



## TECHNICAL SPECIFICATIONS

### Electrical

	TS-MPPT-30	TS-MPPT-45	TS-MPPT-60
• <b>Maximum Battery Current</b>	30 amps	45 amps	60 amps
• <b>Nominal Maximum Operating Power*</b>			
12 Volt	400 Watts	600 Watts	800 Watts
24 Volt	800 Watts	1200 Watts	1600 Watts
48 Volt	1600 Watts	2400 Watts	3200 Watts

#### TS-MPPT-30, 45 and 60

- **Peak Efficiency** 99%
- **Nominal System Voltage** 12, 24, 36 or 48 volts DC
- **Maximum PV Open Circuit Voltage\*\*** 150 volts DC
- **Battery Operating Voltage Range** 8-72 volts DC
- **Maximum Self-consumption** 2.7 Watts
- **Transient Surge Protection** 4500 Watts/port

### Electronic Protections

- **Solar:** Overload, Short Circuit, High Voltage
- **Battery:** High Voltage
- **High Temperature**
- **Lightning and Transient Surges**
- **Reverse Current at Night**

### Battery Charging

- **Charging algorithm** 4-stage
- **Charging stages** Bulk, Absorption, Float, Equalize
- **Temperature Compensation**
  - **Coefficient** -5mV/°C/cell (25° ref)
  - **Range** -30°C to +80°C
  - **Set Points** Absorption, Float, Equalize, HVD

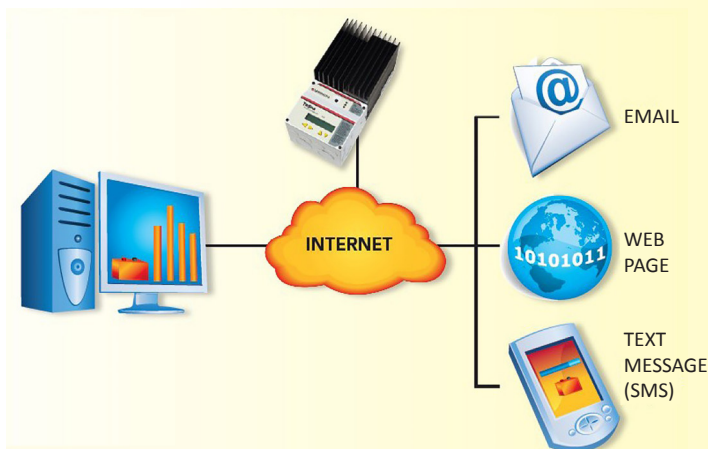
Note: Remote Temperature Sensor is included.

### Mechanical

- **Dimensions** 29.1 x 13.0 x 14.2 cm  
11.4 x 5.1 x 5.6 in
- **Weight** 4.2 kg / 9.2 lbs
- **Max. Wire Size** 35 mm<sup>2</sup> / 2 AWG
- **Conduit knockouts** M20; ½, 1, 1 ¼ in
- **Enclosure** Type 1 (indoor and vented) IP20

### Environmental

- **Ambient Temperature** -40°C to +45°C
- **Storage Temperature** -55°C to +100°C
- **Humidity** 100% non-condensing
- **Tropicalization** Epoxy encapsulation  
Conformal coating  
Marine rated terminals



### Communication Ports

	TS-MPPT-30	TS-MPPT-45	TS-MPPT-60
• <b>MeterBus</b>	Yes	Yes	Yes
• <b>RS-232</b>	Yes	Yes	Yes
• <b>EIA-485</b>	No	No	Yes
• <b>Ethernet</b>	No	No	Yes

### Options

- **TriStar Meter-2 (TS-M-2)**
- **TriStar Remote Meter-2 (TS-RM-2)**
- **Meter Hub (HUB-1)**
- **Relay Driver (RD-1)**

### Certifications

- **CE and RoHS Compliant**
- **ETL Listed (UL1741)**
- **cETL (CSA C22.2 No. 107.1-01)**
- **FCC Class B Part 15 Compliant**
- **U.S. National Electrical Code (NEC) 690.5 Compliant**
- **Manufactured in a certified ISO 9001 facility**

\*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.

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



## MORNINGSTAR

World's Leading Solar Controllers & Inverters

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PRINTED IN USA 03/15.EN