

Technical Note

Handheld Inverter FAQ

Prowatt/PortaWattz

512-0045-01-01 Rev 1

Summary

1. What can I expect to run from my new handheld inverter?

See usage chart in Plugged In Newsletter #5 Fall/Winter '97.

2. Difference between PROwatt inverters and PortaWattz?

The PortaWattz models are economical inverters providing good value for the price. Their outstanding features compared to the PROwatt series include On/Off switch, dual light indicators, an external accessed fuse, and dual AC outlet sockets, (PWZ300) along with an attractive package.

The Prowatt models are high performance inverters providing maximum performance at an excellent value. Their heavier chassis/heatsink eliminates the need for a mechanical fan, inherently improving reliability. Internal components including analog and digital circuitry are optimized to provide a higher momentary AC power surge for vastly improved reactive load start-up, for example, TV, monitors, power tools, electric motors, fluorescent lamps, etc. The advanced MOSFET circuit design also ensures the PROwatt model a several percent efficiency advantage over PortaWattz to turn more battery power into load power. The PROwatt's lower no load idle current draw is only approx. 70 milli amps, eliminating the need for a switch altogether since it drains only 1.6 Ah (2%) from a car battery if left connected for 24 hours with no load.

3. Why does my appliance not run from my handheld inverter? The most common reasons are as follows:

A) Appliance power requirements rating higher than continuous rating of inverter, resulting in overload.

Solution: Use only equipment with power requirements within the specific inverter's range, or use a large capacity inverter.

B) Inverter red light comes on when first connected, but you can't get more than a 60 W light bulb to run from the lighter socket.

Solution: DC voltage is too low at the inverter due to thin or long battery wires. Hard wire inverter DC wires directly to a battery as per TechNote: High Power Installation for Hand Held Inverter.

C) Inverter light comes on but dashboard lighter fuse blows when connecting a small TV.

Solution: The dashboard fuse is too small to accommodate start surge of TV (do not simply install a fuse larger than recommended on the dashboard fuse block). Hardwire inverter DC wires directly as per TechNote: High Power Installation for Hand Held Inverter.

D) Start surge demand from equipment too high for inverter, trips inverter into overload.

Solution: Certain reactive loads such as TVs, monitors, power tools, electric motors, and several compact fluorescent lamps may have continuous ratings which are within the inverter's continuous rating, but have a start surge which is commonly 4 – 10x higher than the appliance's specification plate rating. To maximize surge capacity, hardwire directly to battery as in TechNote: High Power Installation for Hand Held Inverter. If

appliance still does not operate, select a higher performance (PROwatt) or higher power inverter model and assume a 10x surge demand when sizing an inverter for electric motor, TV/monitor, fluorescent lamp loads.

4. Diagnosing a defective inverter.

An inverter should be returned for service if the following conditions arise:

- A) Plug the PW150/250 inverter into a known good lighter socket or 12 V source and no red light comes on (no AC load connected).
- B) Plug the PortaWattz 140/300 inverter into a known good lighter socket or 12 V source, switch it on and the red light immediately turns on (no AC load connected).
- C) Plug the Notepower 50/75 inverter in a known good lighter socket or 12 V source and no green light comes on (no AC load connected).
- D) Plug the inverter into a known good lighter socket or 12 V source and no AC voltage is measurable at the AC outlet (no AC load connected).
- E) Plug the inverter into a known good lighter socket and the dashboard fuse blows upon connecting the lighter plug or turning the inverter on (no AC load connected).

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