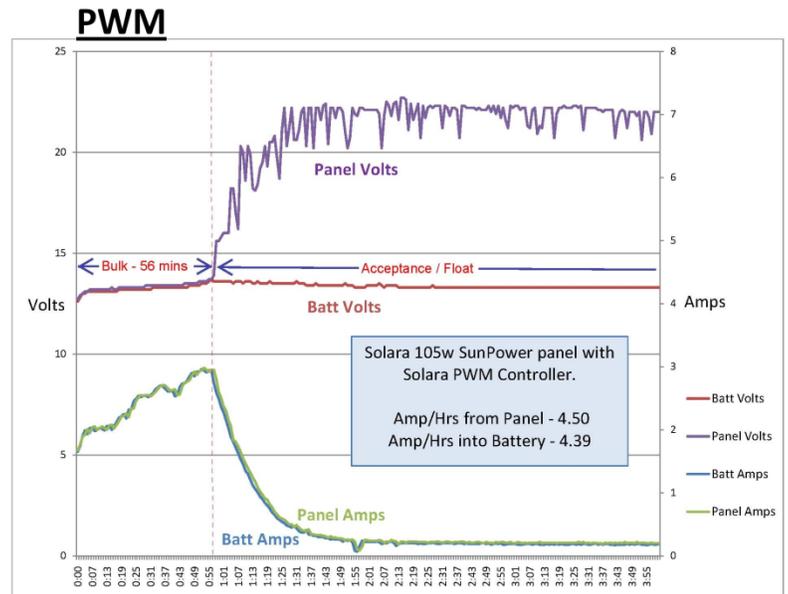


Choosing a Solar Controller - MPPT vs PWM

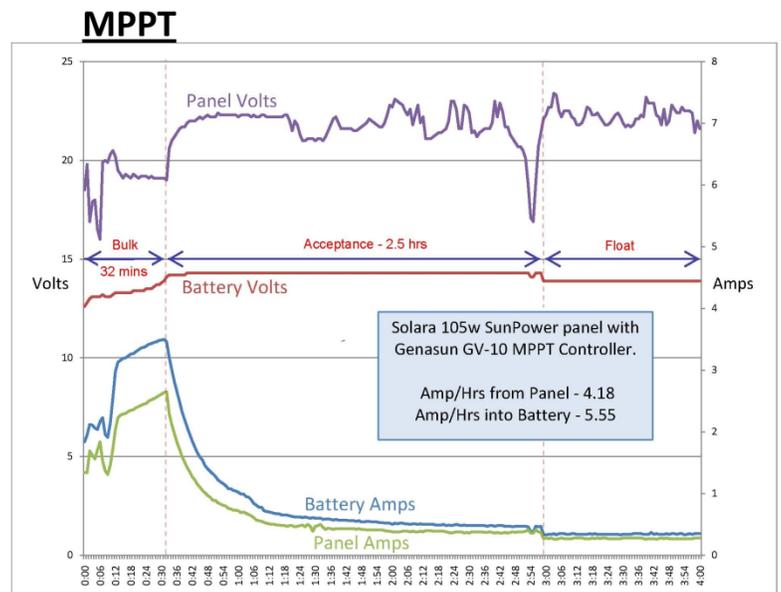
Standard solar panels produce much higher voltages than are safe to feed directly to a battery, so a solar controller or regulator must be connected between them. Two types of controllers are available; PWM (Pulse Width Modulation) and MPPT (Maximum Power Point Tracking).

PWM Controllers - When charging, these controllers feed the power from the panel straight through to the battery until the battery voltage reaches a pre-determined Acceptance level. It will then keep the voltage at that level by pulsing the panel voltage on and off to keep the battery voltage constant. During the Bulk stage of charging, the amperage delivered to the battery is slightly less than the amps from the panel due to losses in the electronics.



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MPPT Controllers - These controllers take the best mix of amps and volts from the panel to give the maximum power. They then track this Maximum Power Point as conditions change to ensure the highest power is extracted from the panel at all times. The DC panel output is then inverted into very high frequency AC and then converted back down to DC to feed to the battery. The result of that inversion/conversion process is that more amps can be delivered to the battery than were produced from the panel, resulting in reduced charging times. That is a significant advantage over PWM controllers, and more than justifies the higher cost of the MPPT models.



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