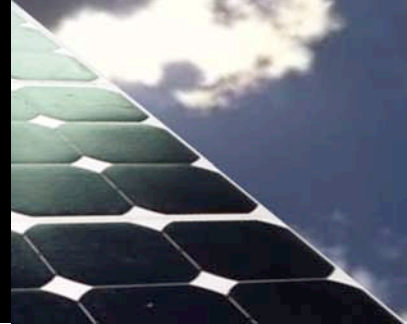


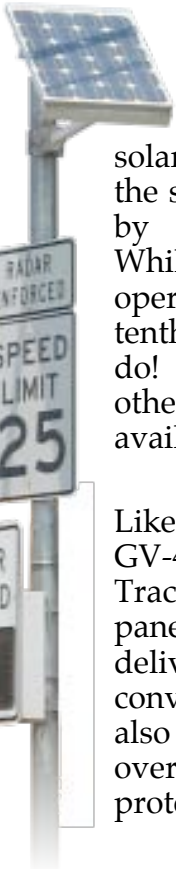
GENASUN™



Solar Charge Controllers for Unattended Devices

Genasun's GV-4 is the first solar charge controller engineered from the start for difficult light conditions seen by unattended off-grid solar devices. While any controller uses some energy to operate, the GV-4 consumes less than one-tenth as much energy as most controllers do! When a panel is under a tree or in other shade, the GV-4 will send any available power straight to your battery.

Like the rest of Genasun's GV series, the GV-4 employs Maximum Power Point Tracking (MPPT) to operate the solar panel at its optimum voltage, thus delivering 10 – 30% more power than a conventional controller. GV controllers also include advanced features such as over-temperature and over-current protection.



Specifications:

Recommended Max Panel Power	45 W
Maximum Output Current	4 A
Panel Voc	0 – 27 V
Operating Consumption	125 μ A (0.125 mA)
Night Consumption.....	90 μ A (0.090 mA)
Battery Float Voltage	13.8 V
Absorption Voltage	14.4 V
Electrical Efficiency (typical)	94% - 98%
Tracking Efficiency (typical)	99%
Operational Temperatures	-40°C – 85°C
Size	4.3 x 2.2 x 0.9", 11 x 5.6 x 2.5 cm
Weight	2.8 oz., 80 g

Features:

- Designed for difficult lighting conditions: under trees, near buildings, in fog or shade
- Integrated DC/DC converter optimizes panel voltage with Maximum Power Point Tracking
- 10 – 30% Typical power gain from MPPT
- Overload, Over-Temperature Protected
- Temperature Compensated Battery Charging
- Multi-stage Battery Charging
- Protected against reverse-polarity connections
- Robust Tracking Algorithm
- Simple Installation
- Made in the USA

For more information, please call us at 617-369-9083 or visit <http://www.genasun.com>

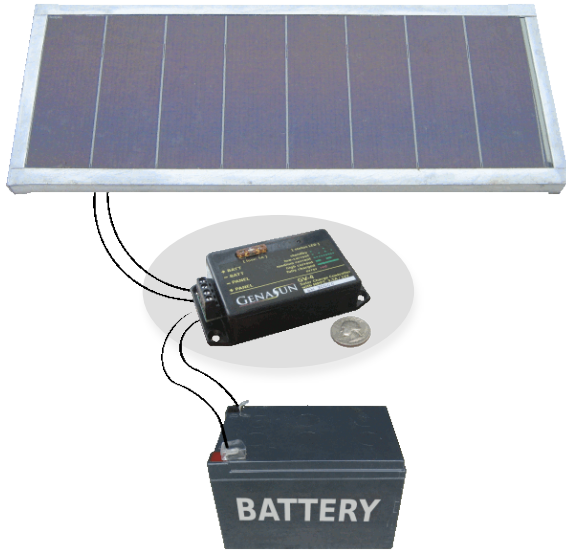
Selected Uses:

- Parking pay-stations
- Construction signs
- Speed signs, other road signs
- Remote monitoring equipment

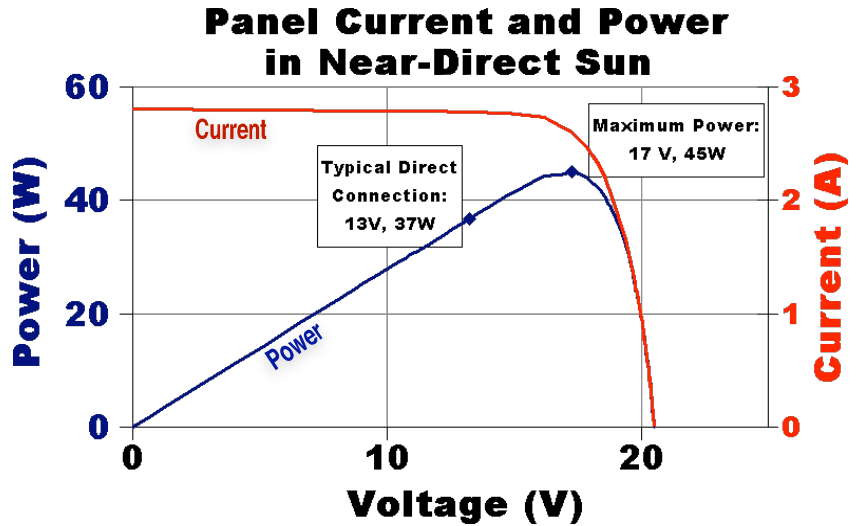
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About Maximum Power Point Tracking (MPPT)



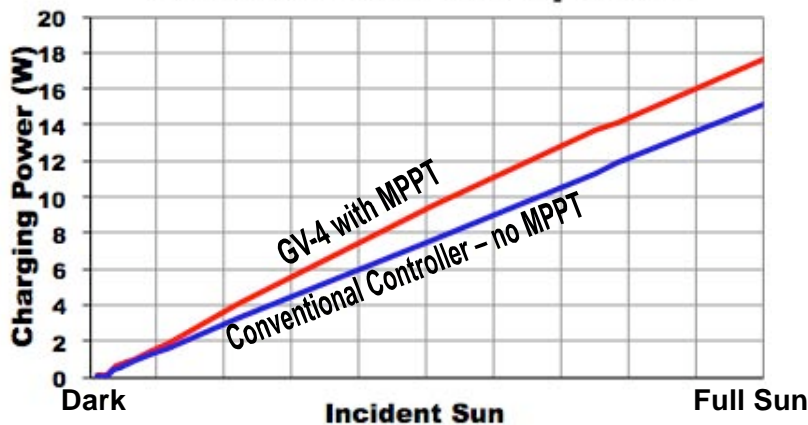
Above: GV-4 in a sample system, connected between a solar panel and a battery



A solar panel's operating voltage has a big effect on its power output (illustrated above). Genasun's GV controllers operate the solar panel at its **optimum operating voltage**, instead of operating the solar panel at the battery voltage. An internal DC/DC converter makes this possible.

This is Maximum Power Point Tracking: actively setting the panel voltage to the maximum power point for the ambient light conditions. With this technique, and with breakthrough low operating current, GV controllers deliver anywhere from 10% to 50% more power than other controllers.

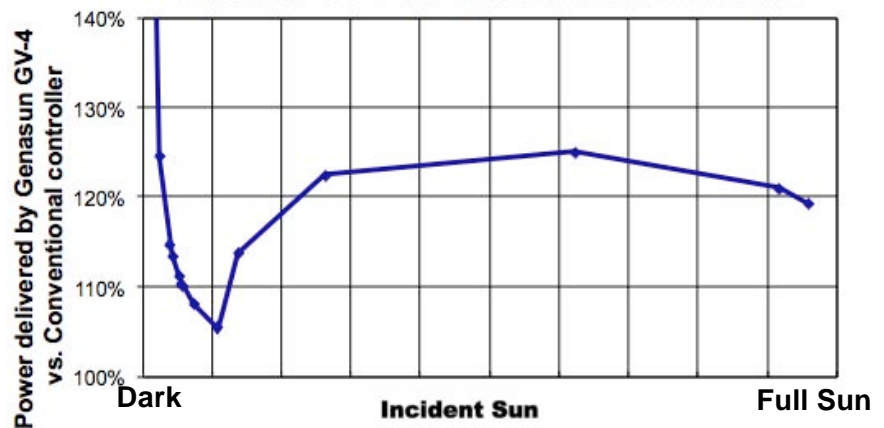
Low-Power Solar Control: Genasun GV-4 vs. Competition



We have measured Genasun's GV-4 against other commercially-available solar charge controllers, and are pleased to say that the GV-4 provides more power than conventional controllers in all light conditions.

Viewed as a percentage of total power (right), Genasun's GV-4's performance is particularly impressive in very low light conditions.

Genasun GV-4 vs. Conventional Controller



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