



# Now with Fully Adjustable Solar Lighting control

Maximum Power Point Tracking Photovoltaic Charge Controller with available load control and IPN™ Network Interface

## SOLAR BOOST™ 2512i & 2512iX

### Maximum Power Point Tracking Increases Charge Current Up To 30% Or More!

Patented Maximum Power Point Tracking technology allows Solar Boost 2512i and Solar Boost 2512iX to increase charge current up to 30% or more compared to conventional charge controllers. Don't waste your money by throwing PV power away! Get the power you paid for with a Solar Boost charge controller.

The low cost Solar Boost 2512i 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 IPN-Remote or IPN-ProRemote displays.

Additional features provided in the Solar Boost 2512iX include automatic or manual equalization, battery temperature sensor input, full IPN network compatibility, and an auxiliary output. The user configurable auxiliary output can serve as either a 25 amp load controller, or as a 2 amp auxiliary battery charger. The load control feature can be used to limit excessive battery discharge in unattended remote systems, whereas the auxiliary battery charge feature is ideal for charging a separate battery such as the engine battery in an RV. With software version 2.00 or later the auxiliary output can also provide fully adjustable dusk to dawn<sup>®</sup> lighting control.

Blue Sky Energy's advanced Integrated Power Net™, or IPN Network, allows up to 8 IPN capable charge controllers to communicate with each other and operate as a single machine rather than separate charge controllers. The IPN network also allows networked controllers to share an optional battery temperature sensor and remote display. The IPN network does not require a display or other special hardware to operate.



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



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

- 25 Amp 12 Volt Rating Supports A Wide Range Of Applications
- Optional IPN-ProRemote Display Provides Charge Control & Full-Featured Battery Monitoring System
- 3-Stage Charge Control with Filtered PWM Output Improves Battery Performance & Life While Minimizing Battery Maintenance
- Clear Anodized Faceplate, Galvanized Mounting Box & Conformal Coated Electronics Resist Corrosion
- Full 12 Month Limited Warranty

#### Additional SB2512iX 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<sup>®</sup>
- Battery Temperature Sensor Input

## ■ How Do Solar Boost Charge Controllers Increase Charge Current?

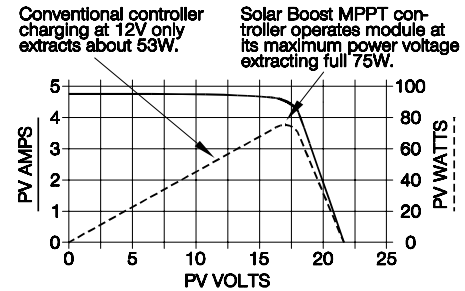
Solar Boost charge controllers increase charge current by harvesting more PV power. A conventional charge controller simply connects the PV module to the battery when the battery is discharged which can artificially limit how much power a PV module can deliver.

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
Output Current Rating	25 Amp maximum, automatic 25 Amp output current limit
Nominal Battery Voltage	12VDC
PV Input Voltage	35VDC maximum
Power Consumption	0.35W Typical standby • 1.0W Typical charge on
Charge Algorithm	3-stage Bulk/Acceptance/Float • Charge time in Acceptance fixed at 2 hours (Range 0 – 10 hours <sup>Ⓜ</sup> ) (Full charge can be based on net charge current matched to battery amp-hours <sup>Ⓜ</sup> )
Acceptance Voltage	14.2VDC Fixed Value (10.0 – 20.0VDC <sup>Ⓜ</sup> )
Float Voltage	13.2VDC Fixed Value (10.0 – 20.0VDC <sup>Ⓜ</sup> )
Power Conversion Efficiency	97% @ 14 Volt 20 Amp Output
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. Electronics extend 1.9" (4.83cm) behind front panel. Mounts into standard 4 <sup>11</sup> / <sub>16</sub> " (11.9cm) square electrical box which is included, Raco p/n 8257 or equivalent.
Analog Input Accuracy / Range	Battery and PV voltmeters, 35.0VDC ±0.50% FS Input/Output ammeters, 30.0A ±0.50% FS
Communication	IPN Network interface for IPN displays <u>only</u> . Full IPN interface to allow multicontroller coordination not provided.
Environmental	-40 – +40°C, 10 – 90% RH non-condensing

SPECIFICATIONS	Additional Specifications / Features for Solar Boost 2512iX
Equalization Voltage	15.2VDC Fixed Value (range 10.0 – 40.0VDC <sup>Ⓜ</sup> ) • automatic Fixed at 2 hours each 30 days, may be disabled (time and day settings variable <sup>Ⓜ</sup> , or equalize can be manually actuated <sup>Ⓜ</sup> )
Auxiliary Output Function	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 @ ≥12.6VDC / OFF @ ≤11.5VDC (Range 10.0 – 40.0VDC <sup>Ⓜ</sup> ), or net battery amp-hours <sup>Ⓜ</sup> )
• Dusk-to-Dawn Control <sup>Ⓜ</sup>	Variable Post-Dusk and Pre-Dawn timers <sup>Ⓜ</sup> , Range 0.5 - 20.0 Hours
Temperature Compensation	Optional temperature sensor adjusts charge voltage setpoints based on measured battery temperature, -5.00 mV/°C/cell correction factor (Range -0.00 – -8.00 mV/°C/cell <sup>Ⓜ</sup> ) • sensor range -60 – +80°C
Auxiliary Battery Voltage	Auxiliary battery voltmeter, 35.0VDC ±0.50% FS
Communication	Complete IPN Network interface. Allows up to 8 IPN capable controllers to set up and operate as a single machine, share a common battery temperature sensor, and share an IPN-Remote or IPN-ProRemote display. Simple twisted pair cable interface with no special communication hardware required.

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

<sup>Ⓜ</sup> With IPN-ProRemote which may be used as a set up tool only, or permanently installed.  
Dusk to Dawn requires software versions 2.0 or later

## ■ Available From:

## ■ Part Numbers & Shipping Weight

Solar Boost 2512i .....	SB2512i .....	1.3 lbs ...	.59kg
SB2512i w/ extra features ..	SB2512iX.....	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

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