



Get Improved Performance From Your Solar Modules and Batteries

SOLAR BOOST™ 50 & 3048

- **The Ultimate Photovoltaic Charge Controller... Increases Charge Current Up To 30% Or More!**

Patented Maximum Power Point Tracking (MPPT) technology allows Solar Boost 50 and Solar Boost 3048 to increase charge current up to 30% or more compared to conventional charge controllers. Don't waste money by throwing PV power away! Get the power you paid for with a Solar Boost charge controller.

Solar Boost controllers also provide an advanced fully automatic three stage charge control system to ensure the battery is properly and fully charged, resulting in enhanced battery performance with less battery maintenance. An equalize function is also included to periodically condition liquid electrolyte lead-acid batteries.

An optional user friendly digital display is available to monitor PV charge performance. Optional temperature compensation of charge voltage is also available to further improve charge control and battery performance.



Features Include

- Patented MPPT technology increases charge current up to 30% or more!
- 50A/24V or 30A/48V ratings support large solar module arrays
- Three stage PWM charge control optimizes charge parameters to battery size & type
- MPPT power converter can charge lower voltage battery from higher voltage array
- Electronic current limit prevents overload or nuisance fuse blow
- Available digital display monitors PV charge performance
- Durable powder coat finish & conformal coated electronics resist corrosion
- Fully protected against excess current, temperature, transient voltage & polarity
- Full 36 month limited warranty, optional extended coverage available
- ETL listed to UL STD. 1741, certified to CAN/CSA STD. E335-1/2E, CE labeled



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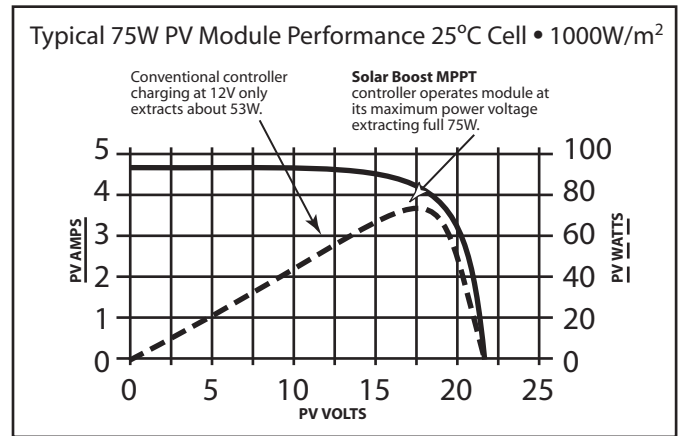
Covered under one or more of the following US Patents
6,111,391 • 6,204,645



How Do Solar Boost™ Controllers Increase Charge Current?

Solar Boost controllers increase charge current by operating the PV module in a manner that allows the module to produce all the power it is capable of. A conventional charge controller simply connects the module to the battery when the battery is discharged. When the 75W module in this example is connected directly to a battery charging at 12 volts its power production is artificially limited to about 53 watts. This wastes a whopping 22 watts or nearly 30% of the available power!

Patented MPPT technology used in Solar Boost controllers operates in a very different fashion. The Solar Boost controller continually calculates the module's maximum power voltage, in this case 17 volts. It then operates the module at its maximum power voltage to extract maximum power. The higher power extracted from the module is then provided to the battery in the form of increased charge current. In conditions where extra PV power is not available, Solar Boost controllers will operate as a conventional controller with very low voltage drop.



The actual charge current increase you will see varies primarily with module temperature and battery voltage. In comfortable temperatures, current increase typically varies between 10 to 25%, with 30% or more easily achieved with a discharged battery and cooler temperatures. What you can be sure of is that Solar Boost charge controllers will deliver the highest charge current possible for a given set of operating conditions.

| SPECIFICATIONS | Solar Boost 50 | Solar Boost 3048 |
|--------------------------------|--|---------------------------------------|
| Current Rating | 50 Amp Maximum | 30 Amp Maximum |
| Nominal System Voltage | 12 / 24VDC Field Selectable | 24 / 48VDC Field Selectable |
| PV Open Circuit Voltage | 57VDC Maximum | 140VDC Maximum |
| Standby Power Consumption | 30mA Typical | |
| Charge On Power Consumption | 150 / 90mA @ 12 / 24VDC | 100 / 70mA @ 24 / 48VDC |
| Charge Algorithm | 3 stage charge. Acceptance/Float transition based on charge current matched to battery amp-hours. Can accept external shunt signal for optimal charge control with widely varying loads. Selectable for 2 stage charge. | |
| Acceptance Voltage Setpoint | 13-16VDC / 26-32VDC | 26-32VDC / 52-64VDC |
| Float Voltage Setpoint | 0-2VDC / 0-4VDC < Acceptance | 0-4VDC / 0-8VDC < Acceptance |
| Equalization Voltage | Acceptance + 1.0 / 2.0VDC | Acceptance + 2.0 / 4.0VDC |
| Voltage step-down | Can charge 12V battery from 24V Array | Can charge 24V battery from 48V Array |
| Temperature Compensation | Optional temperature sensor adjusts charge voltage setpoint based on measured battery temperature. Field selectable slope, -5.0mV/°C/cell (lead-acid), or -2.0mV/°C/cell (NiCd) | |
| Power Conversion Efficiency | 97% @ 40 Amp Output | 97% @ 25 Amp Output |
| Cabinet Dimensions | 10"H x 8 3/4"W x 3 1/2"D (25.5cm x 22.6cm x 8.74cm) | |
| Digital Display | Available in the unit, as a remote, or both. Shows PV input current, output charge current, battery voltage, charge mode and state of charge. Remote display mounts in standard duplex box, includes 25 foot (7.6m) cable. Maximum cable length to 300 feet (91.4m). | |
| Digital Display Range/Accuracy | Voltmeter, 70.0VDC / ±0.30% F.S. | Ammeter, 60.0A / ±0.50% F.S. |
| Specified Temperature Range | 0 to +40°C (Extended range -40 to +60°C, will operate but may not meet spec. - see Technical Bulletin 100206) | |

• Available From

• Part Numbers & Shipping Weight

| | | | |
|--|------------------|---------------|---------|
| Solar Boost 50 w/o display..... | SB50L..... | 83/4 lbs..... | 3.98kg |
| Solar Boost 50 w/digital display..... | SB50DL..... | 9 lbs..... | 4.09kg |
| SB50L front panel digital display..... | SB50PDL..... | 21/2 lbs..... | 1.14kg |
| Solar Boost 3048 w/o display..... | SB3048L..... | 83/4 lbs..... | 3.98kg |
| Solar Boost 3048 w/digital display..... | SB3048DL..... | 9 lbs..... | 4.09kg |
| SB3048L front panel digital display..... | SB3048PDL..... | 21/2 lbs..... | 1.14kg |
| Remote display, 25' cable..... | SB50RD25..... | 2 lbs..... | 0.91kg |
| Battery Temp. sensor, 20' cable | 930-0022-20..... | 1 lbs..... | 0.46kg. |