

POWER INVERTER

DC to AC Power Inverter User's Guide

1 Placement Guidelines

For optimum operation, the INVERTER Inverter should be placed on a flat surface such as the floor of a car. THE LOCATION SHOULD BE:

- Dry. Do not expose to water drip or spray.
- Cool. Operate only in ambient temperatures between 32° and 104°F. Well ventilated. Allow at least 2 inches (5cm) clearance above and on all sides of the INVERTER Inverter for proper cooling.

2 Using the INVERTER Inverter

The 80ST/100ST/150XT/200XT/300ST/350ST/500XT/550ST/800XT/1000XT/1200XT is capable of continuously powering most 220/110-volt AC products that use 80W/100W/150W/200W/300W/50W/500W/550W/800W/1000W/1200W or less. Its AC output waveform, called modified-sine wave, is designed to function similarly to the sine wave shape of utility power. Most AC products rated for 80W/100W/150W/200W/300W/350W/500W/550W/800W/1000W/1200W or less will operate normally with the 80ST/100ST/150XT/200XT/300ST/350ST/500XT/550ST/800XT/1000XT/1200XT. The power or wattage rating of AC products is the average power they use. When many AC products are first switched on, they initially consume more than their power rating. TVs, monitors, and electric motors are examples of products that have high surge requirements at start up. Although the 80ST/100ST/150XT/200XT/300ST/350ST/500XT/550ST/800XT/1000XT/1200XT can supply momentary surge power as high as 80W/100W/150W/200W/300W/350W/500W/550W/800W/1000W/1200W, occasionally some products rated less than 80W/100W/150W/200W/300W/350W/500W/550W/800W/1000W/1200W may exceed its surge capabilities and trigger its safety overload shutdown feature.

Indicators Controls and Connectors

- An AC outlet is provided on one end of the INVERTER Inverter. A 220/110-volt AC product with a continuous power consumption of 80W/100W/150W/200W/300W/350W/500W/550W/800W/1000W/1200W or less, may be plugged in. The INVERTER Inverter receives its operating power through its DC Plug that fits standard vehicle cigarette lighter sockets and 12/24-volt power outlets.
- The ON/OFF switch enables output AC power at the AC outlet when switched ON.
- The green POWER light indicates AC power is present at the AC outlet and the INVERTER Inverter is operating normally.
- The red FAULT light indicates Inverter shutdown caused by low or high battery voltage Overload or excessive temperature.

Inverter Operation

- Plug the INVERTER Inverter DC plug into a vehicle's cigarette lighter or 12-volt outlet.
- Turn the INVERTER Inverter ON/OFF switch ON. The green POWER light indicates. AC power is available at AC outlet.
- Plug the AC product you wish to operate into the AC outlet and switch it on. As the battery charge is used up, battery voltage begins to fall. When the INVERTER Inverter senses the voltage at its DC input has dropped to 10.7 volts, an audio warning is provided. When input voltage drops to 10.0 volts, the INVERTER Inverter, will automatically shut down to prevent battery damage. The red fault light illuminates.
- If the INVERTER Inverter exceeds a safe operating temperature, due to insufficient ventilation or a high temperature environment, it will automatically shut down. The red FAULT light will turn on and the audio warning will sound.
- Should a defective battery charging system cause the battery voltage to rise to dangerously high levels, the INVERTER Inverter automatically shuts down. The red FAULT light will turn on.

CAUTION! Although the INVERTER Inverter incorporates protection against over voltage, it may still be damaged if the input voltage exceeds 16 volts.

- In the event of an overload, low-battery voltage or overheating, the INVERTER Inverter will automatically shut down. (see section 4)

Interference with Electronics Equipment

- Generally, most AC products operate with the INVERTER Inverter just as they would with household AC power. Below is information concerning two possible exceptions.
Buzzing sound in Audio Systems
Some inexpensive stereo systems and boom boxes have inadequate internal power supply filtering and buzz slightly when powered by the INVERTER Inverter. Generally, the only solution is and audio system with a higher quality filter.

Television interference

The INVERTER Inverter is shielded to minimize interference, with TV signals. However, with weak TV signals interference may be visible in the form of lines scrolling across the screen. The following should minimize or eliminate the problem

- Use an extension cord to increase the distance between the INVERTER Inverter and the TV antenna and cables.
- Adjust the orientation of the INVERTER Inverter, television, antenna and cables.
- Maximize TV signal strength by using a better antenna and use shielded antenna cable where possible.
- Try a different TV different models of televisions vary considerably in their susceptibility to interference.

Battery Operating Time

When using the INVERTER Inverter, operating time will vary depending on the charge level of the battery, its capacity and the power level drawn by the particular AC load. With a typical vehicle battery and a 50-watt load (such as a portable stereo/CD player), an operating time of 5-6 hours or more can be expected.

When using a vehicle battery as a power source, it is strongly recommended to start the vehicle every hour or two to recharge the battery before its capacity drops too low. The INVERTER Inverter can operate while the engine is running, but the normal voltage drop that occurs during starting may trigger the INVERTER Inverters low voltage shut down feature.

Because the INVERTER Inverter draws less than 0.15 amps with the ON/OFF switch in the ON position and with on AC products connected, it has minimal impact on battery operation times.

- Thank you for purchasing the INVERTER power inverter. The INVERTER power inverter is an ultra compact and highly portable power inverter from INVERTER, the leader in the field of high frequency inverter design. From the 12/24-volt outlet in your car or boat, the INVERTER will reliably power a wide variety of household AC products, such as portable stereos, laptop computers, camcorders and mobile phone charges. The INVERTER is designed to provide years of trouble free operation and includes automatic safety monitoring circuitry to protect it, and your battery, from inadvertent overload conditions.

- Read this guide before installing or using the INVERTER and save it for future reference.

3 Warning & Caution

Incorrect installation or misuse of the INVERTER Inverter may result in danger to the user or hazardous conditions. We urge you to pay special attention to all CAUTION and WARNING statements, CAUTION statements identify conditions or practices that may result in damage to the INVERTER Inverter or to other equipment, WARNING statements identify conditions that may result in personal injury or loss of life.



WARNING! Shock hazard. keep away from children

- The INVERTER Inverter generates the same potentially lethal AC power as a normal household wall outlet. Treat it with the same respect that you would any AC Outlet.
- Do not insert foreign objects into the INVERTER Inverter's AC outlet or vent openings.
- Do not expose the INVERTER Inverter to water, rain, snow or spray.
- Do not, under any circumstances, connect the INVERTER Inverter to power utility AC distribution wiring.
- Failure to follow the above instructions may result in personal injury or damage to the INVERTER Inverter.



WARNING! Heated surface

- The INVERTER Inverter's may become uncomfortably warm, reaching 140F (60C) under extended high power operation.
- Ensure at least 2 inches (5cm) of air space is maintained on all sides of the INVERTER Inverter. During operation keep away from materials that may be affected by high temperatures.



CAUTION!

- Do not connect any AC product to the INVERTER Inverter, whose neutral conductor is connected to ground.



- Do not expose the INVERTER Inverter to temperatures in excess of 104 F (40C)

CAUTION! Do not use the INVERTER Inverter with the following equipment.

- Small battery operated products such as rechargeable flashlights, some rechargeable shavers, and night-lights that are plugged directly into an AC receptacle to recharge.
- Certain battery chargers for battery packs used in hand powered tools. These chargers will have warning labels stating that dangerous voltages are present at the charger's battery terminals.

4 Troubleshooting

- Problem: AC product will not operate, no inverter lights are on.
Possible Cause:
Poor contact with lighter socket or 12/24-volt outlet.
Lighter socket or 12/24-volt outlet may require ignition to be switched on.
Cigarette lighter or 12/24-volt outlet fuse is blown
Inverter has been connected with reverse DC input polarity
Suggested Remedy:
Press plug firmly into socket, Clean plug or socket if necessary.
Turn key to accessory position.
Check vehicle fuses and replace blown fuse with correct value.
Probable inverter damage has occurred.
Have unit repaired.
- Problem: Measured inverter output is too low.
Possible Cause:
Standard average-leading AC voltmeter used to measure output voltage
Resulting in an apparent Reading 5 to 15 volts too low.
Battery voltage is too low
Suggested Remedy:
Inverter's modified sine wave output requires true RMS voltmeter, such as Fluke 87 series millimeter, for accurate measurement.
Recharge battery.
- Problem: Battery run time is less than expected.
Possible Cause:
AC product power Consumption is higher than rated
Battery is old or defective
Battery is not being properly charged
Suggested Remedy:
Use a larger battery to make up for increased power requirement
Replace battery
Have vehicle electrical system checked by a qualified technician.

5 Special Section

Output voltage: 220 VAC/110V
Output frequency: 50Hz ±2Hz/60Hz±2
Output waveform: Modified sine wave
Input voltage range: 10.0-15.5 VDC/20.0-21VDC
Low battery alarm (nominal): 10.4-11.0V/21.0-22.0VDC
Low battery shutdown point (nominal): 9.7-10.4VDC/19.5-20.8VDC
High battery shutdown point (nominal): 14.5-15.5V/29-30VDC
Battery drain with on AC load (at 12V input): <0.3A
Peak efficiency: >90%

Continues AC output power: 80W/100W/120W/300W/350W/500W/550W/800W/1000W/1200W/2000W/3000W

Maximum AC output power: 160W/200W/300W/600W/700W/1000W/1100W/1600W/2000W/2400W/4000W/6000W

POWER INVERTER

电源转换器使用指南

(简体中文部分)

1 使用环境

基于安全和性能的考虑, 安装环境应具备以下条件:

- 干燥: 不能浸水或淋雨
- 阴凉: 温度在0°C与40°C之间
- 通风: 保持壳体上5CM内无异物, 其它端面通风良好

2 安装使用方法

- 将转换器开关置于关(OFF)的位置, 然后把雪茄头插入车内点烟器插口, 确保插到位而接触良好。
- 确认所有电器的功率在INVERTER标称功率以下方可使用, 将电器的220V插头直接插入转换器一端的220V插座内, 并确保两个插座所有连接电器的功率之和在INVERTER标称功率以内。
- 开启转换器开关, 绿色指示灯亮, 表示工作正常。
- 红色指示灯亮, 表示因过压/欠压/过载/过温, 导致转换器关断。
- 在很多情况下, 由于车用点烟器插口输出有限, 使得正常使用时转换器报警或关断, 这时只要发动车辆或减小用电功率即可恢复正常。

3 注意事项

- 电视机, 显示器, 电动机等在启动时电量达到峰值, 尽管转换器可以承受标称功率2倍的峰值功率, 但有些功率符合要求的电器的峰值功率可能会超过转换器的峰值输出功率, 引发过载保护, 电流被关断。同时带动多个电器, 可能发生这种情况, 这时应先关闭电器开关, 打开转换器开关, 然后逐个打开电器开关, 并应最先开启峰值最高的电器。
- 在使用过程中, 电瓶电压开始下降, 当转换器DC输入端的电压降到10.4-11V时, 报警器发出峰鸣声, 此时电脑或其它敏感电器应及时关闭, 若忽视报警声, 转换器将在电压到9.7-10.3V时, 自动关断, 这样可以避免电瓶被过量放电, 电源保护关断后, 红色指示灯亮起。
- 应及时启动车辆, 给电瓶充电, 防止电量衰竭, 影响汽车启动和电瓶寿命。
- 尽管转换器没有过压保护功能, 输入电压超过16V, 仍有可能损坏转换器。
- 连续使用后, 壳体表面温度会上升到60°C, 注意气流畅通, 易受高温影响的物体应远离。

4 常见问题和解决方法

- 问题: 电器不工作, 转换器指示灯不亮

原因	建议解决方法
电瓶不良	检查电瓶, 根据具体情况更换
正负极接反	检查电瓶连接, 转换器可能有损坏, 更换转换器或送往保修。
接线未连紧	检查电缆线和连结处, 旋紧接线柱

- 问题: 电器不工作; 转换器红色指示灯亮

原因	建议解决方法
电器额定功率超过转换率, 引起过载关断	使用功率小于转换器标称功率的电器
电器功率小于转换器标称功率, 峰值功率过高, 引起过载关	电器峰值功率超过转换器峰值功率, 使用峰值功率与转换器一致的电器

■ 感谢您购买INVERTER系列电源转换器产品, 这款转换器体积小, 设计合理, 代表着高频转换器的新潮流, 无论接在汽车上还是其它的电瓶上, 它都能为家用电器如电视机, 影碟机以及电动工具等提供安全可靠的交流电源, 并设有多种保护功能, 使您的转换器, 电瓶在超常负载下得到有效保护, 方便实用。

■ 在您使用本产品前, 请仔细阅读使用指南。

电瓶电量放完 (转换器报警) 充电或更换电瓶

通风不良, 引起过温关断 关闭转换器, 冷却15分钟, 清除扇及转换器周围物品, 将转换器放置在阴凉的地方, 按要求减少负载, 重新启动。

输入电压过高 检查充电系统工作状态, 电瓶输出电压

- 问题: 测出的转换器输出电压过低

原因	建议解决方法
一般测量用的电压表读数幅度太小	测量转换器输出应用“真有效值万用表”以取得准确数据。

- 问题: 转换器发出报警声

原因	建议解决方法
欠压或过温保护	缩短导线或使用更粗的电缆线, 给电瓶充电, 让转换器冷却, 改善转换器周围通风条件, 将转换器放在阴凉的地方, 按要求减少负载。

- 问题: 转换器只能带动小功率负载

原因	建议解决方法
电流通过导线时, 电压衰减	减短导线长度, 使用加粗的导线

- 问题: 电瓶使用时间过短

原因	建议解决方法
电器耗电量大于转换器额定负载	使用大容量的电瓶
电瓶不良或有损坏	更换电瓶
电瓶充电不够	充电器不能给电瓶充满电, 更换更好的智能充电器
电流在通过导线时衰减	减短导线长度, 使用加粗的导线

5 技术参数

- 输出电压: 220V 频率: 50 ± 2HZ 波形: 修正正弦波
- 输入电压: 10-15V/20-30V
- 欠压报警: 10.4-11.0V/20.8-22V
低压关断: 9.7-10.3V/19.4/20.6V
过压关断: 14.5-15.5V/29-30V
- 空载消耗: 12V输入/24V输入
空载电流: < 0.3A
最大功效: > 90%
- 持输出功率: 80W/100W/150W/200W/300W/350W/500W/550W/800W/1000W/1200W/1500W/2000W/3000W
峰值功率: 160W/200W/300W/400W/600W/700W/1000W/1100W/1600W/2000W/2400W/3000W/4000W/6000W

备注: 本公司生产产品参数有改动时, 不再另行通知!

警告

 触电危险, 儿童远离!