
Specifications

Features

- Unique - zero battery consumption
- Protection (PV & Batt), against short-circuit & reverse polarity, overload, over temperature & battery removal
- Extreme -40°C to +50°C (-40°F to +120°F)
- Can charge a completely discharged battery
- Series design (not shunt)
- Reliable -100% solid state, quiet, completely sealed
- No radio interference
- No need to derate
- Stainless steel case
- 5 year warranty
- Manufactured with solar power
- Designed and built in North America

Model 14 Amp

Electrical Specifications

Voltage configurations 12 volts
(custom voltages 6 to 36 volts)
Max. PV open circuit voltage 30 volts
Max. Charging current at 50 °C (+120F) 14 amps DC
Battery consumption zero
Typical solar consumption 0.005A daylight only
0.001A standby daylight, 0 mA night time
Typical set points: Off: 14.2 Volts On: 13.1 Volts
(other set points available)

General Specifications

Temperature range: -40°C to +50°C (-40°F to +120°F)
Case: Stainless steel case.
Weight: 440 grams (15.6 oz)
Size (H x W x D): 8 x 14 x 4.5 cm (3.125 x 5.5 by 1.75 inches)
Mounting: wall mountable
Terminals: 12-24 AWG

Features & Options

Status Lights: solar on, charging, full
Regulation method Low frequency On-Off series type.
Built in blocking diode. Custom voltage setpoints.
Temperature compensation

Warranty

Full 5-Year Warranty

Warranted in entirety, except abuse, within a period of 5 years following the date of purchase. In the event a defect develops during the warranty period, return the unit to eco energy, postage paid. Eco energy will repair or replace the product with a new or reconditioned unit of equivalent quality.

Eco Energy

Since 1992, Eco Energy has been in the business of designing and manufacturing solar charge controllers, battery chargers, low voltage disconnects, current boosters DC converters and battery voltage monitors.

Eco Energy controls are currently used in power systems for remote homes and cottages, recreational vehicles, boats, telecommunication and navigational systems, natural gas pipeline operations and other solar battery charging applications around the world.

Eco Energy is powered by solar power.



57 Alexander Street
Belleville Ontario
Canada K8N 2H4
Phone: 613 962-9889
Fax: 613 962-9889
Email: info@eco-energy.ca

www.eco-energy.ca
www.eco-energy.us

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Installation Guide

Advanced Solar Charge Controller

14 Amp



Intelligent Charging Solutions

Advanced Solar Charge Controls

Our latest innovation in solar charge controllers, the SunSport series. Tough, easy to install and practically indestructible.

This high performance solar charge controller increases battery life by preventing overcharging. Overcharging can cause corrosion and buckling of the lead plates, increased battery water loss and excess hydrogen gas.

The control also prevents power loss back into the solar modules at night, so an external blocking diode is not required.

Unique no battery drain - Battery standby power consumption is zero! In the dark they use absolutely zero power, ideal for PV systems where efficiency is important. Boaters can leave it connected all winter without draining the batteries. Some other controls which have a standby current draw will drain the battery over the winter with no solar input, reducing the freeze protection of the battery.

Efficient Design – our latest innovation; automatic nighttime shutdown with an intelligent design results in the controller using < 1/10th the power of the industry average. Other controls stay on all night, wasting precious power. Save up to 10% more power from a 5 Watt module.

Safer - Eco Energy controls have more built in protection and safety features than any others on the market. They feature automatic over-temperature shutdown, protection from battery removal conditions, over-current, solar and battery reverse polarity, short circuit and over-voltage protection of the inputs and outputs. Eco Energy is the first to combine all of these safety features into one controller. In remote applications, there is no need to worry about accidentally damaging the controllers.

Installation and Operation

Location

The controller needs to be in a cool location in order to function properly. It should not be in direct sunlight, or mounted in a hot location such as the back of a solar module. The controller should be installed near the batteries, to ensure an accurate battery voltage measurement. The distance from the solar panels to the controller should not exceed 60 feet.

Wiring

#14 AWG or larger wire should be used. There are two PV input terminals which are connected together in parallel for easy expansion of additional panels. Either set of PV input terminals can be used. The control keeps the batteries isolated from each other on the positive side. Battery Neg- terminals are connected together in the control.

As an additional safety precaution a fuse can be installed between the positive output of the control and the positive terminal of the battery.



Operation

The controller protects batteries from overcharging. It allows solar power to charge the batteries until the batteries rise to the full voltage set point. It then shuts off the solar power until the batteries voltage drops by approximately 5%.

The LEDs flash to conserve power. The solar LED will start flashing when solar power is connected.

Because a battery voltage fluctuates, it is normal for the charging lights to turn on and off as the battery approaches full charge.

At night the control shuts down to save power.

Fault Conditions

The charging light is off to indicate a fault during solar short circuit, solar or reversed battery, over-temperature and battery short circuit conditions. Remove all power to the control to reset it.

No damage will occur if the battery is removed, or if the control is directly connected to the solar module. In this case the charging light turn on briefly when the solar module first turns on.

Basic Testing

Connect the control directly to a solar module (in bright sunlight) without a battery. The charging light should flash briefly, and then go out.

If this does not occur the control requires service.

Verification of the Voltage Set point

A power supply can be put on the input with the power supply current limit at or below the controller rating. The charging light should go out when the battery voltage reaches 14.2 volts.