



Product shown with optional meter.



# TRISTAR METER-2™ TRISTAR REMOTE METER-2™

## DIGITAL DISPLAYS FOR TRISTAR CONTROLLERS

Morningstar's *TriStar Meter-2 (TS-M-2)* and *TriStar Remote Meter-2 (TS-RM-2)* are advanced digital meters that may be used with any TriStar™ solar controller. These two meters are identical except that the TS-M-2 is mounted on the controller and the TS-RM-2 is flush mounted up to 30 meters (98.4 feet) away from the controller.

The TriStar meters are 2 x 16 character LCD's that display extensive system and controller information, logged data, bar graph metering as well as alarms and faults for easy troubleshooting. The information may be shown in English, French, German, Portuguese or Spanish languages.

In multi-controller systems the TS-M-2 and TS-RM-2 are networkable using Morningstar's MeterHub to allow individual controller data and aggregate system data to be displayed together on a single meter.

### Key Features and Benefits

#### ■ Easy to Install

- Uses standard 6 conductor RJ-11 connectors.
- TS-RM-2 fits a "double gang" electrical box and includes 30 meters (98.4 feet) of cable.
- Both data and meterbus power flow over a single cable.
- Network supports up to 15 devices and, optionally, more than one meter per system.

#### ■ Easy to Use

- Four directional pushbuttons for easy navigation of display screens.
- Backlighting to enhance readability.
- Meter may be added during initial controller installation, added as an upgrade anytime in the future or connected temporarily for troubleshooting and then using this same meter at other sites.

#### ■ Networking Capability

- Displays individual controller data from up to 15 TriStars with optional Morningstar Meterhubs.
- Aggregates system data to show total charge, load and battery charge/discharge state.
- Auto detects any device found on the network.

### Technical Specifications

#### ■ Electrical

- Self consumption 7.5 mA  
42.5 mA (backlight on)

#### ■ Mechanical

- TS-RM-2 mounting plate dimensions 116 x 116 mm (4.56 x 4.56")
- Plate material powder coated steel
- Meter weight  
TS-M-2 0.23 kg / 0.5 lb  
TS-RM-2 0.18 kg / 0.4 lb
- Connector type RJ-11 (6-pin)
- TS-M-2 cable 0.13 m / 5 in - 6 conductor
- TS-RM-2 cable 30 m / 98.4 ft - 6 conductor
- Cable temperature 60°C rating

#### ■ Environmental

- Operating temperature -40°C to +60°C
- LCD temp. rating -20°C to +70°C
- Storage temperature -55°C to +85°C
- Humidity rating 5 to 95 % (NC)
- Tropicalization conformal coating on both sides of circuit board

#### ■ Certifications

- CE Compliant
- RoHS Compliant
- ETL Recognized Component

#### ■ Compatibility

- TS-45, TS-60, TS-MPPT-45, TS-MPPT-60

# DISPLAYS FOR TRISTAR METER-2™ & TRISTAR REMOTE METER-2™

	TriStar			TS MPPT		TriStar			TS MPPT
	Solar Charge	Load Control	Diversion	Solar Charge		Solar Charge	Load Control	Diversion	Solar Charge
<b>Operating Data</b>					<b>Commands</b>				
Battery Voltage	✓	✓	✓	✓	Reset Ah/kWh Counters	✓	✓	✓	✓
Solar Input Voltage	✓			✓	Reset Ah/kWh Counters	✓	✓	✓	✓
Charging Current	✓			✓	Reset Min/Max Battery V	✓	✓	✓	✓
Load/Diversion Current		✓	✓		Equalize Start/Stop	✓		✓	✓
Battery Sense Voltage	✓	✓	✓	✓	Load On/Off		✓		
Battery Temperature	✓	✓	✓	✓	Reset Battery Service Reminder	✓	✓	✓	✓
Battery Min/Max Voltage	✓	✓	✓	✓	<b>User Settings</b>				
Charging Watts	✓				Set MeterBus Address				✓
Load/Diversion Watts		✓	✓		Set Meter Display Language	✓	✓	✓	✓
Daily Charge Wh				✓	Set Temperature Units (°C/°F)	✓	✓	✓	✓
Heatsink Temperature	✓	✓	✓	✓	<b>Logged Data<sup>1</sup></b>				
<b>Settings Data</b>					Days of Daily Log Data	Last 60 Days			
Nominal System Voltage	✓	✓	✓	✓	Battery Voltage Min (Daily)	✓	✓	✓	✓
Battery Type	✓		✓	✓	Battery Voltage Max (Daily)	✓	✓	✓	✓
Regulation Type	✓		✓	✓	Charge Ah (Daily)	✓			✓
Absorption Charge Voltage	✓		✓	✓	Load Ah (Daily)		✓	✓	
Float Charge Voltage	✓		✓	✓	Battery Wh (Daily)				✓
Equalize Charge Voltage	✓		✓	✓	Solar Vmax (Daily)				✓
Low Voltage Disconnect Value		✓			Battery Watts Max (Daily)				✓
Low Voltage Reconnect Value		✓			Time in Absorption (Daily)				✓
Days Between Equalizations	✓		✓	✓	Time in Float (Daily)				✓
<b>Diagnostic Data</b>					Time in Equalize (Daily)				✓
Ah Total/Since Last Reset	✓	✓	✓	✓	Faults (Daily)	✓	✓	✓	✓
kWh Total/Since Last Reset	✓	✓	✓	✓	Alarms (Daily)	✓	✓	✓	✓
Charge State	✓		✓	✓	<b>Total System Data (multiple controllers)</b>				
Load State		✓			Charge Current	✓			✓
Fault List	✓	✓	✓	✓	Load Current		✓		
Alarm List	✓	✓	✓	✓	Diversion Current			✓	
Days Since Last Equalization	✓		✓	✓	Charging Watts	✓			✓
Days Since Last Battery Service	✓		✓	✓	Charging Ah	✓			✓
Cumulative Hours of Service	✓	✓	✓	✓	Charging Wh	✓			✓
Controller Version	✓	✓	✓	✓	Load Watts		✓		
Meter Version	✓	✓	✓	✓	Load Ah		✓		
Mode of Operation	✓	✓	✓	✓	Diversion Watts			✓	
					Diversion Ah			✓	

<sup>1</sup>Logged data available on TriStars with software v13 or later.

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

**AUTHORIZED MORNINGSTAR DISTRIBUTOR:**



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