

# 200W Solar Charger Maximum Power Point Tracker

Operating Instructions  
Please read these instructions before use



This revolutionary maximum power point tracker solar charger was designed using the technology that won GSL Electronics the prestigious “2008 EDN Innovation award”. A simple, compact and low cost alternative. Ideal for charging batteries with the new low cost and high efficiency grid type panels.



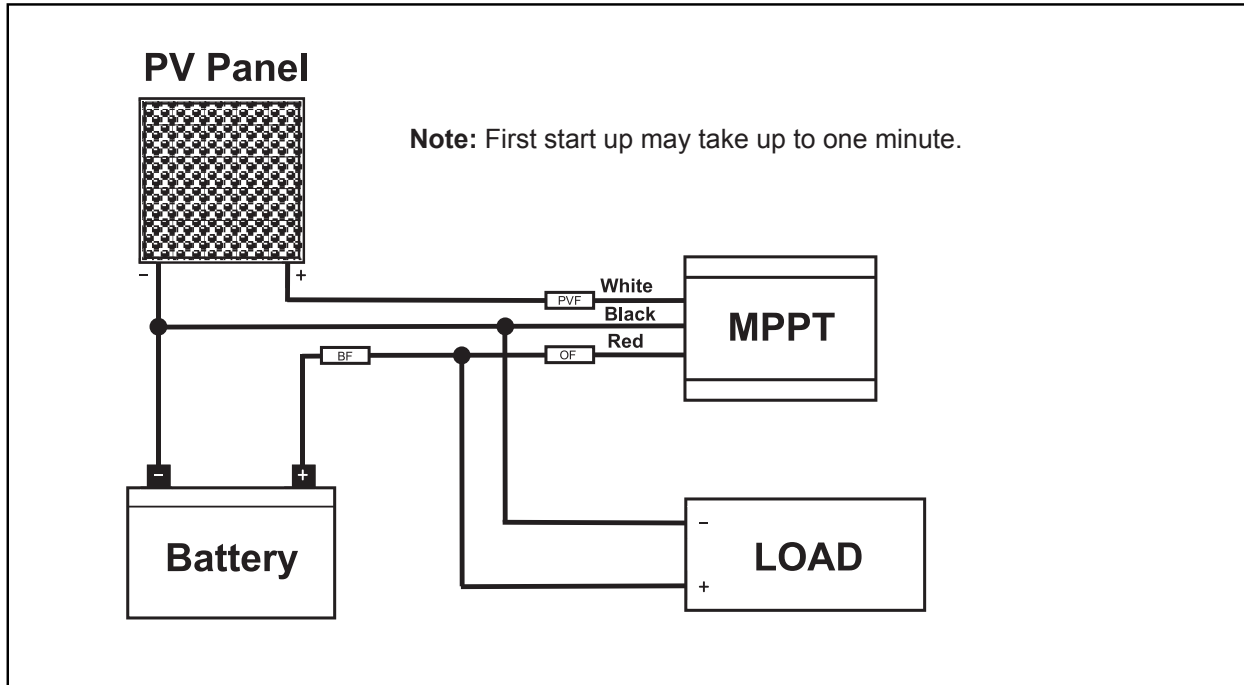
**MPPT12-1 Unit**

**Important:**

- Use only PV Systems with open circuit voltage below 55V and a  $V_{MP}$  no less than 17V for 12V Charging and 34V for 24V Charging.
- Use wires suitable for at least 15a, but if wire runs are over 3m then larger wires are recommended to limit voltage drop and losses.
- Install the unit in a dry place out of direct sunlight and away from flammable liquids or gases.
- Battery fuse ( BF ) is always required and must be located as close to the battery as possible, its sizing depends on the wire size and load ratings. Typically a 15A 24V fuse would do.
- Locate the PV fuse (PVF) as close to the MPPT as possible (10A 60VDC Rating). PVF only mandatory with high power panels.
- If used, this fuse is optional, locate the output fuse (of) as close to the MPPT as possible (15A 24VDC rating).
- Before connecting battery always check battery and PV panel polarity.

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**Basic Wiring Instructions:**



**MPPT12-1 General Information:**

- Green LED flashing – battery charging and all normal.
- Red LED flashing – battery voltage low, below 0.9 of nominal voltage.
- This MPPT is designed to auto detect 12V and 24V battery systems and select a suitable charge regime.
- The maximum absorption voltage is 14.5V or 29V and the float voltage is 13.5V or 27V for 12V or 24V batteries respectively.
- The absorption phase is entered following a low battery condition and is maintained for approx. 1.5 hours.
- Custom float and absorption voltages and times are possible but minimum orders apply.
- This MPPT has a built in multilevel over temperature protection to improve product reliability while maximising output power availability.
- The peak maximum output power is 250W and the continuous output power is 150W on 12V systems and 200W on 24V.
- The typical efficiency is approximately 96% and the current gain during typical bulk charge is over 20%.
- The fuse PVF can be replaced by a suitably heatsinked 20A 60V schottky diode ( its anode connected to the + panel and cathode to the MPPT white wire). This diode will avoid a small drain during night time (approx. 0.04A ) as well as protect against panel short but it will also slightly decrease the battery charge current.