption	<1.2 Watts		
Maximum Combined USB Charging Output	3A at 5V		
Environmental			
Operating Temperature Range	-40C to +60C		
Meter Operating Temperature Range	-20C to +60C		
Humidity	100% Non - condensing		
Tropicalization	Conformally coated PCBs ; marine rated terminals		
Mechanical			
Dimensions (cm)	19.6(W) x 17.3(L) x 7.1(D)		
Weight	1.4 kg		
Wire Size Range Power Terminals	2.5 - 16mm2/ #14-2 AWG		
Enclosure	IP20, Type 1		
Warranty	2 Years		
Certifications	CE, TUV Listed: IEC 62109, EN 62109-1, Emissions 55014-1, Immunity 55014-2		

Electronic Protections

- Solar Input: overload, short-circuit, high voltage warning, reverse polarity, high temperature, nighttime reverse current
- Load Output: overload, short-circuit, high temperature reverse polarity
- Battery reverse polarity (no battery removal)
- Low Voltage Disconnect, Low Voltage Reconnect Settings: 11.4V/12.6V or custom (x2 for 24 volt systems)
- Lighting Settings: Dusk-Dawn

Battery Charging

- 4-stage charging: Bulk, Absorption, Float, Equalize
- 7 standard battery settings and customization
- Supports multiple battery technologies

Data & Communications

- Micro USB data port for firmware updates and 30-day system datalog access (future feature)

Accessories

- Remote Temperature Sensor (RTS)
- Mobile phone holder (included)

*Exceeding Maximum PV Open Circuit Voltage may damage the controller. **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). For more information, please see our white paper on maximum input power.

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