

# Solar Chargers Which are the best?

By Ted Thomas

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When there is just no way you can plug into a 120 Volt AC outlet to recharge and maintain your batteries, using solar energy is your only alternative. How successful you are going to be depends on several important items. After ensuring you have sufficient panels to generate the power you will need, it is the solar charge controller that will determine how satisfied you will be with your system, over the long haul. Why so?.....read on: The job of properly charging and maintaining your battery system depends on making sure you consistently charge them to full capacity, without ever overcharging. Failing to fully charge batteries leads to reduced capacity and shortened life. Why? Sulphate, the #1 cause of early battery failure, forms on the battery's charge plates, effectively reducing surface area and therefore their ability to store

energy. How can you be sure your solar charging system is capable of preventing or eliminating sulphate, regardless of temperature or battery condition? A solar charge controller, properly designed and built, is your only answer. To be such a device, a solar controller must have several needed features-characteristics. If it doesn't, your going to pay the price.... and so will your batteries. This leads me to now tell you, in my opinion, who makes such a "proper" solar charge-controller.

There are a last count more than five manufacturers of solar charge controllers, ranging in price from \$30 to as high as \$300. Why such a spread in price? Much depends on power rating and features such as volt /amp meters, temperature compensation, auto turn-on/off, multi-stage charging-maintaining (using



(Left) Shown is VDC Electronics' SCC005 solar charger-controller-desulphator system with high-efficiency 5 watt solar panel\* (Right) ICP's controller and 5 watt rated panel (sold separately).

pulse width modulation (PWM) circuitry or a micro-processor controller). Last, but definitely not least, is full time - automatic desulphation. The following chart tells the story of five of the "Best Buys". Take your time and read it carefully. Your pocket-book and your batteries will thank you.

Well, after studying the chart, if it isn't clear who I favor, then I have failed. VDC Electronics' BatteryMINDER controller-desulphator is a

real buy\*. It is the only solar controller we were able to find, currently on the market, that offers full time automatic desulphation and temperature compensation. Without both these features, no solar system can truly claim to maximize both the performance and life of lead acid based batteries. It is not often you find a truly better system selling for considerably less than its competition. My advice? . . . Get one quick, before they raise the price.

Manufacturer	VDC	ICP	VDC	ICP	MORNINGSTAR
Model #	SCC005*	10014 <sup>1</sup>	SCC180**	10018 <sup>1</sup>	SG-4 <sup>1</sup>
Power rating (watts out)	5.00	105	180	315	68.0
Suggested Retail \$	\$139.95*	\$37.99	\$139.95	\$89.99	\$30.00
Pulse Width Modulated / Microprocessor	YES	NO	YES	NO	YES
2 stage Charge control	YES	YES	YES	YES	YES
Full Time Desulphation	YES	NO	YES	NO	NO
Temperature Compensation	YES	NO	YES	NO	YES
Over Voltage Protection	YES	YES	YES	YES	YES
Low Solar Protection	YES	YES	YES	YES	YES
Battery Condition Monitor	YES	NO	YES	NO	NO
Solar output status LED	YES	YES	YES	YES	YES
Amps Out meter	NO	NO	NO	NO	NO
Volts Out meter	NO	NO	NO	YES	NO
Reverse polarity LED	YES	YES	YES	YES	YES
Warranty, Years	5	90 Days	5	90 days	1
Guarantee, Years	1	0	1	0	0

\* Model SCC005 comes complete with a true 5-watt high efficiency amorphous silicon solar panel and battery condition monitor, as well as quick connect-disconnect battery terminal assembly. Limited quantities are currently available, until first quarter 2003. Contact VDC for special intro pricing and actual date of availability, in quantity.

<sup>1</sup> Controller Only – Does not include Solar Panel or Battery Condition Monitor.

\*\* Model SCC180 will be available during first half of 2003; call manufacturer for exact date and early bird price incentive.

DISCLAIMER: All information contained herein was derived by the author directly through the actual purchase of the products at retail, without products having been supplied to him by the manufacturer. In the case of model SCC 180, not yet available at retail, a preproduction unit was supplied by VDC at no charge, to be returned after evaluation was completed. All opinions are those of the author. Any errors or omissions are regretted and unintentional. Following are the web sites for all companies:  
ICP Global Technologies: [www.icpglobal.com/](http://www.icpglobal.com/)  
VDC Electronics: [www.vdcelectronics.com/](http://www.vdcelectronics.com/)  
Morningstar Corporation: [www.morningstarcorp.com/](http://www.morningstarcorp.com/)