



BM PRO DEFINITIONS | PWM & MPPT SOLAR REGULATORS EXPLAINED

DEFINITIONS | Solar Regulators - PWM & MPPT

There are two commonly used types of modern solar regulators (also called charge controllers). One is called PWM (pulse width modulation) and the other is called MPPT (maximum power point tracking). Both are able to adjust the charging rate of your battery to keep battery temperature consistent and prevent overcharging, protecting your batteries. A solar regulator also maximises a battery's charging capacity.

ADVANTAGES | MPPT

MPPT controllers are known to maximise charging capacity. This is achieved by converting excess voltage into amperage, which allows solar panels to operate at optimal levels at all times. Power loss in cables is also reduced.

MPPT controllers also prevent reverse-current flow. During night-time and low light periods, solar panels can drain the battery as the current flows backwards. An MPPT controller prevents this from occurring.

- Can maximise battery life in cold conditions
- Particularly beneficial when your system is 150W-200W and can use the advantages of a MPPT system

ADVANTAGES | PWM

PWM's are optimised to expend the life of your batteries, rather than optimising your battery power.

- PWM's are less expensive because of their less complex structure
- PWM's are perfect for a charging system where your battery and panel voltages are matched
- PWM's are good for systems which are smaller and may not require the benefits of MPPT controllers