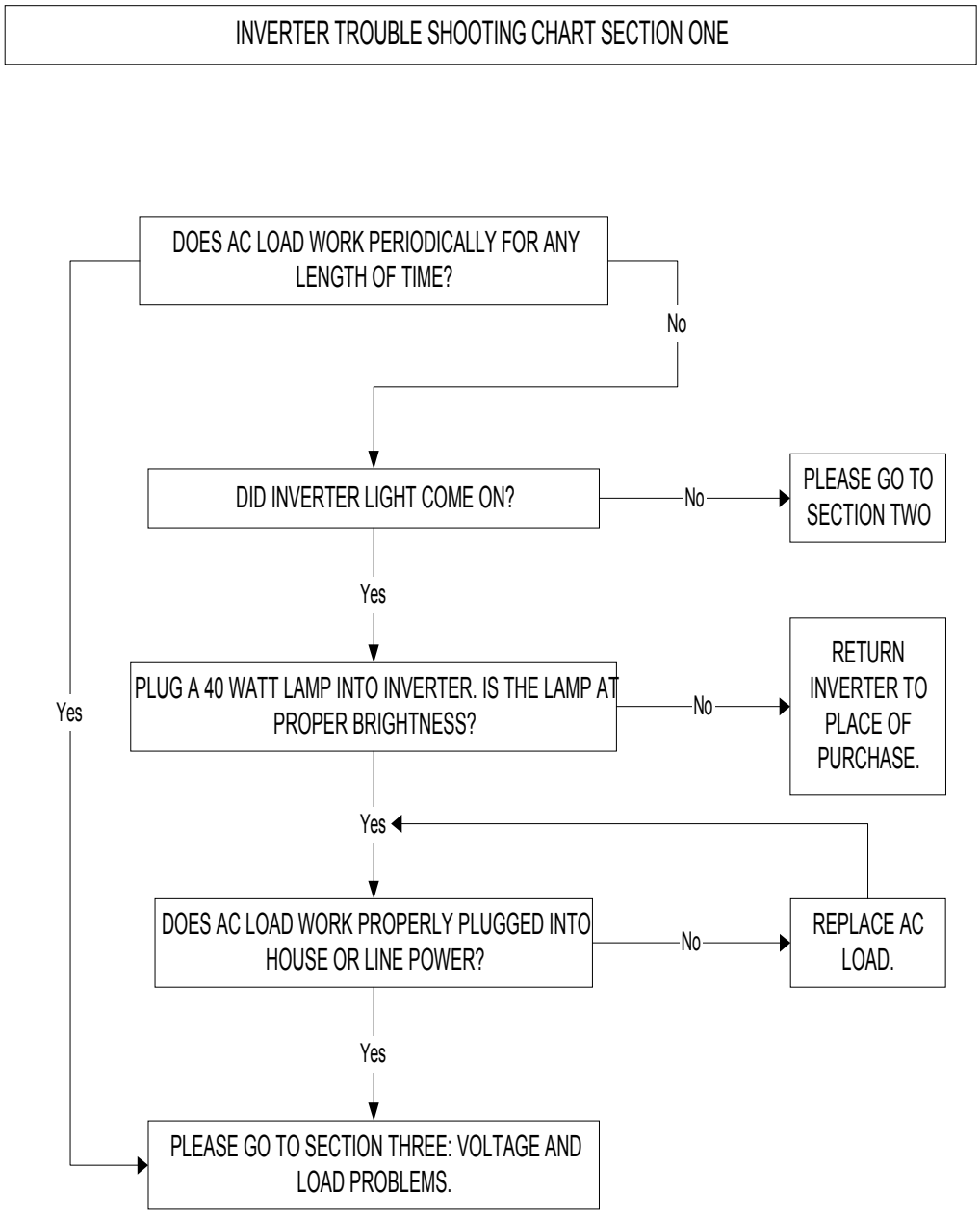
Technical Note

PROwatt

512-0042-01-01 Rev 1

Inverter Troubleshooting Chart and Voltage and Load Problems

Section One: Inverter Troubleshooting Chart



Section 2: Voltage And Load Problems

Xantrex PROwatt inverters are designed to shut down under four major fault conditions: under voltage, over voltage, over temperature, and overload.

Under voltage

In the case of under voltage, the inverters (PROwatt 250 and larger) will give off an audible alarm and shut down. The alarm is set to come on when the voltage "at the inverter" drops to 10.7 VDC. The unit will shut off when the voltage at the inverter drops to 10 VDC. The most common reason for a low battery alarm signal is a discharged battery. A less common cause is a significant voltage drop along the DC wires/cables due to too long/too thin a DC wire. The battery terminal voltage may measure 12.7 VDC (typical fully charged battery) but with the inverter attempting to operate a load, the DC cables appear as a resistor and easily drop 2–3 VDC. The result: the inverter "sees" less than 10.7 VDC which will cause the alarm to sound or the inverter to immediately shut down when first attempting to start the load, if the voltage drops to less than 10.0 V. The solution to this problem is to increase the size of the DC cables and decrease the length of wire/cable between the inverter and the battery. If your problem is not solved, or you have any other questions, please review the manual or contact Xantrex Technical Support.

Over voltage

If the inverter senses more than 15.0 V on its DC input, the inverter will shut down (with no audible alarm). The most common causes of high voltage to the inverter are alternator regulator setting above 15.0 V (or defective regulator), unregulated solar panel, or battery charger/converter connected to the battery. Connecting a 12 V inverter to a 24 V battery system will usually damage the inverter and is not covered under warranty.

Over temperature

The optimal ambient air temperature range for a PROwatt inverter is 0–25 °C (32–80 °F). If the inverter is operated above 25 °C ambient, the inverter's maximum continuous output is de-rated (lowered with increasing ambient temp). If the load and ambient temperature is high enough the inverter will shut down due to excessive internal heating. During shutdown the inverter will stop producing AC, allowing the internal components to cool down. AC power will automatically return when the internal components are sufficiently cooled. The PROwatt 250 and larger inverters will sound an alarm during over-temperature shutdown. The 250 W and larger inverters have fans that are thermally controlled. In cooler environments the fan may only come on when used at high power, while in hotter climates (above 90 °F ambient) the fan may turn on at moderate loads and stay on even after the load is removed. If the inverter overtemp light stays on after the load is removed and the unit has cooled down for two hours (in less than 85 °F ambient) switch the inverter OFF, then ON again; this will reset the fan control circuit. The fan will however turn off automatically when the inverter internal temperature drops below approximately 85 °F. If the light stays on regardless of resetting, contact Xantrex Technical Support—it may require service.

Overload

Xantrex inverters have an overload shutdown feature to prevent damage to internal components in the event that a load draws more power than the inverter can produce. The PROwatt 250 will “beep” and the light will turn OFF as it goes into overload shutdown.

Remove the load and the inverter will resume AC output within a few seconds.

The PROwatt 800, 1000, and 2500 will “beep” and have an overload indicator light. If the inverter shuts down due to overload, remove the load and switch the inverter OFF then ON. This should reset the overload circuit and the inverter will resume normal AC output. If the inverter is turned on with no load connected and goes into overload there is an internal malfunction; contact Xantrex Technical Support for service.

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