

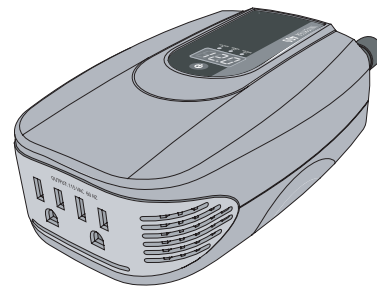
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Printed in China

# **DURACELL<sup>®</sup>**

## **DIGITAL INVERTER 400**



## **Owner's Guide**

# **DURACELL®**

## ***DIGITAL INVERTER 400***

### **Owner's Guide**

## About Xantrex

Xantrex Technology Inc. is a world-leading supplier of advanced power electronics and controls with products ranging from small mobile units to utility-scale systems for wind, solar, batteries, fuel cells, microturbines, and backup power applications in both grid-connected and stand-alone systems. Xantrex products include inverters, battery chargers, programmable power supplies, and variable speed drives that convert, supply, control, clean, and distribute electrical power.

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## Contact Information

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# 1 Introduction

## About the Inverter

Connected to the 12 V outlet in your car, truck, boat, RV, or directly from a dedicated 12 V battery, the Duracell® Digital Inverter 400 efficiently and reliably powers a wide variety of household AC products, such as portable stereos, laptop computers, TVs, VCRs, and other similar products.

The Inverter uses reliable solid state power electronics for years of safe, trouble-free operation and includes the following automatic features to ensure safe and trouble-free operation:

- Low battery alarm
- Low voltage shutdown
- High voltage shutdown
- Overload shutdown
- Overheating shutdown
- Short-circuit protection

# About this Guide

To get the best performance from your Inverter, we recommend that you read this guide before connecting and using the inverter, and then save it for future reference.

This guide contains:

- Important safety information (page 3)
- Instructions for connecting the Inverter (page 11)
- Operating guidelines (page 16)
- Troubleshooting guidelines (page 22)
- Specifications (page 31)

## 2 Important Safety Information

Misusing or incorrectly connecting the Duracell® Digital Inverter 400 may damage the equipment or create hazardous conditions for users. Read the following safety instructions and pay special attention to all **Caution** and **Warning** statements in the guide.

**Warnings** identify conditions that may result in personal injury or loss of life.

**Cautions** identify conditions or practices that may damage the unit or other equipment.

### Warnings and Cautions

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#### **WARNING: Shock hazard**

Keep children away from the Inverter. The inverter generates the same lethal AC power as a normal household wall outlet. Treat the outlet with respect!

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#### **WARNING: Heated surface**

The Inverter housing may become uncomfortably warm, reaching 60°C (140°F) under extended high power operation. Ensure that at least 2" (5 cm) of air surround the inverter. During operation, keep it away from materials that may be affected by high temperatures.

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## **WARNING: Explosion hazard**

Do not use the Inverter in the presence of flammable fumes or gases, such as in the bilge of a gasoline-powered boat, or near propane tanks. Do not use the Inverter in an enclosure containing automotive-type, lead-acid batteries. These batteries, unlike sealed batteries, vent explosive hydrogen gas, which can be ignited by sparks from electrical connections.

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## **WARNING: Crash hazard**

Vehicle drivers should not configure or troubleshoot the Inverter while they are driving the vehicle.

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## **CAUTION: Output non-sinusoidal**

Some chargers for small nickel-cadmium batteries can be damaged if connected to the Inverter. Do not use the Inverter with the following equipment:

- Small battery-operated appliances like rechargeable flashlights, some rechargeable shavers, and night lights that are plugged directly into an AC receptacle to recharge.
  - Battery chargers used in power tools. These chargers display a warning label stating that dangerous voltages are present at the charger battery terminals.
-



## CAUTION

Do not connect live AC power to the Inverter's AC outlets. The inverter will be damaged even if it is turned off.

Do not connect any AC load that has its neutral conductor connected to ground to the Inverter.

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## Additional safety guidelines

- Do not insert foreign objects in the Inverter outlets or ventilation openings.
- Never connect the inverter to power utility AC distribution wiring.
- Do not use the Inverter in temperatures over 104°F (40°C).
- Do not expose the Inverter to water, rain, snow, or spray.

Failure to follow these safety guidelines may cause personal injury and/or damage to the Inverter. It may also void your product warranty.

## 3 Inverter Features

This section describes the main features of the Duracell® Digital Inverter 400.



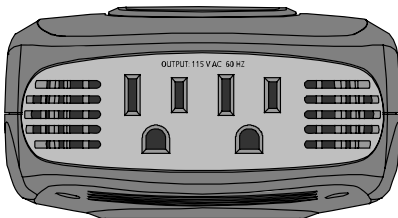
### CAUTION

To prevent overheating, ensure that all the ventilation openings on the unit are kept clear.

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## AC (front) panel

Figure 1 shows the AC panel of the Inverter.



**Figure 1** AC Panel

Two AC receptacles are located on one end of the Inverter. You can plug in 120 V appliances with a combined total continuous power consumption of up to 400 W.

## DC (back) panel

Figure 2 shows the DC panel of the Inverter. Use Table 1 to identify the function of each item.

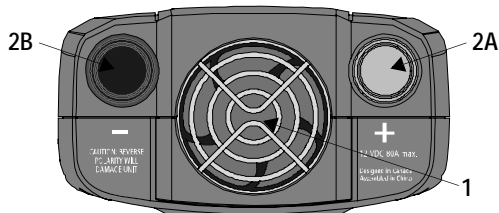


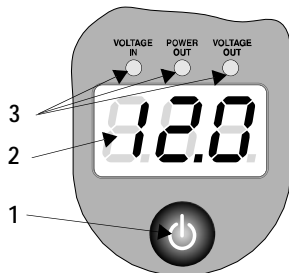
Figure 2 DC Panel

Table 1 DC Panel Functions

Item	Function
1	<b>Fan and Ventilation Openings</b> The cooling fan on the unit is designed to operate only when output power is greater than approximately 80 W. When the inverter is turned on, the fan may operate momentarily. The ventilation openings should not be covered at any time while the inverter is operating.
2	<b>A) Positive and B) Negative Cabling Terminals</b> Connect the ring terminals on the power cables to these terminals. To ensure correct polarity, red must be connected to red and black must be connected to black.

## Digital display (top) panel

Figure 3 shows the digital display panel. Use Table 2 to identify the function of items.



**Figure 3** Digital Display Panel

**Table 2** Digital Display Panel Functions

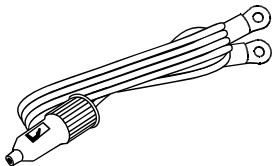
Item	Function
1	Press and hold to turn the unit on and off. When the unit is on, press to toggle the display function to show input voltage, output power or output voltage.
2	<b>Normal Operation</b> Digital display shows input voltage, output power or output voltage. <b>Error Mode</b> Digital display shows error codes and alarm sounds when unit has shut down due to under-voltage, over-voltage, over-load, overheating or high-surge.
3	LEDs indicate the status of the digital display.
	<b>Audible Alarm</b> An audible alarm warns you if an under-voltage shutdown is about to occur.

# Types of connections

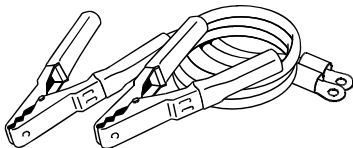
The Inverter comes with accessories for making two types of connections:

- For AC loads of 150 W or less: Lighter plug cable to connect the Inverter to a 12 V outlet in your vehicle. See Figure 4.
- For AC loads up to 400 W: Cable clamps to connect the Inverter directly to a dedicated 12 V battery. See Figure 5.

## Accessories



**Figure 4** Lighter Plug Cable



**Figure 5** Cable for Direct Connection to 12 V Battery

## 4 Connecting the Inverter

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### CAUTION

The Inverter must only be connected to a battery that has a nominal output of 12 V. It will not operate if connected to a 6 V battery and may be damaged if connected to a battery with 16 V or more.

---

## Choosing a location

For best performance, place the inverter on a flat surface in a location that is:

- |  |  |
|--|--|
| <b>Dry</b>                             | Do not expose the inverter to water, rain, snow or spray.  |
| <b>Cool</b>                            | Operate the inverter in ambient temperatures between 0°C and 40°C (32°F and 100°F). Keep it away from heating vents and direct sunlight. |
| <b>Well-ventilated</b>                 | For proper cooling, allow at least 2" (5 cm) of clearance around the inverter.   |
| <b>Clean and free of dust and dirt</b> | Choose a location that is free of any debris that could get into the inverter.   |
| <b>Safe</b>                            | Do not install the inverter in a compartment with batteries or flammable liquids, such as gasoline, or explosive vapors.                 |



# Connecting for loads under 150 W

For loads under 150 W, you can use the lighter plug cable.

Follow these steps to connect the unit with the lighter plug cable:

1. Place the inverter on a flat surface such as the floor of your vehicle.
2. Make sure that the unit is off by verifying the digital display is off.
3. Connect the ring terminals on the lighter plug cable to the cabling terminals on the unit. (The cabling terminals are shown in Figure 2.) Fasten the positive (red) ring terminal to the positive cabling terminal, and then fasten the negative (black) ring terminal to the negative cabling terminal.



## **CAUTION: Reverse polarity**

Power connections of the 12 V DC battery to the Inverter must be positive to positive and negative to negative.

A reverse polarity connection (positive to negative) will blow a fuse in the inverter and may permanently damage the unit. Damage caused by a reverse polarity connection is not covered by your warranty.



## **CAUTION**

Make sure you connect red to red and black to black, and make sure you screw the nuts on tightly.

- 
4. Tighten the nut on each cabling terminal until it is snug. Do not over-tighten.

5. Place the inverter's lighter plug in the vehicle's lighter socket or a 12 V outlet.
6. Turn on the unit by holding the switch located on top of the unit until **8888** is shown on the display.  
The digital display will show the battery voltage, indicating that the Inverter is operating normally and AC power is available at the outlet.
7. Plug in the AC product you want to operate.

---

**Important:** An AC product that is rated more than 150 watts may blow the fuse of your vehicle's lighter socket or 12 V outlet. If that happens, replace the fuse with a similar one as recommended in your vehicle's manual. Follow the next section, "Connecting for loads over 150 W", if your AC product is rated more than 150 watts.

---

8. When not in use, always turn the inverter off by holding the switch until the digital display turns off.

## Connecting for loads over 150 W

To operate loads greater than 150 W continuously, you must connect the unit directly to a 12 V battery using the DC cable clamps. When the inverter is connected this way, you can operate loads of up to 400 W.



## **WARNING: Shock hazard**

Batteries contain corrosive materials and present an electrical shock hazard. To prevent irritation and burns, wear protective eyewear and clothing when you install the inverter or work with the batteries. Take special care to ensure that metal tools and personal metal objects like rings and bracelets do not contact the battery terminals.

---

Follow these steps to make a direct battery connection:

1. Place the inverter on a flat surface.
  2. Make sure that the unit is off by verifying the digital display is off.
- 



## **CAUTION: Reverse polarity**

Power connections of the 12 V DC battery to the Inverter must be positive to positive and negative to negative.

A reverse polarity connection (positive to negative) will blow a fuse in the inverter and may permanently damage the unit. Damage caused by a reverse polarity connection is not covered by your warranty.

---

3. Connect the ring terminals on the DC cable clamps to the cabling terminals on the unit. (The cabling terminals are shown in Figure 2.) Fasten the positive (red) ring terminal to the positive cabling terminal, and then fasten the negative (black) ring terminal to the negative cabling terminal.



## CAUTION

Make sure you connect red to red and black to black, and make sure you screw the nuts on tightly.

---

4. Tighten the nut on each cabling terminal until it is snug. Do not over-tighten.
5. Fasten the positive (red) clamp to the positive battery post, and then fasten the negative (black) clamp to the negative battery post.
6. Turn on the unit by holding the switch located on top of the unit until **8888** is shown on the display.  
The digital display will show the battery voltage, indicating that the Inverter is operating normally and AC power is available at the outlet.
7. Plug in the AC appliance you want to operate.
8. When not in use, always turn the inverter off by holding the switch until the digital display turns off.

# 5 Operating the Inverter

This section explains how to operate the Inverter most efficiently.

## Operating conditions and guidelines

This section describes normal operation as well as conditions that trigger an alarm or automatically shut down the Inverter.

**Normal Operation** When you connect the inverter to the vehicle's lighter socket or directly to a 12 V battery and turn on the unit, the digital display will show input voltage, the input voltage LED illuminates and AC power is available at the outlets. You can now plug in your AC products and turn them on one at a time.

**Low Battery Alarm and Shutdown** As the battery discharges, its voltage decreases. When the Inverter senses that the voltage at its DC input has dropped to 11.0 V, it sounds an alarm, giving you time to shut down sensitive loads such as computers. If you ignore the alarm, and the DC input voltage drops below 10.5 V, the inverter shuts down all loads to save the battery from further discharge. The under-voltage error code 'E01' will show on the digital display.

**High-input Voltage Shutdown** If a defective battery charging system causes the battery voltage to rise to dangerously high levels, the Inverter shuts down automatically. The over-voltage error code 'E02' will show on the digital display.

**Overload Shutdown** If you connect an AC load that is rated too high (see Table 3) or a load that draws excessive surge power, the Inverter shuts down. The overload error code ‘E03’ will show on the digital display.

---

**Important:** If the inverter is connected to a vehicle’s lighter socket or 12 V outlet when an overload occurs, the lighter socket fuse can blow. If that happens, replace the fuse with a similar one as recommended in your vehicle’s manual and follow the section, “Connecting for loads over 150 W”, if your AC product is rated more than 150 watts. The overload error code ‘E03’ may show on the digital display.

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**Overheating Shutdown** The Inverter shuts down automatically if it exceeds its safe operating temperature. The overheating error code ‘E04’ will show on the digital display.

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## Shutting the inverter off

- If you are going to disconnect the battery, turn the inverter off first.
- Turn the inverter off by holding the switch until the display turns off.

## Operating normal loads

The Inverter is capable of continuously powering most 120 V AC products with the following power rating maximums:

**Table 3** Power and Surge Rating

Maximum Output Power Rating	Maximum Surge Rating
400 W	640 W

The inverter’s AC (“modified-sine wave”) output waveform is designed to function similarly to the sine wave shape of utility power. Most AC products correctly rated for the power rating maximums listed in Table 3 or less will operate normally with the Inverter.

**Operating loads with high surge requirements**

The power, or wattage rating, of AC loads is the average amount of power they use. Some appliances consume more power than their power rating when they are first turned on. TVs, monitors, and electric motors are some products that have high surge requirements at start up. The Inverter can supply momentary surge power that is higher than its maximum power rating. Some products rated less than power rating maximum for your inverter may exceed its surge capability and trigger an overload shutdown. If this problem occurs when attempting to operate several AC products at the same time, try first turning on the inverter with all AC products turned off, then one by one turn each on, starting with the high-surge product first.

**Table 4** Wattage of Common AC Products

Product <sup>a</sup>	Watts <sup>b</sup>	Will operate with Inverter?
Cell phone/camcorder charger	10	Yes
Video game console	20	Yes
Portable work light	25	Yes
Stereo system	50	Yes
Laptop computer	75	Yes
13" TV	100	Yes
27" TV	200	Yes
20" TV/VCR combo	300	Yes
Small appliances	400+	No
Power tools	400+	No

a. Power requirements for product examples are estimates only. To calculate the wattage of a product, use the following equation: amperage x 115.

b. If you want to power two or more products simultaneously, add the power requirements of both products to determine the total wattage.



# 6 Maintaining Battery Condition

The battery operating time of the Inverter depends on the charge level of the battery, battery capacity, and the amount of power drawn by the AC loads you are operating. With a typical vehicle battery, you can expect the following:

**Table 5** Battery Operating Times

Load	Sample Appliance	Operating Time
50 W	CD player	6–8 hours
100 W	small TV	3–4 hours
200 W	TV/VCR	1–2 hours

Here are some guidelines that will help to preserve your battery:

- Vehicle batteries are not designed for repeated deep-discharge cycles, and constantly recharging a vehicle's battery will shorten its life. Therefore, when you are using a vehicle battery as a power source, start the vehicle every hour or two to recharge the battery.
- The Inverter will operate while the engine is running, but the voltage drop that occurs when the engine starts may trigger a low-voltage shutdown.
- Vehicle batteries are designed to provide brief periods of very high current needed for engine starting. They are not intended for constant deep discharge. Regularly operating the Inverter from a vehicle battery until the low-voltage alarm sounds will shorten the life of the battery. Consider connecting the Inverter to a separate deep discharge-type battery if you will be frequently running electrical products for extended periods of time.
- If you are not going to use the Inverter for a few days, turn off the unit. The inverter draws 0.3 A or less when the unit is on and no load is connected, but it will eventually discharge the battery.

# 7 Troubleshooting

This section will help you identify the source of most problems that can occur with the Duracell® Digital Inverter 400.

If you have a problem with the inverter, please review this section before contacting your dealer. If you are unable to solve a problem and need to contact service, please prepare for the call by writing down the following details:

- Inverter's serial number
- How long the inverter has been in use
- Where it is installed
- Appliances operating when the problem occurred
- A brief description of the problem

# Common problems

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## **WARNING: Electrical shock and burn hazard**

Do not disassemble the Inverter. It does not contain any user-serviceable parts. Attempting to service the inverter yourself could result in an electrical shock or burn.

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## **Buzz in audio systems**

Some inexpensive stereo systems have inadequate internal power supply filtering and buzz slightly when powered by the Inverter. The best solution is to use an audio system with a high-quality filter.

## **Television interference**

The Inverter is shielded to minimize interference with TV signals. If TV signals are weak, you may see interference in the form of lines scrolling across the screen. Try one of these suggestions to minimize or eliminate the problem:

- Adjust the orientation of the Inverter, television, antenna, and cables.
- Maximize TV signal strength by using a better antenna, and use shielded antenna cable where possible.
- Try a different TV. Different models vary considerably in their susceptibility to interference.

# Troubleshooting reference

This section describes problems, their symptoms, possible causes, and solutions.

**Problem: The AC load will not operate. Digital display is off.**

Possible Cause	Solution
Battery is defective.	Check battery and replace if required.
The inverter has been connected with reverse DC input polarity.	Check connection to battery. The inverter has likely been damaged and needs to be repaired. Have the unit repaired (not covered under warranty).
Loose cable connections.	Check cables and connections. Tighten as required.
Vehicle's lighter socket or 12 V outlet fuse is blown.	Replace the fuse with a similar one as recommended in your vehicle's manual and follow the section, "Connecting for loads over 150 W", if your AC product is rated more than 150 watts.

**Problem: The inverter will run some small loads, but not larger ones.**

Possible Cause	Solution
Voltage drop across DC cables.	Shorten cables or use heavier cables.

### **Problem: Measured inverter output is too low.**

<b>Possible Cause</b>	<b>Solution</b>
A standard “average-reading” AC voltmeter has been used to measure output voltage, resulting in an apparent reading 5–15 V too low.	For accurate measurement, the Inverter modified sine wave output requires a “true RMS” voltmeter for accurate measurements.
The battery voltage is too low.	Recharge the battery.

### **Problem: Battery run time is less than expected.**

<b>Possible Cause</b>	<b>Solution</b>
The AC product power consumption is higher than rated.	Use a larger battery to make up for the increased power requirement.
The battery is old or defective.	Replace the battery.
The battery is not being charged properly.	Some chargers are not able to fully recharge a battery. Make sure that you use a powerful charger.
Power dissipation in DC cables.	Use shorter/heavier DC cables.

## Problem: Inverter will not deliver 400 watts.

Possible Cause	Solution
The inverter is connected to a lighter socket which is fuse limited to 180 watts with the lighter plug cable .	Replace the lighter socket fuse with a similar one as recommended in your vehicle's manual and follow the section, "Connecting for loads over 150 W", for AC products rated more than 150 watts.
The battery does not produce enough volts to supply the inverter with sufficient power.	Turn vehicle on and then connect the inverter directly to the battery using the DC cable with clips.

**Problem: The AC load will not operate, error code shows on digital display and alarm is sounding.**

Error	Possible Cause	Solution
<i>E01</i>	Low voltage shutdown because battery is discharged.	Recharge battery. Shorten cables or use heavier cables.
<i>E02</i>	Over-voltage shutdown because of high input voltage.	Verify the charging system is properly regulated and the battery is 12 V nominal.
<i>E03</i>	The AC product(s) connected are rated at more than the inverter's continuous power rating; overload shutdown has occurred.	Use a product with a power rating within the inverter's continuous power rating (see Table 3).
<i>E04</i>	The inverter has overheated due to poor ventilation. Overheating shutdown has occurred.	Turn inverter off and allow to cool for 15 minutes. Clear blocked fan or remove objects covering unit. Move the inverter to a cooler place. Reduce load if continuous operation is required.
<i>E05</i>	The AC products connected have a surge power that exceeds the Inverter's surge capability or the AC products connected are short-circuited and shutdown has occurred.	The products exceed the inverter's surge capability. Use a product with a starting surge power within the Inverter's capability.  Correct the short-circuit condition.



# Recycling

## **If it's rechargeable, it's recyclable!**

Xantrex recognizes its responsibility as a global citizen and is continually striving to reduce the environmental impact of the work we do and the products we create. We have taken a step forward to limit our impact on the natural environment by initiating a battery recycling program. Xantrex is a licensee of the Rechargeable Battery Recycling Corporation (“RBRC”), a non-profit public service organization dedicated to recycling used rechargeable batteries. Through RBRC’s national program and the availability of recycling depots for Pb batteries, Xantrex customers can recycle rechargeable batteries in a convenient and environmentally friendly way.

If one of your Xantrex battery-integrated products has reached the end of its useful life, we urge you to dispose of the product correctly and safely. Xantrex recommends taking the following steps to recycle your product depending on battery chemistry and size.

## **Ni-MH, Li-ion or small Pb Batteries (up to 2 lbs. or 1 kg)**

If you are recycling a product that contains a Ni-MH, Li-ion or small Pb battery (up to 2 lbs. or 1 kg) then you can simply drop it off at the battery drop-box located at any one of the following major retailers.

**In Canada:** Battery Experts, Battery Plus, Bell World, FIDO, Future Shop, The Home Depot, Home Hardware, London Drugs, Makita Factory Service Centers, Personal Edge, Revy, Sears, The Sony Store, The Source by Circuit City, TELUS Mobility and Zellers

**In the USA:** Alltel, Batteries Plus, Black & Decker, Cingular Wireless, Circuit City, The Home Depot, Lowe's, Milwaukee Electric Tool, Office Depot, Orchard Supply, Porter Cable Service Centers, RadioShack, Remington Product Company, Sears, Staples, Target, US Cellular and Verizon Wireless

If you are not sure of the drop-box nearest you, simply call 1-877-2-RECYCLE to find the retail collection nearest you.

## **Pb Batteries (larger than 2 lbs. or 1 kg)**

If you need to recycle a Pb battery that is larger than 2lbs. (1kg) then you may take one of the following three steps to recycle your battery:

- dispose of your battery product 'as is' at a battery disposal location or waste disposal location nearest you.
- send your battery product 'as is' back to Xantrex for proper recycling of the battery (see address below).

Xantrex Technology Inc.  
Attn: Battery Recovery  
5917 195th Street NE  
Arlington, WA  
USA, 98223

- dispose of the battery inside your product, by first removing it (simple disassembly may be required) and then taking it to a Sears Automotive Facility in your area where it can be dropped off for proper recycling.  
\* If you are not sure of a Sears Automotive Facility nearest you simply go to [www.Sears.com](http://www.Sears.com) and select store locator.

# 8 Specifications

Specifications are subject to change without notice.

**Table 6** Specifications

AC output voltage (nominal)	120 V AC
DC input voltage range	10.5–15.5 V DC
Maximum AC output power	400 W
Maximum AC output surge power	640 W
AC output frequency	60 Hz
AC output waveform	Modified Sine Wave
No load current draw (at 12 V input)	0.3 A
Efficiency (maximum)	90%
Ambient operating temperature range	32–104°F 0–40°C
Low voltage alarm	11.0 V
Low voltage shutdown	10.5 V
High voltage shutdown	15.5 V
Dimensions (L × W × H)	6.1 × 4.1 × 2.2" (15.6 × 10.5 × 5.6 cm)
Weight	1 lb (0.44 kg)

# 9 Warranty and Return

## Warranty

**What does this warranty cover?** This Limited Warranty is provided by Xantrex Technology, Inc. ("Xantrex") and covers defects in workmanship and materials in your Duracell® Digital Inverter 400. This warranty period lasts for 6 months from the date of purchase at the point of sale to you, the original end user customer. You require proof of purchase to make warranty claims.

**What will Xantrex do?** Xantrex will, at its option, repair or replace the defective product free of charge, provided that you notify Xantrex of the product defect within the Warranty Period, and provided that Xantrex through inspection establishes the existence of such a defect and that it is covered by this Limited Warranty.

Xantrex will, at its option, use new and/or reconditioned parts in performing warranty repair and building replacement products. Xantrex reserves the right to use parts or products of original or improved design in the repair or replacement. If Xantrex repairs or replaces a product, its warranty continues for the remaining portion of the original Warranty Period or 90 days from the date of the return shipment to the customer, whichever is greater. All replaced products and all parts removed from repaired products become the property of Xantrex.

Xantrex covers both parts and labor necessary to repair the product, and return shipment to the customer via a Xantrex-selected non-expedited surface freight within the contiguous United States and Canada. Alaska and Hawaii are excluded. Contact Xantrex Customer Service for details on freight policy for return shipments outside of the contiguous United States and Canada.

## **How do you get service?**

**If your product requires troubleshooting or warranty service, contact your dealer.**

If you are unable to contact your dealer, or the dealer is unable to provide service, contact Xantrex directly at:

Telephone: 1 408 987 6359

Web: [www.xantrex.com/support](http://www.xantrex.com/support)

Direct returns may be performed according to the Xantrex Return Material Authorization Policy described in your product manual. For some products, Xantrex maintains a network of regional Authorized Service Centers. Call Xantrex or check our website to see if your product can be repaired at one of these facilities.

**What proof of purchase is required?** In any warranty claim, dated proof of purchase must accompany the product and the product must not have been disassembled or modified without prior written authorization by Xantrex.

Proof of purchase may be in any one of the following forms:

- The dated purchase receipt from the original purchase of the product at point of sale to the end user, or
- The dated dealer invoice or purchase receipt showing original equipment manufacturer (OEM) status, or
- The dated invoice or purchase receipt showing the product exchanged under warranty

**What does this warranty not cover?** This Limited Warranty does not cover normal wear and tear of the product or costs related to the removal, installation, or troubleshooting of the customer's electrical systems. This warranty does not apply to and Xantrex will not be responsible for any defect in or damage to:

- a) the product if it has been misused, neglected, improperly installed, physically damaged or altered, either internally or externally, or damaged from improper use or use in an unsuitable environment;
- b) the product if it has been subjected to fire, water, generalized corrosion, biological infestations, or input voltage that creates operating conditions beyond the maximum or minimum limits listed in the Xantrex product specifications including high input voltage from generators and lightning strikes;
- c) the product if repairs have been done to it other than by Xantrex or its authorized service centers (hereafter "ASCs");
- d) the product if it is used as a component part of a product expressly warranted by another manufacturer;
- e) the product if its original identification (trade-mark, serial number) markings have been defaced, altered, or removed.

## Disclaimer

### Product

THIS LIMITED WARRANTY IS THE SOLE AND EXCLUSIVE WARRANTY PROVIDED BY XANTREX IN CONNECTION WITH YOUR XANTREX PRODUCT AND IS, WHERE PERMITTED BY LAW, IN LIEU OF ALL OTHER WARRANTIES, CONDITIONS, GUARANTEES, REPRESENTATIONS, OBLIGATIONS AND LIABILITIES, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE IN CONNECTION WITH THE PRODUCT, HOWEVER ARISING (WHETHER BY CONTRACT, TORT, NEGLIGENCE, PRINCIPLES OF MANUFACTURER'S LIABILITY, OPERATION OF LAW, CONDUCT, STATEMENT OR OTHERWISE), INCLUDING WITHOUT RESTRICTION ANY IMPLIED WARRANTY OR

CONDITION OF QUALITY, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE TO THE EXTENT REQUIRED UNDER APPLICABLE LAW TO APPLY TO THE PRODUCT SHALL BE LIMITED IN DURATION TO THE PERIOD STIPULATED UNDER THIS LIMITED WARRANTY.

IN NO EVENT WILL XANTREX BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSSES, COSTS OR EXPENSES HOWEVER ARISING WHETHER IN CONTRACT OR TORT INCLUDING WITHOUT RESTRICTION ANY ECONOMIC LOSSES OF ANY KIND, ANY LOSS OR DAMAGE TO PROPERTY, ANY PERSONAL INJURY, ANY DAMAGE OR INJURY ARISING FROM OR AS A RESULT OF MISUSE OR ABUSE, OR THE INCORRECT INSTALLATION, INTEGRATION OR OPERATION OF THE PRODUCT.

## Exclusions

If this product is a consumer product, federal law does not allow an exclusion of implied warranties. To the extent you are entitled to implied warranties under federal law, to the extent permitted by applicable law they are limited to the duration of this Limited Warranty. Some states and provinces do not allow limitations or exclusions on implied warranties or on the duration of an implied warranty or on the limitation or exclusion of incidental or consequential damages, so the above limitation(s) or exclusion(s) may not apply to you. This Limited Warranty gives you specific legal rights. You may have other rights which may vary from state to state or province to province.



## Warning: Limitations On Use

Please refer to your product manual for limitations on uses of the product. SPECIFICALLY, PLEASE NOTE THAT THE DURACELL® DIGITAL INVERTER 400 SHOULD NOT BE USED IN CONNECTION WITH LIFE SUPPORT SYSTEMS OR OTHER MEDICAL EQUIPMENT OR DEVICES. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, XANTREX MAKES NO REPRESENTATIONS OR WARRANTIES REGARDING THE USE OF THE XANTREX DURACELL® DIGITAL INVERTER 400 IN CONNECTION WITH LIFE SUPPORT SYSTEMS OR OTHER MEDICAL EQUIPMENT OR DEVICES.

Please note that the Duracell® Digital Inverter 400 is not intended for use as an uninterruptible power supply and Xantrex makes no warranty or representation in connection with any use of the product for such purposes.

# Return Procedure

## Suggested method

### Direct to place of purchase

Please return your Duracell® Digital Inverter 400 directly to the place of purchase, preferably using the original box and packing materials.

## Alternative Method

### Direct to Xantrex

In the event that you no longer have access to the retail outlet that you purchased your Duracell® Digital Inverter 400 from, you may return the product to Xantrex.

1. Package the unit safely, preferably using the original box and packing materials. Please ensure that your product is shipped fully insured in the original packaging or equivalent. This warranty will not apply where the product is damaged due to improper packaging.
2. Include the following:
  - The RMA number supplied by Xantrex Technology, Inc. clearly marked on the outside of the box.
  - A return address where the unit can be shipped. Post office boxes are not acceptable.
  - A contact telephone number where you can be reached during work hours.
  - A brief description of the problem.
3. Ship the unit prepaid to the address provided by your Xantrex customer service representative.

# Return Material Authorization Policy

Before returning a product directly to Xantrex you must obtain a Return Material Authorization (RMA) number and the correct factory "Ship To" address. Products must also be shipped prepaid. Product shipments will be refused and returned at your expense if they are unauthorized, returned without an RMA number clearly marked on the outside of the shipping box, if they are shipped collect, or if they are shipped to the wrong location.

When you contact Xantrex to obtain service, please have your instruction manual ready for reference and be prepared to supply:

- The serial number of your product
- Information about the installation and use of the unit
- Information about the failure and/or reason for the return
- A copy of your dated proof of purchase

**If you are returning a product from outside of the USA or Canada** In addition to the above, you **MUST** include return freight funds and are fully responsible for all documents, duties, tariffs, and deposits.

**If you are returning a product to a Xantrex Authorized Service Center (ASC)** A Xantrex return material authorization (RMA) number is not required. However, you must contact the ASC prior to returning the product or presenting the unit to verify any return procedures that may apply to that particular facility.

## Out of Warranty Service

If the warranty period for your Duracell® Digital Inverter 400 has expired, if the unit was damaged by misuse or incorrect installation, if other conditions of the warranty have not been met, or if no dated proof of purchase is available, your inverter may be serviced or replaced for a flat fee.

To return your Duracell® Digital Inverter 400 for out of warranty service, contact Xantrex Customer Service for a Return Material Authorization (RMA) number and follow the other steps outlined in “Return Procedure” on page 37.

Payment options such as credit card or money order will be explained by the Customer Service Representative. In cases where the minimum flat fee does not apply, as with 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 has been received.

