

A. INSTRUCTION

The GIANDEL Power inverter product line is used for back-up power. The power inverter converts DC (direct current/car battery) power into AC (alternating current) power that can be used for running a wide variety of tools and appliances. This inverter is perfect for providing mobile power in cars, boats and work trucks. The inverter can also be utilized as a back-up source of electricity in the event of an electrical failure or for several off-grid applications such as camping or in your RV.

B. Please read this instruction manual carefully and make sure your inverter is installed properly before using.

C. Warning and safety

- 1) Read the manual before connecting this inverter and keep it for future reference.
- 2) Don't put the inverter under sunlight, near a heating source, wet or humid environment.
- 3) The case housing of inverter will be hot while using. Do not allow flammable materials to contact the inverter, such as clothing, sleeping bags, carpet or any other flammable materials. The heat from the inverter can damage these items.
- 4) The power inverter is designed to be used with a negative ground electrical system! Don't use with positive ground electrical systems (the majority of modern automobiles, RVs, trucks and boats are negative ground).
- 5) Do not disassemble the unit: it may cause fire or electric shock.
- 6) This device should only be serviced by a qualified technician. This item does not have any serviceable parts.
- 7) Prevent body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerator enclosures during installation.
- 8) Do not operate the inverter if under the influence of alcohol or drugs. Read warning labels on prescriptions to determine if your judgement or reflexes are impaired while taking drugs. If there is any doubt, do not operate the inverter.
- 9) People with pacemakers should consult their physician(s) before using this product. Electromagnetic fields in close proximity to a pacemaker could cause interference to or failure of the pacemaker.
- 10) Keep the inverter well-ventilated. Do not place any objects on top of or next to the inverter or allow anything to cover the cooling fans; doing so can cause the inverter to overheat, causing a potential fire hazard and/or damage to the inverter. Leave adequate ventilation space underneath the inverter as well; thick carpets or rugs can obstruct air flow, causing the inverter to overheat.
- 11) Avoid unintentional starting. Be sure the switch is in the OFF position when not in use and before plugging in any appliance.
- 12) Keep inverter away from children. Don't install the inverter where it is accessible to children.
- 13) The power inverter will output the same AC power as utility power, please treat the AC outlets as carefully as you would your home AC outlets. Do not put anything other than an electrical appliance into the output terminal. It may cause shock or fire.
- 14) Disconnect the battery and inverter when not in use.

Note: Performance of this unit may vary depending on the available battery power or appliance wattage.

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Warning: The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by operator. Guard against electric shock. Do not open the metal case; risk of electric shock.

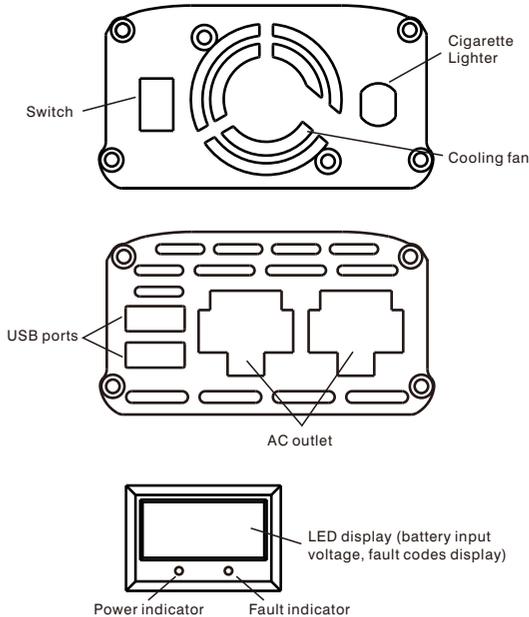
D. Features:

- 1) Adopt advanced MPU control.

Model	PM-300A
DC Input Voltage	12V (9.8-16V)
Output Wave Form	Modified sine wave
Output Power	300W
Output Voltage	AC110-120V 60Hz
Surge Power	600W for 40 msec
Over Load power	400W
Efficiency	about 90%
No Load Current	0.25A
Battery Low Alarm	DC 9.8 ± 0.5V
Battery Low Shutdown	DC 9.5 ± 0.5V (Automatic Recovery at 12.5VDC)
Input Over Voltage Shutdown	DC 16 ± 0.5 V (Automatic Recovery at 14VDC)
Operating Temperature (Automatic Recovery/Shutdown)	32-113° F
Over Temperature Protection	149° F ± 41° F
FAN	Temperature control 104° F ± 41° F
USB Output	5 VDC, Max 4.8A(Dual 2.4A) Automatic identification charging IC
Internal DC Input Fuse	Must Be Fitted, Use 30A Maximum
Power Switch	ON/OFF Control
Cigarette Lighter Cable	YES
Dimensions (LxWxH)	5.63" x 3.42" x 1.97"
Net Weight	1.2 lb

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E. Parts list



F. USING THE POWER INVERTER

1. Check the output voltage and capacity of the battery. The battery (s) should match the voltage of the inverter and have enough capacity for the load.
2. Insert the cigarette plug into the car cigarette socket and ensure well connected.
3. Press the power switch button on your inverter and a green LED will light up indicating that the inverter is on.
4. Before plugging anything into your inverter, make sure the appliance you are trying to power is shut OFF, then plug it into the AC outlet of your inverter and power on your appliance.
5. Once finished using the inverter, turn off your electrical appliance and the inverter. The indicator lights should be off.

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Warning: The car cigarette outlet usually has current limit requirements. It is suggested that the continuous load power should not exceed 100W when the original cigarette holder is supplied, otherwise the car built-in fuse may be burned. If more power requested, a special cigarette outlet should be supplied to connect directly from battery.

G. USING THE USB

The inverter provides dual USB ports and stable 5V DC to the external device, the total maximum current is 4.8A, and the maximum output current of a single USB port is 2.4A, which can directly supply or charge a portable device with a USB interface. USB ports built-in automatic charging identification IC, support various charging protocols.

H. BATTERY

Battery operating time depends on battery capacity and load. The formula for operating time is: battery capacity divided by the value of the load divided by battery voltage times 1.10%. For example, using the numbers from above, the battery specification is 12V, 100Ah capacity and the load is 180W. Take battery capacity 100Ah * 12 / 180 ≈ 6.6 hours of run time if you fully deplete the battery. This is NOT recommended. Deep cycle batteries last longer when they are only depleted to 50% of capacity.

I. SOFT START TECHNOLOGY

The soft start technology built into this inverter protects the unit from delivering too much AC power at once by gradually increasing the AC voltage pushed out. To make sure that you are utilizing this feature, turn on the appliance being used before turning on the inverter. This is especially necessary for equipment that has an inductive load or electrical motor.

J. OUTPUT VOLTAGE & WAVEFORM

The electrical waveform output of this inverter is Modified sine wave, which has the same quality as utility and/or domestic power. This type of waveform is suitable for most electrical devices, appliances and tools. This pure sine wave unit provides more capabilities than modified sine wave inverters because it is a cleaner form of power. The pure sine wave also effectively reduces the noise produced while using appliances.

K. PROTECTIONS IN THE INVERTER

1. Input under-voltage alarm(LO): When the input DC voltage is lower than 9.8V, LED display will indicate "LO", the buzzer will whistle intermittently to remind that the inverter will go into the under voltage protection.
2. Over voltage protection(HI): The inverter will automatically shut down when the input DC voltage is higher than 16V. LED display will indicate "HI". The buzzer will whistle continuously and the green light is off, red light is on. Please turn off the inverter and adjust the input voltage to the admissible range.

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3. Overload protection(OL)n: The inverter will automatically shut down when the load is higher than the rated power. LED display will indicate "OL". The buzzer will whistle continuously. Turn off the inverter and resume to normal operation after taking away the excessive load.
4. Short-circuit protection: The AC output will be automatically shut down when short circuited. And LED display will indicate "OL" It will automatically reset after the problem is solved.
5. Thermal protection(OH): The unit will get hot during operation. If the temperature is higher than 149°F, the inverter will automatically shut down. LED display will indicate "OH"Then the buzzer will whistle continuously and the green light is off, red light is on. Please turn off the inverter, and continue using it after the temperature goes back to normal naturally. Meanwhile find out the factors causing the fault, such as ventilation, ambient temperature, vent, load power etc. It can avoid similar issues from happening again.

L.Troubleshooting Tips

Fault/Display	Cause	Solutions
No output voltage, buzzer sounds continuously	Low input DC voltage	Recharge or replace the battery
	High input DC voltage	Do not use it when the battery is charging. Check the rated voltage of the battery and make sure that it is in the allowable range of the input voltage
	Overload	Reduce the load power.
	Over temperature	Cut off the load and let it cool naturally for 10 to 30 minutes. Restart it after it resumes to normal temperature. The load power is too large, reduce the total load power to the range of rated power. Avoid blocking the vent and improve the ventilation condition. Reduce the ambient temperature.
No output voltage	1. The switch is off. 2. The battery lead isn't connected well	1.Turn on the power switch. 2. Check the cables and make sure they are tightly connected.

Fault/Display	Cause	Solutions
Incorrect output voltage	1. RMS Multimeter measurement error 2. The battery power of RMS Multimeter is low. The input voltage is too high or too low	1. Use a true RMS multimeter to measure, such as the model FLUKE 177/179. 2.Try to maintain the input voltage in the range of rated power 3.Change the battery of the multimeter then test again.
Cannot drive the load	1. Load power is too large, or the actual power of the appliance exceeds nominal power. 2. The starting power is larger than rated power (such as motor)	Reduce a load power, or turn on the appliance first, then turn on the inverter.
While using with TV or audio, there is snowflake on the screen or noise from the audio.	Disturbance	1. Keep the inverter far from antenna. 2. Use screened antenna.

If all of the above methods have been tried, the product still not work properly. The internal circuit of the product may be out of order. Please return the product to the supplier for maintenance.

Welcome to use GIANDEL power inverter. If you have any query during using our inverter, please contact our service team by email: support@giandel.com.au