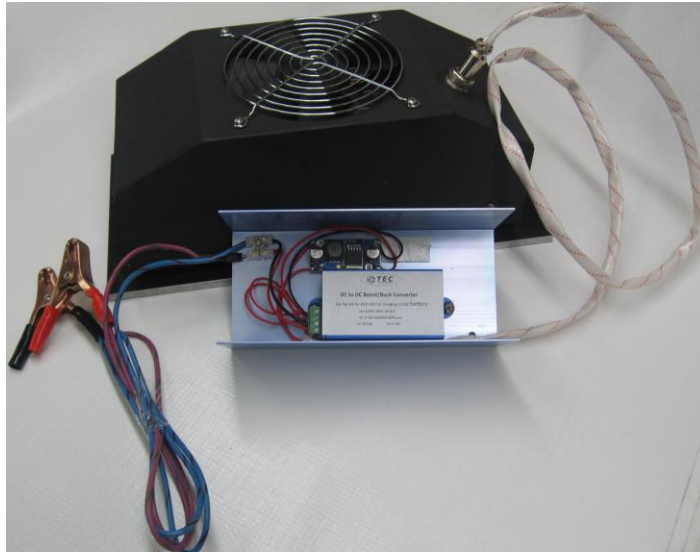




TEG12VDC- 24AIR VDC FORCED AIR COOLING

The TEG12VDC -24AIR has a peak rating of 20 watt . The forced air TEG Generator works up to a hot surface temperature of 400°C (750°F). A pipe vent should be used to allow cooler air to enter the of intake fan to maintain DT (Not Supplied). The OUTPUT from the TEG is regulated with a Boost/Buck constant voltage/constant current DC to DC converter that can be adjusted from ~5V to 16V. This is ideal for charge a 5v to 12VDC battery when set at 6.8V to ~14.2V based on charging specifications found on the battery label.

(OUTPUT BASED ON MAXIMUM HOT SIDE TEMPERATURE and DT).



DESIGNED & MANUFACTURED IN CANADA subcomponents from USA

PART NUMBER	TEG12VDC-24
OUTPUT POWER	20 watts MAXIMUM
OUTPUT VOLTAGE	Preset by Factory to 13.8V Charge Voltage for 12VDC
DC to DC Constant Voltage/ Constant Current Converter	Output Range 5VDC to 16VDC Factory set to 13.8V
Output voltage for charging circuit	Factory set to 13.8V Charge voltage
Recommended Maximum Hot side temperature 400°C	
Fan Specification	5 watt 89 CFM 120mm 5" fan IP55
Dimensions	13"(33cm) x 5" (12.7cm) x 4.123" (10.47cm)
Weight	11 lbs.(5 Kgs.)

Designers of advanced TEG Generators using state of the art heat Transfer patented technology

N.A.1-800-769-2395

International 1-905-751-1362

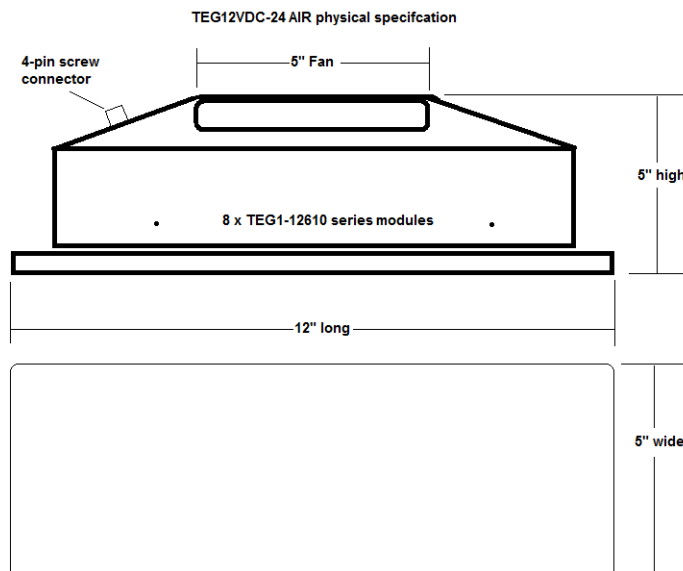
www.tecteg.com

tecteg@rogers.com



CRITICAL NOTES FOR OPERATION:

- **DO NOT attach to a Battery UNTIL OUTPUT VOLTAGE IS ABOVE 18 VOLTS or DC to DC converter will not energize!** A diode is included to prevent reverse voltage to TEG.
- **GENERATOR REQUIRES cold air** on the fan side for best performance!
- We **STRONGLY** advise a 5" to 6" tube air duct from outside that will draw cold air through the fan onto the heat sinks which provides two critical requirements!
 1. Creates critical DT that will increase and maintain optimum power generation.
 2. Protects the fan from overheating. The fan is rated for 160°F or 70°C maximum.
- Do not exceed 750°F hot side temperature on the hot side or you will damage the TEG modules.
- The controller is a boost /buck constant voltage/constant current charge controller. It is set from the factory at 13.8V to 14.2V .
- We also recommend charging a battery and drawing loads (lights, motors, etc...) from the battery NOT from the TEG output directly. **Never place the AIR TEG on a cold stove and allow the TEG to heat up with the stove as both the cold and hot side of the TEG will heat up together and NO DT will be established! Before applying a load make sure the converter is fully energized. This is done by placing the TEG on a very hot surface. Waiting for the fan to start then attaching the clamps to the battery.**
- FAN: 5 inch (120mm) IP55 protection. 3 watt consumption at ideal tested speed or 1.5 watt fan depending on model!



Design and specifications subject to change without notice

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WHAT IS NOT COVERED: Any damage caused by misuse, abuse, accident (dropping or otherwise shocking the Generator) normal wear & tear, or physical damage. Also any incidental or consequential damage or loss is not covered. Improper installation will Null and void all warranty.

There are no warranties of merchantability or of fitness expressed or implied, which extend beyond the description on the face hereof. In no event shall Thermal Electronics Corp. be liable for damages in excess of the purchase price. Thermal Electronics Corp. neither assumes nor authorizes any other person to assume for it any liability in connection with this product.

Abuse, misuse or mistreatment (i.e. if you overheat or drop the Generator) VOIDS all warranties. We do our best to make all of our Generators as durable as possible. However there is no way for us to fully prevent all damage due to overheating, or dropping. Warranty is limited to replacement of parts at the full discretion of the manufacturer and is limited to 1 year from date of purchase.



Example above of a typical installation

Caution!

It is critical that the surface of the stove already be hot before the TEG is placed on the stove. This is because on stove start-up of the wood stove the stove warms up slowly not allowing a DT to take hold. Therefore, the entire TEG heats up cold and hot side together never allowing a Differential between the hot and cold side to be established. Once heat source is fully engaged then place the TEG air unit so that the hot side heats up rapidly before the cold side can heat up and the fan will start. Then and only then attach to a battery.

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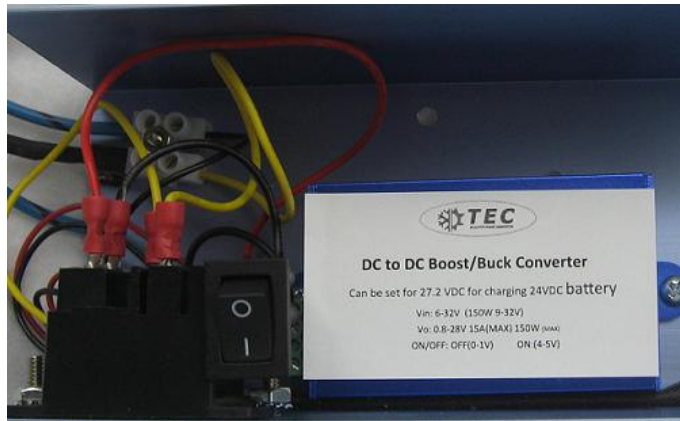
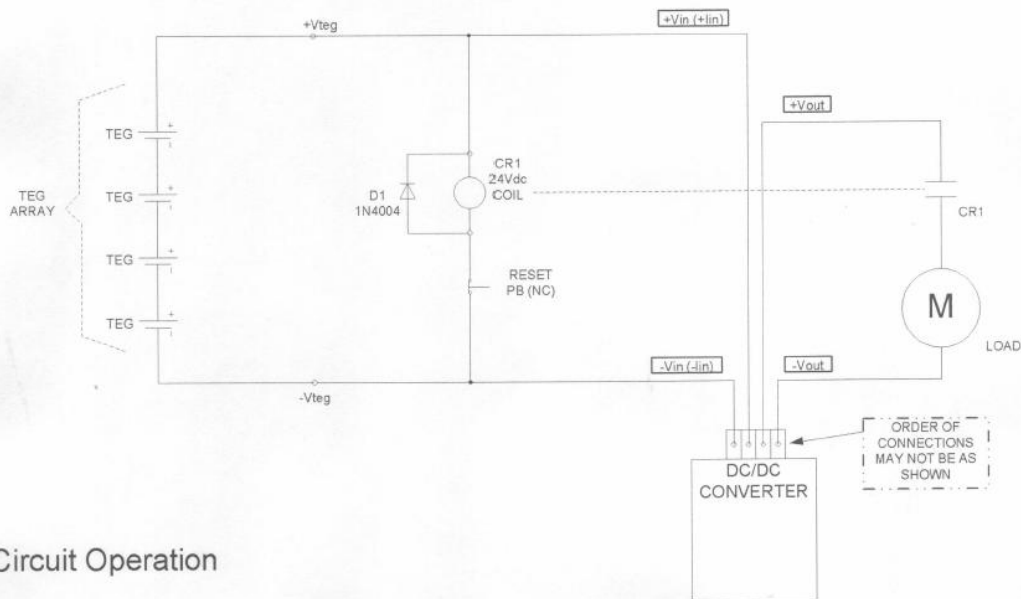


Figure 4

Reliable DC/DC Converter start-up circuit removes the Load from the Output until TEGs produce enough Power to sustain continuous operation.



Circuit Operation

- When V_{teg} is less than 8 Vdc, DC/DC Converter Output is OFF.
- When V_{teg} is 8 ~ 19Vdc, DC/DC Conv. Output is ON but Load is not connected to Output.
- When V_{teg} is > approx. 19Vdc, Control Relay CR1 Energizes and Load is connected to DC/DC Converter Output.
 - When Load is Connected, V_{teg} will reduce due to voltage drop across TEG source resistance.
- While V_{teg} is 8 ~ 24Vdc, Load will run with DC/DC Converter Output voltage & current as set by the Converter.
- When V_{teg} drops below approx. 4Vdc, or if Reset PB is pressed, Control Relay CR1 will de-energize and Load will be disconnected from the DC/DC Conv. Output.
 - This will permit V_{teg} to rise to near Open Cct Voltage

If voltage goes below ~ 8 volts you must reset the DC to DC converter. This can be done by a switch located next to the relay on the blue aluminum case (Figure 4). The switch is designed to reset the DC converter so it will de-energize. Simply turn the switch off and then on again wait about 1 second between each maneuver. The DC to DC converter will only operate when there is a minimum of 8VDC loaded and approximately 18V open circuit. The relay protects the Dc to Dc converter from low voltage.