



5000W Power Inverter OWNER'S MANUAL

Model number-4575000



TO REDUCE THE RISK OF INJURY, USER MUST READ AND UNDERSTAND THIS INSTRUCTIONAL MANUAL. THIS MANUAL CONTAINS IMPORTANT INFORMATION REGARDING THE OPERATION AND WARRANTY OF THIS PRODUCT. PLEASE RETAIN FOR FUTURE REFERENCE.

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1. Introduction

Thank you for purchasing the NPower Digital Power Inverter, a high performance solution for using household power while on the road. Connected to the 12 V output in your vehicle, the inverter efficiently and reliably supplies 115 V/60 Hz AC power with 4000 W continuous output power for a wide variety of loads, such as all kinds of jacklights, air conditioners, audio/video systems and tools with power consumption under 5000 W. It is ideal for operating household appliances on your car, truck, RV and boat.

The inverter has the safety features such as over input voltage shutdown, low input voltage shut off, low input voltage alarm, low voltage turn-off resume, over heating shut off, overload shut off short circuit protection. The digital display will directly readout output power and errors. The unit is not designed to be waterproof.

2. Important Safety Information

For safe and optimum performance, the inverter must be installed and used properly. Carefully read and follow the guidelines in this guide and give special attention to the **CAUTION** and **WARNING** statements.



CAUTION: Instructions provide information that could damage your inverter or equipment connected to it!



WARNING: Instructions provide information on conditions that could result in personal injury or loss of life!



Warning! Shock hazard! Keep away from children!



Warning!

The inverter produces the same potentially lethal AC power as normal household outlets. It is suggested that you treat it as a normal AC outlet.



Warning!

The case to the unit may become very warm under high power operation. Be sure that there is at least 2" (5 cm) of unblocked air space around the entire surface of the inverter at all times. During use, do not place materials that could be damaged by heat near the unit.



Warning!

Do not operate the unit near flammable fumes or gases, such as in the cabin of a gasoline powerboat, or near propane tanks.



Warning!

Do not operate the unit in an enclosed area that contains automotive type lead-acid batteries. This type of battery emits explosive hydrogen gas that can be ignited by sparks.



Warning!

Always make all AC connections before making DC connections or the components built into the inverter can become energized producing an electrical shock hazard. Never work on the AC wiring without first physically disconnecting the DC connections.



Warning!

If connected with loads of over 2000 W, two sets of same size wirings must be connected to the same battery or the connected battery kit. And it may damage the inverter if using one set of wiring only or connecting two sets of wirings to different batteries separately!



Caution !

Do not connect the unit to live AC power circuits or there may be damage to the inverter. Do not connect any AC device which has its neutral conductor connected to ground which connect to the unit.



Caution !

Some chargers for small nickel-cadmium batteries can be damaged if connected to the unit. Do not use the unit on the following items:

- Small battery-operated appliances such as flashlights, razors and nightlights that can be plugged directly into an AC outlet to recharge.
- Certain battery chargers for battery packs used in hand power tools. These chargers will have a warning label indicating that dangerous voltages are present at the battery terminals.



Caution !

Connect the unit to batteries with a normal output of 12 V DC only. A 6 V battery's voltage is too low, and a 24 V battery's voltage is too high and will damage the unit.



Additional Safety Guidelines !

- Do not insert any foreign objects into the unit outlets, vents or fan openings.
- Do not expose the unit to rain, water or any other liquid.
- Do not connect the unit to any utility power distribution systems or branch circuits.
- Do not use the inverter in temperatures over 104°F (40°C) or under 32°F (0°C).

Failure to follow these safety guidelines will result in personal injury and/or the damage to the unit. It may also void the warranty.

3. Protective Features

Over-input Voltage Shut Off

When the 12 V DC power supply voltage exceeds 15.5 ± 0.5 V, the inverter will automatically shut down, and the digital display showing “OUP”.

Low-input Voltage Shutdown

When the 12 V DC power supply voltage drops below 10.5 ± 0.3 V, the inverter will automatically shut down, and the digital display showing “LUP”.

Low-input Voltage Alarm

When the 12 V DC power supply voltage drops below 11 ± 0.3 V, an audible alarm will sound, and the digital display showing “LUP”.

Over-heating Shut Off

When the internal temperature exceeds the regulated temperature due to the increase of ambient temperature, the inverter will automatically shut down, and the digital display showing “LCP”.

When the internal temperature drops below the surrounding air temperature, the inverter will automatically return to normal operation.

Overload Shut Off

When the starting power exceeds the rated power, the inverter will automatically shut down, and the digital display showing “OLP”.

When in over current protection mode, the inverter can't automatically restore normal operation: reset to normal operation by using manual switch.

Short-circuit Protection

This inverter is equipped with multiple internal fuses. When it is in short circuit state, the unit will switch to protective mode, and the digital display showing “OPP”.

4. Features

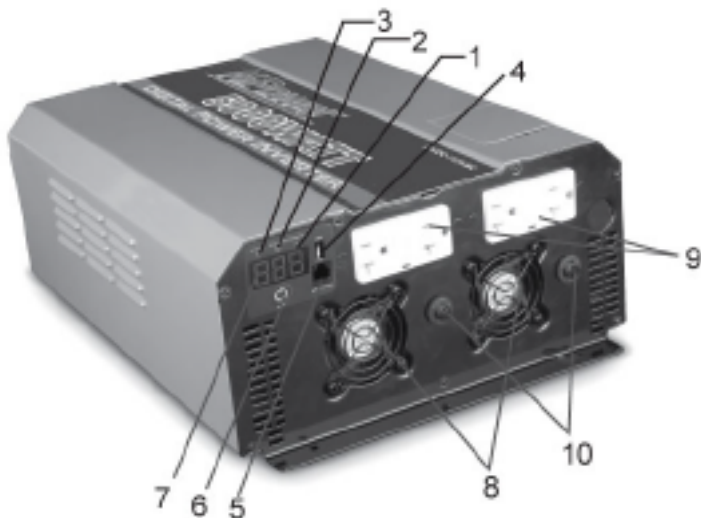


Figure 1: Digital Power Inverter Front Panel

1. **Red LED**—Indicates that the consumption of the loads is under 1000 W, and the digital display showing output power loads in watts.
2. **Yellow LED**—Indicates that the consumption of the loads is over 1000 W, and the digital display showing output power loads in kilowatts.
3. **Green LED**—Indicates the digital display is showing DC input voltage.
4. **USB Port**—Powers and charges USB-enabled devices.
5. **Remote Switch Port**—Use to connect the remote ON/OFF switch via a communication cable.(remote control switch is not included.)

6. **Power Switch Button**— Turn the inverter ON or OFF.
7. **Digital Display**— Shows input voltage (in volts), output power (in kilowatts and watts), and error code information. The allowed power tolerance is 15% (with loads of over 300 W), and the allowed voltage tolerance is +/- 0.2 V (no load).
8. **Cooling Fan and Ventilation Openings**— The high-speed cooling fan protects the inverter from over-heating. Ventilation openings should be kept clean!
9. **2 GFCI-Protected Outlets**—Each GFCI has two AC outlets and is connected with 20A circuit protector.
10. **Two 20A Circuit Protectors**



Figure 2: Digital Power Inverter Rear Panel

11. **Negative (-) DC terminal**—Connects to negative battery cable.
12. **Positive (+) DC terminal**— Connects to positive battery cable.
13. **Chassis Ground Lug**
14. **Ventilation Openings**
15. **AC Knockout**

5. Installation

The unit must be operated in an area that meets the following requirements in order to operate safely and provide optimum performance:

	Description
Dry	Don't allow water or other liquids to drop or splash on the unit.
Cool	Ambient air temperature should be between 32°F and 104° F (0°C- 40°C) (the cooler the better within this range if the ambient temperature is high, the output power may not reach 4000W before the over temperature protection occur.)
Ventilated	Leave at least 2" (5 cm) of clearance around the unit for airflow. Ensure that the ventilation openings are not obstructed.
Safe	Do not operate the unit in the same compartment as batteries or in any compartment storing flammable liquids like gasoline.
Clean	Do not operate the unit in an area that is prone to dirt,

	dust or debris. Especially important if it is in working condition.
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Your Digital Power Inverter supplies max continuous 5000W (5 min) power with 10000 W of surge power. When you turn on an appliance or a tool that operates using a motor or tubes, it requires an initial surge of power to start up. This surge of power is referred to as the “starting load” or “peak load”. Once started, the tool or appliance requires less power to continue operating. This is referred to as the “continuous load” in terms of power requirements. You will need to determine how much power your tool or appliance requires to start up and its continued running power requirements.

The inverter should be connected to your vehicle’s 12 V power with the DC cables. We recommend that the equipment or appliance switch be in the “OFF” position prior to plugging into the AC receptacle of the inverter.



Warning!

Shock hazard! Keep away from children!

Please be sure to remove metal jewelry, such as rings, bracelets and watches etc. to avoid accidents!

Connecting the inverter:

- 1) Place the inverter on a flat surface, such as on the vehicle floor.
- 2) Please make sure that the inverter is shut down.
- 3) Attach the ring type connector marked with red to the positive (+) DC terminal on the power inverter, and attach the ring connector marked with black to the negative (-) DC terminal.



Caution!

Reversing the polarity will cause damage to the inverter, which may also void the warranty.

- 4) Tighten the nut on each DC terminal by hand until it is snug. Do not over-tighten.
- 5) Connect the AC equipment.
- 6) When the power inverter is not in use, disconnect the DC cable clips from the battery to prevent gradual discharge of battery.

Note: This product does not include DC battery cables. DC battery cables are sold separately.



Caution!

A loose connection will cause the voltage to drop and may cause the cables to overheat, resulting in equipment damage or fire.

6. Operating Instructions

- 1) When properly connected to a 12 V outlet or battery, turn on the inverter, and the digital readout will switch on and the unit will deliver AC power to the outlet(s).
- 2) Plug the AC product(s) you wish to operate into the AC outlet(s)
- 3) Switch them on, one at a time (Please do not turn on all at the same time).



Caution!

If there are one more AC products connecting to the inverter, turn on the larger power product first.

- 4) The unit will operate from input voltages ranging from 11.0 V to 15.0 V DC.

As the battery is used, its voltage begins to fall. When the inverter senses that the voltage at its DC input has dropped to the range of 10.7 - 11.3 V DC, an audible alarm sounds, digital display reads “LUP”. This allows time for computers or other sensitive devices to be shut down. If the audible alarm is ignored, the inverter will automatically shut down when the voltage dropped to the range of 10.2 - 10.8 V DC. When readout shows “LUP”, it is indicating a fault happening to the unit. This protects the battery from being over-discharged. Turn off any devices that the inverter is powering.

When input voltage rises to 11.3 – 11.9 V DC, inverter restores to normal.



Caution!

Most vehicle batteries are designed to provide short period of very high current for starting the engine. They are not designed for a constant “deep discharge”. Constantly operating the unit from a vehicle battery until the low voltage shut off will affect the life of the battery. If you are operating electrical products for extended periods of time, you should consider connecting the unit to a separate deep discharge battery.

Should a defective battery charging system cause the battery voltage to rise to the range of 15.0 - 16.0 V DC, the inverter automatically shuts down; readout shows “OUP”



Caution !

Although the inverter incorporates protection against over-voltage, it may still be damaged if the input voltage exceeds 16 V.

If an AC product rated higher than 5100 W (or which draws excessive surge power) is connected, the inverter will shut down, the displaying readout shows “OLP”. The unit will shut down automatically if the inverter exceeds a safe operating temperature due to insufficient ventilation or a high-temperature environment; and the readout will display “OCP”. The cooling fan is designed by the thermo-controlled technology.



Caution !

Operating time will vary depending on the charge level of the battery, its capacity and the power level drawn by the particular AC load. With 4000 W load, the operating time is depending on the vehicle battery capacity. When using a vehicle battery as a power source, it is strongly recommended to start the vehicle every hour to recharge the battery before its capacity drops too low. The inverter can operate while the engine is running, but the normal voltage drop that occurs during starting of the engine may trigger the inverter's low voltage shutdown feature.



Caution !

Because the power inverter draws less than 0.5 A when turning on with no AC product connected, it has minimal impact on battery operating times.

7. Troubleshooting

PROBLEM	CAUSE	SOLUTION
No power, no indicator	Battery is defective	Replace battery
	Blown fuse	Go to a specialist to check it and help to replace the fuse
	Loose cable connections	Check the connection to the battery. Tighten as required

Unit is shutdown with display showing "OLP"	AC products connected are rated at more than 5000W; overload shutdown has occurred.	Reduce load, use a product with power rating less than 5000 W.
	AC products are rated less than 5000 W, but high starting surge has caused overload shutdown.	Use a product with starting surge power within the inverter's capability (≤ 10000 W).
Unit is shutdown with display showing "LUP"	The voltage input is too low (alarm sounds).	Charge the battery.
Unit is shutdown with display showing "OCP"	Inverter is overheated due to poor ventilation and has shut down.	Unplug inverter from DC socket and cool for 15 minutes. Remove objects covering unit. Move the inverter to a cooler place. Reduce load if continuous operation is required. Restart.
Unit is shutdown with display showing "OPP"	Inverter is short circuit and has shut down.	Reset to normal operation by using manual switch
Inverter runs small loads but not large ones.	Low voltage battery	Charge the battery
Water entered unit.	Water entered the unit	Disconnect the inverter and wipe immediately with a dry cloth, or

		permanent damage can occur with liquid ingress.
Alarm sounds.	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 unit to a cooler environment. Reduce load if continuous operation is required.
Measured inverter output voltage is too low.	Standard “average-reading” AC voltmeter used to measure output voltage, resulting in an apparent reading 5 to 15 V too low.	Inverter’s “modified sine wave” output requires “true RMS” voltmeter for accurate measurements.
	Battery voltage is too low	Recharge battery.
Battery run time is less than expected.	AC product’s power consumption is higher than rated.	Use a larger battery to make up for increased power requirement.
	Battery is old or defective	Replace battery.
	Battery is not being	Some chargers are not

	properly charged.	able to fully recharge a battery. Make sure you use a powerful charger.
	Power dissipation in DC cables.	Use shorter/heavier DC cables.

8. Specifications

Specifications are subject to change without notice.

AC Output

Continuous AC output power	4000 W
Max. continuous AC output power(5 minutes)	5000 W
AC output surge power	10000 W
AC output voltage range	105 V - 125 V AC
Output frequency (nominal)	60 ± 1 Hz
Output waveform	Modified sine wave

USB Output

DC output	5 V 500mA
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DC Input

Rated DC input voltage	12.0 - 12.4 V DC
Low battery alarm	11 ± 0.3 V DC, Audible
Low battery shutdown	10.5 ± 0.3 V DC
Low battery shutdown resume	11.6 ± 0.3 V DC

High battery shutdown	15.5 ± 0.5 V DC
Fuse	25A fuse × 24

Physical specifications

Dimensions	16.5 x 11.6 x 5.9" (42 x 29.5 x 15 cm)
Weight	25.96 lb (11.80 kg)

9. Warranty

One Year Limited Warranty Program

NPower warrants this product for one year limited against any defects in materials or workmanship. The defective products will be replaced and repaired at no charge in either of one year.

This warranty lasts for 12 months from the date of purchase at the point of sale to you. This warranty does not apply where the product has been misused, improperly installed, physically damaged or altered, either internally or externally, or damaged from improper use.

NPower will repair or replace the defective product free of charge. Proof of purchase may be required. Warranty term is not extended if NPower repairs or replaces a product. NPower owns all parts removed from repaired products.

To qualify for the warranty, make sure the product has not been disassembled or modified without the prior authorization. If you require warranty service with your product, please return it to the place of purchase along with a copy of your dated proof of purchase or call customer service at 800-222-5381 for details.