XPower Micro Inverter 200, 400 and 800

Owner's Manual

About Xantrex

Xantrex Technology Inc. is a world-leading supplier of advanced power electronics and controls with products from 50 watt mobile units to one MW 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.

Trademarks

XPower by Xantrex is a trademark of Xantrex International.
Xantrex is a registered trademark of Xantrex International.

Other trademarks, registered trademarks, and product names are the property of their respective owners and are used herein for identification purposes only.

Notice of Copyright

Disclaimer

UNLESS SPECIFICALLY AGREED TO IN WRITING, XANTREX TECHNOLOGY INC. ("XANTREX")

(a) MAKES NO WARRANTY AS TO THE ACCURACY, SUFFICIENCY OR SUITABILITY OF ANY TECHNICAL OR OTHER INFORMATION PROVIDED IN ITS MANUALS OR OTHER DOCUMENTATION.

(b) ASSUMES NO RESPONSIBILITY OR LIABILITY FOR LOSS OR DAMAGE, WHETHER DIRECT, INDIRECT, CONSEQUENTIAL OR INCIDENTAL, WHICH MIGHT ARISE OUT OF THE USE OF SUCH INFORMATION. THE USE OF ANY SUCH INFORMATION WILL BE ENTIRELY AT THE USER'S RISK.

Date and Revision

July 2003 Revision B

Part Number

975-0071-01-01

Contact Information

Telephone: 1-800-670-0707 (toll free in North America)
1-360-435-8826 (direct)
Fax: 1-360-435-3547
Email: CustomerService@xantrex.com
Web: www.xantrex.com

Table of Contents

1 Introduction

Thank you for purchasing a Xantrex XPower Micro Inverter 200, 400 or 800. The XPower Micro Inverter 200, XPower Micro Inverter 400 or XPower Micro Inverter 800 are part of a family of ultra-compact, light-weight and modern power inverters from Xantrex, the leader in high frequency inverter design.

About the XPower Micro Inverter

Connected to the 12 volt outlet in your car, truck, boat, RV, or directly from a dedicated 12 volt battery (400 and 800 watt only), the XPower Micro Inverter efficiently and reliably powers a wide variety of household AC products, such as portable stereos, laptop computers, TVs, VCRs, and other similar products.

The XPower Micro 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 (400 and 800 watt only)
- Low voltage shutdown

- High voltage shutdown
- Overload shutdown
- Over temperature shutdown
- Short circuit protection

About This Manual

To get the best performance from your XPower Micro Inverter, Xantrex recommends that you read this manual before connecting and using the inverter, and then save it for future reference.

This manual contains:

- Important safety information (page 3)
- Instructions for connecting the inverter (page 17)
- Operating guidelines (page 25)
- Troubleshooting guidelines (page 33)
- Specifications (page 41)
- Warranty and service information (page 44)

2 Important Safety Information

Misusing or incorrectly connecting the XPower Micro Inverter 200, XPower Micro Inverter 400 or XPower Micro Inverter 800 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 manual.

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

WARNING: Shock hazard

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

WARNING: Heated surface

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

WARNING: Explosion hazard

Do not use the XPower Micro 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 XPower Micro 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.

WARNING - Crash hazard

Vehicle driver’s should not configure or troubleshoot the XPower Micro Inverter while they are driving the vehicle.

CAUTION - Output non-sinusoidal

Some chargers for small nickel-cadmium batteries can be damaged if connected to the XPower Micro Inverter. Do not use the XPower Micro 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 hand 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 XPower Micro Inverter's AC outlets. The inverter will be damaged even if it is switched OFF.
Do not connect any AC load, which has its neutral conductor connected to ground, to the XPower Micro Inverter.

Additional Safety Guidelines

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

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

3 XPower Micro Inverter Features

This section describes the main features of the XPower Micro Inverter.

AC (Front) Panel

Figure 1 shows the AC panel of the XPower Micro Inverter 200. Use Table 1 to identify the function of items.

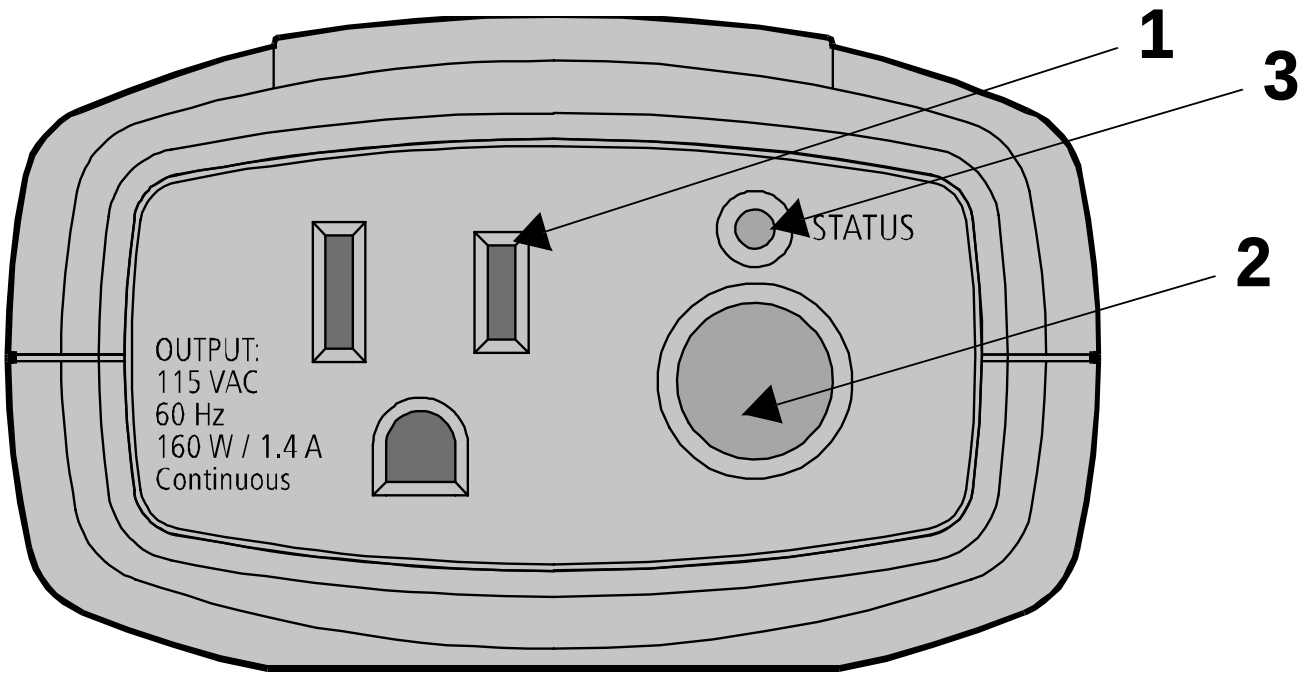

Figure 1 AC Panel of XPower Micro Inverter 200

Figure 2 shows the AC panel of the XPower Micro Inverter 400. Use Table 1 to identify the function of items.

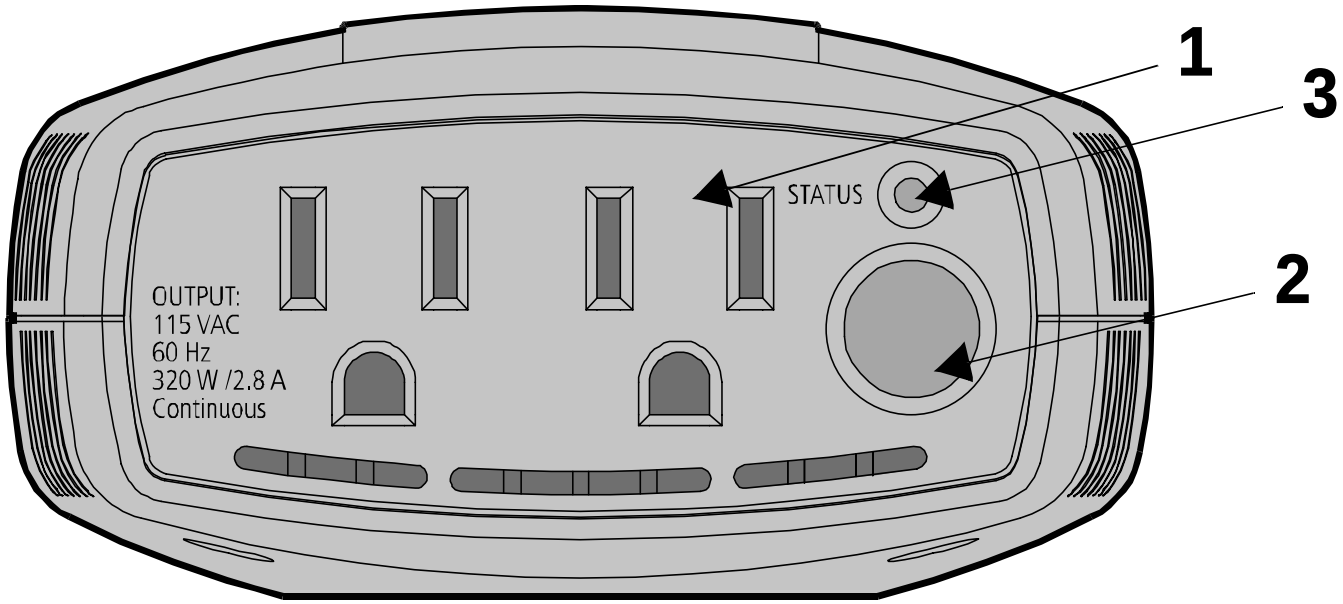

Figure 2 AC Panel of XPower Micro Inverter 400

Figure 3 shows the AC panel of the XPower Micro Inverter 800. Use Table 1 to identify the function of items.

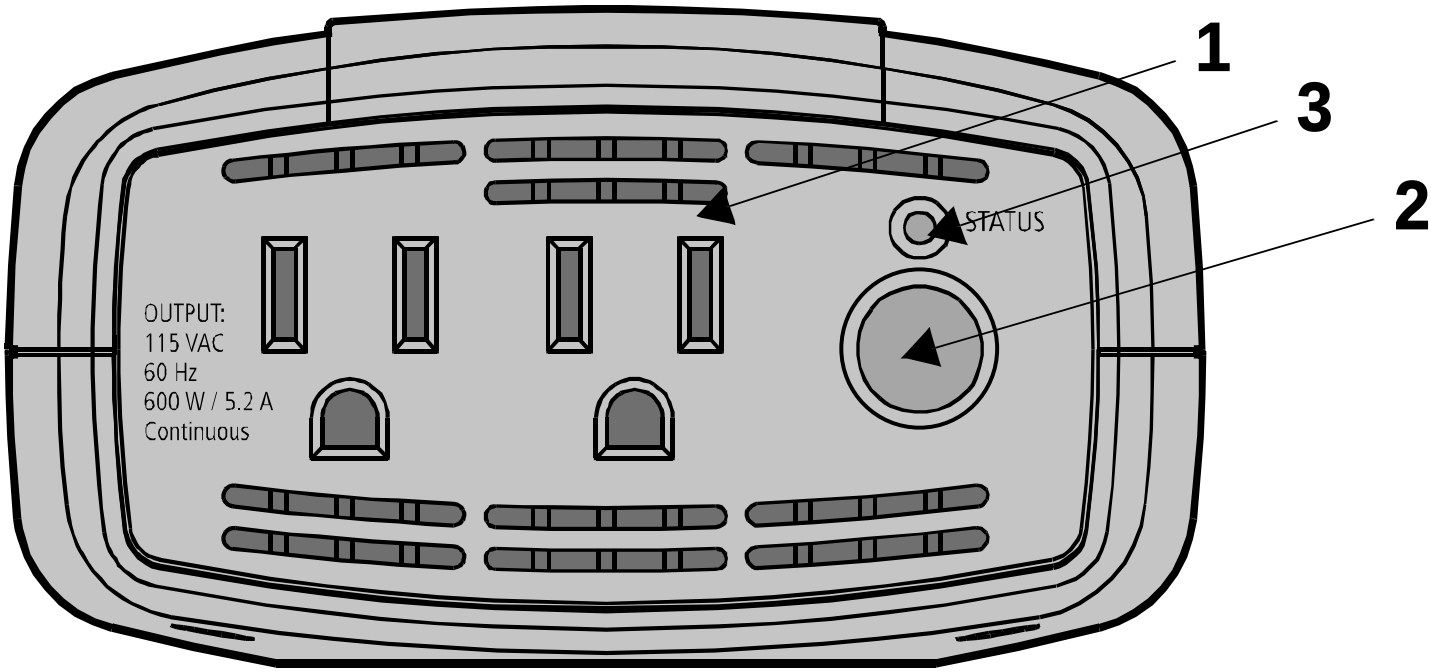

Figure 3 AC Panel of XPower Micro Inverter 800

Table 1 AC Panel Functions

Item	Function
1	**AC Outlets** XPower Micro Inverter 200 An AC receptacle is located on one end of the XPower Micro Inverter 200. You can plug in 120-volt appliances with a combined total continuous power consumption of 160 watts or less when the inverter is turned on. XPower Micro Inverter 400 Two AC receptacles are located on one end of the XPower Micro Inverter 400. You can plug in 120-volt appliances with a combined total continuous power consumption of 320 watts or less when the inverter is turned on. XPower Micro Inverter 800 Two AC receptacles are located on one end of the XPower Micro Inverter 800. You can plug in 120-volt appliances with a combined total continuous power consumption of 600 watts or less when the inverter is turned on.

Table 1 AC Panel Functions

Item	Function
2	**On/Off Switch** When the On/Off switch is on, AC power is available at the AC outlet.
3	**STATUS LED** The green light is on all the time when the On/Off switch is on. The red light indicates that the inverter has shut down. Shutdown is caused by low or high battery voltage, overload, or excessively high temperatures.
	Audible Alarm (400 and 800 watt only) An audible alarm warns of an impending low voltage shutdown.
	Ventilation Openings To prevent overheating, ensure that all the ventilation openings on the unit are kept clear.

DC (Back) Panel

Figure 4 shows the DC panel of the XPower Micro Inverter 200. Use Table 2 to identify the function of items.

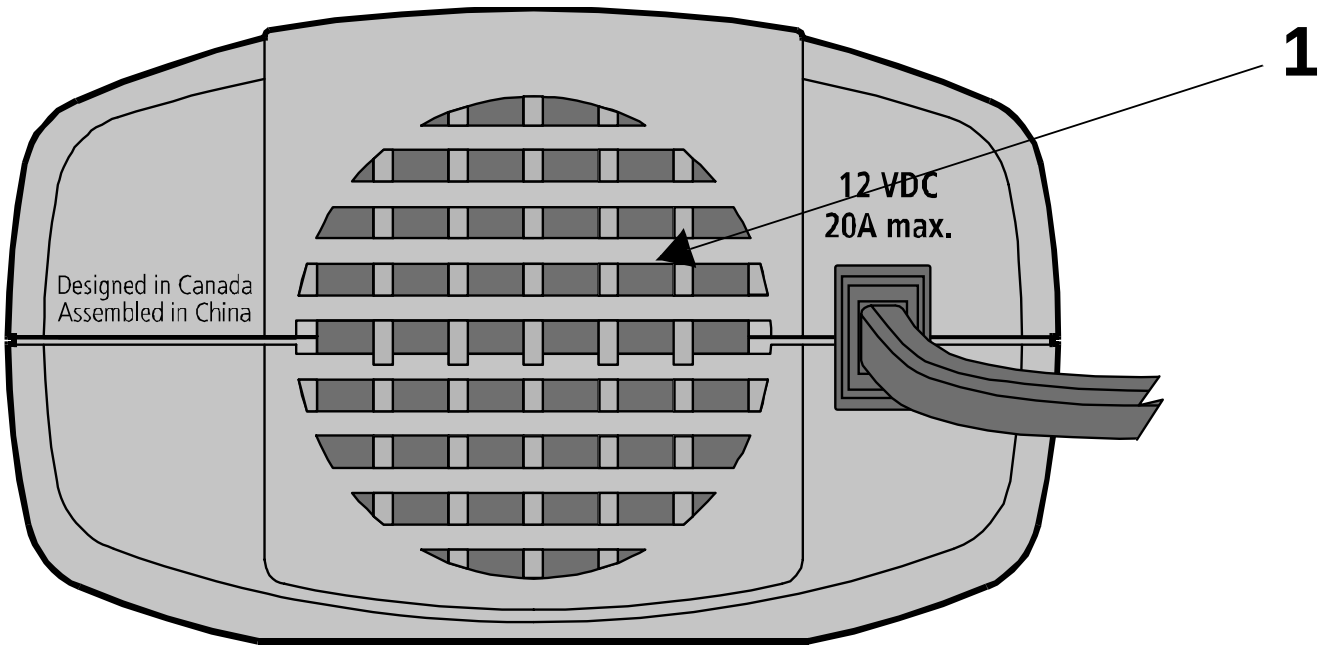

Figure 4 DC Panel of XPower Micro Inverter 200

Figure 5 shows the DC panel of the XPower Micro Inverter 800, which is very similar to the XPower Micro Inverter 400. Use Table 2 to identify the function of items.

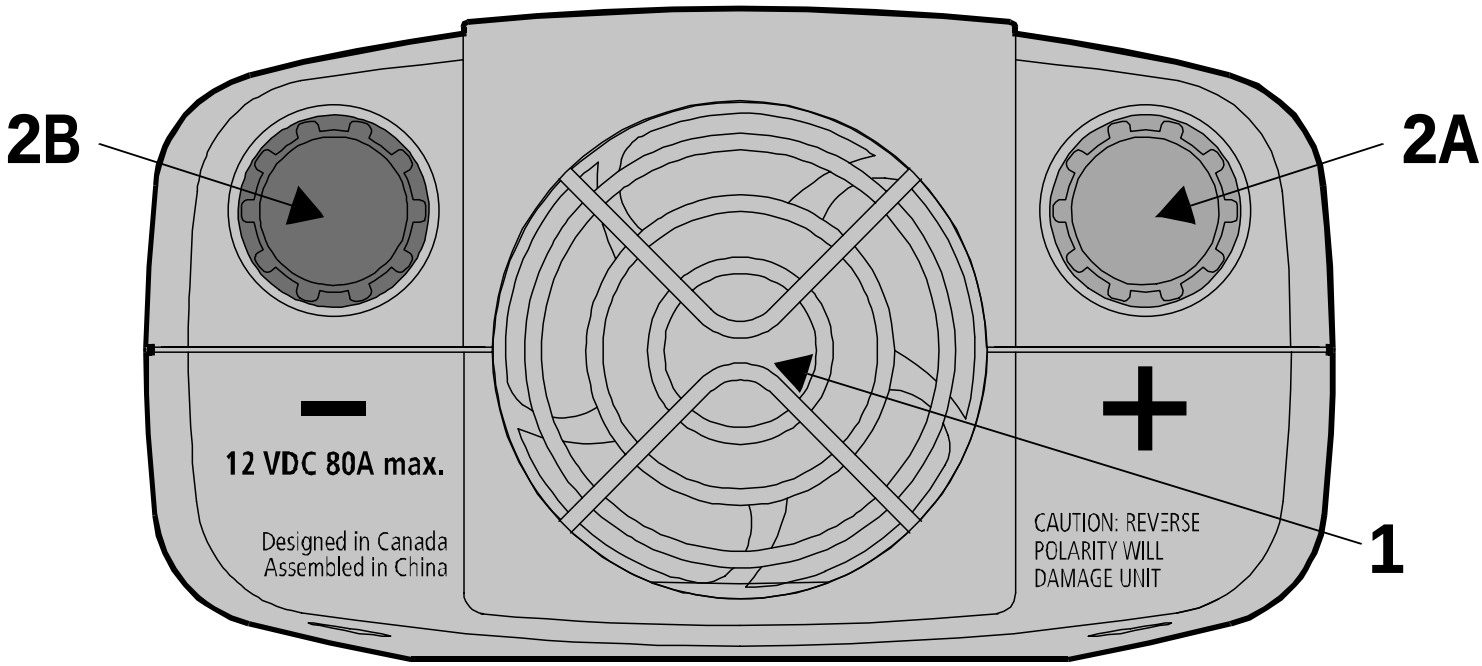

Figure 5 DC Panel of XPower Micro Inverter 800

Table 2 DC Panel Functions

Item	Function
1	**Fan and Ventilation Openings** The cooling fan on the XPower Micro Inverter 200 is designed to operate whenever the inverter in turned on. The cooling fan on the XPower Micro Inverter 400 and XPower Micro Inverter 800 units are designed to operate only when output power is greater than approximately 50 watts. When the inverter is turned on, the fan may operate momentarily. The ventilation openings should not be covered at any time the inverter is operating.
2	**A) Positive and B) Negative Cabling Terminals** For XPower Micro Inverter 400 and XPower Micro Inverter 800, you 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.

Types of Connections

Product	Lighter Plug Connection	Cable Clamps/Battery Connections
XPower Micro Inverter 200	Available - A cable is permanently attached to the inverter	Not Available
XPower Micro Inverter 400	Available - You must connect a separate lighter plug cable (included).	Available - You must connect a separate battery clamp cable (included).
XPower Micro Inverter 800	Not Available	Available - You must connect a separate battery clamp cable (included).

XPower Micro Inverter Accessories

Figure 6 shows the lighter plug cable that is included with the XPower Micro Inverter 400.

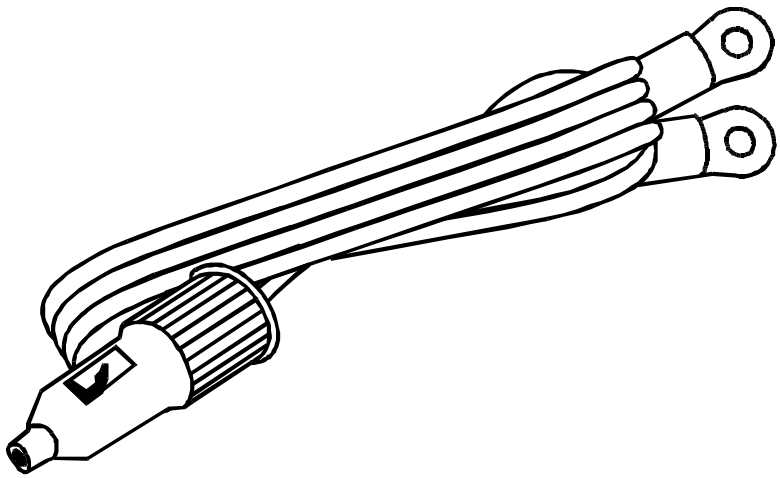

Figure 6 Lighter Plug Cable

Figure 7 shows the cable (included) for direct connection to a 12 volt battery for XPower Micro Inverter 400 and XPower Micro Inverter 800.

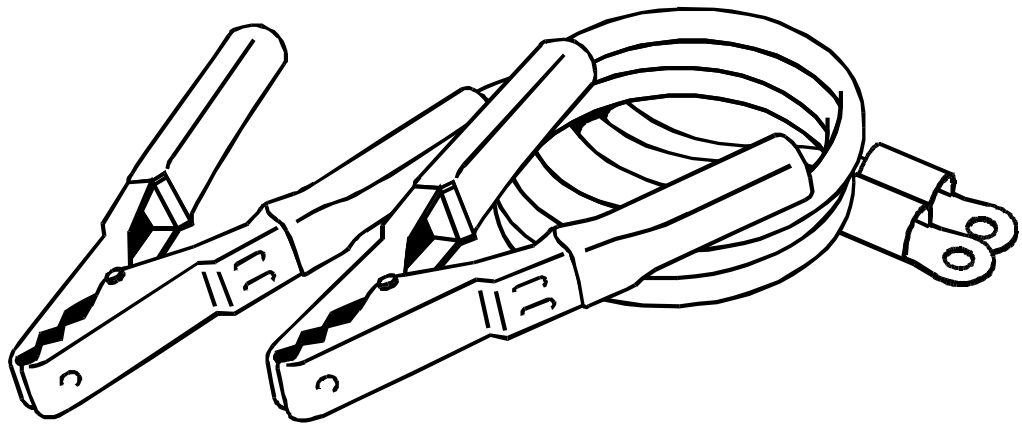

Figure 7 Cable for Direct Connection to 12 volt Battery

4 Connecting the XPower Micro Inverter

CAUTION

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

It is recommended that you hardwire the XPower Micro Inverter 800 directly to the 12 volt battery.

Choosing a Location

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

Dry	Do not expose the inverter to water, rain, snow or spray.
Cool	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.
Well ventilated	For proper cooling, allow at least 5 cm (2 in.) of clearance around the inverter.
Clean and free of dust and dirt	Choose a location that is free of any debris that could get into the inverter.

Connecting for Loads Under 150 Watts

Follow these steps to connect the XPower Micro Inverter 200 or XPower Micro Inverter 400:

1. Place the inverter on a flat surface like the floor of your vehicle.
2. Make sure the On/Off switch on the front panel is off.
3. The XPower Micro Inverter 200 has a power cord with lighter plug hard-wired into it, so you do not need to complete this step.
   If you have a XPower Micro Inverter 400, take the power cord equipped with the lighter plug (Figure 6) and place the ring terminals over the two cabling terminals on the back of the inverter. (The cabling terminals are shown in Figure 7.)

CAUTION - Reverse Polarity

Power connections of the 12 volts DC battery to the XPower 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. Fasten the positive (red) clamp to the positive battery post, and then fasten the negative (black) clamp to the negative battery post.
5. Place the inverter’s lighter plug in the vehicle’s cigarette lighter socket or a 12 volt outlet.

6. Turn on the front panel On/Off switch. The green light indicates that the XPower is operating normally and that AC power is available at the outlet.
7. Plug in the AC appliance you want to operate.
8. Always turn the inverter off when not in use.

Connecting for Loads Over 150 Watts

You must connect the XPower Micro Inverter 400 or XPower Micro Inverter 800 directly to a 12-volt battery if you are going to operate loads greater than 150 watts continuously. When the inverter is connected this way, you can operate loads of any size up to 320 watts continuously with a XPower Micro Inverter 400 and 600 watts continuously with a XPower Micro Inverter 800.

WARNING

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 the On/Off switch on the front panel is off.

CAUTION - Reverse Polarity

Power connections of the 12 volts DC battery to the XPower 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. Take the cables equipped with battery clamps on one end (Figure 7) and place the ring terminals over the two cabling terminals on the back of the inverter. (The cabling terminals are shown in Figure 7.)

CAUTION

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

4. Fasten the positive (red) clamp to the positive battery post, and then fasten the negative (black) clamp to the negative battery post.

5. Turn on the front panel On/Off switch. The green light indicates that AC power is available at the outlets and that the inverter is operating normally.
6. Plug in the AC loads you want to operate.
7. Always turn the inverter off when not in use.

5 Operating the XPower Micro Inverter

This section explains how to operate the XPower Micro 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 XPower Micro Inverter.

Normal Operation When you connect the inverter to the vehicle's cigarette lighter or directly to a 12 volt battery and turn on the On/Off switch, the green light illuminates and AC power is available at the outlets. You can now plug in your AC products and switch them on one at a time.

Low Battery Alarm and Shutdown As the battery discharges, its voltage decreases. When the XPower Micro Inverter senses that the voltage at its DC input has dropped to 11.0 volts, it sounds an alarm (400 and 800 volts only). If you ignore the alarm, and the DC

input voltage drops below 10.5 volts, the inverter shuts down all loads to save the battery from further discharge. The red light comes on.

Overload Shutdown If you connect an AC load that is rated too high (see Table 3 on page 27) or a load that draws excessive surge power, the XPower Micro Inverter shuts down. The red light comes on.

Over Temperature Shutdown The XPower Micro Inverter shuts down automatically if it exceeds its safe operating temperature. The red light comes on.

High Input Voltage Shutdown If a defective battery charging system causes the battery voltage to rise to dangerously high levels, the XPower Micro Inverter shuts down automatically. The red light comes on.

Shutting the Inverter Off

- If you are going to disconnect the battery, turn the inverter off first.
- Turn the inverter off using the front panel On/Off switch.

Operating Normal Loads

The XPower Micro Inverter is capable of continuously powering most 120-volt AC products with the following power rating maximums:

Table 3 Power and Surge Ratings

Product	5 min Max. Power Rating	Continuous Power Rating	Surge Rating Max.
XPower Micro Inverter 200	200 watts	160 watts	400 watts
XPower Micro Inverter 400	400 watts	320 watts	700 watts
XPower Micro Inverter 800	750 watts	600 watts	1200 watts

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 above or less will operate normally with the XPower Micro 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 XPower Micro Inverter inverters 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 switching on the inverter with all AC products switched off, then one by one switch each on, starting with the high surge product first.

Table 4 Wattage of Common AC Products

Product[a]	Watts[b]	Micro 200	Micro 400	Micro 800
Cell phone/camcorder charger	10	Yes	Yes	Yes
Video game console	20	Yes	Yes	Yes
Portable work light	25	Yes	Yes	Yes
Stereo system	50	Yes	Yes	Yes
Laptop computer	75	Yes	Yes	Yes
13” TV	100	Yes	Yes	Yes
27” TV	200		Yes	Yes
20” TV/VCR combo	300		Yes	Yes
Small appliances	400+			Yes
Power tools	400+			Yes

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 2 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 XPower Micro 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

Inverter	Load	Sample Appliance	Operating Time
XPower Micro Inverter 200	50 watts	CD player	6-8 hours
XPower Micro Inverter 400	100 watts	small TV	3-4 hours
XPower Micro Inverter 800	200 watts	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 XPower Micro 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 XPower Micro Inverter from a vehicle battery until the low voltage alarm sounds will shorten the life of the battery. Consider connecting the XPower Micro 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 XPower Micro Inverter for a few days, turn off the On/Off switch. The inverter draws 0.4 amps or less when the On/Off switch 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 XPower Micro Inverter.

If you have a problem with the inverter, please review this section before contacting Xantrex Customer Service. If you are unable to solve a problem and need to contact Xantrex, 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

WARNING - Electrical Shock and Burn Hazard

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

Buzz in Audio Systems

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

Television Interference

The XPower Micro 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 XPower Micro 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 specific remedies.

The AC load will not operate. No inverter lights are on.

Possible Cause	Suggested Remedy
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.

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

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

Measured inverter output is too low.

Possible Cause	Suggested Remedy
A standard “average-reading” AC voltmeter has been used to measure output voltage, resulting in an apparent reading 5-15 volts too low.	For accurate measurement, the XPower Micro Inverter modified sine wave output requires a “true RMS” voltmeter for accurate measurements.
The battery voltage is too low.	Recharge the battery.

Alarm is sounding (400 and 800 only).

Possible Cause	Suggested Remedy
Low voltage shutdown or thermal shutdown has occurred.	Shorten cables or use heavier cables. Recharge battery. Allow unit to cool. Improve air circulation around unit. Locate units in a cooler environment. Reduce load if continuous operation is required.

Battery run time is less than expected.

Possible Cause	Suggested Remedy
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.

The AC load will not operate. The red light is on.

Possible Cause	Suggested Remedy
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 less than the inverter's continuous power rating (see Table 3 on page 27).
The AC product(s) connected are rated at less than the inverter's continuous power rating; high starting surge has caused overload shutdown.	The product exceeds the inverter's surge capability. Use a product with a starting surge power within the XPower Micro Inverter capability.
Battery is discharged (alarm is sounding 400 and 800 only).	Recharge battery.

Possible Cause	Suggested Remedy
The inverter has overheated due to poor ventilation and has shutdown (alarm is sounding 400 and 800 only).	Switch 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.
Input voltage is greater than 15 volts.	Verify the charging system is properly regulated and the battery is 12 volts nominal.

8 Specifications

Specifications are subject to change without notice.

Table 6 Specifications

	Micro 200	Micro 400	Micro 800[a]
AC output voltage (nominal)	120 Vac	120 Vac	120 Vac
DC input voltage range	10.5-15.5 volts DC	10.5-15.5 volts DC	10.5-15.5 volts DC
Maximum continuous AC output power	160 watts	320 watts	600 watts
5 minutes AC output power	200 watts	400 watts	750 watts
Maximum AC output surge power	400 watts	700 watts	1200 watts
AC output frequency	60 ± 4 Hz	60 ± 4 Hz	60 ± 4 Hz

Table 6 Specifications

AC output waveform	Modified Sine Wave		
No load current draw (at 12 V input)	0.3 amps	0.25 amps	0.4 amps
Efficiency (maximum)	90%	90%	90%
Ambient operating temperature range	32° F–104° F 0° C–40° C		
Low voltage alarm	N/A	11.0 volts DC	11.0 volts DC
Low voltage shutdown	10.5 volts DC	10.5 volts DC	10.5 volts DC
High battery shutdown point (nominal)	15.5 volts DC	15.5 volts DC	15.5 volts DC

Table 6 Specifications

Dimensions (L x W x H)	4 x 3.3 x 2in 102 x 84 x 51 mm	5.4 x 4 x 2 in 137 x 102 x 51 mm	7.5 x 4.5 x 2.4 in 141 x 114 x 61 mm
Weight	0.62 lb / 0.28 kg	0.97 lb / 0.44 kg	1.80 lb / 0.82 kg

a.Provides maximum 800 watts of AC output power for up to 1 minute.

9 Limited Warranty

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 XPower Micro Inverter 200, 400 and 800. This warranty lasts for a Warranty Period of **12 months** from the date of purchase at point of sale to you, the original end user customer.

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

Phone: 1-800-670-0707 (toll free)

1-360-435-8826 (direct)

Fax: 1-360-435-3547

Email: CustomerService@xantrex.com

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.

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, DIRECT, 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 XPower Micro Inverter 200, 400 and 800 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 XPower Micro Inverter 200, 400 and 800 IN CONNECTION WITH LIFE SUPPORT SYSTEMS OR OTHER MEDICAL EQUIPMENT OR DEVICES.

Please note that the XPower Micro Inverter 200, 400 and 800 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 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

Return Procedure

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.

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 XPower Micro Inverter 200, 400 and 800 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 XPower Micro Inverter 200, 400 and 800 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 51.

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.

10 Other Xantrex Products

To see the range of inverters and chargers offered by Xantrex, visit our web site at:

http://www.xantrex.com.