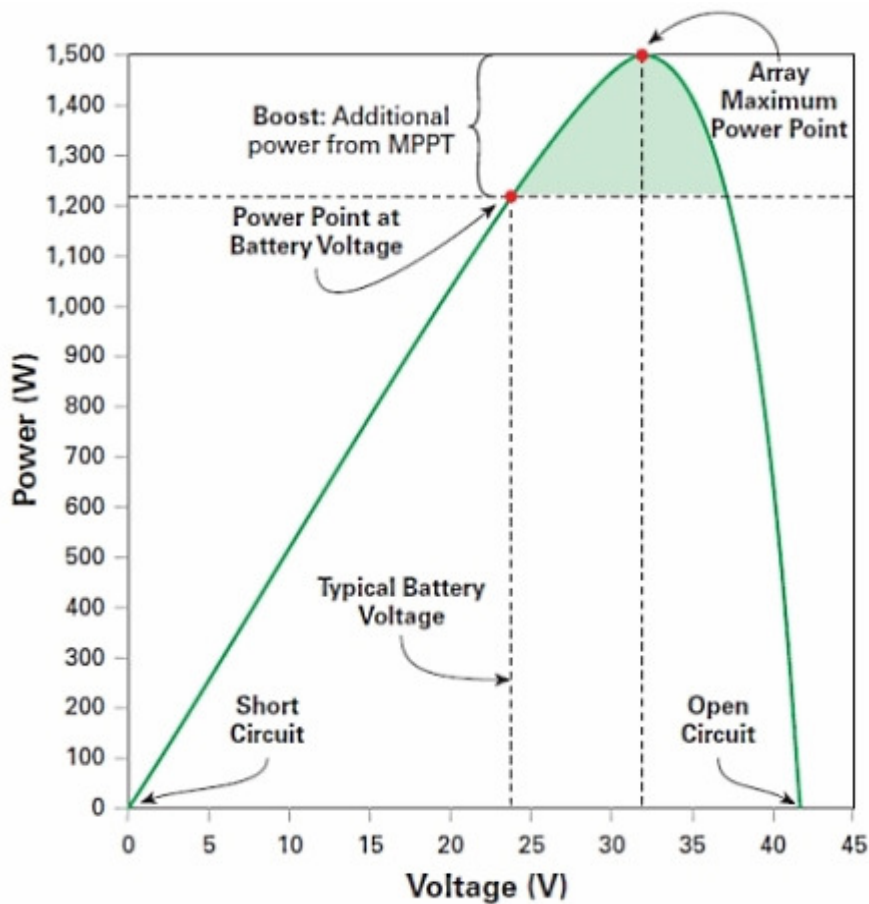


Why Does MPPT Matter In Solar?

MPPT (Maximum Power Point Tracking) charge controllers are finally an important component of battery-based solar energy systems.

MPPT control reduces wasted energy by operating the PV solar module at its higher MPP voltage and lower MPP current, instead of the lower power obtained by connecting the MPPT PV directly across the battery terminals. The higher voltage additionally helps to keep copper losses (on account of longer PV wire runs) down and the current is lower for a given amount of power. Moreover, raising the controller PV voltage limits – also allows more PV modules to be connected in series.



Array Rated Wattage: 1,800 W
Array Nominal Voltage: 24 V

Battery Nominal Voltage: 24 V

MPP tracking efficiency has also improved to almost 100% accuracy. Algorithms that can quickly scan the entire I-V curve of the PV array from battery voltage up to Voc (Open Circuit Voltage) ensure that the correct MPP “bump” is chosen from multiple possible power points with as little time away from the correct power point as possible.

Communications with other controllers, the rest of the system and the internet is also becoming a common requirement. So are the standardized communications protocols, such as Modbus RTU and Modbus over TCP/IP.

Battery charging algorithms are now smarter to improve battery life. If your off-grid home only partially discharges the battery bank, instead of doing a complete daily absorb charge cycle (raised battery voltage), the controller can be programmed to only do this once every few days or when the state of charge falls below a certain point. (Full charges must still be done to reduce battery plate sulfation).