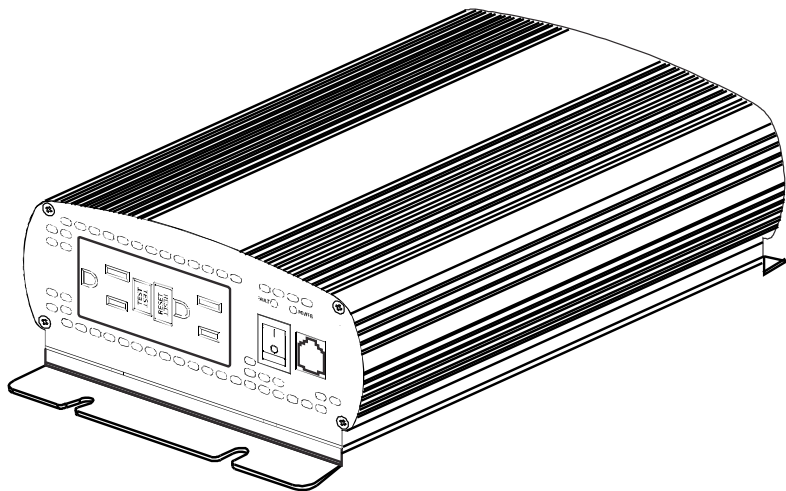


Smart choice for power™

xantrex™



XPower™ Inverter 1500

Owner's Guide

813-1500-UL

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813-1500-UL

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Information About Your System

As soon as you open your product, record the following information and be sure to keep your proof of purchase.

Serial Number _____

Product Number _____

Purchased From _____

Purchase Date _____

To view, download, or print the latest revision, visit the website shown under Contact Information.

About This Guide

Purpose

The purpose of this Owner's Guide is to provide explanations and procedures for installing, operating, troubleshooting, and maintaining the XPower Inverter 1500 .

Scope

The Guide provides safety and operating guidelines as well as information on installing and configuring the inverter. It also provides information about troubleshooting the unit. It does not provide details about particular brands of batteries. You need to consult individual battery manufacturers for this information.

Audience

The Guide is intended for users and operators as well as installers of the XPower Inverter 1500 .

Related Information

You can find more information about Xantrex-branded products and services at www.xantrex.com.

Important Safety Instructions

IMPORTANT: READ AND SAVE THIS OWNER'S GUIDE FOR FUTURE REFERENCE.

This guide contains important safety instructions for the XPower Inverter 1500 that must be followed during installation, operation, and troubleshooting.

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

DANGER indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a potentially hazardous situation, which, if not avoided, can result in death or serious injury.

CAUTION

CAUTION indicates a potentially hazardous situation, which, if not avoided, can result in moderate or minor injury.

NOTICE

NOTICE indicates a potentially hazardous situation, which, if not avoided, can result in equipment damage.

Important: These notes describe things which are important for you to know, however, they are not as serious as a caution or warning.

Safety Information

This chapter contains important safety and installation instructions for the XPower Inverter 1500 . Each time, before using the XPower Inverter 1500 , READ ALL instructions and cautionary markings on or provided with the inverter and all appropriate sections of this guide.

NOTE: The XPower Inverter 1500 contains no user-serviceable parts.

DANGER

HAZARD OF FIRE, ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Do not expose the inverter to rain, snow, spray, or bilge water. This inverter is designed for indoor use only.
- Do not operate the inverter if it has received a sharp blow, been dropped, has cracks or openings in the enclosure including if the fuse cover has been lost, damaged, or will not close, or otherwise damaged in any other way.
- Do not disassemble the inverter. Internal capacitors remain charged after all power is disconnected.
- Disconnect both AC and DC power from the inverter before attempting any maintenance or cleaning or working on any circuits connected to the inverter.
- Do not operate the inverter with damaged or substandard wiring. Make sure that all wiring is in good condition and is not undersized.

Failure to follow these instructions will result in death or serious injury.

NOTE: Turning the inverter to Standby mode using the On/Standby switch on the front panel will not reduce an electrical shock hazard.

DANGER

FIRE AND BURN HAZARD

- Do not cover or obstruct the air intake vent openings and/or install in a zero-clearance compartment.
- Do not use transformerless battery chargers in conjunction with the inverter due to overheating.

Failure to follow these instructions will result in death or serious injury.

DANGER

EXPLOSION HAZARD

- The XPower Inverter 1500 is designed for deep cycle lead-acid batteries. See warning below when connecting to lithium ion batteries.
- Do not work in the vicinity of lead-acid batteries. Batteries generate explosive gases during normal operation. See note #1.
- Do not install and/or operate in compartments containing flammable materials or in locations that require ignition-protected equipment. See notes #2 and #3.

Failure to follow these instructions will result in death or serious injury.

WARNING

LITHIUM ION BATTERY TYPE HAZARD

Make sure to use a lithium ion battery pack that includes a certified Battery Management System (BMS) with built-in safety protocols. Follow the instructions published by the battery manufacturer.

Failure to follow these instructions can result in death or serious injury.

NOTES:

1. Follow these instructions and those published by the battery manufacturer and the manufacturer of any equipment you intend to use in the vicinity of the battery. Review cautionary markings on these products and on the engine.
2. This inverter contains components which tend to produce arcs or sparks.
3. Locations include any space containing gasoline-powered machinery, fuel tanks, as well as joints, fittings, or other connections between components of the fuel system.

Precautions When Working With Batteries

WARNING

BURN FROM HIGH SHORT-CIRCUIT CURRENT, FIRE AND EXPLOSION FROM VENTED GASES HAZARDS

- Always wear proper, non-absorbent gloves, complete eye protection, and clothing protection. Avoid touching your eyes and wiping your forehead while working near batteries. See note #4.
- Remove all personal metal items, like rings, bracelets, and watches when working with batteries. See notes #5 and #6 below.
- Never smoke or allow a spark or flame near the engine or batteries.
- Never charge a frozen battery.

Failure to follow these instructions can result in death or serious injury.

NOTES:

1. Locate the XPower Inverter 1500 unit away from batteries in a well ventilated compartment.
2. Always have someone within range of your voice or close enough to come to your aid when you work near a lead-acid battery.
3. Always have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.
4. If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters your eye, immediately flood it with running cold water for at least twenty minutes and get medical attention immediately.
5. Use extra caution to reduce the risk of dropping a metal tool on the battery. It could spark or short circuit the battery or other electrical parts and could cause an explosion.
6. Batteries can produce a short circuit current high enough to weld a ring or metal bracelet or the like to the battery terminal, causing a severe burn.
7. When removing a battery, always remove the negative terminal from the battery first for systems with grounded negative. If it is grounded positive, remove the positive terminal first. Make sure all loads connected to the battery and all accessories are off so you don't cause an arc.

Precautions When Placing the Inverter

NOTICE

RISK OF DAMAGE TO THE INVERTER

- Never allow battery acid to drip on the inverter when reading gravity, or filling battery.
- Never place the XPower Inverter 1500 unit directly above batteries; gases from a battery will corrode and damage the inverter.
- Do not place a battery on top of the inverter.

Failure to follow these instructions can result in equipment damage.

Regulatory

The XPower Inverter 1500 is certified to UL458 and CSA 107.1 standard. For more information see “Regulatory Approvals” on page 18.

The XPower Inverter 1500 is intended to be used for mobile or commercial applications. It is not intended for use in marine and other applications as it may not comply with the additional safety code requirements needed for those applications. See “Limitations On Use” below.

The XPower Inverter 1500 includes a “Floating Neutral” AC output design. It may be permanently damaged if the AC output Neutral is bonded to Ground which is common in distribution panels. Such damage voids the warranty.

WARNING

LIMITATION ON USE

- Do not use in connection with life support systems or other medical equipment or devices.
- Do not use in ambulances or other life-saving emergency vehicles.

Failure to follow these instructions can result in death or serious injury.

Contents

Important Safety Instructions	iii
Introduction	1
Quality Power	1
Ease of Use	1
Comprehensive Protection	1
Inverter Materials List	2
Inverter Features	3
AC Panel	3
DC Panel	4
Inverter Installation	5
Installation Code	5
Prepare for Installation	5
Typical Power System Design	6
Battery Requirements	6
Charging System	6
Location	7
Cables for DC Input and Ground	7
Fuses (or Circuit Breakers)	7
Install the Inverter	8
Overview of Installation Steps	8
Mount the Inverter	8
Connect the Chassis Ground	8
Connect the DC Cables	9

Inverter Operation	11
Turning the Inverter On and Standby mode	11
Testing the GFCI	12
Operating Several Loads at Once	12
Operating Limits	12
Inverter Loads	13
High Surge Loads	13
Trouble Loads	13
Connecting Appliances to the Inverter	14
Routine Maintenance	14
Maintaining the Inverter	14
Testing the GFCI	14
Troubleshooting	15
Common Problems	15
Buzz in Audio Equipment	15
Television Reception	15
Troubleshooting Reference	15
Specifications	18

Introduction

The XPower Inverter 1500 has been designed to give you quality power, ease of use, and reliability.

Please take a few moments to read this chapter to familiarize yourself with the main performance features and protection features.

Quality Power

The XPower Inverter 1500 is a quality inverter designed for recreational vehicle (RV) and truck applications.

- The inverter provides up to 1500 watts of continuous power. It is designed to handle loads such as 600 watt microwaves, TVs, VCRs, and midsized power tools.
- The inverter's high surge capability lets you handle many hard-to-start loads, including large TVs, refrigerators, and small freezers.
- The unit's low standby battery demand means you don't have to worry about excessive drain on your battery if you leave the inverter on for a few days. When the inverter is on but no power is being supplied to a load, the inverter draws less than 300 mA from the battery.
- The cooling fan in the inverter is thermally activated and comes on when the inverter becomes warm. The fan turns off automatically after the inverter has cooled.

Ease of Use

Superior features and rugged durability have been combined with ease of use:

- The unit is compact, light weight, and easy to install.
- Loads can be powered directly from the GFCI-protected AC outlets.

Comprehensive Protection

The XPower Inverter 1500 is equipped with numerous protection features to guarantee safe and trouble-free operation:

Low battery alarm Alerts you if the battery has become discharged to 11.0 V or lower.

Low battery voltage shutdown Shuts the inverter down automatically if the battery voltage drops below 10.5 volts. This feature protects the battery from being completely discharged.

High battery voltage shutdown Shuts the inverter down automatically if the input voltage rises to 15 volts or more.

Overload shutdown Shuts the inverter down automatically if a short circuit is detected in the circuitry connected to the inverter's output, or if the loads connected to the inverter exceed the inverter's operating limits.

Over temperature shutdown Shuts the inverter down automatically if its internal temperature rises above an unacceptable level.

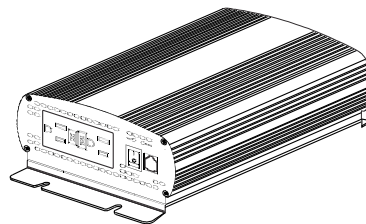
Inverter Materials List

The inverter ships with the following items:

- one XPower Inverter 1500 unit,
- owner's guide,
- integrated GFCI-protected AC outlets,
- two sets of locks and washers for DC cables, and
- one ON/STANDBY remote switch with communications cable.

NOTE: If any of the items are missing, contact Xantrex or any authorized Xantrex dealer for replacement. See "Contact Information" on page i.

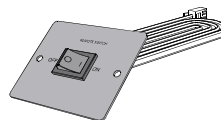
IMPORTANT: Keep the carton and packing material in case you need to return the inverter for servicing.



Inverter
with GFCI-protected outlets



Owner's Guide



ON/STANDBY remote switch with
communications cable



locks and washers

Figure 1 Materials List

Inverter Features

This section describes the different parts of the inverter.

AC Panel

Item	Description
1	GFCI-protected AC outlets are used to power loads up to a combined 1500 watts continuous.
1a	GFCI Reset button is used to recover from a ground trip.
1b	GFCI Test button is used to manually trip the GFCI device and cut power from the AC outlets.
2	ON/STANDBY Switch turns the inverter's control circuit on and in Standby mode. This switch is not a power disconnect switch. Disconnect AC and DC power before working on any circuits connected to the inverter.
3	Remote ON/STANDBY Connector Port is used for connecting the ON/STANDBY remote switch.
4	Fault light (red) indicates that the inverter has shut down due to inverter overload or over-temperature.
5	Power light (green) indicates the inverter is operating.

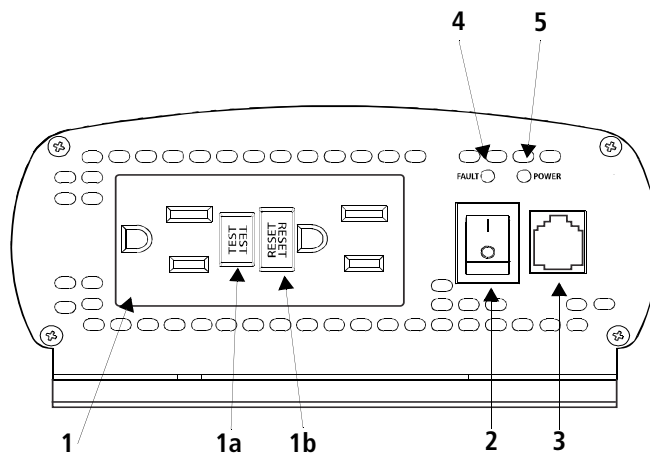
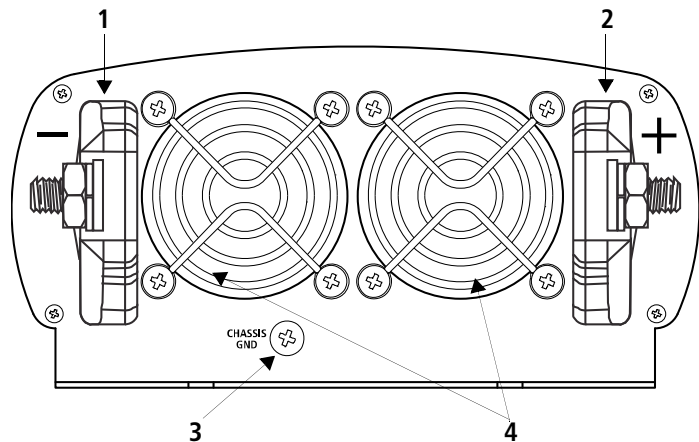


Figure 2 AC Panel

DC Panel



Item	Description
1	Negative DC Input Terminal always connects to the negative terminal of the battery via a negative DC input cable (black battery cable). The negative DC input terminal is colored black.
2	Positive DC Input Terminal always connects to the positive terminal of the battery via a positive DC input cable (red battery cable). The positive DC input terminal is colored red.
3	Chassis Ground Screw connects to vehicle chassis, DC grounding bus or to engine's negative bus.
4	Ventilation Openings must not be obstructed for the proper operation of the inverter. When the inverter is mounted, the ventilation opening on the DC panel must not point up or down.

Figure 3 DC Panel

Inverter Installation

This section describes general installation instructions for the XPower Inverter 1500 .

WARNING

ELECTRICAL SHOCK HAZARD

- All wiring should be done by qualified personnel to ensure compliance with all applicable installation codes and regulations.
- Disconnect all AC and DC power sources.
- Disable and secure all AC and DC disconnect devices and automatic generator starting devices.

Failure to follow these instructions can result in death or serious injury.

Installation Code

The XPower Inverter 1500 is intended for mobile/vehicular applications and conforms to UL458 recreational vehicle electrical standards. The AC receptacles are for temporary (as-needed) connection of cord connected loads only. National electrical codes do not allow the permanent connection of AC distribution wiring to the inverter's GFCI-protected AC output receptacles.

Prepare for Installation

- Design your power system.
- Calculate your battery requirements.
- Choose an effective charging system.
- Choose an appropriate location.
- Purchase cables for DC input and ground.
- Select the correct fuses (or circuit breakers).

Typical Power System Design

Determine how you are going to use your inverter then design a power system that will give you maximum performance. The configuration shown below is a typical power system design applied in installing the inverter in recreational vehicles.

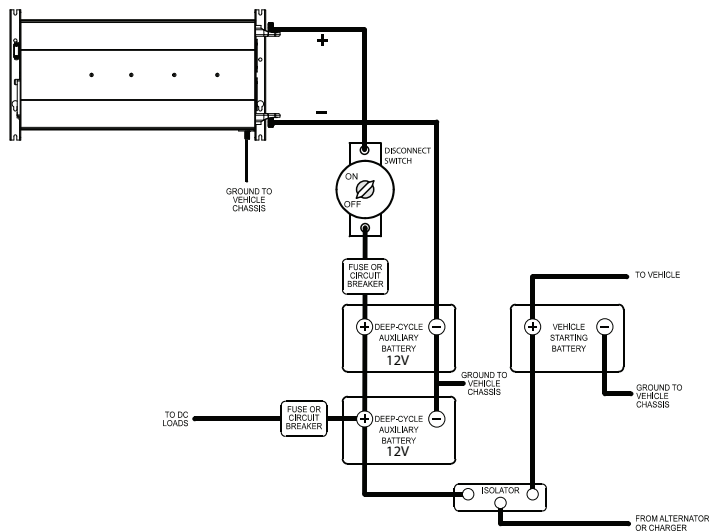


Figure 4 Typical Power System Design

Battery Requirements

Battery type and battery size strongly affect the performance of the XPower Inverter 1500 . Therefore, you need to identify the type of loads your inverter will be powering and how much you will be using them between charges. Once you know how much power you will be using, you can determine how much battery capacity you need. Xantrex recommends that you purchase as much deep discharge battery capacity as possible.

IMPORTANT: Connect the inverter to a 12-volt battery or 12-volt battery bank system. The inverter will not work on 6-volt battery systems and will be damaged when connected to a higher-than-12-volt battery system such as a 24-volt battery system in some trucks or recreational vehicles.

Charging System

The charging system must be appropriate for your particular installation. A well-designed charging system will ensure that power is available when you need it and that your batteries remain in top condition. Inadequate charging will degrade system performance and the wrong type of charger will reduce battery life.

Contact Xantrex or visit www.xantrex.com to find more information about our different battery chargers.

Location

The XPower Inverter 1500 must only be installed in a location that is:

- Dry** The inverter must be installed in a dry location not subject to moisture especially rain, spray, or splashing bilge water.
- Cool** The inverter should not be exposed to metal filings or any other form of contamination.
- Ventilated** The ambient air temperature should be between 0 – 40 °C (32 – 104 °F) for best performance.
- Safe** Ventilation openings on the inverter must not be obstructed. If the inverter is mounted in a tight fitting compartment, the compartment must be ventilated with cut-outs to prevent the inverter from overheating.
- Close to battery** The inverter is not ignition-protected equipment, so it cannot be installed in areas containing gasoline tanks or fittings which require ignition-protected equipment. Xantrex recommends that it is safest not to install any kind of electrical equipment including the inverter in these areas.
- Protected from battery gases** The inverter should be installed as close as possible to the batteries, but not in the same compartment to prevent corrosion. Avoid excessive cable lengths and use the recommended wire sizes. Install with cables sized to achieve less than 3% voltage drop on battery cables under full load. This will maximize the performance of the inverter.

Cables for DC Input and Ground

To operate safely and effectively, use low-resistance wiring between the battery and the inverter because the inverter receives high-current input from a low-voltage battery.

Run a chassis ground cable from the grounding point to the chassis ground screw on the inverter's DC panel.

When purchasing cables for DC input and ground:

- Use a minimum No. 2 AWG for the DC input cable with a
- Maximum cable length of 1.5 meters (5 feet), measured one-way from battery terminal to inverter terminal.
- Use a matching cable size for ground cable. Terminate one end with an appropriately-sized ring connector.
- Use stranded copper wires, avoiding aluminum wires due to their higher-resistance rating.
- Have your DC input cables crimped and terminated with appropriately-sized ring connectors at the store of purchase.

Fuses (or Circuit Breakers)

Install only a DC-rated fuse (or a DC-rated circuit breaker) on the positive cable line as shown on Figure 4. When purchasing fuses (or circuit breakers), follow these recommendations.

- Select a fuse (or circuit breaker) with a maximum rating of 150 Adc.
- Determine the short-circuit current rating of the battery and
- Choose a battery fuse that can withstand the short-circuit current that may be generated by the battery.

Install the Inverter

Review and follow the safety guidelines in “Important Safety Instructions” on page iii before proceeding with installation.

Overview of Installation Steps

- Mount the inverter.
- Connect the chassis ground.
- Connect the DC cables.

Mount the Inverter

1. Make sure the inverter’s ON/STANDBY switch is in Standby mode.
2. Select an appropriate mounting location and orientation. The inverter must be oriented in one of the following ways:
 - Horizontally on a vertical surface. (The ventilation opening on the DC end must not point up or down.)
 - On or under a horizontal surface.
3. Hold the inverter against the mounting surface, mark the positions of the mounting screws, and then remove the inverter.
4. Pilot drill the four mounting holes.
5. Fasten the inverter to the mounting surface using corrosion-resistant fasteners sized #10 or larger.

IMPORTANT: Do not mount the inverter under the engine hood of a vehicle.

Connect the Chassis Ground

1. Make sure the inverter’s ON/STANDBY switch is in Standby mode.
2. Locate the screw terminal labelled CHASSIS GND on the DC panel and remove the chassis ground screw and star washer.
3. Attach the ground cable’s ring connector to the screw terminal on the inverter and secure with the star washer and chassis ground screw.
4. Attach the other end of the ground cable to the vehicle chassis via a grounding point on the vehicle.

DANGER

ELECTRICAL SHOCK HAZARD

Never operate the inverter without properly connecting the chassis ground to the vehicle chassis.

Failure to follow these instructions will result in death or serious injury.

Connect the DC Cables

IMPORTANT: Before proceeding, make sure that your DC input cables are properly terminated with ring connectors appropriate for the size of the cable you are using. Have your cables terminated at the store of purchase.

1. Make sure the inverter's ON/STANDBY switch is in Standby mode.
2. Working on the inverter's positive DC input terminal first, attach one end of the positive DC input cable to the positive DC input terminal on the inverter.

IMPORTANT: Do not over tighten the nut on the inverter terminal. Damage to the inverter terminal may result. However, loose connections can cause excessive voltage drop and may cause overheated wires and melted insulation. A torque of 6.3–6.6 foot pounds (8.5–9.0 Nm) is sufficient. Use the above guidelines when tightening the nuts on both the inverter and battery terminals.

3. Attach a fuse holder (with an installed fuse) to the other end of the positive battery cable.
Alternatively, if you are using a circuit breaker, install the circuit breaker on the positive terminal of the battery.
4. Attach the fused end on the positive DC input cable to the positive terminal of the battery.
Alternatively, if you are using a circuit breaker, attach the other end of the positive DC input cable to the circuit breaker on the battery.

NOTICE

DAMAGE FROM A REVERSE POLARITY CONNECTION

DC power connections to the inverter must be positive to positive and negative to negative.

A reverse polarity connection (connecting positive to negative) will blow an internal fuse inside the inverter and can cause permanent damage to the inverter. This internal fuse is not user-replaceable.

Damage caused by a reverse polarity connection is not covered by the warranty.

Failure to follow these instructions can damage the unit and/or damage other equipment.

DANGER

EXPLOSION AND/OR FIRE HAZARD

Thoroughly ventilate the battery compartment before proceeding to connect the negative DC input cable to the battery. It is always possible that flammable fumes are present, so exercise extreme caution.

Failure to follow these instructions will result in death or serious injury.

5. Working on the inverter's negative DC input terminal, attach one end of the negative DC input cable to the negative DC input terminal on the inverter.
6. Attach the other end of the negative DC input cable to the negative terminal of the battery.
If you have installed a battery selector switch, set it to Off when making the connection to prevent sparking.

Inverter Installation

NOTE: This the last cable connection. A spark is normal when you make this connection to the battery without a battery selector switch. If you have installed a battery selector switch, use it to select one of the batteries or battery banks (house bank preferred over start bank).

7. Move the inverter's ON/STANDBY switch to the On position. The Power light should illuminate, indicating that the inverter is ready for operation.

Inverter Operation

This section explains how to operate the inverter efficiently and effectively:

- Gives procedures for operating the inverter from the front panel
- Discusses operating limits and inverter loads
- Discusses battery charging frequency
- Provides information about routine maintenance

WARNING

ELECTRICAL SHOCK HAZARD

The inverter's ON/STANDBY switch does not disconnect DC battery power from the inverter. You must disconnect AC and DC power before working on any circuits connected to the inverter.

Failure to follow these instructions can result in death or serious injury.

Turning the Inverter ON and STANDBY MODE

The ON/STANDBY switch on the inverter's front panel is the main switch that turns the control circuit in the inverter on and in Standby mode.

To turn the inverter on and in Standby mode from its front panel:

- Move the ON/STANDBY switch to the On position to turn the inverter on.
- Move the ON/STANDBY switch to the Standby position to turn the inverter to Standby mode.
When in Standby mode, the inverter draws a very low current from the battery. See important note below.

To turn the inverter on and in Standby mode from the remote switch:

- Make sure the main ON/STANDBY switch on the front panel is turned on.
- Move the remote ON/STANDBY switch to the On position to turn the inverter on.
- Move the remote ON/STANDBY switch to the Standby position to turn the inverter to Standby mode.
When in Standby mode, the inverter draws a very low current from the battery.

IMPORTANT: The inverter draws less than 300 mA from the battery with the main ON/STANDBY switch turned on and no load connected. If the main switch is left on, even with no loads the inverter will eventually discharge the battery.

To prevent unnecessary battery discharge, turn the inverter to Standby mode when you are not using it

Testing the GFCI

Perform the following GFCI Test:

1. Turn the inverter on.
 2. Plug a simple appliance, such as a lamp, in the GFCI outlet. Turn the lamp on.
 3. Press the TEST button. Observe a clicking sound. The lamp turns off.
 4. Press the RESET button all the way to the bottom until the button locks into position. The lamp turns back on.
-

IMPORTANT: Perform this GFCI test once a month to ensure continued functionality of the GFCI.

Operating Several Loads at Once

If you are going to operate several loads from the inverter, turn the loads on one at a time after you have turned the inverter on.

Turning loads on separately helps to ensure that the inverter does not have to deliver the starting current for all the loads at once, and will help prevent an overload shutdown.

Operating Limits

Power Output The XPower Inverter 1500 can deliver up to 1500 watts continuous. The wattage rating applies to resistive loads such as incandescent lights.

Input Voltage The allowable XPower Inverter 1500 input voltage ranges are shown in the following table:

Operating Condition	Voltage Range	Comment
Normal	10–15 volts	n/a
Optimum Performance	12–13 volts	n/a
Low voltage alarm	11 volts or less	The audible low battery alarm sounds.
Low voltage shutdown	less than 10.5 volts	The inverter shuts down to protect the battery from being over-discharged.
High voltage shutdown	15 volts or more	The inverter shuts down to protect itself from excessive input voltage. NOTE: Although the inverter incorporates over-voltage protection, it can still be damaged if input voltage exceeds 16 volts.

Inverter Loads

The XPower Inverter 1500 will operate most AC loads within its power rating. However, some appliances and equipment may be difficult to operate, and other appliances may actually be damaged if you try to operate them with the inverter. Please read “High Surge Loads” and “Trouble Loads” carefully.

High Surge Loads

Some induction motors used in freezers, pumps, and other motor-operated equipment require high surge currents to start. The inverter may not be able to start some of these motors even though their rated current draw is within the inverter’s limits. The inverter will normally start single-phase induction motors rated at 1/2 horsepower or less.

Trouble Loads

NOTICE

EQUIPMENT DAMAGE

Some appliances, including the types listed below, may be damaged if they are connected to the inverter because of the inverter’s modified sine wave output:

- Electronics that modulate RF (radio frequency) signals on the AC line will not work and may be damaged.
- Speed controllers found in some fans, power tools, kitchen appliances, and other loads may be damaged.
- Some chargers for small rechargeable batteries can be damaged. See “Precautions For Using Rechargeable Appliances” on page viii for details.
- Metal halide arc (HMI) lights can be damaged.
- If you are unsure about powering any device with the inverter, contact the manufacturer of the device.

Failure to follow these instructions can damage the unit and/or damage other equipment.

Connecting Appliances to the Inverter

Since regular amounts of AC current flows between the inverter and your appliances, commonly available extension cords can be used to connect the inverter to your appliances. If your appliance will be connected at a considerable distance from the inverter, it is much more practical and less expensive to lengthen the AC wiring than it is to lengthen the DC wiring.

Routine Maintenance

Maintaining the Inverter

Minimal maintenance is required to keep your inverter operating properly. Periodically you should:

- clean the exterior of the unit with a damp cloth to prevent the accumulation of dust and dirt,
- ensure that the DC cables are secure and fasteners are tight, and
- make sure the ventilation openings on the DC panel and bottom of the inverter are not clogged.

Testing the GFCI

Perform a monthly test of the GFCI. See “Testing the GFCI” on page 12 for instructions.

Troubleshooting

This section describes the most common problems you may encounter with the operation of the inverter along with resolutions.

If you encounter problems other than what is described in this section, contact customer support at the number listed on “Contact Information” on page i.

Common Problems

Buzz in Audio Equipment

Some inexpensive stereo systems may emit a buzzing noise from their loudspeakers when operated from the inverter. This occurs because the power supply in the audio system does not adequately filter the modified sine wave produced by the inverter. The only solution is to use a sound system that has a higher quality power supply.

Television Reception

When the inverter is operating, it can interfere with television reception on some channels. If interference occurs, try the following:

1. Make sure that the chassis ground screw on the rear of the inverter is solidly connected to the ground system of your vehicle or home.
2. Make sure that the television antenna provides an adequate (“snow-free”) signal, and that you are using good quality cable between the antenna and the television.

3. Keep the cables between the battery and the inverter as short as possible, and twist them together with two to three twists per foot. (This minimizes radiated interference from the cables.)
4. Move the television as far away from the inverter as possible.
5. Do not operate high power loads with the inverter while the television is on.

Troubleshooting Reference

WARNING

ELECTRICAL SHOCK HAZARD

Do not disassemble the XPower Inverter 1500 . It does not contain any user-serviceable parts.

Failure to follow these instructions can result in death or serious injury.

NOTE: See table on the following page.

Table 1 Troubleshooting Reference

Problem	Possible Cause	Solution
Low output voltage (96 VAC–104 VAC)	<p>You are using a voltmeter that cannot accurately read the RMS voltage of a modified sine wave.</p> <p>Low input voltage and the load is close to maximum allowable power.</p>	<p>Use a true RMS reading voltmeter such as the Fluke 87.</p> <p>Check the connections and cable to see if the battery is fully charged. Recharge the battery if it is low.</p> <p>Reduce the load.</p>
No output voltage. Both the Power Light and Fault Light are off.	<p>The inverter is in Standby mode.</p> <p>No power to the inverter.</p> <p>The inverter could have been connected with reverse DC input polarity.</p>	<p>Turn the inverter on.</p> <p>Check the wiring to the inverter and to the battery selector switch (if installed).</p> <p>The inverter has probably been damaged. Return the unit. Damage caused by reverse polarity is not covered by the warranty.</p>
No output voltage. Power Light is on.	GFCI is tripped.	Reset GFCI. See “Testing the GFCI” on page 14.

Table 1 Troubleshooting Reference

Problem	Possible Cause	Solution
<p>No output voltage. Fault Light is on.</p>	<p>Low input voltage</p>	<p>Recharge the battery; check the connections and cable.</p>
	<p>High input voltage</p>	<p>Make sure the inverter is connected to a 12 V battery. Check the voltage regulation of the charging system.</p>
	<p>Thermal shutdown</p>	<p>Allow the unit to cool off. Reduce the load if continuous operation is required. Improve ventilation. Make sure the inverter's ventilation openings are not obstructed. Reduce the ambient temperature.</p>
	<p>Unit overload</p>	<p>Reduce the load. Make sure the load does not exceed the inverter's output rating.</p>
	<p>Output is short circuited.</p>	<p>Remove the short circuit.</p>
<p>Low battery alarm stays on.</p>	<p>Poor DC wiring; poor battery condition</p>	<p>Use proper cable size and lengths and make solid connections. Charge the battery. Install a new battery.</p>

Specifications

NOTE: Specifications are subject to change without prior notice.

Electrical Specifications

Output power at 77 °F (25 °C) ambient temperature and 12 VDC input: Maximum continuous output power Maximum surge power	1500 W 3000 W
Operating temperature range	0–40 °C (32–104 °F)
Output voltage	115 Vac RMS \pm 5%
Output waveform	Modified sine wave
Output frequency	60 Hz \pm 1 Hz
Input voltage	10.5–15.5 Vdc
Low battery alarm	11.0 V
Low battery cutout	10.5 V
Optimum efficiency	90%
No load current draw	<0.3 A

Regulatory Approvals

Safety	ITS certified to CSA107.1 and UL458.
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Physical Specifications

Base Unit Dimensions and Weight:	
L × W × H	382×151×75 mm (15×5.9×3 in.)
Net Weight	2.7 kg (5.95 lbs)

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