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12VDC Voltage Regulator Stock no. 461400

Description - The Windstream Power 461400 Voltage Regulator is designed to regulate output voltage to protect 12V batteries from over voltage or appliances in 12V direct DC applications by keeping the output voltage below 13.6V.

- It will accept input voltages of up to 50 volts dc and will regulate the output voltage so as not to exceed 13.6V ($\pm .5$ VDC) and 5 amperes max.
- The type of voltage regulation circuit is a Zener-Regulated Series Darlington Transistor, in which excess power is dissipated as heat.
- In typical operation, once the battery is fully charged, the regulator serves to limit the maximum applied voltage. In this mode of operation even a high voltage drop at low current produces very little heat.
- A blocking diode is built into the regulator to prevent reverse current from a battery.

Specifications:	Input voltage – 50 volts dc maximum at less than .3 A Output voltage – 13.6 volts nominal at no load Output current – 5A at less than 17 V Int. voltage drop – load sensitive, 0.5-3 volts
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Dimensions:	6" long, 4 wide and 3" high
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Weight:	1 lb, 11.8 oz
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Mounting: The 461400 Voltage Regulator is attached to a finned aluminum heat sink, which transfers the heat away from the regulator itself. It is essential that the unit must be mounted in such a way as to permit cooling airflow.

The regulator is not weather proof. If the regulator is installed outdoors and is in an enclosure, be sure to allow for adequate ventilation or used forced convection such as a fan. It is recommended that the regulator's heat sink fins be vertically aligned.

Electrical connections – the input and output wires are connected to the two barrier strips on the top of the regulator case. Connect according to the polarity markings indicated on the case. The wires should preferably be terminated in crimp-on spade terminals, but if such terminals are not available, the wires, if stranded, should be twisted and tinned with solder, so that no wire strands can contact each other.

The regulator case is not electrically connected and does not require grounding, but may be grounded if desired.

Cautions

- **Heat dissipation** - The regulator will get very hot if it is to be operated near its maximum ratings, or if there is a high voltage drop between input and output.
- **Reverse Polarity** – The correct polarity (positive to positive, negative to negative) must be observed or permanent damage to the circuit will result.
- **The regulator should never be connected to a 120V AC outlet**
- **Short circuits** – If the output is short-circuited, and the output current exceeds the maximum specifications (5 amperes) for more than a few seconds, permanent damage to the circuit will result.
- **Note:** The 461400 Voltage Regulator is factory set at 13.6V (output). There is a potentiometer inside the voltage regulator that can reset for 13.6 V or under if required. Please contact Windstream at 802-425-3435 if you require adjustment.

Note: Some generators sold by Windstream Power LLC - such as the Human Power Generator will have an inline full wave bridge rectifier built into the connecting cable that allows the generator shaft to turn in either direction, regardless of polarity and also acts as a blocking diode. You would only have this cable if you purchased a Human Power Generator.

CAUTION!

If the load is lifted ie: a lightbulb burns out, a battery is disconnected, or other 12VDC resistive load separates from the output on the regulator and the **generator is still turning**, open circuit voltage will still be delivered from the generator. There will not be any current but open circuit voltage can rise quickly above the rated 50V and will permanently damage the regulator.

Monitor your application. Make sure current and voltage do not exceed operating envelope.

<p>The warranty on this product becomes void if excessive current or voltage is applied or if the end user modifies the unit.</p>
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