

Technical Notes

PROwatt Power

512-0039-01-01 Rev 1

Surge Protection and PROwatt Inverters

Overview

The output of the PROwatt inverter series is very stable, being controlled by a crystal to establish 60.0 Hz frequency with virtually no drift, or load dependence, 60 Hz +/- .01%.

The output voltage waveform is stable and does not change shape with load since the waveform is generated using digital logic gates operating in discrete levels (binary). The waveform peak, normally set to 145 V, is controlled by a pulse width modulator switching at 120 kHz. The inverter's switchmode DC-DC power converter is of very similar design to the computer power supplies in all personal computers. Considering the approximately 100,000,000 such computer power systems now in use worldwide, we are confident there will be no voltage surge problems as are associated with Grid power lines or generators. Grid power lines can carry surges mainly due to induced voltages from long power lines acting as antennas; an inverter is usually very close to the appliance and not as susceptible to induced voltages. Statpower historically (9 yrs) has sold approximately 200,000 inverters into the computer industry alone with great acceptance from the market (customers include NEC, Toshiba, Compaq, Texas Instruments, Philips). We recommend the PW50 for a notebook under 50 W, the PW75 for larger notebooks up to 75 W, or a PW150 for a notebook with small inkjet printer, a PW250 for a larger laptop with inkjet printer, or a PW800 for a desktop model with monitor and printer.

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Technical Note: *Surge Protection in PROwatt Inverters* © 1997 – 2001 Xantrex International

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