Powerhouse

N 2015

Sealed MPPT 10A 12V Solar Charge Controller

OPERATING INSTRUCTIONS

OVERVIEW

This compact IP67 weatherproof module provides MPPT solar charging for lead acid batteries. Maximum Power Point Tracking (MPPT) circuitry to provide up to 20% additional charge energy than conventional regulators. This essentially allows you to get more power from your existing panels, or alternatively reduce the overall required panel wattage for new systems. Ideally suited for vehicle power systems, solar powered street lamps, ticketing infrastructure and other remote power requirements. Includes a host of protection features for safe and reliable operation.

SPECIFICATIONS

PARAMETER NAME	CONDITION	MIN	RATED	MAX	
Solar charging characteristics					
POWER			150		W
Solar tracking voltage range	MAX output voltage 13.8V	16	18	25	V
MAX output voltage	12V lead-acid battery	13.66	13.8	13.94	V
MAX output current	MAX output voltage 13.8V	11.5	12	12.5	A
MAX efficiency			96%		
Inside temperature protection	Half power output		100		°C
	Output closed		110		°C
Operating ambient temperature	Full load	-40		55	°C
	Half load	-40		75	°C
Load discharging characteristics					
MAX load current			10		A
Battery protection voltage	12V lead-acid battery	10.35	10.5	10.65	V
Battery recovery voltage	12V lead-acid battery	11.8	12	12.2	V
Load leakage current after battery protection		0	100	200	uA
Battery protection delay time			10		S
Storage temperature		-40		125	°C

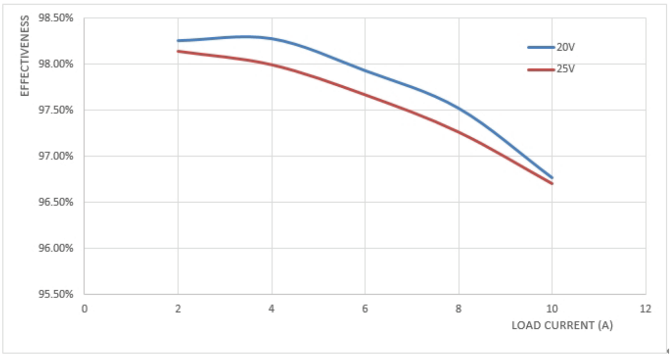
FEATURES

- The MPPT controller utilizes Solar Maximum Power Point Tracking (MPPT) technology to extract maximum power from the solar array
- Using high efficiency synchronous rectifier circuit structure.
- Output power: 150W
- Max output voltage: 12.6V/13.8V/14.6V
- Efficiency ≥95%
- Short-circuit protection
- Over-temperature protection
- Solar input under-voltage protection
- Battery under-voltage protection
- Load port short-circuit protection
- Noise: ＜55dB
- Mechanical shock and vibration resistance: accord with SAEJ1378
- Level of protection: IP67
- Size: 75 x 40 x 22mm
- Weight: 115g

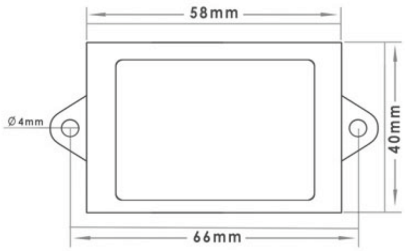
APPLICATIONS

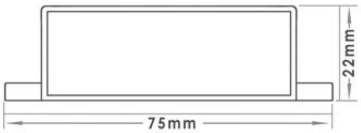
- Solar electric bicycle
- Solar electric tricycles
- Solar powered toy car
- Street ticketing machines
- Caravans/4WD

PHOTOVOLTAIC PANEL BATTERY CONVERSION EFFICIENCY CURVE



DIMENSION DRAWING





Fire retardant plastic case

L: 75 mm

W: 40mm

H: 22mm

Mounting hole distance: 66mm

Mounting hole size: 4mm

FRONT DISPLAY

SIDE DISPLAY

PROTECTION FUNCTIONS

1. OVERHEATING PROTECTION

When the internal temperature of the MPPT controller exceeds 100 °C, the MPPT controller will reduce the output power. If the internal temperature continues to rise to 110 °C, the MPPT controller will automatically turn off the output. When the internal temperature of the MPPT controller is lower than 90 °C, the MPPT controller will automatically resume operation.

2. SHORT-CIRCUIT PROTECTION

When an unexpected short circuit occurs in the MPPT controller output, the MPPT controller automatically turns off the output and automatically returns to normal after the short circuit removed.

3. INPUT UNDERVOLTAGE PROTECTION

When the input DC voltage of the MPPT controller is lower than 15V, the MPPT will protectively shut down and automatically resumes operation after the input voltage is normal.

4. BATTERY UNDERVOLTAGE PROTECTION

When the MPPT controller battery port voltage is lower than the under voltage protection point for 10 seconds, the load port output is turned off. After the load port closed, the leakage current is less than 200uA.

5. LOAD PORT SHORT CIRCUIT PROTECTION

When an unexpected short circuit occurs in the MPPT controller load port, the MPPT controller automatically turns off the load port output, and automatically returns to normal after the short circuit removed.

INSTALLATION INSTRUCTIONS

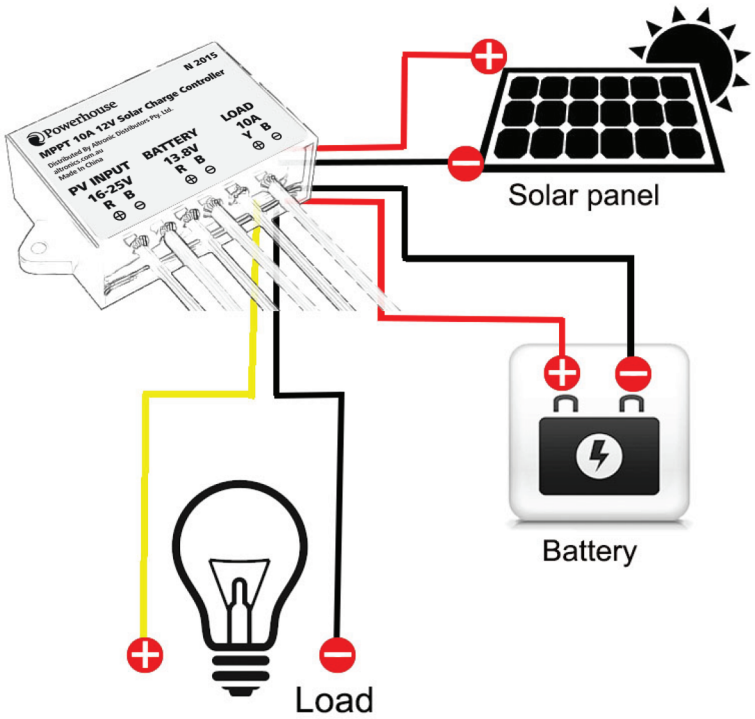
1. PREINSTALLATION INSPECTION

- Check the appearance is normal before installation.
- Check the label on the MPPT controller enclosure to verify that the specifications and performance of the MPTT controller match the equipment.

ATTENTION:

- The MPPT controller should be securely fixed
- The MPPT controller should be installed with a certain space for ventillation
- The output and input wires should be as short as possible to avoid excessive energy consumption during transmission.

SCHEMATIC DIAGRAM



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