

Juta MPPT 10A or 20A Solar Charge Regulator

Notes for Users



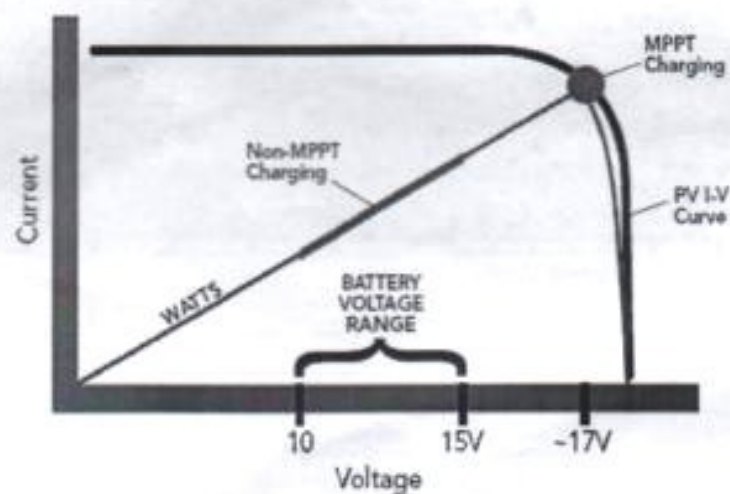
Protection Features

This regulator incorporates protection against:

- Overcharging and overly discharging the batteries
- Battery Reverse Current
- Overloading
- Short Circuits
- Incorrect Battery Polarity Connection

MPPT – Maximum Power-Point Tracking

The most important feature of this controller is the intelligent MPPT system, which allows the system to charge the battery bank more efficiently by drawing current from the solar panel(s) at the most efficient voltage for them, and delivering it to the batteries at a different voltage. It can result in an improvement of 10 – 30% in the energy delivered to the batteries.



For example, in the diagram above, the Maximum Power Point (MPP) for the solar panel occurs at around 17 volts, but if it is connected to a fairly flat battery, a conventional solar

controller would pull the solar panel voltage down to around 12V. By incorporating a DC-DC converter, an MPPT controller can keep the panel operating at the Maximum Power Point Voltage of 17V, while delivering power to the battery at 12V. The result is more efficient transfer of power to your battery.

Solar Panels

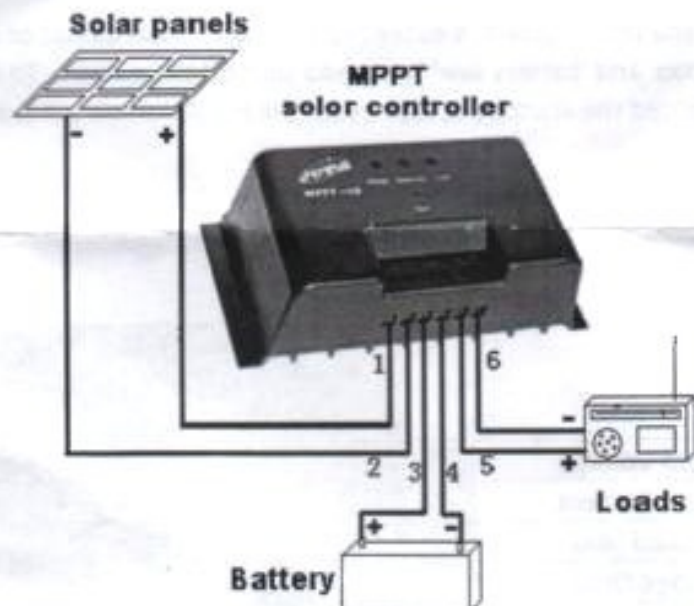
You should use 12V nominal solar panels with this regulator. If you are using more than one solar panel of 12V, they should be connected in parallel.

Charge Regulator

The Juta MPPT 10A is rated for currents up to 10A, and can handle a solar array up to 125W. The 20A version is rated for up to 250W of panels.

Connecting the Batteries, Solar Panels, and Loads

The following diagram shows how you should connect up your system. It is important to connect the batteries first, before the solar panel or load is connected – otherwise you could damage the regulator.



1. Connect the battery to terminals 3 and 4, making sure that the polarities are correct. If the battery is sufficiently charged, the green "Load" light should come on, indicating that it is possible to connect a load. If the light does not come on, check the polarity of the battery again. **It is important to connect the batteries first!**
2. Connect the solar panel output to terminals 1 and 2, paying particular attention to the polarities again.
3. Optionally, connect 12V appliances to terminals 5 and 6. Any appliances connected to these terminals will be switched off when the battery voltage drops, and reconnected when the battery is fully charged. You do not have to use these terminals – it is fine to keep appliances connected directly to the batteries if that is how your system is configured.

Indicator Lights

Load (Green)	On indicates that connection of a load is possible. Off indicates that there is no output from the system.
Battery low (Red)	On indicates that the battery voltage is low. This disconnects the loads from the batteries when the voltage falls below 10.5V. The light will switch off and load power will return when the battery voltage has recovered to 12.6V.
Charge (Red)	On indicates that the battery is charging, flickering indicates float charging, and off indicates that charging has stopped.

Reset Button

If the rated current is exceeded through a short-circuit or overload, the regulator will switch off the 'load' and 'battery low' lights and shut off the output. To reset it, first address the problem that caused the shutdown, then reset the regulator using a sharp object to press through the reset hole.

Technical Data

	MPPT-10	MPPT-20
Rated Voltage	12V	
Rated Current	10A	20A
No Load Loss	<=45mA	
Voltage Drop	<= 400mV	
Max Solar Panel Voltage	23V (12V system)	
Full Charge Cut	14V	
Low Voltage Cut	10.5V	
Reconnect Voltage	12.6V	
Temperature Compensation	-3mV per cell	
Efficiency	95 – 97%	
Net Weight	0.55Kg	0.65Kg
Dimensions	188 x 93 x 55mm	188 x 118 x 55mm