
Specifications

Features

- 5 year warranty
- Manufactured with solar power
- Designed and built in North America
- very low battery consumption
- Extreme -40°C to +50°C (-40°F to +120°F)
- Series design (not shunt)
- Reliable -100% solid state, quiet
- Stainless steel case

Model S20 (-24V)

Electrical Specifications

Voltage configurations 12 volts or 24 volts (fixed)
(custom voltages 6 to 36 volts)

Max. PV open circuit voltage 60V

Max. Charging current at 50 °C (+120F) 20 amps DC

Battery consumption 0.7mA, 2.5 mA when charging

Typical set points: 14.4V / 28.8V Volts at 20°C (68°F)
temperature compensated.

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 Light: charging

Regulation method pulse width modulation (PWM)
type. Built in blocking diode.

Custom voltage setpoints.

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, parking meters, natural gas pipeline telemetry and other solar battery charging applications around the world.

Eco Energy is powered by solar power.



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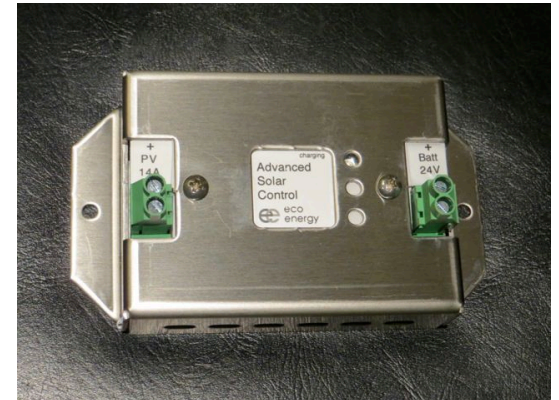
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Installation Guide

Advanced Solar Charge Control

20 Amp - 3 Stage PWM



Advanced Control Solutions

Advanced Solar Charge Controls

Our latest innovation in controls. 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.

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.

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, short circuit and over-voltage protection of the inputs and outputs. Important in remote applications where reliability is critical.

S10 Dual - option specifically designed for systems with two isolated batteries charging from one panel, such as RVs, and boats.

Going solar with confidence has never been easier.

Installation and Operation

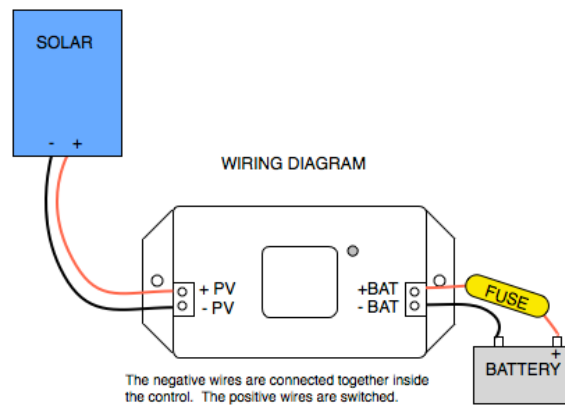
Location

The control 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 control should be installed near the batteries, to ensure an accurate battery voltage and temperature measurement. The distance from the solar panels to the controller should not exceed 60 feet.

Wiring

#14 AWG or larger wire should be used. 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 maintains the battery voltage at this setpoint.

The dual charging version is two separate 10 amp charge controllers in one case.

Because a battery voltage fluctuates, it is normal for the charging light to turn on and off as the battery approaches full charge. When full charge is achieved the charging light will go out completely.

Charging Flashes

One Flash - Charging below charging setpoint
Two Flashes - Charging at charging setpoint
Three Flashes - In float charging mode
No Flash - Charging on hold

The control will switch to float mode after the battery has been at the charging setpoint for a minimum of 10 minutes and a maximum of 4 hours. The amount of time the battery takes to reach the charging setpoint determines the amount of time that is required before switching to float mode. The control will stay in float mode for a minimum of 5 minutes. If the battery voltage drops below the float setpoint a new charging cycle will begin.

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 solar power to reset the control.

No damage will occur if the battery is removed, or if the control is directly connected to the solar module without a battery.

Testing

To test the operation of the control measure the current from the solar module or to the battery. Do not measure the output voltage without the control connected to a battery as the control shuts off if the battery voltage is too low for safety in the event of a short circuit.