



TWO YEAR LIMITED WARRANTY PROGRAM

This limited warranty program is the only one that applies to this product, and it sets forth all the responsibilities of Vector Manufacturing, regarding this product. There is no other warranty, other than those described herein.

This Vector Manufacturing product is warranted, to the original purchaser only, to be free of defects in materials and workmanship for two years from the date of purchase without additional charge. The warranty does not extend to subsequent purchasers or users. Vector Manufacturing will not be responsible for any amount of damage in excess of the retail purchase price of the product under any circumstances. Incidental and consequential damages are specifically excluded from coverage under this warranty.

This product is not intended for commercial use. This warranty does not apply to accessories or damage to units from misuse or incorrect installation/connection. Misuse includes wiring or connecting to improper polarity power sources.

RETURN/REPAIR POLICY: Defective products, other than accessories, may be returned to Vector Manufacturing. Any defective product, other than accessories, that is returned to Vector Manufacturing within 30 days of the date of purchase will be replaced free of charge. If such a product is returned more than 30 days but less than two years from the purchase date, Vector Manufacturing will repair the unit or, at its option, replace it free of charge. If the unit is repaired, new or reconditioned replacement parts may be used, at Vector Manufacturing's option. A unit may be replaced with a new or reconditioned unit of the same or comparable design. The repaired or replaced unit will then be warranted under the terms of the remainder of the warranty period. The customer is responsible for the shipping charges on all returned items after 30 days. During the warranty period, Vector Manufacturing will be responsible for the return shipping charges.

LIMITATIONS: This warranty does not cover accessories, bulbs, fuses and batteries, defects resulting from normal wear and tear (including chips, scratches, abrasions, discoloration or fading due to usage or exposure to sunlight), accidents, damage during shipping to our service facility, alterations, unauthorized use or repair, neglect, misuse, abuse, failure to follow instructions for care and maintenance, fire, flood and Acts of God.

If your problem is not covered by this warranty, call our Technical Support Department at (954) 584-4446 or toll free at (866) 584-5504 for general repair information and charges if applicable.

STATE LAW RIGHTS: This warranty gives you specific legal rights. Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the exclusions or limitations stated herein may not apply. This warranty gives the purchaser specific legal rights: other rights, which vary from state to state, may apply.

TO REQUEST WARRANTY SERVICE FOR THIS PRODUCT: Contact Vector Manufacturing Technical Support by telephone, fax or mail. We suggest that you keep the original packaging in case you need to ship the unit. When returning a product, include your name, address, phone number, dated sales receipt (or copy) and a description of the reason for return and product serial number. After repairing or replacing the unit, we will make every effort to return it to you within four weeks.

WARRANTY ACTIVATION: Please complete Warranty Activation Card and mail to Vector Manufacturing. Enter "VEC1040AMG" as Model and "100 Watt Power Inverter Vehicle Power System" as Product Type. All Vector Manufacturing products must be registered within 30 days of purchase to activate this warranty. Mail the completed registration form, along with a copy of the original sales receipt to:

ATTN.: CUSTOMER SERVICE

4140 SW 30th Ave., Ft. Lauderdale, FL 33312

PH: 954-584-4446 • TOLL FREE: 866-584-5504 • Fax: 954-584-5556.

WARRANTY IS NON-TRANSFERABLE AND NON-REFUNDABLE.

BDO22806

100 Watt Power Inverter

Vehicle Power System Converts DC Vehicle Power to 115 Volt AC Household Power



USER'S MANUAL & WARRANTY INFORMATION

IMPORTANT SAFETY INFORMATION, SAVE THESE INSTRUCTIONS

TO REDUCE THE RISK OF INJURY, USER MUST READ AND UNDERSTAND THIS INSTRUCTIONAL MANUAL. THIS MANUAL CONTAINS IMPORTANT INFORMATION REGARDING THE OPERATION AND WARRANTY OF THIS PRODUCT. PLEASE RETAIN FOR FUTURE REFERENCE.

4140 S.W. 30th Ave., Ft. Lauderdale, FL 33312 U.S.

Toll Free: (866) 584-5504

IMPORTANT SAFETY INSTRUCTIONS

1. Always use the inverter where there is adequate ventilation. Do not block ventilation slots.
2. DO NOT use the inverter near flammable materials or in locations that may accumulate flammable fumes or gases.
3. ALWAYS turn OFF the inverter by removing it from the DC accessory outlet when not in use.
4. NEVER IMMERSER THE UNIT IN WATER (fresh or salt).
5. DO NOT expose to extreme heat or flames.
6. Make sure nominal powering voltage is 12 volts DC, center connection positive (+), 10 amps minimum.
7. DO NOT replace fuse with higher amperage rating.

⚠ WARNINGS

To reduce the risk of fire, electric shock, explosion or injury:

- This is not a toy — keep away from children.
- This equipment employs components that tend to produce arcs or sparks. DO NOT install in compartments containing batteries or flammable materials.
- Use this unit in properly ventilated areas ONLY.
- Do not open — there are no user-serviceable parts inside.
- Do not insert foreign objects into the outlet.
- Do not expose the unit to flammables, water, rain or snow.
- This inverter has not been tested for use with medical devices.

INTRODUCTION

Thank you for choosing the **VEC1040AMG 100 Watt Power Inverter Vehicle Power System**. Please read this guide carefully before use to ensure best performance and avoid damage to the unit or items that you are using it with. Read, understand and comply with all Warnings and Safety Information to ensure safety of persons and equipment.

This inverter is a convenient, easy-to-carry, completely portable source of 115 volt AC to operate appliances to 100 watts. It can be powered by any 12 volt DC accessory outlet that can supply at least 10 amperes. It is also ideal for use with 12 volt DC cordless/portable rechargeable DC power supplies and jump-starter products.

The inverter can be used to operate: 110/120 volt AC laptop computers, game consoles, reading lamps, small fans, and more.

Recharge: 110/120 volt AC devices (laptop computers, cellular phones, camcorders, power tool battery packs) that have an appropriate recharging adapter with a three-prong 110/120 volt AC North American standard-type plug.

OPERATING AND VISIBLE FEATURES

- 100 watts continuous output – 115 volt AC, 60 Hz
- Easiest inverter to use – truly plug and play
- Adapts to any size 12 volt DC accessory outlet
- Compact, pocket size, efficient, and quiet
- Electronic circuit protection prevents damage due to overload/insufficient ventilation
- Low-battery shutdown automatically occurs when battery discharges to 10.6 volts, preventing battery damage
- Self recovery from shutdown – if manual reset is required, remove and reinsert the inverter into the accessory outlet



1. 12 volt POSITIVE (+) contact
2. Internal fuse
3. 12 volt NEGATIVE (-) spring contact
4. Power plug adjusts 45°
5. Green operating LED
6. 115 volt AC three-prong outlet
7. Ventilation slots

POWER SOURCE REQUIREMENTS/RUNTIMES

The inverter can be powered by any 12 volt DC accessory outlet that can supply at least 10 amperes. A charged car battery with 50 amp hours of capacity can operate this inverter at 100 watt output for approximately five hours.

It is also ideal for use with 12 volt DC cordless/portable/rechargeable DC power supplies and jump-starter products.

Estimated runtimes below are at 100 watt output:

- Jump-starters with 17-19 amp hour battery approx. 2 hours
- Compact jump-starter with 15 amp hour battery approx. 1.5 hours
- Compact jump-starter with 12 amp hour battery approx. 1 hour

Lower operating output (less than 100 watts) reduces the current drawn from the DC source, so longer operating times can be realized.

OPERATION OF INVERTER

1. Insert the unit into the vehicle's (or jump-starter's) accessory outlet.
2. Rotate the plug slightly to make sure there is good contact.
3. A green LED light on the inverter will indicate a proper operation.
4. If the inverter does not work, make sure the ignition/accessory switch is actually powering the accessory outlet. Some vehicles need the ignition switch turned on.
5. Plug in the AC appliance.

PROTECTIVE FEATURES

The inverter monitors the following conditions:

Low Battery Voltage – this condition is not harmful to the inverter but could damage the power source, so the inverter automatically shuts down when input voltage drops to 10.6 volts. When this condition is corrected, the unit will auto-reset.

Over Voltage Protection – the inverter will automatically shut down when the input voltage exceeds 15 volts DC.

Note: The inverter will auto-reset after removing a short circuit. If the inverter's fuse fails, disconnect the shorter load and replace the fuse inside the inverter. SEE FUSE REPLACEMENT – if bad fuse is suspected.

OPERATING TIPS

The inverter should only be operated in locations that are:

DRY – Do not allow water or other liquids to come into contact with the inverter.

COOL – Surrounding air temperature should be between -20°C and 40°C - ideally between 15°C and 25°C (60 - 80°F). Keep the inverter away from direct sunlight, when possible.

VENTILATED – Keep the area surrounding the inverter clear to ensure free air circulation around the unit. Do not place items on or over the inverter during operation. The unit will shut down if the internal temperature gets too hot. The inverter will auto-reset after it cools down.

SAFE – Do not use the inverter near flammable materials or in any locations that may accumulate flammable fumes or gases. This is an electrical appliance that can briefly spark when electrical connections are made or broken.

Rated Versus Actual Current Draw of Equipment. Most electrical tools, appliances, electronic devices and audio/visual equipment have labels that indicate the power consumption in amps or watts. Be sure that the power consumption of the item to be operated is below 100 watts. If the power consumption is rated in amps, simply multiply by the AC volts (110) to determine the wattage.

Resistive loads are the easiest for the inverter to run; however, it will not run larger resistive loads (such as electric stoves and heaters) which require far more wattage than the inverter can deliver. Inductive loads (such as TVs and stereos) require more current to operate than do resistive loads of the same wattage rating. For safety reasons, the unit will simply shut down if it is overloaded. To restart the unit, simply remove the load and the unit will auto reset.

Note: *This inverter will not operate appliances and equipment that generate heat, such as hair dryers, electric blankets, microwave ovens, and toasters.*

HOW THIS INVERTER WORKS

This inverter is an electronic device that converts low voltage DC (direct current) electricity from a battery to 115 volt AC (alternating current) household power. In designing this inverter, the manufacturer has incorporated design techniques previously employed in computer power supplies. The result of these design innovations is a smaller, lighter and easier-to-use power inverter.

The inverter converts power in two stages. The first stage is a DC-to-DC conversion process that raises the low voltage DC at the inverter input to 145 volts DC. The second stage is a MOSFET bridge stage that converts the high voltage DC into 115 volts, 60 Hz AC.

The DC-to-DC converter stage uses creative, high frequency, zero voltage switching power conversion techniques that replace the bulky transformers found in less technologically advanced models. The inverter stage uses advanced power MOSFET transistors in a full bridge configuration. This ensures excellent overload capability and the ability to operate reactive loads like lamp ballasts and small induction motors.

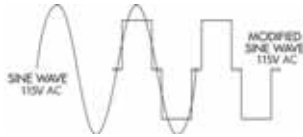
Inverter Output Waveform

The AC output waveform of this inverter is known as a modified sine wave. It is a stepped waveform that has characteristics similar to the sine wave shape of utility power. This type of waveform is suitable for most AC loads, including linear and switching power supplies used in electronic equipment, transformers, and small motors.

The modified sine wave produced by this inverter has an RMS (root mean square) voltage of 115 volts, which is the same as standard household power. Most AC voltmeters (both digital and analog) are sensitive to the average value of the waveform rather than the RMS value. They are calibrated for RMS voltage under the assumption that the waveform measured will be a pure sine wave. These

meters will not correctly read the RMS voltage of a modified sine wave. Non-TRUE RMS meters will read about 20 to 30 volts low when measuring the output of this inverter. For accurate measurement of the output voltage of this unit, use a TRUE RMS reading voltmeter such as a Fluke 87, Fluke 8080A, Beckman 4410, or Triplett 4200.

115 volt AC Output



⚠ CAUTION: Rechargeable Devices

- Certain rechargeable devices are designed to be charged by plugging them directly into an AC receptacle.
- These devices may damage the inverter or the charging circuit.
- When using a rechargeable device, monitor its temperature for the initial ten minutes of use to determine if it produces excessive heat.
- If excessive heat is produced, this indicates the device should not be used with this inverter.
- This problem does not occur with most battery-operated equipment. Most of these devices use a separate charger or transformer that is plugged into an AC receptacle.
- The inverter is capable of running most chargers and transformers.

CARE AND MAINTENANCE

Storage

1. Ideal storage temperature range is 50-68°F (10-20°C).
2. Store and use the inverter in a cool, dry place with adequate ventilation for all-around air circulation.
3. Avoid locations that are exposed to heating units, radiators, direct sunlight, or excessive humidity or dampness.

Fuse Replacement

If the inverter is overloaded, and the green LED is not lit, the internal 10 amp fuse may be blown.

1. Unscrew the flange of the inverter (counterclockwise).
2. Remove the end contact, flange and fuse.
3. Inspect the fuse to see if it is good or blown.
4. Replace with a new 10 amp fuse, if needed.
5. Carefully reassemble the fuse, end contact and flange. Do not overtighten the flange (turning clockwise).

COMMON AUDIO/VISUAL PROBLEMS

Problem: Buzzing Sound In Audio Systems

Some inexpensive stereo systems and boom boxes make a buzzing sound when operated from the inverter, because the power supply in the electronic device does not properly filter the modified sine wave produced by the inverter. The only solution to this problem is to use a sound system that has a higher quality power supply.

Problem: Television Interference

The inverter is shielded to minimize interference with TV signals. However, in some instances, some interference may still be visible, especially when the TV signal is weak. Try the following to improve the picture:

1. Move the inverter as far away as possible from the TV set, the antenna, and the antenna cables. Use a short AC extension cord, if necessary.
2. Adjust the orientation of the antenna cables, and the TV power cord to minimize interference.
3. Make sure the antenna feeding the TV provides an adequate (snow free) signal and that high quality, shielded antenna cable is used.

COMMON POWER OUTPUT PROBLEMS

Possible Causes

Battery voltage below 10 volts.
Equipment being operated draws too much power.
Inverter in thermal shutdown condition.

Main fuse failed (blown).
Inverter is overloaded.

Recommendations

Recharge battery or check DC power supply.
Reduce load to maximum 100 watts.

Allow inverter to cool down. Ensure there is adequate ventilation around unit, and load is no more than 100 watts for continuous operation.
Replace fuse in DC connector.
Reduce load to 100 watts max. to maintain regulation.

SPECIFICATIONS

Power :	100 watts
AC Output:	115 volts, 60 Hz
DC Input:	13.8 volts
Fuse:	10 amps
Waveform:	Modified Sine Wave