MORNINGSTAR
PROFESSIONAL SERIES
World's Leading Solar Controllers & Inverters

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PROSTAR MPPT™ SOLAR CONTROLLER

WITH MAXIMUM POWER POINT TRACKING

- High Reliability
- Maximizes Energy Harvest
- High Efficiency
- Low Noise Design
- Approved for use in hazardous locations around the globe

The ProStar MPPT solar controller is an advanced maximum power point tracking (MPPT) battery charger for off-grid photovoltaic (PV) systems with PV array max power (Pmp) up to 1400 watts. All versions have TrakStar™ Technology and include load control. The controller allows multiple modules in series for 12V and 24V battery systems. Detailed battery programming options allow for advanced battery support for the latest Lithium, Nickel Cadmium, and Lead Acid battery types.

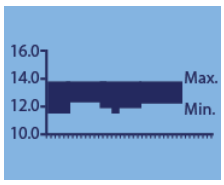
The ProStar design has been proven in over two decades of use in the world's most demanding installations—and ProStar today reflects Morningstar's policy of continuous improvement through regular upgrades and enhancements. Because Morningstar's employee-owned culture never "rests on success," ProStar customers can own both a legend and the latest in a single product.

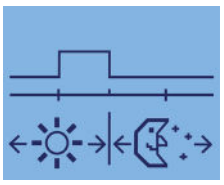
KEY FEATURES AND BENEFITS

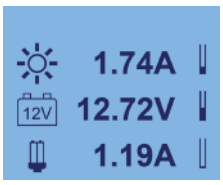
- **Approved for use in hazardous locations: UL/CSA Class1, Division 2, Groups A-D and ATEX/IECEx Zone 2, Gas Group IIC**
- **High Reliability**
  Conformally coated circuit board and corrosion resistant terminals
- **Maximizes Energy Harvest**
  Using TrakStar MPPT Technology to determine and adjust to the true maximum power point as solar insolation changes throughout the day
- **High Efficiency**
  At low, medium, and high power levels
- **Data Logging**
  Up to 256 days of detailed power and load data
- **Low Noise Design**
  Meets US Federal Communications Commission Class B specifications
- **Automatic PV Based Lighting Control**
  Field adjustable, multi-event load control enables powerful options for PV lighting systems
- **MODBUS Communications**
  Solar Industry Standard MODBUS communications protocol allows for easy programming, control, and remote data access

Note: Some battery types require a compatible battery management system.

- **SNMP (Simple Network Management Protocol)**
  Provides more detailed monitoring of all system data with existing IT management and architecture
- **High Strength**
  Polycarbonate case and extruded aluminum heatsink
- **Self Diagnostics**
  Continuous monitoring and reporting of any errors through its status LED's, optional display or communication port
- **Fanless Design**
  For long-term reliability
- **Meter**
  Allows adjustments to charging, lighting, and load control settings without a computer







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TrakStar™ MAXIMUM POWER POINT TRACKING

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Technical Specifications

Versions	PS-MPPT-25, PS-MPPT-25M	PS-MPPT-40, PS-MPPT-40M
Electrical		
Max. Battery Current	25 Amps	40 Amps
Load Current Rating	25 Amps	30 Amps
Max. PV Open Circuit Voltage (Voc)*	120 Volts (without damage to unit)	
Nominal Battery Voltage	12V or 24V	
Nominal Maximum Output Power / Max Recommended Solar PV Input**		
12 volt battery	350W / 440W	550W / 700W
24 volt battery	700W / 880W	1100W / 1400W
Peak Efficiency	98%	
Battery Voltage Range	10-35V	
Voltage Accuracy	<= 0.1% +/- 50mV	
Self-Consumption	normal: 0.6W; maximum: 1W	
LED Indications	(1) status, (3) Battery S.O.C.	
Transient Surge Protection	solar, battery, load	

Environmental	
Ambient Operating Temperature Range	-40°C to +60°C
May derate above the following temperature***	PS-MPPT-40 = 40°C | PS-MPPT-25 = 55°C
Meter Operating Temperature Range	-20°C to +60°C
Storage Temperature	-40°C to +80°C
Humidity	100% non-condensing
Tropicalization	Conformal coating, marine-rated terminals

Load & Lighting Control

- Low Voltage Disconnect, Low Voltage Reconnect Settings: 11.4V/12.6V or custom (x2 for 24 volt systems)
- Lighting Settings: Dusk-dawn or custom

Mechanical Specifications

- Dimensions:
  - — Standard:
    20 x 17 x 7 cm / 7.9 x 7.6 x 2.8 in
  - — w/ Wire Box:
    20 x 28.5 x 9.2 cm / 7.9 x 11.2 x 3.6 in
- Weight:
  - — Standard: 1.4 kg / 3.1 lbs
  - — w/ Wire Box: 1.8 kg / 4.0 lbs
- Wire Size Range - Power terminals:
  - — 2.5 - 35 mm2 / 14 - 2 AWG****
- Battery/Temperature:
  - — sense: 0.25 - 1.0 mm2 / 24 - 16 AWG
- Knockouts (wiring box option):
  - — M20, 1/2", 1" (trade sizes)
- Enclosure: IP20, Type 1

Electronic Protections

- Automatic recovery without fuses
- 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
- Low temperature "foldback" (discontinues charging) in cold conditions to protect LI-ion and other batteries

Battery Charging

- 4-stage charging: Bulk, Absorption, Float, Equalize *****
- 7 standard battery settings and customization
- Temperature Compensation
  - — Coefficient: -30mV / 12 volt / °C
  - — Range: -30°C to +60°C / -22°F to +140°F
  - — Setpoints: Absorption, Float, Equalize HVD and HVDR (solar)

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

Shown with optional meter and wire box

Data & Communications

- Communication Port: MeterBus
- Protocols: Morningstar MeterBus, MODBUS, SNMP (enabled through EMC-1)
- Data logging: 256 days, daily records
- PC Software: MSView

Simple Network Management Protocol SNMP COMPATIBLE

Accessories

- Ground Fault Protection Device (GFPD-150)
- Remote Temperature Sensor (RTS)
- Remote Meter (RM-1)
- Wire Box (PS-MPPT-WB)
- PC MeterBus Adapter (MSC)
- USB Communications Adapter (UMC-1)
- Meter Hub
- Ethernet MeterBus Converter (EMC-1)

Certifications

- Hazardous Locations:
  - » UL121201/CSA C22.2 #213 Class I, Div. 2 Groups A-D TX (T4 or T5)
  - » ATEX II 3G Ex ec ic IIC T4...T5 Gc
  - » IECEx Ex ec ic IIC T4...T5 Gc
- CE;RoHS;TUV Listed (UL1741);cETL (CSA-C22.2No.107.1)
- TUV (IEC 62109-1)
- Manufactured in a certified ISO 9001 facility
- FCC Part-15 Class B compliant

*PV Voltage must be greater than Vbattery + 1 Volt to start charging

**The PV array power rating may exceed the controller's Max Nominal Output Power specification (< 130% recommended). The controller will limit battery current and prevent damage. Array oversizing should be considered on a case by case basis. See our array string sizer tool and related tech documentation. https://www.morningstarcorp.com/array-oversizing

***Assumes 77Vmp, unvented enclosure. See operating manual for further performance characteristic data.

**** Standard wire cover accepts up to 16mm² or #6 AWG wire sizes.

*****Lithium batteries require custom charge settings. The ProStar MPPT includes custom programming settings that can support lithium batteries. See the Morningstar Energy Storage Partner Program webpage for more information.