



Solar Boost™

2512i-HV & 2512iX-HV

20/25 Amp / 12 Volt MPPT Charge Controller

Available both as low cost and full featured versions. Great for cost sensitive applications that require a quality, reliable MPPT controller capable of running 60 Cell modules. Full featured version includes LVD load control or lighting control.

Patented Maximum Power Point Tracking technology allows Solar Boost 2512i-HV and 2512iX-HV to increase charge current up to 30% or more compared to conventional charge controllers. The new higher input voltage capability of the HV version product now allows the use of higher voltage lower cost 60 cell PV modules to charge a 12 volt battery. Don't waste your money by throwing PV power away! Get the power you paid for with a Solar Boost charge controller.

The lower cost Solar Boost 2512i-HV provides an advanced fully automatic 3-stage charge control system to ensure the battery is properly and fully charged, resulting in enhanced battery performance with less maintenance. A partial IPN™ network interface is also included to allow use of the Universal Communication Module (UCM), and IPN-Remote and IPN-ProRemote displays.

Additional features provided in the Solar Boost 2512iX-HV version include automatic equalization, battery temperature sensor input, full IPN network compatibility, and an auxiliary output. The auxiliary output can serve as a 25 amp load controller, 25 amp lighting controller[®], or as a 2 amp auxiliary battery charger. The auxiliary battery charge feature is ideal for charging a separate battery such as the engine battery in an RV.

Blue Sky Energy's advanced Integrated Power Net™, or IPN Network, allows multiple charge controllers to communicate with each other and coordinate their activities to charge the battery as a single coordinate charging machine. The IPN network also allows networked controllers to share an optional battery temperature sensor, UCM and remote display. Complete IPN network functionality is provided within the charge controller and no additional hardware or software is required.



Patented MPPT Technology Increases Charge Current up to 30% Or More!

- 20/25 Amp 12 Volt Rating Supports A Wide Range Of Applications
- Optional IPN-ProRemote Display Provides Charge Control & Full-Featured Battery Monitoring System
- Supports up to 270W of 60 Cell modules
- 3-Stage Charge Control with Filtered PWM Output Improves Battery Performance & Life While Minimizing Battery Maintenance
- Clear Anodized Faceplate, Conformal Coated Electronics & Plastic Case Resist Corrosion
- Full 5 Year Limited Warranty

Additional SB2512iX-HV Features Include:

- Automatic or Manual[®] Equalization To Periodically Condition Flooded Lead-Acid Batteries
- Full IPN Network Interface Coordinates Multiple Controllers & Shares Optional Battery Temperature Sensor & Display
- Auxiliary Output Provides 25 Amp Load Control Or 2 Amp Auxiliary Battery Charge
- Load Controller Provides Fully Adjustable Dusk To Dawn Lighting Control[®]
- Battery Temperature Sensor Input



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

■ How Do Solar Boost Charge Controllers Increase Charge Current?

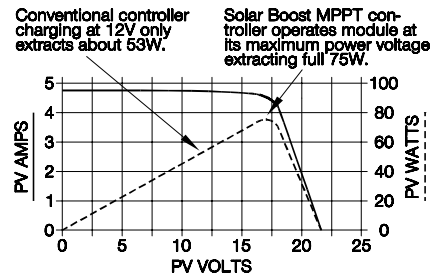
Solar Boost charge controllers increase charge current by harvesting more PV power. A conventional charge controller simply connects the PV module to the battery when the battery is discharged which can artificially limit how much power a PV module can deliver.

Patented Solar Boost MPPT technology operates the PV module at its optimum voltage where it can produce the greatest amount of power rather than at battery voltage. The higher power extracted from the module is then provided to the battery as increased charge current.

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.

Typical 75W PV Module Performance @ STC



SPECIFICATIONS	Solar Boost 2512i-HV
Output Current Limit	25 amp maximum 36 cell modules • 20 amp maximum 60 cell modules
Nominal Battery Voltage	12VDC
PV Input Voltage	50VDC absolute maximum (Recommend maximum V_{OC} at STC \leq 40VDC)*
PV Input Power	Recommended maximum, 340W with 36 cell modules / 270W with 60 cell modules
Power Consumption	0.30W typical standby • 1.0W typical charge ON
Charge Algorithm	3-stage Bulk/Absorption/Float • Charge time in Absorption fixed at 2 hours (Range 0 – 10 hours [Ⓣ])
Absorption / Float Voltage	14.2VDC / 13.2VDC fixed value (10.0 – 20.0VDC [Ⓣ])
Power Conversion Efficiency	96% typical @ 14 volt 20 amp output with 36 cell modules
Physical Configuration and Dimensions	Open frame construction with conformal coated electronics mounted to rear of 5.3" x 5.3" (13.5cm x 13.5cm) clear anodized aluminum face plate. Black ABS corrosion proof mounting box included, 2.5" (6.4cm) deep.
Analog Input Accuracy / Range	Battery / PV voltmeters, 35.0VDC / 55.0VDC \pm 0.50% FS • Input / Output ammeters, 30.0 amps \pm 0.50% FS
Communication	IPN Network connector for IPN displays & UCM <u>only</u> . Complete IPN interface for multi-controller coordination not provided.
Environmental	-40 – +40°C, 10 – 90% RH non-condensing
Additional Specifications for Solar Boost 2512iX-HV	
Equalization Voltage / Time	15.2VDC fixed value (range 10.0 – 40.0VDC [Ⓣ]) • Automatic fixed at 2 hours each 30 days, may be disabled
Auxiliary Output Functionality	Single output field configurable as either: 25 amp load controller –or– 2 amp auxiliary battery charger
• Aux. Battery Charge	2 amp typical, same charge voltage as primary battery
• Load Control	25 amp maximum; ON @ \geq 12.6VDC / OFF @ \leq 11.5VDC (Range 10.0 – 40.0VDC [Ⓣ]), or net battery amp-hours [Ⓣ])
• Lighting Control [Ⓣ]	Variable Post-Dusk and Pre-Dawn timers [Ⓣ] , Range 0.5 – 20.0 hours
Temperature Compensation	Optional battery temperature sensor, -5.00 mV/°C/cell correction factor (Range -0.00 – -8.00 mV/°C/cell [Ⓣ]) • sensor range -60 – +80°C
Auxiliary Battery Voltage	Auxiliary battery voltmeter, 35.0VDC \pm 0.50% FS
Communication	Complete IPN Network interface. Allows up to 8 IPN capable controllers to set up and operate as a single charging machine.,

As a part of our continuous improvement process specifications are subject to change without prior notice.

* See Technical Bulletin #100214.

[Ⓣ]With IPN-ProRemote which may be used as a setup tool only, or permanently installed.

■ Available From:

■ Part Numbers & Shipping Weight

Solar Boost 2512i-HV	SB2512i - HV ..	1.3 lbs ...	59kg
SB2512i-HV w/ extra features	SB2512iX-HV ..	1.3 lbs ...	59kg
IPN-ProRemote with shunt.....	IPNPRO-S	1.8 lbs ...	82kg
IPN-ProRemote w/o shunt	IPNPRO	1 lbs ...	45kg
500A / 50mV current shunt	506-0003-01 ...	1 lbs ...	45kg
IPN-Remote	IPNREM.....	1 lbs ...	45kg
Battery Temp. sensor, 20'	930-0022-20 ...	1 lbs ...	45kg
Universal Com. Module.....	UCM.....	1 lbs ...	45kg

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