POWERDRIVE®

RUGGED POWER THAT DRIVES YOUR LIFESTYLE

powerdriveinverters.com

Owner's Guide

Please Save for Future Reference

PD3000 3000 Watt Power Inverter

Please read this manual thoroughly before installing and operating your inverter. This manual contains information you need to obtain the performance required for your application. Keep this manual for future reference.

The PowerDrive™ Bluetooth™ inverter is the first of its kind in the market! This inverter has high starting capability and max efficiency up to 90%. This Bluetooth™ inverter can connect with all Android™ and iOS™ smartphones. Our phone APP can help check and keep you updated on the battery voltage, output power and product temperature. Set up the protections such as under voltage, over voltage, overload and over-temperature at a distance! Also included are personal settings and battery testing with a more user friendly experience. Welcome to the future of power inverters!

Warnings, Cautions and Notes

It's very important that any operator and installer of this inverter read and follow all WARNINGS, CAUTIONS AND NOTES and all installation and operation instructions. In particular, comply with **WARNINGS** (possibility of serious injury or death), **CAUTIONS** (possibility of damage to the inverter and/or other equipment), and **NOTES** (included to assist you in achieving the maximum performance and longest working life from this advanced-design inverter).

Warnings: Inverter Output

This heavy-duty device produces voltages similar to commercial AC power.

- Danger of shock or electrocution — treat inverter output the same as commercial AC power.
- Do not use the inverter near flammable materials or in any locations that may accumulate flammable fumes or gases. This is an electrical device that can briefly spark when electrical connections are made or broken.
- Do not allow water or other liquids to contact the inverter.
- Do not use appliances with damaged or wet cords.

Cautions: Inverter Operating Environment

- Surrounding air temperature should be between -4° F and 104° F — ideally between 32° F and 104° F.
- Keep the inverter away from direct sunlight, if at all possible. Keep the area surrounding the inverter clear to ensure free air circulation around the unit. Do not place items on or over the inverter during operation. The unit will shut down if the internal temperature gets too hot. Restart the inverter after it cools.
- Your inverter will only operate from a 12V power source. Do not attempt to connect the inverter to any other power source, including any AC power source. Do not reverse DC input polarity – this will void the warranty.

Appliance Cautions

- DO NOT plug in battery chargers for cordless power tools if the charger carries a warning that dangerous voltages are present at the battery terminals.
- Certain chargers for small nickel-cadmium or nickel-metal-hydride batteries can be damaged if powered by this inverter. Two types of appliances are susceptible to damage: Small, battery-operated appliances such as flashlights, cordless razors and toothbrushes that plug directly into an AC receptacle.
- Some fans with synchronous motors may slightly increase in speed (RPM) when powered by the inverter. This is not harmful to the fan or to the inverter.
- Use safety approved extension cords rated at 15 Amps or higher.
- GFCI devices may not work with modified sine wave (MSW) power.
- This inverter is not tested for use with medical equipment.
- This inverter is not tested for use in marine applications.
- In the event of a continuous audible alarm or automatic shut down, turn the inverter OFF immediately. Do not restart the inverter until the source of the problem has been identified and corrected.
- When using your PowerDrive inverter to power lead acid battery chargers (like those used for a car, boat or motorcycle) with modified sine wave, check the temperature of the battery charger after 10 minutes. If the battery charger becomes hot, immediately disconnect it from the inverter and allow it to cool before resuming the charging operation.

Warnings: Danger of Battery Explosion – Install a Fuse

Battery Banks can deliver very high levels of current that can vaporize metal, start fires and cause explosions. PowerDrive™ recommends installing one ANL type fuse and fuse holder close to the positive battery bank terminal. This fuse protects the batteries from accidental DC cable shorts, which can cause batteries to explode. ANL fuses and fuse holders are available at most hardware supply stores.

Cautions

- Loose connections can result in a severe decrease in voltage that can cause damage to cables and insulation.
- Failure to make correct polarity (Pos/Neg) connection between the inverter and the battery bank can result in blowing fuses in the inverter and can permanently damage the inverter. Damage caused by reversed polarity is not covered under the warranty.
- Making the connection to the Positive terminal may cause a spark as a result of current flowing to charge capacitors within the inverter. This is a normal occurrence.

- Because of the possibility of sparking, however, it is extremely important that both the inverter and the 12-Volt battery be positioned far from any possible source of flammable fumes or gases. Failure to heed this warning could result in a fire or explosion.
- Operating the inverter without correctly grounding the unit may result in an electrical shock.

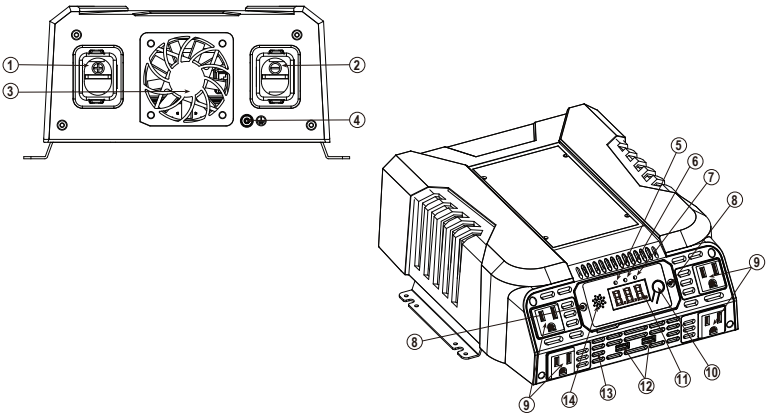
GETTING STARTED

When some tools turn on, there is an initial surge of power to start. This surge of power is referred to as the “starting load” or “peak load.” Once started, the tool or appliance requires less power to operate. 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 (starting load) and it’s continued running power requirements (continuous load).

Power consumption is rated in Watts, or it can be calculated from Amperes (Amps). This information is usually stamped or printed on most appliances and equipment. If this information is not indicated on the appliance or equipment, check the owner’s manual. For electrically sensitive equipment, contact the manufacturer to determine if the device you are using is compatible with modified sine wave AC.

Multiply: **AC AMPS X 110** (AC Voltage) = **WATTS.** This formula yields a close approximation of the continuous load of your appliance.

Multiply: **WATTS X 2** = Starting Load for most appliances. This formula yields a close approximation of the starting load of most appliances. Exceptions are motorized appliances such as pumps, freezers and air conditioners. These appliances can have startup loads of up to eight times the rated Watts.



FEATURES

1. Positive Power Input Terminal.
2. Negative Power Input Terminal.
3. High-Speed Cooling Fans. When the temperature inside the inverter exceeds a preset limit, the cooling fan automatically turns on to cool the inverter. When the temperature reduces, the fan turns off.
4. Ground Terminal.
5. Green LED: Battery Voltage indicator.
6. Yellow LED: Output power indicator (KW), which will be activated when actual output power is larger than 1000 W.
7. RED LED: Output power indicator (W), which will be activated when actual output power is lower than 1000 W.
8. Two screws to attach removable control panel.
9. Four (4) standard North American AC outlets, each rated at 15 Amps.
10. ON/OFF Switch. Turns the inverter ON and OFF.
11. Digital display which can display battery voltage, power watts, and error code.
12. Two USB ports (2400 mA shared.)
13. Ventilation holes.
14. Voice alarm speaker.

Determining the DC Power Requirements

Your inverter requires the input of a 12-Volt battery. To calculate the approximate power in Amps a 12-Volt battery bank you need to know the current, or Amps required for powering the continuous AC load. A shortcut method is to divide the continuous AC load Wattage by 10. For example, the continuous AC load is 3000 Watts. The current (Amps) is: 3000/10 or 300 Amps at 12 VDC. Add to the load any DC appliances that may be powered by the battery bank.

Sizing the Battery

To determine the minimum battery bank Ampere-hour rating that you will need to operate appliances from the inverter, and any DC appliances powered by the battery bank. Follow these steps:

1. List the maximum Wattage that the inverter has to provide (as above).
2. Estimate the number of hours the appliances will be in use between battery recharges. This will vary depending on appliances. As an example, a typical home-use coffeemaker draws 500 Watts during its brew time of 5 minutes, it maintains the temperature of the pot at about 100 Watts. Typical use of a microwave oven is only for a few minutes. Some longer operating time appliances are lamps, TV's, computers and refrigerator/freezers.

3. Determine the total Watt-hours of energy needed. Then multiply the average power consumption in Watts by the number of hours of run time. For example: 2000 Watts for 10 hours = 20,000 Watt hours. Using the 2000 Watts (or 200 Amps) for 10 hours example as above, then 200 Amps is needed for 10 hours. This provides us with the basic Amp-hours (AH) of battery that is required. Ten hours at 200 Amps equals 2000 Amp Hours (AH). This answer is just a beginning because there are other conditions that determine actual run time.

   These include:

   - AC appliance load and time in use (Basic Amp Hour)
   - Cable gauge and length
   - Charge level of the batteries (between use, chargers have to be able to fully charge the batteries)
   - Temperature of the batteries (colder batteries provide fewer Amps)
   - Age and condition of the batteries (older batteries lose capacity Amp hours)
   - Compliance with turning off unnecessary AC and DC loads.

If there is any doubt about sizing the battery bank, it is safe to over estimate the Amp hour requirements of the battery bank.

Note: The type of batteries you use to power your high-power inverter is important. Operating a high-power inverter will routinely discharge batteries and they will require frequent recharging. Batteries used to start engines are not designed to repeatedly charge and discharge. We recommend using “deep-cycle” or “marine” rated batteries.

CABLE GAUGES

When connecting the inverter to a battery bank use the thickest stranded insulated copper wire available in the shortest length practical.

LENGTH	PD3000
1 ft.	4 AWG
2 ft.	4 AWG
3 ft.	3 AWG
4 ft.	2 AWG
5 ft.	1 AWG
6 ft.	1/0 AWG
7 ft.	2/0 AWG
8 ft.	3/0 AWG
9 ft.	3/0 AWG
10 ft.	3/0 AWG

Mounting the Inverter

Your inverter should not be mounted under the hood of a vehicle. If installing in a vehicle, choose a dry, cool, ventilated area as close to the battery as practical. Before drilling any mounting holes, make sure that there are no wires, fuel lines, or tanks directly behind the surface to be drilled.

To mount the inverter

1. Inverter **ON**/**OFF** switch must be in the **OFF** position.

2. The inverter should be mounted horizontally.

3. Position the inverter against the mounting surface and mark locations of the mounting screw openings.

4. Remove the inverter and drill four (4) mounting holes.

5. Fasten the inverter to the mounting surface using corrosion-resistant fasteners sized #10 or larger.

Connecting the Inverter

This inverter has two DC cable connections, one positive and one negative. The order of steps in the following procedure minimizes the danger of sparking near the battery bank.

1. Prepare all cable set ends with ring terminals at the battery ends.

2. Install one fuse holder with fuse on the **Positive** cable close to the battery bank end.

3. Make sure the **ON**/**OFF** switch located on the front panel of the inverter is in the **OFF (O)** position.

4. Ensure all appliance cords or extension cords are disconnected from the inverter.

5. Connect a #8 gauge stranded insulated wire to the enclosure ground terminal and connect the free end of the wire to the vehicle's chassis or any other ground point.

6. Connect the unfused cable to the **Negative (-)** terminal of the battery bank.

7. Connect the **Negative** cable to the Inverter's **Negative (-)** terminal.

8. Insulate the end of cable to be connected to the **Positive (+)** Inverter terminal.

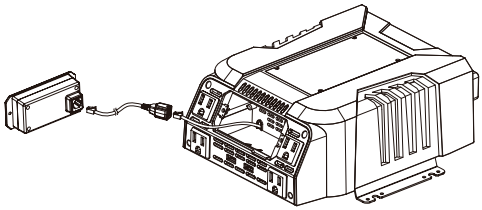
9. Connect the fused cable to the battery bank **Positive (+)** terminal.

10. Connect the **Positive** cable end to the **Positive (+)** inverter terminal.

Note: Sparking is normal for the first connection.

1. Make sure you have good secure connections – Do not over-tighten.

2. If you need the information on the panel at a distance, you can take out the control panel and connect it to 12' extension cord (included) or simply use the APP.



Removable Faceplate Remote Control

1. Remove the screws that attach the panel (Keep the screws safe)

2. Follow the diagram below to connect the panel and supplied extension cord.

Operation

1. Turn ON the inverter: Press the ON/OFF switch on the front panel for 1 second.

2. Turn OFF the inverter: Press the ON/OFF switch on the front panel for 1 second.

3. When you have confirmed that the appliance to be operated is turned off, plug an appliance cord into one of the 110V AC Outlets on the front panel of the inverter.

4. Turn ON the inverter.

5. Turn the appliance ON.

6. Plug in additional appliances and turn them ON.

Note: When using an extension cord from the inverter to an appliance the extension cord should not be longer than 50 feet.

TELEVISION AND AUDIO SUGGESTIONS

Although all PowerDrive™ inverters are shielded and filtered to minimize signal interference, some interference with your television picture may be unavoidable, especially in weak signal areas.

Here are some suggestions that may improve reception:

1. First, make sure that the television antenna produces a clear signal under normal operating conditions. Also, ensure that the antenna cable is properly shielded and of good quality.

2. Change the position of the inverter, antenna cables or TV power cord.

3. Isolate the TV, its power cord and antenna cables from the 12-Volt power source by running an extension cord from the inverter to the television set.

4. Coil the television power cord and the input cables running from the 12-Volt power source to the inverter.

5. Attach a “Ferrite Data Line Filter” to the television power cord. More than one filter may be required.

These filters are available at most electronic supply stores.

Note: Some inexpensive audio systems may produce a slight **"buzzing"** sound when operated with the inverter. The only solution to this problem is to use a sound system with better power supply filtering.

TROUBLESHOOTING

Problem: No Input Voltage

Cause	Solution
Battery is defective.	Replace battery.
Blown fuse.	Ask for help from technician.
Loose cable connections.	Check the connection to the battery. Tighten as required.

Problem: Inverter Shut Down

Cause	Solution
The actual output power is higher than rated power of inverter, overload protection has occurred.	Reduce load to have the actual output lower than rated power of inverter.
The actual output is less than rated power, but high starting surge has caused overload shutdown.	Use a product with starting surge power within the inverter's capability.
The voltage input is too low.	Charge the battery.
Inverter is overheated due to poor ventilation and has shut down.	Disconnect the inverter from battery or DC socket and allow to be cooled for 15 minutes. Please ensure to remove objects covering unit.

TROUBLESHOOTING

Problem: Low Battery Alarm On All The Time

Cause	Solution
Input voltage below 11 V – buzzing sounds.	Keep input voltage above 11 V to maintain regulation.
Poor or weak battery condition.	Recharge or replace battery.
Inadequate power being delivered to the inverter or excessive voltage drop.	Use lower gauge (heavier) cable. Keep cable length as short as possible.

Problem: TV Does Not Work

Cause	Solution
TV does not turn on.	Contact TV manufacturer to find out if the TV is compatible with a modified sine wave.

Problem: Error Code Displayed

Error Code	Solution
LUP	**Low Battery Voltage.** Please charge the vehicle battery or replace the vehicle battery by new one.
OUP	**Over Voltage Protection.** Remove all appliances and turn off the unit by ON/OFF switch. Check the battery voltage, make sure it is within 11 V–15 V.
OCP	**Overtemp Protection.** Remove all appliances and turn off the unit by ON/OFF switch. Cool down for 15 minutes before turning on again.
OPP or OLP	**Overload Protection.** Turn off the inverter and remove all appliances. Then use an appliance with smaller power consumption.

SPECIFICATIONS

Name	PD3000
Input	11–15V DC
Output	115V AC
Output Waveform	Modified Sine Wave (MSW)
Continuous Power	3000 Watt
Surge Power	6000 Watt
Efficiency	MAX 88%
Power Switch	ON/OFF Control
No Load Draw	≤1A DC
Battery Low Alarm	11 ± 0.3V DC
Low Battery Shutdown	10.5 ± 0.3V DC
USB Output	2 Ports (2.4 A share)
AC Output Sockets	4 North American Standard 15 Amps
Internal Fuses	12 x 30 Amp (automotive blade type)
Dimensions (mm)	356 x 357 x 107
Net Weight	4 lbs.

1 YEAR LIMITED WARRANTY

Visit www.powerdriveinverters.com for warranty and technical support.

CALL CUSTOMER SERVICE BEFORE RETURNING THE ITEM TO THE STORE

For customer assistance call 1-866-622-7979
Monday through Friday 8:00am to 5:00pm Eastern Time.

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