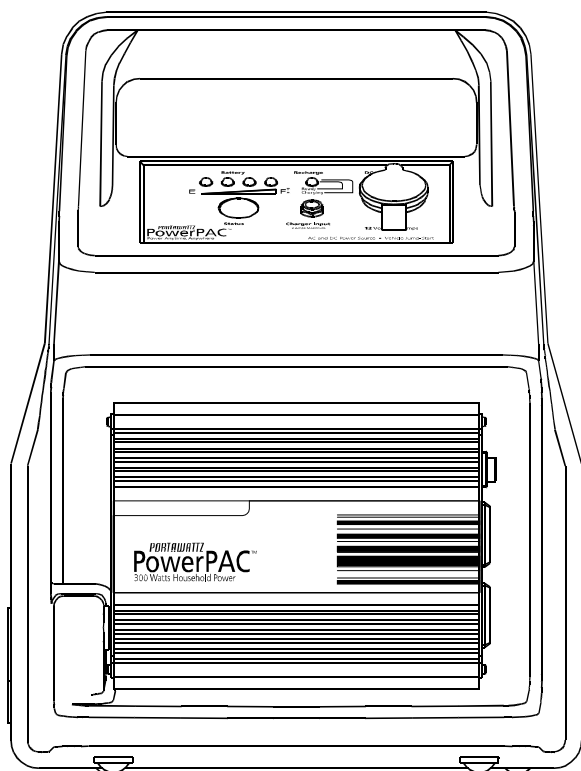


PORTA!WATTZ PowerPAC™



300 Watts
Household
Power

Owner's Manual

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1.0 Introduction

Thank you for purchasing PORTAWATTZ PowerPAC™ ("PowerPAC"), the portable AC and DC power source. Designed for best-in-class performance and value, PowerPAC can temporarily power a wide variety of electrical products and equipment when utility power is unavailable or during a power outage, and can even jump-start your car in an emergency.

Read this manual before using PowerPAC and save it for future reference.

Be sure to charge the PowerPAC immediately after purchase (see Section 8.0). PowerPAC's automatic charging system is intended to be left permanently plugged into a wall outlet, to keep its battery fully charged and ready for use.

The following main topics are covered in this manual:

- How to use PowerPAC as a source of 115 Volts AC to run household or workplace products.
- How to use PowerPAC as a source of 12 Volts DC to run typical auto or marine accessories.
- How to use PowerPAC to jump-start a vehicle.
- How to recharge PowerPAC's battery.



2.0 Safety First ... Before You Use PowerPAC

Misuse of PowerPAC may result in danger to the user. 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 PowerPAC 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.

- PowerPAC 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 any objects into PowerPAC's AC outlets, its DC Power Socket, the High Power DC Connector, or the ventilation holes in its AC inverter. Do not expose PowerPAC to water.
- Do not, under any circumstances, connect PowerPAC's AC receptacle to power utility AC distribution wiring.
- Failure to follow the above safety instructions may result in personal injury and/or damage to PowerPAC.



WARNING! Explosion hazard.

- Do not use PowerPAC where there are flammable fumes or gases, such as in the bilge of a gasoline powered boat, or near propane tanks. Do not use PowerPAC in an enclosure containing automotive-type lead acid batteries. These batteries, unlike the sealed battery in the PowerPAC, vent explosive hydrogen gas which can be ignited by sparks from electrical connections.
- When working on electrical equipment, always ensure someone is nearby to help you in an emergency.



WARNING! Heated surface.

- PowerPAC's AC inverter chassis may become uncomfortably warm, reaching 60° C (140° F) under extended high power operation. Ensure at least 5 cm. (2 in.) air space is maintained on all sides of PowerPAC. During operation, keep away from materials that may be affected by high temperatures such as blankets, pillows and sleeping bags.

CAUTION



- Do not connect any AC load, whose neutral conductor is connected to ground, to PowerPAC.



- Do not expose PowerPAC to temperatures in excess of 40°C or 100°F.



3.0 Quick Start Guide

3.1 Overview

The following basic instructions are intended to provide a brief overview of PowerPAC's key features. For complete information, be sure to read this manual fully. The diagram below shows PowerPAC's key features and accessories.

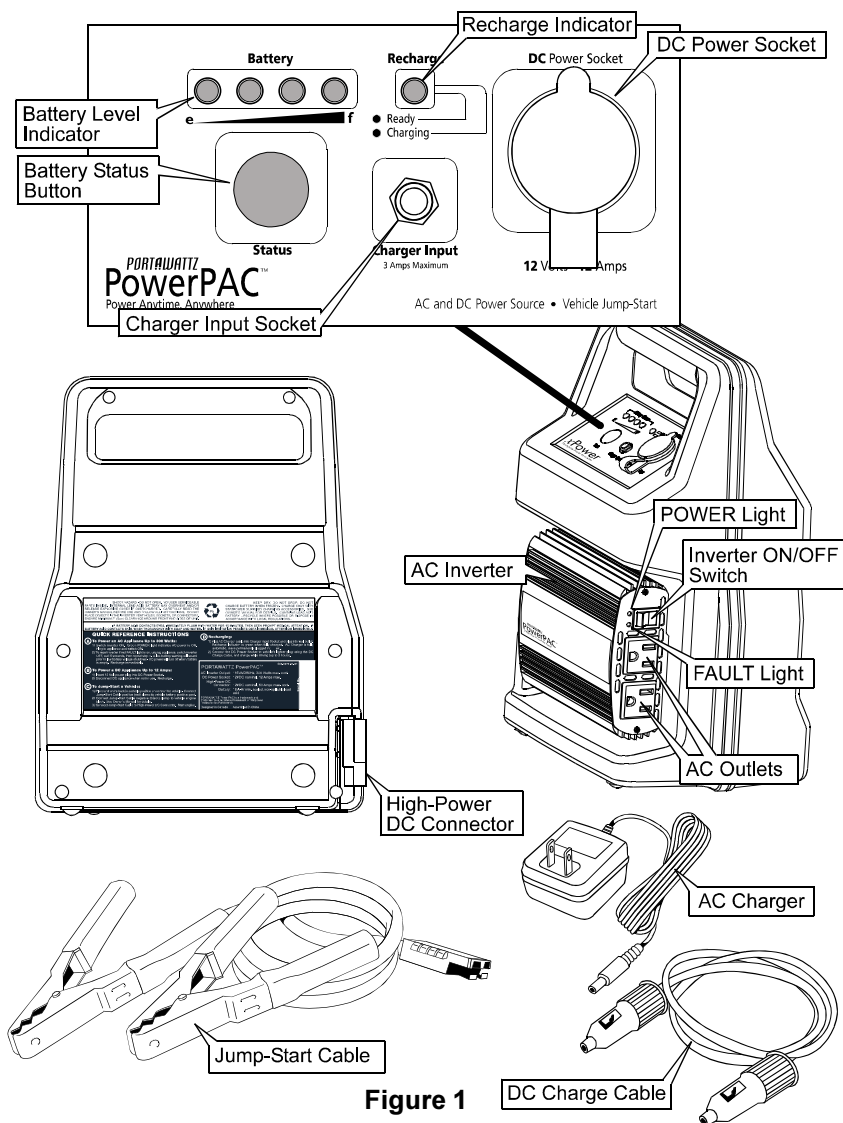


Figure 1



3.2 An Explanation of Power Ratings and Battery Life

AC powered products are rated by how much electrical power (in Watts) they consume. PowerPAC's AC inverter is capable of generating a maximum of 300 Watts to power AC products plugged into PowerPAC's AC receptacles. As an example, a 40 Watt light bulb can be operated from PowerPAC for up to 3 hours when PowerPAC's battery is fully charged.

12 Volt DC auto and marine accessories are generally rated according to how much electrical current (in amperes or "Amps") they draw from the battery. For example, a small 12 Volt fluorescent light that draws less than 0.7 Amps could be expected to operate for about 25 hours before PowerPAC's battery needs recharging. PowerPAC is designed to supply up to 12 Amps from its DC Power Socket.



Remember: The fewer Watts an AC product uses, or the fewer Amps a DC accessory draws, the longer PowerPAC will operate before recharging is required.

3.3 Operating 115 Volt AC Products

1. Ensure PowerPAC battery is fully charged. See Section 8.0 for details.
2. Turn the AC inverter switch ON. The green POWER light indicates AC power is available at the AC outlets.
3. Plug the AC product(s) you wish to operate into the AC outlet(s) and switch the appliance(s) ON, one at a time. PowerPAC will operate most devices rated up to 300 Watts.
4. In the event of an overload, low battery voltage, or overheating, the AC inverter will automatically shut down and its red FAULT light will illuminate. See Section 5.3 for details.
5. Fully recharge PowerPAC's battery as soon as possible after each use.



3.4 Operating 12 Volt DC Accessories

1. Ensure PowerPAC's battery is fully charged. See Section 8.0 for details.
2. Plug the accessory into PowerPAC's DC Power Socket, and switch the accessory on (if required). PowerPAC will operate any 12 Volt DC auto or marine accessory that draws 12 Amps or less.
3. Because the DC Power Socket is internally wired direct to PowerPAC's battery, extended operation of a 12 Volt accessory may result in excessive battery discharge.
Important: Care must be taken to ensure the battery does not become totally discharged. See Section 6.1 for details.

3.5 Recharging PowerPAC

1. The battery's charge level may be seen by pressing the Battery Status Button on PowerPAC's display panel.
2. To recharge, plug the AC Charger into a household AC outlet, and plug the AC Charger cord into the Charger Input Socket on PowerPAC's display panel. The Recharge Indicator will change from amber to green when charging is complete (typically after 35 hours). It is safe (and recommended) to leave the AC Charger connected indefinitely.
3. Charging may also be done from an automobile lighter socket. See Section 8.3 for details.

3.6 Using PowerPAC to Jump-Start Your Vehicle

Due to potential dangers, see Section 7.0 for a detailed explanation.



4.0 Indicators, Controls and Connectors

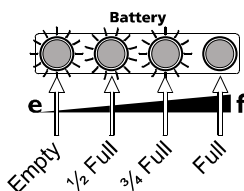
Refer to Figure 1 in Section 3.1 for location of the items identified below.

4.1 Display Panel

The display panel is located on the front of PowerPAC, directly below its carrying handle. Located on the display panel, you will find PowerPAC's DC Power Socket, the Charger Input Socket, a Recharge Status Indicator light, and a Battery Level Indicator that is actuated by the Battery Status Button.

4.1.1 The Battery Level Indicator

The Battery Level Indicator shows the state of charge of PowerPAC's battery. Its function is similar to the fuel gauge in a car. When pressing and holding the Battery Status Button, one or more of the display's four lights will illuminate, showing the approximate amount of charge remaining in the battery. The following diagram shows the function of each light:



When the battery is fully charged, all four lights will illuminate. When discharged (empty), only the red light will illuminate and the battery must be recharged promptly. The diagram shows the battery is approximately $\frac{3}{4}$ full.

Battery condition is indicated most accurately when the battery has been unused for 15 minutes. Pressing the Battery Status Button while supplying power to an AC product may result in false battery charge level reading.

4.1.2 The Recharge Indicator

The Recharge Indicator operates only when the battery is being recharged through the Charger Input Socket. It will not operate when other charging methods are used. When charging the battery with the AC Charger, this light will glow amber, then change to green when the battery is fully charged. Once fully charged, the charging circuitry automatically switches into its charge maintenance mode.



4.1.3 The Charger Input Socket

The AC Charger supplied with PowerPAC connects to this socket when recharging is required. Other low power charging devices can also be connected here. (See Sections 8.2 and 8.5 for full details.)

4.1.4 The DC Power Socket

The DC Power Socket is a cigarette lighter style connector used for powering 12 Volt DC auto or marine accessories (see Section 6.0), and for recharging PowerPAC from your vehicle's electrical system. (See Section 8.3.)

4.2 The AC Inverter

The front-mounted AC inverter is the heart of PowerPAC. It converts 12 Volts DC supplied by the internal battery to 115 Volts AC power. Two standard AC receptacles mounted on the right side of the inverter supply the AC power for running products from PowerPAC. The inverter's ON/OFF switch, and its POWER and FAULT indicator lights are mounted on the same side of the inverter as the AC receptacles. A low battery Voltage alarm warns you when the inverter has nearly discharged the battery, prior to automatic low voltage shutdown. See Section 5.0 for complete details on using the AC inverter.

4.3 The High-Power DC Connector

The High-Power DC Connector, located on the lower left side of PowerPAC, is a high current capacity connector wired directly to PowerPAC's battery. The Jump-Start Cable supplied with PowerPAC connects to the High-Power DC Connector to allow jump-starting of a vehicle in an emergency. Be sure to read Section 7.0 for full details before any attempt is made to use this feature. The High-Power DC Connector can also be used to connect an external battery to PowerPAC to increase battery capacity. See Section 9.0 for more information.



5.0 Powering 115 Volt AC Products

5.1 General Information

PowerPAC is capable of powering most 115 Volt AC products and equipment that use 300 Watts or less. Its AC output waveform, called a “quasi-sine wave” or “modified sine wave”, is designed to function similarly to the sine wave shape of utility power.



CAUTION: Do not use the PowerPAC 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 power tools. These chargers will have a warning label stating that dangerous voltages are present at the charger's battery terminals.

The power, or “wattage”, rating of AC products is the average power they use. During the first moments after they are switched on, many products such as televisions, monitors, and products with motors, consume much more power than their average rating. Although PowerPAC can supply momentary surge power greater than 300 Watts, some products may exceed its capabilities and trigger the inverter's safety overload shutdown circuit. See details in Section 5.3 for the reset procedure. If this problem occurs when attempting to operate several products at the same time, try first switching on the inverter with all products switched off, then one by one switch each on, starting with the high surge product first.

5.2 Connecting Your AC Products

The following steps assume you have fully charged PowerPAC's battery. See Section 8.0.

1. Turn on the AC inverter switch located on the inverter's right side. The green POWER light that illuminates adjacent to the switch indicates AC power is now on and available at the two inverter AC outlets. See Figure 1 in Section 3.1.
2. Plug the AC product you wish to operate into one of the two inverter outlets and switch the product on. The product should operate normally, just as it would if plugged into a wall receptacle.



3. As the AC product is operated, you can check the level of the battery as detailed in Section 4.1.1. This will give you an idea of how much time remains until the battery needs recharging.
4. As the battery becomes nearly discharged, or “empty”, a low voltage warning will sound. This will give you time to shut down a computer, for example. If this warning is ignored, the inverter will switch off automatically a few minutes later to prevent battery damage. (See Section 5.3 for full details.)
5. Fully recharge PowerPAC’s battery as soon as possible after each use. (See Section 8.0.)

5.3 Automatic Overload, Overheating and Low Battery Protection

PowerPAC’s AC inverter has built-in protection against output overload, and from overheating. If an AC product rated higher than 300 Watts (or which draws excessive surge power at start up) is connected, or if the inverter exceeds a safe temperature, it will automatically shut off. The green POWER light will go off and the red FAULT light will switch on. To reset, unplug the product and let the inverter cool. Then, switch the inverter OFF for 5 seconds, then switch back ON. Normal operation will resume.

If the battery is allowed to discharge excessively, damage may occur. To prevent this, the AC inverter has a built-in audible warning that alerts you when the battery is nearly discharged and it is time to recharge PowerPAC. If this warning is ignored, the inverter will automatically switch off and the red FAULT light will illuminate when the battery reaches “empty”. Promptly recharge the battery. (See Section 8.0.)



5.4 Interference with Electronic Equipment

5.4.1 Buzzing Sound in Audio Systems

Some inexpensive stereo systems and “boom-boxes” will emit a buzzing sound from their loudspeakers when operating from the AC output of PowerPAC. This is because the power supply in the equipment does not adequately filter the modified sine wave produced by PowerPAC’s AC inverter. Unless the stereo can be operated directly from PowerPAC’s 12 Volt DC Power Socket, the only solution is a sound system with a higher quality internal power filter.

5.4.2 Television Interference

PowerPAC’s AC inverter is shielded to minimize interference with TV signals. In some cases, particularly with weak TV signals, some interference may still be visible in the form of scrolling lines across the screen. In this case, take the following corrective measures:

1. Use an extension cord to position PowerPAC as far away as possible from the television, antenna and cables.
2. Adjust the orientation of PowerPAC, television, antenna and cables to minimize interference.
3. Maximize TV signal strength by using a better antenna, and ensure a shielded antenna cable is used.
4. Try a different TV. Different models of TV sets vary greatly in their susceptibility to interference.



5.5 Battery Operating Times

Below are typical AC products and equipment that may be operated by PowerPAC with estimated operating times.

115 Volt AC Powered Products Examples	Typical Power (Watts)	Estimated Operating Time (Hours)
Cordless Telephone (stand by time)	5	40
Home Security System	5	40
Clock Radio	8	22
Portable Stereo	10	16
Flourescent Work Light	14	10
Color TV (5")	20	7
Fireplace Fan	20	7
Laptop Computer	25	6
Table Lamp	40	3

Operating times will vary depending on the battery charge level and the actual AC product being operated.

PowerPAC will not operate AC products rated at more than 300 Watts, such as hair dryers, microwave ovens, and toasters.



6.0 Powering 12 Volt DC Accessories

6.1 Connecting 12 Volt DC Accessories

PowerPAC can operate any accessory that is intended to run from a vehicle's lighter socket. Simply insert the accessory's plug into the DC Power Socket on PowerPAC's display panel. PowerPAC's DC Power Socket will operate any 12 Volt DC auto, marine or other 12 Volt accessory that draws 12 Amps or less. The following steps assume you have first fully charged PowerPAC's battery according to instructions in Section 8.0.

1. Plug the accessory into PowerPAC's DC Power Socket, and switch the accessory on (if required).
2. The 12 Volt appliance will operate until the battery runs out of power. Refer to step 4 (below) to avoid battery damage due to excessive discharge.
3. If an accessory that draws more than 12 Amps (or which has a short circuit defect) is connected, PowerPAC's internal circuit breaker will switch off power to the accessory. If this occurs, unplug the accessory and the breaker will automatically reset after a few seconds.
4. The DC Power Socket does not automatically switch off the load when the battery is discharged. To protect the battery against damage resulting from total discharge, it is strongly recommended that the AC inverter is switched on, even when powering 12 Volt accessories only. This will enable the inverter's alarm to warn you when the 12 Volt accessory has nearly depleted the battery. The power used by the inverter to monitor the battery is negligible.
5. Fully recharge PowerPAC's battery as soon as possible after each use.



6.2 Battery Operating Times

Below are typical DC accessories that may be operated by PowerPAC with estimated operating times.

Operating times will vary depending on the battery charge level and the specific accessory being operated.

12 Volt DC Powered Products Examples	Typical Current (Amps)	Typical Power (Watts)	Hours
Cellular Telephone*	0.5	6	36
Fish Finder/Depth Sounder	0.5	6	30
Bilge Pump	3	36	5
Portable Cooler	2.5	30	4
Car Vacuum	7	85	1
Tire Inflator	8	100	1
Spotlight	8	100	1

*Represents talk time available from 12 recharge cycles.



7.0 Vehicle or Boat Engine Starting Assistance

7.1 Jump-Starting Direct to the Battery

PowerPAC may be used to jump-start a 12 Volt vehicle or small boat engine using the Jump-Start Cable supplied. Jump-starting causes very high current surges and possible sparking. Unless care is taken, the possibility of battery explosion exists. Read the safety warnings in Section 2.0 before proceeding, then follow these instructions exactly.

1. Turn off the vehicle or boat ignition, and all accessories.
2. Engage the park or emergency brake and place the transmission in park or neutral.
3. If jump-starting a boat engine, purge the engine compartment and bilge of all fumes before jump-starting.
4. Lay PowerPAC on its back on a flat stable surface near the battery and clear of all moving parts of the engine.
5. Do not connect the Jump-Start Cable to PowerPAC yet. Connect its red positive (+) clamp to the positive (+) terminal of the engine battery.



WARNING: Connecting to the negative terminal can lead to a battery explosion later in this procedure. The battery's positive terminal is identified as being larger in diameter than the negative terminal. In most vehicles it has a red wire connected to it. Do not proceed until you are sure you have connected to the positive terminal.

6. Connect the black negative (-) clamp to the engine block, cylinder head, or other stationary heavy metal part of the motor, as far from the battery as possible. Do not attach the black negative clamp to the battery terminal.
7. Making sure that the cables are clear of belts and fans, plug the Jump-Start Cable into the High-Power DC Connector on the lower left side of PowerPAC, and start the engine.
8. If the vehicle fails to crank, unplug the Jump-Start Cable from PowerPAC, then disconnect the jumper cable clamps. Ensure that the contact area is clean, then repeat steps 5 through 7.
9. After the vehicle is started and while the cables are still connected, it is a good idea to run the motor at fast idle for 5 minutes to fast-charge PowerPAC's battery. After recharging,



unplug the Jump-Start Cable from PowerPAC, disconnect the black (negative) cable clamp, and then as a last step, disconnect the red (positive) cable clamp.

7.2 Jump-Starting via a Vehicle's Lighter Plug Socket

The following simple procedure is often sufficient to start a vehicle when its battery is not completely dead.

1. Connect your vehicle's cigarette lighter socket to PowerPAC's DC Power Socket using the DC Charge Cable. You may need to switch the ignition key to the "accessory" position to supply power to the lighter socket.
2. Wait 15 minutes while PowerPAC partially charges your vehicle's battery, then attempt to start the engine.
3. Once the engine starts, leave PowerPAC connected for at least 5 minutes to recharge its battery.
4. If your vehicle does not start, attempt to jump-start as described in Section 7.1.



8.0 Recharging PowerPAC

8.1 General Information on Batteries and Charging

8.1.1 Charging Options

A variety of charging options are possible with PowerPAC:

- Charging with the fully automatic “plug it in and forget it” AC Charger.
- Charging from your vehicle as you drive.
- Charging from a generator equipped with a 12 Volt battery charging outlet.
- Charging from a solar panel.

8.1.2 Battery Self-Discharge and Shelf Life

All rechargeable batteries gradually discharge when left standing. Periodic charging is necessary to maintain maximum battery capacity. When the AC Charger is connected via PowerPAC's Charger Input Socket, the circuitry built into PowerPAC will regulate the charging process, ensuring the battery is always fully charged, but never overcharged. To ensure safe recharging and maximum battery life, charge only with Xantrex supplied or approved products.



CAUTION: Due to inherent self-discharge, lead acid batteries must be charged at least every 3 months, especially in a warm environment. Leaving a battery in a discharged state, or not recharging every 3 months, risks permanent damage.

8.1.3 Battery Replacement

PowerPAC uses a state-of-the-art internal battery that will serve as a reliable power source for years when properly maintained.

Should replacement ever be needed, Xantrex recommends this be performed by those experienced in the installation of high amperage, high energy batteries. For full details, including information on approved replacement battery models, contact Xantrex (See section 12.0; “How Do You Get Service”).



8.2 Recharging with the AC Charger

Recharging with the AC Charger is a true “plug it in and forget it” charging method. To use it, follow these steps:

1. Disconnect any 12 Volt DC accessories and switch the inverter OFF.
2. Insert the AC Charger plug into the Charger Input Socket on PowerPAC's display panel.
3. Plug the AC Charger into a standard 115 Volt AC receptacle.
4. As PowerPAC charges, its Recharge Indicator will glow amber. A typical recharge may take up to 35 hours.
5. When fully charged, the Recharge Indicator changes to green and PowerPAC is ready to use.
6. Once PowerPAC is fully charged, charging current automatically reduces to a low maintenance level and PowerPAC may be left permanently connected to its AC Charger.

In addition, should your utility power be interrupted, the charging process will automatically restart when power returns.



Note: Battery Level Indicator readings will not be accurate until the battery has “rested” for 15 minutes after charging.



CAUTION: Do not use PowerPAC to operate any AC products or DC accessories while charging with the AC Charger.

8.3 Recharging from Your Vehicle

Using the DC Charge Cable, PowerPAC can be recharged as you drive. Simply plug either end of the DC Charge Cable into PowerPAC's DC Power Socket, and the other end into the vehicle's cigarette lighter socket or 12 Volt accessory outlet. Most of PowerPAC's capacity will be restored in 1 to 3 hours while the motor is running. Although the automatic charge regulation circuitry in PowerPAC does not operate with this charging method, most vehicle voltage regulators will ensure PowerPAC is not overcharged. This charging method must not be used with vehicles having abnormally high voltage electrical systems that operate above 15 Volts DC. Disconnect the DC Charging Cable at both ends once PowerPAC is fully charged or when your vehicle's motor is not running. Do not leave PowerPAC permanently connected to the vehicle's lighter socket or 12 Volt accessory outlet.





CAUTION: While PowerPAC is being recharged with the DC Charging Cable from your vehicle, do not operate AC products over 120 Watts from the AC inverter at the same time.

8.4 Recharging with a Generator's 12 Volt DC Power Outlet

Recharging PowerPAC from a generator using PowerPAC's AC Charger is possible, but would require extended generator running time. Since many generators have an auxiliary regulated 12 Volt DC output designed for charging 12 Volt batteries, using this power source will result in much faster charging. If the generator has a cigarette lighter style socket for its 12 Volt output, follow the connection instructions in Section 8.3.

Most of PowerPAC's capacity will be recharged in about 1 to 3 hours. Level of charge can be verified using PowerPAC's Battery Level Indicator after disconnecting from the charging source as explained in Section 4.1.1.



CAUTION: The generator output must be intended for battery charging. An unregulated output or one that exceeds 15 Volts DC can damage the battery.

8.5 Recharging with a Solar Panel

Small unregulated 12 Volt solar panels rated to produce a maximum of 3 Amps (or 40 Watts) can be used to charge PowerPAC via the Charger Input Socket. You will need to purchase a standard 5.5 mm OD x 2.5 mm ID "DC Coaxial (Barrel Type) Connector" to mate with the Charger Input Socket. Connect the solar panel's positive (red) wire to the coaxial plug's inner contact and the solar panel's negative (black) wire to the plug's outer contact. Once the plug is inserted into the Charger Input Socket and the solar panel is placed in the sun, PowerPAC will charge automatically just as with the AC Charger. (See Section 8.2.) A 3 Amp solar panel will charge PowerPAC in about 8 hours in direct sunlight.



9.0 Connecting to an External Battery

9.1 Extended Operating Time

Much longer battery operating time is possible when connecting PowerPAC to a larger external battery. For example, an external 60 Amp-hour battery will give approximately 3 to 4 times the operating time of PowerPAC's internal battery alone.



WARNING: Use a sealed, non-spillable battery for indoor use. Common auto and marine batteries are not suitable for indoor use unless their fumes are vented outdoors. They contain acid, which is hazardous if spilled. Wear eye protection and protective clothing when connecting PowerPAC to an external battery.

9.2 Connecting an External Battery

The external battery is connected using the Jump-Start Cable as follows:

1. Connect the Jump-Start Cable red positive (+) clamp to the positive terminal of the external battery.



WARNING: Connecting to the negative terminal can lead to a battery explosion later in this procedure. The battery's positive terminal is identified as being larger in diameter than the negative terminal. Do not proceed until you are sure you have connected to the positive terminal.

2. Connect the Jump-Start Cable black negative (-) clamp to the negative terminal of the external battery.
3. Plug the Jump-Start Cable into PowerPAC's High-Power DC Connector. Ensure this step is done last.
4. Disconnect the external battery in the reverse order of the above steps before recharging PowerPAC.



10.0 Troubleshooting

Problem: AC product will not operate, inverter red FAULT light is on.

Possible Cause	Suggested Remedy
<i>Appliance rated more than 300 Watts, safety overload circuit has tripped.</i>	Use an AC product with a power rating less than 300 Watts.
<i>Appliance is rated less than 300 Watts, high starting surge has tripped overload.</i>	AC product may exceed PowerPAC's surge capability. Use an AC product with starting surge power within PowerPAC's capability.
<i>Battery is discharged (alarm is sounding).</i>	Turn off all AC products and recharge battery.
<i>Inverter has overheated due to poor ventilation.</i>	Turn inverter OFF and allow to cool for 15 minutes. Clear blocked fan, or remove objects covering PowerPAC, then restart.

Problem: Run time is less than expected.

Possible Cause	Suggested Remedy
<i>PowerPAC battery is not fully charged.</i>	Recharge using AC Charger, until Recharge Indicator is green.
<i>AC product power consumption is higher than expected.</i>	Check AC product power or "wattage" rating (or current draw for DC accessories) and compare with tables in Sections 5.5 and 6.2.

Problem: Measured inverter output voltage is too low.

Possible Cause	Suggested Remedy
<i>Use of standard "average" reading AC voltmeter to read output voltage.</i>	"Modified-sine wave" output of inverter requires "true RMS" reading meter, such as Fluke 87 series multimeter, for accurate measurement.
<i>Battery is almost "empty".</i>	Check Battery Level Indicator and recharge battery as needed.

Problem: Charging light is OFF when AC Charger is connected.

Possible Cause	Suggested Remedy
<i>No AC power at wall receptacle.</i>	Ensure power is available at receptacle.



11.0 Specifications

12 Volt DC Section

Internal battery type	AGM, sealed lead acid
Internal battery voltage (nominal)	12 Volts DC
Internal battery capacity	18 Amp-hours
Cycle life at 100% discharge/recharge cycles at 20°C	220 cycles
Maximum load current through 12 volt DC Power Socket (breaker protected)	12 Amps

Inverter (115 Volt AC) Section

AC output voltage (nominal)	115 Volts AC
Maximum continuous AC output power	300 Watts
Maximum AC surge power	500 Watts
AC output frequency	60 Hz \pm 4Hz
AC output waveform	Modified sine wave
Inverter no-load current (battery drain with no load on inverter)	0.18 Amps
Ambient operating temperature range	0°C - 40°C / 32°F - 100°F
Low battery alarm trigger point	10.7 Volts (nominal)
Low battery shut down point	10.0 Volts (nominal)

Charging System

AC charger bulk charging current	500 mA (maximum)
Bulk charge to float charge transition voltage (peak charging voltage)	14.6 Volts (nominal)
Float charge to bulk charge transition voltage (charge restart voltage)	12.9 Volts (nominal)
Float charge current (after full charge has terminated)	1mA (nominal)
Charger Input Socket maximum current	3 Amps

Specifications subject to change without notice.



12.0 Limited Warranty (USA and Canada only) and Out-of-Warranty Service Information

What Does This Warranty Cover? Xantrex manufactures its products from parts and components that are new or equivalent to new, in accordance with industry standard practices. This warranty covers any defects in workmanship or materials.

How Long Does The Coverage Last? This warranty lasts for 6 months from the date of purchase. Implied warranties of merchantability and fitness for a particular purpose are limited to six months from date of purchase. Some jurisdictions do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

What Does This Warranty Not Cover? This warranty will not apply where the product (including the internal battery) has been misused, neglected, improperly maintained or installed, physically damaged or altered, either internally or externally, or damaged from improper use or use in an unsuitable environment. Xantrex does not warrant uninterrupted operations of its products. Xantrex shall not be liable for damages, whether direct, incidental, special, or consequential, or economic loss even though caused by the negligence or fault of Xantrex. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

What Will Xantrex Do? Xantrex will, at its option, repair or replace the defective product free of charge. Xantrex will, at its own option, use new and/or reconditioned parts made by various manufacturers in performing warranty repair and building replacement products. If Xantrex repairs or replaces a product, its warranty term is not extended. Xantrex owns all parts removed from repaired products.



How Do You Get Service? In order to qualify for the warranty, dated proof of purchase must be provided and the product must not be disassembled or modified without prior authorization by Xantrex. If your product requires warranty service, please return it to the place of purchase along with a copy of your dated proof of purchase. If you are unable to contact your merchant, or the merchant is unable to provide service, contact Xantrex directly:

BY PHONE: (604) 420-1585
(toll free) 1-800-670-0707
BY FAX: (604) 420-1591
(toll free) 1-800-994-7828
BY EMAIL: support.portawattz@xantrex.com

You must obtain a Return Material Authorization (RMA) number from Xantrex before returning a product directly to Xantrex. Do not return a product to Xantrex without first obtaining an RMA number. When you contact Xantrex to obtain service, be prepared to supply the serial number of your product and its date of purchase as well as information about the installation or use of the unit.

If you are returning a product from the USA or Canada, follow this procedure:

1. Obtain an RMA number and a shipping address from Xantrex.
Product(s) returned without an RMA number or shipped collect, will be refused.
2. Package the unit safely, preferably using the original box and packing materials. Include the RMA number, a copy of your dated proof of purchase, a return address where the repaired unit can be shipped, a contact telephone number, and a brief description of the problem.
3. Ship the unit to the address provided in Step 1, freight prepaid. Obtaining proof of delivery is recommended.

How Other Laws Apply: This warranty gives you specific legal rights, and you may also have other rights which vary from jurisdiction to jurisdiction.

For Our Canadian Customers: When used herein "implied warranties of merchantability and fitness for a particular purpose" includes all warranties and conditions, express or implied, statutory or otherwise, including without limitation implied warranties and conditions of merchantability and fitness for a particular purpose.



Service Out Of Warranty: If the warranty period for your PowerPAC has expired, if the unit was damaged due to misuse, incorrect installation or if other conditions of the warranty have not been met, or if no dated proof of purchase is available, your unit may be serviced/replaced for a minimum flat fee of \$85.00 US (\$125.00 CDN). To return your PowerPAC for out of warranty service, contact Xantrex customer service for a Return Material Authorization (RMA) number and follow the other steps outlined in the section “How Do You Get Service?” above. Options for payment (e.g. credit card or money order) will be explained by the customer service representative. In cases where the minimum flat fee does not apply (e.g. incomplete units or units with excessive damage), an additional fee will be charged. If applicable, you will be contacted by customer service once your unit is received. The minimum flat fee is subject to change without notice.



13.0 Other Products from Xantrex

Xantrex develops, manufactures and markets power electronic products. Our goal is to offer you top quality products that convert and control electric power. We specialize in DC to AC inverters, battery chargers, backup power supplies and other products associated with mobile or power backup applications.

PORTAWATTZ 150 Inverter An extremely compact and versatile inverter, the Portawattz 150 provides 150 Watts of AC power for running everything from small TV's and VCR's to laptop computers. It is also ideal for recharging many of the battery-operated devices found on the market today (e.g. camcorders, cellular phones, etc.).

PORTAWATTZ 300 Inverter The PORTAWATTZ delivers 300 Watts of AC power yet is still small enough to hold in the palm of a hand. It's ideal for small power tools, full size TV sets, desktop computers and other applications that are beyond the power capacity of the PORTAWATTZ 150.

PORTAWATTZ 600 Inverter Designed for recreational and industrial applications, the PORTAWATTZ 600 produces 600 Watts of continuous power from a 12 Volt DC source, and can run loads ranging from power tools to bread makers. It is also ideal for operating a computer, inkjet printer, and fax machine simultaneously.

PORTAWATTZ 1000 Inverter A compact 1000 Watt inverter designed for installation in trucks, vans, boats and RV's. This inverter can operate tools and equipment and even many smaller microwave ovens.

PORTAWATTZ 1750 Inverter A compact 1750 Watt inverter designed for permanent installation in a boat, vehicle, or remote home. This inverter can operate power tools, kitchen appliances, and a wide range of other electrical and electronic equipment.

PORTAWATTZ 3000 Inverter The perfect inverter for running multiple loads simultaneously, or almost any household appliance.

The PROsine line of True Sine Wave Inverters and Inverter-Chargers High tech, high power, high efficiency, True Sine Wave output inverters and inverter-chargers provide 1000 to 3000 Watts at a fraction of the size and weight of older, low frequency technology.

The TRUECHARGE line of smart Battery Chargers Microprocessor controlled for precise charging under all conditions, and for maximum battery capacity and life, these full 3-stage battery chargers provide 10 to 40 Amps of charging current.

Contact your Xantrex retailer for more information or check out our web site at <http://www.xantrex.com>.



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