Specifications

Features
- Very low power consumption
- Protection (Input & Load), against short-circuit & reverse polarity, overload, over temperature & power removal
- Extreme –40°C to +85°C (-40°F to +185°F)
- Reliable -100% solid state, quiet, completely sealed
- No radio interference, Silent
- No need to derate
- Fully encapsulated in epoxy potting
- Solid aluminum case
- 5 year warranty
- Manufactured with solar power
- Designed and built in North America

Model VS 12V 7A or VS 24V 7A

Electrical Specifications
Voltage configurations 12 V (custom 6 to 24 V)
Max. input voltage 30 volts
Max. current (at 85 °C) 7 amps DC
Power Consumption
Standby - 0.15 mA
ON - 2.2 mA without LED (6.5 mA with LED)
16 gauge wire leads
Typical set points: 13.3 Volts On: 12.0 Volts Off
Adjustable from lowest 12.5 On 11.2 Off to highest 13.5 On 12.2 Off
Normal separation between setpoints is 1.3 Volts

General Specifications
Temperature range: –40° to +85°C -40° to +185°F
Case: Solid aluminum case, sealed in epoxy.
Weight: 200 grams
Size (H x W x D): 6.4 x 9.6 x 1.3 cm (2.5 x 3.75 by .5 inches)
Mounting: wall mountable

Features & Options
Built in snubbing diode.
12 or 24 Volts
Optional Status Light: 1 LED (Load On)
We manufacture to your setpoint requirements.

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 has a 6.5 KW array which is used to help manufacture our controls.

eco energy

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Installation Guide

Voltage Switch

7 Amp Battery Discharge Protection

eco energy

Intelligent Charging Solutions

Voltage Switch

The voltage switch protects your batteries from being excessively discharged. The input voltage is constantly monitored by an extremely efficient low power circuit design.

When the input voltage is above the ON setpoint (typically 13.3 volts) the load will be turned on.

When the input voltage is below the OFF setpoint (typically 12.0 volts) the load is turned off to protect the battery from being discharged excessively.

The voltage setpoints are adjustable by turning the adjustment on the back of the control with a small screwdriver.

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 batteries or input power to the controller should not exceed 40 feet.

- WARNING -
DO NOT EXCEED A LOAD OF 7 AMPS
Higher currents than 7 Amps will cause the control to overheat and be damaged.

Wiring
#16 AWG or larger wire must be used.
The positive wires are Red. The negative wires are Black (both black wires are connected together inside the controller so only one negative wire can be used if it is more convenient.) A relay can be installed directly on the output wires to increase the current or voltage capabilities.

Voltage Adjustment
The voltage setpoints can be adjusted on the back of the control. The on and off setpoints move together. Turning clockwise increases the setpoints. The voltage separation between the on and off setpoints is fixed during manufacturing. Different separations can be custom ordered.

Fault Conditions
DC motors and relays can have large starting currents as much as 10 times the running current. This high current during startup will trigger the voltage switch overcurrent protection and will stop a large motor from starting.

If the output is shorted the control will turn off the output and will remain off until power is removed from the input.

Be sure to turn off power to the input to reset the control after a short circuit.

The load (and optional LED) will also be turned off when the control is too hot, however it will automatically turn back on when cooled sufficiently. The optional LED will turn on when the load is turned on.

Basic Testing
Verification of the Voltage Set point
A precision power supply can be put on the input with the power supply current limit at or below the controller rating.

The load will turn on when above the voltage setpoint and turn off when below the Off setpoint.